



CITY OF RICHMOND

**Citywide Warehousing and Inventory
Management – Department of Public
Utilities (DPU) Wastewater Treatment
Plant Warehouse (Phase II)**

Office of the City Auditor (OCA)
Audit Report

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Executive Summary

The Office of the City Auditor (OCA) conducted this audit as part of the FY 2024 audit plan approved by the Audit Committee. The objective of this audit was to evaluate the warehouse inventory management controls and efficiency regarding duplication/ordering for the warehouses operated by the City. This phase (II) of the audit covers the Wastewater Treatment Plant (WWTP) Warehouse operations.

Background

Inventory management is the process of ordering, receiving, storing, tracking, and distributing goods, parts, and materials. An organization's inventory is one of its most valuable assets and a shortage when needed can be extremely detrimental. At the same time, carrying a large inventory creates the risk of spoilage, theft, damage, and shifts in demands, resulting in a liability for an organization and inefficient use of resources. Best practices emphasize the importance of strong internal controls and accurate and reliable inventory data, regular physical counts, and safeguarding inventory to optimize stock levels and minimize costs.

Overall Conclusion

In our assessment of internal controls, we found that the WWTP Warehouse uses a perpetual inventory system to track inventory, with items secured by gates, locked doors, an alarm system, and camera surveillance.

However, opportunities for improvement exist, as industry standards and best practices in inventory management have not been fully implemented. This has resulted in inadequate oversight and monitoring of inventory, purchases, supplies, and materials, leading to unaccounted-for inventory, inaccurate and unreliable data, inventory overstocking, and circumvention of the City's procurement and payment processes.

Fully implementing industry standards and best practices and adherence to the City's procurement process will ensure accountability throughout the inventory management system. The current environment exposes the City to significant risks of error, fraud, and waste, which could go undetected.

Summary of Opportunities for Improvements

Finding 1

Inadequate oversight and monitoring of inventory have resulted in significant financial discrepancies. Purchases totaling approximately \$821,000, including chains and other materials, were not properly recorded in the inventory system or tracked, and at least \$404,265 worth of this inventory was unaccounted for. Additionally, the OCA noted inventory stored outside of the warehouse is not managed and monitored by the warehouse staff. As a result, the inventory records



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were inaccurate and incomplete and materials and supplies were not properly safeguarded to prevent or promptly detect theft, damage, and/or unauthorized use or disposal.

This lack of inventory oversight has significant implications, including the risk of overstocking, understocking, or misuse of materials, which could delay critical repairs and lead to financial waste. Stronger internal controls, proper documentation, and improved monitoring are needed to ensure that all inventory, whether stored inside or outside the warehouse, is accurately tracked and available when needed for maintenance and operations.

Finding 2

The City's competitive procurement process was bypassed, resulting in unnecessary costs of at least \$44,900. The Department of Procurement Services (DPS) required competitive bidding for purchases exceeding \$100,000,¹ but DPU circumvented this by engaging a subcontractor through an existing contractor without proper approval. The subcontractor completed diffuser replacements for \$180,000, while the prime contractor, who appeared to have no significant role, billed the City \$224,900—marking up the price by \$44,900. The prime contractor also received full payment upfront and attested that the work was completed when it was not, violating contract terms and city policies. Neither the prime nor the subcontractor responded to the OCA's inquiries.

DPU failed to consult with DPS for approval to subcontract or explore alternative procurement options, such as competitive bidding or emergency procurement. As a result, the City overpaid for the project, which could have been mitigated with proper procurement oversight.

The OCA will conduct an assessment of the DPU's procurement practices and contract administration as staff resources become available.

This matter was referred to the City of Richmond Office of Inspector General for any further actions they deem necessary.

Finding 3

The OCA identified two instances during testing where vendors were paid approximately \$362,000 prior to providing goods and services. These goods and services were procured through purchase orders. To facilitate the payment, DPU staff entered a receipt in the City's financial system, attesting that the vendor had provided the procured goods and services and the vendor invoiced the City for payment. In one case, the vendor submitted a written statement attesting that work was completed, but it was not. In the other case, the DPU staff indicated they received confirmation that the goods had been delivered; however, supporting documentation to validate this assertion was not provided to the OCA.

¹ The dollar threshold for small purchases increased to \$200,000 effective October 2, 2023.



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Upon discussing this observation with the DPU Senior Director, she sent a memorandum to the department Deputy Directors, Managers, Supervisors, and Engineers instructing them to refrain from paying suppliers prior to goods and services being received and confirmed.

Finding 4

The inventory data at the WWTP Warehouse is inaccurate and incomplete, making it impossible to determine the true dollar value of the inventory. A review and update of the inventory system is needed, as data entered into the system was not always accurate. During the OCA's review, 57 inventory items were counted, and discrepancies between physical counts and the system's on-hand quantities were found in 12% (7 out of 57) of the items.

Additionally, approximately 23% (1,049 out of 4,655) of the inventory items in the March 6, 2024, report lacked cost data. While there are valid reasons for some items to be without unit costs, some may require this information. Without accurate cost data, management cannot make informed budgeting and operational decisions or develop effective inventory controls.

The OCA also found unidentified materials and supplies stored in the warehouse that may not be accounted for in the inventory system. The warehouse staff are working with DPU tradesmen to identify these items and add them to the system where appropriate.

Finding 5

Improvements are needed in the WWTP Warehouse's inventory count process to ensure the accuracy of inventory records. The OCA found that the warehouse lacks formal, documented policies and procedures for conducting physical inventory counts, resulting in inconsistencies in how inventory items are counted and recorded. Without a clear, standardized process, certain items may not be counted, including 82 items valued at \$563,000, which are stored outside the warehouse and not monitored. Additionally, inconsistencies in how staff conduct cycle counts and the absence of documentation for when items were last counted make it difficult to ensure that inventory is managed properly, and discrepancies are identified in a timely manner.

Moreover, the OCA found that there is no formal process to research and document inventory count variances. The warehouse staff manually document counts, but they do not use the inventory management system's reconciliation feature, which could help track variances and improve accuracy. Furthermore, segregation of duties within the inventory process is insufficient, as warehouse staff responsible for conducting counts also handle issuing inventory and processing adjustments. The lack of oversight and mitigating controls increases the risk of error and fraud, highlighting the need for better internal controls, such as blind counts and increased supervision, to safeguard inventory.

Finding 6

The OCA found significant weaknesses in the WWTP Warehouse's inventory monitoring process, leading to inefficient stock management and potential over-purchasing. The warehouse lacks formal



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policies and procedures for maintaining optimal inventory levels, such as setting minimum and maximum stock levels and reorder points for all items. The absence of standardized processes has led to outdated stock levels for many items, with 2,256 items missing minimum quantities and 922 items lacking maximum quantities. Furthermore, 730 items exceeded their established maximum inventory levels, potentially resulting in an excess inventory of at least \$1.4 million. Without proper inventory monitoring, there is a risk of unnecessary spending and stock shortages.

Additionally, the warehouse has no process in place to regularly review and dispose of idle or inactive inventory items, contributing to inefficient use of resources and warehouse space. Approximately 51% of the inventory items had not been requisitioned or received for at least five years, based on the March 6, 2024, inventory report, indicating that a significant portion of stock may be obsolete. Despite this, additional quantities of idle items were purchased in FY 2023, resulting in an inefficient use of approximately \$100,000 in City funds. This lack of oversight and inventory control could lead to further unnecessary expenditures and inefficient resource allocation.

Finding 7

Access levels in the Mainsaver system needs to be reviewed and adjusted to align with employee job duties and responsibilities. The OCA found that access levels were not properly restricted, allowing employees without warehouse-related responsibilities, including one from the stormwater utility, to improperly access and edit inventory data. Additionally, some employees with access to the warehouse data changed inventory records, and one change was reversed after an OCA inquiry. The lack of a formal process to review and manage system access poses risks of unauthorized changes, compromising data integrity, and increasing the potential for errors or misuse.

Finding 8

Written policies and procedures are not in place to govern and guide WWTP Warehouse operations and inventory management functions. A lack of policies and procedures could lead to staff confusion, inconsistent application of processes and procedures, non-compliance with laws and regulations, resulting in legal risks, inefficiencies, and an organization not achieving its mission and objectives. Per the Government Accountability Office (GOA),² management is responsible for developing and implementing policies and procedures to achieve an entity's objectives and guide its operations.

Summary of Recommendations

The OCA issued 18 recommendations and management concurred with 18 recommendations. Management has advised that 2 recommendations are in the process of being implemented, and 3 recommendations have already been implemented. A detailed listing of recommendations and management responses is included in **Appendix C**. We will review the implementation status of the recommendations during our Quarterly Open Recommendation Follow-Up Review.

² GAO-14-704G, "Standards for Internal Control in Federal Government," <https://www.gao.gov/assets/gao-14-704g.pdf>, pages 7-8



Introduction, Background, and Internal Controls

Introduction

Overview of the City's Warehouses' Operations and Inventory Management Processes

Warehouse operations and inventory management processes and procedures are decentralized in the City. The City has six main warehouses that are operated by five different departments: Public Works (DPW), Public Utilities (DPU), Parks, Recreation and Community Facilities (DPRCF), Police (RPD), and Fire (RFD). Each Department oversees its respective warehouse and independently functions using its own staff, processes, and procedures.

Audit Report Issuance Approach

The audit will be issued in phases with this report covering the DPU Wastewater Treatment Plant Warehouse. The warehousing and inventory management processes and procedures employed for the remaining warehouses and the efficiency regarding duplication/ordering will be discussed in separate reports that will subsequently be issued. However, the OCA notes that due to the inaccuracies described in this report, the WWTP Warehouse data cannot be used to determine if there is a duplication of items being ordered among the different City warehouses.

Background

What is Inventory Management and Why is It Important?

Inventory management is the process of ordering, receiving, storing, tracking, and distributing goods, parts, and materials. An organization's inventory is one of its most valuable assets and a shortage when needed can be extremely detrimental. At the same time, carrying a large inventory creates the risk of spoilage, theft, damage, and shifts in demands, resulting in a liability for an organization and inefficient use of resources.

Adequate inventory management strategies and procedures help ensure an organization has the right amount of stock on hand to:

- Prevent stockouts and overstocking,
- Reduce inventory carrying costs, and
- Minimize waste and losses.

Proper inventory management also improves warehouse operations, resulting in the following:



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- Better order fulfillment,
- Improved quality control checks,
- Increased employee efficiency, and
- Reduced employee risks.

Inventory Management Industry Standards and Best Practices

The Government Accountability Office (GAO) issued a best practices framework and guide to improve the accuracy and reliability of the government’s inventory data. The guide summarizes the best practices that have been successfully implemented by companies recognized for outstanding inventory management practices and are applicable to any governmental or non-governmental entity with inventory and/or property and equipment.

Per the GAO,³ accurate and reliable data are essential to an efficient and effective operating environment. As such, managers and decision-makers need to know how much inventory is on hand and where items are located to make effective budgeting, operating, and financial decisions. This creates an effective government that works better and minimizes costs.

Similar to the City of Richmond, each State of Virginia agency is responsible for controlling and securing all inventories within its organization. The inventory controls employed by the State agencies vary based on the agency’s size, complexity of operations, and the quantity and variety of inventory items. The Virginia Department of Accounts has outlined minimum requirements that must be included in inventory management systems (computerized or manual) for supplies and materials.

As shown in **Figure 1** below, the OCA compiled principles and best practices⁴ from these agencies and noted why they are an important component supporting the daily operations of the City’s warehouses.

Figure 1: Inventory Management Best Practices

Best Practice	Why is it Important?
Accurate and Reliable Inventory Data	Accurate and reliable data allow managers to make informed budgeting, operating, and financial decisions to maximize resources and minimize costs. Decision makers need to know how much inventory is on hand and where it is located to optimize inventory levels to prevent shortages or overstocking.

³ GAO-02-447G “Executive Guide: Best Practices in Achieving Consistent, Accurate Physical Counts of Inventory and Related Property,” <https://www.gao.gov/assets/gao-02-447g.pdf>, page 5

⁴ Reviewed best practices included:

- GAO-14-704G, “Standards for Internal Control in Federal Government,” <https://www.gao.gov/assets/gao-14-704g.pdf>,
- GAO-02-447G “Executive Guide: Best Practices in Achieving Consistent, Accurate Physical Counts of Inventory and Related Property,” <https://www.gao.gov/assets/gao-02-447g.pdf>
- Virginia Department of Accounts – Commonwealth Accounting Policies and Procedures (CAPP) Manual Supplies and Materials Inventory, CAPP Manual - 30515 - Supplies and Materials, [CAPP Manual - 30515 - Supplies and Materials Inventory \(virginia.gov\)](https://www.dca.virginia.gov/CAPPManual-30515-SuppliesandMaterialsInventory)



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Physical Counts	Physical inventory counts are critical in verifying the inventory exists and that on-hand quantities agree with the inventory records contributing to the accuracy and reliability of the inventory and financial data.
Oversight and Monitoring of Inventory	<p>Inventory monitoring refers to continuously tracking and analyzing inventory levels, stock movements, and related data. An agency's ability to locate and accurately identify supplies and materials as needed reduces overall inventory costs.</p> <p>The inability to locate or identify supplies and materials could cause unnecessary purchases. Savings may accrue through the reduction of theft and obsolete items.</p>
Safeguarding Inventory	<p>Inventory must be safeguarded to prevent or promptly detect and correct theft, damage, and/or unauthorized use or disposal of assets, materials, and supplies.</p> <p>Storage areas should be:</p> <ul style="list-style-type: none"> • controlled and limited to authorized personnel only and • kept neat, safe, and clean to prevent inventories from being damaged or deteriorating. <p>Inventory should be organized orderly and properly labeled to allow the items to be easily identified and located.</p>
Segregation of Duties	Segregating key duties and responsibilities among different people reduces the risk of error and fraud, as a single individual cannot control an entire process. Ideally, segregation of duties should exist between receiving, stocking, processing, and recording assets and approving transactions. If segregation of duties is impractical, other controls should be implemented to mitigate the risks.
Policy and Procedures	<p>Policies and procedures are essential to any organization and provide a roadmap for day-to-day operations. They help to:</p> <ul style="list-style-type: none"> • ensure compliance with laws, regulations, and internal processes, • guide decision-making, • streamline processes, • ensure management expectations are consistently carried out and • serve as training aids for employees. <p>Policies and procedures should include the information employees need to know to carry out their job functions consistently and accurately.</p>

Source: Compiled by the OCA using identified best practices cited in footnote 4.



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Overview of DPU's Wastewater Treatment Plant (WWTP) Warehouse

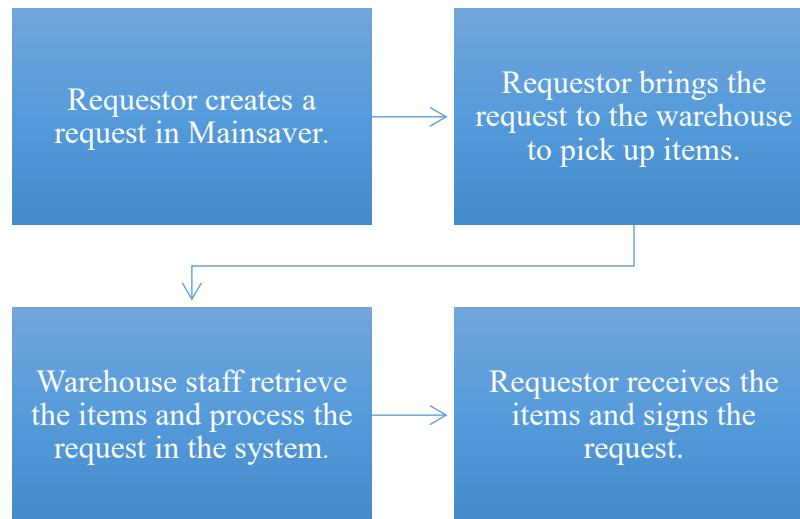
The wastewater utility serves approximately 64,000 customers in the City of Richmond and surrounding areas. The Wastewater Treatment Plant (WWTP) processes up to 75 million gallons of sanitary sewage and stormwater daily before discharging it into the James River. The WWTP Warehouse plays a critical role by providing the parts, equipment, and supplies needed to maintain plant operations, preventing shutdowns, or facility failures.

The WWTP Warehouse is staffed by three employees: a Warehouse and Materials Supervisor and two Warehouse and Materials Technician Seniors. Inventory data, such as requests, receipts, distributions, and adjustments, are electronically tracked in the Mainsaver system. Materials and supplies purchased at the WWTP Warehouse are immediately expensed when purchased. Unlike the DPU Main Warehouse, the WWTP Warehouse is not an internal service fund, as its materials and supplies are primarily used for the WWTP and are not distributed to the other DPU utilities.

Mainsaver is DPU's work order system used to requisition inventory stock items from the warehouse or request non-stock purchases not managed by the warehouse. Stock items are those items that are regularly monitored and reordered when they run low. In contrast, non-stock items are not kept on hand and are ordered as needed for projects.

Warehouse staff are responsible for ordering, receiving, tracking, and requisitioning stock items. For stock items, the requestor creates a request in Mainsaver for available on-hand stock. The requestor brings the request to the warehouse, where staff retrieve and process the order in the system. Once the items are received, the requestor signs the request. This process is outlined below in **Figure 2**.

Figure 2: Request and Distribution of Stock Items



Source: Created by OCA based on walkthroughs.



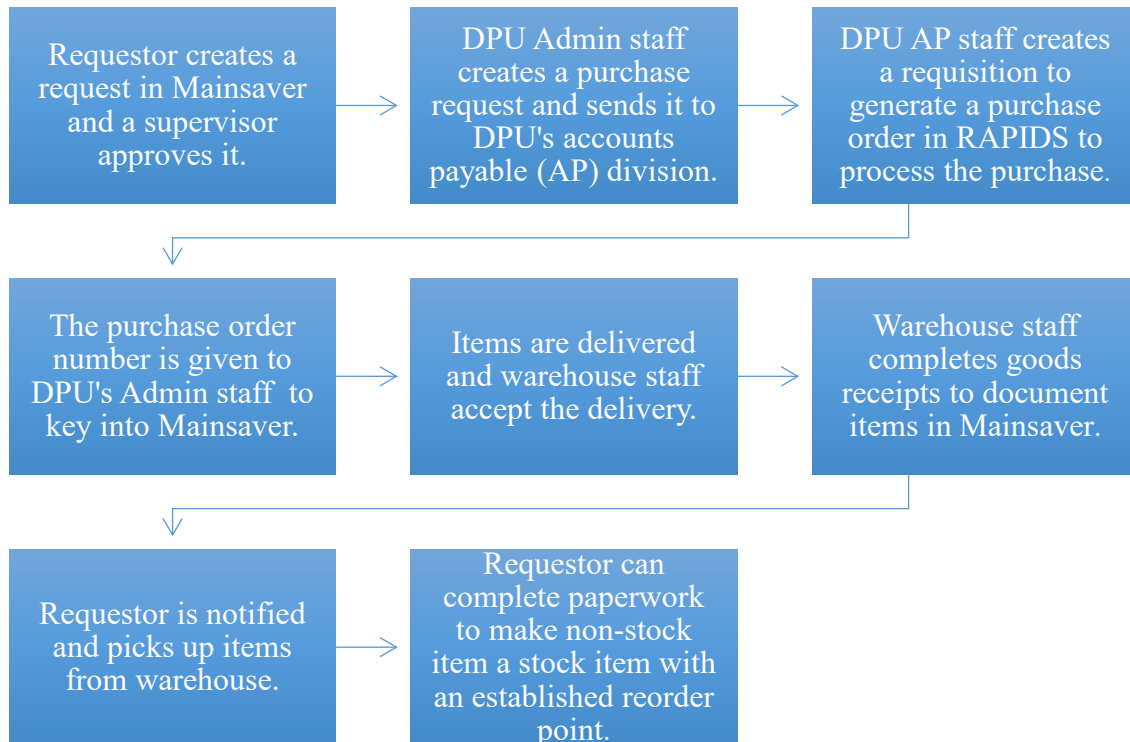
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For non-stock items, the initial request needs to be approved by a supervisor. After approval, the administrative staff creates a purchase request. The purchase request is sent to DPU's accounts payable division, which creates a purchase order in the City's financial system, RAPIDS. The administrative staff also enters the purchase order into Mainsaver for tracking purposes.

Once the items are delivered, warehouse staff accepts the delivery, completes a goods receipt to document the delivery of the items, closes out the order request in Mainsaver, and notifies the requestor that the items are ready for pickup. Warehouse staff are responsible for accepting the delivery of non-stock items and notifying the requestors when items are ready for pickup. The requestor is responsible for managing the non-stock items that were ordered. If desired, requestors can complete the necessary paperwork to establish non-stock items as stock items with set re-order points.

This process for ordering and distributing non-stock items is outlined below in **Figure 3**.

Figure 3: Request and Distribution of Non-Stock Items



Source: Created by OCA based on walkthroughs



Overall Conclusion on Internal Controls

According to the Government Auditing Standards, internal control, in the broadest sense, encompasses the agency's plan, policies, procedures, methods, and processes adopted by management to meet its mission, goals, and objectives. Internal control includes the processes for planning, organizing, directing, and controlling program operations. It also includes systems for measuring, reporting, and monitoring program performance. An effective control structure is one that provides reasonable assurance regarding:

- Efficiency and effectiveness of operations;
- Accurate financial reporting; and
- Compliance with laws and regulations.

In our assessment of internal controls, we found that the WWTP Warehouse uses a perpetual inventory system to track inventory, with items secured by gates, locked doors, an alarm system, and camera surveillance.

However, opportunities for improvement exist, as industry standards and best practices in inventory management have not been fully implemented. This has resulted in inadequate oversight and monitoring of inventory, purchases, supplies, and materials, leading to unaccounted-for inventory, inaccurate and unreliable data, inventory overstocking, and circumvention of the City's procurement and payment processes.

Fully implementing industry standards and best practices and adherence to the City's procurement process will ensure accountability throughout the inventory management system. The current environment exposes the City to significant risks of error, fraud, and waste, which could go undetected.

Findings and Recommendations

Finding 1: The Wastewater Treatment Plant Warehouse inventory lacks adequate oversight, resulting in significant financial discrepancies.

Inventory monitoring refers to continuously tracking and analyzing inventory levels, stock movements, and related data. According to the Virginia Department of Accounts CAPP Manual for Materials and Inventory, "the objectives of an inventory control system are to ensure:⁵

- sufficient quantities of goods are on hand to meet anticipated needs,
- funds are not needlessly tied up in excessive inventory stockpiles,

⁵ Virginia Department of Accounts – Commonwealth Accounting Policies and Procedures (CAPP) Manual Supplies and Materials Inventory, CAPP Manual - 30515 - Supplies and Materials, [CAPP Manual - 30515 - Supplies and Materials Inventory \(virginia.gov\)](#), page 2



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- inventories are safeguarded from loss due to deterioration, obsolescence, and pilferage, and
- supplies and materials are acquired in economic lots and maintained at the lowest cost commensurate with the risks of loss.”

As noted in **Figure 2** and **Figure 3** above, requests for inventory stock items and non-stock purchases are processed in Mainsaver. Warehouse staff are responsible for ordering, receiving, tracking, and requisitioning stock items. For non-stock items, warehouse staff are only responsible for accepting delivery and notifying requestors when items are ready for pick up. The requestor is responsible for managing and monitoring the non-stock purchases.

However, during physical counts of warehouse inventory, a review of inventory expenditure reports, and interviews with warehouse staff, the OCA found that:

- Warehouse staff do not manage or monitor inventory stock items stored outside the warehouse.
- There is inadequate oversight, tracking, and monitoring of inventory purchases.

1A. Inventory stored outside the WWTP Warehouse totaling at least \$563,000 is not adequately managed and monitored.

While conducting inventory counts, the OCA was informed that, in addition to the warehouse, inventory items are also stored in two buildings located on the WWTP grounds and at the Water Treatment Plant. According to the Program and Operations Manager for Plant Maintenance, these items are stored outside the warehouse due to limited spacing and ease of access. We observed the three locations where inventory is stored outside the warehouse and noted that inventory lists, tracking controls, and labeling for parts and locations were not in place. Upon discussing this with the warehouse supervisor, the OCA was informed these items are not managed and monitored by the warehouse staff. However, per the WWTP Program and Operations Supervisor, warehouse staff are still responsible for these items.

Based on a review of the inventory data for these items and physical counts, the OCA noted that these items are not adequately managed and monitored. For example, the March 6, 2024, inventory listing indicated that there were 41 sprockets⁶ of various styles on hand stored outside of the warehouse. However, the OCA counted 92 sprockets located outside of the warehouse. As such, the inventory data for these items is understated.

In another example, the OCA noted that the inventory data included 727 Amwell 10-foot main collector chains, but when we visited the location where the chains were supposed to be stored, we could not conclude if items were on hand as there were various unlabeled chain types in this area. The WWTP Program and Operations Supervisor informed us that even though the inventory report showed 727 chains on hand, there were actually no quantities on hand as that brand has not been used for several years. However, it should be noted that this brand of chain was requisitioned out

⁶ These include inventory stock numbers 006180, 006659, 008842, and 003409.



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of the warehouse twice in June 2024. The ramifications of this issue are further described in **Finding 1B.2** below.

Upon learning that the warehouse staff are not managing and monitoring inventory items stored outside the warehouse, the OCA reviewed the March 6, 2024, inventory report to quantify the number of inventory items stored outside the warehouse. We identified 82 inventory stock items totaling approximately \$563,000 that were located outside of the warehouse and not managed by the warehouse staff. Thirty-four of these stock items had one or more quantities on hand. The OCA noted that the total quantity on hand and the dollar value of inventory stored outside the warehouse could be higher or lower, given the above noted data discrepancies.

Upon discussing these observations with the Program and Operations Manager for Plant Maintenance, we were informed that he was actively working on a solution to manage the stocked items at the Water Treatment Plant. The plan is to centrally locate the stock items in a locked/controlled space at the Water Treatment Plant and implement a process to track the parts and material usage.

As observed during the OCA's inventory count, the lack of controls and tracking of these items resulted in the inability to identify and locate supplies and materials and could lead to unnecessary purchases, overstocking, or obsolete materials. This issue could also have the opposite effect, where supplies and materials may not be available when needed. Furthermore, theft or misappropriation of materials and supplies may go undetected for extended periods.

1B. Inadequate oversight, tracking, and monitoring of approximately \$821,000 in inventory purchases resulted in at least \$404,265 of unaccounted-for inventory.

During FY 2023, 744 invoices totaling approximately \$1.1 million were processed and paid for wastewater purchases. The OCA judgmentally selected a sample of five invoices, totaling approximately \$380,000, and traced them to the inventory system to verify that the purchases were added to inventory. We noted that items purchased on two of the five invoices were not added to the inventory system. One of these items was a stock item that should have been added to the inventory and the other was a non-stock item that was purchased to replace an existing stock item (See **Finding 1B.1**).

The OCA requested and reviewed work orders for the two purchases not entered into the inventory system to determine the quantity of material used on the projects. However, the work orders did not document the materials and quantity used. As such, we could not determine how much of the purchased material was utilized and whether any remaining quantities should have been returned to inventory.

To assess the severity of this issue, the OCA expanded its review and identified inadequate oversight, tracking, and monitoring of approximately \$821,000 in inventory purchases, resulting in at least \$404,265 of unaccounted-for inventory, as discussed in the findings below.



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1B.1 CAN-AM chain purchases totaling \$416,580 were not added to the inventory nor adequately tracked, and their disposition cannot be determined.

One of the expenditures reviewed by the OCA involved the purchase of chains used in the primary wastewater tanks. Specifically, DPU purchased 3,000 feet of CAN-AM chains at a total cost of approximately \$115,000. These chains were not classified as inventory stock items even though it should have been because it was a replacement for the Amwell chains, an existing inventory stock item. Therefore, they were not tracked within the inventory system.

A review of inventory data indicated that 7,270 feet of Amwell chains—an existing stock item—were reported as available for use in the March 6, 2024, inventory report. Upon inquiry, the WWTP Program and Operations Supervisor explained that CAN-AM chains were purchased because they were deemed more durable than Amwell chains, which were prone to breakage. The supervisor further stated that no Amwell chains remained in stock, contradicting the inventory data, which the supervisor claimed was inaccurate.

The CAN-AM chains are stored outside the warehouse and are not monitored by warehouse staff. As noted in Finding 1A, during an on-site visit on June 17, 2024, the OCA was unable to verify the presence of the 7,270 feet of Amwell chains reported in inventory, as multiple types of unmarked chains were stored in the area.

During the site visit, we also observed that a contractor was onsite working on one of the tanks, and DPU staff requisitioned Amwell chains from the inventory. When asked why Amwell chains were requisitioned despite the supervisor's claim that none were on hand, staff explained that this was an error, and the requisition was reversed in the system on June 18, 2024. However, the OCA noted that another requisition for Amwell chains was processed again on June 24, 2024. Also, we noted that DPU concurrently purchased both CAN-AM and Amwell chains in January and February of 2021.

CAN-AM chains were purchased between February 2021 and April 2024, none of which were entered into inventory despite their regular use in tank repairs. These chains, described as a replacement for Amwell chains, were not set up as stock inventory items. **Table 1** summarizes the CAN-AM chain purchases.



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Table 1: CAN-AM Chain Purchases Between February 2021 and April 2024

Invoice Date	Purchased Amount (in feet)	Total Cost
February 8, 2021	3000	\$93,450
February 23, 2022	3000	\$93,450
November 21, 2022	3000	\$114,840
April 12, 2024	3000	\$114,840
Total		\$416,580

Source: Created by OCA using vendor invoices.

The OCA requested and reviewed work orders to determine the quantities of CAN-AM chains used and any remaining stock. DPU provided two work orders, and we noted the following:

- 1st Work Order- the comments referenced replacing tank parts but did not specify the items used. However, the OCA noted the work order number was tied to the Amwell chain that was requisitioned out of the warehouse.
- 2nd Work Order- the comments referenced a “new style” chain but did not specify the brand or identify the quantity used to complete the project. However, the OCA noted the work order number was tied to the Amwell chain that was requisitioned out of the warehouse.

After reviewing the work orders, we noted the materials and quantities used were not documented and both work orders were tied to Amwell chains. As such, the OCA could not verify the exact amount of chain utilized or the remaining amount.

Additionally, the Operations and Maintenance Manual states that each tank requires 3,680 feet of chain, but only 3,000 feet of CAN-AM chain were purchased for each tank, as noted in **Table 1** above. If using the specification requirements, it appears that DPU didn’t purchase enough chains to cover all the tanks during this period. The OCA couldn’t conclude which parts were utilized to complete the entire project or if the project was completed due to the lack of documentation on the work orders.

Accurate inventory data is critical for managing stock levels and avoiding unnecessary expenditures. As noted above in **Table 1**, DPU purchased \$416,580 CAN-AM chains that were not tracked or documented. Failure to track materials properly could result in DPU not having sufficient parts on hand for repairs. In fact, comments from the Asset History Report, dated June 27, 2024, revealed that insufficient parts were available for the project, delaying work on tank #3. As the contractor charges a \$23,471 mobilization fee for each project, the City will incur an additional fee when the contractor returns to complete the work.



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1B.2 Amwell chains purchases totaling \$390,825 were unaccounted for, and their disposition cannot be determined.

As noted in **Finding 1A**, during an on-site visit on June 17, 2024, the OCA was unable to verify the presence of the 7,270 feet of Amwell chains reported in inventory, as multiple types of unmarked chains were stored in the area. The WWTP Program and Operations Supervisor informed us that even though the inventory report showed 727 chains on hand, there were no quantities on hand as that brand had not been used for several years. The OCA also identified an additional purchase of Amwell chains that were not added to inventory or tracked on any identifying work orders. As such, \$390,825 worth of chains were not accounted for, as noted below in **Table 2**.

Table 2: Unaccounted for Amwell Chains

Description	Quantity (in feet)	Dollar Amount
Amwell – on-hand quantity in inventory system as of June 17, 2024	7,270	\$219,045
Amwell – purchase not entered into inventory	3,562.50	\$171,780
Total		\$390,825

Source: Created by OCA using vendor invoices and inventory data

The lack of inventory tracking for both Amwell and CAN-AM chains has led to substantial unaccounted purchases and inventory discrepancies. Stronger internal controls are necessary to ensure that all materials are documented and available when needed for critical repairs.

1B.3 Diffusers totaling approximately \$13,000 were not accounted for.

In addition to the chains not being tracked in the inventory system, the OCA observed a large shipment of diffusers stored in the warehouse's bay area during a WWTP Warehouse tour. Upon inquiry, the DPU Senior Deputy Director informed us the diffusers were purchased to replace the existing ones in the aeration tanks. However, a review of the inventory data revealed that these diffusers were not entered into the inventory system despite being classified as stock items.

The Programs and Operations Manager for Plant Maintenance explained that this purchase was unusual, as a full replacement of the diffusers is not typically required for preventive maintenance. However, preventive maintenance for the aeration tanks had been delayed since December 2018, which contributed to the decision to replace all the diffusers. Additionally, the DPU Senior Deputy Director indicated that the replacement was also necessary to address violations issued by the Department of Environmental Quality (DEQ).

The OCA requested and reviewed work orders for the diffuser replacement project to determine the number of diffusers used and any remaining stock. According to DPU specification sheets, each of the four aeration tanks requires 5,310 diffusers. As shown in **Table 3**, diffusers were replaced in three tanks between October 2023 and November 2023, with the final tank completed in June 2024.



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Table 3: Summary of the Diffusers Installed in the Four Tanks per Work Orders

Work Order No.	Tank No.	No. of Diffusers Installed ⁷	Completion Date
C273050	4	5,308	10/27/2023
C273187	3	5,070	11/8/2023
C273283	2	5,280	11/25/2023
C275211	1	5,297	6/24/2024
		20,955	

Source: Created by OCA using DPU work orders

Despite these diffusers not being initially added to the inventory, the remaining stock from the project was entered into inventory after its completion. As outlined in **Table 4**, the OCA compared the post-project inventory balance and identified a discrepancy of 320 unaccounted-for diffusers, with a unit cost of \$42, totaling \$13,440. DPU staff were unable to explain this variance.

Table 4: Summary of Unaccounted for Diffusers

Date	Chain of events	No. of Diffusers
-	Initial diffusers in the warehouse	433
July – September 2023	Diffusers purchased	21,740
October 2023 – June 2024	Diffusers installed per work orders	(20,955)
	Expected Balance of Diffusers	1,218
7/10/24	Diffusers in inventory after project completion	898
	Variance	320

Source: Created by OCA using purchasing and inventory data and DPU work orders

⁷ The quantities of diffusers installed, as per the work orders, were less than the required amount for each tank.



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Recommendations

Recommendation 1

High Priority

We recommend that the DPU Senior Director establish a process to define, document, and communicate what items should be classified as stock and non-stock items in the WWTP Warehouse. Further, assess the feasibility of centralizing the process of ordering and receiving stock and non-stock items through the WWTP Warehouse.

If deemed to be feasible, establish a process to implement centralized ordering and receiving.

If deemed not feasible:

- a. Mandate that all inventory stock items, including those ordered for projects, be ordered through the warehouse, tracked in the inventory system, and managed and monitored by the warehouse staff.
- b. Establish a process to track all items ordered outside of the established warehouse process that includes tracking receipt and usage and labeling all parts along with their designated location.

Recommendation 2

High Priority

We recommend that the DPU Senior Deputy Director over the WWTP Warehouse establish a process to ensure all materials are tracked and documented on work orders to include the following:

- a. The description and quantity of the material used.
- b. The asset being serviced if not otherwise noted on the work order.

Recommendation 3

Medium Priority

We recommend that the DPU Senior Deputy Director over the WWTP Warehouse ensure the CAN-AM chains referenced throughout this report be set up as a stock item in the inventory system.



Finding 2: The City's competitive procurement requirements were circumvented, resulting in at least \$44,900 in unnecessary costs.

Per the Department of Procurement Services (DPS) Small Purchases Policy 14 (effective February 1, 2021), purchases exceeding \$100,000⁸ for goods, non-professional services, and non-transportation-related construction that are not from an existing contract are required to be competitively procured by the DPS. The agencies are responsible for complying with DPS policies and procedures and are held accountable for any failures. Non-compliance with purchasing requirements may lead to the reduction, suspension, or revocation of an agency's or employee's purchasing authority.

As outlined in **Finding 1B.3**, DPU purchased 21,740 diffusers to replace the existing ones in the aeration tanks, addressing violations issued by the Department of Environmental Quality (DEQ) to the WWTP. The DPU Senior Deputy Director indicated that to get this work done in a timely manner and prevent having to bid out this project competitively, DPU solicited quotes from City contractors. However, the quote amounts were too large or the contractors did not have the manpower to complete the work. The DPU Senior Deputy Director did not provide us with any of the quotes he referenced.

The DPU Senior Deputy Director indicated that he then approached a vendor working onsite at the WWTP about this project, and the vendor indicated he could complete the work but did not have an existing contract with the City. As such, the DPU Senior Deputy Director indicated he connected this vendor with an existing DPU contractor (prime contractor) that had an active contract, as the vendor (subcontractor) was willing and able to complete the work within the required timeframe.

The DPU Senior Deputy Director indicated that the subcontractor quoted \$45,000 per tank, totaling \$180,000. The prime contractor quoted and billed DPU \$224,900 for this work. The prime contractor's quote was based on 3,460 labor hours at the contract rate of \$65 per hour. However, the OCA found that this was likely not the case as the prime contractor was inappropriately paid the entire quote amount up front before the work was completed, even though the contract and price were based on labor hours utilized to complete the work. This issue will be further described in **Finding 3**. This price difference simply appeared to be a markup of \$44,900 (25%) from the subcontractor's quote.

The subcontractor completed three of the four tanks between October 2023 and November 2023 and finally completed the last tank in June 2024 during the OCA's inquiry of the payments and parts. Per DPU, the delay in completing the work on the last tank was due to a mechanical issue that took some time to resolve. The OCA contacted both the prime contractor and subcontractor to schedule a formal interview to discuss this procurement, the work performed, and the payment. However, they did not return our telephone calls.

⁸ The dollar threshold for small purchases increased to \$200,000 effective October 2, 2023.



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The OCA noted under the general contract terms, Section 5.3, that the prime contractor was not allowed to subcontract work under the contract without written approval from the DPS Director. Based on feedback from DPS staff, neither DPU nor the prime contractor requested approval to subcontract this work. The DPS Director indicated that if DPU had consulted with his department, they would have advised DPU to use one of the below options to procure the services:

- Secure approval from the Procurement Services Director to subcontract,
- Utilize a cooperative agreement for the goods and services,
- Competitively procure the services through an Invitation for Bid, or
- Seek approval for an emergency procurement, if warranted.

Circumventing the competitive procurement requirements resulted in the City paying at least an additional \$44,900 for this work. DPU may have been able to get better pricing if work was competitively procured and would not have had to pay the \$44,900 markup if done as an approved emergency procurement from the subcontractor. Furthermore, if DPU had contacted DPS as required, they would have likely been informed the small purchase threshold was set to be changed, and the subcontractor may have had the lowest quote. After discussing this observation with the DPU Senior Director, she issued a memorandum to department Deputy Directors, Managers, Supervisors, and Engineers, instructing them to adhere to Procurement Policies and Procedures. Consequently, **Recommendation 5** below has been fully implemented.

The OCA will conduct an assessment of the DPU's procurement practices and contract administration as staff resources become available.

In addition, this matter has been referred to the City of Richmond Office of Inspector General for any additional actions they deem necessary.

Recommendations

Recommendation 4

Medium Priority

We recommend that the DPU Senior Director ensure staff involved in purchasing decisions are properly trained on the Department of Procurement Services' purchasing requirements. At a minimum, this training should cover policies regarding competitive bidding, subcontracting, and emergency procurements.

Recommendation 5

High Priority

We recommend that the DPU Senior Director mandate staff comply with the City's procurement policies and procedures.



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Finding 3: The City’s contract general terms and conditions were not adhered to, and vendors were paid approximately \$362,000 prior to providing goods and services.

In accordance with Section 21-9 of the City Code, agencies shall promptly pay for completed services and delivered goods acquired from a nongovernmental, privately owned enterprise by the required payment date of:

- The date that payment is due under the contract terms or
- Within 45 days of receipt of goods and services or invoice, whichever is greater, if payment date is not established in the contract.

The City Code section also indicates that separate payment dates may be specified for contracted goods and services provided in a series of partial executions or deliveries, provided the contract allows for such.

The OCA identified two instances where vendors were paid prior to providing goods and services. **Table 5** below summarizes the payment details.

Table 5: Summary of Identified Prepayments

Observation No.	Service Completion or Delivery Date	Payment Date	Payment Amount
1	6/24/2024	10/18/2023	\$224,900 ⁹
2	1/4/2023	12/15/2022	\$137,193

Source: Created by OCA using expenditure documentation

The above goods and services were procured through purchase orders. To facilitate the payments,

- DPU staff entered a receipt in the City’s financial system, attesting that the vendor provided the goods and services, and
- The vendor submitted an invoice to the City for payment.

The OCA reviewed the documentation provided and inquired with DPU staff why the above payments were remitted prior to receipt of goods and services and noted the following:

Observation 1 is related to the removal and installation of the diffusers noted in **Finding 2**. The OCA reviewed the work order documentation provided by DPU and found that the subcontractor

⁹ Section 3.5 of the vendor’s contract indicated that the City is not obligated to purchase or pay for goods and services until they are ordered and delivered or performed.

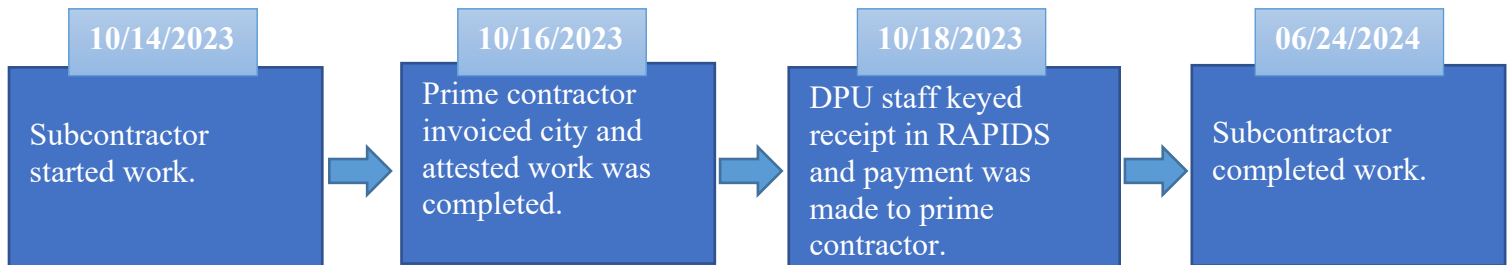


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began work on October 14, 2023, and completed the last tank on June 24, 2024. The prime contractor invoiced the City for the full quote amount, which was supposed to be based on actual labor hours worked, and submitted a completion statement on October 16, 2023, attesting that the work had been completed on the aeration tanks. We noted the completion statement was signed by the prime contractor but not by a City of Richmond representative, as this line was blank on the document. We also reviewed the financial system and noted that DPU staff entered a receipt in the financial system on October 18, 2023, and the payment was issued to the prime contractor on the same day.

Figure 4 below summarizes the work completion and payment timeline for **Observation 1** procurement.

Figure 4: Observation #1 Work and Payment Timeline



Source: Created by OCA using expenditure documentation

As noted in **Finding 2**, the OCA reached out to the prime contractor and subcontractor on several occasions to schedule a formal interview to discuss this procurement and payment. However, the prime nor subcontractor responded. As such, we could not determine why the prime contractor remitted a false statement to DPU that the work was completed. The OCA was also unable to validate how much was paid to the subcontractor and when.¹⁰

The OCA inquired with various DPU staff to understand why the prime contractor was paid before the work was completed. The Program and Operations Supervisor in the Division of Collection Systems and Regulatory Affairs explained that the contractor was paid because they submitted a completion statement indicating the work was done. However, the Senior Deputy Director of DPU noted that smaller contractors often lack the upfront capital to maintain payroll or pay subcontractors. As a result, it is not uncommon for contractors to invoice for the total amount once purchase orders are issued and work begins. When the OCA asked for other examples of vendors being prepaid, the Senior Deputy Director could not provide any.

Observation 2 pertains to the chains purchased for the primary tank preventive maintenance, as noted in **Finding 1**. An invoice totaling approximately \$137,000, dated November 21, 2022, was submitted to the City for payment. The OCA reviewed the financial system and found that DPU

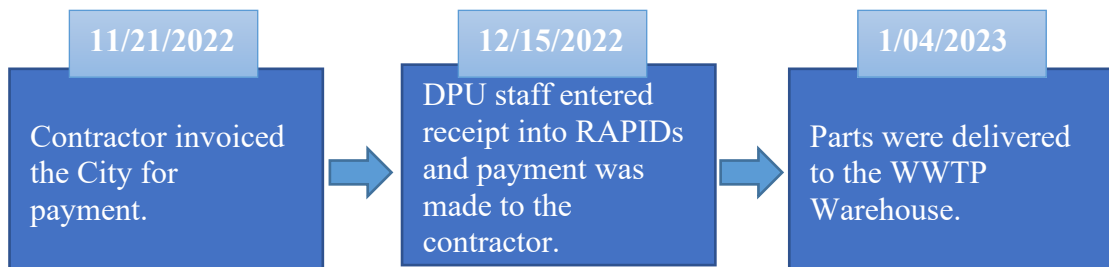
¹⁰ As noted in Finding 2, we referred this matter to the Office of the Inspector General for any additional actions they deem necessary.



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staff entered a receipt on December 15, 2022, and the payment was issued to the contractor on the same day. However, the tank parts were not delivered to the WWTP Warehouse until January 4, 2023, as evidenced by the date stamp on the packing slip. **Figure 5** below summarizes the timeline for the parts delivery and payment in **Observation 2**.

Figure 5: Observation #2 Parts Delivery and Payment Timeline



Source: Created by OCA using expenditure documentation

The OCA asked the DPU Program Manager why a receipt was entered into RAPIDs, and the contractor was paid before the parts were delivered to the WWTP Warehouse. The Program Manager explained that she had received a confirmation from either the vendor or the warehouse staff that the items were delivered. However, the Program Manager did not provide supporting documentation to the OCA to validate this explanation. When we spoke to the warehouse staff and supervisor, they confirmed that the parts were delivered to the warehouse on January 4, 2023, as indicated by the date stamp on the packing slip.

Advancing payments to vendors prior to rendering goods and services creates a risk of financial loss if the vendor goes bankrupt, goes out of business, or fails to provide the procured goods and services. Additionally, it reduces the City's ability to negotiate in the event of a dispute. After discussing this observation with the DPU Senior Director, she issued a memorandum to department Deputy Directors, Managers, Supervisors, and Engineers, instructing them to refrain from paying suppliers until goods and services are received and confirmed. Consequently, **Recommendation 6** below has been fully implemented.

Recommendation

Recommendation 6

High Priority

We recommend that the DPU Senior Director inform employees that advance payments to vendors are prohibited unless explicitly stipulated in the contract.



Finding 4: The inventory data is inaccurate and incomplete, and the true dollar value of the inventory is unknown.

Per the GAO, accurate and reliable data are essential to an efficient and effective operating environment.¹¹ As such, managers and decision-makers need to know how much inventory is on hand and where items are located to make effective budgeting, operating, and financial decisions and create an effective government that works better and minimizes costs. To promote accurate and reliable data, the Virginia Department of Accounts recommends that perpetual inventory systems contain fields for tracking inventory, such as item description, storage locations, min/max levels, cost, inventory receipts, requisitions, and inventory balances.¹²

The OCA found that the WWTP Warehouse’s inventory system was set up in line with the Virginia Department of Accounts recommendations as it contained all relevant fields described. However, the inventory data needs to be reviewed and updated as the data entered into the established fields were not always accurate or complete. Until the data is reviewed and updated, and processes are put in place to ensure its accuracy, management cannot rely on the inventory data to help make effective decisions or identify irregularities.

The OCA reviewed inventory reports, FY 2023 wastewater expenditures, and performed physical inventory counts, and specifically identified the following:

- Inventory records did not reflect the actual quantities on hand,
- Quantities received or unit costs were incorrectly entered into the inventory system,
- Unaccounted for inventory is housed in the warehouse, and
- Cost data was not captured for approximately 23% of the inventory items

4A. Inventory records did not reflect the actual quantities on hand.

The OCA judgmentally sampled 57 inventory items and performed physical counts to test the accuracy of the WWTP Warehouse inventory data. The OCA could not quantify the dollar value of the sampled inventory, as costs were not captured in the inventory system for 23% (13 out of 57) of the items. We then compared the physical counts and item locations with the corresponding fields in the inventory system.

Discrepancies were noted between the physical counts and the system on-hand quantities for 12% (7 out of 57) of the items counted. The OCA could not determine the physical count for one item in the sample because it could not be reasonably identified due to a lack of labeling, with similar style parts commingled together. The system's inventory balances for the sampled items were overstated and understated. However, the OCA could not quantify the dollar value of the

¹¹ GAO-02-447G “Executive Guide: Best Practices in Achieving Consistent, Accurate Physical Counts of Inventory and Related Property,” <https://www.gao.gov/assets/gao-02-447g.pdf>, page 5

¹² Virginia Department of Accounts – Commonwealth Accounting Policies and Procedures (CAPP) Manual Supplies and Materials Inventory, CAPP Manual - 30515 - Supplies and Materials, [CAPP Manual - 30515 - Supplies and Materials Inventory \(virginia.gov\)](#), page 6



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misstatements, as costs were not captured in the inventory system for 4 out of 7 items with discrepancies. **Table 6** below summarizes the physical count observations for the items that did not match the inventory balance.

Table 6: Summary of OCA’s Observations After Physical Inventory Count

Observations	No. of Tested Inventory Items
More items were on hand than noted in the inventory system (understated inventory balance).	4
Fewer items were on hand than noted in the inventory system (overstated inventory balance).	3
Totals	7

Source: Created by OCA using testing results

Additionally, the OCA noted that 11% (6 out of 57) of the sampled inventory items were not stored in the designated locations noted in the inventory system. Items were relocated to other areas in the warehouse or stored in multiple locations, and the warehouse staff could not readily locate them. According to the warehouse staff, inventory locations frequently change due to the challenge of balancing limited space. However, there is no process in place to review and update inventory locations in the system.

The warehouse supervisor and staff identified several factors that may have contributed to the inventory discrepancies, including:

- Warehouse staff does not manage or monitor inventory items stored outside the warehouse.
- Tradesmen borrow items from the warehouse and forget to return them. For example, parts may be borrowed to test whether they fit an asset before being requisitioned. According to staff, prior to 2019, there was no process to document items borrowed from the warehouse. However, items borrowed from the warehouse are now documented.
- Incorrect quantities of received or issued items were input into the inventory system.
- Inventory counts or adjustments were incorrectly posted to the system.

The OCA could not validate if the reasons provided by warehouse staff caused the discrepancies identified in our sample. However, the OCA notes that the reasons for the discrepancies are valid explanations and would need to be addressed by warehouse staff with policy and process changes.

In addition to the factors mentioned by WWTP Warehouse staff and the supervisor, the OCA identified additional possible contributors to the inventory discrepancies:



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- The incorrect unit of measure was entered for one sampled item. The unit of measure was set as "each" in the system, but the material is sold in pounds. The received quantity and unit cost were incorrectly keyed as pounds instead of each.
- Inventory items may have been received or removed from the warehouse without being entered into the inventory system.
- Inventory counts may not have been conducted for items stored outside the warehouse.
- Items may have been misappropriated or stolen.

4B. The quantities received and/or unit costs were incorrectly entered into the inventory system for some items, resulting in a misstatement of the on-hand quantities, unit costs, and inventory value.

The OCA identified at least two instances during the physical inventory count and expenditure review where quantities received were incorrectly entered into the inventory system.

- Stock number 006569 – The item was shipped in feet, but the unit of measure cost was captured in inches in the inventory system.
- Stock number 003426 - The unit of measure is set as each in the inventory system. However, the material is sold in pounds. The received quantity and unit cost were incorrectly entered as pounds instead of each.

After discussion with the warehouse supervisor, the quantity on hand for stock item 003426 was corrected. However, there is no formal process in place to identify when incorrect units of measure or cost are keyed in the inventory system.

Additionally, the OCA noted that the unit of measure for quantities issued and received were set up differently for eight inventory items. For example, stock number 006359 is purchased by the case (which includes 4 gallons) but is issued from the warehouse per gallon. In the inventory system, the unit of measure for this item was set up as "case-4" for receipt and "each" for issuance.

As of the March 6, 2024, inventory report, the item had a recorded cost of \$207.72 each. However, this was the cost for a case, not each gallon. On June 25, 2024, the OCA met with the Mainsaver system consultant and noted that the conversion factor for this inventory item was incorrectly configured.



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4C. Unidentified material and supplies housed at the WWTP Warehouse may not be accounted for in the inventory.

During the physical inventory count, the OCA observed various unlabeled and unidentified items in the back of the warehouse. Neither the warehouse staff nor the supervisor could identify these items. As such, these items may not be accounted for in the inventory system. According to the warehouse supervisor, some of these items have been in the warehouse since before he assumed his position in 2015. He also noted that, prior to his tenure, the warehouse operated as a storage unit for wastewater-related items, which may explain the presence of these unidentified items.

The warehouse supervisor stated that he is collaborating with various DPU tradesmen to identify these items and assess their value, necessity, quantity on hand, and whether they are obsolete and should be disposed of. Once an item is identified, the tradesmen submit a completed parts sheet, and warehouse staff research the inventory system to determine if the item is already recorded. If not, it is added to the system. However, if the tradesmen cannot identify certain items, they remain in the warehouse, as the DPU does not have a formal disposal policy. **Picture 1** below shows examples of the unidentified inventory.

Picture 1: Examples of the Unidentified Inventory in the WWTP Warehouse



Source: Picture taken by OCA

4D. Costs for some of the inventory items were not captured.

Per guidance outlined in the Virginia Department of Accounts CAPP Manual for Materials and Inventory, the cost and sensitivity of the individual inventory items should be assessed to determine the extent to which inventory controls should be established.¹³

As of March 6, 2024 (inventory report date), there were 4,655 active stock items on the inventory listing, with an inventory value of approximately \$6.7 million. However, approximately 23% (1,049) of these items lacked cost data, and approximately 89% of these items (932 items) had

¹³ Virginia Department of Accounts – Commonwealth Accounting Policies and Procedures (CAPP) Manual Supplies and Materials Inventory, CAPP Manual - 30515 - Supplies and Materials, [CAPP Manual - 30515 - Supplies and Materials Inventory \(virginia.gov\)](#), page 8



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recorded on-hand quantities. These items, therefore, were excluded from the total inventory valuation.

According to the WWTP Warehouse supervisor, the absence of cost information for some items is attributed to:

- Surplus materials returned to the warehouse and entered into inventory without a cost.
- Items being set up in the inventory system without a cost before the current warehouse supervisor assumed the role.

The OCA recognizes that there may be valid reasons for some items not having cost data. However, there may be items that should have unit cost information. Per the warehouse staff, there is no process to review the inventory data to determine if material costs are needed.

Without accurate cost information, management may be unable to make informed budgeting, operating, and financial decisions, including developing and implementing inventory management controls and procedures.

Recommendations

Recommendation 7

High Priority

We recommend that the WWTP Warehouse and Materials Supervisor conduct a full inventory count to establish a baseline for quantities on hand.

Once a baseline is established, develop and implement a process to ensure that the inventory data is accurate and complete, including at a minimum:

- a. Reconciling the system quantities to physical on-hand quantities,
- b. Capturing costs, where appropriate,
- c. Updating inventory locations as needed,
- d. Reconciling the quantity of inventory received in and issued from the warehouse to the inventory system to ensure they are accurately keyed, and
- e. Reviewing the system conversion factors for accuracy.

Recommendation 8

Medium Priority

We recommend that the WWTP Warehouse and Materials Supervisor continue to research the unidentified items stored in the warehouse and add applicable items to inventory or dispose of them where appropriate in accordance with the City's Surplus Property policy.



Finding 5: Improvements are needed in the inventory count process to ensure the accuracy of the inventory records.

Per the GAO, inventory counts are an integral component of an organization’s internal control environment to verify the accuracy of inventory records and financial data.¹⁴ The two most predominant approaches to inventory counts are full inventory counts at a point in time and cycle counts.¹⁵ Organizations may choose to use only one approach or a combination of the two approaches in their inventory count process.

The GAO notes that management should establish written policies and procedures detailing the entire count process and review and update them regularly.¹⁶ When selecting an inventory count strategy, management should consider several factors, including staff resources, the existing control environment, the nature of the inventory, the time needed to conduct the count, and the degree of controls required. Management should also consider the dollar amount of items, items critical to operations, and items susceptible to theft and fraud.

The GAO also notes that when performing the inventory count, management should maintain segregation of duties.¹⁷ Specifically, physical custody of assets, processing and recording transactions, and approving transactions should be segregated among different individuals. If not practical, mitigating controls (i.e., two-member count team, blind counts,¹⁸ or increased supervision) should be implemented. Finally, the GAO notes that after the count is complete, management should have a process to research variances and identify and document causes.¹⁹

The OCA assessed the WTP Warehouse’s processes generally against these best practices from the GAO and noted that there were opportunities for improvement in the inventory count process as follows:

5A. Written policies and procedures are not in place to detail the physical inventory count process, roles and responsibilities, and documentation requirements.

The GAO notes that policies and procedures (1) are essential to an effective and reliable physical count, (2) demonstrate management’s commitment to the count process, (3) provides clear communications and comprehensive instructions and guidelines for the count process, (4) ensures

¹⁴ GAO-02-447G “Executive Guide: Best Practices in Achieving Consistent, Accurate Physical Counts of Inventory and Related Property,” <https://www.gao.gov/assets/gao-02-447g.pdf>, pages 7 and 10

¹⁵ Cycle counting is a method by which a portion of the inventory is counted daily, weekly, or monthly until the entire inventory has been counted over a period.

¹⁶ GAO-02-447G “Executive Guide: Best Practices in Achieving Consistent, Accurate Physical Counts of Inventory and Related Property,” <https://www.gao.gov/assets/gao-02-447g.pdf>, page 16

¹⁷ GAO-02-447G “Executive Guide: Best Practices in Achieving Consistent, Accurate Physical Counts of Inventory and Related Property,” <https://www.gao.gov/assets/gao-02-447g.pdf>, page 28

¹⁸ A blind count is when you conduct an inventory count without knowledge of or access to the on-hand quantity balances in the inventory records.

¹⁹ GAO-02-447G “Executive Guide: Best Practices in Achieving Consistent, Accurate Physical Counts of Inventory and Related Property,” <https://www.gao.gov/assets/gao-02-447g.pdf>, page 51



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consistent and accurate compliance and application needed to achieve a high level of accuracy in the count process, and (5) becomes a basis for employee training.²⁰

Management at the WWTP Warehouse have not documented policies and procedures that detail the physical inventory count process. Without a documented plan and process, the OCA could not determine if management had performed a thorough risk assessment in selecting an inventory count strategy. However, as described below, we did identify significant flaws in the current inventory count process.

5B. Under the current count process, not all inventory items will be counted, including 82 items with a total value of at least \$563,000, on the March 6, 2024, inventory report.

The WWTP Warehouse staff and management informed the OCA that they do not conduct full inventory counts at any single point in time. Instead, they rely on a form of cycle counting to maintain accurate inventory records. According to the warehouse supervisor, daily and weekly counts are performed:

- **Daily counts** occur when items are requisitioned from the warehouse, though these counts are not documented.
- **Weekly counts** are performed during staff free time, where the Warehouse and Materials Technician Seniors select a section of the warehouse and count all items in that section. The Technicians print an inventory listing that includes the stock number, manufacturer part, description, total quantity on hand, and location. After performing the counts, they make any necessary inventory adjustments. These counts are documented on the printed inventory listings.

The OCA interviewed both Technicians to understand their methodology for selecting warehouse sections to count. However, we noted inconsistencies in their approaches:

- One Technician stated that he counts sections in a directional order from left to right.
- The other Technician indicated that he selects sections based on when items were last counted, as shown in the inventory data.

These differing approaches could result in some inventory items being counted more frequently than others, while some items might not be counted at all. The OCA reviewed the provided count documentation but could not determine when specific items were last counted or by whom, as this information was not consistently recorded. Given that the counts are manually documented, we were also unable to easily verify whether all sections of the warehouse had been counted.

²⁰ See footnote 16 for reference.



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Additionally, as noted in **Finding 1A**, 82 inventory items valued at approximately \$563,000 are stored outside of the warehouse and are not managed or monitored by warehouse staff. These items are, therefore, excluded from the physical counts conducted by the warehouse staff.

As outlined in **Finding 1A** and **Finding 4A**, the OCA identified discrepancies in the inventory records. The current inventory count strategy does not ensure that incorrect inventory balances are identified in a timely manner. This could lead to stock overages, shortages, and unnecessary spending of government funds. Furthermore, any misappropriation or theft of these items may not be detected promptly or at all.

5C. There was no formal process in place to research and document inventory count variances or identify their root cause.

As noted above, no policies and procedures are in place to outline the physical inventory count process, roles and responsibilities, or documentation requirements. This includes the absence of documented guidelines for handling variances identified during inventory counts. Per the warehouse supervisor and staff, identified variances are discussed verbally as a team, during which they review sign-out sheets and inventory history before making adjustments. If the cause of the variance cannot be determined, the inventory is adjusted in the system. However, these discussions, research efforts, and outcomes are not documented. As such, the OCA cannot validate that a process is in place.

Researching and reconciling count variances is essential to an effective physical count process. It enables management to implement corrective actions, address the underlying issues causing the variances, and justify inventory adjustments. Therefore, any research and the causes of variances should be documented to support the process.

5D. The inventory count process is not documented in Mainsaver.

As noted above in **Finding 5B**, cycle counts are being manually documented on inventory listing printouts. However, there is an inventory count and reconciliation feature in Mainsaver that the warehouse staff is not currently using. This feature can document cycle counts, track identified variances, and record reconciliations performed by staff. It also tracks when the last cycle count was conducted and schedules future count dates for inventory items. Additionally, the feature allows for blind counts, which can help improve accuracy.

The warehouse supervisor indicated that they stopped using this feature as it was not functioning. However, when the OCA met with a Mainsaver representative, he indicated that the feature is still operational and was unaware of any issues.

5E. Duties for the inventory count process are inadequately segregated without mitigating controls.

Per the American Institute of Certified Public Accountants (AICPA), segregation of duties is a basic building block of sustainable risk management and internal controls. “The principle of segregation of duties is based on shared responsibilities of a key process that disperses the critical



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functions of that process to more than one person or department. Without this separation in key processes, fraud and error risks are far less manageable.”²¹ As noted above, the GAO recommends that physical custody of assets, processing and recording transactions, and approving transactions be segregated among individuals. If not practical, mitigating controls (i.e., two-member count team, blind counts,²² or increased supervision) should be implemented.

The OCA reviewed the WWTP Warehouse’s inventory count process and found that duties are not properly segregated. Specifically, we found that the Warehouse and Materials Technician Seniors conducting the inventory counts are also responsible for issuing and storing inventory. In addition, the Warehouse and Materials Technician Seniors were also responsible for processing and approving the inventory adjustments for the items they counted and maintaining their count documentation. Per the warehouse supervisor, they meet as a team to discuss count variances, and he verbally approves the adjustments before they are processed. However, he does not review the inventory adjustments in the system.

Allowing an employee physical custody of inventory and the ability to make adjustments with limited oversight increases the risk of fraud at the WWTP Warehouse. This risk is heightened even further when, as described above, there is no formal process to research inventory count variances and identify root causes for the variance.

The OCA notes that the WWTP Warehouse has only three employees, including the supervisor. Two employees have overlapping responsibilities in the key areas requiring segregation (physical custody, processing, recording, and approving transactions). Achieving adequate segregation of duties in a shop this size may not be practical. However, mitigating controls such as utilizing blind counts and additional supervision can be implemented to offset risks to an acceptable level.

Recommendations

Recommendation 9

High Priority

We recommend that the WWTP Warehouse and Materials Supervisor develop, document, and implement a formal inventory count process. At a minimum, this process should ensure an appropriate amount of inventory is counted, assess which inventory items should be counted, and assess the frequency of the counts required.

Recommendation 10

Medium Priority

We recommend that the WWTP Warehouse and Materials Supervisor work with the Mainsaver representative to assess the feasibility of using the inventory count feature.

²¹ Source: <https://us.aicpa.org/interestareas/informationtechnology/resources/value-strategy-through-segregation-of-duties>, accessed August 31, 2024.

²² A blind count is when you conduct an inventory count without knowledge of or access to the on-hand quantity balances in the inventory records.



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Recommendation 11

Low Priority

We recommend that the DPU Senior Director develop performance measures for the inventory count process and ensure the performance goals are met. Examples of performance goals include dollar value of adjustments, quantity of adjustments, number of accurate accounts, and percent of accurate inventory records.

Recommendation 12

Medium Priority

We recommend that the WWTP Warehouse and Materials Supervisor implement adequate segregation of duties or mitigating controls in the inventory count process.

Recommendation 13

Medium Priority

We recommend that the WWTP Warehouse and Materials Supervisor develop and implement criteria identifying which count variances need to be researched to identify root causes and ensure the cause is documented to support the inventory adjustments.

Finding 6: Inventory monitoring needs improvement to maintain optimal inventory levels and to avoid excessive purchasing.

Inventory monitoring refers to continuously tracking and analyzing inventory levels, stock movements, and related data. Per the Virginia Department of Accounts (DOA)²³ guidance, standard order quantities, and re-order points must be established to maintain adequate control over the inventory levels. When the inventory on hand falls to the minimum stock level, an order should be placed at the established order quantity. The order quantity identifies the number of items to order once an item reaches its reorder point. The reorder point identifies when items need to be replenished. The order quantity should be set to an amount that will cause the stock level to approach the maximum stock level but not exceed it.

The WWTP Warehouse does not have written policies and procedures regarding inventory monitoring, tracking, and stock levels. According to the warehouse staff and management, individuals ordering supplies have the option of completing paperwork to make an item a stock item with reorder points. Once an item becomes a stock item the warehouse staff will manage stocking the item in the warehouse. A stock item will trigger on the Minimum and Maximum report once the quantity has reached the order point. This report is printed daily to alert Managers what items are below the threshold and need to be reordered.

The minimum and maximum stock levels can be changed at the request of the individual requesting the items. There are occasions when the warehouse staff will reach out to individuals to inquire if

²³ Virginia Department of Accounts – Commonwealth Accounting Policies and Procedures (CAPP) Manual Supplies and Materials Inventory, CAPP Manual - 30515 - Supplies and Materials, [CAPP Manual - 30515 - Supplies and Materials Inventory \(virginia.gov\)](#), page 9



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they want to increase the established stock levels if they notice a usage change in a particular item. Most of the communication is verbal, and adjustments to the minimum and maximum stock levels are not documented. There is no formal process to review and assess minimum and maximum inventory levels or re-order quantities for all stock items. As such, some of the already established levels in the inventory system may be outdated as inventory needs may have changed.

6A. Minimum and maximum stock levels and re-order points were not captured for some of the inventory items on the March 6, 2024, inventory report, and the WWTP Warehouse may be ordering and carrying excessive inventory.

The OCA reviewed the March 6, 2024, inventory report to analyze the minimum and maximum stock levels and re-order points for the 4,655 active stock items and noted the following:

- There was no established minimum quantity for 2,256 items listed in the inventory report. Of this amount, 2,009 items had quantities on hand, while the remaining 247 items currently had no quantities on hand.
- There was no established maximum quantity for 922 items listed in the inventory report. Of this amount, 682 of these items had quantities on hand, while the remaining 240 items had no quantities on hand.
- There was no established re-order point for 2,257 items listed in the inventory report. Of this amount, 2,009 of these items had quantities on hand, while the remaining 248 items had no quantities on hand.

In addition to the observations about missing minimum and maximum levels, the OCA also assessed whether items on hand as of the March 6, 2024, inventory report met their established minimum or maximum thresholds. The review found that:

- The established minimum inventory level was not met for 48 items.
- The established maximum inventory level was exceeded for 730 items, with an excess inventory value totaling at least \$1.4 million. This figure could be higher, as approximately 12% (90 out of 730) of the items exceeding maximum levels had no associated costs.

After discussing these observations with the WWTP Warehouse staff and management, they explained that the majority of the inventory items without minimum and maximum stock levels are surplus parts returned from various projects or items available for tradesmen to borrow and return to the warehouse, which are ordered only on an as-needed basis. They also suggested that maximum quantities may have been exceeded because some individuals have requested order quantities exceeding established maximum levels. Finally, the staff indicated that some items fell below their minimum stock levels because orders were either in transit or vendors did not deliver the full ordered quantities.



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6B. WWTP Warehouse does not have a process to periodically identify and dispose of idle and inactive inventory items, which may result in inefficient use of City resources and warehouse space.

Adequate inventory management strategies and procedures help ensure an organization has the right amount of stock on hand to prevent inventory shortages and excessive purchases, reduce inventory carrying costs, and minimize waste and losses. The WWTP Warehouse does not have a process to periodically identify and dispose of idle and inactive stock items, which may result in an inefficient use of City resources and warehouse space.

The OCA reviewed the March 6, 2024, inventory report to determine the last activity date for all active inventory items. We found that approximately 51% of the items were last received or requisitioned out of inventory five or more years from the report date. Only 27% of the inventory items were received or requisitioned out of inventory within one year of the inventory report date. A summary of the number of years since the last activity date from the inventory report date is noted below in **Table 7**.

Table 7: Summary of Years Since Last Activity Date from Inventory Report Date

No. of Years Since Last Activity Date ²⁴	No. of Items	Percent of Total
0-1 year	1,235	27%
2-4 years	1,006	22%
5-10 years	1,348	29%
11-15 years	814	17%
16-20 years	251	5%
20+ years	1	0%
Total	4,655	100%

Source: Created by OCA using inventory data

The warehouse staff explained that some critical parts for wastewater operations may not be used immediately but must be available to replace inoperable equipment. However, they also indicated that no formal process exists to review and identify idle inventory items, and they were uncertain whether the referenced items were still physically present in the warehouse.

In addition to idle inventory, the OCA noted that inactive items are also maintained in the warehouse. Specifically, 924 inactive parts were listed in the June 21, 2024, Inactive Parts Report. Upon discussion with the warehouse supervisor, it was revealed that the warehouse staff does not determine when items become obsolete or when to deactivate them in the inventory system. These decisions are made by trade supervisors, as warehouse staff are unsure whether a part remains

²⁴ The number of years since last activity date was conservatively calculated by rounding down. For example, if an item's last activity date was 4.5 years ago it was captured in the 2-4 years category.



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usable or will be requested in the future. When requested by supervisors, or when notified by vendors that a part is no longer available, the warehouse staff will deactivate the items in the system. However, inactive items remain in the warehouse until picked up by a supervisor or tradesperson. Additionally, there is no disposal policy, and warehouse staff do not dispose of items because they are uncertain if the items may still be needed for wastewater operations.

Disposal of obsolete materials is an essential inventory management control, contributing to proper inventory valuation, efficient use of warehouse space, and reduced carrying costs. Idle and/or obsolete inventory may indicate wasted resources, including (1) funds spent on unnecessary inventory, (2) missed opportunities to recover costs through salvage value, and (3) warehouse space being used to store unneeded items.

6C. Additional quantities of idle inventory items were purchased in FY 2023, resulting in an inefficient use of City funds totaling approximately \$100,000.

In a review of five FY 2023 wastewater expenditures, the OCA identified inefficient use of City resources totaling approximately \$100,000 due to the purchase of additional quantities of idle inventory items. These purchases included shipping costs, but the total spent was conservatively calculated using only the material and parts purchase prices.

Additional quantities of the items were purchased despite the items being last requisitioned out of inventory between November 2013 and December 2021 and quantities on hand exceeding the established maximum stock levels. **Table 8** below is a summary of the observations:

Table 8: Summary of Addition Purchases of Idle Inventory Items in FY 2023

Stock No.	On hand Quantity Before Purchase	Quantity Ordered	Total Spent	Maximum Stock Level	Last Date Checked out of Warehouse
6754	6 each	6 each	\$59,537	4	December 2021
6569	150 ft	128 ft	\$1,321	100 ft	November 2013
6625	2 each	2 each ²⁵	\$4,162	2	October 2021
6749	5 each	6 each	\$31,673.64	4	October 2021
Total			\$96,693.70		

Source: Created by OCA using vendor invoices and inventory data.

²⁵ Two separate orders were delivered for this within two weeks of each other. The second delivery increased the on-hand quantity for this item to four, which exceeded the established maximum stock level.



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The WWTP Warehouse supervisor indicated these items were being discontinued by the supplier, and a decision was made by a former DPU employee to order extra items to have them on hand if needed.

Recommendations

Recommendation 14

High Priority

We recommend the WWTP Warehouse and Materials Supervisor develop and implement a process to:

- a. establish minimum and maximum levels and re-order points,
- b. periodically reviewing the inventory data to assess existing minimum and maximum levels and make changes as needed; and
- c. optimize the level of inventory maintained and document justification for when maximum levels are exceeded.

Recommendation 15

Medium Priority

We recommend the WWTP Warehouse and Materials Supervisor develop and implement a process to identify idle inventory and follow up with the trades supervisors to determine if the items are obsolete or need to be deactivated in the inventory system.

Recommendation 16

Low Priority

We recommend the DPU Senior Director develop and implement a process for disposing of obsolete inventory in accordance with the City's Surplus Property policy.

Finding 7: Access levels in the Mainsaver system need to be reviewed for appropriateness to ensure alignment with job duties and responsibilities.

According to the GAO, access to resources and records should be limited to authorized individuals, and management should design control activities over access to protect an entity from inappropriate access and unauthorized use of the system. These control activities support appropriate segregation of duties and protect data and program integrity from improper modification, destruction, or errors.²⁶

²⁶ GAO-14-704G, "Standards for Internal Control in Federal Government," <https://www.gao.gov/assets/gao-14-704g.pdf>, pages 54,60



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In addition to tracking the WWTP Warehouse inventory data, Mainsaver is also used to create work orders. As such, various DPU employees have access to the system. However, DPU doesn't have a formalized process to review Mainsaver user access. The OCA reviewed the user-level groups report dated May 8, 2024, to determine the DPU users that had access to edit the warehouse inventory data. We noted two user groups have access to edit the warehouse inventory data, and the following observations were noted:

- **Storeroom User Group:** Four employees have edit access. While three of these employees have warehouse responsibilities, one works for the DPU stormwater utility and should not have access. This employee made an unauthorized adjustment to a WWTP warehouse stock item on September 12, 2023, reducing its inventory to zero. Stormwater utility staff stated that their inventory was moved in-house, but no documentation was provided to support this claim.
- **System Steward Group:** Eight employees have full administrator access and can edit warehouse inventory. Three of these employees have warehouse duties, four provide IT services for DPU, and one is an Operations Manager. The OCA found that one non-warehouse employee adjusted two WWTP stock items on March 7, 2024, for system testing purposes. Following the OCA inquiry, these transactions were reversed on July 15, 2024.

The DPU Senior Deputy Director was unaware of the number of employees with access to the warehouse inventory data. Access should be limited based on job duties, with edit and administrator privileges granted only to those with a clear operational need. Excessive access increases the risk of unauthorized or inappropriate adjustments to inventory data.

Recommendation

Recommendation 17

High Priority

We recommend that the DPU Senior Deputy Director over the WWTP Warehouse establish a formalized process to review Mainsaver user access and ensure appropriate access levels are granted based on job duties and responsibilities, including removing any unnecessary access to the warehouse inventory data.



Finding 8: Policies and procedures that govern the warehouse and inventory management function are not in place.

Per the GOA, management is responsible for developing and implementing policies and procedures to achieve an entity's objectives and guide its operations.²⁷ Written policies and procedures provide a foundation for effectively managing an entity's inventory and:

- Demonstrates management commitment,
- Guides employees,
- Helps ensure processes and procedures are consistently and accurately carried out,
- Serves as a training aid for employees, and
- Should be periodically updated.

As noted throughout the report, written policies and procedures were not in place to govern and guide DPU's WWTP Warehouse operations and inventory management function. A lack of policies and procedures could lead to staff confusion, inconsistent application of processes and procedures, non-compliance with laws and regulations, resulting in legal risks, inefficiencies, and an organization not achieving its mission and objectives.

Recommendation

Recommendation 18

Low Priority

We recommend that the WWTP Warehouse and Materials Supervisor develop and implement written policies and procedures to govern and guide warehouse operations and inventory management functions. At a minimum, the policies and procedures should address all recommendations in this report, including the process for ordering, receiving, storing, distributing, disposing, tracking, counting, and reconciling inventory. Policies and procedures should also include employees' roles and responsibilities and establish accountability.

²⁷ GAO-14-704G, "Standards for Internal Control in Federal Government," <https://www.gao.gov/assets/gao-14-704g.pdf>, pages 7-8



Appendix A

Compliance Statement, Objectives, Scope, and Methodology

Compliance Statement

This audit was conducted in accordance with the Generally Accepted Government Auditing Standards promulgated by the Comptroller General of the United States. Those Standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on the audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on the audit objectives.

Objectives

The objective of this audit was to evaluate the warehouse inventory management controls and efficiency regarding duplication/ordering for the main warehouses operated in the City.

Scope

Warehouse inventory management controls and procedures employed within the main warehouses operated by DPW, DPU, PRCF, RPD, and RFD during FY 2023 and the current environment. DPW Fleet and RPD Property and Evidence were excluded from this audit.

The audit will be issued in phases, with this report covering the DPU WTTP Warehouse. Subsequent reports detailing the warehousing and inventory management processes and procedures employed for the remaining warehouses will be issued.

Methodology

The OCA performed the following procedures to complete this audit:

- Researched and reviewed inventory management industry standards and best practices and compared them to DPU's practices,
- Interviewed Department and warehouse staff to determine the inventory management processes and procedures employed at the WWTP Warehouse,
- Conducted site visits to observe the warehouse's layout and noted the physical access controls,



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- Reviewed and analyzed the warehouse inventory data,
- Judgmentally selected a sample of inventory purchases to ensure items were properly added to the inventory records,
- Judgmentally selected a sample of items from the inventory listing and counted them to determine if the on-hand quantities in the inventory records were correct,
- Haphazardly selected and counted a sample of items from the warehouse's shelves to determine if the items were included in the inventory listings and if the correct on-hand quantities were noted in the inventory records,
- Compared the on-hand inventory quantities to the established minimum and maximum levels to determine if sufficient or excessive inventory was in stock, and
- Conducted other tests as deemed necessary.

Management Responsibility

City management is responsible for ensuring resources are managed properly and used in compliance with laws and regulations; programs are achieving their objectives; and services are being provided efficiently, effectively, and economically.



Appendix B

Definition of Audit Recommendations Priorities

The Office of the City Auditor (OCA) assigns priority ratings for the recommendations based on the importance and impact of each recommendation to the City, as outlined in the table below. The OCA is responsible for assigning priority ratings for recommendations, and the City Administration is responsible for establishing target dates for implementing the recommendations.

PRIORITY LEVEL	PRIORITY LEVEL DEFINITION
HIGH	The recommendation addresses critical issues that are occurring that pose significant risks to the organization, including significant internal control weaknesses, non-compliance with laws and regulations, financial losses, fraud, and costly or detrimental operational inefficiencies.
MEDIUM	The recommendation addresses moderate issues that could escalate into larger problems if left unaddressed. While they may not pose an immediate risk, they could lead to significant financial losses or costly operational inefficiencies over time. There is potential to strengthen or improve internal controls.
LOW	The recommendation improves overall efficiency, accuracy, or performance in City operations.



MANAGEMENT RESPONSES

OCA 2025-05

DPU Warehouse Inventory Management
WWTP Phase II audit

RECOMMENDATION #1	
<p>We recommend that the DPU Senior Director establish a process to define, document, and communicate what items should be classified as stock and non-stock items in the WWTP Warehouse. Further, assess the feasibility of centralizing the process of ordering and receiving stock and non-stock items through the WWTP Warehouse.</p> <p>If deemed to be feasible, establish a process to implement centralized ordering and receiving.</p> <p>If deemed not feasible:</p> <ol style="list-style-type: none"> a. Mandate that all inventory stock items, including those ordered for projects, be ordered through the warehouse, tracked in the inventory system, and managed and monitored by the warehouse staff. b. Establish a process to track all items ordered outside of the established warehouse process that includes tracking receipt and usage and labeling all parts along with their designated location. 	
Concur (Yes/No)	YES
ACTION STEPS	
<i>(Please describe the steps you will take or have taken to address the recommendation)</i>	
<p>The Department of Public Utilities (DPU) manages two warehouses to support the various needs associated with providing safe and reliable service. DPU will host an internal meeting with relevant warehouse and maintenance staff to agree on criteria for stock vs. non-stock items and document the process of centralized ordering and receiving currently used.</p>	
Target Date or Date Implemented	12/31/2024
Title of Responsible Employee	Program & Operations Manager

RECOMMENDATION #2	
<p>We recommend that the DPU Senior Deputy Director over the WWTP Warehouse establish a process to ensure all materials are tracked and documented on work orders to include the following:</p> <ol style="list-style-type: none"> a. The description and quantity of the material used. b. The asset being serviced if not otherwise noted on the work order. 	
Concur (Yes/No)	YES
ACTION STEPS	
<i>(Please describe the steps you will take or have taken to address the recommendation)</i>	
<p>The Department of Public Utilities (DPU) supports this recommendation and will ensure that the existing Computerized Maintenance Management System (CMMS) system is configured to support the desired result as described above.</p>	
Target Date or Date Implemented	1/31/2025
Title of Responsible Employee	DPU Senior Director



MANAGEMENT RESPONSES

OCA 2025-05
 DPU Warehouse Inventory Management
 WWTP Phase II audit

RECOMMENDATION #3	
We recommend that the DPU Senior Deputy Director over the WWTP Warehouse ensure the CAN-AM chains referenced throughout this report be set up as a stock item in the inventory system.	
Concur (Yes/No)	YES
ACTION STEPS	
<i>(Please describe the steps you will take or have taken to address the recommendation)</i>	
DPU concurs with this recommendation and the CAN-AM parts will be added as a stock item in the inventory system.	
Target Date or Date Implemented	12/31/2024
Title of Responsible Employee	Program & Operations Manager

RECOMMENDATION #4	
We recommend that the DPU Senior Director ensure staff involved in purchasing decisions are properly trained on the Department of Procurement Services’ purchasing requirements. At a minimum, this training should cover policies regarding competitive bidding, subcontracting, and emergency procurements.	
Concur (Yes/No)	YES
ACTION STEPS	
<i>(Please describe the steps you will take or have taken to address the recommendation)</i>	
DPU Senior Director has provided a copy of the Small Purchases Training material, which represents classes held (and attended by DPU staff) on October 2024.	
Target Date or Date Implemented	11/12/2024
Title of Responsible Employee	DPU Senior Director

RECOMMENDATION #5	
We recommend that the DPU Senior Director mandate staff comply with the City’s procurement policies and procedures.	
Concur (Yes/No)	YES
ACTION STEPS	
<i>(Please describe the steps you will take or have taken to address the recommendation)</i>	
DPU concurs with this recommendation and issued a memo to staff to address expectations.	
Target Date or Date Implemented	11/06/2024
Title of Responsible Employee	DPU Senior Director



MANAGEMENT RESPONSES

OCA 2025-05
 DPU Warehouse Inventory Management
 WWTP Phase II audit

RECOMMENDATION #6	
We recommend that the DPU Senior Director inform employees that advance payments to vendors are prohibited unless explicitly stipulated in the contract.	
Concur (Yes/No)	YES
ACTION STEPS	
<i>(Please describe the steps you will take or have taken to address the recommendation)</i>	
DPU concurs with this recommendation and issued a memo to staff to address expectation.	
Target Date or Date Implemented	8/7/2024
Title of Responsible Employee	DPU Senior Director

RECOMMENDATION #7	
We recommend that the WWTP Warehouse and Materials Supervisor conduct a full inventory count to establish a baseline for quantities on hand.	
Once a baseline is established, develop and implement a process to ensure that the inventory data is accurate and complete, including at a minimum:	
<ul style="list-style-type: none"> a. Reconciling the system quantities to physical on-hand quantities, b. Capturing costs, where appropriate, c. Updating inventory locations as needed, d. Reconciling the quantity of inventory received in and issued from the warehouse to the inventory system to ensure they are accurately keyed, and e. Reviewing the system conversion factors for accuracy. 	
Concur (Yes/No)	YES
ACTION STEPS	
<i>(Please describe the steps you will take or have taken to address the recommendation)</i>	
DPU concurs with this recommendation and will work within Mainsaver to define the process to create and file daily cycle counts based on the Min/Max report and weekly evaluation of inactive items report. Material cost, inventory locations, and conversion factors will be updated and maintained during cycle counts and contract evaluations. Additionally, the WWTP Warehouse and Materials Supervisor will perform a baseline full inventory count.	
This action will be in close alignment with Action Steps outlined in Recommendation #1 of Citywide Warehousing and Inventory Management – Department of Public Utilities (DPU) Main Warehouse (Phase I) Appendix C (Management Response Form).	
Target Date or Date Implemented	3/31/2025
Title of Responsible Employee	Program & Operations Manager



MANAGEMENT RESPONSES

OCA 2025-05

DPU Warehouse Inventory Management
WWTP Phase II audit

RECOMMENDATION #8	
We recommend that the WWTP Warehouse and Materials Supervisor continue to research the unidentified items stored in the warehouse and add applicable items to inventory or dispose of them where appropriate in accordance with the City's Surplus Property policy.	
Concur (Yes/No)	YES
ACTION STEPS	
<i>(Please describe the steps you will take or have taken to address the recommendation)</i>	
<p>Remaining unidentified items will be processed as follows:</p> <ul style="list-style-type: none"> • Utility Plant Specialist Supervisors will review all remaining unidentified items to classify items as inventory items or obsolete. • Inventory items will have an "Add a New Part Data Entry Form" completed and items will be added to inventory. • Unknown or obsolete items will be disposed of in accordance with the City's Surplus Property Policy. • Items will be tracked via MS Excel file to identify unknown item number, status of item review, and result of review (to include name of responsible DPU Supervisor(s) and disposition). 	
Target Date or Date Implemented	3/31/2025
Title of Responsible Employee	Program & Operations Manager

RECOMMENDATION #9	
We recommend that the WWTP Warehouse and Materials Supervisor develop, document, and implement a formal inventory count process. At a minimum, this process should ensure an appropriate amount of inventory is counted, assess which inventory items should be counted, and assess the frequency of the counts required.	
Concur (Yes/No)	YES
ACTION STEPS	
<i>(Please describe the steps you will take or have taken to address the recommendation)</i>	
<p>Create a Physical Inventory and Cycle Count SOP with defined perimeters.</p> <p>This action will be in close alignment with Action Steps outlined in Recommendation #5 of Citywide Warehousing and Inventory Management – Department of Public Utilities (DPU) Main Warehouse (Phase I) Appendix C (Management Response Form).</p>	
Target Date or Date Implemented	3/31/2025
Title of Responsible Employee	Program & Operations Manager



MANAGEMENT RESPONSES

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DPU Warehouse Inventory Management
WWTP Phase II audit

RECOMMENDATION #10	
We recommend that the WWTP Warehouse and Materials Supervisor work with the Mainsaver representative to assess the feasibility of using the inventory count feature.	
Concur (Yes/No)	YES
ACTION STEPS	
<i>(Please describe the steps you will take or have taken to address the recommendation)</i>	
DPU concurs with this recommendation and will evaluate the proposed solution for inventory counting.	
Target Date or Date Implemented	3/31/2025
Title of Responsible Employee	Program & Operations Manager

RECOMMENDATION #11	
We recommend that the DPU Senior Director develop performance measures for the inventory count process and ensure the performance goals are met. Examples of performance goals include dollar value of adjustments, quantity of adjustments, number of accurate accounts, and percent of accurate inventory records.	
Concur (Yes/No)	YES
ACTION STEPS	
<i>(Please describe the steps you will take or have taken to address the recommendation)</i>	
DPU concurs with this recommendation and will put performance measures in place for total value of adjustment vs stated value, perimeters being less than or equal to 5%. Total number of accurate locations vs total number of adjusted locations, perimeters being within 10% of total number counted locations. Total value of inventory virtually vs total value of physical on hand inventory, perimeters being within 5%. Performance measures will be documented in the Physical Inventory and Cycle Count process.	
This action will be in alignment with Action Steps outlined in Recommendation #6 of Citywide Warehousing and Inventory Management – Department of Public Utilities (DPU) Main Warehouse (Phase I) Appendix C (Management Response Form).	
Target Date or Date Implemented	3/31/2025
Title of Responsible Employee	Program & Operations Manager



MANAGEMENT RESPONSES

OCA 2025-05

DPU Warehouse Inventory Management
WWTP Phase II audit

RECOMMENDATION #12	
We recommend that the WWTP Warehouse and Materials Supervisor implement adequate segregation of duties or mitigating controls in the inventory count process.	
Concur (Yes/No)	YES
ACTION STEPS	
<i>(Please describe the steps you will take or have taken to address the recommendation)</i>	
The Physical Inventory and Cycle Count process will include defined roles and responsibilities.	
This action will be in close alignment with Action Steps outlined in Recommendation #7 of Citywide Warehousing and Inventory Management – Department of Public Utilities (DPU) Main Warehouse (Phase I) Appendix C (Management Response Form).	
Target Date or Date Implemented	3/31/2025
Title of Responsible Employee	Program & Operations Manager

RECOMMENDATION #13	
We recommend that the WWTP Warehouse and Materials Supervisor develop and implement criteria identifying which count variances need to be researched to identify root causes and ensure the cause is documented to support the inventory adjustments.	
Concur (Yes/No)	YES
ACTION STEPS	
<i>(Please describe the steps you will take or have taken to address the recommendation)</i>	
All count variances will be researched, documented, and corrected as outlined in the Physical and Cycle Count SOP.	
This action will be in alignment with Action Steps outlined in Recommendation #8 of Citywide Warehousing and Inventory Management – Department of Public Utilities (DPU) Main Warehouse (Phase I) Appendix C (Management Response Form).	
Target Date or Date Implemented	3/31/2025
Title of Responsible Employee	Program & Operations Manager



MANAGEMENT RESPONSES

OCA 2025-05
 DPU Warehouse Inventory Management
 WWTP Phase II audit

RECOMMENDATION #14	
We recommend the WWTP Warehouse and Materials Supervisor develop and implement a process to:	
a. establish minimum and maximum levels and re-order points,	
b. periodically reviewing the inventory data to assess existing minimum and maximum levels and make changes as needed; and	
c. optimize the level of inventory maintained and document justification for when maximum levels are exceeded.	
Concur (Yes/No)	YES
ACTION STEPS	
<i>(Please describe the steps you will take or have taken to address the recommendation)</i>	
DPU concurs with this recommendation and will create an SOP to define the optimal level of inventory based on historical usage, lead times, and anticipated projects.	
This action will be in alignment with Action Steps outlined in Recommendation #9 of Citywide Warehousing and Inventory Management – Department of Public Utilities (DPU) Main Warehouse (Phase I) Appendix C (Management Response Form).	
Target Date or Date Implemented	3/31/25
Title of Responsible Employee	Program & Operations Manager

RECOMMENDATION #15	
We recommend the WWTP Warehouse and Materials Supervisor develop and implement a process to identify idle inventory and follow up with the trades supervisors to determine if the items are obsolete or need to be deactivated in the inventory system.	
Concur (Yes/No)	YES
ACTION STEPS	
<i>(Please describe the steps you will take or have taken to address the recommendation)</i>	
Refer to Operations Center Warehouse Policy 2024-02.	
This action will be in alignment with Action Steps outlined in Recommendation #10 of Citywide Warehousing and Inventory Management – Department of Public Utilities (DPU) Main Warehouse (Phase I) Appendix C (Management Response Form).	
Target Date or Date Implemented	11/12/2024
Title of Responsible Employee	Program & Operations Manager



MANAGEMENT RESPONSES

OCA 2025-05
 DPU Warehouse Inventory Management
 WWTP Phase II audit

RECOMMENDATION #16	
We recommend the DPU Senior Director develop and implement a process for disposing of obsolete inventory in accordance with the City’s Surplus Property policy.	
Concur (Yes/No)	YES
ACTION STEPS	
<i>(Please describe the steps you will take or have taken to address the recommendation)</i>	
Refer to Operations Center Warehouse Policy 2024-02.	
This action will be in alignment with Action Steps outlined in Recommendation #10 of Citywide Warehousing and Inventory Management – Department of Public Utilities (DPU) Main Warehouse (Phase I) Appendix C (Management Response Form).	
Target Date or Date Implemented	11/12/2024
Title of Responsible Employee	Program & Operations Manager

RECOMMENDATION #17	
We recommend that the DPU Senior Deputy Director over the WWTP Warehouse establish a formalized process to review Mainsaver user access and ensure appropriate access levels are granted based on job duties and responsibilities, including removing any unnecessary access to the warehouse inventory data.	
Concur (Yes/No)	YES
ACTION STEPS	
<i>(Please describe the steps you will take or have taken to address the recommendation)</i>	
DPU concurs with this recommendation and will create an SOP to document the process.	
Target Date or Date Implemented	12/31/2024
Title of Responsible Employee	Program & Operations Manager



MANAGEMENT RESPONSES

OCA 2025-05

DPU Warehouse Inventory Management
WWTP Phase II audit

RECOMMENDATION #18	
<p>We recommend that the WWTP Warehouse and Materials Supervisor develop and implement written policies and procedures to govern and guide warehouse operations and inventory management functions. At a minimum, the policies and procedures should address all recommendations in this report, including the process for ordering, receiving, storing, distributing, disposing, tracking, counting, and reconciling inventory. Policies and procedures should also include employees’ roles and responsibilities and establish accountability.</p>	
Concur (Yes/No)	YES
ACTION STEPS	
<i>(Please describe the steps you will take or have taken to address the recommendation)</i>	
<p>Create and implement warehouse operation standards of work. Refer to COR job description, LSW (Leadership Standards of Work) will be created by WWTP Warehouse and Materials Supervisor. We will create SOP for Receiving, Ordering, Cycle Counting, Inventory Disposition and adding new parts to the CMMS.</p> <p>This action will be in close alignment with Action Steps outlined in Recommendation #13 of Citywide Warehousing and Inventory Management – Department of Public Utilities (DPU) Main Warehouse (Phase I) Appendix C (Management Response Form).</p>	
Target Date or Date Implemented	3/31/2025
Title of Responsible Employee	Program & Operations Manager

Appendix D (Status of Recommendations as of Report Issuance)

The table below outlines recommendations that were partially implemented or remain open as of the report's issuance date. The OCA will continuously review partially implemented and open recommendations for closure as part of our Quarterly Open Recommendation Follow-Up Review.

#	RECOMMENDATION	PRIORITY	STATUS
1	<p>We recommend that the DPU Senior Director establish a process to define, document, and communicate what items should be classified as stock and non-stock items in the WWTP Warehouse. Further, assess the feasibility of centralizing the process of ordering and receiving stock and non-stock items through the WWTP Warehouse.</p> <p>If deemed to be feasible, establish a process to implement centralized ordering and receiving.</p> <p>If deemed not feasible:</p> <ul style="list-style-type: none"> a. Mandate that all inventory stock items, including those ordered for projects, be ordered through the warehouse, tracked in the inventory system, and managed and monitored by the warehouse staff. b. Establish a process to track all items ordered outside of the established warehouse process that includes tracking receipt and usage and labeling all parts along with their designated location. 	High	Open
2	<p>We recommend that the DPU Senior Deputy Director over the WWTP Warehouse establish a process to ensure all materials are tracked and documented on work orders to include the following:</p> <ul style="list-style-type: none"> a. The description and quantity of the material used. b. The asset being serviced if not otherwise noted on the work order. 	High	Open
3	<p>We recommend that the DPU Senior Deputy Director over the WWTP Warehouse ensure the CAN-AM chains referenced throughout this report be set up as a stock item in the inventory system.</p>	Medium	Open
4	<p>We recommend that the DPU Senior Director ensure staff involved in purchasing decisions are properly trained on the Department of Procurement Services' purchasing requirements. At a minimum, this training should cover policies regarding competitive bidding, subcontracting, and emergency procurements.</p>	Medium	Closed

5	We recommend that the DPU Senior Director mandate staff comply with the City's procurement policies and procedures.	High	Closed
6	We recommend that the DPU Senior Director inform employees that advance payments to vendors are prohibited unless explicitly stipulated in the contract.	High	Closed
7	<p>We recommend that the WWTP Warehouse and Materials Supervisor conduct a full inventory count to establish a baseline for quantities on hand.</p> <p>Once a baseline is established, develop and implement a process to ensure that the inventory data is accurate and complete, including at a minimum:</p> <ul style="list-style-type: none"> a. Reconciling the system quantities to physical on-hand quantities, b. Capturing costs, where appropriate, c. Updating inventory locations as needed, d. Reconciling the quantity of inventory received in and issued from the warehouse to the inventory system to ensure they are accurately keyed, and e. Reviewing the system conversion factors for accuracy. 	High	Open
8	We recommend that the WWTP Warehouse Supervisor continue to research the unidentified items stored in the warehouse and add applicable items to inventory or dispose of them where appropriate in accordance with the City's Surplus Property policy.	Medium	Open
9	We recommend that the WWTP Warehouse and Materials Supervisor develop, document, and implement a formal inventory count process. At a minimum, this process should ensure an appropriate amount of inventory is counted, assess which inventory items should be counted, and assess the frequency of the counts required.	High	Open

10	We recommend that the WWTP Warehouse and Materials Supervisor work with the Mainsaver representative to assess the feasibility of using the inventory count feature.	Medium	Open
11	We recommend that the DPU Senior Director develop performance measures for the inventory count process and ensure the performance goals are met. Examples of performance goals include dollar value of adjustments, quantity of adjustments, number of accurate accounts, and percent of accurate inventory records.	Low	Open
12	We recommend that the WWTP Warehouse and Materials Supervisor implement adequate segregation of duties or mitigating controls in the inventory count process.	Medium	Open
13	We recommend that the WWTP Warehouse and Materials Supervisor develop and implement criteria identifying which count variances need to be researched to identify root causes and ensure the cause is documented to support the inventory adjustments.	Medium	Open
14	<p>We recommend the WWTP Warehouse and Materials Supervisor develop and implement a process to:</p> <ul style="list-style-type: none"> a. establish minimum and maximum levels and re-order points, b. periodically reviewing the inventory data to assess existing minimum and maximum levels and make changes as needed; and c. optimize the level of inventory maintained and document justification for when maximum levels are exceeded. 	High	Open
15	We recommend the WWTP Warehouse and Materials Supervisor develop and implement a process to identify idle inventory and follow up with the trades supervisors to determine if the items are obsolete or need to be deactivated in the inventory system.	Medium	Partially Implemented
16	We recommend the DPU Senior Director develop and implement a process for disposing of obsolete inventory in accordance with the City's Surplus Property policy.	Low	Partially Implemented

17	We recommend that the DPU Senior Deputy Director over the WWTP Warehouse establish a formalized process to review Mainsaver user access and ensure appropriate access levels are granted based on job duties and responsibilities, including removing any unnecessary access to the warehouse inventory data.	High	Open
18	We recommend that the WWTP Warehouse and Materials Supervisor develop and implement written policies and procedures to govern and guide warehouse operations and inventory management functions. At a minimum, the policies and procedures should address all recommendations in this report, including the process for ordering, receiving, storing, distributing, disposing, tracking, counting, and reconciling inventory. Policies and procedures should also include employees' roles and responsibilities and establish accountability.	Low	Open