CITY OF RICHMOND

Citywide Warehousing and Inventory Management – Final Phase

Office of the City Auditor (OCA)

An Independent Office of the Richmond City Council

Audit Report

"Promoting open and accountable City government through independent audit services."

Report# OCA 2026-05
November 21, 2025

TABLE OF CONTENTS

Executive Summary

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 can be extremely detrimental. At the same time, carrying a large inventory creates the risk of spoilage, theft, an increase in carrying costs, and damage, 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.

Audit Report Issuance Approach

The Office of the City Auditor (OCA) conducted a multi-phase Citywide Warehousing and Inventory Management Audit to assess inventory controls and operational efficiency across the City of Richmond's main warehouses. The City operates six main warehouses managed by five departments: Department of General Services,[1] Department of Public Utilities, Parks, Recreation and Community Facilities, Richmond Police Department, and Richmond Fire Department.

Previously completed audit phases I and II (in October 2024 and November 2024, respectively) assessed DPU's Main Warehouse and Wastewater Treatment Plant Warehouse.

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

Both phases revealed significant deficiencies in inventory control, data accuracy, and physical inventory procedures.

This report constitutes the final stage of the Citywide Warehousing and Inventory Management Audit. It expands the review to warehouses operated by General Services, Parks, Police, and Fire to evaluate warehouse inventory management controls and efficiency regarding duplication/ ordering. Where appropriate, departmental results have been consolidated to highlight recurring risks affecting citywide inventory performance and to present targeted opportunities for process improvement and enhanced operational efficiency.

Overall Conclusion

City Administration and departments have demonstrated a commitment to accountability and a stronger internal control environment. This was evidenced by Administration's request for the OCA

[1] Facilities Management Division was transferred from the Department of Public Works to the Department of General Services effective July 1, 2025.

to perform audits of all main warehouse operations and improvements made in inventory management by departments throughout the audit. For example, throughout the audit, several departments formalized processes, enhanced monitoring, and tightened physical access controls. The OCA notes that several building blocks were in place for warehouse management, such as barcode scanners, work order integration, and the capability to use reorder point for inventory.

However, the OCA found that stronger internal controls and coordinated oversight over inventory management are needed. Inventory is managed independently across locations, resulting in differing practices, incomplete or inaccurate records, and limited visibility into activity across the City. The absence of standardized policies and procedures, coupled with varied systems and inconsistent use of available tools, contributed to data reliability concerns, duplicate ordering, stock imbalances, and a higher risk of fraud, waste, and abuse.

Establishing a citywide governance framework with clear policies and minimum standards, consistent documentation and counts, and integrated reporting would enhance accuracy, transparency, and accountability. These improvements would better safeguard resources, support effective decision making, and help the City realize opportunities for cost savings and operational efficiency.

Summary of Recommendations and Management Response

Departmental management informed the OCA they have taken steps toward improving their inventory management practices. For example:

- Fire Department has enhanced its procurement and inventory process by establishing formal policies, centralized purchase tracking, and enhanced physical security.

- General Services has implemented procedures to record custodial purchases in the inventory system and introduced badge access to secure storage.

- Parks has implemented changes to its approval, purchasing, storage, and distribution processes to provide additional oversight, and items no longer needed were donated or declared surplus.

- Police reported they are currently conducting an inventory count.

The OCA issued 7 recommendations, and management has concurred with them all. The OCA notes that some recommendations will require a longer timeframe to fully implement. Therefore, the OCA has also recommended interim measures to address the findings in the meantime.

The OCA will assess the implementation status of all recommendations as part of its Quarterly Open Recommendation Follow-Up Review. A detailed listing of recommendations and management responses are included in **Appendix C**.

Summary of Opportunities for Improvements

Finding 1

The OCA observed the City does not have a centralized governance framework for inventory. Warehouse operations are managed independently, and citywide expectations, procedures, and minimum standards have not been established. As a result, practices differ across locations and core controls are applied inconsistently.

Inventory records reviewed by the OCA were frequently incomplete or inaccurate. Departments used inconsistent data standards, costs were not uniformly captured, and physical counts were not routinely performed or documented to reconcile inventory records. During testing, the OCA noted some items could not be matched to inventory listings, there were conflicting records for the same items, and variances could not be quantified due to missing or inconsistent cost data. Also, an imbalance was noted in inventory tracking, as less critical items received more monitoring than critical ones, indicating that tracking efforts are not aligned with item importance.

The OCA also noted the absence of a citywide inventory system or integrated reporting. Departments rely on a mix of spreadsheets and systems that are used inconsistently; in some cases, on-hand balances were overwritten rather than adjusted with documented support. This environment limits citywide visibility and may increase the risk of excess stock, stockouts, and missed opportunities for coordination.

Finally, similar items are procured independently by multiple departments. Given current data limitations, a comprehensive spend analysis is not feasible; however, overlapping items across warehouse listings indicate potential opportunities for standardization and coordinated purchasing once foundational data and controls are established.

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, an increase in carrying costs, and damage, 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:

- 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,[2] 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 by agencies in inventory management systems (computerized or manual) for supplies and materials.

---

[2] 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

As shown in **Figure 1** below, the OCA compiled principles and best practices[3] 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 and to prevent shortages or overstocking.
Physical Counts	Physical inventory counts are critical in verifying the inventory exists and that on-hand quantities agree with the inventory records, thereby improving the accuracy and reliability of the inventory and financial data.
Oversight and Monitoring of Inventory	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. The inability to locate or identify supplies and materials could cause unnecessary purchases. Savings may accrue through the reduction of theft and obsolete items.
Safeguarding Inventory	Inventory must be safeguarded to prevent or promptly detect and correct theft, damage, and/or unauthorized use or disposal of assets, materials, and supplies. Storage areas should be: • controlled and limited to authorized personnel only; and • kept neat, safe, and clean to prevent inventories from being damaged or deteriorating. Inventory should be organized orderly and properly labeled to allow the items to be easily identified and located.

[3] 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)

Best Practice	Why is it Important?
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	Policies and procedures are essential to any organization and provide a roadmap for day-to-day operations. They help to: • 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. Policies and procedures should include the information employees need to know to carry out their job functions consistently and accurately.

Source: Compiled by the OCA using identified best practices cited in footnote 3.

Overview of Warehouse Operations

General Services

The Department of General Services[4] Facility Management Division maintains 80 city facilities and operates the department's centralized warehouse that was established in November 2021. The warehouse stocks materials and supplies for daily and preventive maintenance repairs and custodial services. The Facilities Superintendent and the Maintenance and Operations Facilities Manager both oversee warehouse functions. Currently, there are no dedicated warehouse staff. The warehouse is secured by locked doors, badge access to the storage areas, and camera surveillance.

The Maintenance and Operations Facilities Manager is solely responsible for managing custodial inventory, with support from an administrative staff. Custodial inventory is tracked in the Asset Essentials work order system. The request and stocking process is manual, requiring all entries to be keyed into the system. Facility supervisors submit work order requests for supplies, which the Maintenance and Operations Facilities Manager reviews and approves. Once the work order is approved, items are gathered and delivered to the specific building. The custodian at the site signs off on the work order indicating all supplies have been received and the work order is

[4] Facilities Management Division was transferred from the Department of Public Works to the Department of General Services effective July 1, 2025.

returned to the Maintenance and Operations Facilities Manager. Inventory is automatically deducted once the request is completed. According to General Services management, before they moved to a centralized warehouse, custodial items such as cleaning products and toilet paper were delivered directly to City facilities due to limited storage space. Centralizing these items in one location provides better control over inventory and distribution, helping to maintain optimal stock levels.

The Facilities Superintendent oversees keep stock[5] purchases and allows a vendor to manage the inventory. City Departments, including General Services, receive contracted pricing through a Virginia State Cooperative Agreement contract. Inventory is tracked in the vendor's system. The vendor monitors stock levels and submits quotes when replenishment is needed. These quotes are reviewed and approved (or modified) by the Facilities Superintendent via the vendor's website. Upon delivery, General Services receives the shipment, and the vendor restocks and updates the inventory system. General Services staff then use barcode scanning to check items out of inventory.

Parks, Recreation and Community Facilities

The Department of Parks, Recreation and Community Facilities (Parks) is responsible for maintaining more than 170 parks, open spaces, athletic fields, playgrounds, and 21 community centers throughout the City. In addition to offering a broad range of recreational services and programs, Parks supports citywide maintenance efforts through five maintenance shops: Admiral Street, Citywide, Byrd Park, James River, and Forest Hill. Each of these shops functions as a small warehouse, storing tools and inventory to support park and facility maintenance, youth programs, janitorial services, lawn care, and specialized trades. The maintenance shops were secured through a variety of means including gates, key or badge access, cameras, and security systems.

Parks utilizes MainTrac as its system of record to log labor, materials, and equipment hours against fixed assets. Items stored at the maintenance shops include tools, janitorial supplies, lawn equipment, lumber, paint, costumes, tents, audio gear, furniture, and chairs, all of which should be tracked in MainTrac through work orders. Only the Admiral Street maintenance shop has dedicated warehouse staff; the others do not. Each location was responsible for ordering, distributing and tracking their supplies, materials and equipment.

Fire Department

The Richmond Fire Department warehouse centrally stores and supplies inventory for fire stations and response apparatuses, including items such as janitorial supplies, emergency medical services (EMS) supplies and equipment, furniture, uniforms, and appliances. The warehouse was established at a new location in June 2023 to centralize inventory previously dispersed across fire stations, water towers, and the old headquarters. This centralization was done to improve the department's ability to monitor and manage inventory and serves as a hub for deliveries throughout Fire.

[5] Supplies and materials (i.e., air filters) needed for preventive maintenance services.

Currently, Fire does not utilize an inventory management system; all inventory tracking is conducted manually using Microsoft Excel spreadsheets. Warehouse operations are overseen by two Captains, supported by a warehouse manager, part-time staff, and light-duty firefighters. The warehouse manager is responsible for janitorial supplies and deliveries, while other staff manage distinct inventory areas such as EMS items, uniforms, personal protective equipment (PPE), furniture, recruit clothing, office supplies, radios, and fire equipment.

All warehouse processes are manual. Requests for new items are initiated via email to the Captain overseeing the relevant section, who reviews and approves, modifies, or denies the request. Following approval from the overseeing Chief, a purchase order is created, and the item is ordered and delivered to the warehouse. For stocked items, staff pull inventory directly from shelves. Upon receipt of the items, the requestor signs a receiving report to formally acknowledge delivery and acceptance.

Police Department

The Property and Evidence Unit[6] oversees inventory items for the Richmond Police Department. The unit is staffed by 12 personnel, including the officer in charge, who oversees operations across multiple areas including warehouse inventory, security, equipment, and uniforms. Other inventory items include fire extinguishers, police tape, washing fluid, and PPE.

Designated staff primarily handle property and evidence, but also assist with warehouse activities such as unloading and stocking items. The Quartermaster is responsible for managing uniforms and police equipment. Police does not utilize a formal inventory management system. Uniforms and equipment are manually recorded in the Records Management System (RMS), while consumables (i.e., police tape) and PPE are not tracked due to limited quantities and informal processes. Officers are required to return uniforms before receiving replacements. Standard sizes are kept in stock, with additional sizes ordered as needed.

Additionally, the officer in charge reorders consumable items based on visual checks. Requests for supplies (excluding uniforms) are emailed to the officer in charge or one of the managers to process the request. Once the item is delivered, the requestor is notified for pickup.

Findings and Recommendations

Finding 1: A lack of centralized oversight has led to inconsistent warehouse practices as management has not established clear expectations, procedures, or training for inventory management.

Governance is the framework of authority, accountability, policies, and processes that guides decisions and ensures resources are managed effectively. For inventory, governance defines who

[6] Property and Evidence was not a part of this audit. The uniforms, equipment and consumable inventory items are housed in the same building.

does what, which policies apply, and how oversight works so operations are consistent, accurate, and controlled. Strong governance supports accountability, safeguards assets, and provides reliable information for operational and financial decisions.

According to the GAO, management should (1) design control activities to meet objectives and respond to risk, (2) ensure information is complete, accurate, and timely, and (3) perform ongoing monitoring to confirm controls work and fix deficiencies. Internal controls are how governance is executed. The GAO outlines a framework for internal controls.[7] Understanding how these components align with inventory processes provides a basis for identifying strengths and areas for improvement.

Table 1 summarizes its five components and the OCA developed examples of how each relates to inventory governance.

Table 1: GAO Internal Control Components and Relevance to Governance

Component	Governance Relevance
Control Environment	Generally, sets tone, authority, structure, and expectations. For inventory, this is a citywide policy assigning warehouse authority, defining roles and responsibilities, and setting minimum control expectations.
Risk Assessment	Generally, identifies and analyzes risks that prevent achieving objectives. For inventory, it involves classifying items by value and criticality, assessing risks such as theft, loss, obsolescence, stockouts, and misstatement, and determining what to track, how to track it, and the frequency of counts.
Control Activities	Generally, are the policies and procedures that mitigate risk. For inventory, they include documented receiving/issuing, controlled adjustments with reason codes and support, segregation of duties, labeling/locations, reorder points, and scheduled counts with reconciliation.
Information and Communications	Generally, ensures quality information is captured and shared timely. For inventory this includes, using a standardized inventory list (i.e., names, units, locations, costs, and serial numbers), timely recording receipts and issuances, common data definitions, and reporting that provides citywide visibility.
Monitoring	Generally, confirms controls are operating effectively and deficiencies are corrected. For inventory, this includes tracking cycle-count coverage against plan, maintaining variance logs with root causes and approvals, reviewing shrinkage and stockouts, performing spot checks, and overseeing vendor obligations.

Source: Prepared by OCA using GAO standards and inventory best practices cited in footnote 2.

[7] U.S. Government Accountability Office. (2014). *Standards for Internal Control in the Federal Government*. GAO-14-704G. https://www.gao.gov/assets/gao-14-704g.pdf, pages 7-10

The City has not established an effective governance framework for warehouse operations and inventory management. Warehouse operations are decentralized; each location sets its own practices for tracking, recording, and safeguarding inventory. Without citywide policies, procedures, and oversight, practices vary widely, and best practices are not applied consistently.

This gap has led to systemic weaknesses, including unreliable records, higher risk of theft or loss, stockouts and overstocking, and duplicate orders. It also limits the City's ability to compare and monitor activities across warehouses, which reduces transparency and accountability. The OCA reviewed inventory records, conducted physical counts, and interviewed departmental staff. Common issues observed across all warehouses included:

- Absence of formal policies and procedures to govern warehouse operations;
- Inaccurate and incomplete inventory records;
- Insufficient monitoring of inventory levels and usage.

Also, an imbalance was noted in inventory tracking, as less critical items received more monitoring than critical ones, indicating that tracking efforts are not aligned with item importance. Effective inventory governance requires clear roles, consistent procedures, reliable data, and ongoing oversight. As described in detail below, the current environment lacks key control elements, including control activities, monitoring, and risk assessment, that are needed for operational efficiency, financial accuracy, and compliance.

1A: The City currently lacks centralized inventory management guidance, leading to varying practices, procedures, and staffing across departmental warehouse operations.

According to the GAO, management is responsible for developing and implementing policies and procedures to achieve an entity's objectives and guide its operations.[8] In inventory management, written policies and procedures help to:[9]

- Demonstrate management's commitment to accountability and internal control,
- Provide clear guidance for staff on inventory processes,
- Promote consistency and accuracy in inventory handling,
- Serve as a training resource for employees, and
- Support continuity of operations and institutional knowledge over time.

To remain effective, policies and procedures should be reviewed periodically and updated as needed.

Inventory and warehouse functions across the City are decentralized, and a single uniform system may not fit every warehouse. However, the City should establish baseline inventory control standards, similar to the Virginia Department of Accounts' approach described earlier. City Code §2-596(c)(5) assigns the Director of Procurement Services responsibility for

---

[8] U.S. Government Accountability Office. (2014). *Standards for Internal Control in the Federal Government*. GAO-14-704G. https://www.gao.gov/assets/gao-14-704g.pdf, page 8

[9] 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 16,18

maintaining a system of accounting for property in line with generally accepted inventory control principles. However, management has not issued citywide policies or formal standards to guide operations beyond the transfer and disposal of surplus property.[10] According to Department of Procurement Services (DPS) and the Office of the City Attorney, this code section does not reflect DPS' current structure and practices, as the department does not receive or issue property. The provision may be carryover language from a previous organizational structure and is no longer applicable.

The OCA reviewed the policies and procedures for the various warehouse operations, where available, and noted:

- Fire and Police departments do not have policies and procedures to govern their respective warehouses and inventory management processes.

- General Services provided written procedures for both its custodial and keep stock inventory that included procedures for receiving and issuing inventory, documentation requirements, and inventory verification procedures. However, these procedures lacked key controls such inventory adjustments and reconciliation procedures, stock level reviews and reorder point management, training requirements and compliance monitoring. In addition, some of the established procedures were not being followed.

- Parks provided written procedures for accepting deliveries at the Admiral Street maintenance shop, including delivery acceptance, supply requests, and surplus handling. However, the procedures did not address inventory management controls such as conducting inventory counts and reconciliations to the inventory records. Also, written procedures for warehouse and inventory management processes were not in place for the other maintenance shops.

In summary, the absence of formal, citywide inventory standards and oversight represents a governance gap that weakens accountability. Establishing baseline control objectives and minimum standards and requiring departments to develop aligned procedures would improve accountability, consistency, and internal controls across all warehouses.

Before such guidance can be developed, City Administration should conduct a comprehensive inventory assessment and cost-benefit analysis to determine the appropriate level of inventory controls and the optimal warehouse configuration. As part of this assessment, staffing resources should be reviewed to ensure that personnel levels and qualifications are sufficient to support and sustain any changes implemented. This foundational analysis would help ensure that any new standards are both practical and proportionate to the City's operational needs.

As noted above, dedicated warehouse staff were generally not in place within the operations reviewed. Inventory management and oversight responsibilities were often assigned to superintendents, managers, supervisors, or other staff in addition to their regular duties. The

[10] Department of Procurement Services, Surplus Property (Policy 38)

City's Human Resources Classification and Compensation Plan includes several job titles related to warehouse operations, including:

- **Warehouse and Materials Supervisor** – Oversees the City's inventory management and warehouse operations, ensuring efficient storage, distribution, and control of materials. Responsibilities include supervising warehouse staff, monitoring material movement and stock levels, overseeing shipping and receiving activities, and maintaining accurate inventory and purchasing data to support operational needs.

- **Warehouse and Materials Technician, Senior –** Performs a range of inventory management and warehouse functions, including issuing, receiving, tracking, and replenishing materials and supplies. Duties also include maintaining accurate inventory records, operating material handling equipment, ensuring the safe storage of hazardous materials, and supporting purchasing and distribution activities to maintain efficient warehouse operations.

Of all departments reviewed, only the Police Department and the Department of Public Utilities (DPU) have dedicated employees assigned to these positions.

1B: Inventory records were found to be incomplete and inaccurate, which may affect the reliability of financial information and limit management's ability to make informed operational decisions.

Accurate and reliable data is essential to an efficient operating environment.[11] Managers need to know how much inventory is on hand and where items are located to make effective budgeting, operating, and financial decisions. Physical controls and clear accountability reduce the risk of undetected theft or loss, shortages of critical items, and unnecessary purchases of items already on hand. Until inventory is counted, formally recorded, and kept accurate through routine processes, management cannot rely on inventory data to support decisions or detect irregularities.

The OCA interviewed staff, reviewed inventory records and warehouse expenditures (where available) and conducted physical inventory counts (where feasible). Common issues observed across multiple warehouse operations included:

- Incomplete records and an unknown total inventory value;
- Recorded balances that did not match quantities on hand; and
- Physical counts were not performed and/or documented to reconcile the records.

1B.1: The total value of inventory on hand could not be determined.

According to the Virginia Department of Accounts (DOA), the level of inventory control should correspond to item value and nature. A cost-benefit analysis should be used to determine whether

[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

tracking is warranted, considering usage environment and the cost of tracking.[12] Some items such as critical police and fire equipment should be tracked regardless of cost due to their nature and use.

When tracking is warranted, departments may use a perpetual or periodic system. DOA recommends that perpetual systems capture information such as item description, storage location, minimum and maximum levels, cost, receipts, requisitions, and balances.

The OCA interviewed warehouse staff and reviewed inventory records, noting significant variation in the type and method of tracking information across different warehouses as noted below.

Item Description

All inventory reports included item descriptions; however, many were generic and lacked specific details such as brand, model, size, or serial numbers. For example, **Table 2** shows that Fire, Parks, and General Services each carry bleach in their inventory but all record it differently.

Table 2: Example of Generic Description included in inventory records.

Fire	Parks	General Services
"bleach" (1 gallon)	**"pure bleach 1 gallon"**	**"clorox bleach"**

Source: Created by OCA using inventory reports.

The OCA also noted that inventory records contained multiple entries for the same or similar items, making it difficult to determine the total quantity on hand. For example:

- The Fire Department's inventory listings included multiple entries for copier paper, weed eaters, and generators, each showing different quantities on hand.
- The Parks maintenance shops' inventory listings contained multiple entries for tools and equipment such as backpack blowers, mowers, weed trimmers, generators, and saws. Individual entries were recorded for each piece, but corresponding serial numbers were not captured.

Clear and consistent item descriptions are essential for accurate identification and efficient reconciliation during inventory counts. As noted in **Finding 1B.2**, the OCA was unable to reconcile some sampled items to inventory records due to generic descriptions. Additionally, as discussed in **Finding 1A**, the absence of guidance has resulted in a lack of data standardization across departments.

[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)](), pages 3-5

Storage Location

Inventory locations were either inconsistently recorded or not captured for four of the five departments. For example, the Fire and Police Departments inconsistently recorded locations in their inventory reports. While the General Services Custodial[13] and Parks[14] inventory reports listed the warehouse or maintenance shop as the location for all items, the same location was applied uniformly to every item rather than capturing specific storage details. Only the General Services keep stock inventory system consistently recorded detailed inventory locations for its items.

Utilizing detailed storage locations improves efficiency and accuracy in locating items. As highlighted in **Finding 1B.2,** the absence of location information and shelf labeling in some warehouses hindered reconciliation efforts during physical counts.

Minimum/Maximum Levels

Minimum and maximum[15] inventory levels assist management in determining when and how much to reorder. However, they were inconsistently used across the reviewed departments.

- Fire relies on visual monitoring to determine when to reorder items.
- Parks generally rely on visual monitoring to determine when to reorder item.
- Police reorder items based on visual checks. Consumables and PPE are not formally tracked, so minimum/maximum levels and reorder points are not established. For uniforms and equipment, maximum levels and reorder points are recorded in the inventory listing but are not used.
- Minimum and maximum inventory levels were included in the General Services keep stock and custodial inventory listings; however, the on-hand quantities did not consistently align with these established levels. Currently, there are no formal procedures in place to review, assess, or revise the established minimum and maximum levels and reorder points.

[13] The General Services custodial items are in a single cage within the warehouse. Staff have subsequently added the inventory part number to the shelves in the cage.

[14] The maintenance shops varied in size from a closet to multiple cages and outdoor storage space. The OCA noted that items were generally grouped together by category. However, the shelves were not labeled to allow for easy identification of inventory items.

[15] Per the Virginia Department of Accounts (DOA) guidance, 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. (DOA CAPP Manual 30515, "Supplies and Materials Inventory," p. 9)

The Maintenance and Operations Facilities Manager indicated that the reorder points are used to determine which custodial items need to be reordered. However, the OCA noted that 79% of the custodial items had a reorder point of zero. The Facilities Superintendent explained that items are not reordered at the established levels due to funding availability at different points throughout the year.

According to DOA guidance, standard order quantities and reorder points should be established to maintain effective inventory control. The absence or inconsistent use of established minimum and maximum inventory levels and reorder points increases the risk of inefficient inventory management resulting in inventory shortages or overstocking.

Cost

Cost information was inconsistently recorded across warehouses, resulting in unknown inventory balances. Accurate cost data supports budget preparation and financial reporting, enabling management to make informed decisions about inventory control measures.

Inventory Receipts and Requisitions

As noted below in **Table 3** in **Finding 1C**, four of the five inventory systems have the capability to track inventory receipts and requisitions, either through manual data entry, work order integration and/or scanner uploads. However, Parks staff reported inconsistent use of the system to record purchases and requisitions due to limited staffing resources and connectivity issues. The Fire Department tracks inventory manually using spreadsheets, with on-hand quantities overwritten to reflect receipts and requisitions.

Departments are responsible for complete and accurate inventory data. Recurring observations across departments indicate a need for standardized ledger requirements (a minimum data standard). Without reliable and standardized data, the City cannot make informed budget decisions, identify duplication, or set appropriate inventory types, sizes, and values. This data is also necessary for cost-benefit analyses that right-size tracking and align controls to item value and risk.

1B.2: Inventory records did not consistently align with actual quantities on hand.

The OCA performed physical inventory counts[16] on a sample of items from several warehouses and maintenance shops. Discrepancies were identified between recorded inventory quantities and physical counts. Due to inconsistent tracking of item costs, the dollar value of these discrepancies could not be determined.

---

[16] Physical inventory counts were conducted using a sample of items selected from the inventory listings as well as a sample of items directly from warehouse and maintenance shop shelves. The counts were performed to verify the accuracy and completeness of the inventory records.

Fire Warehouse

The OCA attempted to conduct physical inventory counts at the Fire Department warehouse and noted discrepancies; however, the extent of these discrepancies could not be determined due to unreliable inventory records. Two versions of the inventory report were provided: the first prior to testing and the second after the OCA inquired about count discrepancies. These reports were created and updated manually in Microsoft Excel, making it unclear which report reflected current balances.

Due to inconsistent maintenance and updating of inventory records, the OCA was unable to rely on the accuracy and completeness of the inventory listings. Specific observations include:

- Maintaining and updating the inventory listing is a manual process, subject to human error and data entry delays, which affects data accuracy and completeness.

- Each inventory section is maintained by different staff, with no standard format for tracking items.

- Key inventory fields such as cost, storage locations, detailed descriptions, and minimum/maximum levels were inconsistently recorded or missing.

- Inventory quantities were manually overwritten to account for purchases, issuances, and count discrepancies, limiting traceability of inventory movements.

- Similar items were recorded under generic descriptions across multiple listings, and storage locations were inconsistently captured, preventing a clear determination of expected on-hand quantities.

Overall, the inconsistent and manual maintenance of inventory records limited the ability to verify inventory accuracy and completeness.

The OCA also noted that critical equipment was not adequately tracked and monitored. The February 2025 critical equipment records showed significant discrepancies in tracking and maintenance. These issues with data reliability limit the City's ability to ensure critical equipment is properly assigned and tested when required and reduce accountability over warehouse activity and budget planning for replacements.

Staff reported that a contractor was responsible for tracking and maintaining critical equipment asset records; however, the contractor indicated that responsibility rested with the Fire Department. No contract or agreement was provided to the OCA to clarify accountability for maintaining these records.

General Services Warehouse

The OCA conducted physical counts for 10 custodial items and 31 keep stock items and noted the below observations.

Custodial Items

Per the inventory report provided to the OCA prior to the count, there were 173 custodial inventory items. The OCA counted 10 custodial inventory items and compared them to the quantity on hand noted in the inventory system and noted 70% matched the system quantities. The inventory records were overstated for two items reviewed and understated for one item. General Services staff indicated that for one of the overstated items, it may have been removed from warehouse but not requisitioned out of the inventory system.[17]

The OCA also notes that the discrepancies may be attributed to:

- Quantity on hand may have been incorrectly updated when adding purchases to the inventory system or adjusting for identified discrepancies during inventory counts.

- Purchases may not have been added to the inventory system. During the review period, inventory balances were manually overwritten to reflect purchases. Prior to report issuance, the Maintenance and Operations Facilities Manager informed the OCA that staff had received training on entering purchase orders into the inventory system. Going forward, all purchases will be tracked in the system using this method.

- Items may have been removed from the inventory but not requisitioned out of the inventory system as the General Services staff indicated for one of the overstated inventory items.

- Items may have been misappropriated.

Keep Stock Items

Per the inventory report provided to the OCA prior to the count, there were 1,505 keep stock inventory items. The OCA counted 31 inventory items and only 29% matched the quantities on the report. The inventory records were overstated for 10 items reviewed and understated for seven items. The OCA could not conclude on five items (16%) due to the following:

- Three items could not be positively identified due to missing labels on the warehouse shelves and the presence of similar items that could not be easily distinguished from one another.

[17] Item could have been taken to a job site but not requisitioned out of the system. This would be done in case the equipment could be fixed without having to replace the part. If the part was not used, it would be returned to warehouse.

- Two items were found in the warehouse but not recorded in the inventory system; the OCA could not confirm whether these should have been tracked.

General Services staff could not explain the discrepancies in the keep stock inventory. Similarly to the custodial items, issues may be attributed to delays or omissions in recording purchases/requisitions and the risk of misappropriation.

The OCA notes that item costs were not tracked consistently. As a result, the dollar value of misstatements could not be determined. Using day-of-testing costs to value variances would not be appropriate because it could overstate or understate the actual misstatement.

Parks Maintenance Shops

The inventory reports provided by Parks prior to the inventory count contained 1,192 inventory items for the Citywide maintenance shop and 153 for the Forest Hill maintenance shop.[18] Per Parks staff, their inventory listings for the various maintenance shops were set up in 2018 or 2019. The listings were set up based upon the information provided by the different shops. Each shop is responsible for maintaining its listings. However, interviews with staff at five maintenance shops revealed that four were not using MainTrac (the department's work order/asset system), citing connectivity issues. The manager for the Admiral Street location indicated he was not aware there was an inventory listing in MainTrac.

The OCA attempted to conduct physical counts for 24 inventory items (equipment and materials) at the Citywide Maintenance Shop and 21 equipment items at the Forest Hill Maintenance Shop and noted the following.

Citywide Maintenance Shop

The OCA could not readily tie 14 of 24 (58%) of the sampled items to the inventory listing due to generic item descriptions, missing serial numbers for equipment, and a lack of labeling in the maintenance shop. As a result, the OCA could not conclude whether on-hand quantities in the inventory system were correct for the sampled items. For the remaining 10 items:

- Seven out of 10 items had discrepancies between physical counts and system records.

- Three out of 10 items matched the system quantities.

Parks staff attribute the count discrepancies to human error, items were not added or requisitioned out of MainTrac, and incorrect quantities were requisitioned out MainTrac.

[18] Counts include materials, equipment and tools. The Parks maintenance shops inventory listings contained multiple entries for the same tools and equipment; a separate line item was created for each individual unit.

Forest Hill Maintenance Shop

Upon arrival, Parks staff initially stated that all 21 sampled items had been stolen during two separate incidents and were unavailable for counting, and the thefts were reported to the police. The OCA obtained and reviewed the police reports and noted only one item potentially matched a description in the inventory system. When asked why all the stolen items were not included on the police report, Parks staff revised their statement and indicated that some of the sampled items were still located at the maintenance shop. Ultimately, the OCA was unable to verify if the equipment on hand was the equipment on the inventory reports due to the inconsistent tracking of serial numbers and Parks staff informed us that all the equipment on hand was borrowed from another department.

Police Warehouse

Consumable items (e.g., fire extinguishers, police tape, windshield washer fluid, and PPE) and police uniforms/equipment are maintained in the Police warehouse. Consumables are not tracked or formally recorded; therefore, no inventory listing exists. Uniforms and equipment are entered manually into a system; however, staff reported the system is not updated regularly and quantities on hand are not known at any given time. During multiple site visits, the OCA observed uniforms and other items in staff offices that had not been entered into the system, and critical safety equipment in the warehouse that lacked labels. At the outset of audit fieldwork, the OCA was informed that uniforms and equipment were not tracked and that inventory counts were not conducted.

Police staff later provided count sheets for a physical inventory conducted in April–May 2024 and an October 2025 inventory report for a critical safety item. The OCA noted:

- **Significant count variances**: Numerous items in the physical count showed substantially more on hand than recorded, consistent with purchases not being entered in the system.
- **Critical equipment issues:** The October 2025 report showed material discrepancies in assignment, return, replacement, and service life for a key safety item.

These issues with data reliability limit the City's ability to ensure critical equipment is within manufacturer-recommended service life, properly assigned, and replaced when due, and they reduce accountability over warehouse activity and budget planning for replacements. Staff attributed issues to manual processes, data entry delays, and the absence of routine counts.

1B.3: Improvements are needed in the inventory count process to ensure the accuracy of the inventory records.

Per the GAO, inventory counts are a key internal control used to verify the accuracy of inventory records and financial data. Organizations may perform full physical inventory counts at a point in time, cycle counts[19] throughout the year, or a combination of both approaches. The GAO

[19] 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.

emphasizes the importance of documented policies and procedures that define the entire inventory count process, including roles, frequency, documentation requirements, and a process for investigating variances.[20]

When selecting a count strategy, management should consider staff resources, the existing control environment, the nature of the inventory, time needed to conduct counts, and the degree of control required. Factors include dollar value, items critical to operations, and susceptibility to theft or fraud. Effective counts separate physical custody, data entry, and approvals; where full segregation is not feasible, mitigating controls (for example, blind counts, two-person teams, or increased oversight) should be used.[21] After counts, management should research variances, document causes, adjust records as needed, and retain support.[22]

The OCA interviewed warehouse staff and management, reviewed policies and procedures and inventory count documentation (where available) and noted the following:

- Written policies and procedures outlining the full inventory count process, including roles, responsibilities, and documentation requirements, were not in place for the warehouses reviewed. While General Service's custodial and keep stock policies referenced monthly inventory counts, management confirmed these counts were not being performed. In addition, the policies lacked key details such as the type of counts to be conducted, items to be included, assigned personnel, and how results should be documented and retained.

- According to Fire management, the first full inventory count was conducted in August 2023 following the relocation of inventory to the central warehouse. The warehouse manager and designated staff are responsible for tracking and counting inventory, with specific staff assigned to manage and periodically count certain inventory types (e.g., EMS). However, inventory count documentation was not maintained, as discrepancies were directly adjusted in spreadsheets without record of the original counts or changes made. As a result, the OCA could not confirm the frequency or outcomes of inventory counts. Additionally, adequate separation of duties or mitigating controls were not in place during the inventory count process.

- According to the General Services Maintenance and Operations Facilities Manager, custodial inventory was moved to the centralized General Services warehouse in early 2023, but a physical inventory count was not conducted at that time. Inventory tracking in the system began in October 2023 following system training. The manager stated that inventory counts are performed by them and either the warehouse delivery driver or an administrative staff member, with one person counting and the other recording. Identified discrepancies are corrected by overwriting existing balances in the system, and no documentation of the counts is maintained. As a result, the OCA could not verify the

[20] 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
[21] 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
[22] 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

frequency of counts or what adjustments were made. Additionally, adequate separation of duties or mitigating controls were not in place, as the same manager responsible for ordering, receiving, stocking, and adjusting inventory also participates in the counts.

- According to the General Services Facilities Superintendent, keep stock inventory was moved to the centralized General Services warehouse in 2021. A supply contractor, who also sells the keep stock supplies to the City, relocated the items, conducted a count, and set up the inventory system. The Superintendent stated that the contractor manages the inventory, including counting, stocking shelves, and adjusting quantities in the system.

  The OCA interviewed representatives from the contractor, who clarified that inventory counts are not included in their service level agreement with General Services. The full count conducted in April 2024 was done as a courtesy at General Service's request. That count was performed by a contractor employee and two General Services staff. Once completed, the contractor collected the count sheets and updated the inventory system. However, the count information was not retained in the system and cannot be retrieved.

  The Superintendent confirmed that regular inventory counts are not being conducted due to staffing limitations. The OCA noted that separation of duties or mitigating controls were not in place as the contractor is responsible for recommending purchases, receiving items in the system, and stocking shelves with limited General Services oversight. Additionally, prior to this audit, General Services staff did not have access to the inventory system to review or analyze inventory movement.

- Parks does not have a standardized inventory count process. During initial interviews, three of five maintenance shops reported performing inventory counts. Documentation to support the inventory counts was not provided. As such, the OCA could not verify how often counts were conducted or what changes were made. The remaining two shops indicated that counts were not conducted due to:

  - The small and immateriality of their inventory,
  - Lack of dedicated staff for inventory tracking, and
  - Absence of a standardized department-wide process.

- According to the officer in charge over the police warehouse, consumable items and PPE are not tracked or counted due to their limited quantity. The Police Quartermaster stated that inventory counts are performed as needed, but formal cycle counts are not conducted. As noted above, documentation was provided for an inventory count carried out in April–May 2024, after the audit began, but no records were available for prior or current counts. The Quartermaster noted they and a few recruits conducted the count, with one person counting items and another recording the results. Afterward, the Quartermaster collected the count sheets and adjusted the inventory system for discrepancies. The OCA could not verify the frequency of counts or what changes were made. Additionally, we noted a lack of adequate separation of duties or mitigating controls, as the Quartermaster, who handles ordering, receiving, stocking, and adjusting inventory, was involved in the count. Review of the count sheets revealed numerous discrepancies, which were purportedly entered into the system.

Across departments, the lack of formal policies, consistent documentation, and internal control measures weakens the integrity of the inventory count process. Without a clearly defined inventory count strategy informed by risk assessments, departments may be unable to ensure the accuracy or completeness of inventory records. Additionally, permitting staff to access and update inventory records without independent oversight increases the risk of undetected errors or irregularities.

1C: The absence of a centralized inventory management system has resulted in inconsistent tracking and limited visibility over citywide inventory, which can hinder management's ability to make informed operational and financial decisions.

GAO's internal control standards emphasize that management should obtain relevant data from reliable sources, convert it into accurate and dependable information, and use information systems to support operational, reporting, and compliance objectives.[23] Centralized inventory management systems with real-time visibility, standardized item descriptions, and integration with procurement and financial systems align with these standards. These systems improve data accuracy, reduce redundancy, enhance coordination across departments, and strengthen transparency, accountability, and cost control in government operations.

The OCA noted that departments used a range of tools to track inventory, ranging from Microsoft Excel spreadsheets to perpetual inventory systems. **Table 3** summarizes the systems used across the warehouses.[24]

Table 3: Inventory Tracking Mechanisms Employed at the Different Warehouses

Warehouse	Tracking Method	Process Overview
Fire	Spreadsheet	Inventory was manually tracked by category (e.g., janitorial) using separate non-uniform worksheets. On-hand quantities are overwritten to reflect purchases and distributions. Updates are made periodically.
General Services - Custodial	Asset Essentials	A computerized maintenance management system was used for work orders and inventory tracking. Receipts and requisitions were manually entered, and on-hand quantities were overwritten to reflect purchases. The system is updated periodically.

[23] U.S. Government Accountability Office. (2014). *Standards for Internal Control in the Federal Government*. GAO-14-704G. https://www.gao.gov/assets/gao-14-704g.pdf, pages 58-60
[24] The OCA notes that, at the time of the Phase I and Phase II audits, the Department of Utilities was using two separate systems.

Warehouse	Tracking Method	Process Overview
General Services – Keep Stock	Keep Stock	Inventory transactions were uploaded via scanning devices. Purchases were purportedly entered by the vendor staff, and items are automatically deducted when scanned out.
Parks	Main Trac	MainTrac was available to track inventory receipts and requisitions. However, most maintenance shops do not use the system consistently due to reported connectivity issues, resulting in incomplete tracking.
Police	Record Management System (RMS)	Inventory receipts and requisitions are manually entered into the system, which is updated periodically. On-hand quantities are overwritten to reflect purchases.

Source: Created by the OCA

Decentralized systems and practices contribute to inconsistent data capture, as noted in **Finding 1B.1**, and limit citywide visibility. Operating in departmental silos leads to inconsistent tracking, duplicated purchases, and limited insight into overall inventory levels. These conditions increase the risk of excess stock, stockouts, and missed opportunities for coordination and strategic sourcing. Establishing a single citywide system or, at minimum, common data standards with consolidated reporting would improve visibility and control.

Finding 1D: Ordering similar items independently across multiple departments may lead to duplication and hinder the City's ability to leverage economies of scale through coordinated purchasing.

The National Institute of Governmental Purchasing (NIGP)[25] recognizes spend analysis as a foundational practice for identifying procurement consolidation opportunities. According to the NIGP, spend analysis involves collecting and analyzing data about organizational expenditures to gain visibility into spending patterns to determine:

- What was purchased?
- Where was it purchased?
- How many suppliers were involved?
- What was the total expenditure?

By systematically analyzing this data, organizations can identify opportunities for supplier consolidation, standardization of products, and strategic sourcing, leading to cost savings and improved procurement efficiency.

[25] National Institute of Governmental Purchasing - *Spend analysis best practices* [PDF]. https://www.nigp.org/resource/global-best-practices/Spend%20Analysis%20Best%20Practices.pdf

Due to the lack of standardization in inventory tracking described above, combined with inaccurate and incomplete data, generic item descriptions, and the use of different inventory systems, conducting a comprehensive spend analysis is currently not feasible. However, OCA noted similar item descriptions appearing on multiple warehouse inventory lists, indicating potential opportunities for ordering consolidation. During interviews, site visits, and physical counts, OCA observed that Parks, General Services, and Fire all purchase janitorial supplies and paper products. A preliminary review of inventory records identified representative overlaps shown below in **Table 4**.

Table 4: Similar Inventory Items Across Multiple City Warehouses

Parks	General Services	Fire
Hill Manufacturing bowl cleaner double mint(1qt) #3618	Bowl guard toilet bowl cleaner	Toilet bowl cleaner
Bleach 1 Gal	Clorox bleach	Bleach
Atlas 2 ply toilet tissue	Compaq toilet paper Heavenly soft jumbo toilet paper Vintage household toilet paper	Toilet paper
Vantage 9 jumbo tissue dispenser	9 in toilet paper dispenser Generic household tp dispenser Quantum dual toilet paper dispenser Jumbo TP dispenser Stainless steel TP dispenser	Toilet paper dispenser
Symmetry foaming hand soap	Heathgard hand foam soap	Fuzion foaming hand soap

Source: Created by OCA using inventory listings.

Within Parks specifically, maintenance shops placed supply orders independently (e.g., toilet paper and janitorial supplies) rather than coordinating purchases, limiting opportunities for standardization and volume pricing.

The establishment of a strategic sourcing program enables the City to take a proactive and coordinated approach to procurement. By consolidating purchasing activities across departments and leveraging the City's total buying power, strategic sourcing helps secure more competitive pricing, improve contract terms, and ensure the consistent quality of goods and services. This approach reduces duplication of effort, increases efficiency in procurement processes, and enhances transparency and accountability in spending. Furthermore, it strengthens supplier relationships, promotes fair competition, and supports the City's broader goals of fiscal responsibility and sustainable service delivery. Ultimately, strategic sourcing delivers measurable cost savings and operational improvements that benefit both the organization and the stakeholders it serves.

Once strategic sourcing has been established and contracts are in place, it's critical to ensure that departments and agencies procure goods and services using those contracts. This will ensure compliance with approved procurement strategies, maximize cost savings, strengthen supplier relationships, and maintain consistency across the organization.

Recommendations

Recommendation 1 **High Priority**

We recommend that the Chief Administrative Officer (CAO) conduct a comprehensive inventory assessment and cost-benefit analysis to determine the appropriate level of inventory controls and warehouse configuration. This should include:

- Establishing an assessment team to:
  - Conduct a citywide inventory assessment of existing inventory and storage infrastructure by department and warehouse;
  - Identify gaps, redundancies, staffing requirements, and department-specific needs; and
  - Evaluate the feasibility and benefits of centralized, decentralized, or hybrid warehouse models based on item type, usage frequency, location, and operational requirements.
- Conducting a cost-benefit analysis to define the level of inventory controls appropriate to risk, cost, and service-delivery impact and confirm the target warehouse configuration.

After completing the city-wide assessment, the CAO should utilize the results to establish minimum inventory standards and controls required for all departments. These standards should align with industry best practices and at a minimum establish requirements and criteria for:

- Roles and responsibilities,
- Standardized tracking and record keeping of inventory,
- Physical inventory counts and reconciliations,
- Monitoring, training, and oversight,
- Proper documentation and retention,
- Physical security of assets, and
- Periodic review and reporting on inventory performance metrics.

Regardless of the warehouse model selected, the City should implement centralized oversight and monitoring.

Recommendation 2 **High Priority**

We recommend that the CAO implement an interim plan to begin addressing the below minimum standards while the City conducts the citywide assessment and cost-benefit analysis.

- Roles and responsibilities,
- Standardized tracking and record keeping of inventory,
- Physical inventory counts and reconciliations,
- Monitoring, training, and oversight,
- Proper documentation and retention,
- Physical security of assets, and
- Periodic review and reporting on inventory performance metrics.

These interim actions should ensure that departments begin strengthening inventory management practices and aligning with anticipated citywide standards.

Recommendation 3	High Priority

We recommend that the CAO, in coordination with the Director of IT and the Director of Procurement Services, evaluate and, if feasible, implement a centralized inventory management system aligned with the citywide assessment. The evaluation and solution should:

- Assess options for standardized data entry, real-time visibility across locations, and integration with procurement and financial systems;

- Ensure role-based access and approvals, data validation, and audit trails for receipts, issues, and adjustments;

- Provide reporting and dashboards to support management oversight, variance monitoring, and spend analysis; and

- If a single citywide system is not immediately feasible, establish minimum data standards, a common item master, and interfaces to enable consolidated reporting across existing systems.

Recommendation 4	High Priority

We recommend that the Fire Chief implement a formal process to reconcile and validate critical equipment data to ensure all items are accurately assigned, tracked, and tested. This process should include standardized procedures for maintaining and reviewing asset records, regular reconciliations to identify and resolve discrepancies, and staff training to support data accuracy and accountability.

Recommendation 5	High Priority

We recommend that the Police Chief implement a formal process to reconcile and validate critical equipment data to ensure all items are accurately tracked, properly assigned, maintained within manufacturer-recommended service life, and replaced when due. This process should include standardized procedures for updating and reviewing equipment records, regular reconciliations to identify discrepancies, and staff training to support data accuracy and accountability.

Recommendation 6	Medium Priority

We recommend that the Director of Procurement Services, in coordination with the CAO, develop and implement a citywide monitoring and accountability process to ensure the efficient, effective, and coordinated use of City resources while promoting strategic purchasing and standardizing commonly used items. The CAO should mandate departments to procure goods and services through established strategic sourcing contracts whenever applicable, with any exceptions formally documented and approved.

Recommendation 7	Low Priority

We recommend the CAO work with the City Attorney to assess the relevance of City Code Section 2-596(c)(5) and submit any proposed code amendments to City Council for review and approval that are deemed necessary.

Appendix A

Compliance Statement, Objectives, Scope, Methodology, Management Responsibility and Conclusion on Internal Controls

Compliance Statement

This performance 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[26] operated by General Services, Public Utilities, Parks, Police, and Fire during FY 2023 and the current environment. General Services Fleet and Police Property and Evidence were excluded from this audit.

The audit was issued in phases, with this report being the last phase covering General Services, Parks, Police and Fire. Previously issued Phases I and II covered the DPU's Main and Wastewater Treatment Plant warehouses.

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 warehouse practices,
- Interviewed Department and warehouse staff to determine the inventory management processes and procedures employed,

[26] City Administration requested this audit and identified the departments that had main warehouses.

- Conducted site visits to observe the warehouse's layout and noted the physical access controls,
- 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.

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.

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.

Based on the audit test work, the OCA concluded that internal controls were insufficient as documented throughout this report. See the Executive Summary for our overall conclusion.

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.

Office of the City Auditor (OCA)

The OCA is an independent office organized under the Richmond City Council. We aim to serve as a trusted partner in strengthening transparency and accountability in local government through independent, impactful audits that enhance public trust and improve City operations.

Our audits evaluate the effectiveness, efficiency, and compliance of City programs and services. We offer recommendations to improve performance, safeguard public resources, and promote sound governance.

City Auditor

Riad Ali, CPA, CIGA

Audit Conducted by:

Yolanda McCoy, CIA, CFE, CGAP, Deputy City Auditor
Toni Noel, MBA, Senior Auditor

Contact us:

Phone: 804-646-5616
Email: askcityauditor@rva.gov
Website: https://www.rva.gov/office-city-auditor

MANAGEMENT RESPONSES

OCA 2026-05

Citywide Warehousing and Inventory Management

Final Phase

RECOMMENDATION #1	

We recommend that the Chief Administrative Officer (CAO) conduct a comprehensive inventory assessment and cost-benefit analysis to determine the appropriate level of inventory controls and warehouse configuration. This should include:
• Establishing an assessment team to:
  ○ Conduct a citywide inventory assessment of existing inventory and storage infrastructure by department and warehouse;
  ○ Identify gaps, redundancies, staffing requirements, and department-specific needs; and
  ○ Evaluate the feasibility and benefits of centralized, decentralized, or hybrid warehouse models based on item type, usage frequency, location, and operational requirements.
• Conducting a cost-benefit analysis to define the level of inventory controls appropriate to risk, cost, and service-delivery impact and confirm the target warehouse configuration.
After completing the city-wide assessment, the CAO should utilize the results to establish minimum inventory standards and controls required for all departments. These standards should align with industry best practices and, at a minimum, establish requirements and criteria for:
• Roles and responsibilities,
• Standardized tracking and record keeping of inventory,
• Physical inventory counts and reconciliations,
• Monitoring, training, and oversight,
• Proper documentation and retention,
• Physical security of assets, and
• Periodic review and reporting on inventory performance metrics.
Regardless of the warehouse model selected, the City should implement centralized oversight and monitoring.	

Concur (Yes/No)	**Yes**
ACTION STEPS *(Please describe the steps you will take or have taken to address the recommendation)*	
We acknowledge the need to evaluate the City's inventory environment and are taking initial steps with Procurement Services and DGS to scope the level of assessment required. This includes determining the resources, departmental engagement, and data needed to review current inventory practices, storage infrastructure, and the potential merits of centralized, decentralized, or hybrid warehouse models. The results of this scoping effort will inform next steps and guide the development of appropriate citywide inventory standards and oversight expectations.	
Target Date or Date Implemented	12/15/2025- Establishment of assessment team
Title of Responsible Employee	DCAO- Operations

MANAGEMENT RESPONSES

OCA 2026-05

Citywide Warehousing and Inventory Management

Final Phase

RECOMMENDATION #2	
We recommend that the CAO implement an interim plan to begin addressing the below minimum standards while the City conducts the citywide assessment and cost-benefit analysis. • Roles and responsibilities, • Standardized tracking and record keeping of inventory, • Physical inventory counts and reconciliations, • Monitoring, training, and oversight, • Proper documentation and retention, • Physical security of assets, and • Periodic review and reporting on inventory performance metrics. These interim actions should ensure that departments begin strengthening inventory management practices and aligning with anticipated citywide standards.	
Concur (Yes/No)	**Yes**
ACTION STEPS *(Please describe the steps you will take or have taken to address the recommendation)*	
We are working with Procurement Services and DGS to implement interim inventory controls that immediately strengthen accountability, reduce inventory variability risk, and tighten chain-of-custody practices while the citywide assessment proceeds. In parallel, we will individually meet with departments to review their current processes and ensure alignment with minimum standards for tracking, documentation, physical counts, oversight, and asset security. We are also partnering with Procurement and DGS to identify a consultant to conduct a professional analysis, including evaluating consolidation opportunities and the feasibility of a centralized warehouse for commonly purchased items. These coordinated actions provide near-term safeguards and lay the groundwork for a sustainable, citywide inventory management framework.	
Target Date or Date Implemented	1-16-2026. Completion of interim inventory control plan.
Title of Responsible Employee	Directors of DPS and DGS

MANAGEMENT RESPONSES

OCA 2026-05

Citywide Warehousing and Inventory Management

Final Phase

<table>
<tr><th colspan="2">RECOMMENDATION #3</th></tr>
<tr><td colspan="2">We recommend that the CAO, in coordination with the Director of IT and the Director of Procurement Services, evaluate and, if feasible, implement a centralized inventory management system aligned with the citywide assessment. The evaluation and solution should:

• Assess options for standardized data entry, real-time visibility across locations, and integration with procurement and financial systems;
• Ensure role-based access and approvals, data validation, and audit trails for receipts, issues, and adjustments;
• Provide reporting and dashboards to support management oversight, variance monitoring, and spend analysis; and
• If a single citywide system is not immediately feasible, establish minimum data standards, a common item master, and interfaces to enable consolidated reporting across existing systems.</td></tr>
<tr><td>Concur (Yes/No)</td><td>Yes</td></tr>
<tr><th colspan="2">ACTION STEPS
(Please describe the steps you will take or have taken to address the recommendation)</th></tr>
<tr><td colspan="2">We acknowledge the need to evaluate technology options that support more consistent and transparent inventory practices citywide. In coordination with Procurement Services, DGS, and IT, we will scope the level of analysis required to review available inventory management solutions, assess integration needs, and determine minimum data, access, and reporting standards.

This scoping effort will inform whether a centralized platform, enhanced interfaces between existing systems, or a hybrid approach is the most practical path forward. The results will guide next steps while ensuring any long-term solution aligns with operational requirements, internal controls, and emerging citywide inventory standards.</td></tr>
<tr><td>Target Date or Date Implemented</td><td>1/16/2026- Completion of scoping analysis</td></tr>
<tr><td>Title of Responsible Employee</td><td>Directors of Information Technology and Procurement Services</td></tr>
</table>

MANAGEMENT RESPONSES

OCA 2026-05

Citywide Warehousing and Inventory Management

Final Phase

RECOMMENDATION #4	
We recommend that the Fire Chief implement a formal process to reconcile and validate critical equipment data to ensure all items are accurately assigned, tracked, and tested. This process should include standardized procedures for maintaining and reviewing asset records, regular reconciliations to identify and resolve discrepancies, and staff training to support data accuracy and accountability.	
Concur (Yes/No)	**Yes**
ACTION STEPS *(Please describe the steps you will take or have taken to address the recommendation)*	
RFD has implemented several measures to strengthen accountability and reduce inventory variability for critical equipment. This includes new procurement and anti-corruption policies, enhanced asset-tracking practices developed in coordination with Procurement, and physical security improvements such as key-card access and camera monitoring in storage areas. The Logistics Division has also updated its procedures for storage and distribution to promote tighter control and more reliable documentation. These actions support improved accuracy and preparedness as we continue refining our processes and participate in broader evaluations of potential long-term inventory solutions. RFD will also establish an internal team to establish an interim inventory control plan.	
Target Date or Date Implemented	1-16-2026- Implementation of interim inventory control plan. Final plan will be completed with onboarding of inventory management software.
Title of Responsible Employee	Deputy Chief of Support Services

MANAGEMENT RESPONSES

OCA 2026-05

Citywide Warehousing and Inventory Management

Final Phase

RECOMMENDATION #5	
We recommend that the Police Chief implement a formal process to reconcile and validate critical equipment data to ensure all items are accurately tracked, properly assigned, maintained within manufacturer-recommended service life, and replaced when due. This process should include standardized procedures for updating and reviewing equipment records, regular reconciliations to identify discrepancies, and staff training to support data accuracy and accountability.	
Concur (Yes/No)	**Yes**
ACTION STEPS *(Please describe the steps you will take or have taken to address the recommendation)*	
RPD is expanding its Property and Evidence Operational Manual to formally incorporate Quartermaster and consumable-goods procedures, including defined responsibilities, inventory thresholds, reissue and disposal standards, and routine count methodologies. The department will complete a full assessment of existing stock with temporary administrative support and establish an interim tracking mechanism for consumables while the new quartermaster program is finalized. RPD is also identifying training opportunities on government inventory standards and will include Quartermaster and consumables oversight in its routine audit cycle. These actions strengthen departmental controls and ensure RPD remains aligned with the broader citywide effort to standardize inventory practices and improve oversight across all departments.	
Target Date or Date Implemented	1-16-2025- Establish interim tracking mechanism
Title of Responsible Employee	RPD Chief

MANAGEMENT RESPONSES

OCA 2026-05

Citywide Warehousing and Inventory Management

Final Phase

RECOMMENDATION #6	
We recommend that the Director of Procurement Services, in coordination with the CAO, develop and implement a citywide monitoring and accountability process to ensure the efficient, effective, and coordinated use of City resources while promoting strategic purchasing and standardizing commonly used items. The CAO should mandate departments to procure goods and services through established strategic sourcing contracts whenever applicable, with any exceptions formally documented and approved.	
Concur (Yes/No)	**Yes**
ACTION STEPS *(Please describe the steps you will take or have taken to address the recommendation)*	
We concur with the intent of this recommendation. DPS already maintains several strategic citywide contracts for commonly used goods and services, and the primary opportunity now is ensuring consistent departmental utilization. As part of the broader citywide inventory effort, we will use insights from the citywide assessment (Recommendation #1) and interim standards (Recommendation #2) to identify gaps in contract usage, improve visibility into spend patterns, and strengthen monitoring of off-contract purchases. We will reinforce expectations around existing strategic contracts, reissue guidance to departments, and evaluate options for periodic contract-utilization reviews. We will also assess the effectiveness of current citywide contracts and identify opportunities to refine or modernize DPS procedures where appropriate. These actions will support a balanced, phased approach to improving alignment with the strategic sourcing tools already in place.	
Target Date or Date Implemented	12/15/2025- Reissuance of revised DPS guidance to departments.
Title of Responsible Employee	DPS Director

MANAGEMENT RESPONSES

OCA 2026-05

Citywide Warehousing and Inventory Management

Final Phase

RECOMMENDATION #7	
We recommend the CAO work with the City Attorney to assess the relevance of City Code Section 2-596(c)(5) and submit any proposed code amendments to City Council for review and approval that are deemed necessary.	
Concur (Yes/No)	**Yes**
ACTION STEPS *(Please describe the steps you will take or have taken to address the recommendation)*	
We acknowledge the importance of ensuring that the City Code aligns with current operational needs and procurement practices. We will coordinate with the City Attorney's Office to review the relevance and applicability of Section 2-596(c)(5) as part of the broader citywide inventory and procurement assessment. This review will help determine whether any updates are warranted and, if so, what amendments should be considered for Council's evaluation. Our focus will be on ensuring clarity, consistency, and alignment with emerging citywide standards.	
Target Date or Date Implemented	1/5/2026
Title of Responsible Employee	CAO