AUDIT REPORT

Inventory Audit

DEPARTMENT/DIVISION:
Department of Public Works,
Utilities

REPORT NUMBER:
2024-DPW-003

REPORT DATE:
08/31/2024

AUDIT OF DEPARTMENT OF PUBLIC WORKS – UTILITIES: INVENTORY AUDIT

Report Number:

2024-DPW-003

Report Date:

05/05/2024

Director of Department of Public Works, Internal Audit Oversight Committee, County Administrator & Deputy County Administrator:

In accordance with the Internal Audit Charter, SOP# CP.CAD.04.001, the Internal Audit Office (IAO) performed an audit of the Department of Public Works – Utilities: Inventory. This audit was conducted as part of the IAO's risk-based Annual Audit Plan approved by the Internal Audit Oversight Committee for FY24. Internal Audits are designed to provide assurance and add value by improving operations.

The audit's objectives were to: 1. Verify the existence of recorded inventory at the Wastewater Treatment Facility; and 2. To evaluate the effectiveness and efficiency of existing systems and controls.

The results of the audit, findings, and recommendations for improvement are detailed in this report. We would like to thank members of management and staff for their teamwork and cooperation during the audit. Management was provided with an opportunity to respond to this report and their response is included.

Sincerely,

Johnnie Coleman, Senior Internal Auditor

CONCLUSIONS

The IAO's conclusion, based on the evidence obtained, is that the Department of Public Works – Utilities: Inventory is **generally effective[i],** where some weakness in the control environment needs to be addressed and where some business processes lack a high efficiency or effectiveness. This assessment is based on the strengths and weaknesses of the entities' business operations as they relate to the audit objectives.

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BACKGROUND & SCOPE

Background

The Department of Public Works (DPW) provides crucial services that improve the quality of life for the residents of Charles County and ensures County infrastructure and assets are safe and reliable. DPW is comprised of two main divisions, Facilities and Utilities, each of which is further divided into 4 subdivisions.

Within the DPW's Utilities division, an inventory warehouse is located at the Mattawoman Wastewater Treatment Facility. The Utilities warehouse primarily serves Utilities' subdivisions and is maintained separately from Fleet & Inventory Management due to geographic convenience and operational efficiency. The general objective of the Utilities warehouse is to order, stock, secure, and track and inventory of commonly needed supplies to ensure operational efficiency and seamless workflow.

The Utilities warehouse inventory includes items such as common workshop and maintenance supplies, safety gear, equipment parts, water meters, pipe, and hydrants. Inventory at the warehouse is tracked across 4 separate inventories for accounting purposes: Main Storeroom, Meters, Equipment Maintenance, and Line Maintenance. The warehouse holds approximately 1660 unique items with a total quantity of approximately 12,500 items. The total value of inventory at the beginning of FY 2024 (July 2023) was $527,270.51 and approximately $95,000 in inventory was disbursed to staff during FY 2024 Q1.

The Utilities warehouse is typically operated by one Inventory Specialist and is supported and overseen by the Financial Support Manager. Over the last 2 years, the warehouse has seen a high turnover with 3 inventory specialists.

Potential risks as it relates to Utilities' inventory include operational risks such as processing errors, lack of efficiency, as well as fraud risks such as theft. Based on the Internal Audit Office's (IAO) November 2022 risk assessment, the Internal Audit Oversight Committee agreed, as part of the FY 2023/24 Audit Plan, that it was prudent to conduct an internal audit of Utilities' inventory.

Scope & Objectives

The scope of the audit concentrated on assessing inventory systems and processes within DPW's Division of Utilities that encompassed a review of current and retrospective inventory analysis spanning FY 2024. The audit objectives were to:

- Verify the existence of recorded inventory at the Mattawoman Wastewater Treatment Facility.
- Evaluate the effectiveness and efficiency of existing systems and controls.

The IAO's audit approach involved testing audit objectives through evidence-analysis techniques, including reviewing department SOPs, interviewing personnel, conducting site visits, inventory checks, document tracing, and process mapping. ***Detailed audit methods and procedures can be found in the methodology section of this report.***

DISCUSSION, OBSERVATIONS, FINDINGS & RECOMMENDATIONS

1. Standard Operating Procedures

Discussion

Having up-to-date standard operating procedures (SOPs) is crucial to ensure consistency and accuracy in operations. They provide clear guidelines and protocols for carrying out tasks. SOPs also play a key role in onboarding new employees, providing them with comprehensive guidance and reducing the learning curve and minimizing disruptions. The auditor compared Utilities' inventory SOPs to current practices.

Finding 1: The SOP for the "Storeroom Procedures" is outdated and details for inventory tracking and reporting processes are absent.

Recommendation 1: It is recommended that Utilities revise and update the inventory SOP to reflect current or desired inventory practices. Annual reviews and updates of SOPs should be implemented to ensure they reflect actual processes and procedures. Incorporating robust inventory tracking systems and reporting protocols will not only streamline operational processes, but also help guarantee precise inventory management.

2. Disposal of Obsolete Inventory

Discussion

Obsolete inventory poses a challenge to operational efficiency and resource management. Managing obsolete inventory requires ongoing efforts in tracking, storage, and reporting, diverting staff time and attention from more productive tasks. Additionally, the presence of obsolete items can lead to inaccuracies in inventory records and forecasting. Addressing obsolete inventory is important for enhancing overall organizational performance.

Finding 2: The auditor found that a significant volume of inventory is unused. For example, Equipment Maintenance Inventory items are rarely to never used. Utilities last conducted a purge in October 2020, which disposed of only 16 air filters, indicating a lack of comprehensive assessment and disposal procedures for obsolete inventory.

The auditor notes that reasons provided for retaining obsolete items include uncertainty about antiquated inventory relevance and technicians not knowing items exists.

Recommendation 2: To mitigate the impact of obsolete inventory on warehouse operations, it is recommended to establish a structured review process involving senior staff with expertise in historical and current inventory needs. This team can systematically identify and flag obsolete items for disposal or repurposing, thereby optimizing warehouse space and resources. Additionally, inventory staff should provide a listing of stocked items to supervisors/staff to increase inventory awareness and enhance control over outside purchases.

3. Effectiveness & Efficiency of Inventory Tracking Systems

Discussion

The Utilities warehouse tracks incoming invoices and outgoing disbursements for 4 separate inventories (Storeroom, Meters, Line Maintenance, and Equipment Maintenance). Reporting requirements include invoice coding, expense coding of disbursements, as well as inventory on hand and total values for each inventory.

To assess the efficiency and efficacy of the inventory tracking systems, the IAO undertook a multifaceted approach. For one, this involved conducting a physical inventory count to cross-reference against the tracking systems for accuracy. Secondly, the IAO mapped Utilities' current tracking system processes to pinpoint potential redundancies or inefficiencies. Thirdly, the assessment extended to scrutinizing Utilities' Excel-based tracking sheets for thoroughness and reliability.

As a result, this section (section 3) of the report contains several findings and observations that all pointed to the same recommendation.

I. Physical Inventory Count:

Utilities Inventory utilizes two systems for tracking inventory: the INFOR database and Excel. It is important to note that the implementation of INFOR is not fully utilized and serves no reporting purpose. To assess the effectiveness of inventory counts, a sample was selected to compare Utilities' Excel based inventory counts with counts from the INFOR database. The audit also conducted a comparison between the actual physical counts with the records from both the Excel and INFOR tracking systems.

Finding 3a: Out of the 84 sampled items, discrepancies between Excel and INFOR counts were discovered 29% of the time. Among the 41 items subjected to physical counting, over 50% exhibited variances between actual counts and counts recorded in INFOR and/or Excel. The Infor report used in this comparison was generated by the IAO and IAO also notes that the Utilities department staff does not currently have access to the reporting section of Infor.

Variances may be due to input timing variances. A physical inventory count was completed by department staff in June of 2023. The reports provided to IA showed 85 inventory items with variance between records and physical count. 49 items had a variance of 1 unit.

II. Process Mapping:

The image below was created by the IOA as part of the audit to illustrate Utilities' current inventory tracking process. Each arrow represents a manual touchpoint for each item processed through Utilities inventory.

Current Utilities Inventory Tracking Process
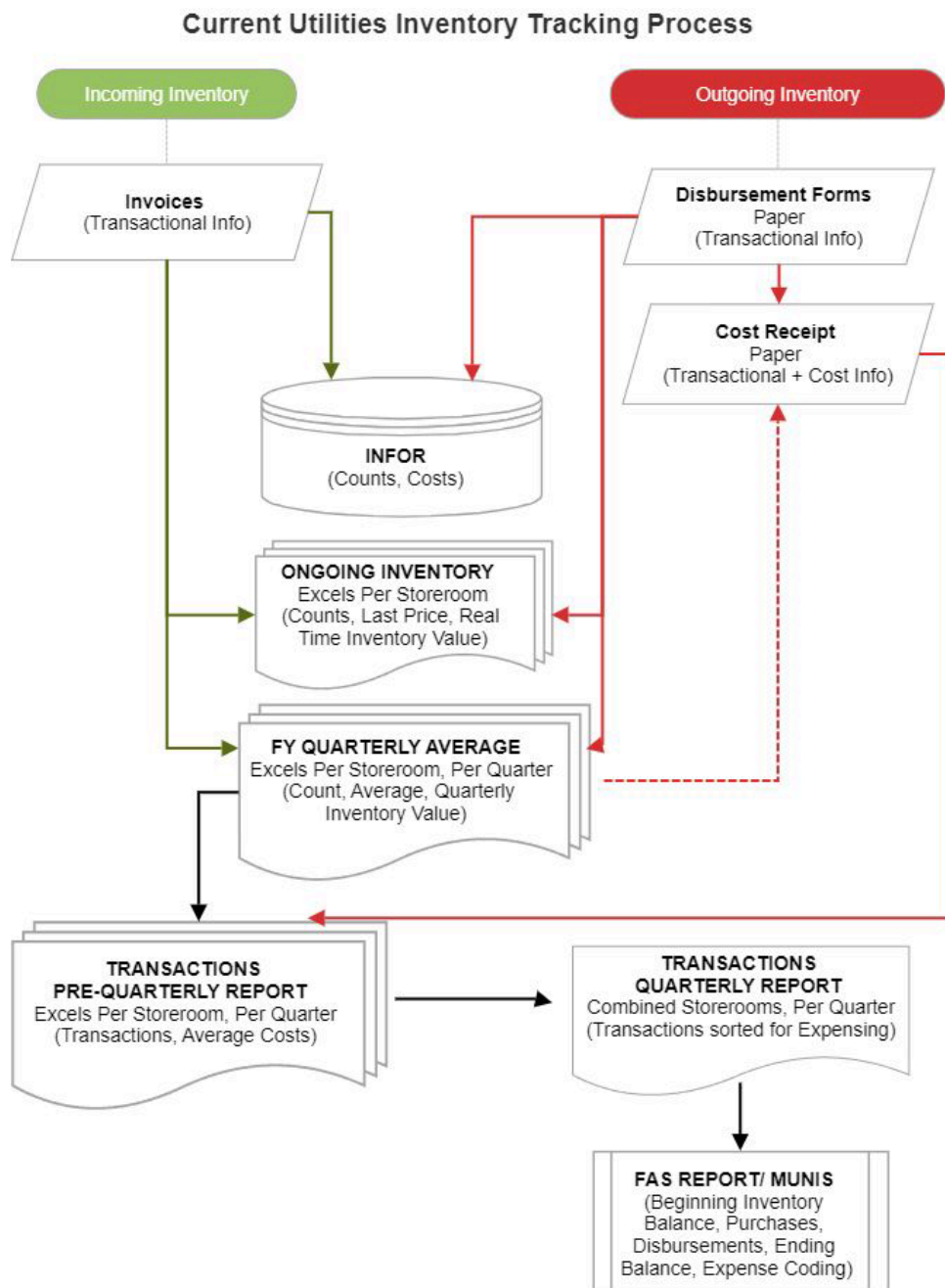
Observation 3a: The INFOR database is presently in use without any defined outputs. It currently serves little purpose beyond providing a quantity reference, which is secondary to the Excel-based tracking sheets.

Observation 3b: The current inventory tracking system has many components requiring significant manual data entry and calculations. Each time inventory is received, one database and two different Excel Documents are updated. Each time an individual item is disbursed, one database and four different Excel documents are updated.

With four separate inventories to account for, there are a total of 13 Excel documents used in the inventory tracking process. The "Ongoing Inventory" Excel document for each of the four inventories tracks real time inventory count and most recent unit price. The "FY Quarterly Average" Excel document for each of the four inventories calculates ongoing average costs, quantities, and total inventory values. These documents start with the Start of Year totals and update for end-of-quarter reports. Additionally, the "Transactions Pre-Quarterly Report" for each storeroom lists disbursement transactions per quarter with count, requestor, user/location/vehicle. These reports are synthesized into one excel sheet for expense reporting.

INFOR may have the potential to automatically generate disbursement transaction reports and other necessary reporting requirements that would add efficiency and eliminate the need for significant manual tracking across multiple Excel files. Staff at Utilities do not currently have access to the reporting side of INFOR and were not aware of reports shared by Internal Audit. Staff is reviewing the Infor reports to determine if they can be useful in this process.

Observation 3c: The "Cost Receipt" appears to be an unnecessary and redundant administrative task. The intent of this step is to handwrite the cost of disbursed items and provide a unique transaction number. The "Disbursement Form" can simply be modified to add item cost. The disbursement form also already contains a unique transaction number.

III. Evaluation of FY Quarterly Averaging Sheet:

As noted above, Utilities updates a "FY Quarterly Averaging" Excel document for each storeroom every quarter. This contains hundreds of manually entered formulas, posing a high risk of human error due to extensive manual manipulation. The audit scrutinized a sample of this report to ascertain the accuracy of manually crafted formulas for inventory counts and cost averages. The audit also examined if invoices and disbursement forms could be traced to formulas for counts and cost averages. This review identified three instances of errors, which are noted in section Findings 3b below.

Finding 3b: An error was discovered where an invoice containing 20 items was erroneously included in the average calculation of a wrong item. Also, two instances were identified where there were no disbursement forms for disbursed items. Additionally, during the audit, Utilities staff noted that they were delayed by 3.5 to 4 months in submitting the FY Q2 Quarterly

Averaging report due to inventory being off a few hundred dollars. These instances illustrate the risks associated with a system heavily reliant on manual inputs.

Recommendation (for Findings 3a-b & Observations 3a-c): Acquire training on the INFOR system and explore its potential to fulfill the requirements for tracking and reporting inventory in Utilities. This may require assistance from the developer. If INFOR falls short in meeting Utilities' tracking and reporting needs, Utilities should devise strategies to streamline processes and eliminate redundancies. ***See Appendix A & B for alternative process maps.***

4. Disbursement Forms

Discussion

The "Disbursement Form" serves as a vital internal control. It tracks data about employee inventory disbursements and provides for a two-step signatory approval process.

Finding 4a: A review of Disbursement Forms revealed that supervisors frequently request items without obtaining secondary approval. This practice is not supported by written policy. With numerous staff members at the supervisory level across Utilities, this lack of control increases the risk of misuse.

Recommendation 4a: Require secondary approval for supervisors to increase control over inventory use. If management determines that supervisors possess sufficient authority to approve their own inventory disbursements without secondary approval, clarify this policy in the Utilities' inventory SOP.

Finding 4b: In review of a sample of Disbursement Forms there were several instances where staff requested items for multiple user/locations. For instance:

- A supervisor acquired 7 quarts of motor oil for user/locations: U241, U264, U265, and U220 (each representing a staff vehicle).
- A supervisor ordered 10 boxes of disposable gloves for user/locations: U198, U231, U281, U290, and U293 (each representing a staff vehicle).
- In a different example, a Disbursement Form had two requestors (with different supervisors) that was only signed by one supervisor.

These examples blur the lines of accountability, making it challenging to determine the actual recipient or use of the inventory increasing the risk of misuse or misappropriation.

Recommendation 4B: Implement a clear chain of custody with each distribution. Each item received should have a single end user or recipient. Staff should not be allowed to obtain supplies on behalf of anyone else. These rules should be documented and clarified for staff.

MANAGEMENT RESPONSE

Management is provided with the opportunity to respond to recommendations and their responses are summarized below. It is important to note that auditors don't implement recommendations as their role is investigative and advisory, lacking the managerial authority to enforce change. Management, on the other hand, holds the responsibility for implementation due to their authority over resources, decision-making, and strategic direction toward goals and objectives, making them accountable for addressing identified issues. As such, management may also have a valid rationale for existing processes or alternatives to audit recommendations.

Management Reponses Provided by: Deb Tarbox

Recommendation 1:

SOP's were last updated in 2018 and need to be revised to include current processes which include use of Hexagon (INFOR), for tracking purposes only. It is the desire to incorporate a more streamline asset tracking system that would provide for less human error opportunities.

Recommendation 2:

An equipment maintenance superintendent (new position) will be starting in FY25. This person will be more qualified to review the inventory currently on hand and determine what is needed to be kept in stock. The current staff does not have the needed expertise to determine which inventory is obsolete. Not certain that the purge (16 air filters) identified in the audit report is accurate.

Recommendation 3a-b & Observations 3a-c:

Management and Information Technology (IT) is aware that Hexagon (Infor) possibly has some additional functions that might be helpful for reporting. Updates to the current software are scheduled for later this year. Department staff currently does not have access to the reporting functions of Hexagon (Infor). A report provided by the Internal Audit staff during this review is currently being reviewed (internally and by an IT systems analyst) to determine if the data provided in this report could be utilized to improve our processes. Management and the Senior Internal Auditor met recently to discuss if additional parameters, like calculation of average cost and inventory totals could be generated from Hexagon (Infor) reports. Although, we currently

don't know if system enhancements can be completed on Hexagon (Infor) we CONCUR that additional electronic functionality could improve quarterly reporting and annual processes. We will also research if additional Hexagon (Infor) training support might be available.

Recommendation 4a - 4b:

In addition to the research above related to the additional training support we will also inquire if (Hexagon) Infor might include an electronic workflow system with an electronic approval process thus proper approval can be based on user permissions.

METHODOLOGY

Audit objectives were selected by the Internal Audit Office to evaluate Utilities Inventory general business functions as it relates to inventory management. The audit approach included procedures to test audit objectives. IAO audit procedures included evidence-analysis techniques based on reviewing department SOP's, interviewing personnel, conducting site visits, inventory checks, document tracing, and process mapping. The table below connects the auditing procedures used to evaluate the audit objectives.

Business Function: Inventory Management	
Audit Objectives	**Audit Procedure(s) / Testing**
Verify the existence of recorded inventory at the Mattawoman Wastewater Treatment Facility	• Conducted a sample physical inventory count to compare stated inventory count to actual inventory count • Traced invoices and disbursements to inventory tracking systems • Conducted onsite visits to assess the organization and security at the warehouse

Evaluate the effectiveness and efficiency of existing systems and controls	• Reviewed standard operating procedures (SOPs) to ensure current relevance
	• Analyzed procedures and controls of warehouse inventory lifecycle
	• Evaluated the efficiency and effectiveness of current inventory tracking systems
	    o Tested cost averaging on tracking system
	    o Verified Munis purchase records to inventory tracking system
	    o Conducted inventory tracking process mapping analysis
	    o Reviewed results from last annual physical inventory count

Internal Controls

Internal controls can be defined as any action taken by management, the board, and other parties to manage risk and increase the likelihood that established objectives and goals will be achieved. Implementation of recommendations noted in this report will strengthen controls. In all elements of the audit procedures, the auditor evaluates the design and effectiveness of controls. If deficiencies in design or effectiveness are noted, it is reported as a finding in this report.

Conformance - Professional Practice of Internal Auditing

The audit was conducted in accordance with the International Standards for the Professional Practice of Internal Auditing. These standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. Additionally, this audit was conducted with the independence to carry out the internal audit responsibilities in an un biassed manner. We approached the audit process with an unbiased mental attitude, focusing solely on the facts and evidence at hand, thereby upholding the principles of objectivity. Internal audits are designed to provide assurance, add value, and improve operations.

| Report Distribution:	Audit Team:
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[i] Definitions:

Effective: The design and effectiveness of the internal control environment address key risks. The business unit complies with external laws and regulations, and internal policies, procedures, and guidelines. Business processes are managed effectively resulting in reliable achievement of expected outcomes.

Generally Effective: The design and effectiveness of the internal control environment generally address key risks; however, findings indicate that some minor areas of weakness in the control environment need to be addressed. Isolated instances of non-compliance with external laws and regulations, and internal policies, procedures and guidelines may exist. Business processes may lack effectiveness or not be managed effectively in all areas resulting in reduced achievement of expected outcomes.

Ineffective: The design and effectiveness of the internal control environment does not address key risks or does not exist. Non-compliance or historical patterns of non-compliance with key regulatory requirements and internal policies, procedures and guidelines exist which expose the audited entity to financial, reputational, and operational risks. Business processes are not managed effectively and expected outcomes are not achieved.
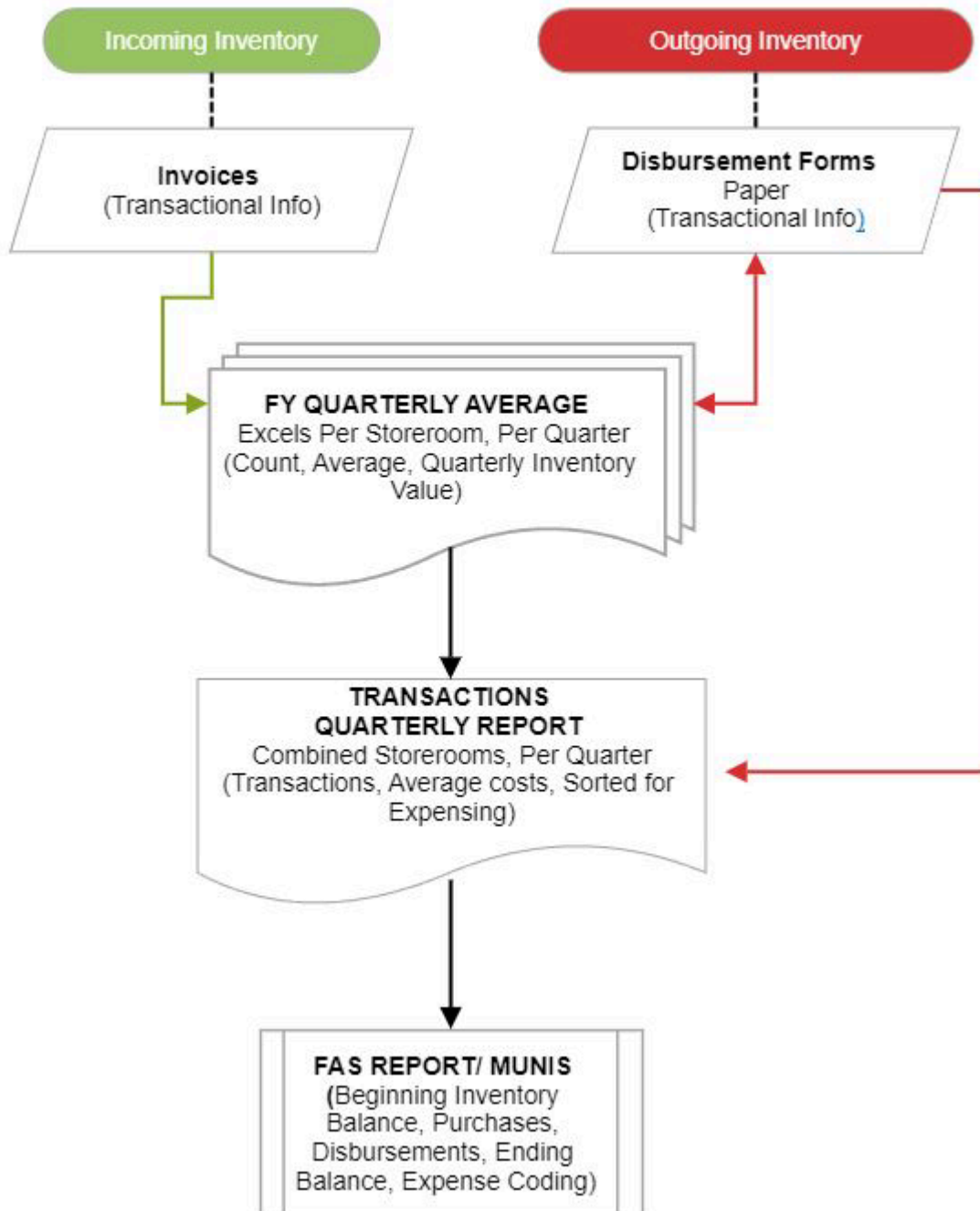
APPENDIX A*

Alternative Inventory Tracking Process - With INFOR
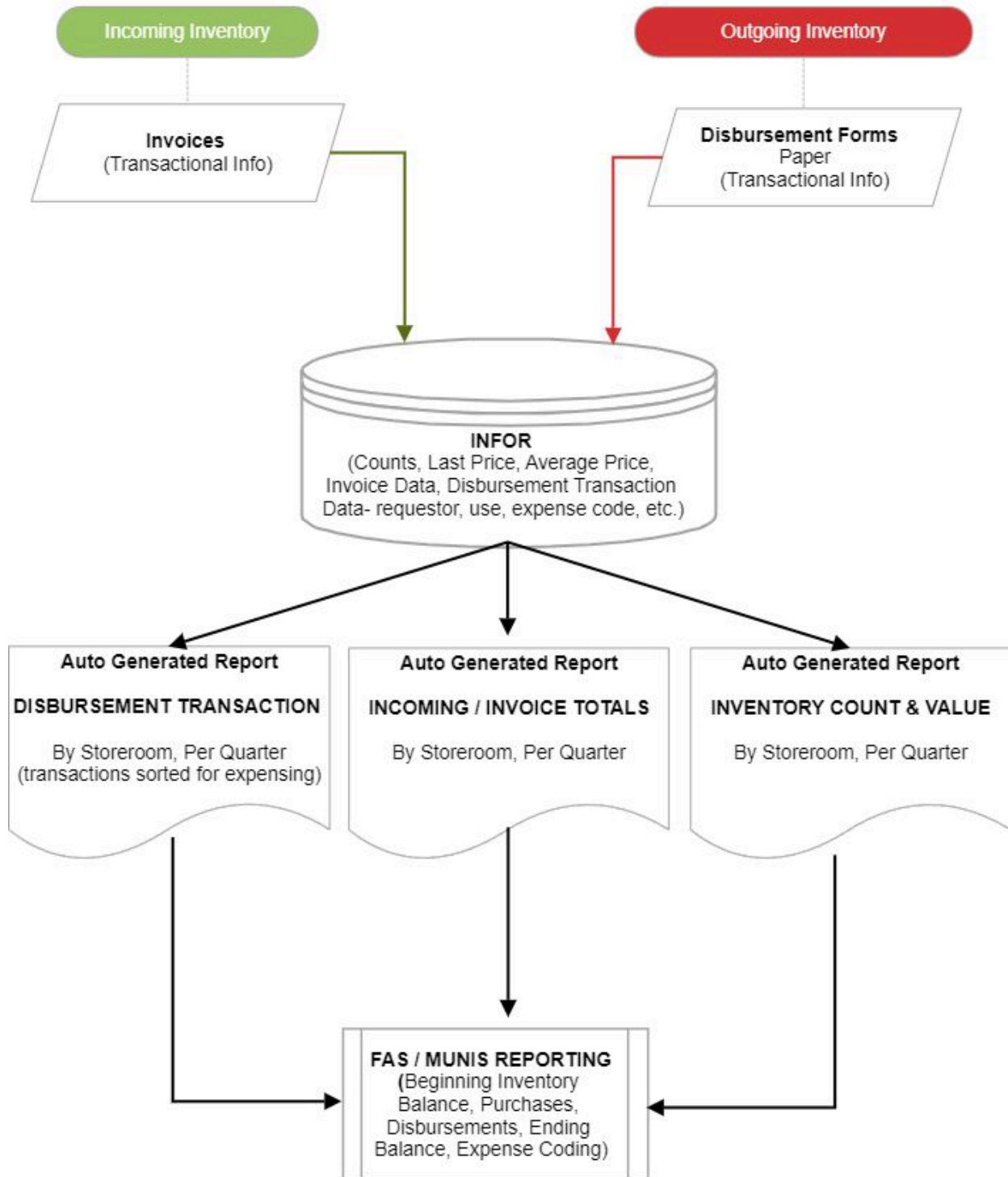
*Note: This is only an observation. This process requires configuring INFOR inputs and outputs. It is not certain that INFOR can provide the report outputs shown on the diagram. INFOR also does not interface with the Munis System and will still require manual reporting to into Munis.

APPENDIX B*

Alternative Utilities Inventory Tracking Process - Without INFOR

Incoming Inventory

Outgoing Inventory

Invoices
(Transactional Info)

Disbursement Forms
Paper
(Transactional Info)

FY QUARTERLY AVERAGE
Excels Per Storeroom, Per Quarter
(Count, Average, Quarterly Inventory
Value)

**TRANSACTIONS
QUARTERLY REPORT**
Combined Storerooms, Per Quarter
(Transactions, Average costs, Sorted for
Expensing)

FAS REPORT/ MUNIS
(Beginning Inventory
Balance, Purchases,
Disbursements, Ending
Balance, Expense Coding)

*Note: This is only an observation. This process removes INFOR data entry, the Ongoing Inventory Excel Sheets (redundant to FY Quarterly Average Sheets), the Cost Receipt (redundant to the Disbursement Forms) and the Pre-Quarterly reports (redundant to the Quarterly Reports). Some revisions to documents may be needed to accommodate the process outlined.