Audit Report

Department of Public Works – Traffic Signal Operations/Maintenance and Traffic Sign Installation/Maintenance Divisions and Equipment Maintenance Division

Supply Inventory

Office of the County Auditor
Baltimore County, Maryland
June 2015

BALTIMORE COUNTY, MARYLAND
OFFICE OF THE COUNTY AUDITOR

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June 3, 2015

Honorable Members of the County Council
Honorable Kevin Kamenetz, County Executive
Baltimore County, Maryland

We have audited the procedures and controls over supply inventory managed by the Department of Public Works, Bureau of Traffic Engineering and Transportation Planning - Traffic Signal Operations/Maintenance and Traffic Sign Installation/Maintenance Divisions (collectively, the "Traffic Division") and the Bureau of Highways - Equipment Maintenance Division ("EM Division") for the period July 1, 2013 through June 30, 2014. As of June 30, 2014, supply inventory maintained by the Traffic Division and the EM Division totaled approximately $1.1 million and $1.0 million, respectively.

Our audit disclosed that the Divisions lacked adequate segregation of duties over inventory operations, physical access controls to the supply inventory, and policies and procedures. Our audit also disclosed that the Divisions' computerized inventory management systems used to record, track, and maintain their supply inventory did not comply with certain County-wide information technology policies. Our audit further disclosed that the Traffic Division lacked certain controls over inventory removal and that the EM Division's inventory records were not accurate, complete, or reliable.

A response to our findings is included as Appendix A to this report.

We wish to express our appreciation to the Department for the cooperation and assistance extended to us during our audit.

Our audit reports and responses thereto are available to the public and may be obtained online at "www.baltimorecountymd.gov/agencies/auditor" or by contacting the Office of the County Auditor, 400 Washington Avenue, Towson, Maryland 21204.

Respectfully submitted,

Lauren M. Smelkinson

Lauren M. Smelkinson, CPA
County Auditor

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Background

Traffic Signal Operations/Maintenance and Traffic Sign Installation/Maintenance Divisions

The Department of Public Works, Bureau of Traffic Engineering and Transportation Planning is responsible for maintaining the traffic control infrastructure on the County's highway system. Two divisions within the Bureau include Traffic Signal Operations/Maintenance (Signal Division) and Traffic Sign Installation/Maintenance (Sign Division). The Signal Division installs and maintains traffic signals, flashers, and signal systems for the County's highway system (and portions of the State's highway system within the County). The Sign Division installs and maintains County traffic signs (Sign Crew) and paints the traffic control markings on the County's roadways (Roadway Crew).

The two divisions (collectively, the "Traffic Division") operate from one location, the Glen Arm facility, where their supply inventory (e.g., traffic lights, signs, cameras, and signals, road paint) is maintained in eight storage areas. The Glen Arm facility's Storekeeper II is responsible for ordering, receiving, and safeguarding the inventory, and for performing an annual inventory count. The Traffic Division's employees assigned to tasks remove inventory from the storage areas. The Traffic Division uses a computerized inventory management system (Data Management) to record, track, and maintain the supply inventory. The Traffic Division's inventory value as of June 30, 2014 totaled approximately $1.1 million (approximately 600 items with quantities of approximately 85,000).

Equipment Maintenance Division

The Department of Public Works, Bureau of Highways is responsible for ensuring the proper operation and maintenance of the County's roadway system. The Bureau's Equipment Maintenance Division ("EM Division") provides preventative maintenance and repair services to the County's heavy equipment (e.g., fire, highway, and utility trucks, ambulances, bulldozers) and small engine equipment (e.g., lawn tractors, generators). The EM Division is responsible for maintaining supply inventory (e.g., tires, rims, batteries, belts, air filters, wiper blades) to service the equipment.

The EM Division operates six facilities located throughout the County. All six facilities are staffed with mechanics who perform maintenance and repair services on County equipment. The Glen Arm facility functions as the EM Division's principal inventory storeroom and supplies inventory to the five satellite facilities. Six Parts Department employees (Parts Manager, Parts Specialist II (2), and Parts Specialist I (3)) at the Glen Arm facility are responsible for ordering, receiving, supplying, and safeguarding the inventory, and for performing an annual inventory count. The EM Division uses a computerized inventory management system (Asset Management) to record, track, and maintain the supply inventory. The EM Division's Glen Arm facility's inventory value as of June 30, 2014 totaled approximately $1.0 million (approximately 4,200 inventory items with quantities of approximately 27,000).

TRAFFIC DIVISION

Findings and Recommendations

1. Adequate segregation of duties was not established over inventory operations.

Effective internal control requires the segregation of incompatible duties to ensure that assets are protected against the risk of loss, misuse, or theft. An "incompatible" duty is one that would put a single individual in the position of being able to both commit a fraudulent act and then conceal it. Our audit disclosed that one employee was performing the following incompatible duties:

- receiving inventory;
- modifying the computerized inventory records (Data Management);
- maintaining custody of and accessing inventory; and
- performing the annual inventory count.

These conditions preclude effective internal control because inventory could be stolen without timely detection.

To improve internal control, we recommend that the Traffic Division segregate incompatible duties. Specifically, an employee who has physical access to inventory should not perform the annual inventory count and should not have the ability to modify the computerized inventory records.

2. The Traffic Division lacked adequate controls over the physical access to inventory.

Effective internal control requires assets to be protected against the risk of loss, misuse, or theft. The Traffic Division's inventory is stored in the following eight areas within the Glen Arm facility: the traffic sign, traffic camera, sign fabrication, parts, and bay storage rooms; the traffic camera bunker; the wire cage; and the bulk storage area. Access to each of these areas is restricted via a locked door, except for the bay storage room (high usage/low-dollar inventory (e.g., sign posts)) and the bulk storage area (mostly heavy inventory (e.g., a 55-gallon barrel of road paint)).

However, our audit disclosed that the Traffic Division did not maintain a list of issued keys to each inventory storage area, showing which employee(s) can access each area. Through interviews, we identified at least eight employees who had been issued keys to access the inventory as required per their job duties. Our audit also disclosed that the Traffic Division had not established a policy to prohibit the lending of keys to unauthorized employees to access inventory storage areas.

These conditions increase the risk that unauthorized access could lead to the misappropriation of inventory.

We recommend that the Traffic Division maintain a list of issued keys that access each inventory storage area and establish a policy that prohibits the lending of keys to employees not authorized to access inventory storage areas.

3. The Traffic Division lacked certain controls over inventory removal.

Effective internal control requires assets to be protected against the risk of loss, misuse, or theft. In this regard, the Signal Division and Sign Division (Sign Crew only) use its computerized inventory management system (Data Management) to generate work orders for each task. Work orders are sequentially numbered by Data Management and include the information necessary for employees to complete assigned tasks (e.g., work requested, inventory, location, crew assigned, etc.). Employees assigned to a task remove the required inventory (could be located in one or more storage areas) from stock and document the removal using inventory sign-out sheets.

The Signal Division stores its inventory in the traffic camera and parts rooms (shared with Sign Division); traffic camera bunker; wire cage; and bulk storage area. Employees are required to document on inventory sign-out sheets the date, quantity, item number, item description, bin location, and their initials. After the assigned tasks have been completed, a supervisor reviews, approves, and closes the work orders in Data Management. On a daily basis, the Storekeeper II uses the sign-out sheets to record the removed inventory in Data Management.

The Sign Division stores its inventory in the parts (shared with Signal Division), sign fabrication, traffic sign, and bay storage rooms. As explained previously, employees that remove inventory from the parts room are required to document on inventory sign-out sheets the date, quantity, item number, item description, bin location, and their initials. Inventory removed from the sign fabrication room is recorded on the parts room sign-out sheet. Employees that remove inventory from the traffic sign and bay storage rooms are required to use pre-printed inventory sign-out sheets. The pre-printed sheets list the inventory item number, description, and bin location, and employees are required to document the quantity removed from stock. After the assigned tasks have been completed, a supervisor reviews and approves the work orders and the pre-printed sign-out sheets (for inventory removed from the traffic sign and/or bay storage rooms), and provides these to the Storekeeper II to record the removed inventory (and close the work order) in Data Management. On a daily basis, the Storekeeper II uses the sign-out sheet from the parts room to record the removed inventory in Data Management.

However, our audit disclosed that certain controls over inventory removal were not adequate. For example, we noted the following:

- Signal Division supervisors were not required to review and approve the inventory sign-out sheets in conjunction with their review, approval, and closure of the related work orders;

- Sign Division supervisors were not required to evidence their review and approval of the work orders and pre-printed inventory sign-out sheets for the traffic sign and bay storage rooms; and
- Sign Division supervisors were not required to review and approve the inventory sign-out sheets for the parts room (includes the sign fabrication room) in conjunction with their review and approval of the related work orders.

Additionally, employees were not required to identify the related work order number when documenting inventory removal on the sign-out sheets.

Consequently, the Signal Division and Sign Division lacked assurance that inventory was properly removed and used for assigned work order tasks.

We recommend that a column be added to the inventory sign-out sheets for employees to document the related work order number. We also recommend that supervisors evidence their review and approval of inventory sign-out sheets to verify that inventory was properly removed and used for assigned work order tasks.

4. The Traffic Division's computerized inventory management system (Data Management) did not comply with certain County-wide information technology policies.

The Office of Information Technology (OIT) supports the technology needs of County agencies. In this regard, OIT has established County-wide information technology policies and standards, including the use of database applications and the creation and protection of passwords. OIT's database applications policy cautions agencies from using desktop computer databases such as Microsoft Access for mission-critical applications and states that OIT will work with agencies to evaluate and phase out such database applications. OIT's password policy requires strong (i.e., complex) passwords (e.g., must contain a minimum number of characters, must include a combination of numbers and letters (upper and lower case), and must not use the user ID) and for passwords to be changed at least quarterly.

However, our audit disclosed that the Traffic Division's computerized inventory management system (Data Management) is a Microsoft Access database application that is critical to its inventory operations because it is used to record, track, and maintain supply inventory. Our audit also disclosed that the Traffic Division does not require its employees' passwords to Data Management to be complex or changed quarterly.

A lack of adherence to established policies and procedures could result in the loss of or unauthorized access to critical inventory records.

We recommend that the Traffic Division comply with County-wide information technology policies and standards to prevent the loss of or unauthorized access to mission-critical inventory information. In this regard, we recommend that the Traffic Division work with OIT to evaluate Data Management to help ensure that proper safeguards exist, to determine

whether the system should be phased out, and to require employees to establish complex passwords that must be changed quarterly.

5. The Traffic Division's inventory policies and procedures were not documented and certain policies and procedures were not adequate.

The County's Purchasing Manual prescribes County-wide inventory policies and procedures, which govern ordering, receiving, and tracking inventory, and performing an annual inventory count to ensure the accuracy of the inventory records (includes investigating, reconciling, and properly recording in an inventory system any discrepancies identified between the count and the records). To implement these County-wide policies and procedures, the Traffic Division has established policies and procedures to manage its inventory operations. However, our audit disclosed that the Division's policies and procedures were not documented and certain policies and procedures were not adequate to ensure that inventory was properly maintained. For example, our audit disclosed the following regarding the approximate 600 inventory items (with quantities of approximately 85,000):

- 209 items (quantities of 24,804 valued at $136,854) had not been ordered/used in the 3 years the Traffic Division had maintained records in its computerized inventory management system (Data Management); and
- 388 items had quantities on-hand exceeding the maximum quantities (pre-established in Data Management) by 71,237 (quantities ranging from 1 to 17,586 over), resulting in an additional $710,327 of inventory on-hand.

Our audit also disclosed that the Traffic Division did not have a documented policy or procedure to evidence its investigation and reconciliation of all discrepancies identified between its inventory count and inventory records. Specifically, for its FY 2014 inventory count, the Traffic Division identified 104 inventory items with quantity discrepancies between the inventory count and inventory records: 43 inventory items had recorded quantities (5,789) greater than the quantities on-hand (5,495) by 294 (valued at $2,708), and 61 inventory items had recorded quantities (5,006) less than the quantities on-hand (5,345) by 339 (valued at $6,814). However, the Traffic Division was unable to provide evidence that the discrepancies had been investigated and reconciled.

As a result, there was a lack of assurance that inventory was properly maintained to prevent waste and that inventory discrepancies were adequately investigated and reconciled to ensure the accuracy of the records.

We recommend that the Traffic Division document its inventory policies and procedures. We also recommend that such policies and procedures ensure that inventory is properly maintained and that all discrepancies identified between the inventory count and inventory records have evidence to support their investigation and reconciliation.

EQUIPMENT MAINTENANCE (EM) DIVISION

Findings and Recommendations

1. Adequate segregation of duties was not established over inventory operations.

Effective internal control requires the segregation of incompatible duties to ensure that assets are protected against the risk of loss, misuse, or theft. An "incompatible" duty is one that would put a single individual in the position of being able to both commit a fraudulent act and then conceal it. Our audit disclosed that EM Division personnel were performing incompatible duties. For example, two Parts Department employees were performing the following incompatible duties:

- ordering inventory;
- receiving inventory;
- modifying the computerized inventory records (Asset Management);
- maintaining custody of and accessing inventory;
- transferring inventory to the satellite facilities;
- approving invoices for payment of inventory purchases; and
- performing the annual inventory count.

Our audit also disclosed that an EM Division employee from outside the Parts Department was performing the following incompatible duties:

- repairing and servicing small engines;
- accessing inventory in the small engine equipment cage; and
- modifying the computerized inventory records (Asset Management).

These conditions preclude effective internal control because inventory could be stolen without timely detection.

To improve internal control, we recommend that the EM Division utilize existing Parts Department personnel to segregate incompatible duties. Specifically, an employee who has physical access to inventory should not perform the annual count and should not have the ability to modify the computerized inventory records; an employee who orders and receives inventory should not be responsible for approving invoices for payment; and an employee who is responsible for repairing and servicing small engines should not have access to the inventory and should not have the ability to modify the computerized inventory records.

2. The EM Division lacked adequate controls over the physical access to inventory.

Effective internal control requires assets to be protected against the risk of loss, misuse, or theft. The six Parts Department employees are responsible for maintaining the supply inventory that is

stored in the following seven areas within the Glen Arm facility: the parts, tire, hose, and battery rooms; the bulk and small engine equipment cages; and the bulk storage area. Access to each of these areas is restricted via a locked door or a padlocked fence, except for the bulk storage area, where mostly heavy inventory (e.g., fire truck windshield) is maintained.

However, our audit disclosed that the EM Division did not maintain a list of issued keys to each inventory area, showing which employee(s) can access each area. Through interviews, we identified at least 13 employees who had been issued keys to access the inventory. Our audit disclosed that in addition to the six Parts Department employees (and their supervisor) who require keys, six other employees (including the EM Division employee from outside the Parts Department noted in finding #1) who are not primarily responsible for maintaining inventory (and work primarily the same hours as the Parts Department employees), were issued keys.

These conditions increase the risk that unauthorized or excessive levels of access may lead to the misappropriation of inventory.

We recommend that the EM Division maintain a list of issued keys that access each inventory area and restrict inventory access to only those employees who are primarily responsible for maintaining inventory.

3. The EM Division's inventory records were not accurate, complete, or reliable.

Effective internal control requires accurate, complete, and reliable records to help detect possible fraud, waste, or abuse of assets. In this regard, the County's Purchasing Manual requires agencies to perform an annual inventory count (includes investigating, reconciling, and properly recording in an inventory system any discrepancies identified between the count and the records) to ensure the accuracy of the inventory records.

The EM Division's Parts Department employees perform an annual count of the Glen Arm facility's inventory using inventory count sheets generated from its computerized inventory management system (Asset Management), which list each inventory item's part number, quantity on-hand, and bin location within one of the facility's seven inventory storage areas. Parts Department employees document their count onto the sheets, the quantities counted are entered into Asset Management, and a report is generated that identifies discrepancies between the inventory records and the inventory count, which the EM Division is to investigate and reconcile.

However, our audit disclosed that the EM Division could not evidence its investigation of all discrepancies identified during its annual inventory count. Specifically, our review of the EM Division's annual inventory count for FY 2014 disclosed that the EM Division had identified 562 inventory items with quantity discrepancies between its inventory count and inventory records: 336 inventory items had recorded quantities (4,827) greater than the quantities on-hand (4,008) by 819 (valued at $29,594), and 226 inventory items had recorded quantities (2,761) less than the quantities on-hand (3,252) by 491 (valued at $13,951). However, the EM Division only

provided evidence that it had investigated and reconciled 6 of the discrepancies: 1 of the 336 discrepancies ($285) and 5 of the 226 discrepancies ($2,167).

Also, our audit disclosed that the EM Division's inventory records were not accurate, complete, or reliable. For example, after the EM Division had updated its inventory records from the annual count, our review of 45 inventory items (with recorded quantities of 1,537 valued at $299,581) disclosed differences between the quantities reflected in the inventory records and the quantities on-hand. Specifically, we found that for 4 inventory items, the recorded quantities (451) were greater than the quantities on-hand (422) by 29 (valued at $5,561), and for 2 inventory items, the recorded quantities (163) were less than the quantities on-hand (180) by 17 (valued at $1,140). Also, our review of 1 inventory item (15 batteries valued at $76 each) disclosed that the quantity reflected in the inventory records matched the quantity on-hand; however, our review of a related purchase invoice disclosed that the EM Division had received and paid for 1 more battery than reflected in the records.

Consequently, the EM Division lacked accurate, complete, and reliable inventory records, which increases the risk that inventory could be stolen without timely detection.

We recommend that the EM Division maintain accurate, complete, and reliable inventory records. To help ensure the accuracy of the records, we recommend that the EM Division evidence its investigation and reconciliation of all discrepancies identified between its inventory count and inventory records.

4. The EM Division's computerized inventory management system (Asset Management) did not comply with certain County-wide information technology policies.

The Office of Information Technology (OIT) supports the technology needs of County agencies. In this regard, OIT has established County-wide information technology policies and standards, including the use of database applications and the creation and protection of passwords. OIT's database applications policy cautions agencies from using desktop computer databases such as Microsoft Access for mission-critical applications and states that OIT will work with agencies to evaluate and phase out such database applications. OIT's password policy requires strong (i.e., complex) passwords (e.g., must contain a minimum number of characters, must include a combination of numbers and letters (upper and lower case), and must not use the user ID) and for passwords to be changed at least quarterly.

However, our audit disclosed that the EM Division's computerized inventory management system (Asset Management) is a Microsoft Access database application that is critical to its inventory operations because it is used to record, track, and maintain supply inventory. Our audit also disclosed that the EM Division does not require its employees' passwords to Asset Management to be complex or changed quarterly.

A lack of adherence to established policies and procedures could result in the loss of or unauthorized access to critical inventory records.

We recommend that the EM Division comply with County-wide information technology policies and standards to prevent the loss of or unauthorized access to mission-critical inventory information. In this regard, we recommend that the EM Division work with OIT to evaluate Asset Management to help ensure that proper safeguards exist, to determine whether the system should be phased out, and to require employees to establish complex passwords that must be changed quarterly.

5. Certain policies and procedures the EM Division had established for maintaining inventory were not adequate.

The County's Purchasing Manual prescribes County-wide inventory policies and procedures, which govern ordering, receiving, and tracking inventory, and performing an annual inventory count. To implement these County-wide policies and procedures, the EM Division has established written policies and procedures to manage its inventory operations. However, our audit disclosed that certain policies and procedures to ensure that inventory is properly maintained were not adequate. For example, our audit disclosed the following regarding the approximate 4,200 inventory items (with quantities of approximately 27,000):

- 747 items (quantities of 4,230 valued at $86,162) had not been ordered/used in 5 years and, of those, 383 items (quantities of 2,216 valued at $39,049) had not been ordered/used in 10 years; and
- 1,297 items had quantities on-hand exceeding the maximum quantities (pre-established in the computerized inventory management system (Asset Management)) by 6,507 (quantities ranging from 1 to 365 over), resulting in an additional $193,083 of inventory on-hand.

As a result, there was a lack of assurance that inventory was properly maintained to prevent waste.

We recommend that the EM Division establish policies and procedures to ensure that inventory is properly maintained.

Audit Scope, Objectives, and Methodology

We have audited the procedures and controls over supply inventory managed by the Department of Public Works, Bureau of Traffic Engineering and Transportation Planning - Traffic Signal Operations/Maintenance and Traffic Sign Installation/Maintenance Divisions (collectively, the "Traffic Division") and the Bureau of Highways - Equipment Maintenance Division for the period July 1, 2013 through June 30, 2014. The audit was conducted in accordance with generally accepted government auditing standards, except for the requirement of an external quality control review. 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 our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

In accordance with the Baltimore County Charter, Section 311, the objectives of our audit were to evaluate the adequacy of internal control practices and procedures over the Divisions' supply inventory and to determine compliance with applicable policies and procedures. In planning and conducting our audit, we focused on supply inventory controlled and managed by the Divisions at the Glen Arm facility based on assessments of significance and risk.

Our audit procedures included inquiries of appropriate personnel, inspections of documents and records, and observations of the Divisions' supply inventory operations. We also tested transactions and performed other auditing procedures that we considered necessary to achieve our objectives. Data provided in this report for background or informational purposes were deemed reasonable but were not independently verified.

Management is responsible for establishing and maintaining effective internal control over supply inventory and for compliance with applicable policies and procedures. Internal control is a process designed to provide reasonable assurance that objectives pertaining to the reliability of financial records, effectiveness and efficiency of operations including safeguarding of assets, and compliance with applicable laws, regulations, policies, and procedures are achieved.

Because of inherent limitations in internal control, errors or fraud may nevertheless occur and not be detected. Also, projections of any evaluation of internal control to future periods are subject to the risk that conditions may change or compliance with policies and procedures may deteriorate.

Our reports on fiscal compliance are designed to assist the Baltimore County Council in exercising its legislative oversight function and to provide constructive recommendations for improving County operations. As a result, our reports generally do not address activities we reviewed that may be functioning properly.

This report includes findings and recommendations relating to conditions that we consider to be significant deficiencies in the design or operation of internal control and administrative and operating practices and procedures that could adversely affect the County's ability to maintain reliable financial records, operate effectively and efficiently, and/or comply with applicable laws, regulations, policies, and procedures. Other less significant findings that did not warrant inclusion in this report were communicated to the Divisions.

APPENDIX A

Department of Public Works

Response

KEVIN KAMENETZ
County Executive

EDWARD C. ADAMS, JR, *Director*
Department of Public Works

Traffic Engineering & Transportation Planning and Equipment Maintenance Audit Responses

Reference: Supply Inventory Audit- Traffic Engineering/ Transportation Planning

FINDINGS AND RECOMMENDATIONS:

Finding #1. Adequate segregation of duties was not established over inventory operations.

The recommendation is that we segregate incompatible duties. An employee who has physical access to inventory should not perform the annual inventory count and should not have the ability to modify the inventory records.

Response to Finding #1:

Most agencies that have inventory have several employees involved in this part of their operation. In our case, this is a small bureau and we have only one position dedicated to handling our inventory. Most of the administration of our bureau takes place in our other office in Towson. We would love to have different people doing the individual functions listed in the comments, but to do so would mean taking other employees from their duties and responsibilities in order to handle inventory. This would have a negative impact on their production and, thus, the other responsibilities of this bureau.

While we have our Storekeeper perform the inventory count, it is reviewed and spot checked by employees of the Office of Budget and Finance who are totally independent of this Bureau. In the future we will have the Management Analyst I (MAI) perform the annual count with the Storekeeper. This will begin with our count for 2015.

We will have the Storekeeper recommend modifications to the inventory records to our MAI and to have the MAI make the modifications.

Finding #2. The Division lacked adequate controls over the physical access to inventory.

The recommendation is that we maintain a list of issued keys that access each inventory storage area and establish a policy that prohibits the lending of keys to employees not authorized to access inventory storage areas.

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Response to Finding #2:

We have already created a list of issued keys that access each area and have established a policy prohibiting the lending of keys. This policy will be distributed in writing.

Finding #3: Controls over inventory removal were not adequate.

The recommendations are that we add a column to the inventory sign out sheets for employees to document the related work order number and that supervisors evidence their review and approval of inventory sign out sheets to verify that inventory was properly removed and used for assigned work order tasks.

Response to Finding #3:

We are willing to add a column to the inventory sign out sheets for employees to document the related work order, but it must be recognized that the work order might not be known at the time the inventory is removed. If an item is removed for a specific work order we can show that in this column. For many items, however, a larger quantity of a particular type of items are removed at a time to stock our vehicles and the items are used for numerous work orders. Examples are signs, sign posts, nuts and bolts used for sign installations. The use of these items are noted on work orders as they are performed, if possible, but the work order numbers are not known at the time the items are removed from inventory. Examples where we could show the work order numbers are signal heads, traffic control cabinets and other similar items that are taken from inventory for a specific project.

We will add another column to the inventory sign out sheets, for the supervisors to approve the inventory removed each day to confirm that there was a legitimate need for those items to be removed. These changes to the inventory sign out sheets will be made within 30 days of this response.

We will also for the next month or so from this response have the Storekeeper check the items being removed from inventory by employees to make sure the sign out sheets accurately reflect the inventory items taken. Once we feel the sheets are being accurately filled out we will continue to have the Storekeeper spot check the forms as inventory is being removed.

Finding #4: The Division's computerized inventory management system (Data Management) did not comply with certain county-wide information technology policies.

The recommendation is that we comply with county-wide information technology policies and standards to prevent loss or unauthorized access to mission-critical inventory information. We should work with OIT to evaluate Data Management to help ensure that proper safeguards exist, to determine whether the system should be phased out, and to require employees to establish complex passwords that must be changed quarterly.

Response to Finding #4:

See Equipment Maintenance response to this finding since the person managing their system also manages ours. Passwords have already been changed and are in compliance with county policy. Also, we were informally told that switching our computerized inventory management system to Accela is expected to be included in their proposed budget for FY 2017.

Finding #5: The Division's policies and procedures for managing inventory were not documented and certain policies and procedures were not adequate.

The recommendation is for us to document our inventory policies and procedures and that such policies and procedures ensure that inventory is properly maintained and that all discrepancies identified between the inventory count and inventory records have evidence to support their investigation and reconciliation.

Response to Finding #5:

Early in the audit process, we created written procedures for Sign/ Signal ordering, receiving, inventory and annual audits to manage inventory. These written procedures will be updated to reflect any changes made since that time.

This finding gives examples of items in inventory that had not been used in the three years of records as well as items that had quantities on hand exceeding maximum quantities established in Data Management. It also gives examples of discrepancies between the inventory count and inventory records.

The first thing to point out concerning the 209 items not used in over 3 years and the 388 items on hand exceeding 'maximum quantities" is that the Data Management system for TETP was created in 2012 and maximum quantities were estimates placed in the system at the time it was established. The inventory on hand at that time is what was entered into the new system. At that point in time our goal was to get the new system up and running as soon as possible, so our efforts went toward counting what we had and entering it. In the past we had construction crews who built signals so we had a large inventory of parts they needed. Now, most new construction is performed by contractors so we can get by with less inventory. However, we still have equipment in the field that is old and might need repairs or replacement with these parts which may be no longer available for purchase. To dispose of parts that might be needed for these repairs would make future repairs much more difficult and costly.

However, we will be reviewing items in this category and those items not used in 3 years and those exceeding maximum quantities. A consideration will be whether we still have old equipment in use that might require the parts for future repairs or replacement. We will surplus ones we know will no longer use and reduce quantities and adjust reorder points of

items where usage shows limited activity over extended periods of time and allow quantities on hand to attrirtion naturally as they are needed.

We also found items for which the units of measure used for the quantity on hand are different from the units of measure used for the "maximum". Once the units are corrected, the quantities by which we exceed the "maximum quantities" as well as the dollar value of these items should be drastically reduced. This process will be done in conjunction with the above review of items in the inventory and we are working on completeing it.

The other recommendation deals with how we document our investigation of discrepancies between inventory records and counts.

We currently investigate discrepancies and make adjustments according to our findings. We will modify our written procedures to provide guidelines for our investigation and reconciliation. We will have the Storekeeper and MAI prepare a report to the Bureau Chief after each inventory count to show their analysis of any discrepancies in quantities and their recommendation as to how the discrepancies should be reconciled. This report will be shared with the Office of Budget and Finance, Purchasing Division (who is responsible for the annual inventory count) and the actual adjustments will be made in conjunction with that Division to ensure all responsible parties are in concurrence with discrepency resolutions. This reporting will occur starting after the 2015 count.

Equipment Maintenance Audit Response

Finding #1. Adequate segregation of duties was not established over inventory operations.

Response to Finding #1.

The Parts Room is staffed by six personnel as previously detailed. The Parts Manager position is supervisory in nature (and his collateral duty is accident management); of the remaining staff of five Parts Specialist, one man is on-the-road daily for parts pick-up and delivery. Each of the Parts Specialist is uniquely qualified and trained to perform each of the duties described above (and more!). To segregate the duties as described by the Auditors with our current staffing would be cumbersome – with scheduled and unscheduled absences, it would be nearly impossible and, certainly, productivity prohibitive.

We have, however, expanded the responsibilities of Parts Specialist II, Mr. Harry Smith Jr., to include the daily review of previous workday's activity for the purpose of ensuring accuracy and completeness. Specifically, the Parts Specialist II will review the entry of vendor's invoices to ensure that stock quantities, commodity codes and prices match the invoice and will review the issuance of stock to work orders to insure that stock utilized matches job description.

Inventory for small engine repair is held within the confines of a fenced-in area and that area is locked when not occupied by shop personnel; this arrangement was established in recognition of limited shelf space within the parts room and to facilitate small engine repair productivity (It is not necessary for the repairing mechanic to go back and forth from the repair area to the parts room for parts that are unique to the repair of small engine equipment.) The Small Engine Repair section operates in a manner similar to a satellite – while the Team Leader or Lead Mechanic is responsible for daily inventory functions, he coordinates with parts room staff. In addition, Team Leader or Lead Mechanic reports to the Heavy Equipment Maintenance Supervisor in charge of the Heavy Equipment shop; the Heavy Equipment Maintenance Supervisor in charge of the Heavy Equipment shop performs an undocumented review of the work orders (generation and parts issued) for the Small Engine Repair section.

Yearly physical inventory count is performed in accordance with the Baltimore County Purchasing Manual; Purchasing Bureau personnel are advised in advance and invited to attend. For fiscal years 2013 and 2014, the Purchasing Bureau opted to perform a spot check of forty randomly selected stock items.

Since the audit, Asset Management has been modified to attach a name and date/time stamp to each inventory transaction so as to increase individual accountability.

Finding #2. The EM Division lacked adequate controls over the physical access to inventory.

Response to Finding #2.

The audit, through interviews, identified thirteen employees who had been issued keys to access the inventory.

Our inquiries confirm that each of the six parts room personnel has a key to the parts room. The Equipment Maintenance Administrator, Data Specialist, Supervisors and on-call mechanic(s) also hold key(s) to the main parts room, tire room, hose room, battery room and small engine repair area.

- The Data Specialist key to the Parts Room has been revoked.
- Pad locks have been placed on the Tire Room and Battery Room doors; keys to those pad locks are in custody of the Parts Room only.

We are of the opinion that the remaining personnel holding these keys do need to hold them (i.e. emergency/after-hours services) and that their holding them has not been problematic, i.e. misappropriation of inventory, as after-hours/emergency issuance of parts are communicated among shop personnel.

EM has initiated a survey to determine all doors or areas that are locked and to determine who holds keys.

Finding #3. The EM Division's inventory records were not accurate, complete or reliable.

Response to Finding #3.

The parts personnel take their duties and responsibilities quite seriously. In the course of a fiscal year, they record over 15,000 parts transactions to repair/work orders, 4,900 invoice transactions and 1,700 parts transfers.

The physical inventory of the Glen Arm facility for FY2014 was conducted in May of 2014. Our inventory results were provided, along with a computer generated stock report, to the Office of Budget and Finance – Finance section; the count sheets, discrepancy reports (over/under) and related materials are on file at the EM Parts Manager's office. The Purchasing Bureau attended at EM and did perform a spot check of randomly selected stock items.

The purpose of a physical inventory in a perpetual inventory system is to validate the inventory records. In performing the FY2014 physical inventory at the Glen Arm facility, 4,138 items were reviewed/counted; of the 4,138 items counted, 3,578 or 86.5% representing 20,153 pieces or 93.9% of inventory, were found with no variance. Of the 4,138 items counted, 293 or 7.1% representing 460 pieces or 2.1% of inventory, were found with a variance of -1 to -4 (shortage); of the 4,138 items counted, 208 or 5.0% representing 319 pieces or 1.5% of inventory, were found with a variance of +1 to +4 (overage). Less than 1.5% of the items counted (59) representing 2.5% of inventory (524 pieces) was found to have a variance of +/-5 or greater. The following table summarizes our findings:

Variance	Items		Count		Average	Low	High	Total $
-14 to -24	5	0.1%	88	0.4%	$ 8.71	$ 0.17	$26.56	$888.13
-5 to -10	37	0.9%	270	1.3%	$ 48.65	$ 0.21	$748.20	$12,618.42
-1 to -4	293	7.1%	460	2.1%	$ 42.58	$ 0.26	$1,050.94	$15,803.03
0	3,578	86.5%	20,153	93.9%	$ 59.51	$0.06	$4,913.00	$ -
1 to 4	208	5.0%	319	1.5%	$ 41.33	$0.25	$ 377.40	$12,286.57
5 to 10	13	0.3%	104	0.5%	$ 4.72	$0.35	$10.00	$ 467.87
11 to 20	4	0.1%	62	0.3%	$ 4.82	$0.48	$ 9.34	$ 278.23
	4,138		21,456					$(16,276.91)

We believe that the above chart indicates a relatively insignificant amount of variances (over and under) within the total inventory with a stock value exceeding $1 million. We assume its most likely human error in the entering or removal process in hitting the wrong commodity codes. In order to further improve our accuracy, Equipment Maintenance will institute weekly cycle counts of randomly selected and/or high use items of inventory. Investigation of discrepancies found in the cycle counts and/or the yearly physical inventory will be documented.

Finding #4. The EM Division's computerized inventory management system (Asset Management) did not comply with certain county-wide information technology policies.

Response to Finding #4.

It is our understanding that this agency's use of a Microsoft Access database application does not comply with OIT's policy regarding the use of desktop computer databases for mission-critical applications; further, the policy (written circa 2006) states that OIT will work with agencies to evaluate and phase out such applications.

EM's computerized inventory management system (Asset Management) is a Microsoft Access database. It was developed in 1999/2000 and went "live" shortly thereafter. It is accessed via a CITRIX connection and is housed on a server in the new Courthouse building's basement. In the eight years since OIT's policy memorandum, the system has been used (at times) by Building Operations/Building Maintenance (now Property Management), Traffic Engineering and Planning and, most recently, by Safety and Training.

It should be noted that EM's computerized inventory management system (Asset Management) has applets for time and attendance, equipment inventory, repair/work order processing and reports. EM looks forward to working with OIT to replace our current computerized inventory management system (Asset Management) with an acceptable replacement.

Upon notification by the Auditors of a discrepancy with our password procedures, new policies and procedures requiring a strong password and periodic password change were implemented.

Finding #5. Certain policies and procedures the EM Division had established for managing inventory were not adequate.

Response to Finding #5.

We do not dispute the need for *current* written policies and procedures; our current Parts Room SOP are aged and cursory at best. We will make efforts to update and expand our SOP.

That the parts rooms have stock that is old and unused is not disputed; in some instances, given the age of our fleet, EM's parts rooms may hold the only replacement/spare parts in existence. For example, fire apparatus manufacturer American La France has gone out-of-business; while we still hold several ALF apparatus in our fleet, we have been unable to identify a source of factory-authorized parts for these apparatus. To dispose of these parts, in our opinion, would be imprudent.

We have been aware of this issue for several years and are working to reduce overall inventory and aged stock.

- From physical inventory FY2013 to physical inventory FY2014, the physical value of stock held was reduced $85,968.10 against a reduction of 613 pieces
- Between 2012 and 2014, the amount of "non-moving stock" at Glen Arm was reduced from 295 items to 234 items.

We continue to "refresh" the fleet; as we do so, we search for opportunities to dispose of stock that is no longer required or is simply outdated. It must be considered, however, that replacing older equipment may result in our requiring previously non-stocked items to be held on-site. As an example, vintage Case and Kawasaki wheeled front end loaders were recently replaced with Caterpillar front end loaders. These replacements resulted in the following:

- Stock related to the Case and Kawasaki units were moved from satellite locations to Glen Arm (which may have resulted in our temporarily exceeding maximum stock quantities at Glen Arm).
- As the Case and Kawasaki units were disposed of, excess stock was disposed of.
- New stock was acquired for the Caterpillar loaders.

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