Montgomery County, Maryland

Office of the County Executive

Office of Internal Audit

Information Technology Audit
Asset Management: Mobile Devices

January 25, 2022

Highlights

Why MCIA Did this Review

The Montgomery County Office of Internal Audit (MCIA) conducted an Information Technology (IT) audit of IT asset management processes within Montgomery County Department of Technology and Enterprise Business Solutions (TEBS) and select departments. The audit included a review of applicable policies and procedures surrounding the County's mobile device acquisition and disposal processes. This report includes results specific to mobile device management across select departments identified above.

This audit was conducted as a result of MCIA's 2019 IT risk assessment. The focus was to evaluate the current internal control environment of the County's IT asset management function. The audit was conducted by the accounting firm SC&H Group, Inc., under contract with MCIA.

MCIA is making 4 recommendations to TEBS and all departments with mobile devices to strengthen the existing control environment within the County's IT asset management processes.

IT Audit: Asset Management – Mobile Devices

What MCIA Found

The audit of the County's IT mobile device asset management function determined that established mobile device asset management processes and controls optimize mobile device lifecycles and support achievement of secure asset disposition. The audit identified several opportunities to mitigate risks. The risks can be addressed by enhancing or implementing internal controls within the IT asset management processes.

We identified 4 recommendations to strengthen controls and mitigate risks within the County's mobile device asset management processes:

1. Develop and implement a formal County-wide mobile device management policy.
2. Establish a mobile device working group of the various departmental Verizon Wireless contract managers to discuss current practices and identify best practices related to mobile device acquisition, approval, management, and disposal.
3. Develop and communicate formal County-wide mobile device procedures based on the working group's identified best practices.
4. Establish an internal standard for managing mobile device inventory across all departments with mobile devices.

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Objectives

This report summarizes the information technology (IT) audit of Montgomery County's (the County) IT asset management processes. The audit was performed by SC&H Group, Inc. (SC&H), under contract with the Montgomery County Office of Internal Audit (MCIA).

The audit included meeting with members of the County's Department of Technology and Enterprise Business Solutions (TEBS) and select departments (refer to **Appendix A** for complete listing of departments included in the audit) to build upon the knowledge obtained through the County's Information Technology Risk Assessment (ITRA), and to understand the following:
1. Documented policies, procedures, standards, and/or guidelines
2. Processes for acquiring , inventorying, and disposing of IT assets
3. IT asset management responsibilities
4. IT asset management lifecycle functions performed in a standardized manner

The audit objectives were to:
1. Ensure sufficient policies and procedures are in place for procuring, inventorying, and disposing of IT assets (e.g., computing devices including servers and data center equipment, laptops, desktops, and mobile devices).
2. Understand, document, and test the procurement processes/controls in place around in-scope IT assets.
3. Ensure the IT asset management process is controlled, monitored, and reviewed in compliance with industry best practices.
4. Ensure that procedures are in place for updating inventory upon IT asset retirement or employee transfer or termination.
5. Ensure that sufficient controls are in place over software asset management including identification of unauthorized software, documenting and evaluating controls over loaner laptops, documenting and evaluating controls over wiping devices that are no longer in active inventory, and understanding the process for remotely disabling machines that are non-recoverable.

This report summarizes findings and recommendation concerning IT asset management of mobile devices. Findings and recommendations concerning other IT asset categories (e.g., servers and laptops) can be found in a separate report, MCIA-2-2.

Background

County-wide Information Technology Overview
The County manages hardware, software, and technology through a combination of centralized and decentralized functions to enable employees to provide quality services to citizens and businesses, deliver information and services to citizens, and increase productivity.

TEBS is responsible for assisting the County's departments with identifying innovative technology solutions, helpdesk support, IT security, and IT vendor and contractor selection and management.

Asset Management Overview

Asset Management is the overall process of procuring, distributing, monitoring, and retiring devices and software to limit exposure to risk throughout the lifecycle of a device. Established asset management processes and controls reduce the risk of devices and assets being inappropriately purchased and ensure appropriate use of County funds. Failure to follow sufficient processes and controls throughout the asset's lifecycle could result in the potential for outdated devices and security controls and an increased risk of device failure.

Mobile Devices
Mobile device is a general term for any handheld computer or smartphone. Tablets, e-readers, and smartphones are all mobile devices. Mobile devices have the ability to make and receive phone calls, text messages, and voicemail. Further, they can also be used to browse the internet, send and receive emails, participate in social media, and download apps using cellular or Wi-Fi connection.

Mobile Device Contracts
The County currently has mobile device contracts with three service providers: Verizon Wireless (Verizon), AT&T, and T-Mobile.
1. AT&T and T-Mobile: The County has individual contracts with specific departments. The County is in current negotiations to move to one contract for each provider for the County.
2. Verizon: The County has one County-wide contract with Verizon that is managed by one account manager. Further, Verizon has a business account manager that is the point of contact for all County departments.

For the purposes of this audit, testing was focused specifically on the Verizon contract considering Verizon devices account for more than 90% of the County's mobile device accounts.

As of November 2020, the Office of Procurement had a listing of 26 departments, across the Executive, Legislative, and Judicial branches that have an active record (or active contract account) with Verizon. Further, based on the size and structure of those departments, there are separately-managed accounts for individual divisions. For example, the Department of Transportation maintains separate accounts within the underlying divisions (Division of Transit Services and Division of Highway Services).

The following are departments with active records with Verizon are as follows.
1. Alcohol Beverage Services
2. Board of Elections
3. Circuit Court
4. Community Engagement Cluster
5. Community Use of Public Facilities
6. Department of Correction and Rehabilitation
7. Montgomery County Council
8. Office of the County Executive
9. Office of Emergency Management and Homeland Security
10. Department of Environmental Protection
11. Fire and Rescue Service
12. Department of General Services
13. Department of Health and Human Services
14. Office of Human Resources
15. Office of the Inspector General

16. Office of Management and Budget
17. Office of Labor Relations
18. Office of Procurement
19. Department of Permitting Services
20. Department of Police
21. Department of Public Libraries
22. Department of Recreation
23. Sheriff's Office
24. State's Attorney's Office
25. Technology and Enterprise Business Solutions
26. Department of Transportation

Verizon Wireless Contract Management

For each department with an active Verizon contract account, there is a designated contract administrator responsible for managing the account and contacting Verizon to manage devices. These departments leverage the County-wide negotiated contract, dated January 2021. The Verizon contract is established for use under a blanket purchase order through the Office of Procurement. Department contract administrators submit Verizon monthly bills for payment to Accounts Payable within the Office of Finance. The bills include monthly service charges and device acquisitions and upgrades. These charges align with individual departmental purchase orders, and are based on agreed upon rates within the County-wide Verizon contract.

Scope and Methodology

The audit was conducted from March 2021 to November 2021. The audit focused on the current mobile device asset management processes maintained and administered by TEBS and selected departments. Processes included the following:
1. Mobile device policies and procedures, content, and development to ensure mobile device management lifecycle functions are performed in a standardized manner.
2. Mobile device process and supporting activities from other processes necessary to manage procurement and acquisition of mobile devices.
3. Mobile device process and supporting activities supporting management / monitoring of use of mobile devices.
4. Mobile device process and supporting activities from other processes necessary to manage reclamation and destruction processes around in-scope mobile devices.
5. Policies supporting mobile device acquisition and disposal.

The audit also included an analysis of mobile device asset management processes during the time period January 1, 2020 to July 31, 2021:
1. Acquisitions
2. Disposals
3. Inventory Management

Scoping

SC&H performed the following procedures to obtain a preliminary understanding of the County's mobile device asset management function.

Interviews

SC&H conducted detailed interviews and walkthroughs with TEBS and selected department staff. The purpose was to observe and document the internal controls and related risks associated with each of the following domains:

1. Policies and Procedures
2. Acquisitions
3. Disposals
4. Inventory Management

Policy and Procedure Review
SC&H reviewed the County's IT asset management policies and procedures. The County has not developed formal policies and procedures specific to mobile device asset management.

Test Plan Development
Utilizing the information obtained during scoping and preliminary department assessment, interview, and walkthrough procedures, SC&H developed an audit plan to test the operational effectiveness of internal controls.

Fieldwork
Fieldwork consisted of testing the operational design and/or operational effectiveness of internal controls identified during scoping and preliminary department assessment, interviews, and walkthrough procedures. SC&H prepared a document request listing for all information needed to satisfy the testing steps developed in the audit plan, including populations required to select samples for which additional information was requested. SC&H utilized both judgmental and haphazard selection methods for sampling. The following includes additional details regarding sample selections and test procedures performed.

Sample Selection
Mobile device samples were selected for each of the 12 selected departments based on the respective size of their population. The total population of mobile device purchases or upgrade orders from the 12 departments was 1,038: 445 purchases and 593 upgrades. Based on the population, SC&H selected 41 samples to test: 20 purchases and 21 upgrades.

Documentation Review
SC&H reviewed the County's IT asset management policies and procedures. However, the County has not developed formal policies and procedures specifically related to the following mobile device asset management sub-processes:
1. Acquisitions
2. Disposals
3. Inventory Management

Walkthroughs
Walkthroughs were performed with the TEBS team and selected departments to obtain a more thorough understanding of each sub-process to evaluate the effectiveness of internal controls and workflow between TEBS and select departments.

Internal Controls and Compliance Testing
Internal controls identified and detailed within the audit plan were tested to assess the operating effectiveness of the identified control activity.
1. For each mobile device sample selected, SC&H requested supporting documentation showing evidence of approval of the mobile device purchase or upgrade, evidence that the requestor received the mobile device, and evidence each department had an internal monitoring and tracking process in place.

Validation

The preliminary test results were compiled and presented to the TEBS team on August 31, 2021. Appendix B is provided as reference for all controls tested as part of the audit.

Findings and Recommendations

The audit determined the County's policies related to mobile device management provide insufficient detail to mitigate risks associated with lifecycle of the asset. The following three findings were identified to strengthen and expand the County's IT mobile device management processes and controls.

Finding 1: Mobile Device Policy

Currently, there are no formal policies or procedure documents specifically related to mobile device management.

The following was identified:
1. Based on review of the sample documentation provided, the selected departments are managing mobile devices in an informal and decentralized manner.
2. Requests for new device purchases and upgrades are managed primarily via email or verbally. Certain selected departments leverage forms that are completed and signed to document the request and approval of mobile devices.
3. Evidence of receipt of purchase or request to upgrade a device is not documented.
4. Some departments have an independent process to manage and monitor the mobile device inventory within their respective department/division, while others rely on data maintained by Verizon.

Risks
1. Lack of formalized policies could result in inefficient or ineffective mobile device management approvals and activities.
2. Lack of formalized documentation and processes could result in opportunities to manipulate data/reporting and an inability to prevent and/or detect fraud, waste, or abuse in County funds or resources.

Recommendation 1.1
TEBS should develop and implement a detailed mobile device asset management policy that formally outlines the requirements, roles and responsibilities, and other key aspects related to mobile device management for all County departments; including mobile device acquisitions, disposals, replacements, and inventory management.

Finding 2: Acquisitions and Upgrades

SC&H selected a sample of 41 mobile device purchases or upgrades across 12 selected departments and requested supporting documentation for the approval and receipt of the mobile device purchase or upgrade.

The following was identified:
1. 18 of 41 samples: Insufficient evidence was provided to show approval by a supervisory level County employee for the new mobile device purchase or upgrade.
2. 26 of 41 samples: Insufficient evidence was provided to show receipt of the new or upgraded mobile device by the appropriate user.

Risks
1. Lack of formalized policies and procedures could result in inappropriate approval of mobile devices.
2. Lack of formalized documentation and processes could result in opportunities to manipulate data/reporting and an inability to prevent and/or detect fraud, waste, or abuse in County funds or resources.

Recommendation 2.1
TEBS should establish a working group of contract administrators to discuss current practices in order to identify best practices related to mobile device acquisition, approval, management, and disposal. Examples of best practices include, but are not limited to, documented forms signed by the requestor and approver for mobile device purchases or upgrades, and signature and date evidence on the shipping receipt by the County employee upon receipt of the device in the mail.

Recommendation 2.2
Based on the working group's identified above, develop and communicate formal County-wide mobile device best practices procedures.

Finding 3: Independent Mobile Device Inventory

SC&H requested sample documentation across the 12 selected departments for evidence of key information documented for each mobile device (such as make, model, phone number, and location). Further, SC&H gained an understanding on how individual departments are managing mobile device inventory. Certain departments utilize the information and data managed and provided by their Business Contract Manager at Verizon or through the Verizon account portal.

The following was identified:
1. Seven of 12 departments: The department did not have an independent mobile device inventory (e.g., excel spreadsheet) to manage their mobile device inventory.

Risks
1. Lack of formalized policies and procedures could result in inefficient or ineffective mobile device management activities.
2. Lack of formalized documentation and processes could result in opportunities to manipulate data/reporting and an inability to prevent and/or detect fraud, waste, or abuse in County funds or resources.

Recommendation 3.1
TEBS, in coordination with the mobile device working group identified above, should establish an internal standard for managing mobile device inventory across the County. A minimum standard should be identified and established across all departments with mobile devices.

Comments and MCIA Evaluation

We provided the Department of Technology and Enterprise Business Services (TEBS) with a draft of this report for review and comment. TEBS responded with comments on January 14, 2022. The TEBS response has been incorporated in the report at Appendix C. TEBS concurred with the finding of the audit that Montgomery County departments are managing mobile devices (tablets and smartphones) in an informal and decentralized manner and that most departments have insufficient formalized policies, procedures, inventories, and documentation related to mobile devices. TEBS noted that it does not currently play a direct role in the management, procurement, and maintenance of other departments' county-issued mobile devices, and that TEBS is committed to enabling staff productivity and accessibility through technology while also preventing fraud, waste, or abuse in County funds or resources. As such, TEBS is prepared to support a collaborative cross-departmental approach to achieve the implementation of the report recommendations. No changes have been made in the report based on the response.

Appendix A – In Scope Departments

Department Listing	Samples Selected
Alcohol Beverage Services	No
Board of Elections	No
Circuit Court	No
Community Engagement Cluster	No
Community Use of Public Facilities	No
Department of Correction and Rehabilitation	No
Montgomery County Council	Yes
Office of the County Executive	Yes
Office of Emergency Management and Homeland Security	No
Department of Environmental Protection	No
Fire and Rescue Service	Yes
Department of General Services	Yes
Health and Human Services	No
Office of Human Resources	Yes
Human Rights Commission	Yes
Office of the Inspector General	No
Office of Management and Budget	No
Office of Labor Relations	No
Office of Procurement	Yes
Department of Permitting Services	No
Department of Police	Yes
Department of Public Libraries	No
Department of Recreation	Yes
Sheriff's Office	No
State's Attorney's Office	Yes
Technology and Enterprise Business Solutions	Yes
Department of Transportation	Yes

Appendix B – Areas of Focus: Mobile Devices

Domain	Control #	Control Description
Governance	C1	Asset management policies and procedures are documented, reviewed, and updated on a periodic basis.
Acquisitions	C6	All new mobile device requests must be approved by an employee's supervisor prior to purchasing.
	C7	Key information for each mobile device (such as make, model, phone number, location) is recorded by the department supervisor in an internal tracking spreadsheet
Disposals	C20	Supervisors collect employee's old cell phone and stores it in case an employee needs a replacement phone outside of their phone upgrade window (1 year).

Appendix C – Department Comments

DEPARTMENT OF TECHNOLOGY AND ENTERPRISE BUSINESS SOLUTIONS

Marc Elrich
County Executive

Gail M. Roper
Chief Information Officer/Director

MEMORANDUM

January 14, 2022

TO: **Bill Broglie, Internal Audit Manager**
Office of the County Executive

FROM: **Gail Roper, Director** *Gail M. Roper*
Department of Technology and Enterprise Business Solutions (TEBS)

SUBJECT: Formal Comments on Draft Report: Information Technology Audit – Asset
Management: Mobile Devices – January 2022

Enclosed please find the Department of Technology and Enterprise Business Solutions formal
response to the Information Technology Audit – Asset Management: Mobile Devices draft
final report issued by Internal Audit.

If you or the audit firm working with you have any questions, please contact Alison Dollar, Chief
Budget Officer, or myself.

cc: Alison Dollar, Chief Budget Officer, TEBS
Ivan Galic, Division Chief, One Face Forward Initiative, TEBS

TEBS concurs with the finding of the audit that Montgomery County departments are managing mobile devices (tablets and smartphones) in an informal and decentralized manner and that most departments have insufficient formalized policies, procedures, inventories, and documentation related to mobile devices.

While TEBS does not currently play a direct role in the management, procurement, and maintenance of other departments county-issued mobile devices, TEBS is committed to enabling staff productivity and accessibility through technology while also preventing fraud, waste, or abuse in County funds or resources. As such, TEBS is prepared to support a collaborative cross-departmental approach to achieve the implementation of the following recommendations:

1. Develop and implement a formal County-wide mobile device management policy.
2. Establish a mobile device working group of the various departmental Verizon Wireless contract managers to discuss current practices and identify best practices related to mobile device acquisition, approval, management, and disposal.
3. Develop and communicate formal County-wide mobile device procedures based on the working group's identified best practices.
4. Establish an internal standard for managing mobile device inventory across all departments with mobile devices.

In addition to the audit recommendations, TEBS has been working to increase the number of staff with Microsoft licenses that support outbound calling via Microsoft Teams which eliminates the need for some staff to have mobile devices. This technology can achieve cost savings for the County.

TEBS is implementing a Mobile Device Management (MDM) service enhancement program through Microsoft Intune that gives departments optional additional security and asset controls over their department's mobile devices. TEBS will be exploring the use of the Intune MDM to serve as a departmental reporting tool supporting mobile device asset management. Additionally, this tool would give departmental IT the ability to control, wipe, and otherwise manage County-provided mobile device assets.