

Audit Report

**Maryland Department of Transportation
State Highway Administration**

January 2019



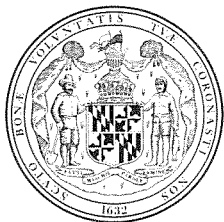
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DEPARTMENT OF LEGISLATIVE SERVICES
MARYLAND GENERAL ASSEMBLY

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DEPARTMENT OF LEGISLATIVE SERVICES
OFFICE OF LEGISLATIVE AUDITS
MARYLAND GENERAL ASSEMBLY

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January 30, 2019

Senator Craig J. Zucker, Co-Chair, Joint Audit Committee
Delegate Shelly L. Hettleman, Co-Chair, Joint Audit Committee
Members of Joint Audit Committee
Annapolis, Maryland

Ladies and Gentlemen:

We have conducted a fiscal compliance audit of the Maryland Department of Transportation (MDOT) – State Highway Administration (SHA) for the period beginning August 7, 2014 and ending June 30, 2017. SHA is responsible for the planning, construction, improvement, maintenance, and operations of the State highway system.

Our audit disclosed a number of findings requiring corrective action on the part of SHA. Specifically, SHA did not have comprehensive procedures in place to ensure it billed the responsible parties for the cost to repair damage to SHA property caused by traffic accidents. While SHA billed 2,221 parties for damages totaling \$6.6 million during the audit period, we identified 8,719 additional accidents that may have caused damage to State property. Additionally, SHA did not monitor the Maryland SafeZones speed enforcement program contractor for compliance with all contract terms and conditions, including several related to the staffing of speed enforcement zones. SHA also failed to publish several contract awards on *eMaryland Marketplace* as required, including the current SafeZones' contract valued at \$28.6 million.

SHA did not always follow established procedures to ensure that amounts paid to vendors for snow and ice removal services were proper, and did not have adequate procedures to resolve, in a timely manner, its highway construction-related expenditures that had been suspended from the federal reimbursement process. We also noted that, even though during our audit period SHA discovered significant occurrences of missing equipment, such as snow plows and other supplies, from its district locations, SHA had not conducted a comprehensive review of physical security practices to help prevent future losses. Finally, SHA lacked adequate controls over corporate purchasing card expenditures to prevent

or detect unauthorized purchases, and certain outdated software and security-related settings on SHA computers were not sufficient to provide SHA with adequate assurance that its computers were properly protected.

MDOT's response to this audit, on behalf of SHA is included as an appendix to this report. We reviewed the response and noted general agreement to our findings and recommendations, and we will advise the Joint Audit Committee of any outstanding issues that we cannot resolve with MDOT.

We wish to acknowledge the cooperation extended to us during the audit by SHA, and MDOT and SHA's willingness to address the audit issues and implement appropriate corrective actions.

Respectfully submitted,

A handwritten signature in black ink that reads "Gregory A. Hook". The signature is written in a cursive style with a large, prominent initial "G".

Gregory A. Hook, CPA
Legislative Auditor

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Background Information

Agency Responsibilities

The Transportation Article, Section 8-201, of the Annotated Code of Maryland establishes the State Highway Administration (SHA) in the Maryland Department of Transportation. SHA is responsible for the planning, construction, improvement, maintenance, and operations of the State highway system. SHA operates numerous facilities throughout the State, including a headquarters in Baltimore City and seven district offices. According to the State's accounting records, SHA's fiscal year 2017 expenditures totaled approximately \$1.9 billion.

Status of Findings From Preceding Audit Report

Our audit included a review to determine the status of the two findings contained in our preceding audit report on SHA dated April 20, 2016. We determined that SHA did not satisfactorily address these two findings, both of which are repeated in this report.

Findings and Recommendations

Accident Billing

Finding 1

State Highway Administration (SHA) procedures to identify State property damaged by traffic accidents using Maryland Department of State Police (MSP) records and to invoice for these damages were not comprehensive. We identified more than 8,700 accidents during our audit period from MSP records that may have caused damage to State property and could be subject to recovery by the State.

Analysis

SHA did not have comprehensive procedures to ensure it identified all traffic accidents that may have caused damage to SHA-maintained State property, and to seek recovery from responsible parties for the cost to repair such damages.

According to State law, any person who drives or moves any vehicle on any State highway is liable for all damages that the highway sustains as a result of any illegal driving or vehicle movements. During our audit period, SHA billed 2,221 responsible parties for damage to State property totaling approximately \$6.6 million.

- SHA identified accidents to be reviewed primarily by accessing automated records maintained by MSP through monthly queries, but the queries used were not comprehensive since they did not identify all accidents that potentially caused damage to SHA-maintained property. SHA identified approximately 16,000 accidents for review during our audit period. However, we requested more comprehensive queries of MSP records that included all accident reports and then filtered these records by using data fields associated with SHA property damage. We identified an additional 8,719 accidents beyond those previously identified by SHA during its monthly queries that may have caused damage to SHA-maintained property during this period. For example, SHA did not identify all accidents that potentially caused damage to SHA-maintained traffic signal structures and bridges.
- SHA did not account for the disposition of all accidents it identified to ensure that all were reviewed, and that the responsible parties were invoiced if applicable. Once accidents were identified through the monthly queries, SHA requested written reports of accidents from MSP and forwarded them to appropriate district office employees who were responsible for determining if damage occurred to SHA property, the cost to repair the damage, and the responsible party (typically the vehicle owner). SHA headquarters employees

used information obtained from the district employees to submit bills to the responsible parties. However, we found numerous instances in which SHA lacked documentation of a final determination and any action taken for accidents identified.

Specifically, we tested 30 accidents that occurred during the period from August 2014 through May 2017 which SHA had identified for district office review. Our test determined that SHA had satisfactorily addressed 6 of these accidents (that is, billed the responsible parties for the cost of damages, or documented that billings were unnecessary), which resulted in 5 billings totaling \$14,595. SHA had not satisfactorily addressed the remaining 24 accidents as of March 2018, including 10 accidents that occurred more than three years prior to March 2018. Since State law requires SHA to bill the responsible party within three years from the date of the accident, any billable costs associated with these accidents can no longer be recovered.

We also reviewed 50 of the additional 8,719 accidents that we identified from our review of MSP records. We determined that SHA had not taken any action to address 39 of these accidents. We noted that SHA had billed for 11 of these accidents or determined that billings were unnecessary. In these 11 instances, SHA had become aware of these accidents through other parties. We were not readily able to determine the actual number of the 8,719 accidents not otherwise known to SHA nor the amount of potential cost recovery since SHA had not yet determined the disposition of each accident.

The lack of adequate procedures for identifying all motor vehicle accidents involving SHA-maintained State property, determining liability for repairs, and, when appropriate, billing for related damages was caused, in part, by SHA's lack of a comprehensive policy. For example, SHA's written policy did not reflect SHA's current practice of accessing MSP accident records in order to request related MSP reports. In addition, the policy did not require the responsible SHA staff to formally account for the disposition of all MSP accident reports obtained and distributed to district office employees for review.

Recommendation 1

We recommend that SHA establish and implement a comprehensive policy and related procedures for identifying traffic accidents that caused damage to State property and obtaining recovery for the related repair costs, in accordance with State law. The policy should include steps for identifying and reviewing all such accidents, taking the required action (including billing the responsible party or documenting why billing was not warranted), and accounting for and documenting the disposition of all identified accidents.

We also recommend that SHA review the aforementioned accidents not satisfactorily addressed that occurred within the three-year recovery period allowed by law, and take appropriate action.

Maryland SafeZones Program

Maryland SafeZones is an SHA program in which Automated Speed Enforcement (ASE) vehicles with mounted speed cameras are deployed in highway work zones to help ensure compliance with posted speed limits and to reduce the potential for accidents involving motorists and construction workers. SHA contracted with a vendor to provide speed camera equipment, data collection, and violation processing in designated construction zones. The vendor is responsible for issuing citations after review of digital photos by a sworn police officer, and for collecting and remitting related payments to the State. Revenues from citations are first used to cover costs incurred by SHA and MSP in administering the SafeZones program, and any remaining revenue is distributed to MSP to fund additional enforcement activities. SHA contracted with this vendor for the period from January 1, 2016 through December 31, 2020 for an amount not-to-exceed \$28.6 million. The contract also provides for two additional one-year renewal periods which, if executed, would bring the total cost to approximately \$40.3 million.

Finding 2

SHA did not have adequate procedures in place to ensure the SafeZones program vendor complied with all contract requirements.

Analysis

SHA did not adequately monitor the Maryland SafeZones program vendor to ensure that the program was properly administered in compliance with all contract requirements. The contract contains certain vendor requirements, most of which are intended to ensure program compliance in accordance with State law and are necessary for the valid issuance of a citation when a speeding violation is detected. There were 18 enforcement work zones active at various times during the period between January 2017 and June 2017.

- SHA had not taken adequate steps to ensure that the vendor complied with all contractual requirements prior to the start of each enforcement session (typically a day or a shift). These requirements included the mandatory presence of a trained operator in the ASE vehicle during enforcement sessions, road signage indicating photo enforcement in use, and the verification and documentation by the vendor of work zone site compliance

before each enforcement session. Although the vendor was required to verify and document its compliance with these requirements prior to the start of each session and submit this documentation to SHA, SHA did not ensure the submission of nor review the related documents.

In addition to a lack of review of vendor site compliance documentation, SHA's own on-site reviews were inadequate. An SHA employee was to conduct periodic site inspections of the enforcement work zones to monitor the vendor's compliance; however, SHA had not established formal procedures stating the expected timing, frequency, methodology, and documentation of these inspections, and there was no requirement for supervisory review of the inspection results. We found that, for the 18 enforcement work zones active between January 2017 and June 2017, there was no documentation of SHA inspections at 10 of these sites during this period, even though SHA advised us that all 18 sites had been inspected. Although certain documentation existed that each of the remaining 8 sites had been inspected at least once during this period, the documentation consisted only of the inspector's notes that the inspection occurred, without regard to vendor compliance with the aforementioned specific site requirements. Finally, there was no evidence of supervisory review of the available inspection documentation.

- We also found that SHA did not obtain documentation from the SafeZones program vendor to ensure that the vendor performed the required reviews of driver's license records for its employees assigned to the program. The contract required the vendor to perform an annual review to ensure that its employees assigned to enforcement work zones have a valid driver's license with no more than four points accumulated. Based on our request, SHA obtained documentation from the vendor, which showed that, as of November 2017, the vendor had not performed a review of driver's license records for 13 employees for periods ranging from 14 to 21 months. During this period, 21 employees should have been subject to driver's license reviews.

SHA paid the vendor approximately \$6.8 million for the period January 1, 2016 through June 30, 2017. According to vendor reports, during this period approximately 354,000 citations were issued, while collections from paid citations totaled \$12.5 million.

Recommendation 2

We recommend that SHA establish appropriate monitoring procedures to ensure that the vendor complies with the requirements of the SafeZones program. Specifically, we recommend that SHA

- a. periodically review required vendor inspection documentation from the vendor to support work zone site compliance;**
- b. establish comprehensive procedures regarding the timing, frequency, methodology, and required documentation for its own independent inspections of enforcement work zones, including supervisory review; and**
- c. obtain documentation from the SafeZones program vendor to ensure that an annual review of the driver's license records for all its employees is performed, as required under the contract.**

Contractual Services

Finding 3

SHA did not always follow established procedures at the one SHA district office we examined to ensure the propriety of payments to vendors for snow and ice removal services.

Analysis

Procedures for verifying vendor billings for snow and ice removal services were not consistently followed at the one SHA district office we examined. Our review of one district with snow and ice removal service expenditures totaling \$32 million for the audit period disclosed numerous instances in which SHA did not verify the propriety of vendors' billings in accordance with its established procedures. According to SHA's records, payments to all vendors for snow and ice removal services Statewide totaled approximately \$106 million during our audit period.

SHA contracts with various vendors to provide snow and ice removal services for State-maintained roads. Vendors are paid hourly rates based on the type of equipment deployed as stated in their contracts (such as dump trucks, graders, and loaders). SHA's established procedures require that documentation (such as the vendor hours worked and the type of equipment used) be verified and SHA supervisory approval be documented prior to the payment of related vendor invoices.

We tested 10 invoices paid during the period January 2015 through March 2017 (comprising the deployment of 156 pieces of equipment) processed by three of the five maintenance shops within this district, totaling \$2.3 million, and noted that

SHA did not ensure that snow and ice removal services were provided for all hours billed. Although each of the 10 invoices tested was approved by supervisory personnel, our test disclosed that certain required documentation to support the vendor billings was absent. For example, there was no documentation to support the hourly charges for 57 of the 156 equipment items billed. In addition, our test disclosed that SHA could not document the type of equipment deployed for 127 items related to 9 of the invoices tested, and, accordingly, was not in position to verify that it was properly billed for the related payments totaling approximately \$1.6 million.

Recommendation 3

We recommend that SHA ensure that existing procedures to verify vendor invoices for snow and ice removal are complied with by district offices.

Specifically, we recommend that SHA

- a. obtain and review documentation for each invoice that supports the services provided, including the hours worked and type of equipment used, by the snow and ice removal vendors; and**
- b. retain the aforementioned documentation, along with the required supervisory approval of the billing documents.**

Finding 4

SHA did not comply with certain State procurement-related reporting and publication requirements for contract awards totaling \$77.1 million.

Analysis

SHA did not follow State procurement-related reporting or publication requirements for certain contract awards totaling \$77.1 million.

- SHA did not report 85 contracts procured for snow and ice removal services valued at approximately \$6.5 million for fiscal years 2016 and 2017 to the Board of Public Works (BPW) as required. State law requires SHA to submit an annual report to BPW disclosing the number and value of contracts awarded for snow and ice removal services for the fiscal year, as well as certain other contract information. While SHA annually submitted such a report, we determined that the method SHA used to compile the reported information was not comprehensive, resulting in certain procurements of such services to be omitted. According to SHA records, 1,678 snow and ice removal contracts totaling \$145.9 million were awarded during fiscal years 2016 and 2017.

- Our test of five service contract awards made by SHA during the period from May 2015 through June 2017, totaling \$86.3 million, disclosed that SHA did not comply with State regulations with respect to the posting of three of these awards, valued at \$70.6 million, on *eMaryland Marketplace (eMM)*. As of April 2018, SHA had not published its January 2016 contract award for the administration of the Maryland SafeZones program, valued at \$28.6 million, on *eMM*. Two additional contract awards for software development and real estate services, totaling \$42 million, were not published within 30 days of contract award, as required. Rather, these were published 70 and 92 days, respectively, after the contract awards.

eMM is an Internet-based, interactive procurement system managed by the Department of General Services. State laws and regulations generally provide that *eMM* is to be used by State agencies to publish awards greater than \$25,000 within 30 days of the contract award. Publishing awards on *eMM* provides transparency over State procurements including information about winning bidders and the amount of the related awards. A similar condition was commented upon in our preceding audit report with respect to maintenance and construction contract awards.

Recommendation 4

We recommend that SHA

- a. use appropriate methods to ensure that all contracts procured for snow and ice removal services are reported to BPW, as required; and**
- b. comply with State laws and procurement regulations by publishing contract awards on *eMM* within 30 days of the contract award (repeat).**

Federal Funds

Finding 5

SHA did not have comprehensive written procedures to resolve, in a timely manner, certain highway construction-related expenditures that had been suspended from the federal reimbursement process, and related follow-up efforts were not always documented.

Analysis

SHA did not have comprehensive written procedures to resolve, in a timely manner, certain highway construction-related expenditures that had been suspended from the federal reimbursement process in order to identify an allowable federal grant to which these expenditures could be charged. Additionally, SHA did not always document its investigative efforts and work

performed in order to resolve these items. According to SHA's records, as of June 2017, expenditures in this suspense account totaled approximately \$7.7 million. Federal reimbursements totaled \$548.6 million during fiscal year 2017.

Highway construction-related expenditures were initially charged to the Transportation Trust Fund, which was later reimbursed, in part, from the Federal Highway Administration. SHA recorded these expenditures in the Maryland Department of Transportation's Financial Management Information System (MDOT FMIS) and requested weekly federal reimbursement for the appropriate percentage of these expenditures, which varied depending on the type of work performed. In certain instances, such as when the initially identified grant budget was exceeded, these expenditures were recorded in a suspense account pending review by SHA personnel.

Using MDOT FMIS summary reports, SHA employees subsequently reviewed these expenditures to identify other available federal grants under which these expenditures were permissible, so that reimbursement could be requested. However, SHA had not established formal procedures for investigating all items on the summary reports that considered timeliness and significance, and for documenting their disposition and the related investigative efforts for resolving these items. As a result, certain expenditures remained unreimbursed in the suspense account for extended periods, and there was a lack of assurance that all such expenditures were ultimately investigated and resolved.

We reviewed three projects from the summary report dated June 26, 2017, with unreimbursed expenditures totaling approximately \$1.2 million. We noted that SHA did not document its efforts, such as with written notes, to resolve and obtain federal reimbursement for one of the projects. This project's unreimbursed expenditures had grown from \$50,000 as of August 2016 to \$695,000 as of June 2017. We did note that, as of March 2018, the project's unreimbursed expenditures had been reduced to \$415,000, according to a later summary report.

Due to the nature of highway construction projects, expenditures and federal reimbursements may occur over a number of years following the initial obligation of funds for a project. Nevertheless, efforts should be made to obtain reimbursements as soon as practical, and adequate records should be maintained to ensure all reimbursable expenses placed in a suspense account are reimbursed. A similar condition was commented upon in our preceding audit report.

Recommendation 5

We recommend that SHA

- a. establish and implement comprehensive written procedures that consider timeliness and significance for reviewing expenditures that were suspended from the federal fund reimbursement process (repeat), and**
- b. document the investigation and disposition of suspended expenditures (repeat).**

District Office Property

Background

SHA maintains equipment and supply items at its central headquarters location and at its seven district offices, each of which includes a central office and various field locations or maintenance shops (34 in total). According to its records, the value of SHA's equipment assigned to the district offices as of June 30, 2017 totaled approximately \$78 million. The district offices also maintained numerous supplies. Equipment and supplies included snow plows, vehicles, landscaping tools, and computer components.

Finding 6 (Policy Issue)

SHA had not completed a comprehensive review of physical security practices in place at its district offices to ensure that equipment and supplies were adequately protected from loss or misappropriation.

Analysis

SHA had not completed a comprehensive review of security over equipment and supplies located at its numerous district offices, including field locations, to ensure these items were adequately protected from loss or misappropriation. Certain enhanced security measures were taken after numerous snow plows were found to be missing in June 2015; however, these measures were not comprehensive. According to its records, SHA reported to the Maryland Department of General Services (DGS) that 351 equipment items totaling approximately \$745,000 were identified as missing or stolen from all district locations during the period from July 2014 through December 2017. In addition, SHA reported the following equipment and supply items totaling \$171,000 to the Maryland Department of State Police as stolen.

**Missing or Stolen Equipment Reported to the
Maryland Department of State Police
(June 2015 through October 2017)**

Date	Location	Equipment Description	Approximate Value
June 2015	Glen Burnie	22 Snow Plows	\$97,000
December 2016	Hunt Valley	18 Computer Components	39,000
October 2017	Glen Burnie	24 Truck Tires	9,000
October 2017	Fairland	76 Power and Landscaping Tools	26,000
		Total	\$171,000

Source: SHA Records

Missing or stolen equipment or supplies are generally identified through periodic physical inventories or employee observation. After identifying the aforementioned missing snow plows in June 2015, SHA conducted a complete physical inventory in July 2015 of snow plows at all SHA locations and identified an additional 197 plows valued at \$524,000 that were missing throughout the State.

SHA subsequently took certain corrective measures, such as enhancing the documentation requirements associated with its written inventory procedures, and implementing an electronic lock system at the one district location from which the 22 snow plows were reported stolen. However, SHA has not conducted a comprehensive review of the physical security over equipment and supplies at all SHA district offices and maintenance shops. For example, such a comprehensive review could include, at a minimum, consideration and evaluation of physical security measures currently in place (such as employee access, security monitoring systems); prior security breaches; and the type, value, and location of equipment being stored. Due to the decentralized nature of its operations and the types of equipment and supply items it maintains, and given the losses that have occurred to date, we believe that such a review is warranted at all locations.

Recommendation 6

We recommend that SHA strongly consider completing a documented comprehensive review of security over equipment at all district office locations, and implement appropriate corrective actions as deemed necessary to safeguard the State assets under its control.

Corporate Purchasing Cards

Finding 7

SHA lacked proper internal controls over corporate purchasing cards to prevent or detect unauthorized purchases.

Analysis

SHA lacked proper internal controls over corporate purchasing cards (CPC). According to the issuing bank's records, corporate purchasing cards had been issued to 132 SHA cardholders as of June 30, 2017, and the related expenditures during fiscal year 2017 totaled approximately \$14.5 million. Our review disclosed certain control deficiencies regarding system access to SHA's internal purchasing card system and the monitoring of purchasing activity.

- SHA did not perform a periodic review to ensure that access to its automated purchasing card system was properly restricted. We determined that, according to SHA's records, six individuals had improper "system administrator" access that allowed them to log in as an existing cardholder, and edit data on any cardholder log (such as item descriptions, unit prices, and transaction amounts), create new transactions, and delete existing transactions. Four of these individuals had left SHA's employment 5 to 45 months prior to our testing in August 2017, and two individuals still employed at SHA did not require the access for their job duties. One of these two employees had also been appropriately assigned the CPC program administrator role. However, this role also included system access capabilities that essentially mimicked the "system administrator" capabilities, which were inconsistent with the CPC program administrator responsibilities.
- SHA's CPC expenditure review procedures did not include the use of available Level-3 purchasing data from the issuing bank to help determine the propriety of CPC transactions. This level of data, when reported by merchants, provides detailed purchasing information, including invoice-level line item details (such as item descriptions and item quantities). The Comptroller of Maryland's *Corporate Purchasing Card Program Policy and Procedures Manual* requires the use of Level-3 data during monthly reviews

of cardholder logs to ensure that each item purchased as reported on the logs is the same item listed under the item description in the Level-3 data. We determined that Level-3 data was available for SHA CPC purchases totaling \$6.3 million during fiscal year 2017.

Recommendation 7

We recommend that SHA

- a. perform periodic reviews to ensure that critical automated purchasing card system access is provided only to employees who require it for their job duties, and in a manner that ensures a proper segregation of duties;**
- b. delete system administrator access for the aforementioned six individuals who either no longer work at SHA or do not need the access;**
- c. revise the user role for the CPC administrator to prevent access similar to system administrator capabilities; and**
- d. ensure compliance with the *Manual* by incorporating the use of Level-3 data, when available, as a part of the monthly supervisory review to aid in the assessment of the propriety of CPC purchases.**

Information Systems Security and Control

Background

The SHA Office of Information Technology supports employee use of numerous information technology applications which operate on the MDOT datacenter mainframe and various server platforms. Certain of SHA's systems are either web-based or cloud hosted applications which employees can access from remote locations. As of December 2017, SHA had over 4,200 computers in operation.

Finding 8

Certain outdated software and security-related settings on SHA computers were not sufficient to provide SHA with adequate assurance that its computers were properly protected.

Analysis

SHA computers tested were not always sufficiently protected from malware, certain software vulnerabilities, and untrusted network traffic. Our December 2017 to January 2018 testing of 12 randomly selected computers disclosed the following;

- Of the 12 computers tested, 11 had outdated versions of the malware protection software installed, with software release dates that ranged from August 2016 to March 2017. At the time of our test, the most recent version

of the software was released in July of 2017. Using a separate management console, MDOT – Office of Transportation Technology Services (OTTS) manages the malware protection software installed on SHA computers.

- Certain of computers tested had not been updated with the latest releases for software products that are known to have significant security-related software vulnerabilities. Although the vendors for these software products frequently provide software patches to address these vulnerabilities, SHA had not updated all of its computers for these patches. For example, of 12 computers tested for one of these software products, 4 computers were identified as running older versions of this software that had not been updated for periods ranging from 4 to 7 months.
- Four of the 12 computers tested were laptops and the host-based firewalls were not enabled on any of these computers. Therefore, if and when these laptops were used outside of the SHA network they would be susceptible to attack from untrusted traffic.

The State of Maryland *Information Security Policy*, states that agencies, at a minimum, must protect against malicious code (viruses, worms, Trojan horses) by implementing protections (anti-virus, anti-malware) that, to the extent possible, include a capability for automatic updates.

Recommendation 8

We recommend that SHA

- a. in conjunction with MDOT – OTTS, ensure that all computers are running current versions of their malware protection software;**
- b. promptly install all critical security-related software updates on its computers; and**
- c. ensure that all laptop computers are protected by an enabled and properly configured host-based firewall.**

Audit Scope, Objectives, and Methodology

We have conducted a fiscal compliance audit of the Maryland Department of Transportation (MDOT) – State Highway Administration (SHA) for the period beginning August 7, 2014 and ending June 30, 2017. The audit was conducted in accordance with generally accepted government auditing standards. 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.

As prescribed by the State Government Article, Section 2-1221 of the Annotated Code of Maryland, the objectives of this audit were to examine SHA's financial transactions, records and internal control, and to evaluate its compliance with applicable State laws, rules, and regulations.

In planning and conducting our audit, we focused on the major financial-related areas of operations based on assessments of significance and risk. The areas addressed by the audit included procurement and disbursements for highway design and construction and SHA's operating expenditures, federal funds, speed enforcement, equipment, and information systems. We also determined the status of the findings contained in our preceding audit report.

Our audit did not include certain payroll support services (such as processing of personnel transactions and maintenance of employee leave records) provided by MDOT – Secretary's Office to SHA subsequent to November 9, 2016 when the Secretary's Office began performing these payroll support services. In addition, our audit did not include an evaluation of internal controls over compliance with federal laws and regulations for federal financial assistance programs and an assessment of SHA's compliance with those laws and regulations because the State of Maryland engages an independent accounting firm to annually audit such programs administered by State agencies, including SHA.

To accomplish our audit objectives, our audit procedures included inquiries of appropriate personnel, inspections of documents and records, observations of SHA's operations, and tests of transactions. Generally, transactions were selected for testing based on auditor judgment, which primarily considers risk. Unless otherwise specifically indicated, neither statistical nor non-statistical audit sampling was used to select the transactions tested. Therefore, the results of the tests cannot be used to project those results to the entire population from which the test items were selected.

We also performed various data extracts of pertinent information from the State's Financial Management Information System, MDOT's Financial Management Information System (such as revenue and expenditure data), and the State's Central Payroll Bureau (payroll data), as well as from the contractor administering the State's Corporate Purchasing Card Program (credit card activity). The extracts are performed as part of ongoing internal processes established by the Office of Legislative Audits and were subject to various tests to determine data reliability. We determined that the data extracted from these sources were sufficiently reliable for the purposes the data were used during this audit.

We also extracted data from SHA's construction management information system, the SafeZones system, SHA's equipment system, SHA's corporate purchasing card system, and SHA's automated crash recording system for the purpose of selecting test items. We performed various tests of the relevant data and determined that the data were sufficiently reliable for the purposes the data were used during this audit. Finally, we performed other auditing procedures that we considered necessary to achieve our audit objectives. The reliability of data used in this report for background or informational purposes was not assessed.

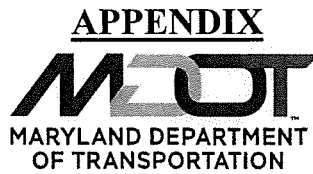
SHA's management is responsible for establishing and maintaining effective internal control. Internal control is a process designed to provide reasonable assurance that objectives pertaining to the reliability of financial records; effectiveness and efficiency of operations, including safeguarding of assets; and compliance with applicable laws, rules, and regulations 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 are designed to assist the Maryland General Assembly in exercising its legislative oversight function and to provide constructive recommendations for improving State operations. As a result, our reports generally do not address activities we reviewed that are functioning properly.

This report includes findings relating to conditions that we consider to be significant deficiencies in the design or operation of internal control that could adversely affect SHA's ability to maintain reliable financial records, operate effectively and efficiently, and/or comply with applicable laws, rules, and regulations. Our report also include findings regarding significant instances of noncompliance with applicable laws, rules, or regulations. Other less significant findings were communicated to SHA that did not warrant inclusion in this report.

The response from MDOT, on behalf of SHA, to our findings and recommendations is included as an appendix to this report. As prescribed in the State Government Article, Section 2-1224 of the Annotated Code of Maryland, we will advise MDOT regarding the results of our review of its response.



Larry Hogan
Governor
Boyd K. Rutherford
Lt. Governor
Pete K. Rahn
Secretary

Office of the Secretary

January 25, 2019

Gregory A. Hook, CPA
Legislative Auditor
Office of Legislative Audits
Department of Legislative Services
301 West Preston Street, Room 1202
Baltimore MD 21201

Dear Mr. Hook:

Enclosed please find the Maryland Department of Transportation State Highway Administration's (MDOT SHA) responses to the Office of Legislative Audit's audit report for the period beginning August 7, 2014 and ending June 30, 2017. Additionally, an electronic version of this document has been sent to your office via email.

If you have any additional questions or concerns, please contact Ms. Jaclyn D. Hartman, MDOT Chief Financial Officer at 410-865-1035 or jhartman1@mdot.maryland.gov. Of course, you may always contact me directly.

Sincerely,



Pete K. Rahn
Secretary

Confidential Enclosures

cc: Ms. Jaclyn D. Hartman, Chief Financial Officer, MDOT

Mr. Gregory A. Hook
Page Two

bcc: Ms. Brenda Cachuela, Director, Office of Audits, MDOT
Ms. Betty Conners, Deputy Administrator, MDOT SHA
Mr. R. Earl Lewis, Jr., Deputy Secretary of Policy, Planning, and Enterprise Services,
MDOT
Mr. James F. Ports, Jr., Deputy Secretary of Operations, MDOT
Mr. Joshua Pasch, Director of Audits, MDOT SHA
Mr. Gregory Slater, Administrator, MDOT SHA
Mr. Steven P. Watson, Deputy Chief Financial Officer, MDOT

**Maryland Department of Transportation
State Highway Administration
Audit Responses
Period August 7, 2014 to June 30, 2017**

Accident Billing

Finding 1

State Highway Administration (SHA) procedures to identify State property damaged by traffic accidents using Maryland Department of State Police (MSP) records and to invoice for these damages were not comprehensive. We identified more than 8,700 accidents during our audit period from MSP records that may have caused damage to State property and could be subject to recovery by the State.

Recommendation 1

We recommend that SHA establish and implement a comprehensive policy and related procedures for identifying traffic accidents that caused damage to State property and obtaining recovery for the related repair costs, in accordance with State law. The policy should include steps for identifying and reviewing all such accidents, taking the required action (including billing the responsible party or documenting why billing was not warranted), and accounting for and documenting the disposition of all identified accidents. We also recommend that SHA review the aforementioned accidents not satisfactorily addressed that occurred within the three-year recovery period allowed by law, and take appropriate action.

Response:

MDOT SHA concurs with the recommendation. A comprehensive policy will be established by June 30, 2019. Procedures to identify all accidents that are potentially reimbursable will be developed by MDOT SHA's Office of Finance as part of a team that consists of MDOT SHA's Offices of Traffic and Safety, Information Technology, and Maintenance, as well as with the Maryland State Police (MSP). Using data captured in MSP's Automated Crash Reporting System, MDOT SHA captures accident data from across the State and identifies accidents with MDOT SHA property damage. MDOT SHA will continue to work with MSP to improve the information that is included in police reports so that MDOT SHA has the information it needs to identify accidents causing damage to State property and pursuing recovery where possible. Where necessary, MDOT SHA will follow-up with MSP to obtain actual accident reports and additional information (additional comments, photos, etc.) to facilitate billings where possible. MDOT SHA will implement these procedures no later than June 30, 2019.

Regarding the aforementioned accidents not satisfactorily addressed, MDOT SHA will continue to bill all responsible parties for damage to MDOT SHA property, including the instances noted above, or maintain documentation for the reason billing was not necessary. With respect to the five instances noted in the analysis, MDOT SHA billed \$21,589.29 and collected \$15,334.25 on four of the accidents. The remaining incident could not be billed as the driver was found not at fault during a requested hearing. Finally, MDOT SHA's Office of Finance, in conjunction with MDOT SHA's Office of Information Technology, launched a workflow application on January 1, 2019, to better track and manage accident reports and their related billings. This application identifies MSP Accident Reports containing information that may require accident billing. The process has already resulted in significant time savings in identifying and obtaining copies of potential billable accidents.

Maryland SafeZones Program

Finding 2

SHA did not have adequate procedures in place to ensure the SafeZones program vendor complied with all contract requirements.

Recommendation 2

We recommend that SHA establish appropriate monitoring procedures to ensure that the vendor complies with the requirements of the SafeZones program. Specifically, we recommend that SHA

- a. periodically review required vendor inspection documentation from the vendor to support work zone site compliance;**
- b. establish comprehensive procedures regarding the timing, frequency, methodology, and required documentation for its own independent inspections of enforcement work zones, including supervisory review; and**
- c. obtain documentation from the SafeZones program vendor to ensure that an annual review of the driver's license records for all its employees is performed, as required under the contract.**

Response:

- a. MDOT SHA concurs with the recommendation. The comprehensive written procedures include detailed frequency of site inspections, the methodology to verify and document contract compliance, and supervisory approval of the documented inspection results. MDOT SHA implemented these procedures effective October 1, 2018.
- b. MDOT SHA concurs with the recommendation. The MDOT SHA initiated a new field inspection form in November 2017 requiring specific criteria be inspected and documented, as well as a supervisor approval signature line. The criteria include SafeZone Program field requirements per law, COMAR, and MDOT SHA policy. Additionally, MDOT SHA implemented a standard operating procedure (SOP) for completion of the form by field inspectors, as well as a standard for timing and frequency of the inspections.

Once approved by a supervisor, the inspections are retained in a MDOT SHA shared drive. MDOT SHA implemented this process effective October 1, 2018.

- c. MDOT SHA concurs with the recommendation. At the time of the audit, some of the driver license record reviews for vendor employees were not available; however, these records have been reviewed for all current vendor personnel. Effective October 1, 2018, the MDOT SHA has initiated a requirement that the vendor supply an employee roster at each monthly Stakeholder Meeting. The vendor employee roster must include vendor employee's name, hire date, the date of security/background clearance, driver's license check date, and training completion dates for MDOT SHA and Vitronic Training. The MDOT SHA will review the roster at each monthly Stakeholder Meeting to document the annual driver license requirement is being consistently met.

Contractual Services

Finding 3
SHA did not always follow established procedures at the one SHA district office we examined to ensure the propriety of payments to vendors for snow and ice removal services.

Recommendation 3

We recommend that SHA ensure that existing procedures to verify vendor invoices for snow and ice removal are complied with by district offices. Specifically, we recommend that SHA

- a. **obtain and review documentation for each invoice that supports the services provided, including the hours worked and type of equipment used, by the snow and ice removal vendors; and**
- b. **retain the aforementioned documentation, along with the required supervisory approval of the billing documents.**

Response:

- a. MDOT SHA concurs with the recommendation. To facilitate this process, MDOT SHA implemented a uniform Hired Contractor Check-in Sheet (HCCS) that is utilized by all MDOT SHA maintenance shops during winter storm events. The HCCS documents the process of signing-in contractors, verifying equipment items and rates, documentation of other contract information, and signing-out contractors at the end of each winter storm event. The HCCS is then used to support the processing of invoices when presented by hired contractors. MDOT SHA implemented this procedure on November 1, 2018.
- b. MDOT SHA concurs with the recommendation. This approval is documented on each invoice presented for payment. In addition, supervisory approvals are documented electronically when invoices are processed and approved for payment in MDOT FMIS. When processing invoices for payment, MDOT SHA requires that all support documents (including the HCCS) relevant to the invoice be retained to justify and support the invoice payment.

Finding 4

SHA did not comply with certain State procurement-related reporting and publication requirements for contract awards totaling \$77.1 million.

Recommendation 4

We recommend that SHA

- a. use appropriate methods to ensure that all contracts procured for snow and ice removal services are reported to BPW, as required; and**
- b. comply with State laws and procurement regulations by publishing contract awards on *eMM* within 30 days of the contract award (repeat).**

Response:

- a. MDOT SHA concurs with the recommendation. While the snow and ice removal contracts procured under the special emergency procurement regulations were properly reported to the BPW, normal emergency procurements awarded during significant winter storms were not. The \$6.5 million in purchase orders that were awarded under normal emergency procurement procedures should have been reported to the BPW, in accordance with current BPW advisories. These purchase orders were missed because they were incorrectly coded in MDOT FMIS as “M” for “maintenance” procurements instead of “EM” for “emergency” procurements. MDOT SHA will remedy this finding by taking two actions. First, MDOT SHA Office of Procurement and Contract Management and Office of Finance will provide guidance/training to the Office of Maintenance and the Districts shops, instructing them on how to properly code emergency purchase orders for snow operations. This action will occur by July 31, 2019, in time for the fiscal year 2020 snow season. Second, MDOT SHA will perform queries against discrete accounting distribution data elements that will identify purchase orders that are created for specific emergency winter events versus blanket purchase orders that represent the contractual relationships MDOT SHA has with vendors for season-long snow and ice removal. This will allow MDOT SHA to identify and report both blanket purchase orders and purchase orders that represent emergency procurements for snow and ice removal. These procedures will commence no later than June 30, 2019.
- b. MDOT SHA concurs with the recommendation. A reminder of this regulation will be issued by MDOT SHA’s Office of Procurement and Contract Management to all MDOT SHA procurement staff. Additionally, prior to activating blanket purchase orders in MDOT FMIS, the Office of Procurement and Contract Management and the Office of Finance will require a copy of the relevant eMM screen to confirm that the award was posted. This requirement will become part of the MDOT FMIS blanket purchase order Activation Checklist. In addition, to ensure that all blanket purchase orders are posted to eMM as required, a report will be generated from MDOT FMIS twice a month to identify those blanket purchase orders that were eligible for eMM posting during the period. Verification that the eMM posting occurred for those blanket purchase orders will be performed by MDOT SHA’s Office of Procurement and Contract Management, with verification results stored on the MDOT SHA shared drive. MDOT SHA plans to implement this procedure no later than June 30, 2019.

Federal Funds

Finding 5

SHA did not have comprehensive written procedures to resolve, in a timely manner, certain highway construction-related expenditures that had been suspended from the federal reimbursement process, and related follow-up efforts were not always documented.

Recommendation 5

We recommend that SHA

- a. establish and implement comprehensive written procedures that consider timeliness and significance for reviewing expenditures that were suspended from the federal fund reimbursement process (repeat), and**
- b. document the investigation and disposition of suspended expenditures (repeat).**

Response:

- a. MDOT SHA concurs with the recommendation. While informal documented procedures and work aids existed at the time of the examination, the Office of Finance has now formally documented the process. Additionally, by March 31, 2019, MDOT SHA will discuss the possibility of developing an aging report for suspended amounts with the MDOT FMIS Support Team at MDOT TSO.
- b. MDOT SHA concurs with the recommendation. The Director of Finance will continue to meet with key staff from the Office of Finance Capital Programming Division on a bi-weekly basis to discuss the Preview – Federal Aid Billing Summary Progress Report (Preview). This report is a “preview” of MDOT SHA’s weekly federal bill that is presented to the Federal Highway Administration (FHWA). In addition to considering the billed amount, items discussed include Code A’s, Code B’s, and the resolution of specific suspended amounts; especially those amounts that are complex or have aged on the Preview. Suspended amounts are documented on the “Preview Overrun Analysis”. This analysis represents a chronological history and detailed documentation of each suspended item’s follow-up activity. Finally, meeting minutes including a list of meeting attendees and specific overrun action items discussed are kept and memorialized by the Office of Finance. This formal investigation process commenced in June 2018.

District Office Property

Finding 6 (Policy Issue)

SHA had not completed a comprehensive review of physical security practices in place at its district offices to ensure that equipment and supplies were adequately protected from loss or misappropriation.

Recommendation 6

We recommend that SHA strongly consider completing a documented comprehensive review of security over equipment at all district office locations, and implement appropriate corrective actions as deemed necessary to safeguard the State assets under its control.

Response:

MDOT SHA concurs with the recommendation. In October 2017, MDOT SHA created a Security team responsible for conducting security reviews at all MDOT SHA locations. The team has completed reviews at fifteen MDOT SHA facilities to date, giving priority to district offices and shops with inventory supply rooms. Actionable items from the reviews resulted in additional security measures being implemented at three sites and the remaining sites are underway or awaiting vendor proposals. The security measures that will be implemented include cameras, additional access door controls, gate controls, and video intercoms for visitor access.

The team has begun conducting reviews on the second-phase of sites. The team will continue to conduct surveys at all remaining facilities to complete the cycle of surveys, which will result in actionable recommendations to improve security. Reviews are projected to be completed by December 2019. As recommended improvements are completed, the Security team has also begun conducting follow-up security inspections of facilities across the State to verify the changes are still adequate, systems are operational, and they are being used as intended. The follow-up is projected to be completed by July 2019.

Corporate Purchasing Cards

Finding 7

SHA lacked proper internal controls over corporate purchasing cards to prevent or detect unauthorized purchases.

Recommendation 7

We recommend that SHA

- a. perform periodic reviews to ensure that critical automated purchasing card system access is provided only to employees who require it for their job duties, and in a manner that ensures a proper segregation of duties;**
- b. delete system administrator access for the aforementioned six individuals who either no longer work at SHA or do not need the access;**

- c. **revise the user role for the CPC administrator to prevent access similar to system administrator capabilities; and**
- d. **ensure compliance with the *Manual* by incorporating the use of Level-3 data, when available, as a part of the monthly supervisory review to aid in the assessment of the propriety of CPC purchases.**

Response:

- a. MDOT SHA concurs with the recommendation. The System Administrator will be responsible for the periodic review. This review will be documented and maintained by the System Administrator. MDOT SHA will implement this process no later than June 30, 2019.
- b. MDOT SHA concurs with the recommendation; however, deletion of former employees would adversely impact transaction history. Instead, at this time all system access for individuals who no longer work at MDOT SHA has been inactivated.
- c. MDOT SHA concurs with the recommendation. The Office of Finance will take the following actions to improve user security in the Corporate Purchasing Card System's (CPCS) security module:
 - Assign the System Administrator role to an Office of Finance employee who works in another unit within the Office of Finance, but not in the Credit Card Section. This will place the responsibility for creation and inactivation of users in CPCS outside the Credit Card Section thereby allowing the removal of system administration duties from everyone in the Credit Card Section. System Administrators are precluded from holding a credit card. MDOT SHA will accomplish this action no later than June 30, 2019.
 - Re-evaluate the duties and capabilities assigned to all roles within CPCS to avoid internal control conflicts when specific roles are assigned to specific employees. MDOT SHA will accomplish this action no later than June 30, 2019.
- d. MDOT SHA concurs with the recommendation. Level-3 data reports are received from the credit card issuing bank and contain transactions flagged by the General Accounting Division (GAD), which are shared with cardholders and their respective approvers. These reports flag purchases that appear to be personal items or gifts. The Office of Finance requires cardholders and approvers to review these transactions and supply documentation to support why they are a proper business expense. The Office of Finance collects and retains the submitted documentation. The Office of Finance will discuss the Level-3 data reports with GAD to determine if all needed filters are being used to produce those transactions that should be investigated further. In our discussions with GAD, we will determine if additional use of the Level-3 data is required. MDOT SHA will meet and discuss this issue with GAD no later than June 30, 2019.

Information Systems Security and Control

Finding 8

Certain outdated software and security-related settings on SHA computers were not sufficient to provide SHA with adequate assurance that its computers were properly protected.

Recommendation 8

We recommend that SHA

- a. in conjunction with MDOT – OTTS, ensure that all computers are running current versions of their malware protection software;**
- b. promptly install all critical security-related software updates on its computers; and**
- c. ensure that all laptop computers are protected by an enabled and properly configured host-based firewall.**

Response:

- a. MDOT SHA concurs with the recommendation. In April 2018, MDOT SHA implemented weekly security scan reports to ensure all computers are running current version of malware protection software. MDOT SHA continues to push malware/anti-virus updates to all devices and mitigates endpoints out of compliance weekly.
- b. MDOT SHA concurs with the recommendation. In April 2018, MDOT SHA deployed a network access control solution, providing near real-time status and notification of endpoints out of compliance for all critical security-related updates on its computers. Full vulnerability scans are performed monthly and MDOT SHA continues to meet with MDOT security weekly to review the vulnerability list and prioritize resolution.
- c. MDOT SHA concurs with the recommendation. In April 2018, MDOT SHA ensured all MDOT SHA laptops are protected via group policies that defines security at the computer level. The host-based firewall is enabled and properly configured automatically using the group policy.

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