



**CITY OF BALTIMORE  
DEPARTMENT OF TRANSPORTATION**

**PERFORMANCE AUDIT OF  
AUTOMATED TRAFFIC VIOLATION ENFORCEMENT  
SYSTEM**

**For the Period July 1, 2017 through April 30, 2018**

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# CITY OF BALTIMORE

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Honorable Joan M. Pratt, Comptroller  
and Other Members of the  
Board of Estimates  
City of Baltimore, Maryland

### **Executive Summary**

We have conducted a performance audit of the Automated Traffic Violation Enforcement System (ATVES) of the Department of Transportation for the period July 1, 2017 through April 30, 2018. The purpose of our audit was to determine that the automated speed and red light enforcement cameras were accurately recording violations, that violations were properly reviewed and approved before citations were issued, that fines were collected and posted to the revenue account and to determine the amount of revenue collected as a result of paid violations.

Based on the work performed, we determined that there were some operating deficiencies. In addition, due to discrepancies in the records for revenue, we were unable to determine an accurate amount of revenue collected. These findings and our recommendations are included in the Findings Section of this report.

We appreciate the cooperation and assistance provided by the staff members of Department of Transportation ATVES while conducting this audit. The knowledge and assistance of staff was instrumental to the completion of this audit.

A handwritten signature in black ink that reads "Audrey Askew".

Audrey Askew  
City Auditor

December 7, 2018

**Department of Transportation**  
**Automated Traffic Enforcement Violation System**  
**Background Information**  
**For the Period July 1, 2017 Through April 30, 2018**

The Automated Traffic Violation Enforcement System (ATVES) is responsible for the location and operation of automated traffic enforcement cameras in Baltimore City. The ATVES is created with the goal of:

- Improving the quality of life for Baltimore City residents, those conducting business in Baltimore City and visitors to Baltimore City by advocating for and maintaining a safe and orderly transportation system.
- Reducing fatalities and injuries resulting from red light violations, speeding and other motor vehicle and pedestrian traffic violations.
- Improving pedestrian and motorist safety.
- Reducing property damage and loss.
- Analyzing roadway locations with a safety concern and consider alternatives to traffic violation cameras such as Department of Transportation (DOT) and Baltimore Police Department (BPD) practices, roadway modifications and other alterations.
- Install and maintain automated traffic enforcement solutions (cameras) when it is determined to be in the best interest of safety and efficiency.

These goals are accomplished through photo enforcement technology and a violation and citation processing system that is capable of capturing reliable data, digital images and video related to a variety of traffic violations. A Red Light Camera Monitoring System is a stationary camera that uses sensors working in conjunction with a traffic control signal to record images of motor vehicles entering an intersection during a red light signal phase. Photos and video are taken from the rear of the vehicle with the red light signal visible, both before entering the intersection and while the vehicle is in the intersection. The red light enforcement cameras are operational twenty-four hours, seven days a week, and every day of the year. Each red light violation is \$75. Fines collected from July 1, 2017 through April 30, 2017 for red light camera violations were \$4,827,141.44.

A Speed Camera Monitoring System is either permanently installed (fixed) in a particular location or are portable cameras that can be moved from location to location. Baltimore City speed cameras use tracking radar that measures the speed of vehicles that pass the camera. Each speed monitoring system undergoes an in-house daily calibration test and an annual calibration test by an independent testing company. School Zone Speed Monitoring System Cameras measure vehicles exceeding the speed limit by at least 12 miles per hour in a posted (signed) school zone. Speeding vehicles will be tracked and photographed from the rear of the vehicle with tracking radar, photos, and video, that record the vehicles speed. School Zone Speed monitoring systems are operational Monday through Friday, 6:00 AM through 8:00 PM, every day of the year. Each speed camera violation is \$40. Fines collected from July 1, 2017 through April 30, 2017 for speed camera violations were \$7,127,096.72.

**Department of Transportation**  
**Automated Traffic Enforcement Violation System**  
**Background Information**  
**For the Period July 1, 2017 Through April 30, 2018**

Red light camera and speed camera citations can be paid via mail, online or in person at the Abel Wolman Municipal Building, Bureau of Revenue Collections located at 200 N. Holliday Street Baltimore, MD. Fines paid online are processed by ACI, the vendor contracted to process online payments. Citations mailed are processed by Merkle, the lockbox vendor.

Red light camera and Speed camera citations can be challenged by submitting a court trial request online, by mail or in person. Online trial requests are processed and updated to the system by BCIT within 24 hours. In person and mail-in trial requests are processed and updated by a parking fines employee. At trial, the judge can decide to dismiss the citation, find the motorist not guilty, reduce the fine or impose the original fine. If an individual contests a citation in court and is found guilty, they will be responsible for paying the fine at court on the day of the trial. All revenue from tickets that are challenged in court and paid at court is revenue of the State of Maryland and not of Baltimore City. In the event the motorist is unable to pay on the day of trial, the judge may offer a deferment of payment. Payments that are deferred have to be paid through the Bureau of Revenue Collections by the due date determined by the judge. Defendants that do not pay the fines at the Courts or do not pay the Bureau of Revenue Collections by the deferred date determined by the judge, are liable to pay the City the full fine (original citation) amount plus any court costs assessed by the judge; these payments must be made in person at the Bureau of Revenue Collections. The Courts send trial disposition reports to the Bureau of Revenue Collections after each trial date that indicates the judge's verdict and fine assessed for each defendant. Bureau of Revenue Collections uses the trial disposition report to update its system for reduced fines and to close out accounts if applicable.

Red light camera and Speed camera citations can be abated or marked uncollectible. An abatement occurs when a citation is issued for circumstances such as unmarked police vehicles responding to emergencies, funeral processions, stolen vehicles, etc. Citations are marked uncollectible if issued in error for circumstances such as camera malfunction, emergency vehicle with sirens activated, etc. Status codes are used in the Collections system to indicate a citation has been abated (A) or is uncollectible (U). An abated or uncollectible citation must be noted in the system with an explanation and supporting documentation.

**Department of Transportation**  
**Automated Traffic Violation Enforcement System**  
**Audit Scope, Objectives and Methodology**  
**For the Period July 1, 2017 Through April 30, 2018**

We have conducted a performance audit of the Department of Transportation ATVES to determine the operating efficiency of the automated speed and red light enforcement cameras to accurately record violations, review and properly approve violations before citations were issued and determine the amount of revenue collected as a result of paid violations. Our audit was for the period July 1, 2017 through April 30, 2018.

Our audit was conducted in accordance with generally accepted *Government Auditing Standards* related to performance audits, issued by the Comptroller General of the United States and, accordingly, included such tests of the records and such other auditing procedures as we considered necessary in the circumstances.

To accomplish our objectives, we interviewed personnel in ATVES to obtain an understanding of the policies and procedures used to ensure that violations recorded by the automated traffic cameras were valid and properly approved. We also interviewed Bureau of Collections personnel to obtain an understanding of the procedures for collecting and recording revenue from violations.

Our audit findings and recommendations, as well as Department of Transportation ATVES' and Bureau of Revenue Collections' responses, are detailed in the Findings and Recommendations section of this report.

**Department of Transportation  
Automated Traffic Violation Enforcement System  
Findings and Recommendations  
For the Period July 1, 2017 Through April 30, 2018**

**Finding #1 – Red Light Camera Revenue Report**

**Condition:**

Red light camera revenue reported as collected by the ATVES in its Monthly Review report for the period August 1, 2017 through April 30, 2018 did not agree to the red light camera revenue recorded in the Department of Transportation accounting records (general ledger accounts).

**Criteria:**

Red light camera revenue reported as collected should be based on fines collected at the Bureau of Revenue Collections, fines paid on-line and processed by the vendor ACI and fines paid by mail and processed by the vendor Merkle. All of these collections are posted to the DOT revenue account.

**Cause:**

The ATVES prepared its reports based on reports provided by the Baltimore City Office of Information Technology (BCIT). The BCIT report included amounts for the fines assessed (\$75 per violation) and a balance amount (as identified on the BCIT report). ATVES determined revenue collected by reducing the gross fines assessed by the balance amount. However, through discussions with BCIT, the balance amount was not an accurate account of outstanding balances as it did not consider adjustments related to court requests, abatements and other situations that would require adjustments to the fines assessed.

**Effect:**

Red Light revenue reported by the ATVES for the period August 1, 2017 through April 30, 2018 in the amount of \$4,284,795 is \$542,346 less than the amount of \$4,827,141 recorded in DOT general ledger accounts.

**Recommendation:**

We recommend the DOT ensure that reports of red light revenue collected are accurate and consistent. In addition, we recommend DOT consult with BCIT to determine if BCIT can provide reports to assist in accurately calculating red light revenue collected. We also recommend DOT reconcile any differences between BCIT reports and the DOT general ledger.

**DOT's Response:**

DOT/ATVES does not accept this finding. The ATVES report is for operational performance tracking. The internal ATVES report will be annotated to identify the source of the data. The official collection of funds will be reported by the Baltimore City Department of Finance.

**Department of Transportation  
Automated Traffic Violation Enforcement System  
Findings and Recommendations  
For the Period July 1, 2017 Through April 30, 2018**

**Finding # 1 – Red Light Camera Revenue Report (Continued)**

**Audits' Response to DOT's Response:**

When the Department of Audits was provided the ATVES Monthly Review Reports by the prior Director of ATVES, we were not informed that the reports were for operational performance tracking only.

**Finding #2 – Speed Camera Revenue Report**

**Condition:**

Speed camera revenue reported by the ATVES as collected in its monthly review report for the period August 1, 2017 through April 30, 2018 did not agree to the speed camera revenue recorded in the Department of Transportation accounting records (general ledger accounts).

**Criteria:**

Speed camera revenue reported as collected should be based on fines collected at the Bureau of Revenue Collections, fines paid on-line and processed by the vendor ACI and fines paid by mail and processed by the vendor Merkle. All of these collections are posted to the DOT revenue account.

**Cause:**

The ATVES prepared its reports based on reports provided by the Baltimore City Office of Information Technology (BCIT). The BCIT report included amounts for the fines assessed (\$40 per violation) and a balance amount. ATVES determined revenue collected by reducing the gross fines assessed by the balance amount. However, through discussions with BCIT, the balance amount was not an accurate account of outstanding balances as it did not consider adjustments related to court requests, abatements and other situations that would require adjustments to the fines assessed.

**Effect:**

Speed camera revenue reported by the ATVES for the period August 1, 2017 through April 30, 2018 in the amount of \$8,052,406 is \$925,309 greater than the amount of \$7,127,097 recorded in DOT general ledger accounts.

**Recommendation:**

We recommend the DOT ensure that reports of speed camera revenue collected are accurate and consistent. In addition, we recommend DOT consult with BCIT to determine if BCIT can provide reports to assist in accurately calculating speed camera revenue collected. We also recommend the DOT reconcile any differences between BCIT reports and the DOT general ledger.



**Department of Transportation  
Automated Traffic Violation Enforcement System  
Findings and Recommendations  
For the Period July 1, 2017 Through April 30, 2018**

**Finding #2 – Speed Camera Revenue Report (Continued)**

**DOT's Response:**

DOT/ATVES does not accept this finding. The ATVES report is for operational performance tracking. The internal ATVES report will be annotated to identify the source of the data. The official collection of funds will be reported by the Baltimore City Department of Finance.

**Audits' Response to DOT's Response:**

When the Department of Audits was provided the ATVES Monthly Review Reports by the prior Director of ATVES, we were not informed that the reports were for operational performance tracking only.

**Finding #3 – Speed Camera: Validity of Violations**

**Condition:**

The Department of Audits noted an authorized reviewer/approver of the Speed Camera Citations signed off as the reviewer/approver for second and third reviews.

**Criteria:**

Per the Department of Transportation (DOT) ATVES process, a three-step review is performed on each violation. First, the vendor reviews the violation, next a DOT staff member or a police officer will complete the second review. The final review is performed by a police officer who will sign off on the violation (this officer must not be the same individual from the second review).

**Cause:**

The approver on this citation was a Baltimore City Police Officer who reviewed and approved the citation for both the second and third review.

**Effect:**

If the policy for reviewer/approver violations is not followed, the approval process is flawed and the validity of violations becomes questionable. There was no true oversight in validating speed camera violations.

**Recommendation:**

In accordance with ATVES three-step review process, we recommend ATVES ensure a different individual reviews and approves all citations.

**DOT's Response:**

ATVES accepts the auditor's recommendation and has notified vendors to ensure that a Baltimore Police Department who reviews a violation for quality cannot also do the final approval of the same violation.

**Department of Transportation  
Automated Traffic Violation Enforcement System  
Findings and Recommendations  
For the Period July 1, 2017 Through April 30, 2018**

**Finding #4 – Vehicles Flagged for Non-Payment of Fine**

**Condition:**

The Department of Audits performed testing of red light and speed camera violations. Three of the 248 citations tested for Red Light Camera violations and seven of the 330 citations tested for Speed Cameras violations were not paid and the violator's tags were not flagged with the Maryland Motor Vehicle Administration (MVA).

**Criteria:**

Per the Department of Transportation ATVES procedures, violations unpaid 52 days after the mailed date of the citation will be submitted to the MVA for tag suspension.

**Cause:**

Baltimore City's Bureau of Revenue Collections failed to flag the violations for non-payment.

**Effect:**

Revenue may be lost as a result of the Bureau of Revenue Collections' failure to timely flag the violator's registration.

**Recommendation:**

In accordance with ATVES procedures, we recommend the Bureau of Revenue Collections timely flag all violations unpaid 52 days after the citation notice date.

**Bureau of Revenue Collections' Response:**

Eight of the citations were issued to temporary tags and when the citations were flag eligible, the motorists had permanent tags and surrendered the temporary ones. The other two citations were issued to a tag that was canceled, returned to MVA, and are no longer registered. Per BCIT, temporary tags are not submitted to MVA.

**Audits' Response to Bureau of Revenue Collections' Response:**

We recommend the Bureau of Revenue Collections develop policies and procedures to identify citations issued to vehicles with temporary tags as temporary tags are traceable to vehicles and owners. We also recommend Bureau of Revenue Collections periodically monitor and document the payment status of such citations in the system. In addition, we recommend Bureau of Revenue Collections develop a policy for determining a period of time after the citation date when such violations should be deemed uncollectible.

**Department of Transportation  
Automated Traffic Violation Enforcement System  
Findings and Recommendations  
For the Period July 1, 2017 Through April 30, 2018**

**Finding #5 – Speed Camera Erroneous Violations Report**

**Condition:**

ATVES did not maintain error reports for the period of August 1, 2017 through April 30, 2018 detailing erroneous violations submitted by the speed camera vendor, American Traffic Solutions, Inc. (ATS).

**Criteria:**

Per the Maryland Transportation code Section 21-809 (a)(3)(i), an erroneous violation is defined as “a potential violation submitted by a speed monitoring system contractor for review by an agency that is apparently inaccurate based on a technical variable that is under the control of the contractor.” In addition, section (b)(5)(ii)(1) states “if more than 5% of the violations in a calendar year are erroneous violations, then the contractor shall be subject to liquidated damages for each erroneous violation equal to at least 50% of the fine amount for the erroneous violation, plus any reimbursements paid by the local jurisdiction.”

**Cause:**

ATVES did not maintain error reports detailing potential violations submitted by the vendor.

**Effect:**

Without error reports, management (ATVES) is unable to track all occurrences where the contractor submitted inaccurate violations based on a technical variable that is under the vendor’s control. In addition, without maintaining error reports, ATVES is unable to determine if liquidated damages are due.

**Recommendation:**

We recommend ATVES maintain reports of erroneous violations to determine if erroneous violations exceed the 5% threshold and whether liquated damages should be assessed.

**DOT’s Response:**

DOT/ATVES does not accept this finding. ATVES tracks the number of erroneous citations via the officer/ quality assurance rejections and the Ombudsman reports of erroneous violations as defined in code Section 21-809 (a)(3)(1) The percentage for the audit timeframe per citations mailed is listed below:

Erroneous violations July 1, 2017 to April 30, 2018	
Ombudsman (source Ombudsman tracking report)	11
ATVES and BPD (Source the Reject Reason Summary Report)	24226
Total erroneous violations	24237
Total violations	810,606
Percentage	2.9%

**Department of Transportation  
Automated Traffic Violation Enforcement System  
Findings and Recommendations  
For the Period July 1, 2017 Through April 30, 2018**

**Finding #5 – Speed Camera Erroneous Violations Report (Continued)**

**Audits' Response to DOT's Response:**

When originally requested for this audit, DOT informed Audits they did not maintain the records for erroneous violations and moving forward they would track such errors. DOT's response includes erroneous citations tracked through the ATVES Ombudsman Office (issued citations) and does not meet the definition of the Maryland Transportation Code Section 21-809(a)(3)(i) (potential violations).

**Department of Transportation  
Automated Traffic Violation Enforcement System  
Audit Note  
For the Period July 1, 2017 Through April 30, 2018**

The Department of Audits was not able to determine the operating efficiency of the speed cameras. The contract agreement with MRA Digital, LLC provided for annual calibration checks for speed cameras beginning July 2017. The first calibration occurred July 2018 and was outside of our audit period July 1, 2017 through April 30, 2018.