
EVALUATION OF SPEED MONITORING SYSTEMS

JULY 2026



OFFICE OF PROGRAM EVALUATION AND GOVERNMENT ACCOUNTABILITY
DEPARTMENT OF LEGISLATIVE SERVICES
MARYLAND GENERAL ASSEMBLY

Evaluation of Speed Monitoring Systems

**Department of Legislative Services
Office of Program Evaluation and Government Accountability
Annapolis, Maryland**

July 2026

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Victoria L. Gruber
Executive Director



Michael Powell
Director

DEPARTMENT OF LEGISLATIVE SERVICES
OFFICE OF PROGRAM EVALUATION AND
GOVERNMENT ACCOUNTABILITY
MARYLAND GENERAL ASSEMBLY

July 6, 2026

Senator Shelly Hettleman, Senate Chair, Joint Audit and Evaluation Committee
Delegate Jared Solomon, House Chair, Joint Audit and Evaluation Committee
Members of the Joint Audit and Evaluation Committee

Dear Senator Hettleman, Delegate Solomon, and Members:

At the request of the Executive Director of the Department of Legislative Services, the Office of Program Evaluation and Government Accountability has conducted an evaluation of Speed Monitoring Systems.

The report contains two recommendations. The Maryland Department of Transportation's (MDOT) response is Appendix A.

We wish to express our appreciation for the cooperation and assistance provided by MDOT and the local jurisdictions who operate speed monitoring systems.

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'M. Powell'.

Michael Powell
Director

MP/mpd

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Chapter 1.

Introduction

Maryland uses automated speed cameras, referred to as speed monitoring systems (SMS), to enforce speeding laws in school zones, residential areas, work zones, and certain highways. Local jurisdictions operate most speed camera programs; however, systems may also be operated by the State Highway Administration (SHA) and the Maryland Transportation Authority.

When a speed camera records a vehicle traveling at least 12 mph above the posted speed limit, an image of the vehicle's license plate is captured and reviewed. If the violation is confirmed, a citation is issued to the registered owner of the vehicle.

State law establishes requirements for how SMS are deployed and operated, including:

- signage and public notice requirements;
- restrictions on where cameras may be placed;
- equipment calibration standards; and
- enforcement procedures for unpaid citations.

For the period covered by this evaluation, automated speed camera citations carried a civil fine of \$40. Citations are mailed to the address associated with the license plate photographed by the speed camera.

More than 2 million speed camera citations are issued annually in Maryland

SMS operate throughout Maryland. Between fiscal 2023 and 2025:

- the number of jurisdictions operating speed cameras increased from 48 to 57;
- the number of cameras operating statewide ranged from 723 to 844; and
- over 2.3 million citations were issued each year.

Over the three-year period, more than 7 million speed camera citations were issued statewide.

Exhibit 1: Statewide speed monitoring activity

	FY23	FY24	FY25
Jurisdictions	48	53	57
Cameras	844	723	826
Citations Issued	2,435,281	2,316,823	2,541,529
Net Revenue	\$19,957,432	\$26,373,005	\$25,532,544

Source: OPEGA staff depiction of information in MPCTC reports.

State law requires jurisdictions operating SMS to submit annual data on program activity to the Maryland Police and Correctional Training Commissions (MPCTC). MPCTC publishes these annual mandatory reports and makes them publicly available for download via their website:

<https://mpctc.dpscs.maryland.gov/reports.htm>

Speed camera data was not consistently accessible across jurisdictions

Maryland does not maintain a centralized database for automated speed enforcement data. As a result, the Office of Program Evaluation and Government Accountability (OPEGA) collected detailed violation-level data directly from jurisdictions and their vendors.

OPEGA requested speed camera violation data from the five jurisdictions that issued the highest number of citations during fiscal 2023 and 2024, as well as from the SHA. The requested data covered the period from July 1, 2023 through June 30, 2025.

For purposes of this evaluation:

- a violation refers to any instance where a vehicle was recorded traveling at least 12 mph above the posted speed limit; and
- a citation refers to instances where a citation number was assigned after review of the recorded violation.

Not all violations resulted in a citation. Violations may be dismissed for reasons such as equipment errors, emergency vehicles, or administrative review. Less than 4% of all violations were dismissed.

Jurisdictions reported that access to violation-level data is not always readily accessible because the data is typically maintained by the vendors.

As a result:

- requested data was provided over several months;
- one jurisdiction could not provide data because of a vendor contract dispute;
- another jurisdiction could only provide partial data because of a vendor transition; and
- data formats varied across jurisdictions and vendors.

Separately, OPEGA worked with the Motor Vehicle Administration (MVA) to obtain all SMS citations that were referred to MVA for enforcement.

The data collected from these sources provided the basis for observations presented in this report.

Chapter 2. SMS Violation Trends

OPEGA analyzed approximately 3.35 million speed camera violations that were associated with about 1.5 million unique license plates. For purposes of this analysis, OPEGA treated each unique license plate as a unique vehicle. While a license plate may occasionally transfer between vehicles, MVA indicated this is uncommon.

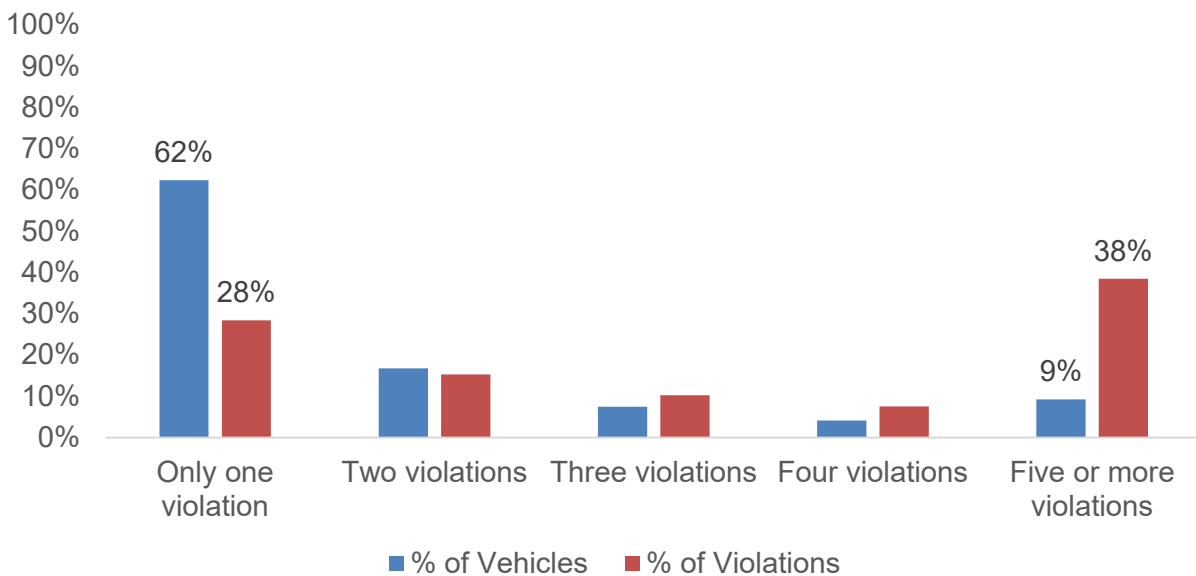
Most offenders received very few violations

Most vehicles captured by speed cameras received only a small number of violations during the period reviewed. About 62% of vehicles received only one violation, accounting for 28% of all violations.

In contrast, a much smaller group of vehicles accumulated violations repeatedly, sometimes across multiple jurisdictions. About 9% of vehicles received five or more violations, accounting for 38% of all violations.

The vehicle with the most violations received 287 across two of the five jurisdictions.

Exhibit 2: Distribution of vehicles and violations by number of violations



Source: OPEGA analysis of sample data.

Some vehicles accumulated violations across multiple jurisdictions

Some vehicles repeatedly received violations across multiple jurisdictions rather than within a single speed camera program.

Several of the vehicles with the highest volume of violations appeared in the data from more than one jurisdiction, indicating that some repeat offenders traveled throughout the state while continuing to accumulate violations. Vehicles may also have received violations in the other jurisdictions operating automated speed enforcement programs that were not included in this evaluation.

Maryland does not maintain a single statewide system that tracks all automated speed enforcement activity associated with a vehicle across jurisdictions. Jurisdictions only maintain records for their own programs, and MVA only receives information on unpaid citations referred for enforcement.

Most violations involved speeds between 12 and 15 mph above the limit

Maryland speed cameras only issue violations when a vehicle exceeds the posted speed limit by at least 12 mph. Across the violations reviewed by OPEGA, approximately 2.35 million violations (71%) involved speeds between 12 and 15 mph above the limit.

Under Maryland law, exceeding the speed limit by 30 mph or more is considered reckless driving. Roughly 40,000 violations (2%) met or exceeded this threshold.

Exhibit 3: Percent of violations falling in certain speed bands

MPH Over the Speed Limit	Percent of Violations
12 – 15	71%
16 – 19	20%
20 – 29	8%
30 – 39	1%
40 +	1%

Source: OPEGA analysis of sample data.

The speed bands used for this analysis correspond to recent legislation that created graduated fines for increased levels of speeding.

**Penalty Structure for Violations Recorded by Speed Monitoring Systems
Effective October 1, 2025**

<u>Exceeding the Speed Limit by:</u>	<u>Maximum Penalty</u>
12 - 15 MPH, inclusive	\$40
16 - 19 MPH, inclusive	70
20 - 29 MPH, inclusive	120
30 - 39 MPH, inclusive	230
40 or more MPH	425

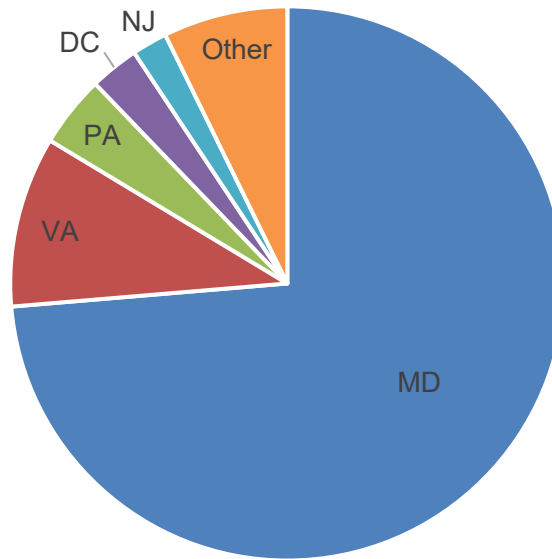
MPH: miles per hour

Source: Department of Legislative Services

Vehicles registered outside Maryland accounted for one-quarter of violations

Vehicles with out-of-state license plates were responsible for a large number of violations in Maryland. Approximately 26% of violations involved out-of-state vehicles. Virginia accounted for the largest share of those violations, followed by Pennsylvania, Washington DC, and New Jersey.

Exhibit 4: Distribution of speed violations by state



Source: OPEGA analysis of sample data.

Unlike Maryland vehicles, out-of-state vehicles cannot be referred to the Maryland MVA for further enforcement. As a result, collecting unpaid fines from out-of-state vehicle owners can be more difficult.

Chapter 3. MVA Enforcement

Local jurisdictions may refer unpaid speed camera citations issued to Maryland vehicles to MVA for enforcement. Once a citation is referred, MVA places a flag on the vehicle's registration that prevents the registration from being renewed until the citation is resolved.

OPEGA analyzed citation and enforcement data from three jurisdictions whose records could be matched with MVA data using unique citation identifiers. These jurisdictions accounted for approximately 270,000 citations referred to MVA for enforcement.

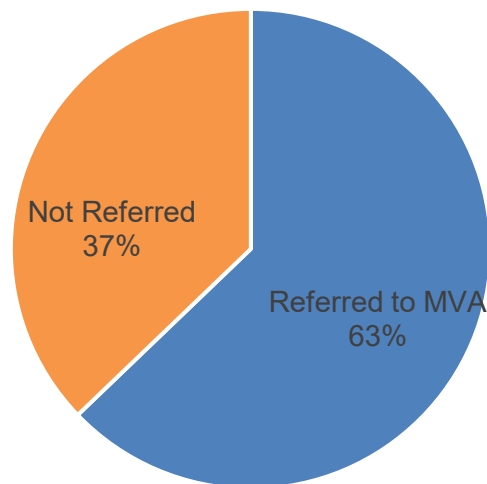
Data Limitations:

Although jurisdictions have varying policies for when payment is due, at least two indicated that citations are not considered overdue until at least 30 days after issuance. To avoid counting citations that were still eligible for timely payment, OPEGA excluded citations that occurred within 30 days of the end of the data collection period. There is no established standard for when a jurisdiction may refer overdue citations to MVA for enforcement.

Over one-third of unpaid citations were not referred to MVA for enforcement

There were approximately 230,000 unpaid citations from the jurisdictions reviewed. About 37% of those unpaid citations had not been referred to MVA for registration flagging. Vehicles without any flags may renew their MVA registration, despite having unpaid citations with the jurisdictions.

Exhibit 5: Percent of unpaid citations referred to MVA for enforcement



Source: OPEGA analysis of sample and MVA data.

Over half of citations referred to MVA remained unresolved

When a citation is referred to MVA, two separate flags are placed on the vehicle registration:

- a jurisdictional flag associated with the unpaid citation; and
- an administrative flag associated with MVA processing requirements.

Before the vehicle registration can be renewed, both flags must be resolved. Some vehicle owners resolved one flag but did not fully resolve the citation.

At the time of OPEGA's analysis only 43% of flagged citations had been fully resolved.

Exhibit 6: Status of jurisdictional and administrative flags

Flag Status	Number of Citations
Both Flags Resolved	115,145
Neither Flag Resolved	116,367
One Flag Resolved	38,877

Source: OPEGA analysis of sample and MVA data.

Many vehicles with unresolved flags had expired registrations

When a vehicle owner does not resolve registration flags, the vehicle registration eventually expires and that vehicle cannot legally operate on public roadways.

More than two-thirds of unresolved registration flags were associated with vehicles that had expired registrations. Some registrations had expired recently, while others had been expired for several years.

This indicates that some vehicle owners continued to leave citations unpaid, allowing their vehicle registrations to expire.

Thousands of vehicles with expired registrations continued receiving speed camera citations

Although vehicles with expired registrations are not legally permitted to operate on Maryland roadways, there were more than 18,000 vehicles with expired registrations that received at least one additional speed camera citation after their registration expiration date.

Approximately 250 of those vehicles received more than 10 citations after the registration had expired. The vehicle with the highest number of post-expiration citations accumulated 184 violations after its registration expired.

Chapter 4. Super Speeders

OPEGA identified a small group of vehicles that accumulated high numbers of speed camera violations while also repeatedly traveling at extreme speeds.

For purposes of this report, OPEGA defined “Super Speeders” as a vehicle that:

- received 50 or more speed camera violations; and
- had at least 10% of those violations occur at speeds of 30 mph or more above the posted speed limit.

OPEGA identified 33 vehicles that met these criteria.

Half of the Super Speeders were registered outside of Maryland

Sixteen of the 33 Super Speeders were registered outside of Maryland. Virginia accounted for most of the out-of-state vehicles identified.

Exhibit 7: Super Speeders by State

State	# of License Plates
MD	17
VA	12
NY	1
SC	1
DC	1
NC	1
Total	33

Source: OPEGA analysis of sample data.

Most citations received by Super Speeders were not paid

Twenty-five of the 33 Super Speeders did not resolve any of their citations, 10 from Maryland and 15 of the 16 out-of-state vehicles.

Although some violations were dismissed for technical or administrative reasons, the 33 Super Speeders received 2,636 enforceable citations. At the time of this analysis, only 5% of those citations had been paid or otherwise resolved.

Exhibit 8: Payment rate of Super Speeder citations

State	Citations	Total Paid	% Paid
Maryland	1,516	120	8%
Out-of-State	1,120	6	1%
Total	2,636	126	5%

Source: OPEGA analysis of sample data.

Most Maryland Super Speeders had unresolved MVA flags

Of the 17 Maryland Super Speeders, 14 had citations that had been referred to MVA for enforcement.

Those 14 vehicles accounted for 726 speed-related registration flags placed by MVA. At the time of analysis:

- 128 flags had been resolved; and
- 598 flags remained unresolved.

Only 6 of the 14 flagged Super Speeders had resolved any of their registration flags.

Exhibit 9: Status of Super Speeder MVA Flags

MD Super Speeders	Total Flags	Flags Released	Flags Unreleased
MD Vehicle 1	242	0	242
MD Vehicle 2	106	0	106
MD Vehicle 3	77	77	0
MD Vehicle 4	74	0	74
MD Vehicle 5	68	0	68
MD Vehicle 6	64	32	32
MD Vehicle 7	47	0	47
MD Vehicle 8	25	4	21
MD Vehicle 9	8	8	0
MD Vehicle 10	5	5	0
MD Vehicle 11	4	2	2
MD Vehicle 12	3	0	3
MD Vehicle 13	2	0	2
MD Vehicle 14	1	0	1
MD Vehicle 15	0	-	-
MD Vehicle 16	0	-	-
MD Vehicle 17	0	-	-
Total	726	128	598

Source: OPEGA analysis of sample and MVA data.

A few Super Speeders continued receiving violations after their registration expired

Seven Maryland Super Speeders had expired vehicle registrations at the time of analysis. Four of those vehicles continued to receive speed camera violations after their registrations expired. Ninety eight percent of the violations that these four Super Speeders accumulated were after their vehicle registration expiration date.

Exhibit 10: Violations earned by Super Speeders after registration expiration

MD Super Speeder	Registration Expiration Date	Total Violations	Violations earned after Registration Expired
MD Vehicle 1	3/1/2024	287	278
MD Vehicle 2	12/1/2023	228	224
MD Vehicle 3	3/18/2023	86	86
MD Vehicle 4	2/1/2024	73	73
Total		674	661

Source: OPEGA analysis of sample data.

Chapter 5.

SMS Effectiveness and Enforcement Outcomes

Automated speed enforcement is intended to reduce speeding and improve roadway safety. Program administrators stated that the primary goal of automated speed enforcement is to improve safety rather than generate revenue, and that camera locations are selected with that objective in mind. If cameras successfully reduce speeding over time, the number of citations issued at a location would be expected to decline, resulting in decreased revenue.

Violations declined at most camera locations over time

Two jurisdictions provided camera deployment records identifying where and when individual speed cameras became operational.

Using those records, there were nine cameras that:

- became active during the review period; and
- remained operational for at least 13 months.

For each camera, OPEGA compared the number of violations recorded during the first full month of operation with the number recorded during the same month one year later.

Exhibit 11: Percent change in violations issued over time

Camera #	Month 1 Violations	Month 13 Violations	% Change
1	333	104	-69%
2	331	181	-45%
3	298	197	-34%
4	143	49	-66%
5	86	24	-72%
6	901	508	-44%
7	1,197	412	-66%
8	319	405	27%
9	718	656	-9%
Total	4,326	2,536	-42%

Source: OPEGA staff analysis of sample data.

Eight of the nine cameras experienced a decline in violations over the one-year period. Across all cameras, violations declined by approximately 42% between the first month of operation and the same month one year later.

Citation payment rates were lower among repeat offenders, out-of-state vehicles, and higher-speed violations

OPEGA analyzed the percentage of citations that were paid, referred to as the payment rate, for citations that remained subject to payment after administrative review. Citations dismissed after issuance were excluded from analysis.

At the time of analysis, more than 1.3 million citations remained unpaid, representing approximately \$54.7 million in uncollected citation revenue.

Payment rates differed when comparing several characteristics of the vehicles that accumulate citations including:

- vehicles that accumulated large numbers of citations had lower payment rates relative to those with few citations;
- out-of-state vehicles had lower payment rates than Maryland vehicles;
- vehicles that were caught traveling at higher speeds had lower payment rates than those traveling at lower speeds.

Exhibit 12: Payment rates by violation characteristic

Characteristics of Violator/Citation	Category	% of Citations Paid
Number of Citations earned	1-4	67%
	5-9	53%
	10-19	41%
	20+	23%
State Vehicle is Registered	Maryland	64%
	Virginia	26%
	Other States	52%
Speed of Citation	12-15 mph	60%
	30+ mph	48%

Source: OPEGA analysis of sample data.

These characteristics may overlap. For example, some repeat offenders were also registered outside of Maryland or accumulated citations for traveling at higher speeds. As a result, differences in payment behavior may reflect multiple contributing factors.

Recommendations

Recommendation #1:

The Maryland General Assembly should establish consistent standards for when unpaid SMS citations are referred to MVA for registration flagging.

MVA indicated that local jurisdictions currently determine when a citation is considered overdue and when it is eligible to be referred to MVA for enforcement action. Referral practices vary among jurisdictions, with some referring citations 45 days after issuance while others did not refer them for several years.

Establishing consistent statewide referral standards would help ensure that unpaid citations are treated uniformly across jurisdictions and that vehicle owners face similar consequences for noncompliance. Currently, vehicles with citations that have been flagged by MVA may not renew their registration until flagged citations are resolved. In contrast, vehicles with unpaid citations that are not referred to MVA may continue to renew registrations and operate without additional enforcement action.

Recommendation #2:

Maryland Department of Transportation should review whether current enforcement mechanisms adequately address repeat violators, vehicles with expired registrations, and out-of-state vehicles with unpaid speed camera violations.

OPEGA identified vehicles that accumulated large numbers of speed camera violations while continuing to operate despite unpaid citations, unresolved MVA flags, and expired registrations.

Out-of-state vehicles accounted for approximately one-quarter of violations and generally demonstrated a lower payment rate for citations compared to Maryland vehicles.

Reviewing the effectiveness of current enforcement mechanisms could help determine whether additional enforcement tools or policy changes are needed to address repeat noncompliance.

Appendix A.

Response from the Maryland Department of Transportation

Recommendations

Recommendation #1:

The Maryland General Assembly should establish consistent standards for when unpaid SMS citations are referred to the MVA for registration flagging.

The MVA indicated that local jurisdictions currently determine when a citation is considered overdue and when it is eligible to be referred to the MVA for enforcement action. Referral practices vary among jurisdictions, with some referring citations 45 days after issuance while others did not refer them for several years.

Establishing consistent statewide referral standards would help ensure that unpaid citations are treated uniformly across jurisdictions and that vehicle owners face similar consequences for noncompliance. Currently, vehicles with citations that have been flagged by the MVA may not renew their registration until flagged citations are resolved. In contrast, vehicles with unpaid citations that are not referred to the MVA may continue to renew registrations and operate without additional enforcement action.

MVA Comments:

MVA concurs.

Recommendation #2:

MDOT should review whether current enforcement mechanisms adequately address repeat violators, vehicles with expired registrations, and out of state vehicles with unpaid speed camera violations.

OPEGA identified vehicles that accumulated large numbers of speed camera violations while continuing to operate despite unpaid citations, unresolved MVA flags, and expired registrations.

Out of state vehicles accounted for approximately one quarter of violations and generally demonstrated a lower payment rate for citations compared to Maryland vehicles.

Reviewing the effectiveness of current enforcement mechanisms could help determine whether additional enforcement tools or policy changes are needed to address repeat noncompliance.

MVA Comments:

Starting October 1, 2026, Senate Bill 111 authorizes the Administration to make an agreement, arrangement, or declaration with the authorized representative(s) of any other jurisdiction to provide for reciprocal enforcement of out-of-state violations recorded by Automated Traffic Enforcement Systems. The enabling legislation authorizes the Administration to share data and refuse to register or reregister motor vehicles with outstanding out-of-state violations from a cooperating state.

Without consistent standards in enforcement of unpaid automated enforcement violations and full visibility of violations occurring in all Maryland jurisdictions, violations may not be enforced in a consistent and timely manner.