



UNIVERSITY *of* MARYLAND  
SCHOOL OF MEDICINE  
SHOCK, TRAUMA AND ANESTHESIOLOGY  
RESEARCH CENTER

# **SURVEY OF AVAILABLE DATA FOR AGGRESSIVE AND RECKLESS DRIVING IN MARYLAND**

Charles “McC” Mathias National Study Center for Trauma  
& EMS (NSC)

University of Maryland, Baltimore

## **Final Report**

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## EXECUTIVE SUMMARY

### AVAILABLE DATA FOR AGGRESSIVE AND RECKLESS DRIVING IN MARYLAND

1. Maryland State Police (MSP) Electronic Traffic Information Exchange (E-TIX) Data, Citations and Adjudications Data
2. Maryland Automated Traffic Violation Enforcement Data
3. MSP Automated Crash Reporting System (ACRS)
4. Maryland Motor Vehicle Administration (MVA) Records
5. Maryland State Highway Administration (SHA) Work Zone Speed Cameras Data
6. Fatality Analysis Reporting System (FARS) Data
7. Maryland Drivers' Crash and Citations Records in Other States: VA, DC, DE, NC, PA
8. Maryland County and Municipal Police Departments Records

#### Acronyms used:

ACRS – Automated Crash Reporting System  
E-TIX – Electronic Traffic Information Exchange  
FARS – Fatality Analysis Reporting System  
MSP – Maryland State Police  
MVA – Motor Vehicle Administration  
MHSO – Maryland Highway Safety Office  
SAR – Speed, Aggressive, and Reckless  
SHA – State Highway Administration

We met virtually with our partners to identify the potential data sources:

- MHSO
- Baltimore County
- Howard County
- Montgomery County
- MVA
- SHA
- Other states: VA, DC, DE, NC, PA
- E-mail inquiry for community and local police departments

## **1. Maryland State Police (MSP) Electronic Traffic Information Exchange (E-TIX) Data, Citations and Adjudications Data**

E-TIX data are by far the most important source of information for SAR driving in Maryland. They contain information about all traffic stops, including citations and warnings. Full information about the driver, type of violation, traffic stops outcomes, arrests, searches, etc. are available. The E-TIX data can be linked to the crash data for more advanced reports.

- ✓ Data agreement with MSP is required to access the data.

The traffic citation and adjudication data for violations of motor vehicle laws in the State of Maryland are available on a semi-annual basis from the Maryland District Court System. The citation database includes information about the violation and subsequent adjudication and conviction of each traffic citation issued in the State. The citation and adjudication data can be linked to the crash data for more advanced reports.

- ✓ Data agreement with the District Court is required for access to the data.

## **2. Maryland Automated Traffic Violations Enforcement Data**

The automated traffic violations enforcement system includes speed cameras, red light cameras, and school bus cameras (outside only). The data collected from these speed cameras includes the following fields: vehicle registration tag, date, time, the street being monitored, the speed limit of the street, and the recorded speed of the vehicle. There are also more advanced cameras that are capable of functioning simultaneously as a red-light camera and a speed camera. These advanced cameras are also reportedly able to detect the usage of cell phones as well.

The data collected from each type of camera is managed by a separate third-party vendor who is responsible for storing the data and generating data reports for the local jurisdiction (county, city, town, etc.) upon request, however the jurisdiction owns all rights to the data itself. There are only a few major vendors that are used in the State of Maryland for administering the cameras, including storage and maintenance of collected data.

A new automated enforcement bill was approved by MD Legislature covering stop sign automated enforcement; Legislation - HB0364. Prince George's County can now enforce stop sign violations automatically. The above is the extent of all available automated enforcement technology within our state.

- ✓ Access to the data may be given by the jurisdiction that owns the data. Vendors are required to provide any data and reports requested by the jurisdiction, but they may levy an additional fee for larger data requests from other clients.

### **3. Maryland State Police Automated Crash Reporting System (ACRS)**

ACRS is a system used by MSP to document and report crash data. This data is used to inform MSP as well as the various transportation safety related agencies and organizations throughout Maryland. The crash data contain several elements that relate to aggressive and reckless driving, including contributing circumstances and person actions like speeding, failure to yield right of way, improper lane change, operating motor vehicle in erratic/reckless manner, etc.

The crash data can be linked to the E-TIX data for more advanced reports.

- ✓ Access to the data with personal identifying information requires data agreement with MSP and the state agency must be part of the Network Maryland system.
- ✓ The MSP publishes a public copy of the data sanitized of all identifiers on their website.
- ✓ Records of fatal crashes are visualized in a dashboard on the Zero Deaths MD website, with filters to enumerate crashes where speed or aggressive driving was a contributing cause.

### **4. Maryland Motor Vehicle Administration (MVA) Records**

MVA stores or has access to all data related to driver's license suspensions and traffic violation points accumulated for all Maryland drivers. This data includes standardized codes set forth in the American Association of Motor Vehicle Administrators (AAMVA) code dictionary, which are used to identify the type of driver conviction or the reason for a driver withdrawal.

The MVA data contain many elements that are related to aggressive and reckless driving. In addition, the MVA data contain detailed demographics for the drivers, including self-reported race determination, zip-codes, etc. that can be linked to the citation and crash data.

The MVA also receives data from most other states, presenting the opportunity for a potential wealth of data. However, this data is limited to violations that result in a conviction and flags that are reported from the use of automated enforcement. Traffic violations that do not result in conviction are not reported and multiple automated enforcement violations may be reported as one flag.

- ✓ Access to the data requires data agreement with MVA.

## **5. Maryland State Highway Administration (SHA) Work Zone Speed Cameras Data**

The Office of Traffic Safety, a division of SHA, manages work zone speed cameras that are used on Maryland's highways. These cameras are moved to different locations between each work shift. The data collected by these cameras include the following fields: date, time, location, posted speed limit, speed of the vehicle, and tag number. One of the major vendors for Maryland manages and stores the data but SHA owns the data, and they can request these data at any time and have data available for the last 15 years.

- ✓ Access to the data requires data agreement with SHA.

## **6. Fatality Analysis Reporting System (FARS) Data**

FARS is a collection of fatal motor vehicle crashes and contains data collected from qualifying crashes throughout the United States. FARS is used by the National Highway Traffic Safety Administration (NHTSA) to identify issues within the current highway infrastructure. There are two conditions that must be present in order for a given crash to be included in the FARS data: the crash must have involved a motor vehicle traveling on a public road, and the crash must result in the death of a motorist or non-motorist within 30 days of the incident. FARS crash data is publicly available and contains data from 1975-2022 and there are indicators for contributing factors, including speeding.

- ✓ Access to FARS data is free.

## **7. Maryland Drivers' Crash and Citations Records in Other States: VA, DC, DE, NC, PA**

All states' Highway Safety Offices (HSO) use or have some type of access to their own state's crash data, citation and adjudication data for their traffic safety analysis. Many but not all states also have automated traffic violations enforcement data.

Some of the drivers in these records have Maryland driver's licenses. It is possible to request these data from other states and they are generally interested in collaboration with us. Different states have different relationships with the owners of the data in question: their state police, judiciary system, or the owners of the speed cameras (where available) data and their vendors.

These data are very valuable because they represent the full picture of the behavior of the Maryland drivers in other states that includes not only the violations with convictions that is reported to MD MVA, but all of them. Obtaining data may take considerable time but it is possible.

- ✓ Access to the data from other states may require data agreements or deidentification process.
- ✓ Summary reports from other states can be obtained relatively fast.

## **8. Maryland County and Municipal Police Departments Records**

Some county and municipal police departments have local records related to aggressive and reckless driving. Typically, these are records of residents' complaints of speeding on local roads, speed feedback signs, etc. These data could be valuable because they cannot be found elsewhere. On the other hand, the records are usually not systematic and in the same format, some of them are not digital records. It would be very hard and time consuming to obtain and summarize the data.

- ✓ Access to the data would require asking the local police departments to share the data.

## LIMITATIONS

### 1. Source

The best source for SAR violations would be a population data but this is practically not possible because we cannot identify all SAR violations, all the time, throughout the State of Maryland.

The second-best source of data would be a representative sample of the SAR violations (random sample in time). This is theoretically possible but very expensive, and time consuming. Typical example of such samples are the annual Seat Belt observation studies.

The next best source of SAR data is a convenience sample. This is the data that is readily available and can be used for reports and analysis. The justification for using these data is that the sample data are **at least correlated** to the population data.

For example, many drivers caught by speed cameras driving more than 12MPH above the speed limit are probably the same drivers who commit SAR violations. That way studying the currently available data we can determine some basic characteristics of the SAR drivers' population.

### 2. SAR Violation Definition

The SAR driving definitions vary by state, are complex in nature, and are changed all the time. For example, with the new crash ACRS data version 2.0 (2024) the SAR driving definition for the State of Maryland has changed and it is not backward compatible with the previous versions. If we use only the narrow definition of SAR driving we will not be able to determine basic trends and we will miss many of the SAR violations in previous years.

**Reporting the SAR violations in their current narrow definition is necessary but not a sufficient condition to understand the full scale of the SAR problem in Maryland.** This is the reason that in this survey of available SAR data we apply a broader definition that includes speeding and other moving violations in addition to the narrow-defined SAR violations by ACRS 2.0.

## LIST OF AVAILABLE SAR RELATED DATA BY SOURCE

### 1. MARYLAND STATE POLICE (MSP) ELECTRONIC TRAFFIC INFORMATION EXCHANGE (E-TIX) DATA, CITATIONS AND ADJUDICATIONS DATA

- **SAR and Related Measures Available in Citation Data**
  - ✓ Rate and type of conviction (e.g. Guilty, PBJ, etc.)
  - ✓ Time to conviction (time from citation to adjudication)
  - ✓ Recidivism for SAR violations, and other violations (after detailed analytics)
  - ✓ Comparison of the rate of conviction for SAR to other types of violations
  - ✓ Description of SAR drivers (age, gender, race)
  - ✓ Socio-economic characteristics of the SAR drivers based on their zip code linked to US Census and American Community Survey (ACS) data.
  - ✓ After linking with MSP Crash Data (ACRS):
    - ✓ Proportion of SAR drivers with crashes, crash characteristics, injuries, etc.
    - ✓ Compare the proportion of SAR drivers with crashes to drivers with other citations, and drivers with no citations.
- **Limitations of Citation Data**
  - ✓ Adjudications may take a long time, sometimes several years, to be finalized and appear in the database.
  - ✓ Requires data agreement with the Maryland District Court



- **SAR and Related Measures Available in E-TIX Data**
  - ✓ Number of SAR violations by year, month, day of the week, time of the day
  - ✓ Proportion of warnings and citations
  - ✓ Reporting SAR violations' reason for stop, stop outcomes, searches and outcome of searches, arrests, criminal charges, etc.
  - ✓ Recidivism for SAR violations, and other violations; citations vs warnings
  - ✓ Time between two SAR violations, or between two moving violations
  - ✓ Description of SAR drivers (age, gender, race)
  - ✓ Socio-economic characteristics of the SAR drivers based on their zip code linked to US Census and American Community Survey (ACS) data.
  - ✓ After linking with MSP Crash Data (ACRS):
    - ✓ Proportion of SAR drivers with crashes, crash characteristics, injuries, etc.
    - ✓ Compare the proportion of SAR drivers with crashes to drivers with other citations, and drivers with no citations.
  - ✓ After linking with MVA Data:
    - ✓ Compare the self-reported race determination by the driver (MVA) with the officer determination (E-TIX).
  
- **Limitations of E-TIX Data**
  - ✓ Officers have discretion on issuing warnings or citations, which may not fully capture the violators speed.
  - ✓ Requires data agreement with the MSP.

## 2. MARYLAND AUTOMATED TRAFFIC VIOLATION ENFORCEMENT DATA

- **SAR and Related Measures Available in Automated Enforcement Data**
  - ✓ The actual speed and the speed limit.
  - ✓ Number of speeding violations by year, month, day of the week, time of the day
  - ✓ Number and proportion of repeated offenders (by car owner)
  - ✓ Time between two speeding violations (by car owner)
  - ✓ After linking with MVA Data
    - ✓ Demographics characteristics of the car owner.
    - ✓ Socio-economic characteristics based on the car registration zip code linked to US Census and American Community Survey (ACS) data.
  
- **Limitations of Automated Enforcement Data**
  - ✓ Only the license tag and the car owner data are available, not the actual driver.
  - ✓ Access to the data may be given by the jurisdiction that owns the data.  
Vendors are required to provide any data and reports requested by the jurisdiction, but they may levy an additional fee for larger data requests from other clients.

### 3. MSP AUTOMATED CRASH REPORTING SYSTEM (ACRS)

#### ➤ SAR and Related Measures Available in Crash Data

- ✓ Identifying and reporting SAR related crashes based on the “Contributing Circumstances” field from the crash data.
- ✓ Reporting the demographic characteristics of the drivers involved in SAR related crashes.
- ✓ Reporting the crash characteristics of SAR related crashes and comparing them to the other crashes.
- ✓ Reporting the injury severity (KABCO) of drivers involved in SAR related crashes and comparing it to the rest of the crashes.
- ✓ Reporting the socio-economic characteristics of the drivers involved in SAR related crashes based on their zip code linked to US Census and American Community Survey (ACS) data.
- ✓ After linking with E-TIX and Citations Data:
  - ✓ Reporting the number and proportion of SAR drivers with previous citations: number and type of citations, recidivism, etc.
- ✓ After linking with MVA Data:
  - ✓ Self-reported race determination by the driver (MVA) involved in SAR related crash.

#### ➤ Limitations of Crash Data

- ✓ Possible missing data in “Contributing Circumstances” field, where not all circumstances are recorded accurately.
- ✓ Access to the data with personal identifying information requires data agreement with MSP and the state agency must be part of the Network Maryland system.

## 4. MARYLAND MOTOR VEHICLE ADMINISTRATION (MVA) RECORDS

### ➤ SAR and Related Measures Available in MVA Data

- ✓ Number and proportion of driver's license suspensions and traffic violation points related to SAR.
- ✓ Report from most of the other states about MD drivers convicted of traffic violations, including the ones related to SAR (SAR definitions vary by state).
- ✓ Number and proportion of repeated offenders
- ✓ Distribution of SAR related violations by zip code of the driver
- ✓ Socio-economic characteristics based on the driver's zip code linked to US Census and American Community Survey (ACS) data.
- ✓ Demographic information about drivers with SAR related violations, including self-determined race category.
- ✓ After linking with crash data
  - Number and proportion of drivers with SAR violations (MVA) who were involved in a crash, crash characteristics, etc.

### ➤ Limitations of MVA Data

- ✓ Only convictions are reported to MVA, while many citations do not result in conviction.
- ✓ MVA only receives one flag from automated enforcement even if the vehicle was issued multiple violations.
- ✓ A handful of states do not report MD drivers' violations to MVA.
- ✓ Access to the data requires data agreement with MVA.

## 5. MARYLAND STATE HIGHWAY ADMINISTRATION (SHA) WORK ZONE SPEED CAMERAS DATA

- **SAR and Related Measures Available in SHA Data**
  - ✓ The actual speed and the speed limit in the work zone.
  - ✓ Number of speeding violations in work zones by year, month, day of the week, time of the day.
  - ✓ Number and proportion of repeated offenders (by car owner)
  - ✓ After linking with MVA Data
    - ✓ Demographics characteristics of the car owner.
    - ✓ Socio-economic characteristics based on the car registration zip code linked to US Census and American Community Survey (ACS) data.
  
- **Limitations of SHA Data**
  - ✓ Only the license tag and the car owner are available, not the actual driver.
  - ✓ Access to the data may be given by the jurisdiction that owns the data. Vendors are required to provide any data and reports requested by the jurisdiction, but they may levy an additional fee for larger data requests from other clients.

## 6. FATALITY ANALYSIS REPORTING SYSTEM (FARS) DATA

- **SAR and Related Measures Available in FARS Data**
  - ✓ FARS may provide additional information about crash causation factors and SAR.
  - ✓ Includes data from the Detailed Crash Investigation Report (DCIR).
  - ✓ Nationwide data that can be used for comparisons between different states.
  - ✓ Drugs and alcohol use data.
  
- **Limitations of FARS Data**
  - ✓ Only fatalities are included in FARS.
  - ✓ Only some of the fatalities are included: crashes on a public road, and within 30 days of the incident.

## 7. MARYLAND DRIVERS' CRASH AND CITATIONS RECORDS IN OTHER STATES: VA, DC, DE, NC, PA

- **SAR and Related Measures Available in Other States Data**
  - ✓ Additional SAR citations and SAR related crashes of MD drivers.
  - ✓ Potential for collaboration with other states on SAR.
  - ✓ Summary reports from other states about MD drivers' violations can be obtained relatively fast.
  
- **Limitations of Other States Data**
  - ✓ Access to the data from other states may require data agreements or deidentification process.
  - ✓ SAR definitions vary by state.

## 8. MARYLAND COUNTY AND MUNICIPAL POLICE DEPARTMENTS RECORDS

- **SAR and Related Measures Available in County and Municipal Police Departments Records**
  - ✓ Additional local SAR data that are not available anywhere else: residents' complaints of speeding on local roads, speed feedback signs, etc.
  - ✓ Summary data for all county automated enforcement is available in the Speed Monitoring Systems (SMS) Reports <https://mpctc.dpscs.maryland.gov/reports.htm>
  - ✓ Obtaining the summary local records is not difficult.
  
- **Limitations of County and Municipal Police Departments Records**
  - ✓ Aggregating and summarizing the data from different police departments may be difficult because there is no uniform data format.

# APPENDIX

## Documentation from Meetings with Partners

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## 1. Maryland State Police (MSP) Electronic Traffic Information Exchange (E-TIX) Data, Citations and Adjudications Data

The citation data are available from the Maryland District Court System but requires a data agreement. The citation data includes information about the violation and subsequent adjudication/outcome of each traffic citation issued in Maryland. There are 23 calendar years of citation and adjudication data (2000-2023); data from the years 2015-2020 were updated as of December 2023, and data from 2021-2023 were updated as of March 2024. These databases contain files from jurisdictions that are using either paper or electronic (e-TIX) citations.

In 2014 the Maryland District Court System began a multi-year migration of the citation and adjudication data from a mainframe to a digital system, known as the Maryland Electronic Courts (MDEC) Conversion. As cases are processed, those that do not convert properly from the mainframe to MDEC are flagged and sent to the jurisdiction of record for review and correction. While some records are corrected promptly and returned, others may be put on hold until a motion is filed, and the case comes up in court. Therefore, errors in records may persist, as final conversion to the digital system may take months to occur, and reported frequencies may be underestimates of actual numbers. All jurisdictions over a several-year period have converted to MDEC with Baltimore City being the final to onboard in 2024.

### Aggressive Driving

Reckless, negligent and aggressive driving violations, fines and points are defined as follows in the 2023 Traffic Citation manual (See Table 2 below).

**Table 2. Reckless, Negligent and Aggressive Driving Violations**

Section				Contribute to Crash	
		FINES	POINTS	FINES	POINTS
§ 21-901.1a	Reckless driving veh. in wanton and willful disregard for safety of persons and property	\$510	6		6
§ 21-901.1b	Negligent driving veh. in careless and imprudent manner endangering property, life, and person	\$240	1	\$280	3
§ 21-901.2	Aggressive driving by committing, at the same time or during a single continuous period, 3 or more of the following violations:				
	(1) § 21-202 Traffic lights with steady indication;				
	(2) § 21-303 Overtaking and passing vehicles;				
	(3) § 21-304 Passing on right;				
	(4) § 21-309 Driving on laned roadways;				
	(5) § 21-310 Following too closely;				
	(6) § 21-403 Failure to yield right-of-way; or				
	(7) § 21-801.1 Exceeding a maximum speed limit or posted maximum speed limit	\$370	5		5

Among the three types of violations, a reckless driving citation incurs the highest fine and most points. Difficulties exist in obtaining convictions for violating the aggressive driving statute because of the requirement that officers must observe three separate driving violations in order to issue an aggressive driving citation.

## Speeding

The number of speeding citations issued by Maryland law enforcement officers has declined over time. More than 277,000 speeding citations were issued in 2011, dropping to just over 100,000 issued in 2023 and representing an approximate 64% decline in the number of speeding citations handed out to drivers across the State over the past 13 years.

Speeding violations, fines and points are defined below in the 2023 Traffic Citation manual (Table 3 below).

**Table 3. Speeding Violations, Fines and Points**

Section		Contribute to Crash			
		FINES	POINTS	FINES	POINTS
§ 21-801a	Driving veh. in excess of reasonable and prudent speed on hwy	\$90.00	1	\$130.00	3
§ 21-801b	Failure to control veh. speed on hwy. to avoid collision	\$130.00	3		3
§ 21-801c	Failure to reduce veh. speed at intersection without traffic device	\$90.00	1	\$130.00	3
§ 21-801d	Failure to reduce speed at railroad grade crossing	\$90.00	1	\$130.00	3
§ 21-801e	Failure to reduce speed on curve	\$90.00	1	\$130.00	3
§ 21-801f	Failure to reduce speed on crest of grade	\$90.00	1	\$130.00	3
§ 21-801g	Failure to reduce speed on narrow and winding roadway	\$90.00	1	\$130.00	3
§ 21-801h	Failure to reduce speed in dangerous (weather, highway conditions)	\$90.00	1	\$130.00	3
§ 21-801.1	Driving veh. on hwy. at speed exceeding limit				
	Exceeding posted speed limit by:				
	1 to 9 mph	\$80.00	1	\$120.00	3
	10 to 19 mph	\$90.00	2	\$130.00	3
	20 to 29 mph	\$160.00	2	\$200.00	3
	Exceeding posted maximum speed limit of (65,70) mph by 10 to 19 mph	\$160.00	2	\$200.00	3
	Exceeding posted maximum speed limit of (65,70) mph by 20 to 29 mph	\$290.00	5		5
	30 to 39 mph	\$290.00	5		5
	40 mph and over	\$530.00	5		5
§ 21-802.1	Exceeding highway work zone speed limit				
	Exceeding posted speed limit by:				
	1 to 9 mph	\$290.00	1	\$330.00	3
	10 to 19 mph	\$300.00	2	\$340.00	3
	20 to 29 mph	\$370.00	2	\$410.00	3
	30 to 39 mph	\$500.00	5	\$540.00	5
	40 mph and over	\$740.00	5	\$780.00	5
§ 21-803.1e	Exceeding speed limit in posted school zone with (flashing warning lights, notice of double fines)				
	Exceeding posted speed limit by:				
	1 to 9 mph	\$120.00	1	\$160.00	3
	10 to 19 mph	\$140.00	2	\$180.00	3
	20 to 29 mph	\$270.00	2	\$310.00	3
	30 to 39 mph	\$540.00	5		5
	40 mph and over	\$1,000.00	5		5

As shown in the table, speeding in a highway work zone or in a posted school zone generally incurs the highest charges. In addition, the number of points imposed on the driver's license increases for speeds in excess of 10 mph, reaching a high of 5 points for speeds of 30 mph or greater. The most recent data on aggressive and speed citations and adjudications are presented in Tables 4,5, and 6 (next page).

**Table 4. Aggressive and Speed Citations for 2021**

2021 Aggressive & Speed Citations and Adjudications - Statewide															
Data Received March 2024															
Reason	Adjudication														Total
	Guilty	PBJ	MERGED	STET	Not Guilty	Dismissed	Judgement of Acquittal	Nol Pros	Failed To Appear	Jury Trial Prayer	Forwarded Circuit Court	Abated by Death	Open	Other	
Aggressive driving	107	25	11	20	124	73	3	137	2	3	5	2	84	1	597
Speeding	84,281	16,507	541	1,600	8,640	3,460	194	14,805	113	75	166	129	9,027	5	139,543
<b>Total</b>	<b>84,388</b>	<b>16,532</b>	<b>552</b>	<b>1,620</b>	<b>8,764</b>	<b>3,533</b>	<b>197</b>	<b>14,942</b>	<b>115</b>	<b>78</b>	<b>171</b>	<b>131</b>	<b>9,111</b>	<b>6</b>	<b>140,140</b>

**Table 5. Aggressive and Speed Citations for 2022**

2022 Aggressive & Speed Citations and Adjudications - Statewide															
Data Received March 2024															
Reason	Adjudication														Total
	Guilty	PBJ	MERGED	STET	Not criminally responsible	Not Guilty	Dismissed	Judgement of Acquittal	Nol Pros	Failed To Appear	Jury Trial Prayer	Forwarded Circuit Court	Abated by Death	Open	
Aggressive driving	91	25	17	17	1	100	54	2	155	2	1	3	0	59	527
Speeding	66,025	12,898	389	1,308	0	7,068	2,792	138	12,035	73	25	140	60	7,414	110,365
<b>Total</b>	<b>66,116</b>	<b>12,923</b>	<b>406</b>	<b>1,325</b>	<b>1</b>	<b>7,168</b>	<b>2,846</b>	<b>140</b>	<b>12,190</b>	<b>75</b>	<b>26</b>	<b>143</b>	<b>60</b>	<b>7,473</b>	<b>110,892</b>

**Table 6. Aggressive and Speed Citations for 2023**

2023 Aggressive & Speed Citations and Adjudications - Statewide															
Data Received March 2024															
Reason	Adjudication														Total
	Guilty	PBJ	Nolo Contendre	MERGED	STET	Not Guilty	Dismissed	Judgement of Acquittal	Nol Pros	Failed To Appear	Jury Trial Prayer	Forwarded Circuit Court	Abated by Death	Open	
Aggressive driving	79	17	0	19	14	79	41	1	134	1	2	7	1	139	534
Speeding	56,699	12,589	1	365	993	5,505	2,223	93	9,314	81	48	131	28	12,569	100,639
<b>Total</b>	<b>56,778</b>	<b>12,606</b>	<b>1</b>	<b>384</b>	<b>1,007</b>	<b>5,584</b>	<b>2,264</b>	<b>94</b>	<b>9,448</b>	<b>82</b>	<b>50</b>	<b>138</b>	<b>29</b>	<b>12,708</b>	<b>101,173</b>

## E-TIX data

E-TIX data contain information for all traffic stops. About 40% of the traffic stops result in citations, and about 60% - in warnings. This makes the E-TIX data one of the best sources for analysis of aggressive and reckless driving. There is information about the specific reason for each traffic stop, including speeding, red light violations, etc. Additional information is available about the driver, including race, age, and gender, state of residence and state of registration, duration of the stop, conducted search, and outcome, including arrest, search, crime charges, etc.

## 2. Maryland Automated Traffic Violation Enforcement Data

During the NSC's meetings with representatives from Howard County and Montgomery County, we also inquired about alternate county-level sources of data on speeding and aggressive driving. We found that both counties employ various forms of automated enforcement to some extent, namely speed cameras, red light cameras, and school bus cameras. The data collected from each type of camera is managed by a separate third-party vendor who is responsible for storing the data and generating data reports for the county upon request, however the county owns all rights to the data itself. Howard County is also part of the Regional Automated Enforcement Center (RAEC), which it founded in 1998. The RAEC is comprised of 10 active partners spanning 5 counties in Maryland and serves as a standardized system for managing red light cameras while adhering to high standards of data integrity and quality control. The current members of the RAEC are listed as follows: the Town of Bel Air, Charles County, the Town of Cheverly, the Town of Cottage City, the City of Greenbelt, Hagerstown, Howard County, the City of Hyattsville, the Town of Landover Hills, and the Town of Morningside.

Since their initial adoption in 1998, Howard County has installed 26 red light cameras. The data collected from these cameras is managed by Verra Mobility and includes the following fields: date of violation, time of violation, speed limit of the roadway that is being monitored, speed of the offending vehicle, time of each stage of the traffic signal (green, yellow, red), vehicle license plate number, and lane number. Note that some jurisdictions monitor turns on red, but not all jurisdictions do this. As previously mentioned, Howard County may request large-scale data reports from Verra Mobility at any time. Alternatively, Howard County can generate simple reports on their own using PowerBI, a data visualization software. Montgomery County also utilizes red light cameras, though we did not receive detailed information regarding the number of cameras in use and what specific data points they capture. A third-party vendor, Modaxo Traffic Management, is responsible for managing the data collected from these cameras.

In addition to its implementation of red-light cameras, Howard County also employs the use of speed cameras. However, this use is limited to school zones and includes about 205 sites. The data collected from these speed cameras includes the following fields: vehicle registration tag, date, time, the street being monitored, the speed limit of the street, and the recorded speed of the vehicle. The cameras are self-tested and calibrated on a monthly basis and are proven to be accurate with less than 10 cases per camera of erroneous citations being issued in 2023. These erroneous

citations consist of instances where the camera mistakenly captured a non-offending vehicle. Montgomery County utilizes speed cameras throughout its entire jurisdiction as opposed to Howard's approach of using them solely within school zones. Montgomery County has begun to use more advanced cameras that are capable of functioning as a red-light camera and a speed camera. These advanced cameras are also reportedly able to detect the usage of cell phones as well, however they are not widely used as they are much more costly in comparison to the simpler red light and speeding cameras that were previously implemented. Similar to how the data is managed for red light cameras, the data for speed cameras in both Howard County and Montgomery County is managed by Modaxo Traffic Management.

The final form of automated enforcement that we discussed with Howard and Montgomery County is school bus cameras. There are approximately 500 school busses in use in Howard County, and each bus is equipped with 10-15 cameras that monitor both the interior and exterior of the bus. For the purpose of this report, emphasis was placed on the exterior cameras, as they will best record any potential aggressive driving exhibited by drivers in the bus's immediate proximity. The NSC did not receive any information regarding individual data points that are collected from these cameras, likely because the data collected by these cameras is owned by Howard County Public Schools rather than Howard County itself. Like the speed and red-light cameras, the data collected by school bus cameras is managed by another entity. In the case of both Howard County and Montgomery County the data is managed by Bus Patrol America.

In essence, the data from these cameras could prove to be valuable in the analysis of speeding, aggressive, and reckless driving in Maryland as the data is centralized due to many counties using the same vendors to manage their data. This streamlines the process for acquiring such data as one would merely need to reach an agreement with the owner of the data (Howard County or Montgomery County) without needing to establish contact with multiple different contractors or vendors.

Source for information on RAEC: [Red Light Cameras | Hagerstown, MD - Official Website \(hagerstownmd.org\)](http://www.hagerstownmd.org)

### 3. MSP Automated Crash Reporting System (ACRS)

The Automated Crash Reporting System (ACRS) is a system used by Maryland State Police (MSP) to document and report crash data. This data is used to inform MSP as well as the various transportation safety related agencies and organizations throughout Maryland. This data is collected by law enforcement agencies across all of Maryland's counties and jurisdictions. Summaries of this data are made publicly available through multiple sources including the Maryland Crash Data Download tool at [mdsp.maryland.gov](http://mdsp.maryland.gov) and the Fatal Crash Dashboard at [zerodeathsmd.gov](http://zerodeathsmd.gov). However, ACRS data that is made publicly available is de-identified, meaning that it contains no personally identifiable information. ACRS data containing identifiable information is also available directly from MSP provided that the inquiring person or entity is part of the Network Maryland system and has the necessary permissions and infrastructure to handle those data. The Fatal Crash Dashboard provides data from 2016-2024 and encapsulates the ACRS data into several data definition categories, the two most notable for this survey being "Speed Related" and "Aggressive Driving". The Speed Related category is comprised of fatal crashes involving vehicles where at least one driver was reported to be speeding. This information is derived from the data within the "Contributing Circumstances-Person Actions" field. If the value for this field is either "exceeded speed limit" or "too fast for conditions" then the crash is categorized as speed related.

The Aggressive Driving category is comprised of incidents involving people who are fatally injured in a crash where a driver was reported to be driving aggressively. Similar to the Speed Related category, determination of whether aggressive driving is present is based on the data present within the "Contributing Circumstances-Person Actions" field. If the field contains at least two of the following behaviors, then the incident is categorized as aggressive driving:

- Failed to yield right of way.
- Failed to obey stop sign.
- Failed to obey traffic signal.
- Failed to obey other traffic control.
- Failed to keep right of center.
- Failed to stop for school bus.
- Exceed speed limit.
- Too fast for conditions.
- Followed too closely.
- Improper lane change.

- Improper passing.
- Failure to obey traffic signs, signals, or officer.
- Disregarded other road markings.
- Other improper action.
- Operated motor vehicle in erratic/reckless manner.

Speeding and aggressive driving definitions changed with the launch of ACRS 2.0. It affects multi-year analysis as fields collected in 2024 are no longer aligned with fields collected in previous years.

The Maryland Crash Data Download tool contains data from 2019-2023 and includes fatal crashes, injury crashes, and property damage crashes. This tool is publicly available and allows users to filter results by the county in which the crash occurred, the type of report (fatal, injury, property), and the agency who submitted the report.

Sources for ACRS information:

- [Dashboard Data Definitions - Zero Deaths Maryland & Vision Zero - Maryland Highway Safety Office \(zerodeathsmd.gov\)](https://www.zerodeathsmd.gov/dashboard-data-definitions)
- [Crash Data Dashboard - Zero Deaths Maryland & Vision Zero - Maryland Highway Safety Office \(zerodeathsmd.gov\)](https://www.zerodeathsmd.gov/crash-data-dashboard)
- [Crash Data Download \(maryland.gov\)](https://www.maryland.gov/crash-data-download)
- [Field Reference Guide \(nhtsa.gov\)](https://www.nhtsa.gov/field-reference-guide)

## 4. Maryland Motor Vehicle Administration (MVA) Records

The NSC met with a representative from the MVA, who confirmed that the MVA stores or has access to all data related to driver's license suspensions and traffic violation points accumulated for all Maryland drivers. This data includes standardized codes set forth in the American Association of Motor Vehicle Administrators (AAMVA) code dictionary, which are used to identify the type of driver conviction or the reason for a driver withdrawal. The MVA also receives data from most other states, presenting the opportunity for a potential wealth of data. However, this data is limited to violations that result in a conviction and flags that are reported from the use of automated enforcement.

It is important to note that the MVA only receives one flag from automated enforcement even if the vehicle was issued multiple violations. Because many violations do not result in a conviction, using this data for the purpose of analyzing speeding and aggressive driving on a general scale will lead to an underestimation of the number of violations.



## **5. Maryland State Highway Administration (SHA) Work Zone Speed Cameras Data**

The NSC met with representatives from the State Highway Administration to inquire about any potential data that is collected and relates to speeding and aggressive driving. The Office of Traffic Safety, a division of SHA, manages work zone speed cameras that are used on Maryland's highways. These cameras are moved to different locations between each work shift. The data collected by these cameras closely resembles that of the speed cameras used by Howard and Montgomery counties, and includes the following fields: date, time, location, posted speed limit, speed of the vehicle, and tag number.

Until recently, the fine for speeding in a work zone is equivalent to that of a standard speeding citation. Since June 1, 2024, the fine has doubled to \$80, and SHA is planning to implement a more complex way of calculating the fine for speeding in a work zone. This new method is intended to base the fine in proportion to the severity of the incident. For example, an instance of speeding where a worker was actually present in the work zone, and thus endangered, would result in a higher fine than an instance of speeding that took place in an empty work zone. Like the speed cameras for Howard County and Montgomery County, Modaxo is responsible for storage and management of the data collected by SHA's work zone cameras. SHA can request this data at any time and have data available for the last 15 years.

## 6. Fatality Analysis Reporting System (FARS) Data

The Fatality Analysis Reporting System (FARS) is a collection of fatal motor vehicle crashes and contains data collected from qualifying crashes throughout the United States. FARS is used by the National Highway Traffic Safety Administration to identify issues within the current highway infrastructure. There are two conditions that must be present in order for a given crash to be included in the FARS data: the crash must have involved a motor vehicle traveling on a public road, and the crash must result in the death of a motorist or non-motorist within 30 days of the incident. FARS crash data is publicly available and can be accessed at [Fatality Analysis Reporting System \(FARS\) | NHTSA](#), and contains data from 1975-2022.

FARS data elements related to speeding/aggressive driving:

- C32 – Related Factors – Crash Level
  - A value of “013” in this field denotes aggressive driving/road rage by non-contact vehicle driver. This value is only used if the investigating officer states in the report that a non-contact vehicle was being operated aggressively. Officer must specifically use the terms “aggressive” or “road rage”.
- V30 – Travel Speed
  - Records the speed the vehicle was traveling prior to the crash as reported by the investigating officer. If the vehicle speed in mph is 1-151, enter the speed as value. If traveling over 151 mph, value is entered as 997.
- D22 – Speeding Related
  - Identifies if the driver was speeding and it was related to the crash. Codes for this field are as follows:
    - 0 (No)
    - 2 (Yes, racing)
    - 3 (Yes, exceeded speed limit)
    - 4 (Yes, too fast for conditions)
    - 5 (Yes, specifics unknown)
    - 9 (Reported as unknown)
- D24 – Related Factors – Driver Level
  - A value of 008 in this field denotes aggressive driving/road rage. This value is used “when the case materials include a factor or note a violation identifying aggressive driving behavior.” The coding manual also states that in order for aggressive driving to be included as a related factor, the investigating officer must use the term “aggressive” or “road rage” when describing the driver’s behavior.

- PC7 – Speed Limit
  - Identifies the value indicated in the case materials that best represents the speed limit just prior to the vehicle’s critical pre-crash event. Codes for this field are as follows:
    - 00 (No statutory limit/Non-trafficway or driveway access)
    - 05-95 (Actual speed limit in 5 mph increments)
    - 98 (Not reported)
    - 99 (Reported as unknown)

While FARS does contain specific data elements relating to aggressive driving, and the accessibility of the data may make it an enticing source in comparison to ACRS, it is imperative to remember that the FARS data is limited solely to crashes that occurred on a public road and resulted in a death. This means that FARS data is inherently derivative of that stored within ACRS as it is merely a subset of crashes that meet the previously stated criteria.

While the criteria for speed/aggressive are derived from Maryland crash reports, the FARS analyst may have additional information, e.g., crash reconstruction reports, that may provide additional information about crash causation factors and while the query for speed/aggressive is similar between state-reported and federal-reported crash data, there are differences in the numbers. The publicly available FARS and MSP data may be interpreted to show slightly different numbers/percentages for analysis of the extent of the proportion of fatalities (only) related to SAR driving.

### **Sources for FARS info:**

- Intro: Fatality Analysis Reporting System Analytical User’s Manual, 1975-2022 (<https://crashstats.nhtsa.dot.gov/Api/Public/ViewPublication/813556>)
- Data elements: 2022 FARS/CRSS Coding and Validation Manual (<https://crashstats.nhtsa.dot.gov/Api/Public/ViewPublication/813545>)

## **7. Maryland Drivers' Crash and Citations Records in Other States: VA, DC, DE, NC, PA**

The NSC met with the Highway Safety Offices of Virginia, DC, Delaware, Pennsylvania, and North Carolina to discuss what data they collect, if any, on Maryland drivers who are found to be speeding or driving aggressively in their jurisdiction. Each of these regions primarily uses crash data and citation data for information related to aggressive driving, but to varying degrees. The North Carolina Department of Motor Vehicles, for example, uses crash data more than other methods because the crash reports that they receive include a more detailed description, and they are able to select reports including drivers from specific states by using the driver license number.

Each state/jurisdiction also implements some degree of automated enforcement in the form of speed cameras, red light cameras, or school bus cameras, but are not used extensively in most of these areas. For example, DC has a more robust automated enforcement infrastructure than their counterparts, spanning multiple neighborhoods, while automated enforcement is still in its infancy in other areas like Delaware, which uses only one speed camera. Because of this inconsistency, data collected from automated enforcement may prove useful when used to supplement other sources but will not be a sufficient source of data when used independently.

The representatives that were contacted have expressed interest in collaboration, but gaining access to the data may be convoluted despite this. As their approaches to collecting data are varied, so too are their methods of storing and maintaining it. While each jurisdiction generally collects the same type of data (citation, crash, ATE), ownership of it varies by state. In some areas the crash data and citation data are owned by the Department of Transportation, and in others it may be owned by the court system or Department of Motor Vehicles. Accessing the data will include first determining who the owner of the data is and will likely involve establishing some form of data use agreement with them. Establishing several DUAs with out-of-state entities will certainly be an arduous task as each state may have unique regulations and requirements for accessing and using data.

## 8. Maryland County and Municipal Police Departments Records

In addition to the data that is entered into ACRS, many counties also keep separate records of citations that are written by its respective municipal police departments. While completing this data survey, the NSC contacted representatives from Baltimore County, Howard County, and Montgomery County regarding their county-specific records. Approaches may differ slightly by county, with some utilizing Geographical Information Systems in conjunction with their citation data to identify problem areas within their jurisdiction.

Some county and municipal police departments have local records related to aggressive and reckless driving. Typically, these are records of residents' complaints of speeding on local roads, speed feedback signs, etc. These data could be valuable because they cannot be found elsewhere. On the other hand, the records are usually not systematic and in the same format, some of them are not digital records. It would be very hard and time consuming to obtain and summarize the data. Access to the data would require asking the local police departments for sharing the data.

# **THE END OF THE FINAL REPORT SURVEY OF AVAILABLE DATA FOR AGGRESSIVE AND RECKLESS DRIVING IN MARYLAND**