



Maryland SafeZones

Work Zone Automated Speed Enforcement Program

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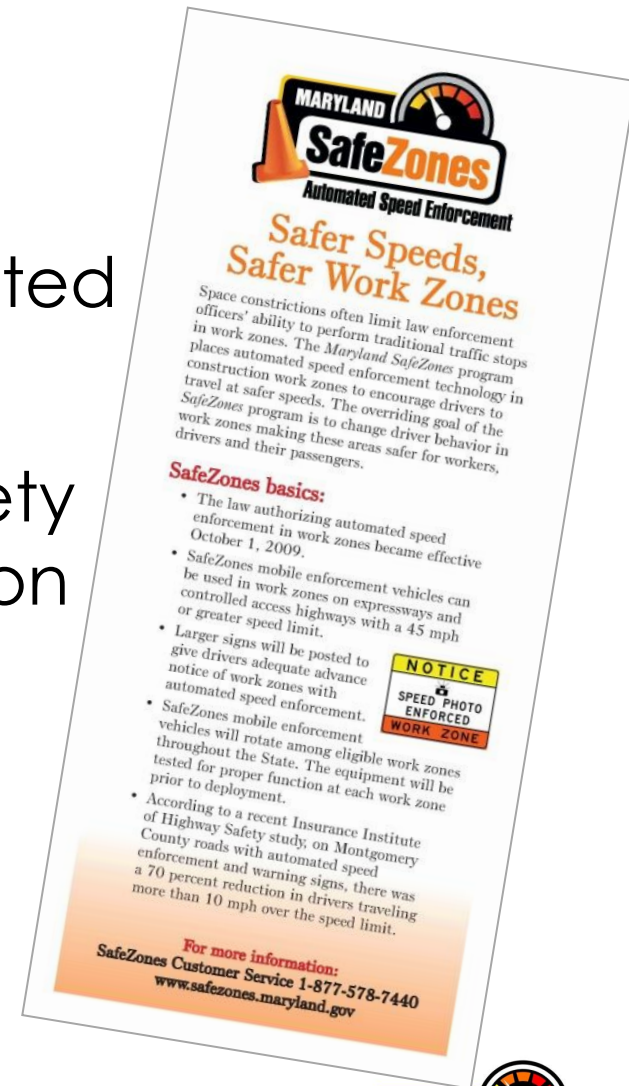
Overview

- Program goals
- Rules and regulations
- Citation processing
- Pilot program
- Long term program
- Program results
- Challenges



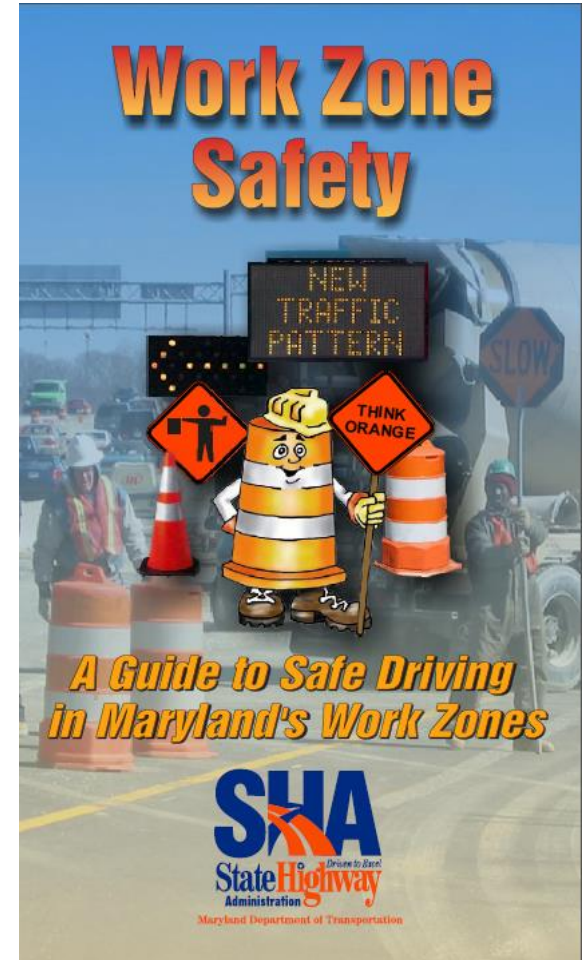
Program Goals

- Change driver behavior using an integrated 3-E approach
- Promote awareness of speed-related safety issues
- Enhance worker and motorist safety by the reduction of or normalization of speeds in work zones



Maryland's Safezones Program

- Good WZ design
- Train All workers in safety
- New products
- Motorist information thru media/ITS
- WZ inspections
- Promote safety and mobility
- Enforcement



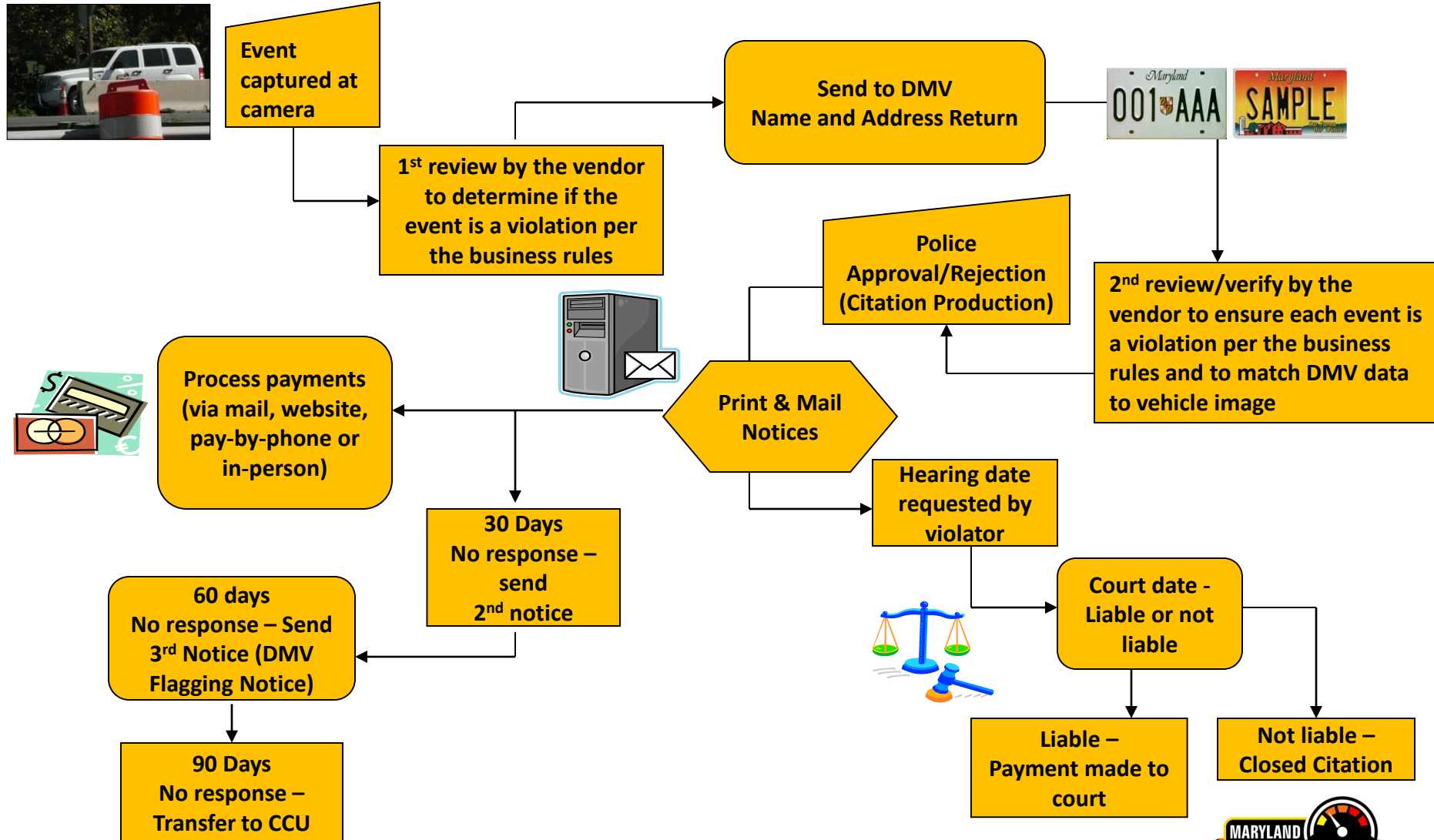
Rules and Regulations

- Expressways and controlled access highways (45 mph and greater)
- At least 12 mph over the posted speed limit
- Conspicuous signing
 - 4 approach warning signs (2 on each side of roadway)
 - General notice signs
 - Speed limit signs
 - Speed display trailer
- ASE System continuously manned during deployment
- System tested prior to and after each deployment

- Photos of rear license plate
- Citations reviewed, approved and signed by a law enforcement officer
- Civil penalty, with a fine of \$40 and no points
- Warning Period
 - 41 days in Pilot Program
 - 21 days for each new long-term work zone (began Oct. 2010)

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Operational Processing Flow Chart



Pilot Program

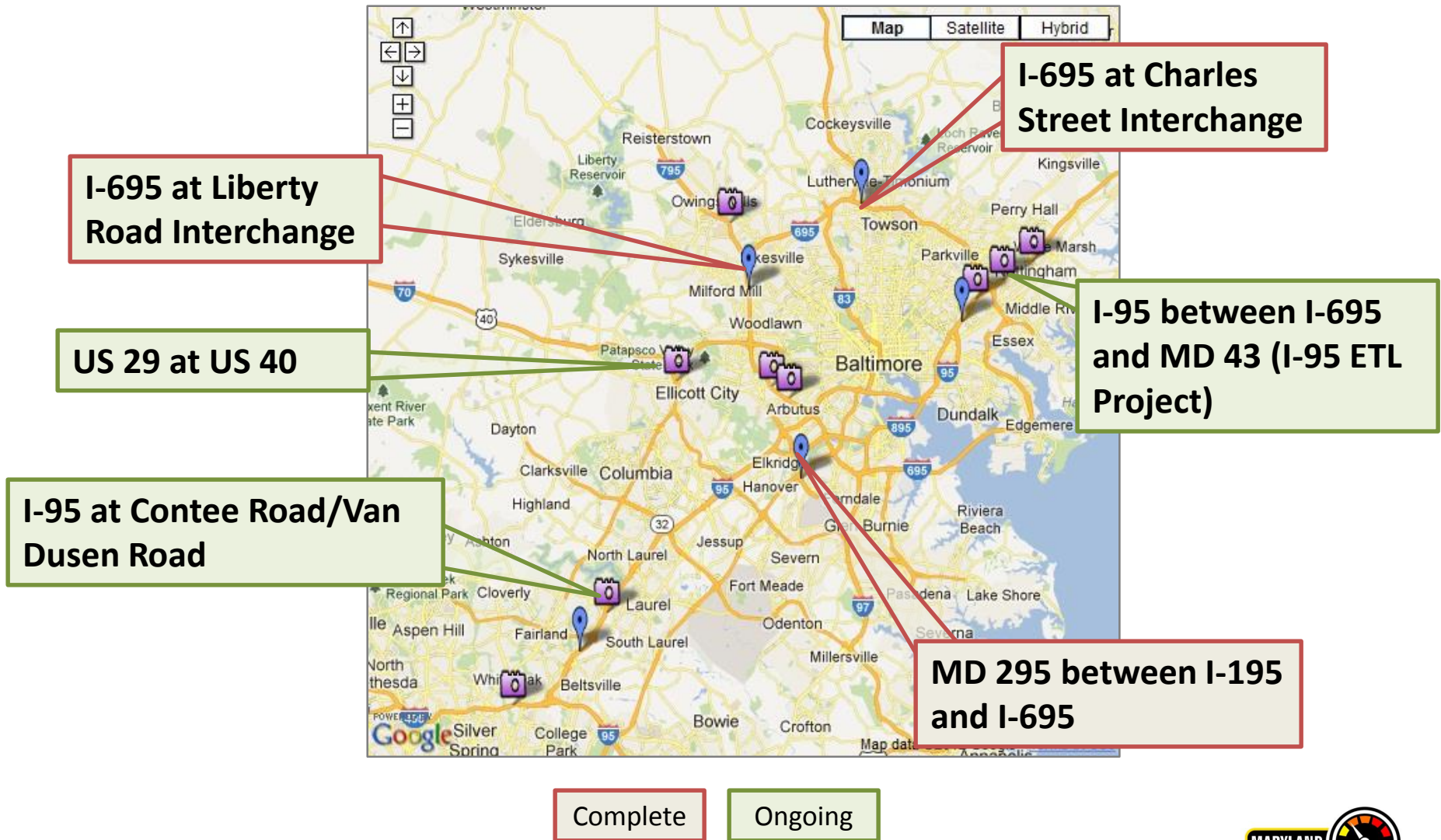
- Oct. 5, 2009 to June 30, 2010
- Issued warnings until November 15, 2009
- Two (2) mobile enforcement vehicles
- Radar-based technology
 - Integrated lidar in 1st vehicle in April 2010, 2nd vehicle in June 2010
- Five(5) work zones – nearly 55,000 citations and warnings issued
 - I-695 @ Charles Street
 - I-95 ETL (I-895 to I-695)
 - I-95 @ the ICC (MD 198 to MD 202)
 - I-695 @ Liberty Road
 - MD 295 between I-195 and I-695

Long Term Program

- Seven (7) enforcement vehicles (plus one spare)
- Laser-based enforcement technology
- Five (5) deployments per vehicle per week
- Double shifts
 - Daytime – AM (6 AM to 3 PM)
 - Nighttime – PM (8 PM to 5 AM)
- Deploy on any day of the week
- Rotate vehicles based on work zone activity



ASE Work Zones – Location Map



Program Operations

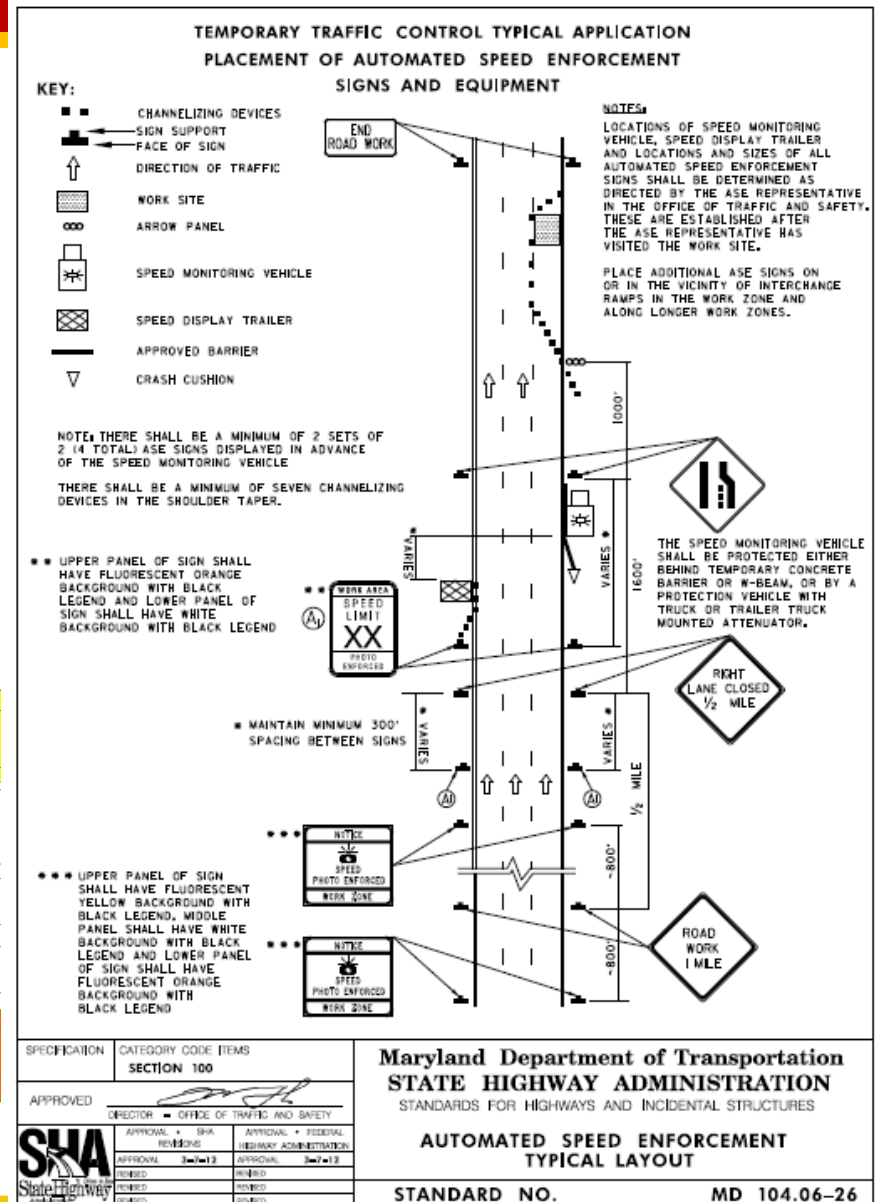
- Project Selection
 - Expressways/controlled access highway, min. posted speed 45 mph
 - Worker exposure/motorist hazards
 - Lane shifts, lane width reduction, lane splits, closed shoulders, shortened acceleration/deceleration lanes, rough pavement, etc.
- Project Coordination
 - *Construction Contractor*: Phase changes, construction activities, vehicle location
 - *ASE Contractor*: Deployment schedules, customer service, back-office work, courts
 - *Design Engineer*: Signing, vehicle location and protection, contract pay items

ASE Equipment Location

- Considerations for ASE Vehicle and Speed Display Trailer Placement:
 - Protection
 - Behind barrier/guiderail (most desirable)
 - Behind traffic control devices (TCDs) in lane closure configuration (less desirable)
 - Behind TCDs on shoulder (least desirable)
 - Location
 - Construction activities and work zone set-up impact available locations
 - Safe entry/exit
 - Functionality of ASE System
 - Grade/elevation
 - Line of sight

Advance Warning Signs

- Two sets of signs, each set comprised of two signs
- One on each side of the roadway
- Cover ALL approaches to the ASEV



Statistics – July 1, 2010 to December 31, 2015

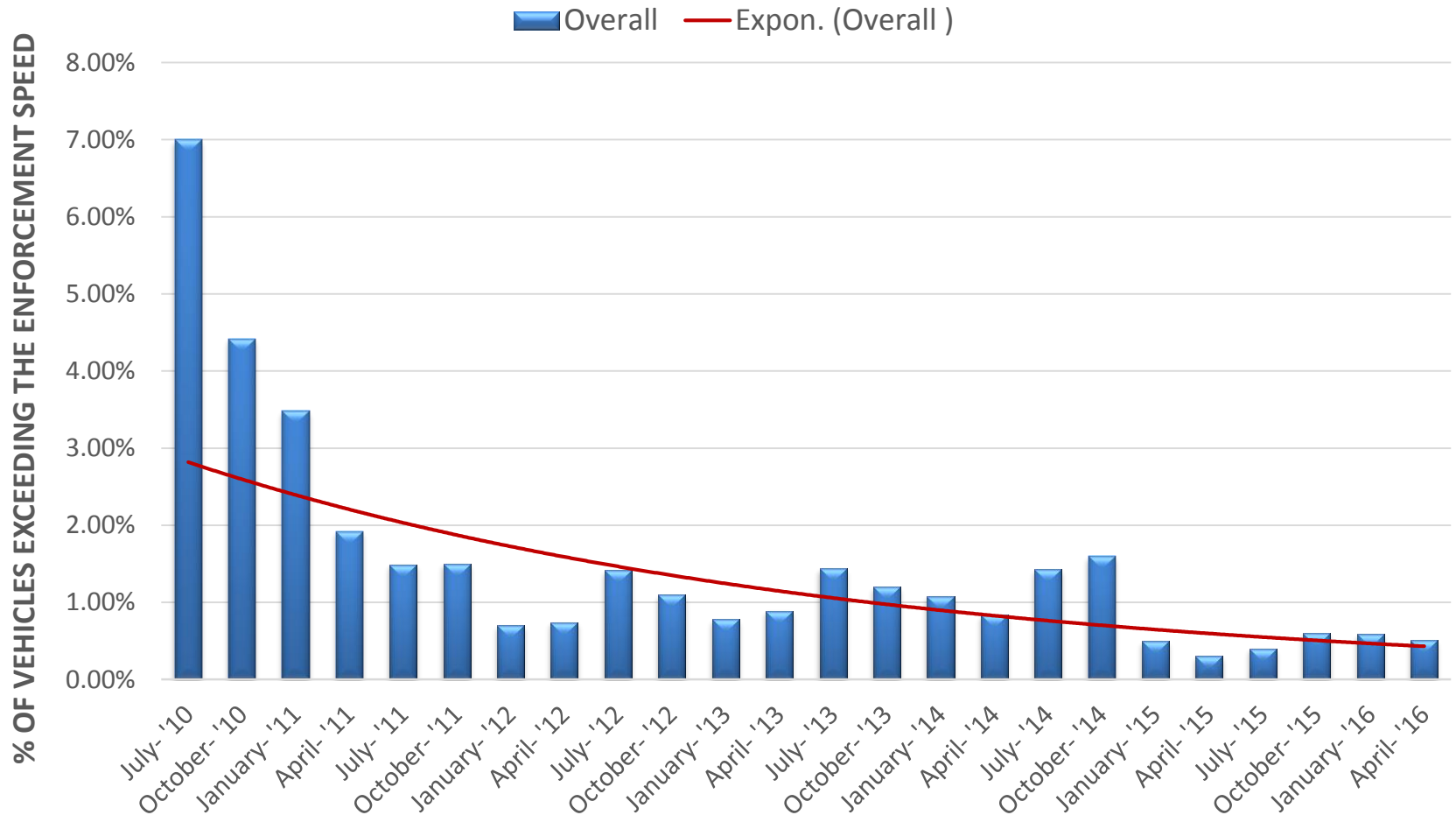
- Over 2.5 M citations issued
- Issuance rate of 75% for all violations
- Issuance rate of 94% for controllable citations
- Reject reasons:
 - Controllable: clarity of plate, dark environment
 - Uncontrollable: DMV does not return an address, obstructed plate, rentals/leases, unknown vehicle make
- Approx. 83% of citations have been paid
- Collected Revenue: About \$82 million
 - Program administrative and operating costs have not been subtracted from this total

Program Results

- Reduction in the percentage of drivers exceeding the enforcement speed
- Reduction in the percentage of drivers excessively speeding over the enforcement threshold
- Reduction in number of crashes

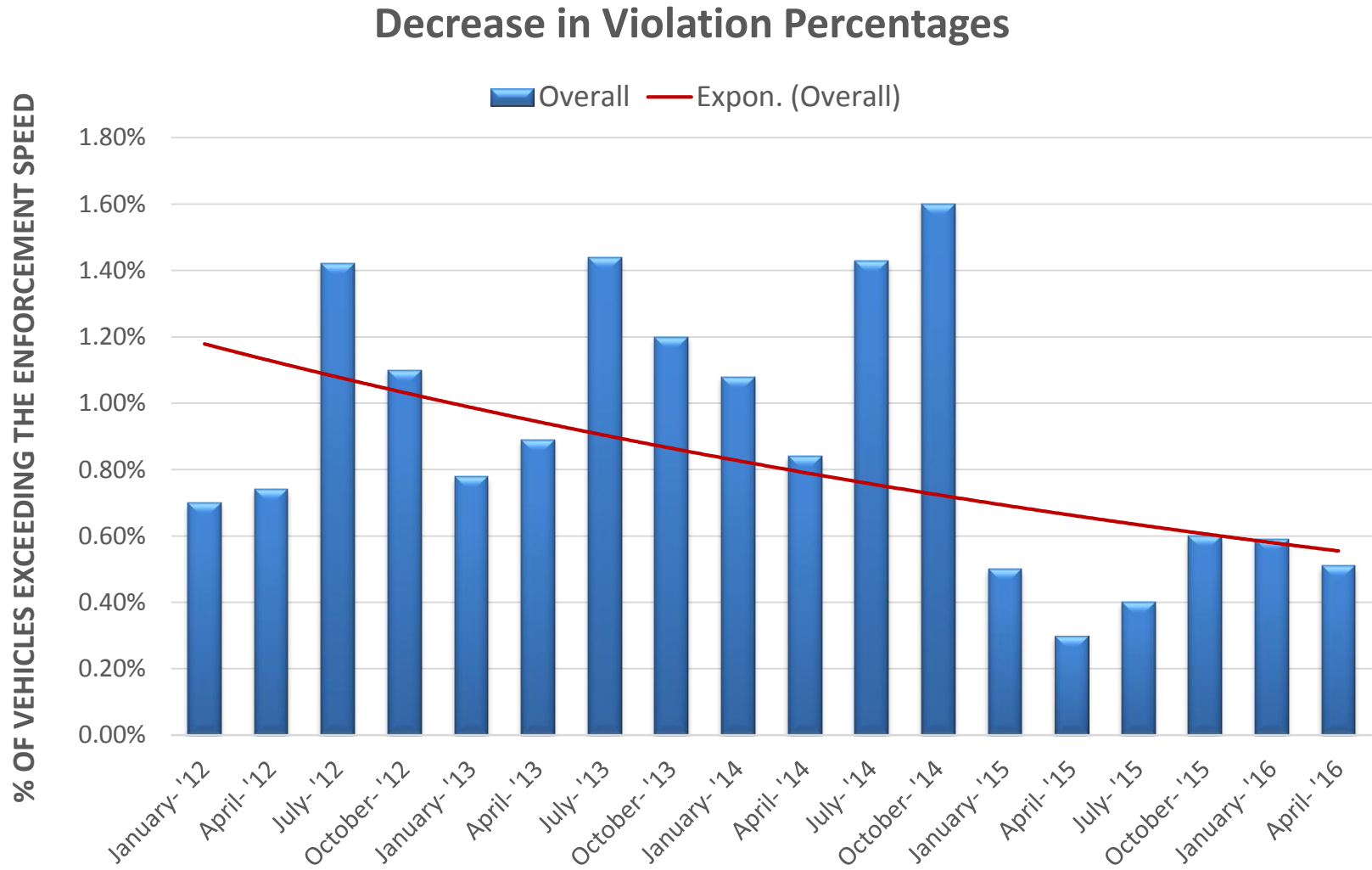
Decrease in Violation Percentages

Decrease in Violation Percentages



Quarterly Summary from 2010~2016

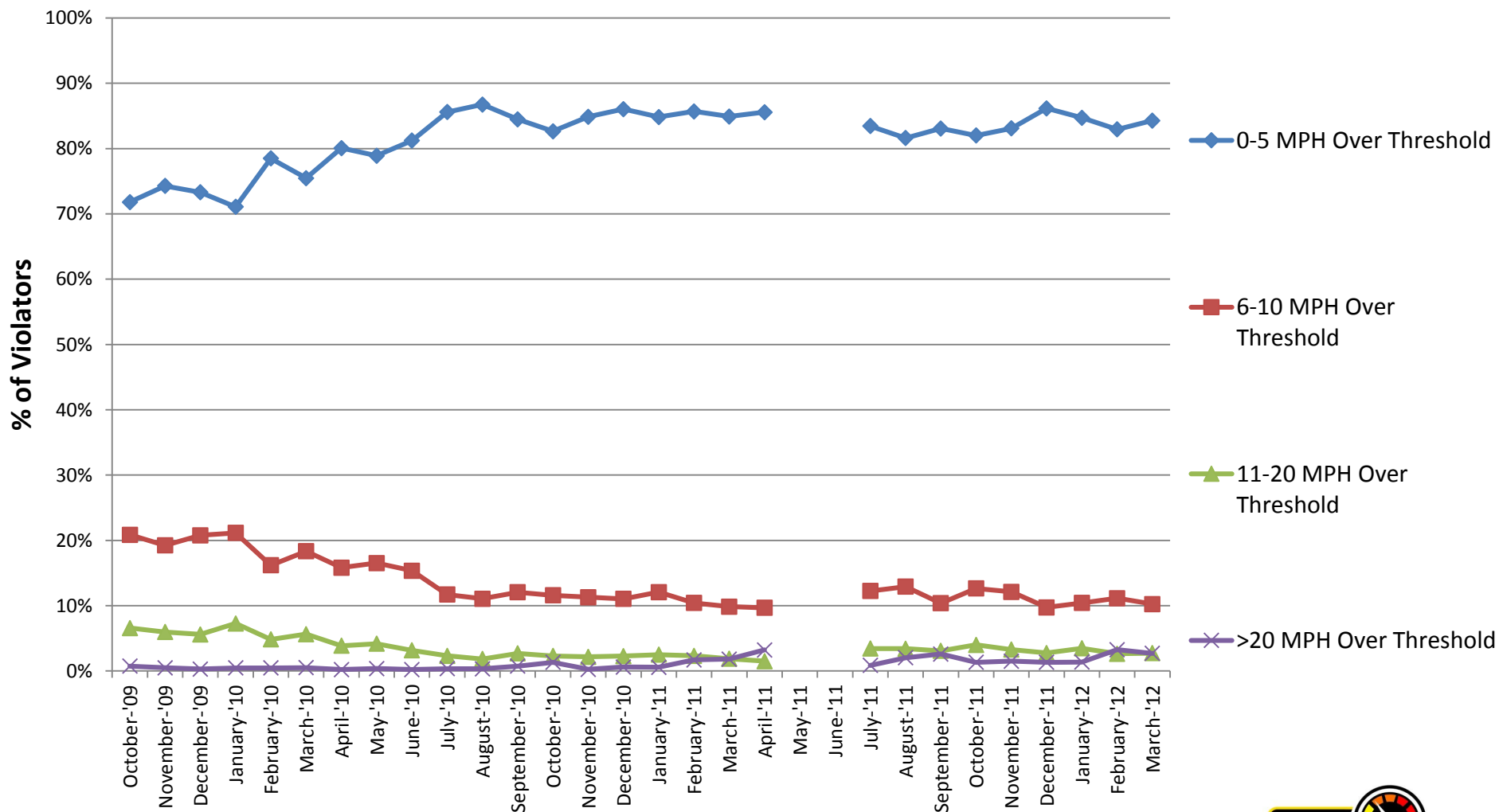
Decrease in Violation Percentages



Quarterly Summary from 2012~2016

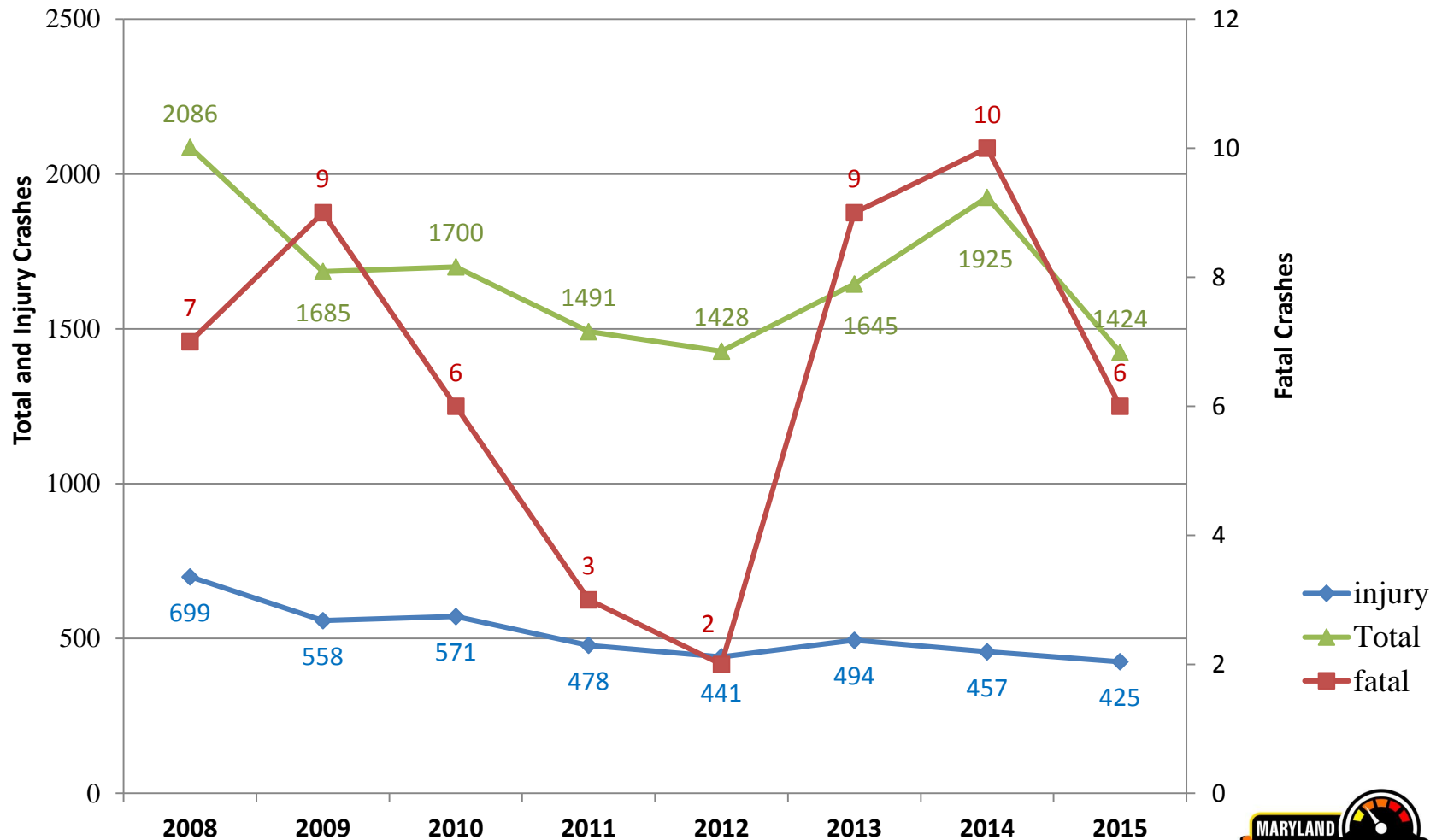
Decrease in Excessive Speeders

Enforcement Location: I-695 at Charles St



Reduction in number of Crashes

Crash Data For All Maryland Work Zones



Challenges

- Customer inquiries
 - Emails, phone calls, FOIA requests, reporter requests, etc.
- Customer curiosity
 - “Friendly” drive-bys or stop-bys
- Operations coordination
 - Scheduling deployments, changing on-the-fly, weather, etc.

Next Steps

- Continue evaluating projects for eligibility
- Continue evaluating efforts to improve operator safety
- Continue to collect and analyze before and after data for program evaluation and improvement
- Potential future legislation?

Media Coverage of Speed Cameras

- County Voids Hundreds Of Speed Camera Citations
- Baltimore needs a speed camera do-over
- Charles sheriff's office suspends use of speed cameras over sign placement issue
- Drivers' videos show Morningside speed-camera problems
- Conflicting Reports On Status Of City Speed Cameras



Other WZ ASE Programs in U.S.

- **Illinois**

- \$375 fine, 2nd Offense \$1000 + 90 Day Suspension
- Police Officer sits in vehicle
- Citation issues at Officer's discretion

- **Oregon**

- 11 mph Over Speed Limit
- Normal Speeding Fine + Points

- **Washington**

- 11 mph Over Speed Limit
- \$137 Fine, No Points

- **Colorado**

- 10 mph Over Speed Limit
- \$80 Fine, No Points

- **Arizona**

- Operator Shot and Killed in 2009*
- Program Ended When Contract Lapsed in 2010
- Law Repealed in 2012



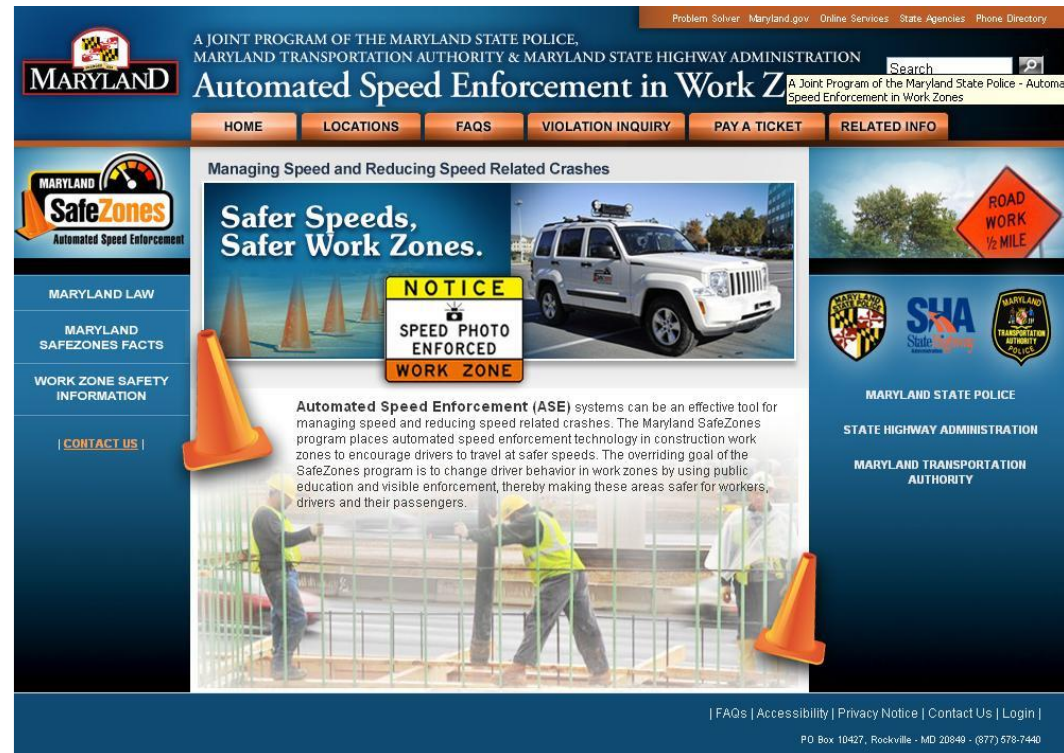
Fun Facts

- In 2014, only 0.36% of all citations (905/252,726) were contested
- Only 0.019% (48/252,726) were overturned
- One owner has 68 violations
- People who complain about speeding in their neighborhoods, flash their headlights to warn of a speed trap
- 85% of all drivers think they are better than average

Additional Information

- Safezones Website
 - Enforcement locations
 - Statistics
 - Online payment
 - FAQs
 - Useful resources

<http://safezones.maryland.gov>



- SHA Website
 - Safety Programs -> Automated Enforcement
 - <http://roads.maryland.gov>

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