

Narrative Report: Automated Speed Enforcement, The State of Knowledge and Implications for Transportation Planning

A White Paper



Prepared for the
New Jersey Department of Transportation

Prepared by Rutgers Voorhees Transportation Center,
Bicycle and Pedestrian Resource Center & Safe Routes to School Resource Center
October 2022

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ABOUT

The Alan M. Voorhees Transportation Center (VTC) is a national leader in the research and development of innovative transportation policy. Located within the Edward J. Bloustein School of Planning and Public Policy at Rutgers University, VTC has the full array of resources from a major research university on transportation issues of regional and national significance.

The New Jersey Safe Routes to School Program, supported by the New Jersey Department of Transportation, is a statewide initiative with a mission to partner with schools and communities to prioritize and implement opportunities for people to walk, bike, or travel by other wheeled devices. By focusing on improvements to support active travel by youth, we believe we can create conditions that are safe, healthy, equitable, and appealing for all. The New Jersey Safe Routes Resource Center (SRRC) assists public officials, transportation and health professionals, and the public in creating safer and more accessible walking and bicycling environments for children in New Jersey through education, training, and research.

The New Jersey Bicycle and Pedestrian Resource Center (BPRC) assists public officials, transportation and health professionals, and the public in creating a safer and more accessible walking and bicycling environment through primary research, education, and dissemination of information about best practices in policy and design. The Center is supported by the New Jersey Department of Transportation through funds provided by the Federal Highway Administration.

This report was supported by the New Jersey Department of Transportation with funding from the United States Department of Transportation's Federal Highway Administration. New Jersey and the United States Government assume no liability for its contents or its use thereof. With special thanks to Tracy Noble, the Manager of the Public & Government Affairs Office at AAA Mid-Atlantic, for providing supporting research on case studies in Baltimore, Maryland.

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1 ABSTRACT

In August 2020, as part of its 2020 Strategic Highway Safety Plan, the State of New Jersey adopted its strategy of working with advocates and other stakeholders on legislation, regulations, policy, and programs to improve safety for bicyclists and pedestrians. The State sought to assess current practices nationally and provide recommendations for Automated Speed Enforcement in school and work zones to eliminate vulnerable road user fatalities and serious injuries (New Jersey 2020 Strategic Highway Safety Plan, 2020). Staff at the Alan M. Voorhees Transportation Center conducted a review of best practices, research, and legislation and interviewed key stakeholders regarding automated speed enforcement programs across the country.

2 THE NEED FOR SPEED ENFORCEMENT

Implementation of speed control seeks to prevent traffic-related injuries and fatalities by decreasing the likelihood, and degree of severity, of crashes. The traditional enforcement method, and still the most common for controlling speed, has been traffic stops by police officers. The use of speed cameras augments traditional enforcement and provides efficient, consistent, equitable and effective deterrence in places where traditional enforcement might be hazardous. Automated Speed Enforcement programs are not intended as a substitute for permanent infrastructure improvements that address speeding.

For two decades, speeding has been a factor in approximately one-third of all motor vehicle fatalities across the nation (National Highway Traffic Safety Administration, 2022). Speed-related crashes in New Jersey averaged 16,346 for 2015-2019, and speed-related fatalities averaged 122 for each of those years (New Jersey Division of Highway Traffic Safety, 2022).

It has been estimated that 5 percent of pedestrians would die when struck by a vehicle traveling 20 mph, about 40 percent would die when struck by a vehicle traveling at 30 mph, 80 percent would die when struck at 40 mph, and nearly 100 percent would die when struck by a vehicle traveling over 50 mph (National Highway Traffic Safety Administration, 2000).

Smart Growth America's annual report, *Dangerous by Design 2021*, highlights the need to reconsider how traffic deaths are treated during, before, and after they occur. The report stresses the need to shift away from a focus on enforcement, ineffectual educational campaigns, victim-blaming that influences legal processes, and a lack of consideration of the condition of infrastructure that contributes to crashes. The report highlights the problems inherent in referring to such traffic occurrences as 'accidents,' which has fostered a perception that serious traffic injuries are not preventable (Smart Growth America, 2021).

[FHWA's Safe System Approach](#) addresses the issues raised here. Based on the idea that humans make mistakes, that human bodies have limited ability to tolerate crash impacts, and that human mistakes should never lead to death, the approach promotes design and management of road infrastructure “to keep the risk of a mistake low; and when a mistake leads to a crash, the impact on the human body does not result in a fatality or serious injury.” This approach asserts that the “transportation system can be designed and operated to accommodate human mistakes and injury tolerances and avoid death and serious injuries” (Federal Highway Administration, 2022).

3 WHAT IS AUTOMATED SPEED ENFORCEMENT?

Automated enforcement is the use of cameras or photo radar, most commonly, to deter dangerous driver behaviors including speeding and running red lights. License plate information is extracted from the photograph to identify the vehicle owner, and to issue and mail a ticket. The driver associated with the license plate information has a given amount of time to respond to the ticket by paying a fee or appealing the citation. Citations are often fee-based with no points applied to the driver’s license.

This paper explores the strategy of using Automated Speed Enforcement (ASE) to counter dangerous speeding behaviors among drivers, the impact of implemented automated speed enforcement programs as a legal and policy strategy to improve safety for all road users, and reviews best practices and legislation as implemented in other states.

In November 2021, the Federal Highway Administration (FHWA) added [Speed Safety Cameras \(SSCs\)](#) to its toolbox of proven safety countermeasures. The FHWA strongly encourages the implementation of these countermeasures on the state, regional and local levels to improve safety. The agency considers SSCs to be “an effective and reliable technology to supplement more traditional methods of enforcement, engineering measures, and education to alter the social norms of speeding.” SSCs can be fixed units (a single camera for one location), P2P or point-to-point cameras (multiple cameras which capture speed over a certain distance), or mobile units (on a trailer or vehicle). Use of fixed units on urban roadways can result in a reduction in all crashes of up to a 54 percent and a 47 percent reduction in injury crashes on urban arterials. P2P units can reduce fatal and injury crashes on expressways, freeways, and urban arterials by up to 37 percent and mobile units can reduce crashes on urban arterials by up to 20 percent (Federal Highway Administration, 2021).

The FHWA also notes that, “with proper controls in place, SSCs can offer fair and equitable enforcement of speeding, regardless of driver age, race, gender, or socio-economic status. SSCs should be planned with community input and equity impacts in mind” (Federal Highway Administration, 2021).

ASE captures vehicle license plate information when drivers exceed a particular threshold over the posted speed limit (e.g. going 51 mph in a 40mph zone, or 11 miles per hour over the posted speed

limit). If the device detects in the affirmative, it will document the vehicle's date, time, and speed. ASE camera implementation can be covert and/or overt and mobile and/or immobile.

- 1) **Covert camera enforcement** involves using cameras hidden in discreet locations with no warning to drivers that they are approaching an enforced location. These operations are used less often in the United States than in other countries due to adverse public reactions, and legislation outlawing such usage.
- 2) **Overt camera enforcement** involves placing cameras in visible locations through speed display boards or conspicuous vehicle modifications. This type of enforcement includes substantial signage, including pavement markings, fixed or temporary signage, and markings on enforcement units, to warn drivers that they are approaching camera locations. Even though overt enforcement provides fewer area-wide reductions in speed, it is more readily accepted and can contribute to the educational awareness component of the program.
- 3) **Mobile enforcement units** usually operate outside of police vans or other vehicles parked to the side of a roadway and then are deployed according to an enforcement plan. With limited enforcement units, mobile units can provide greater geographical coverage. However, use of mobile units tends to be restricted to times during which law enforcement operates. To effectively ban the use of covert operations, some states have mandated that a police officer be present at the time of the speeding violation.
- 4) **Immobile enforcement units** can operate without law enforcement present for up to 24 hours a day and usually present as pole-mounted above-ground or in-ground speed measuring equipment. When placed at or near intersections, these units can also serve to detect red-light running violations. They can provide a substantial deterrence effect in terms of efficiency as they are not bound to human limitations. Additionally, such cameras provide the most significant safety benefits as they allow law enforcement to capture speeding violations in locations that would otherwise prove challenging through traditional enforcement procedures.

Several countries have used ASE and the United Kingdom, France, Germany, and Australia have succeeded in implementing country-wide programs. In the United States, more than 157 jurisdictions employed speed cameras as of July 2021 (National Conference of State Legislatures, 2021). The first automated speed enforcement program in Paradise Valley, Arizona, dates to 1987. Most ASE programs and demonstration projects are functioning in local jurisdictions. The implementation of the type of Automated Speed Enforcement is mainly dependent on the specific conditions of the roadway for each jurisdiction. Several studies of automated enforcement programs have been conducted to determine program effectiveness and best practices. (Boos, 2009; Farmer, 2017; Poole, 2017; Rodier, 2007).

4 AUTOMATED SPEED ENFORCEMENT IMPLEMENTATION

The National Cooperative Highway Research Program *Report 729, Automated Enforcement for Speeding and Red Light Running*, provides guidelines to assist a jurisdiction in implementing ASE. Considerations for use of ASE include the following traffic safety concerns:

- the frequency and proportion of all collision occurrences and the number of speeding and red-light running violations that occur;
- any factors in crashes that are not related to dangerous driving behavior, such as the timing of light signals and sight distance; and
- the specific location of dangerous driving behavior should be consistent with identifying the primary issue at hand. Most recently, ASE has seen success in adoption primarily in work zones, school zones, residential streets, and other urban arterials. However, each location brings a unique set of circumstances that differentiate themselves based on procedure and enforcement.

Enabling Legislation Considerations

A state must pass enabling legislation that describes the ASE programs for municipalities. The guidance notes that legislation should provide flexibility to allow for technological advances to improve the efficiency of such programs without being overly constrained by narrowly defined legal distinctions. However, legislation should incorporate specific considerations to identify the methodology and evaluation processes for an ASE program (National Academies of Sciences, Engineering, and Medicine, 2012). Equity considerations should be part of the selection of the locations.

- 1) Responsibility** – Determine when to hold a driver and the vehicle owner accountable and to what degree. A *driver-centered* approach faces the most opposition due to privacy concerns; cameras take high-quality facial images to correctly identify the driver at the time of the offense. In use in most states, an *owner-centered* approach requires that cameras capture license plate information. This approach reduces privacy concerns and enables identification of a responsible party, leading to a greater number of speeding citations and a more significant deterrence effect. If the driver who caused the speeding violation is not the owner of a vehicle, there is typically an appeals process where the owner is allowed to plead out.
- 2) Violation** – For each violation, a clear penalty must be codified. The violation notice should include the name and address of the responsible party, whether the vehicle owner, the driver, or both. The notice should indicate the process for paying the penalty and how to contest the violation through an appeals process, establish a deadline by which to respond, and indicate the consequence of failing to respond. If the jurisdiction intends to hold a party other than the owner of the vehicle responsible, a written statement from law enforcement or an authorized technician is needed to indicate that the vehicle in question was being operated in violation of the law, i.e., substantially exceeding the legal speed limit.
- 3) Appeals Process** – The legislation should establish a due process method to allow judicial evaluation of specific cases, e.g., when a violation is contested because the specified responsible party is the owner of the vehicle, but not the driver, at the time of the violation.

Jurisdictions must establish a reasonable maximum of time that can elapse between the violation occurrence and the mailing of the violation notice to ensure proper recollection of memory by the responsible party. Local jurisdictions have tended to establish a 14-day maximum period to ensure proper judicial review. The appeals process must also be flexible enough to allow for legal exceptions that warrant a violation waiver, e.g. the vehicle's theft at the time of the violation.

- 4) **Rule of Evidence** – A program should make clear the distinction between citing the vehicle owner and the vehicle driver, and describe the evidence required in the case of a civil or a criminal offense. In many states, in a civil case, the image captured is considered self-authenticating. In a criminal case, a higher standard of proof would be required.
- 5) **Image/Data Privacy** – Jurisdictions must follow procedures related to the evidence, i.e. the photographs taken, to ensure privacy, including restricting use to speed management. Other uses of the data can alienate individuals based on privacy concerns.
- 6) **Warning Period** – Before a program begins, jurisdictions should inform the public about the program's purpose, and all other details, including how ASE works, the hours of implementation, costs of receiving a citation, and the payment and appeals process. Jurisdictions should incorporate a reasonable time frame, such as the first 30 to 90 days of the program, during which speeding drivers receive warning notices rather than citations.
- 7) **Vendor Payments** – Most local jurisdictions will seek to contract with private companies for installation and maintenance of the cameras and to manage the software for system reporting. The contract with the vendor should be based on a flat fee rather than on the number of violations issued to avoid the perception that the program is a revenue generator rather than an effort to reduce speed and increase safety. One such case study in Maryland received scrutiny for this type of "for-profit" negotiation. In March 2013, local media identified that the contract between Baltimore County and the speed camera vendor violated state statute on ASE enforcement requiring that "if a contractor operates a speed camera system on behalf of a local jurisdiction, the contractor's fee may not be contingent on the number of citations issued or paid." Specifically, Baltimore County issued \$19 for every \$40 ticket to the private company. In 2008, Montgomery County and several municipalities faced legal challenges for this same "for-profit" practice. However, the courts at the time denied the plaintiff the right to sue since the defense had argued that the local jurisdiction did operate and oversee enforcement, and the private company only provided the vehicle and equipment (Averella, 2013).
- 8) **Revenue** – Enabling legislation should define the use of revenue generated by the ASE program if there is a surplus after all operation fees are covered. In general, revenues are added to a city's general fund, or to "highway safety functions" or "road safety improvements." The use of revenue may impact whether a community will support the program.
- 9) **Evaluation** – Evaluation allows agencies to determine the effectiveness of the ASE program's progress in meeting its goal to reduce dangerous, excessive speeding behaviors and ensure that the technology utilized continues to function optimally. Regularly scheduled equipment inspection and calibration is needed to ensure accuracy.

10) Extensive Educational Outreach Campaign – An education campaign is needed to raise awareness of the ASE program among community members and to respond to any concerns. A successful campaign strategy focuses on the goal of using ASE programs to improve safety. The report recommends that public education outreach begin at least six months to one year before the warning period, through the 30- to 90-day warning period and continue throughout the program. Public outreach should try to leverage various media, including news media, public meetings, public service announcements, print ads, mailings, billboards, and websites. (National Highway Traffic Safety Administration, 2008).

5 EQUITY AND AUTOMATED SPEED ENFORCEMENT

In 2021, it was reported that traffic enforcement is the leading cause of interactions between the police and the public, and African American drivers are 63 percent more likely to be stopped on the road even though they drove 16 percent less than white drivers. When stopped, African Americans are 115 percent more likely to be searched than white drivers (Fegan, 2021).

Automated Speed Enforcement provides a way to “reduce racial profiling and minimize violent encounters between police and the public” (Ralph et al. 2022). Framing ASE as a tool to reduce interpersonal racial bias increases public support for this strategy. Effectiveness was shown even when controlling for personal characteristics, political ideology, and views on policing, although the strategy was shown to be ineffective for some groups. This study also noted that long-term support for cameras depends on effective implementation during which government leaders must:

- communicate the purpose of the cameras and explain their decisions to the public;
- ensure that cameras are not disproportionately located in low-income neighborhoods or communities of color;
- develop effective contracts with camera operators, draft fair ticketing policies, and decide how revenues will be used; and
- anticipate and respond to concerns about privacy and surveillance (Ralph et al., 2022).

Lessons from Chicago, IL

One aspect of ASE that is embraced as a perceived benefit is the increased racial neutrality and non-violent enforcement afforded by this technology. A review of the City of Chicago’s Automated Enforcement Program, which includes red-light and speed cameras, reported that the program did not eliminate racial and economic inequities, despite the reduction in direct police enforcement. In Chicago, speed camera operation is limited to safety zones, areas delineated around schools and parks. The study found that speed cameras reduced the expected number of fatal and severe injury crashes by 15 percent. However, the disproportionate impact on Black and Latino residents points to the need for improvements to Chicago’s Automated Enforcement Program:

Spatial and social distribution of tickets

- More tickets were issued to households in predominantly Black and Latino communities as compared to other parts of the city.
- The number of tickets issued increased with the number of nearby cameras.

Economic Impact of Paid Ticket Fines and Fees

- Black and Latino drivers bear a disproportionate share of the absolute economic burden of tickets.
- Residents of low-income neighborhoods pay a higher share of ticket fees relative to their income and the number of tickets received.
- Residents of majority Black and low-income neighborhoods are much more likely to accrue fees on tickets and are much less likely to pay the ticket once fees have accumulated or they have received more than one ticket.

Recommendations of the study address the location of cameras, the fine and fee structure, and assessment of camera efficacy:

- Examine the decision-making process that resulted in placement of more cameras in Latino neighborhoods
- Introduce late fee cap and statute of limitations on late payment; stop doubling of fines for late payment; reduce base fine in line with risk of harm
- Scale fines and fees by ability to pay, and based on number of infractions
- Base camera placement on local speed study
- Reassess camera locations showing no improvement or worse safety results, and relocate when needed (Sutton and Tilahun, 2022)

Similarly, an analysis of Washington, D.C.'s ASE program found that drivers in Black-segregated neighborhoods were over 17 times more likely to be ticketed for a moving violation than in a white-segregated neighborhood. Photo enforcement accounted for 96 percent of the citations and 97 percent of the fines. The report notes that high-speed corridors are more often sited in Black communities. Recommendations include an emphasis on design for safe streets, the reinvestment of fine revenues into permanent infrastructure improvements in the locations generating the fines, and a fine structure scaled to income. (Farrell, W. 2018)

6 MEASURING RELATIVE EFFECTIVENESS: NEW YORK CITY

New York City's ASE program has resulted in decreased numbers of traffic crashes. The program originated in 2013 through the adoption of Sec. 1180-b of the State's Vehicle and Traffic Law which granted the City the authority to initiate a pilot program in 20 school speed zones in pursuit of the city's Vision Zero initiative to eliminate traffic deaths and severe injuries. Implemented in January 2014, the pilot program was expanded to 140 school speed zones in June 2014. To date, NYC operates cameras in 750 school zones, which is the area within a quarter-mile radius of a school building, with approximately 1,300 cameras. The cameras are placed based on data on speeding and pedestrian injury crashes. Initially, the cameras operated during the

hours of 6 am to 10 pm through both mobile and immobile radar and laser technology which detects when a vehicle is traveling at greater than 10 miles per hour over the legal speed limit. Speed cameras are operating 24/7 as of August 1, 2022.

The program uses a strict owner-based approach in that cameras capturing a speeding violation record the license plate information. A technician verifies the violation and a Notice of Liability (NOL) is mailed to the vehicle owner. The NOL is associated with a \$50 flat fee regardless of the excess speed that a vehicle was traveling. However, if the NOL is not paid, a summons is issued at a cost ranging from \$180 to \$600 plus an \$88 state surcharge and can affect the motorist's driving record, adding points and affecting insurance rates. The enabling legislation limits the usage of cameras to speed enforcement and requires the city to issue a report on traffic injuries by severity and identify any errors (New York City Department of Transportation, 2019).

In 2018, when NYC's program was utilizing 140 speed cameras, Columbia University conducted a study that sought to determine the adequate number and location of speed cameras to have a "herd immunity effect," that is associated with a maximum return on investment via the Markov model. This model identifies the economic and health impacts associated with speed cameras to determine whether a particular correlation exists with the number and location of speed cameras present. Specifically, the model mathematically denotes such a comparison through quality-adjusted life years (QALYs) to weigh the indirect and direct costs of medical expenses among the general population. The study confirmed that, regardless of the number of increased speed cameras, there was always an associated saving in terms of money and lives. However, each camera was associated with more minuscule gains as the cameras surpassed an optimal number in a specific area.

The study evaluated system effectiveness specific to NYC that included a "spacing rule of thumb" where it was shown that each camera reduced traffic speeds within 1km or 0.62 miles of its location. The study recommended that adequate spacing be provided between the cameras, 1km intervals, to gain maximum coverage impact. The study also identified roads that are ill-suited for automated enforcement, such as green spaces or less developed roads better suited for other infrastructure improvements. In addition, the study stated that different populations have varying tolerances regarding speed management due to existing road conditions. As a result, alternative strategies should include assessing other measures to improve effectiveness on a case-by-case basis, such as the incorporation of 'blanket areas' to warn drivers that they are approaching a speed camera. (Li, S., et al, 2019)

NYC's speed cameras are part of a broader safety campaign that includes approximately 5,000-speed limit signs and several other safety improvements, including: 1) a reduction in the citywide default speed limit to 25 miles per hour, 2) installation of 2,136 speed humps between 2014 through 2020; and 3) the completion of 750 safety engineering projects since the original implementation of its Vision Zero program. The speed cameras have proven to reduce dangerous excessive speeding behaviors and their consequences, with a 72 percent decrease in speeding and a 14 percent decrease in injuries at fixed camera sites. NYC police officers issued about 80,000 speeding tickets between 2009 through 2013; that number has almost doubled since the ASE program's expansions to as high as 152,381 tickets in 2018. Through its ongoing education outreach campaigns, the city has seen an increase in the number of people who said they would give more thought to

not speeding upon approaching crosswalks. The city has also seen an 83 percent of people who said they would pay more careful attention when sharing the roadway with bicyclists and pedestrians (New York City Department of Transportation, 2020).

As a result of both a strong deterrence effect from the number of tickets issued and the ongoing education campaign, NYC saw a 73 percent decline in the average weekly violations at new speed camera locations in the first 18 weeks of 2019. Most significantly, as of the summer of 2019, all speed camera sites had at least 96 percent violations traveling at more than 10 miles per hour, but no more than 20 miles per hour. The percentage of speed violations that occurred while a driver traveled at greater than 30 miles per hour was 1.99 percent. In 2020, over half of the vehicles cited were not involved in a repeat offense (Julia Kite-Laidlaw, 2021).

Since the program began in 2014, only 0.1 percent of the violations have been overturned. This further adds to the credibility of the ASE program in being able to continue enforcement without violating the due process of any individual or group. Speed camera revenue goes into the City's general fund (NYCDOT, 2019). Speed cameras are operating 24/7 as of August 1, 2022.

7 OTHER BEST PRACTICE EXAMPLES

Three Automated Speed Enforcement programs implemented in densely populated metropolitan areas, including Philadelphia, Seattle, and Montgomery County, Maryland, and a statewide program that has been implemented in Pennsylvania's work zones offer information on implementation and initial assessment of effectiveness. The evaluation of such programs has substantial merit in considering implementation for New Jersey.

Philadelphia, Pennsylvania – State enabling legislation was passed in 2018 for pilot ASE programs on Roosevelt Boulevard, a twelve-lane local highway, and in work zones throughout Pennsylvania. The Philadelphia ordinance authorizing the Roosevelt Boulevard pilot went into effect in September 2019 as part of the City's Vision Zero initiative. The five-year ASE pilot program began in June of 2020. Once named one of the "deadliest highways," Roosevelt Boulevard exhibits high levels of vehicular traffic and high levels of pedestrian traffic, particularly at intersections. Residents in surrounding developments rely on the route for shopping districts and other infrastructure. The ASE program involved the use of 32 fixed camera locations, with four cameras at each intersection, along the lower portion of Roosevelt Boulevard. During the 60-day warning period, 402,359 violation warning notices were mailed. The hours of enforcement are from 4:00 am to 8:00 pm.

The program is managed by VerraMobility, Philadelphia Parking Authority, the Philadelphia Office of Transportation, Infrastructure and Sustainability (OTIS), and PennDOT. PennDOT and the City used data to determine the eight initial locations that exhibited high speeding and aggressive driving occurrences. The program issues citations for drivers traveling in excess of 11 miles per hour over the posted speed limit, which triggers a camera to record an image of the vehicle's license plate. Security software verifies

the vehicle's speed and the information is sent to the Parking Authority for review, and finally to the Philadelphia Police Department. Through VerraMobility, the Parking Authority sends out the Notice of Liability (NOL) within 30 days of the violation or within 30 days of obtaining owner information. The NOL includes instructions for how to return the notice. The fine structure includes an enhanced monetary penalty, which increases with excessive speeding. Payment within 30 days upon receiving the mail is also an admission of guilt. However, if an owner does not pay the fee, three additional late fee periods are assessed, and continuously unanswered violations get forwarded to third-party debt collectors.

Between June 2020 and February 2021, speeding violations decreased by 91.4 percent with a drop in average travel speed from 57.4 mph to 56.4 mph. PennDOT reported that after \$2,754,452 in expenses, the total revenue generated was \$18,019,444, \$13,150,092 of which was transferred to PennDOT's Transportation Enhancement Grants Program to be used for road safety infrastructure improvements. A total of 27,736 violations remained unmailed to owners due to software issues. There was a 48 percent collection rate with an anticipation that the rate would continue to increase. Only two percent of all violations were pending judicial review. Violations issued and paid declined from 84,608 in August 2020 to 16,776 in February 2021 (Philadelphia Parking Authority, 2021).

Recommendations from the report of the pilot include:

- Install additional speed cameras along this corridor, particularly between Banks Way and Deveraux Avenue
- Consider installation of a traffic signal between Strahle and Woodward Street
- Increase police presence during off-peak hours to reduce excessive speeding
- Develop and air Public Service Announcements targeting local communities about the dangers of speed to motorists, pedestrians, and bicycle riders

Pennsylvania's Automated Work Zone Speed Enforcement (AWZSE) Program – Pennsylvania's AWZSE Program is a collaborative effort of Pennsylvania DOT, Pennsylvania Turnpike Commission, and the State Police, and complements the work of the State Police. The stated goals of the program are reducing speeds in work zones, promoting work zone safety, improving driver behavior and saving the lives of workers and travelers.

The program began live enforcement in March, 2020, was put on hold a week later due to the COVID 19 pandemic, and then proceeded in April 2020. AWZSE was consistently used from June through November and during that time, work zone speeds decreased. The percentage of drivers exceeding the work zone speed limit decreased by 16.6 percent and the percentage of drivers excessively speeding decreased by 43.6 percent. Of the violations issued, 11.62 percent went to repeat violators. Overall work zone crashes decreased by an estimated 30-35 percent. Long-term work zones have seen a 5-8 percent decrease in average speeds whether the work zone used AWZSE or not. The agencies have incorporated messages about the program into their work zone safety messaging programs and have highlighted the benefits. The program did not generate revenue. The program has a dedicated website.

Several changes to the legislation are suggested in the annual report to improve the program:

- Ability to withhold vehicle registration renewal until fines are paid (similar to EZPass)
- Ability to transfer liability from vehicle's registered owner if both parties agree in writing
- Consideration of alternatives to fine structure
 - Financial penalty on first offense
 - Speed-based penalties, i.e., increasing penalties for mph over posted speed limit
- Ability to hold hearings virtually, or as document review post-pandemic

Seattle, Washington – The City of Seattle implemented its ASE program in November 2012, with a goal of reducing speeding in school zones. Seattle was mainly concerned with excessive vehicle speeding, particularly by parents due to the fact that the risk of death to a child sharply increases to over 50 percent when involved in a collision with a car traveling at 40 mph. The program went into place during commuter hours around four elementary schools, with an initial warning period between November and December 2012. The program then went into full force through January of 2015. This particular study looked at the effect of ASE on speeding rates during school travel hours in school zones and how long the effect remained.

The Seattle Department of Transportation and the Seattle Police Department conducted a preliminary study to determine the four school zones based on areas ranked in the 85th percentile for high rates of speeding, where average speed was 34 to 36 mph and 5 to 22 percent of all vehicles exceeded 40 mph. The city contracted with a private company to install and maintain the cameras. Additionally, each selected location had flashing beacons, and had additional signage installed to warn drivers that the school was a speed zone. Seattle issued speeding citations of \$189 for vehicles traveling more than 20 mph over the posted speed limit where the cameras took a photographic image of the license plate. During the one-month waiting period, owners received a letter indicating that they would have been issued a ticket. Evaluation of the program was limited as the Seattle Police Department stated that they could not make public the actual violation speed. As an alternative, the study looked to conduct a before-after study to compare outcomes.

Through observation of speeding during the speed school zone timeframes, 38 percent of the school travel hours observed at least one speeding violation, i.e., a motorist traveling above 35 mph. Additionally, 10 percent of violations exceeded 35 mph and traveling more than 15 mph over the posted speed limit. The warning period saw the highest number of citations per hour with a mean of 13.0, which dropped during the first month after the warning period to 6.4. The first year saw a reduction of about four violations per hour per 1,000 vehicles, and the second year saw an additional decrease of 3 violations per hour per 1,000 vehicles. Additionally, while the mean hourly violation speed increased slightly, the overall mean decreased by one mph between the warning period and the first year, continuing into the second year. The study further identified key trends in its findings, which included:

- 1) Traffic patterns remained constant; therefore, the chance that a motorist sought alternative routes during the program was unlikely.

- 2) The observed beneficial effects of ASE continued past the first year of the program with only noticeable spikes in violations during non-school hours such as the spring and summer months supports the continuation of the ASE program during these interval periods;
- 3) While drivers that received violations decreased their speeds, drivers that did not receive violations but routinely travel at high speeds did not reduce speeds as quickly, resulting in slight increases in mean violation speed with a decreased overall mean violation speed;
- 4) The funds generated from the ASE program provided the city a new revenue stream for investing in safe and active school transportation (Quistberg et al., 2019).

Montgomery County, Maryland – Montgomery County implemented its ASE program in May 2007 for both residential streets with speed limits of 35 mph or lower and school zones. Since its original implementation, the county made two substantial changes to the program, including adjusting the violation threshold from 11 mph to 12 mph above the speed limit in 2009 and shifting to a corridor approach where cameras were moved periodically along a road segment in 2012. Speed cameras operate between 6 am to 8 pm. The speeding violations carry a fine of \$40 for the vehicle owner but no license penalty points. Over time, the ASE program has expanded from 18 mobile camera units to 56 fixed camera units, 30 portable cameras units, and 6 mobile speed camera vans as of 2014, which monitored 73 speed camera corridors and 61 speed camera sites. Before its implementation, the city ran a "Safe Speed" publicity campaign focused on the dangers of speeding and the role of speed cameras. During the program, signage was installed along specific roadways, advertising the location of the cameras on entrances to corridors. This evaluation study included a telephone survey to assess awareness and attitudes and analyzed police-reported crashes between 2004 to 2013 using a logistic regression model to estimate the program's effect on those traveling more than ten mph over the posted speed limit (Hu & McCartt, 2016).

The mean speed and proportion of vehicles exceeding 10 mph declined in all three sites. The mean speed at camera sites declined by 10.2 percent, and the percentage chance of a vehicle exceeding 10 mph at camera sites decreased by 62 percent. As to public perception, 56 percent of drivers in the area agreed that speeding was a problem on residential streets before the program, 95 percent knew that cameras were operating on residential streets where 62 percent supported its use and 38 percent opposed its use. Public support for use of ASE in school speed zones was higher than on residential streets at 86 percent in favor by 2014. Overall, 76 percent of respondents noted that they had reduced their speed. As a result, 59 percent received at least one violation, and 75 percent knew someone who had received a citation. Additionally, the proportion of drivers who reduced their speed declined at a rate similar to that of drivers who viewed speeding as a problem, indicating a safety improvement. (Hu & McCartt, 2016).

Following the law change and shift to a corridor approach, the crash data showed an overall 39 percent reduction in the percentage chance that a crash involved a severe or fatal injury. Although this study was limited in analyzing actual observations of decreasing speeding violations, the crash data and survey

results indicate an increased public perception of increased safety along roadways, which can result in substantial long-term reductions in speeding and crashes. Even though some jurisdictions in the State of Maryland, including Baltimore and Prince George's County, faced legal challenges to their respective ASE programs, the effects of ASE in reducing speed occurrences and increasing perception of safety along roadways were still evident. This effect was particularly evident in the study case of Montgomery County (Hu & McCartt, 2016).

8 NEW JERSEY AND AUTOMATED ENFORCEMENT

In a five-year pilot program, from 2009 to 2014, the state experimented with automated enforcement to track red-light running violations through 73 camera intersections in 24 municipalities; however, the state did not renew the program after its expiration. The use of speed cameras has been prohibited by state law since 1992. (NJ Rev Stat § 39:4-103.1 (2016))

NJ Senate bill S460, introduced in 2022, prohibits the NJ Motor Vehicle Commission or other agencies from sharing driver information with other states to fine drivers for violations captured by speed enforcement cameras or red-light cameras. The bill passed the NJ Senate by a vote of 40-0 but to date has not passed the NJ Assembly. The current status of this bill is unknown.

For the past several years, bills have been introduced in the New Jersey Assembly and Senate to conduct a five-year Automated Speed Enforcement pilot program specific to active work zones. As currently written, the bill would apply to work zones on highways under the jurisdiction of the NJ Department of Transportation (NJDOT) and the New Jersey Turnpike Authority (NJTA). A driver traveling at a speed in excess of 11 miles per hour over the posted speed limit would receive a ticket. Revenues would be directed to the NJ State Police (75 percent) to enable the agency to provide trained personnel in work zones and to NJDOT and NJTA (25 percent), and incorporate at least two warning signs at each location, notifying the public of the camera's location. The current status of this legislation is not known.

9 BENEFITS AND LIMITATIONS (EXPERT INTERVIEWS)

As part of this research effort, interviews were held with Marco Conner who, at the time of the interview, was Deputy Director of Transportation Alternatives, and Ken McLeod, Policy Director for the League of American Bicyclists. Their thoughts related to automated speed enforcement are summarized below:

Marco Connor –

- There is evidence that automated enforcement is effective in reducing speeding and red-light running and leads to lower crash injury and fatality rates.
- For enforcement to be effective, it must be widespread and visible and the New York City program provides this kind of enforcement. New York City is a model for how others can implement these programs. In New York City, speed cameras have been shown to be extremely effective. They have reduced speeding violations by more than 60 percent and reduced

speeding violations by as much as 85 percent in some locations. They have resulted in reduced fatalities and this has been achieved with a \$50 fine. Seven out of 10 people who are ticketed do not receive another ticket in at least the first 3 years. There is no need to penalize excessively, but some drivers with frequent violations need additional penalties.

- Speed camera programs and Red-Light Running programs are useful in gathering data to determine the prevalence of speeding and inform public policy.
- The idea for setting up legal sanctions and public policy is to keep penalties as low as possible and still achieve the greatest level of deterrence.
- Speed camera programs avoid any risk of escalation of use of force. There is no risk of bias, as long as you ensure that the cameras are not disproportionately placed in black and brown neighborhoods.
- New York's Dangerous Vehicle Abatement Program is about to start. The program is designed for the subsection of drivers for whom a \$50 ticket is not a deterrent and who cause a disproportionate number of crashes. License suspension is often not sufficient for these drivers who will drive without a license. The program allows for the seizure of a vehicle if the vehicle receives 5 red light running tickets and 15 speeding tickets in 12 or 18 months. The driver will be required to participate in a 90-minute program.
- These programs meet less political opposition when the focus is on road worker safety and when they provide increased penalties in work zones. In New York City, the opening for the program in 2013 was to limit operation to school zones. The tie to student safety helped politically.
- The red-light running program has been operating in New York City since 1995. The state law treats this program and ASE as pilot programs so the authorization has to be renewed every few years.
- There can be missteps, such as with Chicago's program which had problems with tickets mailed erroneously and administrative errors.
 - Any program should start with a period of three months when warnings are mailed in order to fix any bugs in the system.
 - Fines should not be high so the program cannot be criticized as being inequitable, and there is no need for tickets to be higher than \$50.
- Transportation Alternatives is pushing for the fines collected to be earmarked for traffic safety with a portion of the revenues to go back into street safety projects in the area where the ticket was issued. Objections to ASE programs include that the cameras are there to fill city coffers and that automated enforcement is a means of wealth extraction from low income, black and brown neighborhoods. The data does not show this. There is research showing that the drivers breaking the law are not from the neighborhood where the infraction occurred.
 - There is a need to address the underlying conditions causing or contributing to traffic dangers. The program could earmark some of the proceeds to safety, with a portion to the neighborhood, and a portion to other areas.
- A few key points:
 - It is important to stress that unpaid fines cannot lead to arrest warrants.
 - Companies that operate and supply cameras should be paid not by the number of tickets issued but by the number of cameras.
 - Some places are set up to fail, or likely fail due to lack of funding. There is an initial assumption that the program has to pay for itself.
 - There are privacy concerns related to how data is stored, and who has access to it. In New York City, no entity has access without a warrant related to a suspected crime.

- The huge education effort around Vision Zero has helped with acceptance of the speed cameras.
- Families for Safe Streets and Transportation Alternatives in 2018-2019 conducted the Every School Campaign around speed safety cameras with 350 coalition partners, AARP, the teachers union, hospitals, schools and groups of students, the local school crossing guard union, PTA, students, and faith-based groups. A political cohort of elected officials were involved. This effort created a paradigm shift because it was led by families affected by traffic crashes. The NYPD commissioner and district attorneys spoke in favor of the ASE program.

Ken McLeod –

- ASE is a tough program; it gets criticism from the right and the left. Traditional conservative opposition says that ASE is a revenue generator and drivers have the right to be confronted by an officer. On the left, the concern is that the cameras are often placed in black and brown neighborhoods and have disparate effects, especially factoring in the legacy of higher speed roads pushed through low-income communities. There has not been a lot of engagement around these criticisms.
- I believe that ASE is not a solution, but a tool on the way to a solution. We need to redesign the street so it is designed for the posted speed limit. Drivers feel comfortable and safe in speeding because there is extra space built into the roadway. They believe it is an injustice when they get ticketed. We need to remember that the goal is not ticketing, but reducing speeding.
 - If there are numerous citations associated with a camera location then the speeding issue at that location has not been addressed sufficiently. Don't throw a camera on it and call it done.
 - We need automated speed enforcement *and* changes to the built environment.
- Look at the number of tickets received by a driver if they are involved in a crash where someone is injured or killed. Isolate the small percentage of people who speed most often from the normal population who are just reading road design; that's a very positive message around speeding that shows we are not normalizing all speeding.
- There has been recent research on ASEs in Chicago, and the Washington, D.C. program would be a good one to look at.
- I hope we are building toward that vision of a traffic safety approach that is not as dependent on enforcement. There is an evolving conversation about enforcement, and how to talk about enforcement without promoting enforcement.

10 DISCUSSION

The review of literature and examination of legislation and practice in various locations provides the basis for the following policy considerations for the implementation of an Automated Speed Enforcement Program. This list is not intended to be exclusive of other considerations.

- 1) Inform stakeholders that the primary goal of ASE programs is to improve the safety of pedestrians, bicyclists, and other vulnerable road users. Speed cameras effectively deter excessive speed behaviors and result in fewer traffic crashes and injuries in school zones,

- residential zones, and highways. Connect this effort to a long-term safety goal such as Vision Zero. (Farmer, C. 2017)
- 2) Select sites that have been identified as dangerous based on crash data and target violations with greater safety impacts. Focus the program on drivers traveling over 10mph over the speed limit. Gain support from the public and governmental agencies by publicizing the safety issues and the need for innovative solutions. (Farmer, C. 2017)
 - 3) In determining the siting of cameras, give particular attention to minority and low-income neighborhoods to avoid a disproportionate negative impact on residents.
 - 4) Analyze road design at high-frequency crash locations to determine infrastructure improvements that would slow traffic.
 - 5) Keep fines low to avoid placing a disproportionate burden on residents of low-income and minority communities.
 - 6) Implement an enhanced penalty commensurate with potential to harm, with increased fines for drivers who exhibit more significant excessive speeding (Roosevelt Blvd in Philadelphia) or who repeatedly speed.
 - 7) An extensive educational outreach campaign should focus on changing driver behavior and attitudes. The campaign would begin before the installation of speed cameras to inform the public about the set up and operation of the cameras, the process for appealing citations, and the dangers of excessive speeding. (Farmer, C. 2017)
 - 8) Provide a probationary period, sufficient grace periods for payment, and a clearly defined appeals process address due process concerns for drivers who receive warnings and tickets. (Farmer, C. 2017)
 - 9) Although the most significant results of decreased occurrences of excessive speeding will occur during the first few months of the program, maintain the program to continue to provide a deterrent effect and educational awareness of the dangers of excessive speeding.
 - 10) Surplus revenue from ASE programs should be used to improve the safety of bicyclists, pedestrians, and other vulnerable road users. Do not design budgets around anticipated revenue. The goal of ASE programs is to have no revenue.
 - 11) Gather data and report on the effect of the program on a regular basis. (Farmer, C. 2017)
 - 12) Automated Speed Enforcement is a supplement to, not a replacement of, traditional law enforcement practices. It is part of an approach that integrates engineering, education and enforcement.
 - 13) Speed camera programs are often implemented in school zones during school commute hours and in work zones during times of active road work. Expansion to 24/7 operations would be based on crash data at specific locations.

Automatic Speed Enforcement programs are effective in reducing the number of crashes where implemented, and in some cases beyond, and contribute to a culture of safety. Their efficacy is highlighted by the inclusion of Speed Safety Cameras in the FHWA Proven Safety Countermeasure Toolbox. Examples of ASE programs in neighboring states provide some guidance on steps for implementation.

The intent of ASE programs is ultimately to be so effective that there are no fines to collect. However, the presence of speeding often reflects the built environment. Analysis of high-crash frequency locations should result in, not only the placement of cameras, but strategies for reducing speeds and improving pedestrian and bicycle safety infrastructure. This approach is particularly applicable to New Jersey's low-income and minority neighborhoods where roadway design contributes to speeding. The program will be most successful as part of a larger safety initiative such as Vision Zero or Toward Zero Deaths that provides a broad public awareness campaign and puts funding toward signage, media, and infrastructure improvements that promote and support the safety of all road users.

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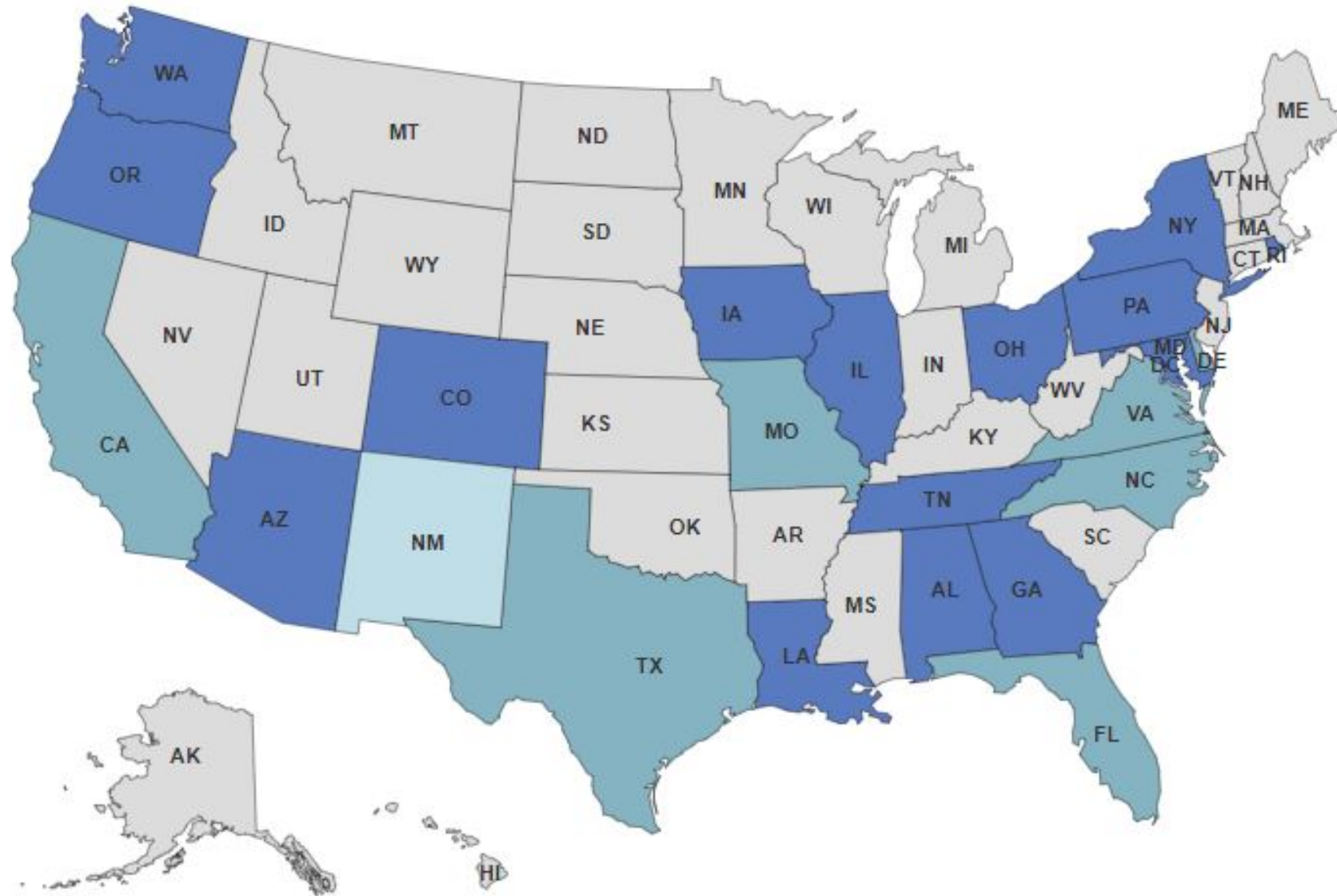
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Appendix

Automated Speed Enforcement Map
Automated Speed Enforcement by State

States where red light cameras or speed cameras are currently used



■ Red light and speed ■ Red light ■ Speed ■ None

	RLR	ASE	Where are cameras permitted (RLR/ ASE)	Are Cameras Permitted	Penalties (RLR/ ASE)	Other Provisions
Alabama	✓	✓	Specified Jurisdictions	✓	fine (ranging from minimum of \$60 to minimum of \$110 depending on the jurisdiction); generally not listed in criminal or driving record/ fine (ranging from minimum of \$60 to minimum of \$100 depending on the jurisdiction and speed above the limit); generally not included in criminal or driving record	
Alaska						
Arizona	✓	✓	Statewide	✓	same as traditional enforcement penalty: maximum \$250 fine and 2 points/ same as traditional enforcement penalty: maximum \$250 fine and 3 points	not permitted on state highways; not placed within 600 feet of posted speed limit change except near school crossing
Arkansas		✓	school zones or at a railroad crossing (for ASE only)			police officer must be present and must issue citation at time and place of violation (for ASE only)
California	✓		statewide (for RLR only)	✓ (for RLR only)	same as traditional enforcement penalty: \$100 base fine and approximately \$400 additional fees plus 1 point (for RLR only)	
Colorado	✓	✓	statewide/ school zones, residential neighborhoods, construction zones, and streets that border a municipal park	✓	maximum fine of \$75, not reportable to Department of Public Safety; no points and not included in driving record/ maximum fine of \$40, unless violation occurs in school zone or construction zone; not reportable to the Department of Public Safety; no points and not included in driving record	police officer or government employee must be present at time of alleged violation; in construction zones, citations issued only when construction is occurring (for ASE only)
Connecticut						
Delaware	✓		statewide (for RLR only)	✓ (for RLR only)	civil or administrative assessment not to exceed \$110; not classified as a criminal offense, shall not be made a part of the driving record, and shall not be used for insurance purposes; DMV shall suspend license for failing to pay assessment (for RLR only)	
D.C.	✓	✓	citywide	✓	\$150 fine; DMV cannot suspend license for failure to pay fine or penalty; no points/ fine, which varies depending on how fast above the speed limit the vehicle is traveling; DMV cannot suspend license for failure to pay fine or penalty; no points	
Florida	✓		statewide (for RLR only)	✓ (for RLR only)	\$158 fine; no points (for RLR only)	
Georgia	✓	✓	statewide/ school zones	✓	civil monetary penalty of not more than \$70; not considered a moving traffic violation, no points, not listed in driving record, and not used for insurance purposes/ civil monetary penalty of \$75 for a first offense and \$125 for second or subsequent offenses; additional processing fees may not exceed \$25	cameras may only be used to capture violations one hour before through one hour after instructional school time (for ASE only)
Hawaii	✓		Counties of Hawaii, Maui, Kauai, Honolulu and City of Honolulu after a 2-year pilot program in the City and County of Honolulu (for RLR only)		civil monetary penalty not to exceed \$200 for a first offense; \$300 for a second offense; \$500 for a third or subsequent offense (for RLR only)	
Idaho						
Illinois	✓	✓	specified jurisdictions/ in a construction or maintenance speed zone; in a safety zone (within 1/8th of a mile of a school or a park district used for recreational purposes) in municipalities with a population of 1,000,000 or more inhabitants	✓	civil penalty not to exceed \$100 or the completion of a traffic education program, or both; license suspension for failing to pay any fine for multiple offenses; not considered a violation of a traffic regulation and not recorded on driving record/ in construction zones, minimum \$375 fine; in safety zones, fine, which varies depending on how fast above the speed limit the vehicle is traveling; license suspension for failing to pay any fine for multiple offenses; not considered a violation of a traffic regulation and not included in driving record	in construction zones, citations issued only when workers are present; in safety zones, citations issued only during certain hours (for ASE only)
Indiana						
Iowa	✓	✓	specified jurisdictions	✓	fine (ranging from \$65 to \$100 depending on the jurisdiction); not listed on driving record/ fine (ranging from \$5 to \$500 depending on jurisdiction and speed above the limit); certain jurisdictions double fines in construction zones; not listed on driving record	
Kansas						
Kentucky						
Louisiana	✓	✓	specified jurisdictions	✓	fine (ranging from \$100 to \$125 depending on the jurisdiction); not classified a criminal conviction and not included in driving record/ fine, which varies depending on how fast above the speed limit the vehicle is traveling and the jurisdiction; not classified a criminal conviction and not included in driving record	not permitted on interstate highways, except when placed in construction zones where workers are present and operated by the state (for ASE only)
Maine						
Maryland	✓	✓	statewide/ specified jurisdictions	✓	maximum fine of \$100; not a moving violation for the purpose of assessing points, not included in the driving record, and shall not be used for insurance purposes/ maximum fine of \$40; not a moving violation for the purpose of assessing points, not included in the driving record, and shall not be used for insurance purposes	in school zones, citations issued only during certain hours; in construction zones, system used only to record images of vehicles traveling at least 12 mph above speed limit (for ASE only)
Massachusetts						
Michigan						
Minnesota						
Mississippi						

Missouri	✓	✓	specified jurisdictions	✓ (For RLR only)	fine (generally, \$100); no points in certain jurisdictions/ \$100 fine; certain jurisdictions increase to \$200 fine for traveling 20 mph over speed limit	certain jurisdictions limit violations to school zones and on streets that include crosswalks used by children when going to or leaving school (for ASE only)
Montana						
Nebraska						
Nevada	✓	✓	statewide			red light camera equipment must be held in hand or installed temporarily or permanently within law enforcement vehicle or facility/ speed camera equipment must be held in hand or installed temporarily or permanently within law enforcement vehicle or facility
New Hampshire						use of camera or other device to determine vehicle ownership or identify vehicle occupants is prohibited unless specifically authorized by statute (for ASE only)
New Jersey						
New Mexico	✓	✓	specified jurisdictions	✓ (for ASE only)	fine (ranging from \$66 to \$100 depending on the jurisdiction); certain jurisdictions allow vehicle seizure for nonpayment of fine/ \$100 fine; certain jurisdictions allow vehicle seizure for nonpayment of fine	not permitted on state and federal roadways/ mobile enforcement vans not permitted on state and federal roadways
New York	✓	✓	specified jurisdictions	✓	maximum fine of \$50; not classified as a criminal offense, not included in driving record, and not used for insurance purposes/ maximum fine of \$50; not classified as a criminal offense, not included in driving record, and not used for insurance purposes	not permitted on a controlled-access highway exit ramp or within three hundred feet along a highway that continues from the end of a controlled-access highway exit ramp (for ASE only)
North Carolina	✓		specified jurisdictions (for RLR only)	✓ (for RLR only)	fine (ranging from \$50 to \$100 depending on the jurisdiction); no points and not used for insurance purposes	
North Dakota						
Ohio	✓	✓	statewide	✓	fine which shall not exceed the maximum fine imposed for a substantially equivalent criminal traffic law violation (not more than \$150 for a traffic control signal violation, which is a minor misdemeanor); no points and not used for insurance purposes (for RLR only)	not permitted on interstates when operated by townships (for ASE only)
Oklahoma						
Oregon	✓	✓	statewide	✓	same as traditional enforcement penalty; Class B traffic violation resulting in a maximum \$1,000 fine/ same as traditional enforcement penalty; traffic violation resulting in a fine, which varies depending on how fast above the speed limit the vehicle is traveling	in specified jurisdictions, may not be used for more than 4 hours per day, may not be used on controlled access highways, and must be operated by uniformed police officer out of marked police vehicle; in construction zones, citations issued only when workers are present and must be operated by a uniformed police officer out of marked police vehicle (for ASE only)
Pennsylvania	✓	✓	specified jurisdictions/ active work zones, effective 2/16/19; Philadelphia, effective 12/18/18	✓	maximum fine of \$100; not a criminal conviction, not included in the driving record, and shall not used for insurance purposes/ written warning for a first offense in an active work zone, \$75 for a second offense and \$150 for third or subsequent offense; potential pilot programs are limited to a maximum fine of \$150	in work zones, citations issued only when workers are present (for ASE only)
Rhode Island	✓	✓	statewide/ school zones, Monday through Friday, between 7:00 a.m. and 6:00 p.m. from August 15 through June	✓	fine of \$85; not a moving violation nor a criminal conviction and not included in driving record; not used for insurance purposes until there is a final adjudication/ \$50 fine first and second offense, \$95 fine third and subsequent offense; not considered a moving violation nor captured on the driving record	
South Carolina			statewide			authorized only for violations that occur during emergency
South Dakota						state law prohibits Department of Public Safety and Division of Motor Vehicles from providing to other states information that can be used by those states to impose or collect civil fine resulting from alleged violation enforced by camera program
Tennessee	✓	✓	statewide/ a school zone and on any S-curve that inhibits a driver's full vision through the bend	✓	\$50 fine; not included in driving record and not used for credit rating or insurance purposes/ \$50 fine	
Texas			some communities may continue to operate under the terms of a contract signed before the ban enacted June 2019 (for RLR only)	✓ (for RLR only)	maximum \$75 civil or administrative penalty; DMV may refuse to register a vehicle alleged to have been involved in a violation; not classified as a criminal offense, not included in the driving record, and not used for credit rating (for RLR only)	
Utah		✓	school zones and areas that have a posted speed limit of 30 mph or less (for ASE only)	✓ (for ASE only)	not reportable and no points	police officer must be present
Vermont						
Virginia	✓	✓	statewide/ school crossing zones and highway work zones	✓ (for RLR only)	monetary penalty of not more than \$50; not considered a conviction, not included in the driving record, and not used for insurance purposes/ fine not to exceed \$100; civil penalty and not considered for insurance purposes	systems allowed at no more than 1 intersection for every 10,000 residents in each community, except for communities under the Northern Virginia Regional Commission, which are allowed systems at no more than 10 intersections or no more than 1 intersection for every 10,000 residents, whichever is greater (for RLR only)
Washington	✓	✓	statewide at intersections of 2 arterials/ school speed zones	✓	maximum \$250 fine; not included in the driving record and shall be processed in the same manner as parking infractions/ fine no greater than the fine for a parking infraction within the jurisdiction; not included in the driving record and shall be processed in the same manner as parking infractions	for any city west of Cascade mountains, city may only operate one speed camera and Washington state legislature must have first authorized its use and location for at least 1 full year (for ASE only)
West Virginia						
Wisconsin						
Wyoming						