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# TRAFFIC TECH

## Technology Transfer Series



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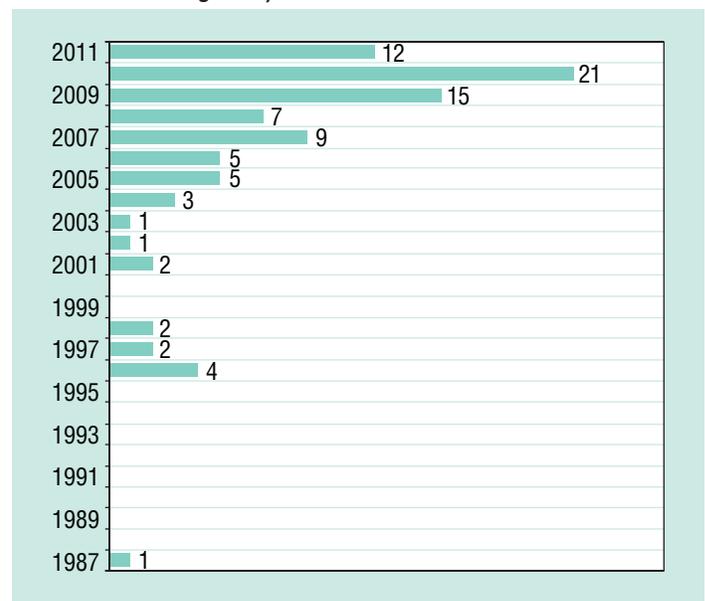
# System Analysis of Automated Speed Enforcement Implementation

Speeding is a major factor in a large proportion of traffic crashes, injuries, and fatalities in the United States. Automated speed enforcement (ASE) is one effective countermeasure for reducing speeding and crashes. NHTSA and the Federal Highway Administration co-published the *Speed Enforcement Camera Systems Operational Guidelines* (2008) to assist State and local agencies to plan and operate ASE systems as a component of comprehensive speed management programs.

This survey, conducted in 2011-2012, examined the protocols and practices of U.S. law enforcement agencies in the deployment and implementation of ASE, public perceptions of fairness, and the nature of communication by communities regarding any positive outcomes of ASE operations. It also examined the alignment of existing ASE programs with FHWA/NHTSA Guidelines. We identified 107 U.S. jurisdictions with ASE programs as of October 2011, located in 12 States and the District of Columbia (91 currently active, 15 discontinued, and 1 agency that had both currently active and discontinued components of their ASE program). We mailed each of the 107 jurisdictions a questionnaire with follow-ups conducted by mail, e-mail, phone, and site visit. Completed questionnaires were received from 90 agencies (84% response rate). Some highlights from the findings are presented below.

The first ASE program in the United States (still in operation) began in 1987 in Paradise Valley, Arizona. The number of ASE programs in the United States grew slowly at first. Of the 90 agencies responding to our survey, 35 ASE programs started in period 1987 to 2007. The other 55 agencies responding had established their ASE programs from 2008 to 2011 (Figure 1) with the recent spike coming largely from three States, Maryland (20), Arizona (10), and Washington (8). The introduction of enabling legislation in a large State can cause a spike in the number of programs initiated in a year. Maryland, in particular, has vaulted to the lead in the number of ASE programs in the past 5 years after legislative changes. Arizona, Colorado, and Oregon were the primary ASE States during the early years of ASE in the United States. Of these, only Arizona has continued to experience any real growth in ASE programs.

**Figure 1. Year of ASE Program Implementation by Number of ASE Programs Started That Year (n=90) (Includes Current and Discontinued Programs)**



There are some important differences between the program administration of the older ASE programs (1987 to 2007) and the newer programs (2008 to 2011). Much of the difference is related to the enabling legislation and technology employed. Arizona, Colorado, and Oregon, with the oldest ASE programs in the country, are different from other States and the District of Columbia in some key areas. They have the largest number of jurisdictions that capture images of the drivers (24 of 29 jurisdictions). States implementing ASE after 2000 generally do not capture driver images. Consequently, newer ASE programs generally charge the registered vehicle owner with an ASE violation whether that person was actually the driver or not.

In Arizona and Oregon, the monetary fines are substantially higher, by as much as four to five times, compared to ASE violations in other States. In addition, Arizona and Oregon impose more severe sanctions than in other States. Arizona and Oregon treat an ASE speed violation essentially the

same as if an officer stopped the driver. Points on the driver license (and potentially higher insurance rates), requirements for defensive driving classes, and even driver license suspensions are used in Arizona and Oregon. In fact, 18 of the 20 ASE agencies that have these types of sanctions are in these two States. Other States treat ASE violations as civil violations, only resulting in monetary fines. For States that have enabling legislation for owner responsibility versus driver responsibility, less evidence (e.g., no photograph of the driver) is needed to issue a citation.

There was some variation between older and newer ASE program technology choices. Older programs (49%) are more likely than newer programs (16%) to use *speed-on-green* red light cameras that also identify speeders driving through intersections. Older programs (89%) also use mobile enforcement more than newer programs (53%), while newer programs (22%) were more likely to use semi-fixed ASE, which move cameras between secure housings at different locations, than older programs (11%). The use of fixed, pole-mounted cameras were about equal for older (46%) and newer (45%) ASE programs. Many agencies reported using some combination of ASE device types. The most common combination of ASE devices was fixed units, speed on green, and mobile units used by 14 percent of agencies.

Mobile ASE units were used by 60 of the 90 responding agencies. Until recently, mobile ASE units have been almost universally comprised of vans or patrol vehicles, staffed with personnel from either the ASE agency or contracted vendor. In some States, staffing mobile ASE units is a legal requirement. In some other States where it is not, that protocol appears to be changing in favor of remotely monitored mobile units.

ASE equipped trailers have been introduced in several States over the past few years. ASE trailers are set up for operation and monitored from the ASE agency or an ASE vendor control center. Like ASE trailers, ASE agencies are increasingly setting up unattended ASE mobile vans at deployment locations for remote monitoring. The radio-based technology that allows remote monitoring of ASE mobile units has only recently been developed and become cost effective. There are obvious cost saving implications for ASE agencies and vendors.

Community participation in the planning and operation of ASE programs can have an impact on program success, but only 27 percent of agencies reported forming a stakeholders group at the beginning of the program. Older programs

(31%) were more likely than newer (24%) programs to report forming such groups.

Strategic speed management plans are an important component in speeding law enforcement. Of the agencies responding, 53 percent had no written strategic plan for reducing speeding, while 34 percent had written plans, and 11 percent did not know if they had written plans.

Nearly half (48%) of the agencies responding stated they had not conducted, and did not plan to conduct, evaluations of crashes associated with their ASE programs, while 28 percent reported having conducted crash evaluations, and 22 percent said they were planning to conduct crash evaluations.

ASE program alignment with the FHWA/NHTSA Guidelines varied widely by specific guidelines. Low-alignment items included use of stakeholder groups and crash evaluations. High-alignment items included encrypting ASE data and doing legal reviews before program implementation. Most agencies (63%) were unaware of the ASE guidelines prior to participating in the study.

Overall, ASE programs have been increasing in recent years; however, some jurisdictions have terminated their ASE programs. Of the 11 agencies with discontinued ASE programs that responded, 5 cited more than one reason for discontinuing ASE. One agency cited six reasons for doing so. The most common reason cited for terminating ASE programs was decisions by elected leaders, followed by economics. Other reasons cited for terminating programs included litigation, contractual issues and concerns with State legislative changes. None of these agencies reported program termination due to inaccuracy of the equipment, faulty maintenance, or other systemic problems.

## References:

Federal Highway Administration & National Highway Traffic Safety Administration. (2008). *Speed Enforcement Camera Systems Operational Guidelines* (Report No. DOT HS 810 916). Washington, DC: Authors. Available at [http://safety.fhwa.dot.gov/speedmgt/ref\\_mats/fhwasa09028/resources/Speed%20Camera%20Guidelines.pdf](http://safety.fhwa.dot.gov/speedmgt/ref_mats/fhwasa09028/resources/Speed%20Camera%20Guidelines.pdf)

## How to Order

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