U.S. Department of Transportation
Federal Highway Administration

Checklist for Implementing Work Zone Speed Safety Cameras

Photo Credit: Getty Images.

☰ Speed Safety Cameras can help improve work zone safety by improving speeding-related issues and reducing fatalities and serious injuries in work zones.

The Federal Highway Administration (FHWA) and the National Highway Traffic Safety Administration (NHTSA) published the *Speed Safety Camera Program Planning and Operations Guide*[1] (**figure 1**) in 2023. This checklist, based on the guide, provides a high-level list of steps and considerations for State and local practitioners who are developing a program for implementing work zone speed safety cameras (SSCs).

STEPS FOR IMPLEMENTING WORK ZONE SPEED SAFETY CAMERAS

Six steps and their associated activities for implementing a work zone SSC program are described in the following section. Additional details for each of these steps and activities are in the guide.

Step 1. Strategic Planning includes activities necessary to assess safety needs, the legal framework, and community and stakeholder engagement. Strategic planning activities include the following:

☐ *Conduct safety needs assessment* for SSCs in work zones by analyzing work zone crashes, considering factors such as severity (focus on fatalities and serious injuries), speeding, work zone intrusions, and demographic and social data of work zone locations.

☐ *Conduct legal and policy review* to determine whether SSCs can be used in work zones.

☐ *Identify and engage stakeholders* to get community buy-in for SSC authorization (if needed and encourage effective communications and considerations for equity during SSC program implementation. The guide includes a comprehensive list of traffic safety and community stakeholders. The list may include law enforcement, State or local department of transportation attorneys, public health agencies, communications experts, elected officials, members of the public and community groups, and statewide or local chapters of construction industry and advocacy groups.

☐ *Develop communications framework* for strategically conducting both internal communications and external outreach and engagement activities while moving toward work zone SSC authorization and implementation.

Figure 1. Photo. The cover of the Speed Safety Camera Program Planning and Operations Guide. *Source: FHWA.*

Step 2. SSC Program Planning guides SSC program developers through steps to implement SSC enforcement in a jurisdiction. SSC program planning activities include the following:

☐ *Define program goals*, for example, reduce speeding-related crashes in work zones, reduce highway worker fatalities and injuries, and complement existing law enforcement efforts.

☐ *Determine scope, scale, and type of program*, including the potential as a pilot program, jurisdictions eligible for SSC deployment, the types of locations, and work zone conditions for deployment (e.g., unprotected channelized work zones, barrier-protected work zones, or both; limited-access highways, all State roadways, or both; whether workers must be present for active SSC operations).

☐ *Develop SSC program plan* to set up administration and oversight of the work zone SSC program; identify roles and responsibilities for transportation agencies, law enforcement, and possible vendors; and build on prior efforts to plan communications activities to educate about and promote the SSC program.
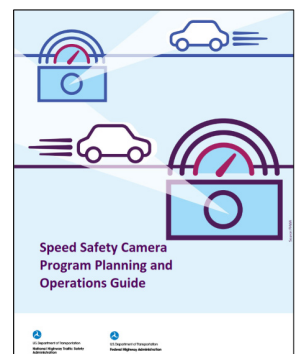
[1] https://highways.dot.gov/sites/fhwa.dot.gov/files/Speed%20Safety%20Camera%20Program%20Planning%20and%20Operations%20Guide%202023.pdf

Step 3. Enforcement Planning and Field Operations considers various aspects of planning for active work zone SSC enforcement with various key components within two activities.

Develop an enforcement plan to provide clear internal guidance for conducting enforcement operations and addressing public concerns and help jurisdictions target program resources most effectively. This includes the following key components:

☐ *Site selection* of work zones for SSC deployment should be data driven (e.g., speeding-related crashes, speed data, social and demographic data) to identify specific work zones that would benefit most. Additional considerations may include the work zone duration, location and road characteristics (e.g., limited access highway versus two-lane roadway, urban versus rural, posted speed limit), and worker protection (e.g., channelized devices versus barriers).

☐ *Enforcement speed threshold* may be based on authorizing legislation, staffing considerations for enforcement, or consideration of the traditional enforcement speed threshold.

☐ *Enforcement strategy and equipment types* might comprise portable or mobile units for work zone SSCs; however, those may be placed in a single location for the full duration of a work zone or moved to different locations or different work zones on a regular basis. Different types of SSC equipment and supporting backend software available from vendors may provide varying strengths that are preferred based on SSC program goals.

☐ *Signing strategies and driver feedback* should be based on authorizing legislation, which may specify signing and public notification requirements for work zone SSC deployments. Agencies will have to develop the specific signing approach based on recommendations from the *Manual on Uniform Traffic Control Devices for Streets and Highways*. Additional considerations may include a public website about planned and active SSC locations, as well as speed feedback display boards.

☐ *Scheduling SSC* operations may be based on staffing availability (i.e., to be present when SSCs are actively enforcing), only when workers are present at a work zone, or only during daytime hours.

☐ *Coordination with other law enforcement and stakeholder efforts* should occur for these entities to be aware of SSC program goals and activities. Placement of work zone SSCs may complement other enforcement activities and be prioritized for locations that are difficult for law enforcement to enforce effectively.

☐ *Monitoring of the enforcement program and ongoing improvement* includes collection and analysis of crash, enforcement, and speed data. Based on the effectiveness of SSC enforcement, changes may be warranted if performance or safety goals are not met.

Conduct field operations to establish procedures for work zone SSC operations.

☐ *Operator staffing and training* for two key functions of a work zone SSC program: operating equipment and issuing citations. Responsibilities for these functions may be determined using some combination of transportation agency staff, law enforcement, and contracted vendor staff.

☐ *Unit location and set-up procedures* for consistent SSC unit setup should consider obstructions, avoiding work zone activity, and camera line of sight, while encouraging worker and driver safety by placing the unit in locations that limit driver distraction and are not a roadside hazard.

☐ *Event documentation* is needed to encourage public trust and support citation adjudication. Agencies should adequately document SSC deployment requirements, such as worker presence, as well as equipment calibration logs, deployment site location and hours, enforcement speed threshold, and citations issued. Agencies may also consider having staff on-site, cameras to confirm worker presence, or worker presence sensors to document work zone activity.

☐ *Data transfer* with considerations for data security is notable to protect driver privacy and agencies should consider legal restrictions regarding what individuals or entities are able to access and process data collected by work zone SSCs.

☐ *Equipment maintenance and calibration* needs should be considered for mobile SSC units when procuring equipment and developing procedures in order to encourage accuracy.

Step 4. Violation Structure, Processing, Delivery, and Adjudication considers a variety of activities that include the following:

☐ *Distribution of responsibilities* for citation processing should follow State and local laws and may include one or more transportation agencies, authorized subcontractors or vendors, and law enforcement agencies.

☐ *Steps in the violation issuance process* include violation detection, vehicle owner identification, citation issuance, and compliance with privacy policies and data confidentiality.

☐ *Options for citation recipients* should be clearly stated on the citation and allow adequate response time. Information about the program and methods to easily respond to the citation should be provided.

☐ *Status tracking and followup procedures* should consider developing procedures for tracking violations (e.g., a vendor software that meets program needs and applicable laws, regulations, and data security policies) and what to do if a recipient does not respond to a violation notice (e.g., reminder notice).

☐ *Violation notices issued to government and business vehicles* may require special procedures and engagement with fleet owners (e.g., bus, police, fire, rescue, government, construction contractors, vendors) as owners likely will not be driving the vehicles.

☐ *Receipt and use of fine revenues* may be prescribed by authorizing legislation and are often allocated to traffic safety programs or improvements to enhance public support of work zone SSCs.

Step 5. Program Startup involves final activities to implement the enforcement and violation processing plans. Program startup activities include the following:

☐ *Equipment procurement* includes the selection of mobile or portable SSC technologies with backend capabilities that best meet agency needs based on SSC program priorities identified in activities from prior steps. This activity includes cost considerations of equipment, operations, and maintenance, as well as equipment-related staffing needs.

☐ *Vendor agreements* if the agency would like ongoing vendor staff support for services such as work zone selection, verifying work zone activity, processing and mailing approved citations, or performance reporting, for example.

☐ *Coordination with departments of motor vehicles and other agencies* is needed to access vehicle registration data to support processing and adjudicating citations.

☐ *Data management* includes storage and security considerations and data retention policies to reduce privacy concerns.

☐ *Marketing, communications, and public education* are needed to inform the public, improve public relations, and promote safety goals. These include pre-program publicity and program transparency via public websites regarding program goals, information about work zones with SSCs, and documented safety benefits of the program, if available.

☐ *Program rollout and warning period* may help identify early issues that need to be corrected prior to violations carrying fines or license sanctions.

Figure 2. Photo. Advanced sign for a work zone speed safety camera. Source: Pennsylvania Department of Transportation.

Step 6. Program Evaluation is integral to the success and improvement of an SSC program and may help identify changes to make it more effective. Program evaluation activities include:

☐ *Basic program monitoring* includes rudimentary ongoing data collection and assessment to confirm that program goals are being met and identify possible changes in strategy or scheduling to make work zone SSCs more effective (e.g., placement, visibility, work zone type).

☐ *Evaluation of safety (crash and speed effects)* to quantitatively assess the relative safety of work zones with and without SSC deployments based on data that are required (and available), while considering tradeoffs of each data source. Evaluation should consider program goals for reducing crashes, improving worker safety, and reducing speeds, as well as equity. Crash data may include crash severity, crashes involving workers, "near miss" incidents between vehicles and workers, and public and worker perceptions to compare work zones with and without SSC deployment. Speed data may be used to examine changes in speed variance, changes in speed at the work zone with SSCs, changes in speed upstream and downstream from the work zone, and continued changes in speed after the work zone SSC deployment has ended. Citation data may also be used to identify changes in driver behavior based on the number of repeat offenders.

☐ *Evaluation of public awareness and attitudes* via public opinion surveys may be beneficial before and after initial work SSC deployment and assess attitudes toward enforcement generally, as well as understanding, perceptions, and experience with work zone SSCs, program goals, information about active deployments, and revenue allocation. This may help identify needed communication changes regarding signing, outreach, and driver education.

FOR MORE INFORMATION

FHWA and NHTSA Speed Safety Camera Program Planning and Operations Guide

https://highways.dot.gov/sites/fhwa.dot.gov/files/Speed Safety Camera Program Planning and Operations Guide 2023.pdf

"National Work Zone Safety Information Clearinghouse" ("Speed Safety Cameras" subheading under "Smart Work Zones")

https://workzonesafety.org/topics-of-interest/smart-work-zones

FHWA "Proven Safety Countermeasures: Speed Safety Cameras"

https://highways.dot.gov/safety/proven-safety-countermeasures/speed-safety-cameras

NHTSA "Countermeasures That Work: Speed Safety Camera Enforcement"

https://www.nhtsa.gov/book/countermeasures-that-work/speeding-and-speed-management/countermeasures/enforcement/speed-safety-camera-enforcement

POINTS OF CONTACT

Martha Kapitanov
FHWA Office of Operations
202–695–0736
martha.kapitanov@dot.gov

Phillip Bobitz, P.E.
FHWA Office of Safety
717–221–4574
phillip.bobitz@dot.gov

Jeffrey A. King
FHWA Office of Safety
602–382–8991 | 202–409–2421
jeff.king@dot.gov