

School Zone Speed Safety Cameras In North Carolina

A COMMUNITY READINESS AND PLANNING RESOURCE

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Executive Summary	i
Chapter 1: The Basics of Speed Safety Cameras	1
Introduction.....	1
What Do Speed Safety Cameras Do?.....	3
How Do Speed Safety Cameras Work?	4
What is Involved In Implementing An SSC Program?	6
North Carolina’s SSC Legislation.....	7
Chapter 2: Initial Program Phase.....	9
Build the Core Team and Make the Decision to Move Forward	9
Establish Goals and Objectives	12
Coordinate Framing and Messaging.....	14
Gather Community Input	15
Chapter 3: Program Planning Phase.....	17
Local Ordinance Development	17
Equipment and Vendor Selection	21
Chapter 4: Program Installation Phase.....	26
Identify Eligible Sites	26
Screen and Select Sites	28
Install Appropriate Signage and Markings.....	34
Chapter 5: Program Deployment and Operations Phase	36
Establish a Timeline for Program Rollout	36
LAUNCH Awareness and Messaging Campaigns	37
Issue and Adjudicate Violations.....	40
5.4 Test and Update Program Monitoring Procedures	41
Chapter 6: Program Monitoring and Evaluation Phase.....	42
Plan the Program Evaluation	43
6.2 Share Evaluation Findings.....	46
Chapter 7: Program Refinement Phase	49
Chapter 8: Conclusions	51
Additional Resources	52
References	53
Appendix A: SSC Planning Logic Model	56
Appendix B: Vendor Considerations	57
Appendix C: Footnotes	60

Executive Summary

Motor vehicle crashes remain a leading cause of death in the United States, claiming more than 110 lives each day. In North Carolina, traffic fatalities increased 18% from 2019 to 2024, while serious injuries rose 7% during the same period. Speed is a central driver of these outcomes: higher travel speeds reduce the time drivers have to detect and respond to hazards and substantially increase the likelihood that a crash will result in severe injury or death. School zones are among the most critical of settings in which speed management is necessary. Many schools in North Carolina sit along or near higher-speed corridors, making it difficult to maintain speeds low enough to protect children and families during arrival and dismissal.

Speed safety cameras (SSCs)—also referred to as speed cameras or automated speed enforcement—have become an increasingly common tool to support speed management and improve compliance with posted limits. SSCs typically use radar or lidar to measure vehicle speed and camera imagery to document vehicles exceeding a set threshold, enabling warnings or civil penalties to be mailed to the registered vehicle owner. A substantial body of research has found SSC programs reduce speeds and are associated with meaningful reductions in fatal and injury crashes, with particularly strong results reported in school zones and work zones.

As of October 1, 2025, North Carolina law allows local governments to use SSCs to enforce school zone speed limits under Senate Bill 391. The law establishes a framework for local ordinances, citation procedures, owner-liability processes, signage requirements, and consequences for unpaid penalties, including potential DMV registration holds. Local governments must adopt ordinances consistent with state law and coordinate with NCDOT for deployment on state-maintained roadways.

This document is designed to help North Carolina communities that are considering, planning, or implementing SSC programs in school zones by:

- (1) explaining SSC technology, program components, and effectiveness;
- (2) providing practical tools and resources for each phase of program development, deployment, and evaluation; and
- (3) distilling lessons learned from SSC programs in North Carolina and across the United States.

The guide emphasizes that successful SSC programs depend on technical readiness (clear administrative processes, staffing capacity, data systems, and interagency coordination) and public legitimacy (transparent, fair, and well-communicated decisions that build trust). The guide highlights the end-to-end program lifecycle that many jurisdictions follow after a law is enacted. The guide is laid out in the following sections:

- **Chapter 1:** The Basics of SSCs: An introduction to these systems, how they work, and what is known about their effectiveness.
- **Chapter 2:** Initial Program Phase: Highlights efforts needed to assess initial readiness and approaches to partnership formation.
- **Chapter 3:** Program Planning Phase: Describes legal and administrative framework development, including ordinance adoption.
- **Chapter 4:** Program Installation Phase: Discusses equipment/vendor selection and contracting as well as site selection and installation.
- **Chapter 5:** Program Deployment and Operations Phase: Provides insights into best practices for successful program launch and ongoing maintenance and operations.
- **Chapter 6:** Program Monitoring and Evaluation Phase: Covers key data needs and practices to support program monitoring and evaluation.
- **Chapter 7:** Program Refinement Phase: Highlights opportunities for ongoing program refinement and potentially expansion.

In addition to these sections, this guide includes resources, case studies, and appendices that offer real-world examples and hands-on tools for agencies working through various processes.

By grounding decisions in safety outcomes, transparent procedures, and community partnership, North Carolina communities can implement SSC programs that reduce speeding in school zones, protect children and families, and strengthen broader Safe System efforts statewide.

Chapter 1: The Basics of Speed Safety Cameras

INTRODUCTION

Motor vehicle crashes are a leading cause of death in the United States, taking the lives of more than 110 people each day. In North Carolina, traffic fatalities statewide increased 18% from 2019 to 2024, and serious injuries grew by 7% during the same period.¹ According to the North Carolina Department of Transportation, “62% of vehicles involved in fatal crashes were exceeding the posted speed limit by more than 10%.”²

Speed plays a critical role in roadway safety, influencing drivers’ ability to detect hazards, the time available to avoid crashes, and the severity of resulting injuries. Research consistently shows that, as vehicle speeds increase, both the likelihood and severity of crashes rise.³ These relationships underpin many of the strategies used by transportation agencies to manage speeds and promote safer travel environments.

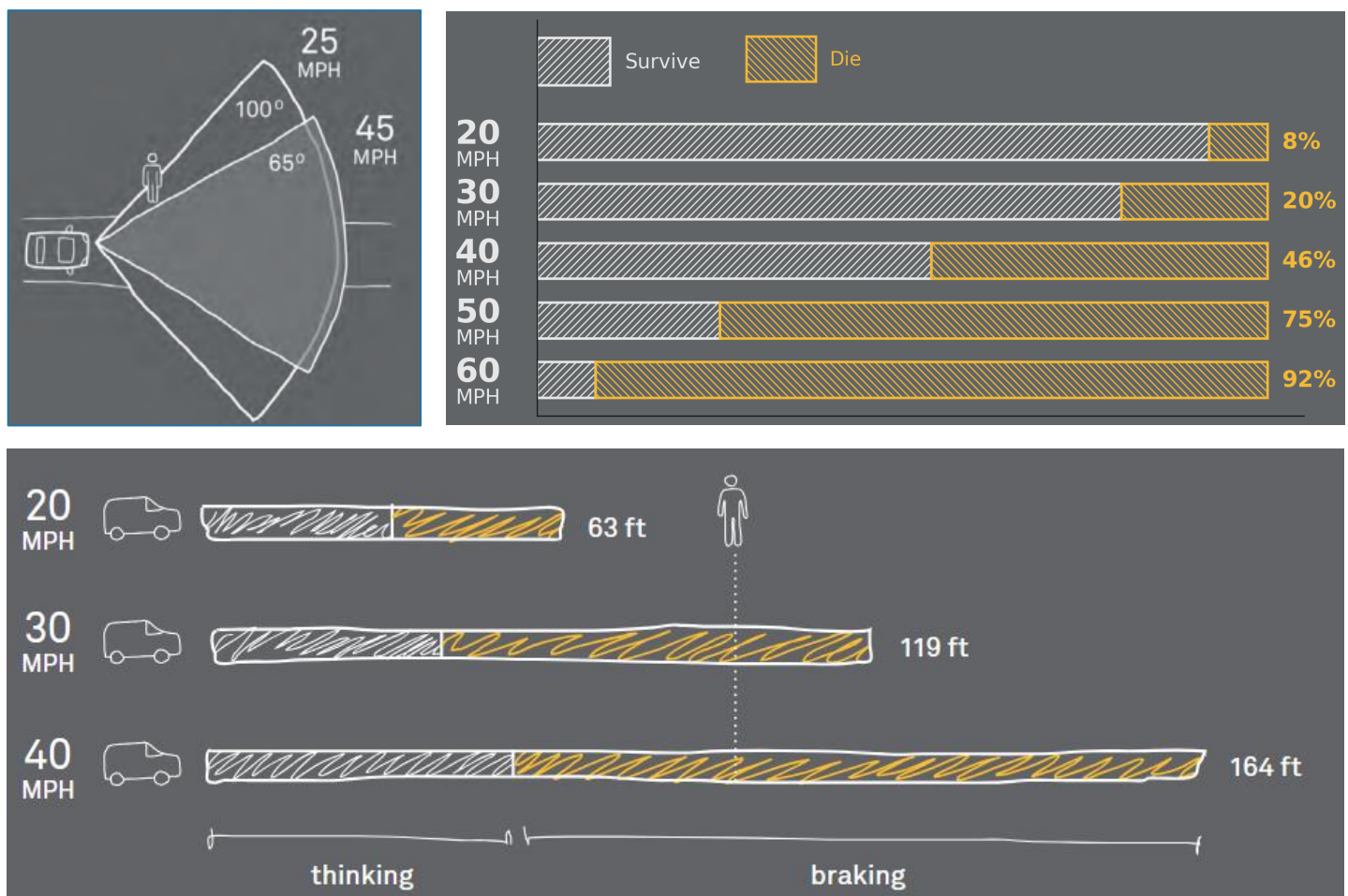


Figure 1. Diagrams depicting the impact of speed on motorist attention (Top Left), reaction time and stopping distance (Bottom) and risk of pedestrian death (Top Right). (Left and lower image source: NACTO (2020).⁴ Right top image source: Created by UNC using data from Tefft (2013).⁵



*Figure 2.
SSCs can help
improve safety for
those traveling to
and from school.
(Source:
pedbikeimages.org/
Dan Burden).*

Across North Carolina, speeding contributes significantly to severe and fatal crashes. Statewide transportation safety goals—particularly those aligned with Vision Zero and the Safe System approach—recognize safer speeds as a central emphasis area, as documented in the 2024 update to the state’s [Strategic Highway Safety Plan](#).⁶ Schools located on or near higher-speed corridors face challenges maintaining speeds low enough to protect children and families during arrival and dismissal periods.

Speed safety cameras (SSCs) have emerged as an important tool to support speed management and improve compliance with posted speed limits. In North Carolina, as of October 1, 2025, local governments may use SSCs to enforce school zone-speed limits. According to [data compiled by the Insurance Institute for Highway Safety \(IIHS\)](#), SSCs are now authorized by legislation in more than 25 U.S. states. More than 300 communities operate speed camera programs, often integrated within broader safety initiatives.⁷

The purpose of this document is to support NC communities that may be considering, planning, or actively deploying speed safety camera programs, by:

1. Providing an overview of SSCs, including the basics of the technology, system elements, and effectiveness.
2. Offering tools and resources for each step of planning, deploying, and evaluating SSCs.
3. Distilling and sharing research and lessons learned from SSC programs across NC and the US.

WHAT DO SPEED SAFETY CAMERAS DO?

A speed safety camera (SSC), otherwise known as a speed camera or automated speed enforcement, uses speed detection technology (such as radar and lidar) to measure the speeds of motor vehicles and take photos of vehicles traveling above a set speed threshold. The license plate of the speeding vehicle is photographed, and the owner of the vehicle is issued either a warning or a civil penalty by mail.

The purpose of SSCs is to prevent traffic-related deaths and injuries by encouraging drivers to travel at safe speeds. As travel speeds increase, there is a higher chance of a crash occurring, and a higher likelihood that the crash will result in a severe injury or death.

Research evaluating speed safety camera programs has routinely shown that they are effective in reducing motor vehicle speeds and decreasing the risk of death and severe injury. While results vary by location, U.S. and international studies have found SSCs to be associated with reductions of approximately 20 to 37% in fatal and injury crashes, especially when deployed in locations like school zones and work zones.⁸ Oregon DOT completed a [comprehensive review](#) of state and international speed camera studies and found them very effective in reducing average speed and overall speeding behavior. Speed safety cameras also reduce the occurrence of total crashes, as well as those resulting in severe injuries and deaths. Many studies also suggest that these safety benefits are experienced beyond the sites where the cameras are installed, otherwise known as a “halo effect,” suggesting that communitywide safety can be improved even when cameras are only installed in specific locations.⁹

They can also provide secondary benefits such as freeing law enforcement personnel for other duties and improving crosswalk yielding behavior.¹⁰ Because of their demonstrated effectiveness, speed safety cameras are identified by both the [National Highway Traffic Safety Administration](#) and the [Federal Highway Administration](#) as effective ways to reduce deaths and injuries.

Notably, SSCs are not intended to replace engineering or policy-based speed management measures but instead to complement them, especially where roadway constraints may limit other interventions. Speeding, like many other road user behaviors, is heavily dependent on environmental factors like the design of the roadway and roadside, as well as vehicle factors like the power of the engine or presence of speed-regulating devices, and also human factors and driver characteristics. Reinforcing speed-related outreach and law enforcement with modifications to the roadway environment and safety-supportive policies is the most effective way to reduce motor vehicle speeds.

Summary of Research on Speed Safety Cameras

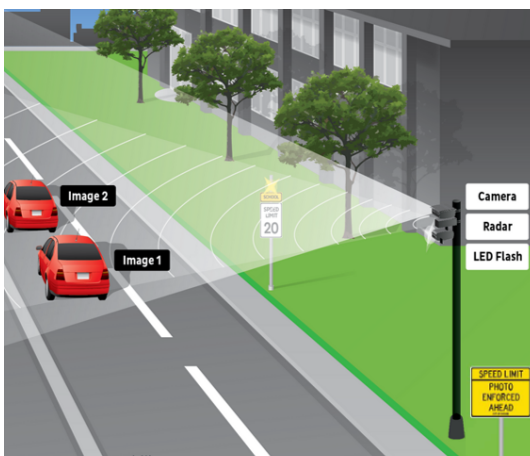
A review of 28 studies examining speed camera effectiveness found steady evidence of crash reductions near camera locations. Total crash reductions varied by jurisdiction and ranged between 8% to 49%, with most studies reporting between 14% to 25% fewer crashes at locations treated with SSCs. Fatal or serious crashes decreased by at least 11%, and up to 44%.¹¹

Washington D.C.'s before and after analysis of 118 speed camera locations found reductions in total crashes, crashes involving injury, disabling injuries, right angle crashes, and left turn crashes at camera sites.¹² A pilot program in Charlotte indicated a 10% reduction in crashes at locations with speed camera systems.¹³ An analysis of Chicago's speed camera program compared two time periods (2013–2014, when most cameras were installed, to 2015–2017), finding a 12% reduction in fatal and injury crashes and a 15% reduction in fatal and severe injury crashes at treated locations.¹⁴

Declining violation rates over time can indicate program success, as drivers adjust their behavior in response to camera presence. Since the beginning of its speed camera program in 2014, New York, NY, has seen daily violations at camera locations decrease by 94%.¹⁵ Seattle observed a 55.6% reduction in citations after two years, and a 67% decrease since 2012.¹⁶ A study on outcomes from four Seattle elementary schools found that violations declined by nearly 50% when automated camera citations were issued compared to warnings.¹⁷

HOW DO SPEED SAFETY CAMERAS WORK?

SSCs can include fixed, mobile, and point-to-point systems. Some systems are designed to be permanent installations, while others may be temporary and/or more easily relocated. Often, SSCs rely on a combination of radar as well as camera technology.



- Step 1** Driver enters designated school zone marked with speed enforcement signage and markings
- Step 2** Portable or fixed system using camera and/or radar technology identifies vehicles traveling above predetermined speed during school operating hours
- Step 3** System captures time-stamped images of the vehicle that show location, distance and time traveled, as well as a close-up of the license plate
- Step 4** Law enforcement personnel review evidence and verify plate, vehicle, and speed
- Step 5** Citation issued and fine mailed to vehicle owner
- Step 6** Owner may dispute fine and move to appeals process

*Figure 3. SSC elements.
Image: Verra Mobility.*

Figure 3 shows the basic steps in which SSCs work. In Step 1, a vehicle enters the designated SSC enforcement zone. Per NC law, “a posted sign is required to alert road users that a speed camera system is being used to issue citations for school zone speed violations. Placement of sign can be no more than 1,000 feet from the speed camera

system.”¹⁸ Portable or fixed cameras detect vehicles traveling above the established speed threshold in Step 2, and the system captures video or photographic evidence of both the violation and license plate in Step 3.

As part of Step 4 and 5, identified violations are reviewed and citations are sent. The NC law designates that law enforcement staff must review each violation documented by a speed safety camera and submit written confirmation of this process. Citations must include a photo of the vehicle, time and location, vehicle registration, recorded speed, written statement from the officer confirming a violation occurred, and information on how to either pay or contest the fine. Citations must be sent within 60 days of the violation.

Citations are issued to the registered vehicle owner. If the owner was not driving the vehicle at the time of the violation, they have 30 days to submit an affidavit, either:

1. Identifying the name and address of the person who had permission to operate the vehicle, who may then be issued the citation.
2. Stating that the person operating the vehicle did not have permission to lease, rent, borrow, or otherwise utilize the vehicle.

SSC violations in NC are considered non-criminal and carry a civil penalty of \$250 to the owner of the vehicle. No points are assigned to the driver's license of either the driver or the owner of the vehicle when violations are issued by speed safety camera systems. If unpaid after 30 days, a \$50 late fee applies, and the DMV will block the vehicle's registration renewal until the total fines are paid.

Distinguishing SSCs from other Camera Technologies

Speed Safety Cameras may overlap in their placement along the roadside with other technologies such as closed circuit camera television (CCTV) cameras and the technology used in a speed safety camera system may be similar to other applications, such as license plate readers (LPRs). However, these other technologies have different purposes and are governed by differing sets of laws and policies.

By law, speed safety cameras are only intended to improve speed limit compliance and transportation safety and their use is very narrow in scope: to document specific instances when a driver is violating the posted speed limit in an active school zone. Unlike CCTVs, SSC cannot be used for continuous recording, general surveillance, criminal law enforcement, or real time monitoring. While SSCs are able to capture license plate data when identifying a violation, the license plate information is only used for the singular purpose of identifying the registered vehicle owner and issuing a civil penalty under the SSC program. LPRs in NC are governed by separate regulations, N.C. Gen. Stat. §§ 20-183.30 through 20-183.32.

WHAT IS INVOLVED IN IMPLEMENTING AN SSC PROGRAM?

The implementation of SSC programs generally follows several phases: establishing state standards, building local partnerships and administrative processes, selecting sites, installing equipment and signage, and deploying the system with community outreach. Ongoing monitoring ensures transparency, fairness, and opportunities for program refinement. See Figure 4 and the following sections for details on what activities occur in each phase.

Overall, while elements of SSC programs and timelines may vary, successful and sustainable implementation depends on:

1. **Technical readiness:** having clear administrative frameworks, staff capacity, rollout and evaluation plans, as well as routine collaboration and clear structures for coordination in place.
2. **Community perception of program legitimacy:** establishing processes for ensuring fairness, transparency, community buy-in, and management of legal and political issues, as well as ensuring access to data and information to support decision-making.

The following sections outline program roles, responsibilities, and timelines across the phases of SSC program development, highlighting how overarching principles and NC-specific laws shape decision-making at each stage.

1	LAW ENACTMENT		SB 391 went into effect October 1, 2025.
2	STATE STANDARDS AND CERTIFICATION PROCESSES		SSC technology must be reviewed and approved by NC Criminal Justice Education and Training Standards Commission and Secretary of Public Safety.
3	LOCAL PROGRAM DEVELOPMENT	INITIAL PHASE	Build the team and establish goals; determine feasibility and planning or data needs; coordinate messaging and initiate community outreach.
4		PLANNING PHASE	Establish legal frameworks, administrative frameworks, and implementation and evaluation frameworks.
5		INSTALLATION PHASE	Community engagement, vendor/ equipment coordination, site selection, equipment installation and testing.
6		DEPLOYMENT PHASE	Community outreach; rollout phase; media coverage; violation processing and appeals; data collection, monitoring, evaluation, and reporting.
7	LOCAL PROGRAM MONITORING AND REFINEMENT		Local program refinements such as location adjustments, expansion, changes to vendor procurements, and program staffing.
8	STATEWIDE LEGISLATIVE UPDATES		Revisions to state legislation to clarify the law and/or adjust.

Figure 4. Timeline of SSC Program Development.

NORTH CAROLINA'S SSC LEGISLATION

State law establishes the administrative framework for automated speed enforcement in North Carolina, defining the authorities, approvals, and responsibilities that shape how local SSC programs are developed and operated.

History of Automated Enforcement in NC

Automated speed and red light enforcement are not new to North Carolina. Communities across the state have historically used these technologies to enforce laws related to traffic speed and traffic signal compliance, as well as more recent applications related to enforcing laws related to passing school buses. A February 2020 report documented 11 communities in NC that had automated enforcement programs at one time, with only 4 in existence at the time of the report.¹⁹ Charlotte, NC, was the first community to establish an automated speed enforcement program under pilot legislation in 2003.

Though successful,²⁰ these applications ran into legal challenges due to the distribution of program revenues. Until 2024, legal interpretation of automated enforcement programs in North Carolina held that no more than 10% of the “clear proceeds” of these programs could be spent on vendor payments and operational costs (as specified in the NC Constitution). Because many of these programs required more of the revenue to cover operating costs, they were at risk of legal challenges, and many of them shut down as a result. However, in 2024, a legal challenge heard by the North Carolina Supreme Court led to a ruling that allowed more flexibility in cost sharing arrangements that diverted more than 10% of revenues to operational costs, based on enabling legislation used to establish the program in Greenville, NC. This effectively opened the door for an expansion of these programs, and the 2025 legislation included similar language about cost sharing arrangements to ensure their constitutionality.²¹

As of October 1, 2025, North Carolina state law allows local governments to adopt ordinances for using automated speed camera systems to enforce speed limits in school zones. The law, passed as part of Senate Bill 391, also designates state authorities to set approval and calibration standards for camera systems and establishes requirements for how citations are issued and enforced. Collectively, these measures aim to reduce speeding and improve safety for children and youth traveling to and from school, as well as improve safety throughout the community.

The law designates the North Carolina Criminal Justice Education and Training Standards Commission and the Secretary of Public Safety to approve systems and establish standards for system calibration and accuracy. Local governments must comply with these standards. Currently, these standards are under development and are likely to be finalized by 2027.

According to the NC legislation, municipal or county governments must create an ordinance, select safety camera sites, determine a revenue sharing model, collect and disburse citation fines and fees, and report unpaid citations to the Department of Motor Vehicles. This authority is granted under N.C. Gen. Stat. 160A-300.4 for municipalities and N.C. Gen. Stat. 153A-246.1 for counties. The local ordinance is required to include several key elements, which are further described in **Chapter 3**.

The NC Constitution requires that fines and penalties from citations go to the local school district in which the fines originated.²² However, the law allows a portion of funds to pay for implementing, managing, and maintaining the program. No funds are used to boost operating revenue of local law enforcement agencies, nor are they diverted to special accounts within the municipal budget to fund things like road safety improvements. The law allows local governments, boards of education, and law enforcement agencies to enter into local agreements around revenue, such as cost-sharing and reimbursement protocols.

Detail about the requirements for local ordinances can be found in [§ 160A-300.4 \(d\)](#).

Additional information about owner-liability affidavits, citation service methods, late-response penalties and collection options, administrative hearing and appeal procedures, signage and right-of-way provisions, and DMV registration holds, appears across the related sections enacted and cross-referenced in SB 391.

SSC program development requires collaboration across numerous local and State partners. Specific agencies and organizations involved in this work include:

1. **Local and County Jurisdictions:** Encompassing every key entity at the local/county level, including municipal planning and engineering, law enforcement, school districts, legal teams and local attorneys, and elected officials. More details about key members of the core planning team are discussed in **Chapter 2**.
2. **North Carolina Department of Transportation:** Various entities, including Highway Division Offices, the Traffic Safety Unit, and Municipal School Transportation Assistance (MSTA) play a role in establishing school zones on State-owned roads and approving equipment installation on State-owned right-of-way.
3. **Governor's Highway Safety Program:** Offers assistance, education, and support in the planning and deployment of SSC programs.
4. **North Carolina Criminal Justice Education and Training Standards Commission and the Secretary of Public Safety:** This group establishes standards and protocols for reviewing, testing, and approving technology used in SSC programs.

Chapter 2: Initial Program Phase

Following the establishment of statutory authority and administrative conditions, the Initial Program Phase focuses on local readiness. Though not a legal requirement under the state law, it is recommended that communities carefully prepare for and discuss key items during this initial phase. During this phase, partners convene to confirm whether to move forward with an SSC program, address high-level considerations, and establish the goals and values that will guide future decisions. Decisions at this stage help shape the program's overall approach and expectations for public communication, partnership roles, and implementation.

Key steps in this phase include:

- Creating a core team to determine whether SSC programs should be pursued.
- Developing clear, measurable goals and objectives for SSCs.
- Drafting messaging and communications about SSC programs.
- Performing outreach to community members and other partners.

Communities with successful SSC programs often share these early practices: engaging key partners early and consistently, defining clear safety-focused goals, and coordinating messaging before public outreach begins. The activities in this phase help create a shared foundation to support all subsequent planning, implementation, and refinement efforts. The following sections provide more insight and examples to support this early foundation-building work.

BUILD THE CORE TEAM AND MAKE THE DECISION TO MOVE FORWARD

Local leadership will need to decide whether to proceed with a camera program. In some places, a single person will make this decision and in other places, a small group might come together to assess the benefits and feasibility. Once the decision to move forward has been made, SSC programs require local government and school district efforts to plan, purchase, maintain, and manage the program and coordinate with other traffic safety improvement efforts. Because an SSC program will impact numerous agencies, organizations and community members, numerous partners should be involved in collaborative discussions around whether, and how, to establish speed safety programs in school zones.

During the Initial Program Phase, many communities convene a core team to guide early discussions and decision-making. This group brings together the perspectives and expertise needed to determine whether and how a program should move forward. Initial core partners commonly include:

- City, town, or county leadership and elected officials.
- Municipal or county legal counsel.
- Local government management staff.
- School district or board of education staff.
- Public works or engineering department staff.
- Finance or budget staff.
- Courts or administrative hearing representatives.
- Law enforcement.
- Data protection, privacy, and governance staff or people with expertise in this topic.

SSC programs can involve a wide range of partners beyond the core team. As decisions are made and public outreach begins, the group typically expands to include additional agencies, school representatives, community organizations, and other stakeholders. Additional partners should be involved as they are identified in the early planning process.

For example, Philadelphia's SSC program is coordinated across multiple agencies, including the Pennsylvania Department of Transportation (PennDOT); the Philadelphia Office of Transportation, Infrastructure and Sustainability; the Department of Streets; the Police Department; the Parking Authority; as well as their camera system vendor and associated firms involved in citation processing, review, and debt collection. The Philadelphia Department of Finance Office for Administrative Review handles appeals. While not all NC communities will require this level of complexity, especially in the initial stages of a program, Philadelphia illustrates the breadth of coordination that can accompany larger, mature programs.²³

Early coordination through a core team supports transparency, strengthens internal alignment, and helps anticipate operational and policy issues before they arise. These steps help prepare partners to communicate clearly and consistently about program purpose, site selection, the impact of speeding, purpose of the cameras, and how they work.

One of the first questions the core team may be faced with is: where will this program live, administratively? Even with many partners, most communities find that a singular, public facing home is needed for a SSC program. There is no one answer that works for all agencies, and a variety of models exist. For example, in Philadelphia, PA, the SSC program is officially housed within the Philadelphia Parking Authority (PPA). In Prince George's County, MD, the Police Department lead the program, while in neighboring Baltimore, MD and in Washington DC, the Department of Transportation is charged with leading the program. Although school districts are important partners and beneficiaries of SSC programs, school districts don't typically own or manage SSC programs. While school districts value safety and are charged with pupil transportation, the mission of the school districts is first and foremost to provide educational services. The agencies most responsible for delivering safe transportation systems and enforcing speed limits are the DOTs and their law enforcement partners.

Deciding who “owns” the program—even when multiple departments and agencies may play important supporting roles—is worth considering carefully in that this decision will shape public trust, legal defensibility, and integration of the program with other safety initiatives. Historically, many police departments have managed SSC programs, though some agencies, such as Washington DC, have intentionally moved away from enforcement-led SSC programs to housing the programs within their Transportation and/or Planning departments. The advantages of having a transportation department as the lead of the program are that:

- Transportation/planning/public works departments typically have the safety and roadway data needed to help screen for potential SSC sites and the engineering/planning expertise needed for site assessment and coordination with the state DOT regarding signage, easement coordination, and installation of roadside hardware.
- Transportation staff, especially those involved in leading safety programs such as Vision Zero and Safe Routes to School, tend to have the established partnerships needed tell the safety story—framing SSCs as part of a larger safety program—and to engage school officials, law enforcement staff, and get community input.

- Transportation planning and public works departments are often more well-positioned with a data governance framework to take advantage of the data provided by SSCs regarding traffic counts and other safety outcomes to plan additional roadway safety measures.
- Municipal transportation staff are typically able to coordinate regionally through membership in a Metropolitan Planning Organization or Rural Planning Organization to help ensure that different jurisdictional approaches are as aligned as possible.

Regardless of which agency takes the lead, strong collaboration across partners in the School District, Police Department, and other units will be required.

ESTABLISH GOALS AND OBJECTIVES

Once the core team agrees to explore or pursue an SSC program, early discussions can focus on clarifying the program's purpose and overall direction. At this stage, there is a need to build a shared understanding about why the program is being considered, how it fits within broader safety efforts, and to identify questions/issues to address in later phases.

Key questions to begin asking during this phase include:

- How do SSCs align with existing safety goals, plans, and initiatives? What other speed management strategies are in use and how can SSCs complement broader measures?
- Do we have a sense of which schools/ school zones in our community have ongoing traffic safety concerns?
- Do we know the locations of designated school speed zones and whether existing school zones meet statutory definitions and eligibility requirements? Are there needs to request new school speed zone designations?
- How should success be measured, and what data resources do we have, or will we need, to measure success?
- Do we have enough staff capacity, funding, and resources, or what additional partners, expertise, or resources might be needed?

Asking these questions can help partners make an early inventory of assets, needs, and potential constraints and to set expectations for the scope of a program, future planning, communications, and evaluation. An internal assessment of capacity, in particular, is a critical item to address early on. Agencies should understand the full scope of costs and staffing investments related to SSC planning and operation, which includes (but may not be limited to) the following:

- Program administration staff.
- Police review of violations.
- Adjudication and court proceedings.
- Supporting infrastructure installation and maintenance.
- Technical staff to oversee program design and ongoing evaluation.
- Finance and administrative staff to oversee, manage and track revenue.

Establishing clear goals and objectives during this phase supports decision-making in later phases and shapes how the program will be implemented, monitored, and evaluated. SSC programs that invest time in this step are better positioned to make consistent choices about camera locations, operational policies, outreach strategies, and how program success will be defined and assessed. More detailed objectives, such as the number of cameras, site-specific details, or performance measures, are typically developed in later phases as feasibility analysis and community engagement progress (see **Chapters 4 through 6**).

As noted in **Chapter 1**, the long-term goal of SSC programs is to prevent traffic-related deaths and injuries by reducing speeding. Effective SSC programs can define success using a mix of short-term, intermediate, and long-term objectives (Table 1). This approach allows communities to demonstrate early progress, maintain accountability, and assess longer-term safety outcomes as data becomes available (See **Chapter 6** for more details).

Table 1. Example SSC Program Objectives

Short Term	• Improved awareness of school zone speed limits. • Increased understanding/acceptance of SSCs as a safety measure. • Reduced concerns about enforcement bias. • Stronger coordination among partner agencies.
Intermediate	• Reductions in vehicle speeds. • Improved compliance with posted speed limits. • Decreases in repeat violations.
Long Term	• Reductions in total crashes. • Reductions in speeding-related crashes. • Reductions in severe and fatal injuries.

Communities may find the following approaches helpful when establishing SSC goals and objectives:

- **Look to existing safety priorities.** Successful SSC programs often begin by reviewing state, regional, and local safety plans to understand how speeding is framed as a safety concern. These plans provide a useful starting point for goal setting because they articulate shared safety priorities, define target outcomes, and establish common language around safety performance.
- **Ensure goals align with legislative requirements.** Goals and objectives should reflect statutory constraints, including where and when SSCs may operate.
- **Use available data and community input.** Baseline speed and crash data, along with input from school communities and the public, can help identify priority issues and shape realistic measures of success. Visit the [NC Vision Zero Data Dashboard](#) for interactive data, maps, and visuals of statewide, county level, and city-level data, including speed and safety.
- **Use a logic model as a planning resource.** Some communities find it helpful to use a logic model or similar planning tool to describe how SSC activities are expected to lead to short-term, intermediate, and long-term outcomes. Used early, a logic model can help clarify assumptions, align partners, and guide decisions across planning, implementation, and evaluation. A sample logic model is provided in **Appendix A**.

COORDINATE FRAMING AND MESSAGING

How an SSC program is framed early on influences how it is understood, discussed, and ultimately supported within a community. During the Initial Program Phase, framing and messaging efforts focus on internal alignment and early readiness, helping partners articulate why the program is being considered, how it supports safety goals, and how it fits within a broader approach to speed management and community safety.

At this stage, the emphasis is not on launching a full communications campaign, but on developing a shared foundation that enables consistent and transparent communication as planning and engagement progress. See **Chapter 5** for more on communications related to program deployment.

Positioning the SSC program as one component of a broader safety program or campaign can be a useful way to demonstrate that it isn't a standalone initiative or some kind of revenue-generator. Many SSC programs across the U.S. are either administered by Vision

Zero offices or explicitly connected to Vision Zero initiatives. Programs in Portland, New York, Philadelphia, Seattle, and Washington D.C. have integrated SSCs within their broader Vision Zero frameworks, positioning cameras as one component of a comprehensive approach to eliminating traffic fatalities. This framing emphasizes safety outcomes over enforcement and helps communicate the program's purpose to the public.

Early coordination on framing allows partners to present a consistent message when engaging with elected officials, agency leadership, school communities, media, and the public. Establishing shared talking points at this phase helps prevent mixed messages and builds confidence among partners who may be asked to explain the program.

Key actions include:

- Developing a common set of messages that all partners can use.
- Identifying who will serve as primary spokespeople.
- Preparing partners to respond consistently to common questions and concerns.

GATHER COMMUNITY INPUT

Communities are a critical source for information and feedback to help inform the planning, authorization, implementation, and evaluation of SSC programs. Early community engagement helps shape how a speed safety camera program is understood and developed. In the Initial Program Phase, engagement is focused on listening, building awareness, and identifying questions or concerns that should inform future planning and communication. Primary audiences during this phase typically include the school community and people who live or travel near potential school zone locations.

Community input may be used to help:

- Understand the public's key concerns and values related to road safety, equity, and camera programs.
- Understand differences in groups that have more or less support for the program. This information can help drive messaging and outreach plans.
- Identify candidate camera locations as a complementary data source to other information such as crash data, speed data, equity analyses, and/or other contextual information.
- Establish baseline measures that can help monitor the program over time.

Key actions during this phase may include:

- Gathering community input through surveys, open houses, focus groups, or meetings held near schools.
- Identifying approaches to reach audiences that may be less likely to participate using traditional engagement methods, and reducing participation barriers where possible, such as language access, meeting timing, or format.
- Preparing partners to respond to common questions related to how the technology operates, how camera data is used and protected, how the revenue will be used, and other questions related to fairness, privacy, and program intent.

Some communities have used strategies to engage populations that may be underrepresented through traditional outreach methods. Portland, OR, for example, employed focus groups to reach English as a Second Language (ESL) drivers, recognizing that language barriers can affect both awareness of SSC programs and familiarity with citation procedures. NC communities may consider similar approaches to ensure information reaches all road users traveling through school zones.²⁴

Community surveys are another tool that can be used during the early stages of SSC program development. When designed thoughtfully, surveys can help communities gather input that complements crash data, speed data, and statutory requirements. Portland, OR, for example, conducts surveys at regular intervals to inform program operations. These are part of biennial evaluations required by Oregon state law and must assess the effect of photo radar on traffic safety, the degree of public acceptance, and the process of administration. The agency [prepares reports that capture key metrics and findings](#).²⁵

Data from surveys or other public engagement methods can help build trust when the information can clearly explain how community input was or will be used, share results publicly, and describe how community feedback informed subsequent decisions. See **Chapter 6** for more information about ongoing use of surveys to monitor public input as part of a broader program evaluation.

Chapter 3: Program Planning Phase

This phase focuses on SSC program planning across two key areas: developing and adopting ordinances that establish legal frameworks for program operation and crafting administrative and evaluation frameworks to guide program operations and the selection of vendors and camera technology.

Key actions in this phase include:

- Craft and adopt a local ordinance that specifies the approach to SSCs within the framework of state law.
- Determine the administrative framework and select technologies for day-to-day program operations.
- Interview and negotiate with vendors to support program operations.

LOCAL ORDINANCE DEVELOPMENT

As required under State law, any municipal or county government that wants to establish an SSC program must first craft and adopt a local ordinance allowing for the use of these systems that meet specific criteria. All details of program operation should be captured in the ordinance, so it is important for the team to keep this in mind when crafting that language. To ensure that the program is legally defensible and sustainable in the long term, communities (and especially their local attorneys and legal teams) should ensure that the language aligns and agrees with State law.

Per State law, the municipal or county ordinance must include:

- Procedures for issuing citations to vehicle owners within 60 days of the violation and receiving disputes from drivers within 30 days of the violation.
- Specifying the amount (\$250) and the type (noncriminal) of penalty.
- Details captured in the citation, which must include a recorded image of the vehicle speeding; the vehicle's registration number and state of issuance; the date, time and location of the violation; the recorded speed; a copy of the certificate sworn or affirmed by a law enforcement officer of the violation; and the process for paying the penalty.
- Procedures for a nonjudicial hearing process to review contested penalties.
- A mechanism for the municipality to coordinate with and provide notice to the state Division of Motor Vehicles about vehicle owners who fail to pay their citations.

In addition to the above required elements, it may be useful to incorporate data protection and data privacy considerations into the local ordinance. At a minimum, this should include clear statements about who has access to the speed camera data and how it will be used.

Where State law allows flexibility, communities will need to specify their approaches to be clear and transparent about the parameters within which the SSCs will operate. For example, the State law does not establish a threshold speed for issuing citations. Another issue that should be addressed in the local ordinance is specifying the types of vehicles that may be exempt from violations. For example, communities will typically specify that law enforcement, fire, or emergency response vehicles actively responding to emergency calls are not subject to violations. This detail will need to be captured in local ordinances.

Another consideration for county and local ordinances is the issue of jurisdictional boundaries and consistency. Because school districts in North Carolina (with some exceptions) are typically aligned with county boundaries, there is a temptation to adopt ordinances at the county level that would then apply to all SSC programs at the municipal level in that county. However, while the statute appears to be written broadly enough for an interpretation that a county ordinance applies in both the county and municipal areas, without clear language the safest course of action for school zones in municipal areas is for them to have municipal ordinances authorizing civil enforcement of the speed limit.

Given the shared role of both the county school district and local municipality in operating SSC programs, there should be coordination and consistency between the ordinances in areas where drivers may encounter SSCs managed by two different entities. For example, two adjacent municipalities should take steps to write their ordinances in a way that supports consistent applications when it comes to details like speed thresholds. Such consistency will increase transparency and may reduce public frustration and resistance to the program.

Define speed limit thresholds

One of the most common questions about any SSC program is related to threshold speeds above which drivers will be issued citations. For example, if the school zone speed limit is set at 20 mph, it is unlikely that drivers traveling at 21 mph will receive a citation, while drivers traveling 30 mph may be ticketed. Policies for speed limit thresholds vary across jurisdictions. A 2016 analysis of 70 programs found that school zone violation thresholds averaged 9 mph over the posted speed limit.²⁶ Examples from specific programs include state- and municipal-level thresholds:

- In Georgia, citations are issued to motorists traveling in excess of 10 mph over the speed limit.²⁷
- In Ohio, the default threshold for SSCs is 10 mph. However, in school zones the threshold is lowered to 6mph.²⁸
- In Stamford, CT, violations are issued for speeds exceeding 10 mph over the limit.²⁹

Communities should consider how threshold decisions may affect both safety outcomes and public perception of program fairness. For example, setting thresholds too high above the speed limit (e.g. 15 mph) will result in speeding that is not enforced by the cameras. On the other hand, setting thresholds that are quite low (e.g. 1 to 3 mph) may result in less public support for the program. Striking a balance and setting thresholds that achieve program goals while maintaining public support is a key consideration.

A warning period duration and purpose can be specified in the ordinance. A longstanding practice in many communities with SSC programs involves sending warnings to drivers who violate speed thresholds before issuing citations. The primary reason for doing this is to raise awareness of the program and increase transparency about the program's goals and purpose before it goes into full effect. Community members may be less likely to oppose the program if they have ample time to adjust before citations are distributed. A warning period also offers communities an opportunity to work with local media to draw attention to the SSC program, and the problem of speed in general, which may increase support for the program.

In addition, it will be important to define violation exemptions clearly. For example, many states and cities with SSC programs note that emergency vehicles that are responding to emergency calls are exempt from violations. In Tennessee, exempt vehicles include emergency vehicles with active emergency lights, vehicles moving out of the way for marked emergency vehicles, vehicles under police escort, and vehicles in funeral processions.³⁰

Warning Period Recommendation for North Carolina Communities

Based on a national scan of successful SSC programs, it is recommended that communities adopt a warning period of 90 days to be in effect prior to issuing SSC violations, and to use this period to share information about the program with the public and to gather baseline speed data, which can be used to support camera evaluations. See Section 5.2 for more on public outreach prior to camera deployment and Section 6.1 for more on data collection and program monitoring.

Though the State law doesn't require this to be part of a local program, it does specify that municipalities, law enforcement, and boards of education can enter into agreements that allow for cost-sharing and reimbursement protocols. According to the NC constitution, proceeds generated from traffic violations, after accounting for the cost of program operations, must be distributed to the County school district. SSC programs are no different, though cost-sharing and reimbursement agreements allowed under the State law can be used to dictate how costs for program operations will be covered under the program, and how revenues might be shared among partners after they are distributed to the school district.

One model for revenue distribution and cost sharing can be found in the red light automated enforcement program in Greenville, NC, which was upheld by the NC Supreme Court in 2004 (see previous section on the History of Automated Enforcement in North Carolina). The Court upheld the program because all of the proceeds went to the School Board, and the costs that were then invoiced by the City and the vendor qualified as "collection costs" and not enforcement costs. The vendor invoiced the School board for installing and operating the cameras as well as processing detected violations, which the Court found were not active, direct, or discretionary actions that typified enforcement. The City invoiced the School Board for an officer's salary and benefits whose job it was to review images to determine if a violation occurred and if the plate matched DMV records. The Court found that the officer had limited discretion and that his discrete, focused duties were more akin to collection than enforcement and so the deductions for his salary and benefits were upheld.

In ordinance or in a related policy, communities will need to define their process for disputed tickets. Under the state law, owners must pay or respond to an issued citation within 30 days of receipt. Key adjudication questions include:

- Who reviews violations before notices are issued?
- What evidence is included in the notice?
- How soon must a notice be sent?
- What appeal options are available?
- Can people appeal without using the internet?
- Who hears appeals?
- How are dismissal rates tracked by site?
- What happens when one camera location produces unusual citation or dismissal patterns?

As agencies are developing their ordinance, consideration of future data governance issues can also be made. A speed safety camera program will collect sensitive information, even if the program is limited to traffic safety purposes. Communities will need clear, public-facing policies covering:

- What images and data are collected,
- Whether non-violation data are stored and for how long,
- How long images are retained,
- When data are automatically deleted,
- Whether data may be requested for purposes beyond the speed safety program,
- What legal process is required for any outside access,
- How access is logged, and
- What happens if there is a data breach.

NC communities may also need simple, visible ways to show that privacy has been considered seriously. This could include a public privacy summary, a plain-language FAQ, a retention policy, annual reporting, and a named contact for privacy questions.

EQUIPMENT AND VENDOR SELECTION

Most SSC cameras in the US operate with the support of contracted for-profit vendors, who provide a combination of camera technology and various services to support SSC programs. Vendors therefore play a critical role in the effectiveness of SSC programs and their ultimate sustainability. The following sections identify key considerations for local agency staff to make as they consider what vendor may be appropriate for their unique community needs. Ultimately, decisions regarding vendors should be driven by the community's safety goals and objectives, including fairness, transparency, and legal compliance, and not by revenue generation.

There are different types of SSC camera technologies.

- **Fixed cameras** are well suited for consistent, high-risk locations such as school zones with persistent speeding.
- **Mobile systems** offer flexibility in terms of their ability to be transferred to different locations. They may have lower upfront costs but require more staff time. These systems tend to be most appropriate where problems are network-wide and may shift from one location to another.

Agencies should ensure that selected equipment meets NC's required standards, functions reliably in local weather and lighting conditions, and has a documented track record of accurate data collection needed for the SSC program goals. Many vendors will also offer equipment that is resistant to vandalism and equipped with additional security measures to prevent tampering.

Program management models and key considerations

There are three primary models for SSC implementation in terms of program management:

- **Agency owned** and operated programs that are completely managed by a municipal department or agency, without any outside vendor involvement.
- **Fully vendor supported** programs that are contracted as full-service package deals, limiting the staff time needed to administer and oversee the program.
- **Hybrid models** where agencies lease equipment or services from vendors but maintain control over program administration.

Agency-owned models are those in which the local jurisdiction purchases and maintains the camera technology and program elements in full. Agency-owned models provide the greatest control and transparency over data, equity practices, and public messaging but require significant internal capacity and staff skill and training, particularly in terms of data management and security. Managing an in-house program also allows agencies to directly align camera placement with safety data, equity analyses, and community priorities, which research shows is critical to sustaining public trust and program effectiveness.

When agencies purchase and manage their own SSC equipment, they assume responsibility for equipment procurement, calibration, maintenance, data security, and program evaluation. Routine equipment testing and certification may be required to maintain legal defensibility. Agencies should budget for lifecycle costs, including software updates, replacement hardware, data storage, and staff training.

Fully vendor-supported models are designed to be turnkey operations with full customer support and can reduce administrative burden but require strong contractual oversight. Particularly, contracts must explicitly define agency needs related to data, program monitoring, evaluation, and vendor performance in order to address community concerns regarding transparency and accountability.

There are numerous considerations for agencies considering a fully vendor-supported model, as the structure of these agreements and contracts can be wide-ranging and potentially overwhelming for agencies with limited automated enforcement experience.

Hybrid models, where the local agency determines what support is needed and creates a service agreement to fill gaps in need, are increasingly common. In hybrid approaches, vendors typically provide equipment and technical support while agencies retain enforcement authority and data control. One challenge area identified with this model is the possibility of needing multiple vendors for different specialized needs (e.g., one for cameras, one for violation processing, etc.) and the challenges in coordination across multiple contracts and timelines.

Vendor considerations

Under any governance model, agencies should consider:

- Time and information needs to support contracting and negotiations.
- Equipment design life and lifecycle costs.
- Engagement with the public and concerns that may arise regarding the optics of SSC violation fees going to a private company.
- Maintaining program continuity when vendor agreements end and/or changes to vendors are needed.

In addition, agencies should pay careful attention to the vendor's proposed approach and their own agency needs and priorities in relationship to key issues likely to affect public perceptions around program legitimacy, fairness, and transparency. These include:

Vendor Fee Structure

The cost of setting up and maintaining SSC programs varies widely, but vendors may seek to ensure local agencies that there is no financial commitment to setting up and operating a program. This arrangement can be complicated or misleading, so it is useful to understand how the program revenue is collected and how the vendor receives their payment. Most vendors fall into one of two categories when it comes to fee structures:

- The vendor collects a share of each violation paid under the SSC program. If there are no violations over a period of time, no additional revenue goes to the vendor.
- The vendor collects a regular fee regardless of the number of violations issued. Any revenue beyond that amount is kept by the local agency (e.g., the school district).

Each approach presents its own benefits and challenges. When structuring vendor agreements, communities should carefully consider fee structures and their potential effects on program perception. New York, NY's, program, for example, demonstrates challenges that can arise when vendor fees are tied to citation revenue, which may raise public concerns about financial incentives influencing program operations and camera placement. Contracts should clearly specify that site selection, enforcement thresholds, and operational decisions all remain under agency control and are driven by safety and outcome data rather than revenue considerations.³¹

Vendor Agreement Recommendation for North Carolina Communities

Public acceptance of speed safety cameras will likely depend on whether the program is clearly safety driven and not perceived as a revenue tool. Any vendor arrangement should avoid incentives tied to the number of citations issued. Program revenue, if any, should be handled transparently and ideally directed toward road safety improvements.

Vendor Role in Site Selection

Many vendors will perform a preliminary analysis of potential camera locations before approaching or meeting with municipalities. Though this can be helpful, it is important to keep in mind that vendors may have different priorities for selecting locations that differ from the local community's criteria. Be prepared to share the results of your own analysis when meeting with vendors and ask for details about how they arrived at specific location recommendations.

Data Governance: Privacy, Security, and Appropriate Use

Community members often cite privacy as a concern related to automated enforcement programs. Protecting user data, especially when it comes to photographs and videos collected by the cameras, should be a top consideration for agencies when interviewing potential vendors.

Ideally, the local ordinance will establish measures for protecting data and ensuring appropriate data governance. See Section 3.1 for more on key considerations regarding data privacy during ordinance development.

In addition to the ordinance language, it is important to establish data ownership and data governance clearly in the vendor contract. Vendor contracts should make clear whether the vendor can reuse, retain, sell, aggregate, or analyze program data beyond the agency's authorized purpose. Public agencies should avoid arrangements where the vendor effectively controls the data without strong agency oversight.

Given that NC SSC programs may involve multiple entities, vendor agreements should clearly define:

- who owns the data,
- who can access the data,
- who pays for data infrastructure,
- who maintains dashboards or reports,
- who approves research access,
- who responds to data issues,
- what uses are prohibited,
- what happens if data are misused,
- and what happens when a vendor or agency partner leaves the program.

Most vendors will have protections in place that involve secure portals that allow only law enforcement personnel to view camera evidence of violations. Ask vendors to share their protocols for protecting this data and ensuring security of personal details.

Data Sharing and Acquisition

The data collected by vendors, both related to citations and overall speed performance at camera locations, is highly valuable and can be used for numerous safety applications. While many vendors will share quarterly or annual summary statistics regarding violations, violation rates, and revenue collected, local municipalities should work with vendors to include language in their contracts that allow for full access to de-identified disaggregated data, while still protecting individual privacy. Agencies can ask for examples of this data during the contract negotiation process to make sure what they're receiving is useful, timely, consistent, and complete, and can be integrated into their other safety data for decision making and evaluation purposes.

Data sharing expectations can be written into vendor contracts, operating policies, and public reporting documents. Local agencies should aim to establish clear standards for the data to be provided by the vendor and how it will be used. NC communities should also define what happens when data provided by the vendor falls below acceptable thresholds.

Appendix B provides additional considerations for vendor selection.

Chapter 4: Program Installation Phase

This phase includes a number of pre-launch activities and implements the plans put into place in the earlier phase of program development. This includes key steps such as:

- Identifying and screening sites to determine eligibility and priority.
- Finalizing site selection and site preparation (e.g., signing and marking).

In most cases, the vendor will provide significant support in this work and routine coordination will be required. The municipality leading the program will also be utilizing the partners established early in the process to confirm various details of the approach. The following sections highlight key considerations in this phase, specifically around finalizing site selection and site preparation.

IDENTIFY ELIGIBLE SITES

Determining the eligibility of camera locations based on State law is critically important to ensure the legality of an SSC program. SSCs can only be used in school zones that have both reduced speed limits and designated times when those limits are in effect, in addition to signage. Therefore, identifying and inventorying schools with these features is an essential first step in the site screening and selection process.

What's a school speed zone?

School speed zones in North Carolina are established through State or local ordinance depending upon roadway ownership. They are intended to reduce motorist speeds near schools to reduce the risk of crashes among those traveling to and from school (including public, private and parochial schools). In this guide, the term “school zone” will be used to mean a school speed zone where there is a posted lower speed at designated times.

These zones lower speeds along roads adjacent to or near schools by up to 10 mph, and the reduced speed limit cannot be lower than 20 mph. These zones are also required to post the hours during which the reduced speed limit is applicable. By default, this is typically 30 minutes before the start of school and 30 minutes after the end of the school day, though NCDOT evaluation may allow for extending this enforcement period. Finally, a school speed zone and accompanying reduced speed limits and operating hours must be identified by signs and pavement markings in compliance with both NCDOT typical designs and the Manual on Uniform Traffic Control Devices (MUTCD).³²

Review or inventory school zones

To better understand where school zone speed cameras are permitted, the local municipality may want to start by reviewing school zone locations to create an inventory of which streets are designated as school zones. Some places may already have an established inventory listing school zone location, while others may not. In those cases, it may require visiting school sites to see what is on the ground.

As part of the review of local school zones, it will also be helpful to note whether the school zone roads are NCDOT or locally maintained. This will help determine who may be responsible for installing and maintaining school zone elements. NCDOT will install and maintain signage in school zones approved for NCDOT roadways. It is the municipality or school's responsibility to update NCDOT on any school start and end time changes that impact when school zones are enforced. These will need to be updated as soon as possible if the school zone includes signage detailing the school zone speed enforcement times.

When reviewing school zone locations there are several features to be sure to note. Review the signs and pavement markings to ensure they meet NCDOT and Manual on Uniform Traffic Control Devices (MUTCD) requirements (see Section 4.2 for more detail). Examine the school speed zone hours of operation as posted on the signs to determine if any changes should be made. Note whether changes should be made to the school zone before moving forward with SSC installation.

Establish new school zones if needed

Municipalities should work together with school representatives when they believe a school zone is needed. Requests generally are expected to come from the school but there should be clear involvement and approval from the municipality. Contact the NCDOT division office early to work together on designating a new school zone. The NCDOT division may decide to perform a study to determine the necessity and will want to be sure the municipality is coordinating with the schools in the request. The full list of criteria for determining a school zone are available on the [NCDOT website](#).

For locally-maintained roads adjacent or near a school, the municipality may use local ordinances to establish school zones. The municipality may then place signage for the school zone indicating enforcement times or signage along with flashers that activate during enforcement times.

SCREEN AND SELECT SITES

Site screening is an important step for determining which eligible sites have safety problems that can be addressed through SSCs. With some exceptions, communities do not typically place an SSC at every eligible school. For this reason, a screening process is needed to narrow down the list of potential sites and determine where to place a limited number of cameras. The core team will be essential in supporting the site screening and selection process.

Community engagement conducted in earlier steps can help ensure that the local community is both aware and on board with the placement of school zone speed safety cameras. During this process it will be important to continuously engage partners in the community and use the messaging outlined in **Chapter 5**, Section 5.2. By developing a clear site selection process, speed safety camera program managers can be transparent about the criteria used in making decision about camera placement. The following sections offer considerations for site selection.

Assess Existing Conditions

As the aim of speed safety cameras is to improve safety within school zones, the key to site selection will be documenting safety needs and connecting those to speed-related issues. The following table includes prompts, questions and data sources that can be used to assess existing conditions in school zones and determine the need for SSCs.

Table 2. Factors to consider when documenting safety needs in school areas.

Consideration	Observation Prompts & Data Sources	Implications for SSCs
Prior Documentation of Police-Reported Crashes	Although child-related crashes and certain crashes (such as those involving pedestrians and bicyclists) are often under-reported and not consistently captured in police data sources, police crash reports remain an important source of information.³³ Communities should seek to obtain crash data for a minimum of 5 years from local law enforcement or NCDOT to answer these questions: • Is there a history of police-reported crashes near the school? • What type of crashes have occurred and what is known about the factors that contributed to the crashes? • Specifically, is there a detectable pattern of crashes that have occurred in the vicinity of the school during school operating hours (e.g., weekdays, 6am to 6pm)?	While demonstrated crash history is not a requirement for SSCs, documenting a pattern of crashes related to school travel can bolster the case for SSCs in the school zone.
Pedestrian/Bicyclist Activity	Observe school arrival/dismissal and talk to school administrators and crossing guards about student travel to answer these questions: • Are there many pedestrians or bicyclists in the area? Is walking/bicycling activity consistent and frequent? • In what way is the pedestrian/bicyclist activity in the area related to school travel? • Is there potential for future changes (e.g., development, policy changes) to result in higher levels of walking and bicycling?	Higher levels of existing or future pedestrian and bicyclist activity can increase exposure to crashes involving motor vehicles. Areas with regular walking and bicycling activity can be good candidates for placing SSCs.

Consideration	Observation Prompts & Data Sources	Implications for SSCs
Vehicle Volumes	Vehicle volume (i.e., exposure) data is among the strongest predictors of future crashes. Traffic volume data from NCDOT can help answer the following questions: • Are there high levels of motor vehicle traffic within the vicinity of the school? • Are there high traffic volumes and/or congestion near the school during arrival and dismissal?	Higher traffic volumes can be associated with a higher risk of crashes involving pedestrians and bicyclists. Locations with high levels of motor vehicle traffic can be good candidates for SSCs.
Prevailing Speeds	Ideally, the posted speed limit will align closely with the target speed goal for safety as well as actual prevailing speeds of motorists. If not, SSCs or other interventions may be needed to reduce travel speeds. Consult with NCDOT Division Office, law enforcement partners, school administrators, and members of the core team to answer these questions: • What is the posted speed, and how do driver speeds compare to the posted speed limit? • What have local speed studies revealed about traffic speeds during school hours, or during other times of day? • Are there ongoing speed enforcement activities occurring in the school area? • What engineering/design changes have been made to improve safety and limit speeds?	Higher traffic speeds can increase the likelihood and severity of crashes involving pedestrians and bicyclists. Locations where prevailing traffic speeds are demonstrably higher than school zone speed limits are good candidates for SSCs. It is important to know the history of a site and whether other interventions or design changes have been implemented to reduce motor vehicle speeds. Understanding what has been tried previously to manage speeds can help inform whether SSCs may be a good fit.

Consideration	Observation Prompts & Data Sources	Implications for SSCs
Additional Risk Factors	Site and area characteristics that may increase the risk of crashes may include site distance, lighting/visibility, and traffic speeds. Perform field observations and/or desktop site reviews to answer the following questions: • How does the design of the roadway (e.g., number of lanes, width of the road) influence driver behavior? Document functional classification (e.g., major/minor arterial, major/minor collector, local, etc.) and context (e.g., rural, urban, suburban). • Is there a high density of driveways and/or intersections along the route? • Are there existing facilities to support bicycling and walking (e.g., sidewalks, bike lanes, curb ramps, marked crosswalks)? Is an adult crossing guard present during school hours? • Is there adequate pedestrian-level lighting along streets in the school area? • Are there sight distance obstructions near driveways, intersections and other crossings that limit the ability of drivers traveling at higher speeds to see pedestrians and bicyclists?	The risk factors listed here can increase the risk of crashes involving pedestrians and bicyclists. While no single factor listed here will make SSCs the right or wrong choice, documenting these site characteristics can inform camera placement and site selection. • Drivers may naturally travel at higher speeds on roads with multiple lanes, where the width of the road and lack of visual friction may increase speeding. • Frequent driveways and intersections in the school zone may increase the number of turning movements and conflict points between road users. • Areas with existing infrastructure to support active travel (e.g. sidewalks, bike lanes) may have higher levels of pedestrian and bicyclist activity. • Inadequate lighting and sight distance obstructions in school areas may limit motorists' visibility of pedestrians and bicyclists, leading to more severe outcomes when coupled with higher speeds.

Reviewing sites with these questions and prompts in mind will help communities determine if observed safety problems can be solved by SSCs, or if other interventions may be more appropriate. There are many examples of school area traffic safety issues that may not be directly impacted by SSCs. For example, streets around a school may experience congestion or risky driver maneuvers during pick-up and drop-off hours. While these can pose safety risks, they may not be speed-related. Communities should consider the specific safety needs of a site to determine if an SSC is appropriate for that location.

In addition, sites need to be reviewed from a pure feasibility standpoint regarding whether there is sufficient space and technical specifications to accommodate the camera equipment requirements (e.g., electrical connection, cellular transfer of data, fiber, etc.).

Washington DC has a clear process articulated for how it selects sites for SSCs as well as other engineering treatments, both proactively and reactively, based on various data sources (see Figure 5).

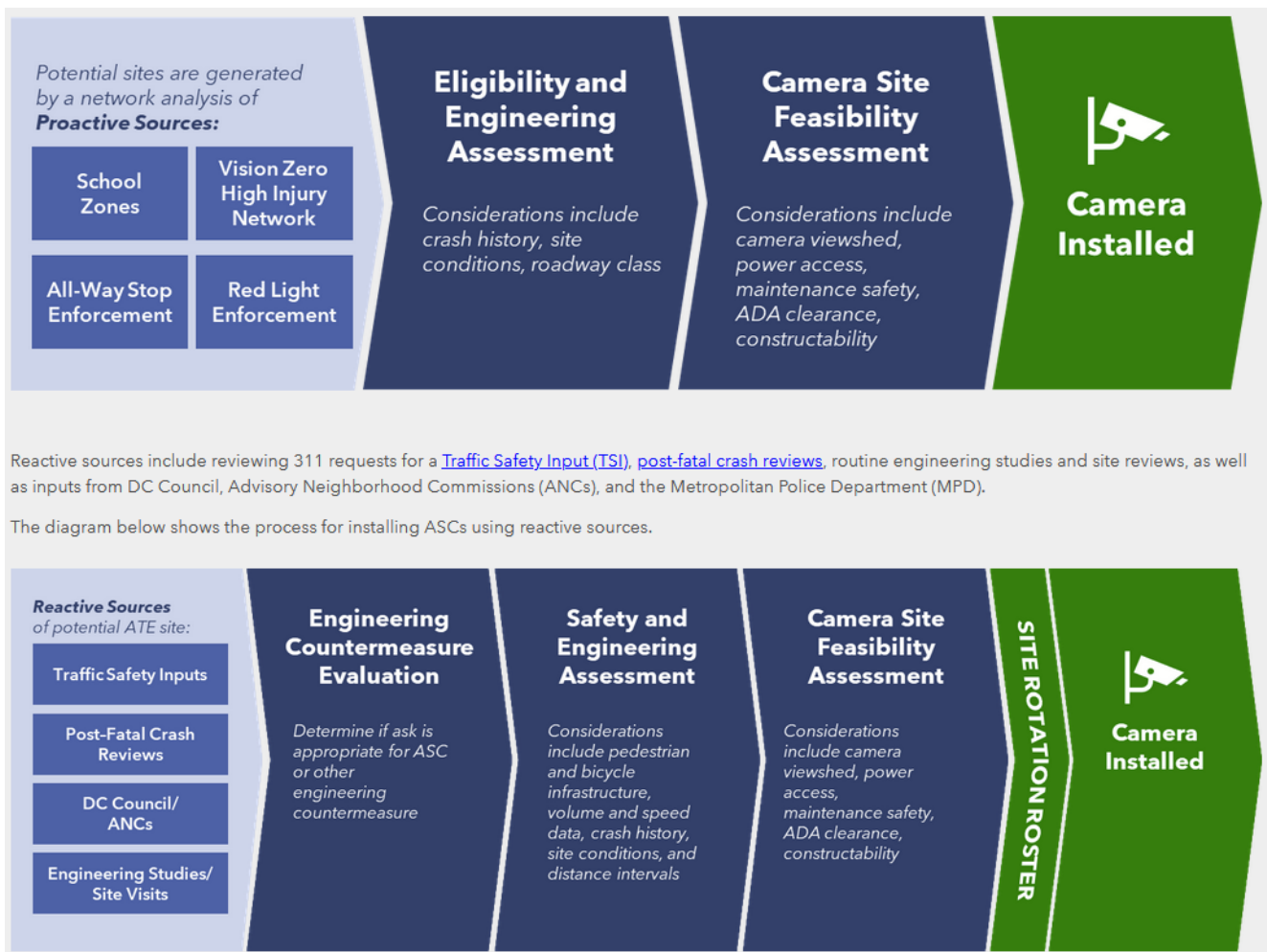


Figure 5. DDOT approach to SSC site selection (Source: DDOT).

Because SSCs should be implemented as part of a broader speed management approach, it is also useful to consider what other strategies could help reduce motor vehicle speeds in place of, or in addition to, SSCs. NCDOT published [numerous resources related to speed management strategies](#) in January 2026 that are relevant for communities that are considering SSCs:

- [North Carolina Speed Management Toolkit](#)
- [Speed Primer](#)
- [Speed Limit Data Collection and Determination Worksheets](#)

Assess Equity Implications Through Analysis and Community Engagement

When starting a program and selecting sites, it is important to understand the impact of speed safety cameras on the neighborhoods where cameras may be located. Lack of safety and high-speed traffic may be a legacy of lower investment in a community and other safety measures may need to be implemented before speed cameras are deployed. Communities should consider how receiving SSC fines may burden those in the neighborhood near the school by weighing the factors identified in the assessment of existing conditions alongside feedback gleaned from the community during ongoing engagement. By engaging the community, the core team implementing a camera program should explore concerns about camera placement and the impact on the local community. These considerations and community input would determine what safety measures would best apply and whether a camera is the right option for community safety.

For example, camera locations in Seattle, WA, are selected using the City's [Racial and Social Equity Index](#), which reflects factors that contribute to a population's sociodemographic and health disadvantages. Using this index prevents the City from concentrating its cameras only in areas that may already be burdened by other social and economic factors. In [Kenmore, WA](#), the community took a different approach to mitigate violation burdens by instituting a 50% reduction in fines for ticketed registered owners who receive public assistance.³⁴ The Vision Zero Network report [Fair Warnings: Recommendations to Promote Equity in Speed Safety Camera Programs](#) offers numerous recommendations for selecting SSC locations in an equitable manner.

INSTALL APPROPRIATE SIGNAGE AND MARKINGS

Once sites are selected and finalized, it is important to ensure compliance with the state law's requirements for signage and markings. One of the primary requirements, as mentioned previously, is to ensure the camera is placed within a school zone that is established through ordinance and has accompanying signs and pavement markings. A posted sign is required to alert road users that a speed camera system is being used to issue citations for school zone speed violations. Placement of sign can be no more than 1,000 feet from the speed camera system. Signs are subject to pre-existing sign guidelines under [N.C. Gen. Stat. 136-30](#).

Local governments will need to engage with NCDOT Division Traffic Engineers when placing cameras and other signs on State-owned roads. This is done through encroachment agreements between the local jurisdiction and NCDOT, which are required for the installation of new facilities within NCDOT right of way. Detailed guidance for completing encroachment agreements with NCDOT can be found in Chapter 2 of the Department's [Utilities Accommodation Manual](#).

Communities that are considering placing cameras within existing school speed zones on state-owned roads should reach out to their Division office early in the process and allow time for those agreements to be finalized before camera equipment can be installed.

Signs and markings in school speed zones on state-owned roads must comply with NCDOT guidance and specifications. NCDOT maintains guidance for selecting and placing signage and markings for school speed zones and cameras within NCDOT right of way (Figure 6). Please see the [NCDOT Signing and Delineation](#) website for more detail.



Figure 6. NCDOT Typical Design for Signing School Zone with Speed Camera System (Source: NCDOT).

Chapter 5: Program Deployment and Operations Phase

This phase of the program involves initial startup or roll out of the program and supporting ongoing operations and program administration. The work involved in prior steps laid the foundation for the deployment of a community's SSC program, but specific steps should be considered during initial roll-out and program monitoring. In particular, this is the time when community engagement, data preparedness, and coordinated messaging becomes critically important.

Key steps involved in this phase include:

- Creating a detailed timeline for program implementation, including warning periods.
- Providing public communication and messaging alongside the initial rollout.
- Issuing and adjudicate violations.

ESTABLISH A TIMELINE FOR PROGRAM ROLLOUT

Each community should develop a clear timeline for the initial rollout of its SSC program. Because the SSC program is so closely aligned with school locations, communities should consider the best time of year to roll out the program considering milestones in the school calendar. For example, some communities may choose to initiate program rollout with the start of the school year. Others may choose to wait until school is in session for a few months before launching their program. There is also the consideration of school calendars, whether they are “traditional” in nature or year-round. Consider the pros and cons of launching a program before, during, or directly following the school year, and use the identified launch point to develop the remainder of the timeline.

Once the program launch timeline is established, communities should work backwards to incorporate time to collect data for program evaluation. At a minimum, communities should work to have cameras in place to start collect pre-launch data 90 days prior to the start of their warning period. This data, which reflects the speed of every vehicle passing the camera location, will be essential for determining baseline speed compliance before the launch of the program. The data will be continuously collected during program operations to measure the impact of the SSC for each camera location.

Following initial data collection, communities should incorporate time for a warning period before citations are issued. Most successful SSC programs around the U.S. incorporate an initial warning period when drivers violating the speed limit are issued warnings, rather than citations. Warning periods generally range from 30 to 90 days, after which citations will be issued.

The SSC program in [San Francisco, CA](#), provides an example of the potential effectiveness of using structured warning periods. During a 60-day period, the city issued over 350,000 warnings before citations began in August of 2025. Violation data showed that 70% of drivers who received a warning did not receive a subsequent citation, suggesting that warning periods can meaningfully affect driver behavior before enforcement begins.³⁵

LAUNCH AWARENESS AND MESSAGING CAMPAIGNS

Extensive public engagement during the planning phase will go a long way towards preparing the community for the rollout of an SSC program. However, there is still a need to develop and execute a thorough communications plan during the lead up to SSC operations, through the initial deployment period, and throughout program operations. Providing clear and consistent messaging will help prepare motorists, those living in the vicinity of SSC locations, and parents, teachers, and students for the upcoming enforcement period.

At least four weeks prior to camera activation, begin messaging about the program and how it will work. Be sure to provide:

- General announcements (press releases, social media, school newsletters).
- School-specific communications (principals, PTA, parent email lists).
- On-street signage installed at least 30 days prior to activation (see Section 4.3 for details).
- Clear explanation of any warning period.

Websites are most commonly used to present more information about the program, often including a list of commonly asked questions and answers such as:³⁶

- Why are speed zone cameras being installed?
- How will I know where the cameras are located?
- What are hours of operation?
- What are the fines?
- I received a warning notice and/or a citation. What do I do?
- How do the cameras work? Are they accurate?
- What happens to ticket revenue?
- Will photo enforcement tickets affect my driving record or insurance?

Beyond websites, communities can use a wide range of methods to share this information with the community. Videos can be useful to demonstrate how SSCs work and procedures for reviewing violations and issuing citations. Data dashboards are another common tool for sharing program details like camera locations, revenue generated, and evaluation metrics. School-specific outreach to students and caregivers is another valuable avenue for distributing SSC program information.

Read more about methods for program tracking and reporting effectiveness in **Chapter 6**.

Emphasize Safety, Transparency, and Purpose

Messaging should clearly explain the problem being addressed and the role cameras play in reducing risk, particularly in school zones where children and families are present. Effective framing often includes the following key messages:

- School zones serve children walking, biking, and being dropped off, who are more vulnerable to injury.
- Speeding increases the likelihood and severity of crashes.
- Cameras are used in locations where data indicates a safety concern.
- Revenue use is defined by law and tied to program costs and school-related purposes.

Rather than relying on a single message, communities often use a set of message types to address different aspects of the program. Examples include:

- Safety: “Speed safety cameras are used near schools to protect children and reduce severe crashes.”
- Data-Driven: “Locations are selected based on speeding patterns and documented safety concerns.”
- Fairness: “Cameras apply the same rules to everyone. Citations are based solely on speed.”
- Transparency: “Program locations, data, and revenue use are publicly available.”
- Equity and Access: “Payment options are available, and site selection considers community context.”
- Privacy: “Only images needed to document speed violations are captured and retained.”

These examples may be adapted to reflect how the program is implemented locally and the audiences being addressed.

Use Clear, Data-Informed Explanations

Communications should clearly explain the details of the program and connect them to overall safety goals. Messages can help answer questions you anticipate from the community, such as:

- Why were school zone camera locations selected? (e.g., crash history, speeding data, people walking and biking).
- How does the program align with state law?
- What is the role of the vendor versus the local municipality in planning and operating the program?

Providing this context helps address common questions about fairness, intent, and decision-making. Agencies can go one step further and create public facing portals and dashboards to share program details with the public, such as camera locations, fines issued by camera location, and criteria for evaluating program impact. For example, the District of Columbia's [Automated Safety Camera Locations and Violations Tracker](#) allows the public to view camera locations by enforcement type (red light camera, SSC, etc.) and violation trends over time. Within the dashboard is education on the history and implementation of the various enforcement programs being utilized in D.C., and information on the intent behind each program, listed as: to reduce speeding, change driver behavior at intersections, or reduce traffic violations. One of the biggest strengths of this particular dashboard is that it enables users to view violations by individual camera (example shown in Figure 7), increasing transparency at a more localized level.

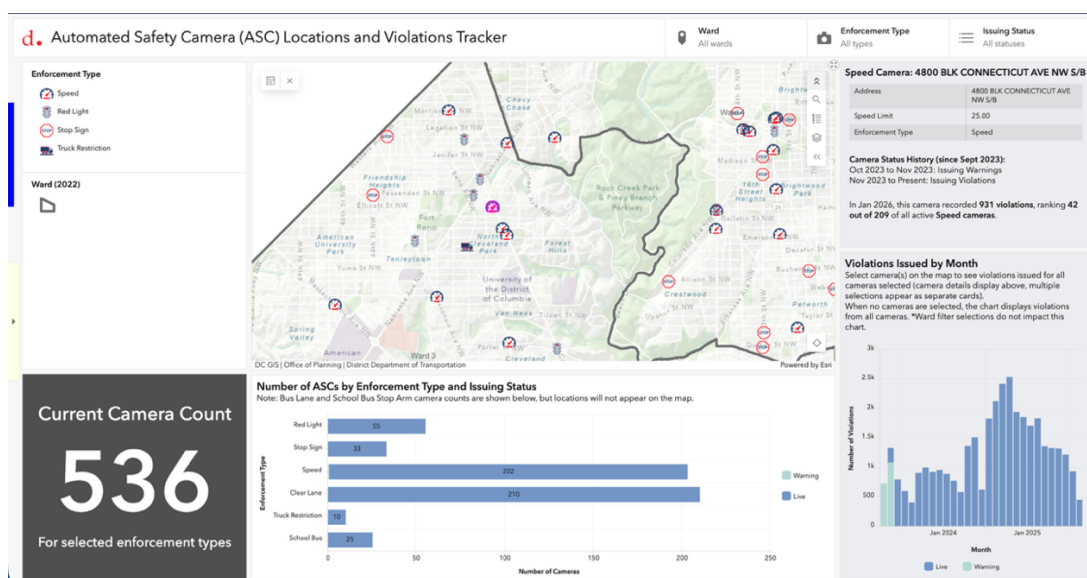


Figure 7. Washington, D.C., DOT Dashboard of Automated Safety Camera Locations and Violations Tracker (Source: DDOT).³⁷

Anticipate Social Justice and Privacy Concerns

Concerns related to equity, privacy, and surveillance commonly arise during the active roll out of automated enforcement programs. Ideally, these issues would have surfaced during the initial planning phase and been considered during the development of the program. For example, decisions made in the creation of the local ordinance (e.g., in how it defines fines and payment options), the vendor selection (e.g., in how data protections are in place), site selection criteria (in how community context is considered), and other decision points will all have an effect on how fair and objective the program is perceived to be. Partners responsible for engaging with the public will need to be prepared to discuss these topics and the decisions made when the program is rolled out. For ideas about framing communications to address social justice, fairness, and privacy concerns, refer to the Vision Zero Network report [*Fair Warnings: Recommendations to Promote Equity in Speed Safety Camera Programs*](#).

ISSUE AND ADJUDICATE VIOLATIONS

Following the initial warning period, communities will begin issuing violations based on the procedures laid out in the local ordinance (see Section 3.1). Law enforcement personnel will review violations captured by the SSCs and issue citations to a vehicle's registered owner. Fines will either be paid by the driver or contested through mechanisms established in the ordinance. Data for vehicle owners who do not pay violations will be shared with the North Carolina Division of Motor Vehicles (NCDMV), which may prevent registration renewals until payment is made.

In a typical program structure, where day-to-day program operations are managed by an outside vendor, violations captured by SSCs are stored in both video and photo formats and shared with the relevant law enforcement agency. Many vendors operate secure web portals that can be accessed by officers to review the violation. If an officer determines that the speed threshold was, in fact, exceeded during specified hours in a school zone, they will issue a citation to the registered owner of the vehicle.

Registered owners will receive the violation in the mail with documented evidence of the violation, which may also be made available via the program website. Instructions will be provided to the owner about how to pay or contest/appeal the violation. Violations are paid to either the camera vendor or directly to the local jurisdiction, depending upon the model set up by the vendor.

In addition to providing the evidence package, the violation is an opportunity to share information about the program and the importance of safety. Consider including messages about broader safety problems, the role of speed in traffic deaths and injuries, and information about the community's ongoing efforts to address safety concerns through its Vision Zero or other safety programs.

Owners who wish to contest the violation will be able to follow appeals procedures outlined in the local ordinance. As specified in state law, owners must pay or respond to an issued citation within 30 days of receipt. In cases where the owner can produce an affidavit stating that the vehicle was either being operated by another person or was stolen at the time of the violation, violations may be waived. After 30 days following receipt of the citation, owners waive their right to contest the violation and may be required to pay a late penalty of up to \$50.00.

Local jurisdictions and/or vendors will monitor payment status for issued violations and report data about unpaid violations to the NCDMV. NCDMV, under state law, will hold all future vehicle registrations for that vehicle until the violation has been paid. Notably, even with strong incentives for violators to pay fines, agencies can anticipate that a significant volume of violations will not be paid. In particular, fleet vehicle drivers, rental vehicle drivers, and drivers with out of state are likely to have much lower rates of response to violations.

5.4 TEST AND UPDATE PROGRAM MONITORING PROCEDURES

Though communities should already be considering the short- and long-term evaluation of the SSC program's impact, especially with respect to speed reductions and changes in violations over time, it is also important to closely monitor system performance in the first weeks and months of program deployment to identify and correct any unanticipated problems that may arise. For example, communities can regularly check to confirm the posted school speed zone hours and the SSC operational hours are aligned. The warning period is an especially good time to identify any problems with camera placement and violations review procedures (among others), so these can be corrected before violations are issued. Local agencies can work with the vendor to create a plan for program monitoring during the initial roll-out and at regular intervals so that the team is responsive to problems that may arise.

Chapter 6: Program Monitoring and Evaluation Phase

The Program Monitoring and Evaluation Phase focuses on understanding how the SSC program is functioning and whether it is contributing to its intended goals. Effective SSC programs use monitoring and evaluation to support transparency, guide continuous improvement, and communicate program performance to partners, decision-makers, and the public.

While North Carolina law does not mandate specific evaluation requirements for SSC programs, many communities choose to establish regular monitoring and evaluation practices to strengthen accountability, build trust, and support learning over time.

Key steps involved in this phase include:

- Create a plan for program evaluation, including timelines and data needs.
- Collect data needed for evaluation before, during, and after program implementation.
- Prepare regular reports to share key outcomes and performance details with the community and other stakeholders.

SSC program evaluations should organize their evaluations around the overall program goals, aligning performance metrics with stated SSC program objectives. Distinguishing between need to have measures and nice to have measures allows programs to start with a focused set of indicators and expand over time as capacity allows.

Early planning helps ensure that data needed for monitoring and evaluation is available, reliable, and usable. Consider which data will be collected by the jurisdiction and what will be provided by the vendor (if applicable). Establish timelines for collecting and analyzing data to support short-, intermediate, and long-term evaluation.

If the jurisdiction has limited experience with or capacity for program evaluation, consider partnering with organizations that can support this work. Local universities, state highway safety offices, or consultants with evaluation expertise can assist with evaluation planning, study design, data collection, data analysis, and sharing results.

The following sections provide additional insight and examples to plan for monitoring and evaluation, so data collection, reporting, and learning are built into the program from the start.

PLAN THE PROGRAM EVALUATION

There are two types of evaluation to use for measuring SSC program performance:

- **Process evaluation:** Is the program being implemented as planned?
- **Outcome evaluation:** Is the program changing behavior and improving safety?

Process Evaluation

Process evaluation focuses on documenting and monitoring how the program operates day to day. It is especially important during program planning, site selection, and early operations to ensure the program is being implemented as intended and to identify issues early. For SSC programs, process evaluation often helps confirm that:

- The program is operating legally and in accordance with state law and local policy.
- Required safeguards and review procedures are in place.
- Operational issues are identified early.
- The agency can clearly explain how the SSC program works.
- Cameras are functioning as intended.

Most SSC programs begin by tracking a small, manageable set of indicators focused on implementation, administration, and transparency. These measures help agencies understand three core aspects: what was done, who the program reached, and how it was delivered.

What was done

Documenting the activities and outputs of the SSC program helps capture what was implemented and when. This may include:

- How sites were selected.
- Number of active cameras.
- When warning periods began and ended.
- How many outreach or education activities were held.
- What program materials were developed or distributed (webpages, FAQs, signage)

In NC, this can include tracking the flow of cases through the initial capture, law enforcement officers review, dispute, hearing, and final determination. This helps demonstrate that required review and dispute processes are in place and functioning as intended. It can also serve as an initial indicator that the cameras are functioning as intended and accurately issuing citations. For example, in [New York, NY](#), 99.7% of the total citations (5,931,771) were valid (not dismissed through review or hearings).³⁸

Who the SSC program reached

Documenting who the SSC program reached helps agencies understand who is affected by the program and can inform responses to common questions about fairness and impact. This may include:

- How many people responded to surveys.
- Which communities were included in outreach efforts.
- Characteristics of the neighborhoods near camera locations.
- Where cited vehicles are registered (e.g., local, out of county, out of state).
- Tracking community feedback – complaints, successes, etc.

In North Carolina, this can also include tracking the number of owner affidavits submitted and the number of citations reissued to a driver after review. Over time, this information can help agencies understand how the owner–liability process functions in practice and inform future decisions about program design, communication, and administrative processes.

How the program was delivered

Documenting how the SSC program was delivered helps agencies understand whether the program operated the way it was designed, approved, and communicated. This may include:

- When cameras were active.
- Time of citation.
- Number of violations by speed over the posted limit.
- Program revenue and costs.
- Time between violation capture and citation issuance.

In North Carolina, maintaining clear and consistent records is particularly important because disputes related to SSC citations may require documentation of system accuracy, calibration, review procedures, and compliance with state law and local ordinances.

Much of this information already exists in vendor records, citation systems, or routine documentation. Programs can always build on these measures over time, but starting with a simple, consistent, and well-documented approach helps set the foundation for long-term success.

Outcome Evaluation

Outcome evaluation focuses on whether SSCs are contributing to desired changes, such as reduced speeding and improved safety conditions over time.

When reviewing outcomes, it is important to recognize that many factors beyond the SSC program can influence results. These may include external events, other safety strategies (such as roadway design changes, education, or traditional enforcement), and policy changes. These factors should be considered when selecting outcome measures, interpreting trends, and communicating findings.

Outcome measures are typically grouped into short-term, intermediate, and long-term outcomes. Each evaluation timeframe has a specific purpose, with associated performance measures, as shown in Table 3 below.

Table 3. Speed Safety Camera Evaluation Outcome Measures by Evaluation Timeframe

	Evaluation Timeframe		
	Short Term	Intermediate	Long Term
Timeframe and Purpose	0 to 6 months Reflect early safety impacts that may appear soon after implementation.	6 months to 1 year Reflect changes in driving behavior and perceived safety that may occur after sustained operation.	1+ years Reflect broader safety impacts that may take multiple years to observe.
Performance Measures	- Number of vehicles that receive a warning but do not receive a citation. - Change in awareness of school zone speed limits. - Change in public acceptance of the SSC program. - Number of citations per vehicle.	- Change in number of vehicles exceeding the speed limit in school zones. - Change in speeds during enforcement periods. - Change in average daily citations over time. - Increased perceived safety for people walking and biking in SSC locations.	- Change in total crashes at SSC locations compared to control or citywide trends. - Change in speed-related crashes at SSC locations compared to control or citywide trends. - Change in fatal and serious injury crashes at SSC locations compared to control or citywide trends.
Examples	Montgomery Co., MD Portland, OR Washington, DC New York, NY	San Francisco, CA Neptune Beach, FL Alpharetta, GA	New York, NY Montgomery Co., MD Seattle, WA Washington, DC

6.2 SHARE EVALUATION FINDINGS

Transparent and proactive data sharing helps demonstrate that the program is safety-focused, supports accountability to the public and decision-makers, and reinforces trust over time. Sharing data and lessons learned also allows jurisdictions to contribute to a growing body of practice-based knowledge that can help other communities plan, implement, and refine their own SSC programs.

Successful SSC programs use a range of strategies to share findings in ways that are appropriate for different audiences and purposes. Common communication tools include:

Annual reports

Annual reports typically provide a clear, high-level overview of program operations, key trends, and notable outcomes. They are commonly used to communicate with the public and decision-makers and to document program progress over time. In many jurisdictions, annual reports are part of a mandatory reporting process. Oregon, Washington State, and New York, NY, all outline their reporting requirements in state statute. Oregon reports are released biennially, whereas Washington and New York, NY, require annual reports.³⁹ Oregon requires information on traffic safety impacts, public acceptance of the program, and how the program is administered. Portland, OR's, [Fixed Speed Reports](#) are published online and available on the Oregon State Legislature's website.⁴⁰ Washington State requires cities and counties to report the number of crashes and citations at each camera location, as well as how camera revenue is used, including the share applied to program costs and how any excess revenue is allocated.⁴¹ Many municipalities in Washington State have dedicated websites to their SSC programs that include access to annual reports, including [Kent](#) and [Wenatchee](#).⁴² New York, NY's, [Automated Speed Enforcement Report](#) requirements are more extensive. In addition to camera locations and operating dates, the number of notices of liability issued, and program costs and revenues, reports must also include adjudication outcomes and compare crash rates between school speed zones with and without cameras.⁴³

While North Carolina law does not mandate specific evaluation or reporting requirements for SSC programs, some communities may choose to establish regular reporting practices to support transparency, accountability, and long-term program credibility. For example, the Washington, D.C., Department of Transportation produces a [Semi-Annual Council Report](#) that is supported by an interactive, public-facing dashboard that includes details about each camera location and revenue collected.

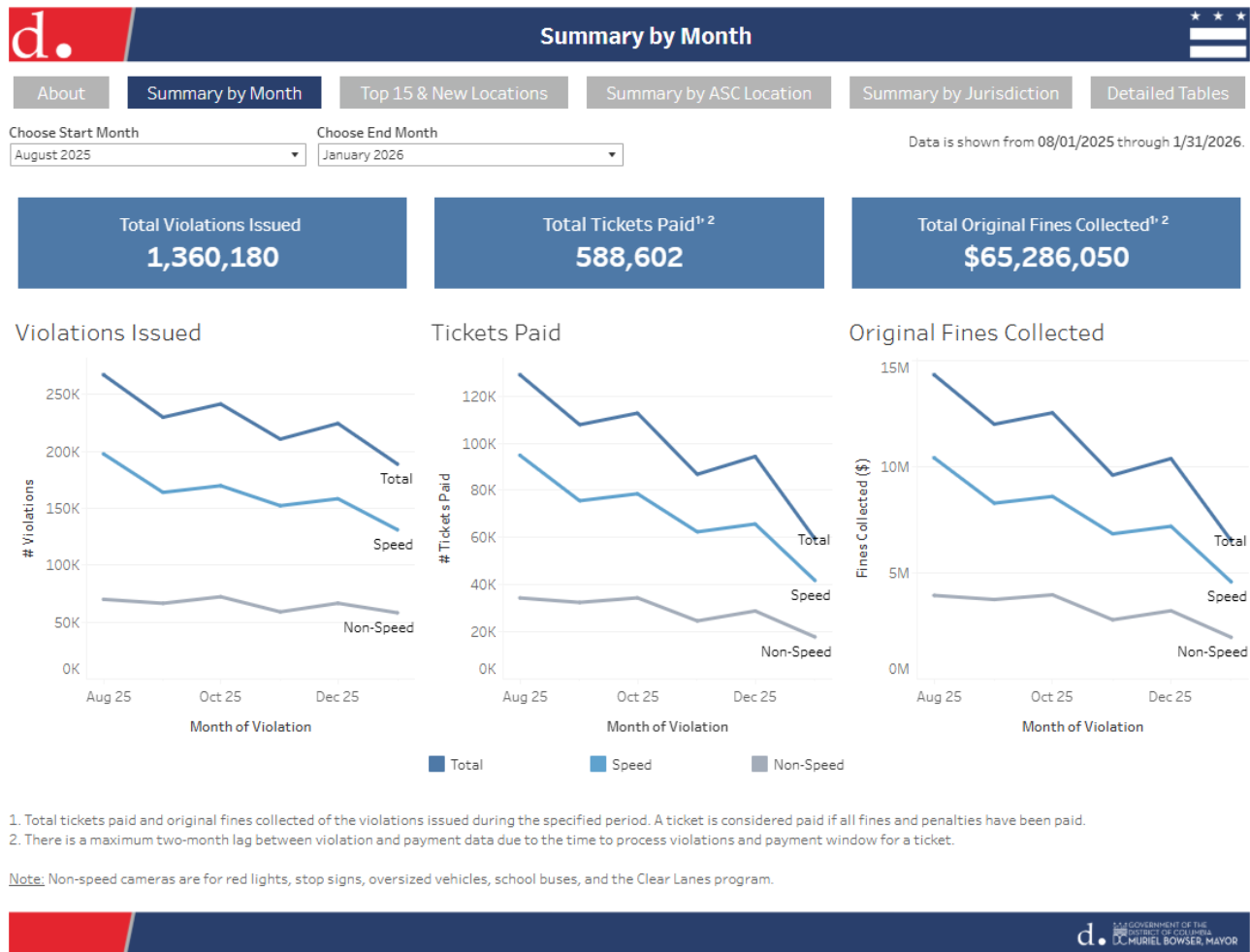


Figure 8. Washington, D.C., DOT Dashboard of Semi-Annual Council Reports (Source).

Dedicated program webpages

Dedicated program webpages provide a centralized, easy-to-access location for information about the SSC program. Program webpages can improve transparency and awareness by clearly explaining how the program works, where cameras are located, and what to expect if a citation is issued. For example, [Bellevue, WA](#), publishes its SSC program webpage in eight different languages relevant to the community.⁴⁴ Other SSC programs, such as [San Francisco, CA](#), and [Minneapolis, MN](#), publish materials on their webpage in multiple languages.⁴⁵

Because webpages can be updated regularly, they are well suited for sharing current information and addressing common questions over time. This can be particularly helpful for SSC programs using mobile cameras to provide up-to-date locations. Howard County, Maryland publishes a weekly list of speed camera locations on their program webpage.

<https://www.howardcountymd.gov/police/speed-camera-program>

Data dashboards

Data dashboards provide a visual, interactive way to share SSC data and can support transparency and inform decision-making. Dashboards are often used to show trends such as citations over time, camera locations and status, or changes in speeding behavior. Because dashboards can be updated frequently, they are especially useful for monitoring program performance between reporting cycles and responding to emerging questions or concerns. Several jurisdictions use public-facing dashboards to share SSC data in different ways. For example, in [Portland, OR](#), the SSC dashboard is maintained by their Vision Zero Office.⁴⁶ Both the [District of Columbia](#) and [Seattle, WA](#), report SSC data alongside other automated enforcement programs in comprehensive dashboards illustrating citywide safety efforts.⁴⁷ [San Francisco, CA](#), hosts SSC data in a dedicated dashboard.⁴⁸

Presentations and briefings

Presentations and briefings are a useful way to share SSC findings with decision-makers, partners, and community members in a clear, focused format. They allow agencies to highlight key takeaways, explain trends, and connect evaluation findings to program decisions. Many jurisdictions use presentations to support policy discussions, such as decisions about program expansion, operating hours, or resource allocation. Presentations are also commonly used for community engagement, where sharing data in public meetings, workshops, or school forums helps explain how the program works, respond to concerns, and show how feedback and data inform improvements over time.

Technical reports

Technical reports provide a way to document SSC methods, analyses, and findings in greater depth. They are often intended for internal staff, partner agencies, or decision-makers who need detailed information to support planning, oversight, or policy decisions. For example, [Minnesota](#) published a technical report to highlight the decision-making process and the evaluations they conducted for identifying camera locations.⁴⁹ Other applications include presenting in-depth data analysis, such as the reports published by [Seattle, WA](#), and [Chicago, IL](#).⁵⁰ Both [Portland, OR](#), and [Montgomery County, MD](#), prepared technical reports to document outcome evaluation findings for broader program goals.⁵¹

Chapter 7: Program Refinement Phase

For new SSC programs, there are many decisions to make early on, from vendors to camera locations, and even the wording used in a webpage FAQ. It is common for this to feel overwhelming, and for communities to worry about getting everything right before moving forward. Successful SSC programs use early decisions as starting points and then learn, adapt, and improve over time.

Program Refinement focuses on using those lessons learned to strengthen how the SSC program operates and how effectively it advances safety goals. It is not a one-time phase but an ongoing process that allows SSC programs to respond to real-world conditions, community feedback, and evolving safety needs.

Key steps in this phase include:

- Documenting early issues and making required adjustments during rollout.
- Tracking program outcomes and using insights to inform new or changing camera locations.

For new SSC programs, early refinements help build public confidence in the program, improve day-to-day operations, and demonstrate responsiveness. This may include:

- Updating webpage FAQs to address common questions or misunderstandings.
- Providing additional guidance or training to law enforcement officers to support consistent citation review.
- Clarifying signage or communications between warning and citation phases.
- Adjusting camera operating hours to reflect updated school zone schedules.

Over time, monitoring and evaluation findings may also point to larger opportunities for improvement. These decisions typically build on early experience and are supported by data collected over multiple years.

A well-documented example comes from New York, NY. When the city's speed safety camera program first launched in 2013, state law limited enforcement to school days during school hours and brief periods before and after. Analysis of crash and speed data showed that approximately 85% of fatal and serious injury crashes in school zones were occurring outside authorized enforcement times. The data also showed that the share of vehicles exceeding the speed limit by more than 11 mph was significantly higher when cameras were inactive.⁵²

These findings supported a 2019 policy change allowing cameras to operate on weekdays from 6am to 10pm. Continued evaluation showed that in 2021, 30% of fatal crashes occurred in school zones with cameras but outside enforcement hours, including weekends and overnight. In response, the city used these findings to support legislation expanding speed camera enforcement to operate 24/7 beginning in 2022.

Other programs have used evaluation findings to address equity and inform the planning of related safety efforts. In Seattle, WA, for example, data on violations and crash risk gathered as part of the SSC program have been used to guide additional traffic calming investments at locations with the highest rates of speeding. Revenue from automated enforcement in Seattle has been directed toward safety improvements such as sidewalks, crosswalks, flashing beacons, and other infrastructure designed to reduce risk.

Chapter 8: Conclusions

As communities consider implementing school zone speed safety cameras, it is helpful to recognize that these programs operate within systems that continue to evolve. State leaders may clarify standards, agencies may refine administrative procedures, and local governments may adjust ordinances as they gain experience. Beyond statutes and standards, day-to-day conditions also change. School schedules, traffic patterns, staffing capacity, and community priorities can also shift over time. Building flexibility into program design from the outset allows communities to adapt while remaining focused on safety goals.

Flexibility is most effective when paired with strong operational foundations. Long-term program strength is supported by steady operations and transparency. Clear documentation, consistent delivery, and reliable data practices help ensure that the program functions as intended for safety improvements. Regular reporting and open communication reinforce public understanding. What data show, how feedback is being considered, and why adjustments are needed can help maintain public trust and demonstrate that the program is focused on protecting students and families.

Communities in North Carolina have the benefit of a growing body of experience nationwide. Speed safety camera programs operate in hundreds of jurisdictions across the country, and many have documented their approaches to site selection, vendor contracting, evaluation, public reporting, and many other aspects. When new questions arise, there is often a relevant example that can inform local decision-making. Seeking guidance and peer examples can help communities anticipate challenges, strengthen implementation, and refine their approach over time.

This document is intended to support readiness and thoughtful action. By planning for change, staying attentive to community context, and drawing lessons learned from other jurisdictions, North Carolina communities can develop and sustain SSC programs that reduce speeding in school zones and contribute to safer travel for students, families, and all road users.

Additional Resources

North Carolina Contacts and Organizations

- NCDOT Traffic Safety Unit:
<https://www.ncdot.gov/initiatives-policies/safety/traffic-safety/Pages/default.aspx>
- NCDOT Highway Divisions and Contact Information:
<https://www.ncdot.gov/divisions/highways/Pages/divisions.aspx>
- North Carolina Governor's Highway Safety Program:
<https://www.ncdot.gov/initiatives-policies/safety/ghsp/Pages/default.aspx>
- NC Department of Justice Criminal Justice Education and Training Standards Commission:
<https://ncdoj.gov/law-enforcement-training/criminal-justice/>

North Carolina Resources and References

- Legislation: Authorize Use of Electronic Speed-Measuring Systems to Detect Speed Limit Violations in School Zones (p. 6-10 of NC Senate Bill 391 / Session Law 2025-47):
<https://www.ncleg.gov/Sessions/2025/Bills/Senate/PDF/S391v8.pdf>
- NCDOT Speed Management Resources:
https://connect.ncdot.gov/resources/safety/Teppl/Pages/Teppl-Topic.aspx?Topic_List=S40
- NCDOT Crash Data: <https://www.ncdot.gov/initiatives-policies/safety/traffic-safety/Pages/Crash-Data.aspx>
- North Carolina Vision Zero Safety Dashboards: <https://ncvisionzero.org/visualizations/safety-dashboard/>

Other National, State, and Local Resources

- Speed Safety Camera Program Planning and Operations Guide (FHWA):
<https://www.pedbikeinfo.org/downloads/SpeedSafetyCameraProgramPlanningOperationsGuide2023.pdf>
- Improving Guidance for Speed Safety Camera (Oregon DOT):
https://www.oregon.gov/odot/Programs/ResearchDocuments/SPR873_SpeedSafetyCamera.pdf
- Fair Warnings: Recommendations to Promote Equity in Speed Safety Camera Programs (Vision Zero Network): https://visionzeronetwork.org/wp-content/uploads/2024/12/Fair-Warnings_FINAL.pdf
- Automated Enforcement Program Checklist (IIHS): <https://www.iihs.org/media/431e551b-3f64-4591-8e30-ad35a069f41f/cF4n4g/News/2021/050621%20auto%20enforcement/AE-checklist-May-2021.pdf>
- Automated Enforcement in a New Era (GHSA):
https://www.ghsa.org/sites/default/files/2024-12/AE_newera_12-5-23_0.pdf
- Speed Safety Camera Enforcement (NHTSA): <https://www.nhtsa.gov/book/countermeasures-that-work/speeding-and-speed-management/countermeasures/enforcement/speed>
- Speed Safety Camera Readiness Guide (Washington State DOT):
<https://wtsc.wa.gov/wp-content/uploads/2024/06/Speed-Safety-Camera-Readiness-Guide-06-2024.pdf>
- Guide for Determining Readiness for Speed Cameras and Other Automated Enforcement (World Bank):
<https://documents1.worldbank.org/curated/en/794451581062198463/pdf/Guide-for-Determining-Readiness-for-Speed-Cameras-and-other-Automated-Enforcement.pdf>

References

- Anne Arundel County. "Automated Traffic Enforcement Speed Program."
<https://www.aacounty.org/police-department/automated-traffic-enforcement-speed-program>.
- Cal. A.B. 645 (2023–24 Reg. Sess.).
- Chicago Department of Transportation. ASE Before–After Analysis (2023–24) (Chicago: City of Chicago, 2025), [https://www.chicago.gov/content/dam/city/depts/cdot/CSZ/2025/ASE%20-%20Before-After%20Analysis%20\(2023-24\)%20-%20WRITE-UP%20and%20LIST%20COMBINED%20-%20V6.pdf](https://www.chicago.gov/content/dam/city/depts/cdot/CSZ/2025/ASE%20-%20Before-After%20Analysis%20(2023-24)%20-%20WRITE-UP%20and%20LIST%20COMBINED%20-%20V6.pdf).
- City and County of San Francisco. "Map of Automated Speed Enforcement Citations," DataSF,
<https://data.sfgov.org/Transportation/Map-of-Automated-Speed-Enforcement-Citations/azxr-m3nm>.
- City of Bellevue. "Speed Safety Cameras," <https://bellevuewa.gov/speed-safety-cameras>.
- City of Canton. "Frequently Asked Questions and Answers,"
<https://www.cantonga.gov/government/departments/police/faqs/school-zone-speed-cameras-faq>.
- City of Kenmore, Washington. "Kenmore Automated Photo Enforcement (KAPE) Program." <https://www.kenmorewa.gov/government/departments/public-works/engineering/automated-photo-enforcement>.
- City of Kent Police Department. "Photo Enforcement Program,"
<https://www.kentwa.gov/departments/police-department/photo-enforcement-program>.
- City of Minneapolis. 2025 Minneapolis Traffic Safety Camera Pilot Location Impact Analysis: Technical Report (Minneapolis: City of Minneapolis, 2025), <https://www.minneapolismn.gov/media/-www-content-assets/documents/Minneapolis-Traffic-Safety-Camera-Location-Analysis.pdf>.
- City of Minneapolis. "Traffic Safety Camera Resources," <https://www.minneapolismn.gov/government/programs-initiatives/visionzero/actions-taken/traffic-safety-camera/resources/>.
- City of Portland. (2023). *City of Portland Photo Enforcement Biennial Report, 2021–2022*. Portland Police Bureau, Traffic Division – Traffic Investigations Unit. https://www.oregonlegislature.gov/citizen_engagement/Reports/2023-Biannual-PhotoEnforcement-Report.pdf.
- City of Seattle Municipal Court. "Traffic Camera Infractions," <https://seattle.gov/courts/about/data-and-publications/general-data-reports/traffic-camera-infractions>.
- City of Tigard. "Photo Traffic Enforcement FAQ," <https://www.tigard-or.gov/your-government/departments/police/traffic-safety/photo-traffic-enforcement-faq>.
- City of Wenatchee Police Department. "Automated Traffic Safety Program,"
<https://www.wenatcheewa.gov/government/police/citizen-services/automated-traffic-safety-program>.
- Cunningham, C. M., J. E. Hummer, and J. P. Moon. (2008). "Analysis of Automated Speed Enforcement Cameras in Charlotte, North Carolina," *Transportation Research Record* 2078, no. 1 (2008).
<https://doi.org/10.3141/2078-17>.
- DDOT. (n.d.). Automated Safety Camera (ASC) Locations and Violations Tracker. <https://asc.ddot.dc.gov/>

- Denning, S., and K. Millonzi. (2025). *New Legislation Authorizes Enforcement of School Zone Speed Limits Through Automated Cameras*. UNC School of Government.
- District of Columbia Department of Transportation. "Automated Safety Camera (ASC) Program," <https://asc.ddot.dc.gov/>.
- FHWA & NHTSA. (2023). *Speed Safety Camera Program Planning and Operations Guide*. <https://www.pedbikeinfo.org/downloads/SpeedSafetyCameraProgramPlanningOperationsGuide2023.pdf>.
- Ga. Code Ann. § 40-14-18.
- IIHS. (2025). *Speed Camera Communities*. <https://www.iihs.org/research-areas/speed/speed-camera-communities>.
- Kumfer, W., L. Martin, S. Turner, and L. Broshears. (2023). *Safe System Approach for Speed Management*. FHWA-SA-23-002.
- Miller, R. J., J. S. Osberg, R. Retting, M. Ballou, and R. Atkins. *System Analysis of Automated Speed Enforcement Implementation*. NHTSA, 2016.
- Municipal Research and Services Center of Washington (MRSC). "Automated Traffic Safety Cameras," <https://mrsc.org/explore-topics/public-safety/traffic-safety/traffic-safety-cameras>.
- N.C. Const. art. IX, § 7.
- N.C. Gen. Stat. § 20-141.1.
- N.C. Gen. Stat. §§ 153A-246.1(c), 160A-300.4(c).
- NACTO. (2020). *City Limits: Setting Safe Speed Limits on Urban Streets*.
- NCDOT. (2024). *2024 North Carolina Strategic Highway Safety Plan*. <https://www.ncdot.gov/initiatives-policies/safety/traffic-safety/Pages/strategic-highway-safety-plan.aspx>.
- NCDOT. (2025). *Speed Limit Setting Guidance and Training*. <https://connect.ncdot.gov/resources/safety/Teppl/TEPPL%20All%20Documents%20Library/Speed%20Management%20Training%20Presentation.pdf>.
- NCOT. (2024). *NC SHSP*.
- New York City Department of Transportation. *New York City Automated Speed Enforcement Program, 2024 Report*. (New York: NYC DOT, 2025). <https://www.nyc.gov/html/dot/downloads/pdf/speed-camera-report.pdf>.
- NYCDOT. (2025). *New York City Automated Speed Enforcement Program, 2024 Report*. <https://www.nyc.gov/html/dot/downloads/pdf/speed-camera-report.pdf>.
- Oregon Department of Transportation. *Improving Guidance for Speed Safety Camera*. SPR 873. Salem: Oregon DOT, 2025.
- Oregon Department of Transportation. *Improving Guidance for Speed Safety Camera*. SPR 873. Salem: Oregon DOT, 2025, 49.
- Oregon DOT. *Improving Guidance for Speed Safety Cameras*, SPR 873, 42.

- ODOT. (2025). *Improving Guidance for Speed Safety Camera*.
https://www.oregon.gov/odot/Programs/ResearchDocuments/SPR873_SpeedSafetyCamera.pdf.
- Office of the New York City Comptroller Scott M. Stringer. *A Tale of Two Tickets* (2018).
<https://comptroller.nyc.gov/wp-content/uploads/documents/Tale-of-Two-Tickets.pdf>.
- Or. Rev. Stat. § 810.443; Rev. Code Wash. § 46.63.220(6)(b); N.Y. Veh. & Traf. Law § 1180-b(n).
- Portland Bureau of Transportation. "Speed and Intersection Safety Cameras."
<https://www.portland.gov/transportation/vision-zero/safety-cameras>.
- Portland Bureau of Transportation. *Preliminary Legislative Report: Outcome Evaluation, Fixed Photo Radar System, 2021–2022* (2022). https://www.oregonlegislature.gov/.../Portland%202021-22_Preliminary%20Legislative%20Report_Fixed%20Photo%20Radar%20System.pdf.
- Portland Bureau of Transportation. "Vision Zero Dashboard."
https://public.tableau.com/app/profile/portland.bureau.of.transportation/viz/VisionZeroDashboard_16179023789280/VisionZeroDashboard.
- Quistberg, D. A., L. L. Thompson, J. Curtin, F. P. Rivara, and B. E. Ebel. "Impact of Automated Photo Enforcement of Vehicle Speed in School Zones..." *Injury Prevention* 25, no. 5 (2019): 400–406.
<https://doi.org/10.1136/injuryprev-2018-042912>.
- Retting, R. A., S. Y. Kyrychenko, and A. T. McCartt. "Evaluation of Automated Speed Enforcement in Montgomery County, Maryland," *Traffic Injury Prevention* 9, no. 5 (2008): 440–45.
<https://doi.org/10.1080/15389580802221333>.
- Rogers, J. M., S. S. Dey, R. Retting, R. Jain, X. Liang, and N. Askarzadeh. "Using Automated Enforcement Data to Achieve Vision Zero Goals..." 2016 *IEEE Big Data Conference*. <https://doi.org/10.1109/BigData.2016.7841099>.
- Sandt, S., S. Proescholdbell, K. Evenson, W. Robinson, D. Rodriguez, K. Harmon, and S. Marshall. (2020). "Comparative Analysis of Pedestrian Injuries..." *Transportation Research Record*.
- SFMTA. (2025). *Speed Camera Tickets Start Today...*
<https://www.sfmta.com/blog/speed-camera-tickets-start-today-whats-next-and-impact-so-far>.
- San Francisco Municipal Transportation Agency. "Speed Safety Cameras."
<https://www.sfmta.com/projects/speed-safety-cameras>.
- Stamford, Conn., Code of Ordinances art. XIII, § 231-86.
- Tefft, B. C. (2013). "Impact speed and a pedestrian's risk of severe injury or death." *Accident Analysis and Prevention* 50: 871–878. doi:10.1016/j.aap.2012.07.022.
- Tilahun, N. (2022). "Safety Impact of Automated Speed Camera Enforcement..." *Transportation Research Record* 2677.
- Washington Traffic Safety Commission. *Speed Safety Camera Readiness Guide*. Olympia, 2024.
- WTSC. (2024). *Speed Safety Camera Readiness Guide*. <https://wtsc.wa.gov/wp-content/uploads/2024/06/Speed-Safety-Camera-Readiness-Guide-06-2024.pdf>.

Appendix A: SSC Planning Logic Model

Some communities find it helpful to use a logic model or similar planning tool to describe how SSC activities are expected to lead to short-term, intermediate, and long-term outcomes. Used early, a logic model can help clarify assumptions, align partners, and guide decisions across planning, implementation, and evaluation. The example below can be tailored for local agency use.

Inputs (Resources)	Activities (What you do)	Outputs (Products of activities)
Project funding Camera vendor Staff Local partnerships	Develop local ordinance Community engagement Select a camera vendor Identify camera locations Install cameras Launch camera warning period Issue citations Review camera data Maintain equipment	Number of active cameras Number of warnings issued Number of citations issued Number of community engagement events Program materials (webpages, FAQs, data dashboards)
Outcomes		
Short Term	Intermediate	Long Term
Number of vehicles that receive a warning but not a citation Change in awareness of school zone speed limits Change in public acceptance of the SSC program Number of citations per vehicle	Change in number of vehicles exceeding the speed limit in school zones Change in average speeds during enforcement periods Change in average daily citations over time Increased perceived safety for people walking and biking in SSC locations	Change in total crashes at SSC locations compared to control or citywide trends Change in speed-related crashes at SSC locations, compared to control or citywide trends Change in fatal and serious injury crashes at SSC locations compared to control or citywide trends
Assumptions		External Factors
Public communication builds support and trust Local data is accessible and accurate		State legislation changes News or media narratives Roadway changes Broader traffic safety trends

Appendix B: Vendor Considerations

Communities preparing to interview, enter into contracts with, or otherwise work with outside vendors to manage and deploy their SSC programs should be prepared for those discussions. The following considerations for engaging with vendors were compiled based on conversations with public agencies and existing vendors who operate SSC programs across the country. Each section below describes a critical aspect of the community/vendor relationship and includes questions to prompt internal discussions that may also be used when talking with vendors.

Program Design and Vendor Relationship

As outlined in **Chapter 3**, Section 3.2., there are several ways to structure a program depending on agency capacity and preference. Local governments should assess capacity for program administration, technical maintenance, and data management before selecting a model, keeping in mind that program design can have implications for public acceptance. These implications go beyond just fee structure; some vendors offer communications support that may increase outreach for smaller communities. Agencies should approach these partnerships mindfully to ensure the program remains public-oriented.

Questions to consider:

- **Administrative:** Do we have internal capacity to process citation payments, manage records, and handle customer service inquiries?
- **Technical:** Do we have the internal capacity and knowledge to maintain equipment, data security, and ensure system calibration?
- **Communications:** What is our public engagement plan, and will we need vendor support for community outreach?

Key Components for Requests for Proposals (RFPs)

Agencies should outline a scope of work and program design that reflects their capacity self-assessment. Key consideration is to ensure technology meets state-approved standards. Other items to address proactively in the RFP include implementation timeline, training and ongoing support expectations, and reporting and performance metrics required from the vendor.

Questions to consider:

- What performance standards and response times do we expect from the vendor?
- What reporting do we need to evaluate program effectiveness, and how frequently?
- Is the proposed technology approved by state guidelines?
- What training, if any, will staff need, and who is responsible for providing it?

Data Security, Privacy and Acquisition

Contracts should explicitly establish that data ownership is retained by the agency, with clear provisions for security standards like encryption and Federal Information Security Modernization Act (FISMA) compliance. Agencies should also outline audit capabilities and breach notification protocols. Record retention and destruction requirements should align with state law where applicable. Beyond security, agencies should ensure that data is structured to support safety outcomes, outlining in the RFP key performance metrics and data sharing agreements that will facilitate evaluations. Agencies should ask vendors to provide disaggregated vehicle-level data, while ensuring data privacy.

Questions to consider:

- Who owns the data, and what access does the vendor retain after termination?
- How will we access and use the data to evaluate program effectiveness?
- Do we have capacity to generate our own reports, or will we rely on vendor-provided reports?
- Will the vendor include access to raw data (specifically disaggregated vehicle-level data) in the agreement?
- What happens to our data if there is a security breach or vendor transition?

Payment Structures for Violations

Agencies must determine how violation payments will be collected and how revenue will flow between vendor and the agency. Common structures include vendors collecting payments and remitting the agency's share, or agencies collecting payments directly and paying the vendor a fixed fee separately. Payment structure can impact viable contract model arrangements; direct agency collection may work better for fixed fee models. Agencies should also specify acceptable payment methods for individuals who've received a violation. Online platforms are standard, but some agencies also provide the option to pay via telephone, kiosk, or mail.

Questions to consider:

- Who will collect payment for violations?
- If the vendor collects, how and when will revenue be remitted to the agency?
- What payment methods should be available to the public?
- How does our payment structure align with our contract model?
- How will nonpayment or low rates of violations impact revenue for the vendor and/or the jurisdiction?

Contract Safeguards

Contracts should include clear termination and transition provisions, specifying how data will be returned and equipment removed at no cost upon contract end. Maintenance requirements should address calibration, response times, and performance standards. Agencies should require adequate insurance coverage, including cybersecurity liability, and prohibit subcontracting of critical functions without prior approval.

Questions to consider:

- What happens to our data and equipment if the contract ends or the vendor transitions?
- What maintenance and response time standards do we require?
- Does the vendor carry all sufficient insurance, including cyber liability coverage?
- Which functions require agency approval before subcontracting?

Appendix C: Footnotes

- ¹ NCDOT. (2024). *2024 North Carolina Strategic Highway Safety Plan*. North Carolina Department of Transportation, <https://www.ncdot.gov/initiatives-policies/safety/traffic-safety/Pages/strategic-highway-safety-plan.aspx>.
- ² NCDOT. (2025). *Speed Limit Setting Guidance and Training*. North Carolina Department of Transportation, <https://connect.ncdot.gov/resources/safety/Tepp/TEPPL%20All%20Documents%20Library/Speed%20Management%20Training%20Presentation.pdf>.
- ³ Kumfer, W., Martin, L., Turner, S., and Broshears, L. (2023). *Safe System Approach for Speed Management*. Federal Highway Administration. FHWA-SA-23-002. United States Department of Transportation.
- ⁴ NACTO (2020). *City Limits: Setting Safe Speed Limits on Urban Streets*. New York, NY: National Association of City Transportation Officials.
- ⁵ Tefft, B.C. (2013). Impact speed and a pedestrian's risk of severe injury or death. *Accident Analysis and Prevention*, 50:871-8. doi: 10.1016/j.aap.2012.07.022.
- ⁶ NCOT. (2024). NC SHSP.
- ⁷ IIHS. (2025). *Speed Camera Communities*. Insurance Institute for Highway Safety, <https://www.iihs.org/research-areas/speed/speed-camera-communities>.
- ⁸ FHWA & NHTSA. (2023). *Speed Safety Camera Program Planning and Operations Guide*. Federal Highway Administration, National Highway Traffic Safety Administration, <https://www.pedbikeinfo.org/downloads/SpeedSafetyCameraProgramPlanningOperationsGuide2023.pdf>.
- ⁹ ODOT. (2025). *Improving Guidance for Speed Safety Camera*. Oregon Department of Transportation, SPR 873, https://www.oregon.gov/odot/Programs/ResearchDocuments/SPR873_SpeedSafetyCamera.pdf.
- ¹⁰ WTSC. (2024). *Speed Safety Camera Readiness Guide*. Washington State DOT, Washington Traffic Safety Commission, <https://wtsc.wa.gov/wp-content/uploads/2024/06/Speed-Safety-Camera-Readiness-Guide-06-2024.pdf>.
- ¹¹ Oregon Department of Transportation. *Improving Guidance for Speed Safety Camera*. SPR 873. Salem: Oregon DOT, 2025.
- ¹² Rogers, J. M., S. S. Dey, R. Retting, R. Jain, X. Liang, and N. Askarzadeh, "Using Automated Enforcement Data to Achieve Vision Zero Goals: A Case Study," in *2016 IEEE International Conference on Big Data (Big Data)* (Washington, DC, 2016), 4029-31, <https://doi.org/10.1109/BigData.2016.7841099>.
- ¹³ Cunningham, C. M., J. E. Hummer, and J. P. Moon, "Analysis of Automated Speed Enforcement Cameras in Charlotte, North Carolina," *Transportation Research Record: Journal of the Transportation Research Board* 2078, no. 1 (2008), <https://doi.org/10.3141/2078-17>.
- ¹⁴ Tilahun, N., "Safety Impact of Automated Speed Camera Enforcement: Empirical Findings Based on Chicago's Speed Cameras," *Transportation Research Record: Journal of the Transportation Research Board* 2677, no. 1 (2022), <https://doi.org/10.1177/03611981221104808>.
- ¹⁵ New York City Department of Transportation, *New York City Automated Speed Enforcement Program, 2024 Report* (New York: New York City DOT, 2025), <https://www.nyc.gov/html/dot/downloads/pdf/speed-camera-report.pdf>.

- ¹⁶ Washington Traffic Safety Commission. Speed Safety Camera Readiness Guide. Olympia: Washington Traffic Safety Commission, 2024.
- ¹⁷ Quistberg, D. A., L. L. Thompson, J. Curtin, F. P. Rivara, and B. E. Ebel, "Impact of Automated Photo Enforcement of Vehicle Speed in School Zones: Interrupted Time Series Analysis," *Injury Prevention* 25, no. 5 (2019): 400–406, <https://doi.org/10.1136/injuryprev-2018-042912>.
- ¹⁸ N.C. Gen. Stat. §§ 153A-246.1(c), 160A-300.4(c).
- ¹⁹ Anderson, T., Cunningham, C., and Findley, D. (2020). The 2019–2020 North Carolina Survey of Automatic Traffic Enforcement Systems. NCSU Institute for Transportation Research and Education. NC Governor’s Highway Safety Program.
- ²⁰ Cunningham, C.M., Hummer, J.E., and Moon, J.P. (2008). Analysis of Automated Speed Enforcement Cameras in Charlotte, North Carolina. Transportation Research Record: Journal of the Transportation Research Board, No. 2078, Transportation Research Board of the National Academies, Washington, D.C., 2008, pp. 127–134. DOI: 10.3141/2078-17
- ²¹ Denning, S., and Millonzi, K. (2025). New Legislation Authorizes Enforcement of School Zone Speed Limits Through Automated Cameras. UNC School of Government. Published October 3, 2025.
- ²² N.C. Const. art. IX, § 7.
- ²³ Oregon Department of Transportation. Improving Guidance for Speed Safety Camera. SPR 873. Salem: Oregon DOT, 2025, 49.
- ²⁴ Ibid., 34
- ²⁵ City of Portland (2023). City of Portland Photo Enforcement Biennial Report, 2021–2022. Portland Police Bureau, Traffic Division – Traffic Investigations Unit. City of Portland, OR. https://www.oregonlegislature.gov/citizen_engagement/Reports/2023-Biannual-PhotoEnforcement-Report.pdf.
- ²⁶ Miller, R. J., J. S. Osberg, R. Retting, M. Ballou, and R. Atkins. System Analysis of Automated Speed Enforcement Implementation. Final Report No. DOT HS 812 257. Washington, DC: National Highway Traffic Safety Administration, 2016.
- ²⁷ Ga. Code Ann. § 40-14-18.
- ²⁸ ORC Section 4511.0912
- ²⁹ Stamford, Conn., Code of Ordinances art. XIII, § 231-86
- ³⁰ Tenn. Code Ann. § 55-8-198(d)
- ³¹ Oregon DOT, Improving Guidance for Speed Safety Cameras, SPR 873, 42
- ³² N.C. Gen. Stat. § 20-141.1.
- ³³ Sandt, S., Proescholdbell, S., Evenson, K., Robinson, W., Rodriguez, D., Harmon, K., and Marshall, S. 2020. Comparative Analysis of Pedestrian Injuries using Police, Emergency Department, and Death Certificate Data Sources in North Carolina, U.S., 2007–2012. *Transportation Research Record, Volume 2674, Issue 9, pp 687–700*.
- ³⁴ City of Kenmore, Washington. "Kenmore Automated Photo Enforcement (KAPE) Program." City of Kenmore. <https://www.kenmorewa.gov/government/departments/public-works/engineering/automated-photo-enforcement>.

- ³⁵ SFMTA. (2025). Speed Camera Tickets Start Today: What's Next and the Impact So Far. San Francisco Municipal Transportation Agency. <https://www.sfmta.com/blog/speed-camera-tickets-start-today-whats-next-and-impact-so-far>
- ³⁶ City of Canton, "Frequently Asked Questions and Answers," <https://www.cantonga.gov/government/departments/police/faqs/school-zone-speed-cameras-faq>.
City of Bellevue, "Speed Safety Cameras," <https://bellevuewa.gov/speed-safety-cameras>
Anne Arundel County, "Automated Traffic Enforcement Speed Program," <https://www.aacounty.org/police-department/automated-traffic-enforcement-speed-program>.
City of Tigard, "Photo Traffic Enforcement FAQ," <https://www.tigard-or.gov/your-government/departments/police/traffic-safety/photo-traffic-enforcement-faq>.
- ³⁷ DDOT. (n.d.). Automated Safety Camera (ASC) Locations and Violations Tracker. Washington, D.C., Department of Transportation. <https://asc.ddot.dc.gov/>
- ³⁸ NYCDOT. (2025). *New York City Automated Speed Enforcement Program, 2024 Report*. New York City Department of Transportation. <https://www.nyc.gov/html/dot/downloads/pdf/speed-camera-report.pdf>.
- ³⁹ Or. Rev. Stat. § 810.443; Rev. Code Wash. (RCW) § 46.63.220(6)(b); N.Y. Veh. & Traf. Law § 1180-b(n).
- ⁴⁰ Portland Bureau of Transportation, "Speed and Intersection Safety Cameras," <https://www.portland.gov/transportation/vision-zero/safety-cameras>.
- ⁴¹ Municipal Research and Services Center of Washington (MRSC), "Automated Traffic Safety Cameras," <https://mrsc.org/explore-topics/public-safety/traffic-safety/traffic-safety-cameras>.
- ⁴² City of Kent Police Department, "Photo Enforcement Program," <https://www.kentwa.gov/departments/police-department/photo-enforcement-program>; City of Wenatchee Police Department, "Automated Traffic Safety Program," <https://www.wenatcheeva.gov/government/police/citizen-services/automated-traffic-safety-program>.
- ⁴³ NYCDOT. (2025). *New York City Automated Speed Enforcement Program, 2024 Report*. New York City Department of Transportation. <https://www.nyc.gov/html/dot/downloads/pdf/speed-camera-report.pdf>.
- ⁴⁴ City of Bellevue, "Speed Safety Cameras," <https://bellevuewa.gov/speed-safety-cameras>.
- ⁴⁵ San Francisco Municipal Transportation Agency, "Speed Safety Cameras," <https://www.sfmta.com/projects/speed-safety-cameras>; City of Minneapolis, "Traffic Safety Camera Resources," <https://www.minneapolismn.gov/government/programs-initiatives/visionzero/actions-taken/traffic-safety-camera/resources/>.
- ⁴⁶ Portland Bureau of Transportation, "Vision Zero Dashboard," Tableau Public, https://public.tableau.com/app/profile/portland.bureau.of.transportation/viz/VisionZeroDashboard_16179023789280/VisionZeroDashboard.
- ⁴⁷ District of Columbia Department of Transportation, "Automated Safety Camera (ASC) Program," <https://asc.ddot.dc.gov/>; City of Seattle Municipal Court, "Traffic Camera Infractions," <https://seattle.gov/courts/about/data-and-publications/general-data-reports/traffic-camera-infractions>.
- ⁴⁸ City and County of San Francisco, "Map of Automated Speed Enforcement Citations," DataSF, <https://data.sfgov.org/Transportation/Map-of-Automated-Speed-Enforcement-Citations/azrr-m3nm>.
- ⁴⁹ City of Minneapolis, *2025 Minneapolis Traffic Safety Camera Pilot Location Impact Analysis: Technical Report* (Minneapolis: City of Minneapolis, 2025), <https://www.minneapolismn.gov/media/-www-content-assets/documents/Minneapolis-Traffic-Safety-Camera-Location-Analysis.pdf>.

- ⁵⁰ Quistberg, D. A., L. L. Thompson, J. Curtin, F. P. Rivara, and B. E. Ebel, "Impact of Automated Photo Enforcement of Vehicle Speed in School Zones: Interrupted Time Series Analysis," *Injury Prevention* 25, no. 5 (2019): 400–406, <https://pmc.ncbi.nlm.nih.gov/articles/PMC6445786/>; Chicago Department of Transportation, *ASE Before-After Analysis (2023–24)* (Chicago: City of Chicago, 2025), [https://www.chicago.gov/content/dam/city/depts/cdot/CSZ/2025/ASE%20-%20Before-After%20Analysis%20\(2023-24\)%20-%20WRITE-UP%20and%20LIST%20COMBINED%20-%20V6.pdf](https://www.chicago.gov/content/dam/city/depts/cdot/CSZ/2025/ASE%20-%20Before-After%20Analysis%20(2023-24)%20-%20WRITE-UP%20and%20LIST%20COMBINED%20-%20V6.pdf).
- ⁵¹ Portland Bureau of Transportation, *Preliminary Legislative Report: Outcome Evaluation, Fixed Photo Radar System, City of Portland, 2021–2022* (Portland: Portland Bureau of Transportation, 2022), https://www.oregonlegislature.gov/citizen_engagement/Reports/Portland%202021-22_Preliminary%20Legislative%20Report_Fixed%20Photo%20Radar%20System.pdf; Retting, R. A., S. Y. Kyrychenko, and A. T. McCartt, "Evaluation of Automated Speed Enforcement in Montgomery County, Maryland," *Traffic Injury Prevention* 9, no. 5 (2008): 440–45, <https://doi.org/10.1080/15389580802221333>.
- ⁵² Office of the New York City Comptroller Scott M. Stringer, *A Tale of Two Tickets: How Disparate Standards of Traffic Enforcement Compromise Safety on City Streets* (New York: Office of the New York City Comptroller, 2018), <https://comptroller.nyc.gov/wp-content/uploads/documents/Tale-of-Two-Tickets.pdf>.