



**Washington State  
Department of Transportation**



**TRAFFIC SAFETY  
COMMISSION**



# **HIGHWAY SPEED CAMERA PILOT PROGRAM**

## **2024 Status Report**

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September 2024

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## **GLOSSARY**

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ASC – Average Speed Camera

ASV – Apparent Successful Vendor

DES – Department of Enterprise Services

DOL – Department of Licensing

RFI – Request for Information

RFQQ – Request for Quotes and Qualifications

RK&K – Rummel, Klepper and Kahl

WSDOT – Washington State Department of Transportation

WSP – Washington State Patrol

WTSC – Washington Traffic Safety Commission

# INTRODUCTION

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The Washington State Department of Transportation, in partnership with the Washington State Patrol and the Washington Traffic Safety Commission, has initiated the first known highway automated speed enforcement camera pilot program using the average speed method within the United States. This work is being completed under a proviso. This report is part of the mandated status reporting of the program as required in ESHB 2134, Section 217 (11).

By the end of field testing in June 2025, and the development of the final report in fall 2025, the following will be completed:

- Gain an understanding of the technical and policy aspects of average speed control as a mechanism for speed enforcement;
- Determine the appropriate contract/procurement method to identify and contract with a vendor to provide services;
- Review crash data and determine the most appropriate locations, based on crash volume and severity;
- Test both the field implementation and the required back-office systems for the selected vendor for a three-to-four month period;
- Collect data related to technology/system performance and driver behavior impacts resulting from the installation of the technology; and
- Produce a final report summarizing program activities and lessons learned.

# PROGRAM GOALS

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Nationally, during the last 10 years, there has been an increase in the overall number of crashes on U.S. roadways. Some of these crash statistics increased during the COVID-19 pandemic, when reduced traffic volumes allowed travelers' speeds to increase and subsequently increase the number of speed-related crashes. General program goals include:

- Improve safety, save lives, reduce serious injuries
- Improve driver behavior
- Reduce speeding on Washington roadways

With any safety program, the principles are built on the three traditional "E's" of traffic safety: engineering, education and enforcement. More recently, additional E's have been added, including equity and encouragement. At the highest level, the goal of the program is to determine if this technology would reduce fatalities and injuries resulting from speed-related crashes. To accomplish this goal, there are additional actions and goals that can be accomplished to aid in reducing crashes.

## Enforcement

A primary goal is to reduce the number of speed-related crashes. One method to reduce speeding in high-risk areas is to increase enforcement presence. When used appropriately and effectively, automated speed cameras allow for increased speed enforcement without diverting resources from other public safety needs. Enforcement goals for this program include:

- Testing of the selected vendor's automated speed enforcement cameras for the effectiveness of the technology.
- Testing the back-office functions of the system in processing and mailing speeding notices.
- Determining the impact of the cameras on driver behavior.

Beyond enforcement, this program will incorporate engineering, education, equity and encouragement goals during the pilot period.

## Education

- Developing a notice that warns vehicle owners that their vehicle was captured speeding and providing information on safe driving.
- Providing education on the technology, method of capture and background for the program.
- Reporting to stakeholders on the lessons learned from the pilot program.

## Engineering

- Establishing key criteria (crashes, geometry, interchange/intersection location, etc.) for determining camera locations.
- Setting appropriate speed thresholds (how far over the speed limit a vehicle must be traveling to constitute a notification) that encourages a reduction in speeds while maintaining public transparency.

## Equity

- Collecting data through this pilot program to be analyzed as part of WSDOT's ongoing Environmental Justice assessment in compliance with the Healthy Environment for All Act, also called the HEAL Act, Chapter 70A.02 RCW.
- Identifying potential sites with a data-driven process that can be scaled and modified as appropriate for future programs.
- Selecting sites that take into account potential work zone enforcement efforts to ensure a distributed approach, not concentrating multiple program efforts in the same immediate roadway network or along the same corridor.

## Encouragement

- Encouraging speeding drivers, through a notification, to help save lives by driving within the speed limit on Washington roadways.

## FHWA Safe System Approach and Washington Target Zero

The program also complements Washington state’s Safe System Approach, which incorporates national and international models.

The Safe System Approach is founded on the principles that humans make mistakes and that human bodies have limited ability to tolerate crash impacts. The six principles for the Safe System Approach are:

- Death/serious injury is unacceptable
- Humans make mistakes
- Humans are vulnerable
- Responsibility is shared
- Safety is proactive
- Redundancy is crucial

As part of a Safe System Approach, there are six system elements:

- Safe road users
- Safe vehicles
- Safe speeds
- Safe roads
- Post-crash care
- Safer land use

Automated speed enforcement, including the average speed method, ties back to many of these principles. By reducing speeding, we help reduce serious injuries and deaths and mitigate some of the potential harm to vulnerable road users resulting from driving mistakes at high speeds. This enforcement technology also directly relates to one of the key system elements – safe speeds.

## Washington Safe System Approach elements and principles

This program also supports the Washington Target Zero Plan, which incorporates the Safe System Approach into state goals and plans to reduce the number of traffic deaths and serious injuries on Washington’s roadways to zero by the year 2030. Target Zero also serves as the state’s Strategic Highway Safety Plan.



# ROLES AND RESPONSIBILITIES

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There are several entities with significant roles in the development and implementation of the plan. Including:

- WSDOT – with consultant support from Rummel, Klepper and Kahl (RK&K)
  - Primary administrator and oversight for the program
  - Program research on existing applications
  - Automated speed enforcement policy development
  - Review of crash data and development of methodology for the selection of camera locations
  - Management of the procurement process for a program vendor
    - Drafting a Request for Information (RFI) and Request for Quotes and Qualifications (RFQQ)
      - Includes final review, approval and distribution of the RFI and RFQQ to potential vendors
  - Review of submitted vendor packages from RFQQ
  - Site selection for deployment
  - Contract negotiation with Apparent Successful Vendor
  - Coordination with Apparent Successful Vendor during field implementation and operation
  - Required reporting for the State Legislature
- Washington Traffic Safety Commission
  - Policy support
  - Input on site selection
- Washington State Patrol
  - Coordination on speeding notice
  - Coordination on enforcement location selection
- Apparent Successful Vendor
  - Technology provider for speed cameras
  - Operator of the system
  - Data processing for WSDOT distribution
  - Data collection during operations
  - Ad-Hoc and overall reporting for program operations
  - Maintenance, inspection and operational checks during field implementation
  - Removal of equipment at close of field operations
- Washington State Department of Licensing
  - Coordination on license/vehicle record lookup for speeding notices and tracking
- Washington State Department of Enterprise Services
  - Speeding notice printing and mailing



# PROGRAM STATUS

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## Legislative background

The program is being implemented with authorization for WSDOT, WSP, and WTSC to develop an automated Highway Speed Camera Pilot Program to test the technology on state highways. The goals of this program include:

- Testing speed camera technology.
- Determining the effect on traveler behaviors.
- Compiling public responses to the use of traffic safety cameras on highways.

This program must be completed by June 30, 2025, including background research, procurement of a vendor, testing, and final reporting. Under the proviso, although speeding data will be collected, drivers (on a selected basis) who are speeding will be notified, and no fines will be levied as part of the program. WSP will issue no infractions.

## What is the average speed method/section control?

The average speed method looks to expand the area of monitoring and enforcement to a segment, as opposed to standard point speed capture systems. The proposed method includes the installation of a series of cameras along a corridor or within an enforcement zone. Cameras are located throughout the zone and at each camera location, vehicles and license plates are photographed with a time stamp. Some vendors will also capture point speed measures at each enforcement point as a secondary measure. By capturing the times at each camera and a known length between them, a determination on the speed of the vehicle through the enforcement zone will be made and compared to an established speed threshold. From there, a determination is made if the vehicle is speeding and if the occurrence should be advanced to a review process.

The average speed method differs from 'traditional' automated speed enforcement in that most existing speed enforcement equipment uses 'point' speed, or a measurement of speed at a single point along a roadway. This single point leads to a reduced area of influence, as well as changed driver actions only in the immediate area adjacent to the enforcement location. With the extended length of the monitored enforcement zone, the average speed method will reduce speeds over a longer length, including a 'halo' effect on either end of the enforcement zone, where the reduced speed carries beyond the limits of the enforcement zone.

Applications may vary based on the speed and type of roadway. Systems have been installed at speeds as low as 20 mph (United Kingdom) or as short as 390 meters (United Kingdom), while also enforcing higher speed roadways (70 mph, United Kingdom) over longer lengths (10-46 kilometers, Italy and United Kingdom). Cameras have also been installed to limit speeding and speed-related crashes on critical links with little to no roadway redundancy, such as critical coastal routes, tunnels and bridges (Norway/Austria/Singapore/Kuwait).

This program will be one of the first known installations of the average speed method technology for automated speed enforcement within the United States. Other areas within the country have attempted or are developing similar programs, including applications along critical facilities with few secondary parallel routes, or for work zone applications where the length of the work zone renders point speed detection less effective in reducing speeds.

## Program accomplishments

In the initial months of the program, the focus has been on researching vendor operational capacities and opening a procurement process to find a vendor who can provide an average speed system in Washington. A brief summary of program accomplishments is below:

- Background research and industry state-of-practice
  - The WSDOT program team extensively researched the use and application of the average speed method in several international regions.
- Request for Information (RFI)
  - The WSDOT program team developed an RFI for vendors operating within the automated enforcement industry to gain a more thorough understanding of specific functions of different systems and approaches to automated speed enforcement, and specifically, systems enforcing with average speed/section control methods.
- Request for Quotes and Qualifications (RFQQ)
  - The vendor for the program is being procured through an RFQQ process. An RFQQ is a single step procurement process, with potential vendors submitting qualifications, responses to technical specification questions and price in a single submission. The RFQQ will enable a single step submission moving immediately into review and selection by the WSDOT program team, with both technical and price elements considered in a single evaluation. The procurement and required materials were developed in accordance with WSDOT standards, and captures the technical requirements, cost structure and contract mechanisms for the agreement with the Apparent Successful Vendor.

## Implementation and approach in Washington

### Summary of Request for Information (RFI)

Given the limited use of this method within the United States and lack of established systems and vendors, the WSDOT program team made the decision to initially gather information through an RFI to selected vendors operating in the automated enforcement space. This RFI served to aid the WSDOT program team in gauging where the state of the industry sits with regards to the application of average speed enforcement, as well as learning about some of the data processing and back-office processes that would be critical with a permanent, fine-issuance program requiring full violation distribution and an appeals process.

Topics covered within the RFI include (but are not limited to):

- Camera technology and license plate recognition
- Speeding determination
- Equipment requirements, including mounting, power, etc.
- Limitations or complications to system performance
- Back-office processing
- Violation review and coordination

The RFI was publicly posted through WSDOT and shared with known vendors in June 2024, with a response deadline in July 2024. Six responses were provided. Due to the proprietary nature of several of the responses, exact answers cannot be shared as part of this document. A brief summary, however, did reveal some critical elements to the application:

- All systems use some form of detection (LIDAR, radar, etc.) as part of their camera technology to capture vehicles entering the enforcement zone.
- Several of the automated license plate recognition technologies used Artificial Intelligence or machine learning as part of the recognition and matching process.
- The systems presented various options for mounting of the equipment, including mobile mounting options using trailers or a tripod, as well as more permanent options affixed to overhead sign structures, lighting fixtures or other overhead structures.
- The detection and image capture options could be configured to a variety of lane arrangements, i.e. to capture roadways with more lanes or the potential for obstruction from larger vehicles. In these cases, additional cameras can be configured.
- The preferred lengths for the enforcement areas should be based on the enforced speed, but could be as short as 500 feet, with few limitations on the maximum length.
- One of the critical elements in capturing speeding, as well as the transparency of the system, will be the ability to ensure that the clocks are properly timed and synchronized, and that there is verification of the required synchronization for the system operation.

Following the responses to the RFI, the program moved into the procurement phase to assign a vendor for the trial program.

## Procurement and Request for Quotes and Qualifications (RFQQ)

### Challenges

In determining the appropriate contracting mechanism for the proposal, several factors were considered.

- One of the conditions of the proviso which governs this work involves spending the allotted funding by June 30, 2025. To maximize the field implementation and trial time for the selected vendor, equipment demonstrations were not feasible within the timeframe provided. This was not seen as a major detriment, since the system is being installed on a trial basis, and not as a final installation for an extended contract.
- There was also a concern given the temporary nature of the program whether vendors would engage on an installation for a short-term period with no guarantee of a future project. Cost concerns for mobilization and program startup for a collection period of three to four months may dissuade potential vendors from pursuing the opportunity.
- The use of multiple vendors was discussed. This would allow a trial of multiple vendors and technologies but would also require upfront set up and back-office coordination between the WSDOT program team and multiple vendors. There were also concerns that multiple vendors with multiple mobilizations would drive overall program costs beyond what was available in the proviso funds. It was ultimately decided to select a single vendor.

- It was determined, to minimize the number of steps and negotiations required to reach Notice-to-Proceed, that a Request for Proposals (RFP) with separate cost submissions would potentially delay the field deployment to a point where the data collection and testing of the systems would be minimal.
- The team considered selecting a vendor directly from the RFI. There were legal and regulatory issues from pursuing this approach that ruled it out.

In the end, attempting to procure this contract via a traditional RFP approach would have left little to no time for data collection and follow-up reporting, given the June 30, 2025, deadline for use of the proviso funding. Subsequently, the decision was made to pursue the procurement as a RFQQ.

### **Request for Quotes and Qualifications schedule**

The RFQQ was published in early September 2024. The RFQQ is required to be available for 45 days ahead of the deadline for submission, with responses due to WSDOT by mid-October 2024. Following a 21-day review, a vendor will be selected based on both technical qualifications and price in November 2024, allowing for approximately six weeks for debriefings, protests and final contract negotiations. It is expected that an apparent selected vendor will be announced in December 2024, with formal Notice to Proceed before the end of the year. After reaching a final contract agreement with the selected vendor, it will take 8-12 weeks to reach field deployment.

### **Vendor acquisition status**

At the time of this report, the RFQQ is publicly available for vendor consideration. The vendors will be afforded opportunities during the posting time frame to provide questions to the WSDOT program team for input ahead of making a formal submission.

### **Location selection**

The program also must select the locations for the technology. The team is evaluating appropriate locations where there is an existing speed-related crash issue, as well as where the systems could provide high-quality detections and easy installation.

Existing crash records (using the last five full years of data 2019-2023) were reviewed to determine locations with high speed-related crashes. These locations were then evaluated based on both the volume and the severity of the crashes (number of fatal, serious injury, suspected/minor injury and property damage crashes) to develop potential locations for installation.

From this list, the WSDOT program team evaluated site suitability for this type of installation. Factors in this evaluation included corridor continuity (lack of significant cross-section changes, intersections, or interchanges were preferred), as well as adequate room for placement/mounting of the required detection equipment. Temporary systems may require use of a trailer or vehicle, so locations with a shoulder or flat area separate from live traffic were preferred.

Based on this evaluation, several locations were identified for consideration by the program partners. As of the writing of this report, final determination on two locations for this program are still being determined.

## NEXT STEPS

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### Selection process

The RFQQ submissions will be evaluated in conjunction with the provided quote for services to determine the best value submission for selection as the apparent successful vendor. The evaluation will take place over 21 days to ensure schedule adherence.

### Location determination

A list of potential locations for installation is being finalized. Two locations will be selected during the advertisement period, to enable vendors to more effectively estimate their costs.

### Schedule for pilot - activation for trial

Once a vendor is in place, an initial activation could start as early as February 2025, with an official start in late March 2025. This will allow three to four months of data collection for the program.

### Data collection

Through the process, the program plans to capture a wide variety of data related to the performance of the technology, as well as any changes to driver behavior resulting from the presence of the cameras.

Items that will be tracked by the vendor include:

- Average speed camera activities and locations
- Number of speeders captured
- Percentage of speeders captured that were rejected
- Traffic volumes and speeding/non-speeding captures by location
- Breakdown of event rejection categories and amounts
- Reasons for interruptions to service
- Data on violators, including state of residence, rental vehicle and speed of vehicle
- Breakdown of speeding events by location, day of the week and time

Additional reporting metrics may be available on an ad-hoc basis as the program progresses, but this is still in development.

### Future reporting

Per the proviso establishing this program, the team is scoped to provide both this status report and a final program summary in the winter of 2025. This final report will include a complete summary of the procurement process and selected vendor, as well as a recap of the performance of the deployments, lessons learned from the program and a summary of the collected data. Required reporting from the vendor will include the statistics mentioned above and will figure significantly in the evaluation of the effectiveness of the technology, as well as future prospects for a more permanent program going forward.