

Automated Work Zone Speed Enforcement (AWZSE)



Field Deployment Guide

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Section I — AWZSE Program Overview

A. Introduction

[Act 86 of 2018 signed on October 19, 2018](#), created [Title 75 \(Vehicle Code\) Section 3369](#) authorizing a five-year pilot program utilizing Automated Speed Enforcement Systems in active work zones. This pilot program is a joint program between the Pennsylvania Department of Transportation (PennDOT) and the Pennsylvania Turnpike Commission (PTC). The goals of the Automated Work Zone Speed Enforcement (AWZSE) Program are to:

- Reduce motorist speeds in work zones to the appropriate posted speed limit,
- Improve driver behavior in work zones by ensuring they are more accountable for their speeds,
- Improve the safety of workers and motorists traveling through the work zone,
- Complement existing enforcement efforts that Pennsylvania State Police performs, and
- Continue to promote work zone safety.

The purpose of this Field Deployment Guide is to provide general information about the program, describe the guidelines and criteria for project identification and scheduling, and to establish the protocols and procedures for AWZSE unit deployment operations. For additional information or questions regarding the program, please visit the program website at <https://workzonecameras.penndot.gov/>.

B. Legislative Deployment Requirements

[Title 75 \(Vehicle Code\) Section 3369](#) established the requirements for program development. The following are key highlights from the legislation that relate to field deployment activities.

Program Element	Legislative Requirement
Roadway Eligibility (§3369.b)	PennDOT - All federal-aid highways with an active work zone Turnpike – All Turnpike highways with an active work zone
Police Validation (§3369.d.1)	Pennsylvania State Police (PSP) Automated Enforcement Unit within the Bureau of Patrol reviews all fine carrying violations
Sign Requirements (§3369.b)	<ul style="list-style-type: none">• Two “Active Speed Limit Photo Enforced” signs shall be placed prior to the enforcement location (<i>AWZSE Vendor Responsibility</i>)• One “Active Enforcement Vehicle” sign on Vehicle (<i>AWZSE Vendor Responsibility</i>)• One “End Road Work” or “End Active Work Zone” sign (<i>Construction or Maintenance Responsibility</i>)• Any regulatory speed limit reduction signs need to be placed in conformance with the approved Traffic Control Plan
Violation (§3369.c)	11 mph or more over the work zone regulatory speed limit
Active Work Zone Requirement (§3369.a)	Workers must be present while AWZSE is active. AWZSE enforcement will occur in the activity area of the work zone. (<i>AWZSE Vendor will be Responsible for documenting this requirement</i>)
Location Identification (§3369.b)	Department will identify potential AWZSE locations on its website (https://workzonecameras.penndot.gov/locations/). The website will be updated weekly.

C. Additional Legislative Requirements

While not directly related with this Field Deployment Guide, the following legislative requirements clarify the overall program.

Program Element	Legislative Requirement
Responsible Party (§3369.c, e.)	<ul style="list-style-type: none">• Violations are the responsibility of the Registered Vehicle Owner.• Violations are civil in nature, not criminal.• Violations do not carry driver's license points or impact merit rating for insurance purposes.• Violation tiering will be tracked by Registered Vehicle Owner and Vehicle Plate.
Issuing of Violations (§3369.d)	<ul style="list-style-type: none">• Once the Registered Vehicle Owner is identified through state Driver Vehicle Records, the program has 30 days from identification to mail the violation to the Registered Vehicle Owner.• Violations must be mailed within 90 days from the date the violation occurred.
Defenses (§3369.g)	<ul style="list-style-type: none">• The vehicle was reported stolen at the time the violation occurred.• The person receiving the Notice of Violation was not the Registered Vehicle Owner when the violation occurred.• Device being used for enforcement was not operating correctly at the time the violation was captured.
Contest Process (§3369.j)	<ul style="list-style-type: none">• Registered Vehicle Owner has 30 days from the mail date to request a hearing.• 1st Level Appeals are heard through an Informal Hearing Officer which is a Law Clerk in PennDOT's Office of Chief Counsel. If the Registered Vehicle Owner wants to contest the finding of liability ruling of the Informal Hearing Officer, the appeal then goes to a 2nd Level Appeal through the District Court System.• 2nd Level Appeals are heard by the District Justice where the violation occurred, and their finding of liability ruling is considered final.
Penalty Structure (§3369.e)	<ul style="list-style-type: none">• 1st Violation – Written Warning, No Monetary Fine• 2nd Violation – \$75 fine• 3rd and subsequent Violations – \$150 fine per occurrence• Fines identified are flat fees except for credit card convenience fees and/or late fees.• Court costs are applied if a violation is appealed to the District Court system.
Annual Reporting (§3369.h.4)	Annual report to the PA Legislature Transportation Committee chairpersons are due April 1st each year. First report will be provided in 2020.

Additional details about the program are defined by the legislation, including applicability of the legislation, violation structure, requirements for enforcement, and the appeals process, for example. Where applicable, these specific legislative requirements are discussed within this document.

D. Partner Roles and Responsibilities

Government Agencies



Program Administrator



AWZSE Vendor



Agency / Partner	Responsibilities
PennDOT	<ul style="list-style-type: none"> Scheduling and Monitoring of units on PennDOT roadways Development, Implementation, and Operation of Financial Processes Promulgation of Temporary Regulations Development of Standards for Department operations Procurement and Provision of Informal Hearing Officers
Pennsylvania Turnpike Commission	<ul style="list-style-type: none"> Scheduling and Monitoring of units on Commission roadways Implementation and Operation of Auditing Processes Vendor Contract Compliance Development of Standards for Commission operations
Pennsylvania State Police	<ul style="list-style-type: none"> Violation Review and Affirmation Field Speed and Quality Control Checks
Program Administrator	<ul style="list-style-type: none"> Program Development Project Selection and Scheduling Field and Back Office QA/QC Operational Compliance and Process Updates Program Outreach Performance Monitoring and Reporting Additional support as necessary
System Administrator	<ul style="list-style-type: none"> Field Unit Deployment Violation Review and Mailing Fine Collection and Backend Disbursement Customer Service and Record Keeping Supporting Informal Hearings

Appendix A provides contact information for key personnel for the program and an overview of the Program Administrator and System Administrator program approach.

E. Automated Enforcement Technology

The AWZSE program utilizes many different components to perform its enforcement, detailed information regarding the components is identified below:

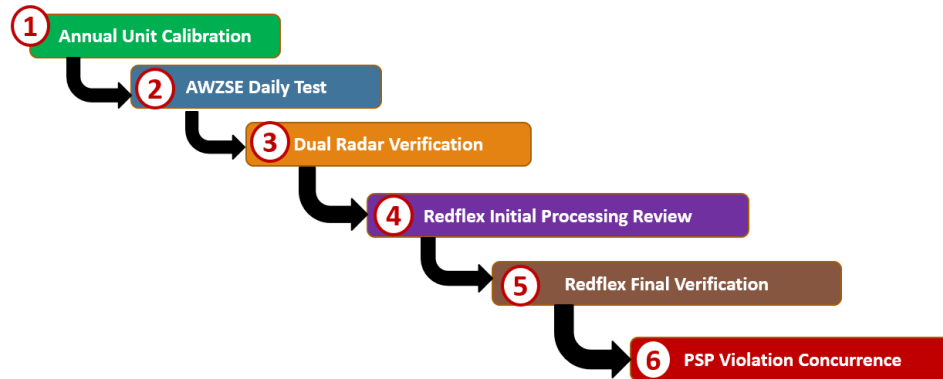


Program Element	Technology Description
Vehicle	<ul style="list-style-type: none"> White Jeep Grand Cherokee will be the standard vehicle for the Pilot program All equipment is self-contained in vehicle
Mounting	<ul style="list-style-type: none"> Vehicles come to the job site with radar and camera equipment already mounted Units can enforce from either side of roadway Minor adjustments to the components by AWZSE operator when changing enforcement side Units set-up to perform enforcement over 54-inch high barrier with glare screen
Speed Timing Device	<ul style="list-style-type: none"> Dual Radar System utilized where both radar readings must agree for violation <ul style="list-style-type: none"> <u>Speed Radar</u> – Similar to PSP radar handheld unit <u>Tracking Radar</u> – “Doppler Radar” validating movement in lane System calibrated and certified annually by a third-party testing lab AWZSE operator performs pre- and post-enforcement daily tuning fork self-tests on-site
Camera System	<ul style="list-style-type: none"> Two advancing (front) and receding (rear) plate photos are taken of vehicles going 11 mph or greater than the established regulatory speed limit System calibrated and certified annually by a third-party testing lab AWZSE operator performs pre-enforcement camera verification test
Enforcement Records	<ul style="list-style-type: none"> Enforcement records are immediately encrypted and can only be opened by back-office software If remote field uploading capabilities - records are transmitted several times a day If no-remote field uploading capabilities - records are transmitted at the AWZSE depot location each night AWZSE operator cannot access or adjust enforcement records
AWZSE Operator Daily Log	<ul style="list-style-type: none"> AWZSE operator required to provide daily log of various enforcement activities Activity log is the responsibility of the AWZSE operator and becomes part of the enforcement package that PSP reviews

F. Violation Verification

To ensure that the automated speed enforcement equipment operates as intended during operation and that all violations collected during a deployment are valid, a six-layer process of equipment certification and testing and violation verification has been established. If any of these steps is found to have failed during the violation review process, the violation will no longer be valid.

MULTIPLE LAYER VIOLATION VERIFICATION



Tier	Violation Verification Description
(1) Annual Unit Calibration	<ul style="list-style-type: none"> Each enforcement unit is calibrated annually by a third-party testing lab approved by PennDOT. The calibration certificate is made available to State Police during their violation verification activities and to violators for review upon receiving a Violation.
(2) AWZSE Daily Test	<ul style="list-style-type: none"> Each enforcement unit undergoes a self-test at the start and end of each enforcement period. If one of these self-tests fail, the enforcement cannot begin until the self-test is passed, or if at the end of the deployment, all violations collected during that enforcement are null and void.
(3) Dual Radar Verification	<ul style="list-style-type: none"> The technology within the automated speed enforcement units contains two radar units. For a violation to be recorded, the speed detected by each radar must approximate each other to a high confidence level. If the speeds detected do not, a violation is not recorded.
(4) Redflex Initial Processing Review	<ul style="list-style-type: none"> Redflex manually reviews each violation recorded and uploaded to the back-office database. This initial review confirms that all documentation is in order including records of the start and end self-tests, ensures that the image quality is high enough to issue a Notice of Violation, and initiates the DMV lookup process to identify the registered owner.
(5) Redflex Final Verification	<ul style="list-style-type: none"> Redflex confirms that the registered owner information returned from the DMV lookup matches up with the vehicle captured in the images. For example, a registered owner lookup tied to a blue sedan matches a blue sedan in the images. Another check of the documentation is completed, and the Notice of Violation is prepared at this point.
(6) PSP Violation Concurrence	<ul style="list-style-type: none"> For all appealed and fine-carrying notices, PSP will be reviewing and affirming the notices. PSP will be reviewing that the plate shown in the images matches the plate key-in for the DMV lookup. They will also be reviewing that the unit certification is current and that the unit passed the self-tests at the start and end of the enforcement period.
Additional QA/QC	<ul style="list-style-type: none"> In addition to the violation verification processes outlined above, the Program Administrator will be performing quality control checks to ensure that deployments are established and set up in accordance with the standards for each agency's roadways. Pennsylvania State Police will also be doing field quality control checks confirming that the equipment being used in the field matches the approved certificate and all statutory requirements are being fulfilled.

Section II — Deployment Approach



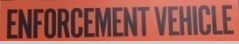

A. Program Structure

The statewide AWZSE program is being managed and operated as a joint PennDOT and PTC program, with both agencies operating the program as a single entity. The Department and PTC have established several operating protocols for operating the program.

Program Element	Technology Description
# of Deployment Units	<ul style="list-style-type: none"> Up to 17 units are anticipated - 10 units are identified for PennDOT federal-aid highways - 7 units are identified for PTC highways
Enforcement Time Frames	<ul style="list-style-type: none"> Enforcement can only occur when workers are present and active in the work zone Up to an 8-hour deployment shift (System Administrator to be provided a starting enforcement time by the Program Administrator) System Administrator will begin enforcement at the identified start time unless delayed by work zone setup System Administrator is responsible for vehicle preparation time and travel to and from project location Each Vehicle can perform up to 2 shifts daily (Day shift and Night shift) No restrictions on when enforcement can occur, so weekday and weekend activities can be supported
Project Identification	<ul style="list-style-type: none"> The enforcement unit will be located within the activity area of the work zone See Section III – Project Request to request a project that may be a good AWZSE candidate See Section IV – Project Selection to identify the data-driven project selection criteria Field Project Contact is identified who has daily knowledge of the project schedule
Project Scheduling	<ul style="list-style-type: none"> See Section V – Project Scheduling to identify how projects are included on the Monthly Menu and Weekly Deployment Schedules All projects go through the project identification process <ul style="list-style-type: none"> - All long-term projects require a project coordination meeting and field visit prior to being added to the deployment schedules - All short-term projects are reviewed and where possible, project coordination meeting and/or field visit with the crew is conducted All project scheduling coordination is conducted between the Program Administrator and Field Project Contact
Field Considerations and/or Lessons Learned	<ul style="list-style-type: none"> System Administrator will not begin deployment into a work zone until it is fully established Contractor/Maintenance crew responsible for providing “End Roadwork” sign Contractor/Maintenance crew responsible for any regulatory speed limit reduction signs placed in conformance with the approved Traffic Control Plan Unit to remain stationary during enforcement for minimum of 1 ½ hours at a time to minimize the amount non-enforcement time while relocations are occurring (Typically 15-min per relocation time)

B. AWZSE Standard Drawings

PennDOT and PTC have developed new Pennsylvania Typical Applications or “PATA” and Pennsylvania Turnpike Commission Maintenance and Protection of Traffic Standard or “PTS” drawings for the AWZSE program. These drawings have been provided in **Appendix B** of this document. The drawings are intended to provide clear guidance to the AWZSE operator for proper sign setup required for deployment. Liability of the AWZSE deployment, documentation, and deployment compliance to the legislation are the sole responsibility of System Administrator. Coordination between System Administrator and the Contractor/Maintenance field staff shall occur as identified within PennDOT Publication 408, Section 105.07. To further clarify the signing requirements and responsibilities identified in Section I, Part B - Legislative Deployment Requirements, the following chart has been developed.:

Sign	Deployment Description
	<ul style="list-style-type: none"> Contractor and/or Maintenance crew is responsible for providing, installing, maintaining and documenting the Work Zone in accordance with their approved Traffic Control Plan or Publication 213 PATA figure. System Administrator will not be setting up work zones and they have been instructed to not enter the work zone until it has been fully established. If Work Zone Speed Limit regulatory signs are provided, the Contractor and/or Maintenance crew is responsible for covering and uncovering of signs as per the approved Traffic Control Plan or Publication 213 PATA figure.
	<ul style="list-style-type: none"> System Administrator is responsible for providing, installing, maintaining and documenting the placement of the 2 required “Active Speed Limit Photo Enforced” signs. System Administrator is responsible for ensuring conformance with the PATA or PTS figures provided within Appendix B. System Administrator will bring the 4-foot by 4-foot roll-up sign, appropriate sign stand, and all required ballasting of the signs.
	<ul style="list-style-type: none"> System Administrator is responsible for providing the “Enforcement Vehicle” sign on the vehicle in accordance with the legislative requirements
	<ul style="list-style-type: none"> Contractor and/or Maintenance crew is responsible for providing, installing, maintaining and documenting the “End Road Work” or “End Active Work Zone” sign in accordance with their approved Traffic Control Plan or Publication 213 PATA figure. AWZSE legislation requires a sign to identify the end of the enforcement area. Maintenance set-ups with AWZSE are required to place the “End Road Work” or “End Active Work Zone” sign. System Administrator will be documenting that the “End Road Work” sign is present and will be reporting any issues to the Project Contact.

C. Work Zone Speed Limit Policy

The Department has developed and implemented a Work Zone Speed Limit Policy (SOL 494-20-02). The purpose of the policy is to ensure consistency when speed limit reductions are being considered and necessary. AWZSE work zones should be to the posted regulatory speed limit unless a completed [TE-162 \(Temporary Traffic Control Zone Regulatory Speed Limit Reduction Evaluation\)](#) that is approved by the appropriate District Traffic Engineer and Highway Safety and Traffic Operations Division Chief. The TE form is only required when a speed limit reduction is proposed.

D. Field Deployment Lessons Learned

The AWZSE Program Team, including PennDOT, PTC, PSP and the Program Administrator, will be tracking and documenting lessons learned from AWZSE deployments that can be applied to further deployments statewide. These lessons learned will be shared with requestors and updates can be made available to District staff and designers upon request. Some of these lessons learned include:

- Be cognizant of large metal objects that may be within range of radar
- Radar cannot be located near sharp horizontal or vertical curves
- Vehicle cannot be located significantly higher or lower than adjacent traffic (generally needs to be within +/- 1-foot).

Section III — Project Request

A. Introduction

The next three sections of this document outline how a project goes from an initial request, through the identification and prioritization process, and finally onto monthly and weekly schedules.



B. Requesting AWZSE in a Work Zone

Project requests can be sent to the resource account email address for the program (RA-PD-AWZSE@pa.gov). Project requests should be sent by either Department or PTC staff. Contractors, utilities, or highway occupancy permit application should work directly with their project contact. The minimum primary information that should accompany the request is as follows:

- Project Number (ECMS Number or PTC Contract Number)
- Location of Work
- Type of Work
- Type of Work Zone (Long-Term/Short-Term)
- Type of Worker Protection (Barrier/Channelizing Devices)
- Project Contact

An overview of the information that will be included on the request form can be found in **Appendix C**.

It is important that the information from the original request be reevaluated and updated as necessary throughout the design process. It should be completed initially during Preliminary Design and revised as necessary at Final Traffic Control Plan Approval. A formal request form is currently under development and when completed, it will be available at the program website at www.workzonecameras.penndot.gov.

Section IV — Project Identification



A. Project Evaluation Criteria

The Project Evaluation Criteria (PEC) is a list of qualitative and quantitative metrics used to prioritize specific work zones for potential AWZSE deployments. These criteria are used to prioritize deployment locations from the list of available projects where an AWZSE deployment will most meet the primary goals of the program: To reduce speeds and increase safety in active work zones.

The PEC is divided into three separate categories with each category having several specific metrics. The three categories are as follows:

- Project and Work Zone Information – Includes general project information for project identification purposes
- Geometrics and Roadway Restrictions – Includes information about site features and geometric considerations of the work zone
- Operational Considerations – Includes information about speeds and volumes of the roadway where the project is located

The Geometrics and Roadway Restrictions and Operational Considerations categories contain criteria that impact the prioritization of work zones selected for AWZSE deployments.

Appendix D contains a list of the information and metrics utilized to perform a detailed project evaluation.

B. Project Identification Responsibilities

Project Phase	Group	Responsibilities
Project Identification	PennDOT/PTC – General	<ul style="list-style-type: none"> Request projects through the online request form or through the program resource account (RA-PD-AWZSE@pa.gov) until the request form is operational. Agencies are encouraged to establish a single point of contact for requesting projects, and the AWZSE team will reach out to that contact person to identify the appropriate project specific contact
	PennDOT/PTC – Designers/ Project Delivery	<ul style="list-style-type: none"> Identify locations within a work zone that the AWZSE unit and advance signing can be located appropriately within the work zone. Ensure that sign spacing on Traffic Control Plans allows for AWZSE advance signing placement in accordance with the appropriate PATA or PTS figures. Ensure that access points are available in the work zone for the AWZSE unit to enter and exit the zone. To function properly, the AWZSE unit should be deployed at the same or similar elevation as the passing traffic (to within roughly plus/minus one foot). Additionally, no signs or other obstruction should be placed within 200 feet behind or ahead of the unit. The unit may be placed behind channelizing devices or barrier. If the work zone speed limit is being reduced as identified within Section II, Part C, the appropriate TE-162 form must be completed in accordance with the Department's Work Zone Speed Limit Policy and concurrence must be received from the appropriate District Traffic Engineer and Highway Safety and Traffic Operations Division Chief.
	PennDOT/PTC – Construction/ Maintenance	<ul style="list-style-type: none"> Coordinate with AWZSE team on work schedules and setting up project site visits to confirm suitability for deployments.
	AWZSE Team	<ul style="list-style-type: none"> Collect potential projects from lists of active construction and maintenance projects. Receive and review project recommendations from completed request forms or the resource account. Confirm a project is eligible to receive an AWZSE deployment; specifically, confirm that the work zone is on a PennDOT federal-aid or Turnpike roadway and that the AWZSE unit and advance warning signage can fit within the work zone. Review Traffic Control Plans (if available). Coordinate with project contacts to confirm work schedules and set up a site visit to confirm project suitability for a deployment.

Section V — Project Scheduling



A. Reviewing and Updating Project Request Forms

Once a project is on the prioritization list, the request form submitted for the project should be reviewed and updated with any new or updated information since the form was originally filled out in the Project Identification phase. The data from the updated forms is then used to update the PEC for each project and move forward with the prioritization and scheduling process.

B. Monthly Project Listing (Monthly “Menu”)

As the required information is gathered for each project from either the statewide team or the request form, the projects are prioritized based on the considerations for each project. The work zone data gathered (identified in **Appendix D**) will be used to assess the level of automated speed enforcement needs, focusing on four general categories: roadway geometrics and restrictions, historic speeds and excessive speeding history, safety considerations including crash history, and worker vulnerability. Each of the four areas will be scored, and the projects will be prioritized for deployment by these metrics.

Once the projects are scored, the Program Administrator will develop a monthly project listing, or monthly “menu” of available projects, which will be used as the base list of projects from which the weekly project schedule will be developed. This list will include project information, location, work shift (day/night), workdays (weekday/weekend), and other pertinent information such as construction phase or other key information required for developing a schedule. Each project will also have an assigned contact from the statewide AWZSE team as part of that listing. The assigned contact person will be responsible for coordination between the statewide AWZSE team, the local construction / maintenance contact, and the field supervisor for the System Administrator.

The monthly project listing will be developed and finalized by the statewide AWZSE team and confirmed by the Highway Safety and Traffic Operations Division, Bureau of Maintenance and Operations. Once confirmed, the monthly project listing will be distributed to the identified project contacts, including work zone managers and appropriate Construction and Maintenance Unit contacts. The monthly project list is expected to be available at least two weeks prior to the start of month. For example, the monthly project list for May would be expected to be available and distributed by early to mid-April. Monthly project lists will also be available on the P/PennDOT Shared drive on the Commonwealth network

C. Weekly Project Schedule

The weekly deployment schedule will be developed based on projects identified on the monthly menu and the project prioritization process. This weekly schedule will define deployment locations by date, location within the work zone (milepost or segment) if known, location description, and scheduled shift time (anticipated enforcement hours).

The development of the weekly deployment schedule will incorporate work schedules and activities for each

project. The identified statewide AWZSE team contact will reach out to the identified project contact to identify upcoming work schedules, activities, confirmation of construction phases, and discussion on any upcoming pertinent activities. This contact will occur at least two weeks prior to the week of enforcement. The statewide AWZSE team will use the local input provided for each project and review the System Administrator's available daily resources to develop a weekly deployment schedule.

The prioritization scores developed during the Project Identification phase will be used and refined to aid in scheduling deployment shifts. The effectiveness of the units in these work zones will be monitored and will also be a factor in the assignment of deployment shifts. The statewide AWZSE team will be accounting for work zone intensity and specific construction operations as well. Additionally, the AWZSE team will incorporate field logistics such that the units are scheduled appropriately to minimize the distance between scheduled deployments in a 24-hour period.

Prior to initial scheduling, the statewide AWZSE team and the System Administrator will be performing a field view of the project to confirm the suitability of the project during its current construction phase. Similarly, field views will be completed for any long-term projects with any major construction phase changes. Construction personnel should notify the AWZSE team if work zone site conditions change and a re-evaluation or field view is required.

D. Project Prioritization and Scheduling Responsibilities

Project Phase	Group	Responsibilities
Scheduling – Update Project Information	PennDOT/PTC	<ul style="list-style-type: none"> Ensure that project information is up-to-date from initial project request submitted during Project Identification Phase.
	AWZSE Team	<ul style="list-style-type: none"> Ensure that updated information provided by District is reflected in Project Prioritization Matrix.
Scheduling – Monthly Project List (“Monthly Menu”)	PennDOT/PTC	<ul style="list-style-type: none"> Coordinate with AWZSE Team on projects suitable for deployments in the next month.
	AWZSE Team	<ul style="list-style-type: none"> Coordinate with District on projects suitable for deployments in the next month. Develop overall monthly menu based on coordination with each District. Distributes Monthly Menu to project contacts and distribution list.
Scheduling – Weekly Project Schedule	PennDOT/PTC	<ul style="list-style-type: none"> Project contact coordinates with AWZSE team on specific schedules.
	AWZSE Team	<ul style="list-style-type: none"> Coordinate with project contacts to establish active working schedule for the week. Develop weekly schedule based on each project's working availability. Distributes Monthly Menu to project contacts and distribution list.

Section VI — Deployment Coordination

Deployment Coordination outlines the mobilization and operations for each AWZSE unit deployment.

A. Pre-Deployment Communication

At least one week in advance of a scheduled deployment, the deployment will be shown on a weekly deployment schedule, where the Program Administrator has preliminarily identified that the unit can be located within the work zone and that work is tentatively scheduled during the deployment window. When these schedules are set, the Program Administrator will provide the Transportation Agency Representative with when the unit is scheduled for their work zone either as a primary or backup deployment location. The Program Administrator will also provide the weekly schedules to the System Administrator. The Program Administrator will communicate with the Transportation Agency Representative at least one day before the scheduled deployment to confirm the project is still capable of hosting the AWZSE System Administrator and that workers will be present. If the work zone is no longer feasible as a deployment location, the Program Administrator will notify the System Administrator, confirm with the Transportation Agency Representative that the backup deployment location can host the unit, and direct the System Administrator to the previously identified backup location.

B. Day-of Deployment Communication

The Transportation Agency Representative is to communicate with the Program Administrator if System Administrator is not able to deploy the AWZSE equipment. The Program Administrator will then notify System Administrator in accordance with the notification tree shown in **Appendix E**.

System Administrator will communicate with the Program Administrator if they are not able to deploy the AWZSE equipment. The Program Administrator would notify the Transportation Agency Representative in accordance with the notification tree shown in **Appendix E**.

Events such as weather, equipment failures, or contractor preparedness could require the deployment to be cancelled or rescheduled. The notification processes for these events are included in **Appendix E**.

System Administrator is to notify the PennDOT's STMC or PTC's TMC when entering or exiting enforcement mode.

Appendix F contains the System Administrator operator checklist with specific work zone considerations included at certain steps of the checklist.

Construction and maintenance personnel should not interfere with the advance warning signs placed by the System Administrator or interfere with the operation of the unit. This includes passing between the enforcement unit and live traffic or standing too close to the unit.

Appendix A – Program Contacts

General Program Information	
Item	Information
Program Website	https://workzonecameras.penndot.gov/
Program Resource Account	RA-PD-AWZSE@pa.gov

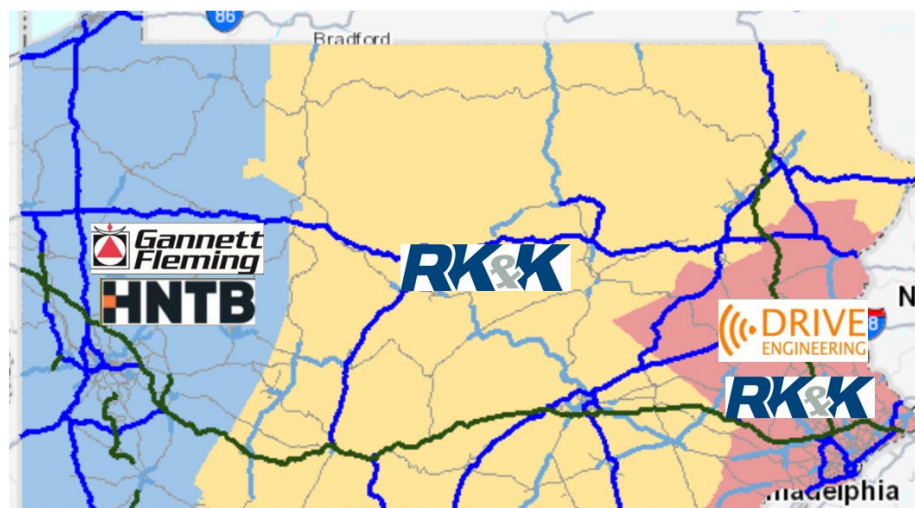
Overall Program Management Team			
Name	Role	Phone	Email
Dan Farley	PennDOT Project Manager	(717) 783-0333	dfarley@pa.gov
Brian Crossley	Manager Temporary Traffic Control Unit – BOMO	(717) 265-7562	bcrossley@pa.gov
Chad Smith	Turnpike Commission Project Manager	(717) 831-7287	chsmith@paturndpike.com
Mahmood Shehata	Program Administrator Project Manager	(484) 322-2812	c-mshehata@pa.gov
Ben Snyder	Program Administrator Deputy PM	(717) 216-5284	c-bensnyde@pa.gov
Ryan Dill	Program Administrator Scheduling Lead	(717) 216-5289	rdill@rkk.com

Eastern Region			
PennDOT Districts 5 and 6 Turnpike Mainline (I-76/I-276) from Lebanon-Lancaster (266) to Delaware River Bridge (359) Turnpike Northeast Extension (I-476) from Mid-County (A20) to Mahoning Valley (A74) Turnpike I-95 Connector			
Name	Role	Phone	Email
John Claudy	Program Administrator Eastern Region Lead and Eastern Regional Scheduling	(484) 748-1399	john@driveengineering.com

Central Region			
PennDOT Districts 2, 3, 4, 5, 8, and 9 Turnpike Mainline (I-70/I-76) from Somerset (110) to Morgantown (298) Turnpike Northeast Extension (I-476) from Lehigh Valley (A56) to Clarks Summit (A131)			
Name	Role	Phone	Email
Hannah Landvater	Program Administrator Central Region Lead	(717) 216-5296	c-hlandvat@pa.gov
Ryan Dill	Program Administrator Central Region Scheduling	(717) 216-5289	rdill@rkk.com

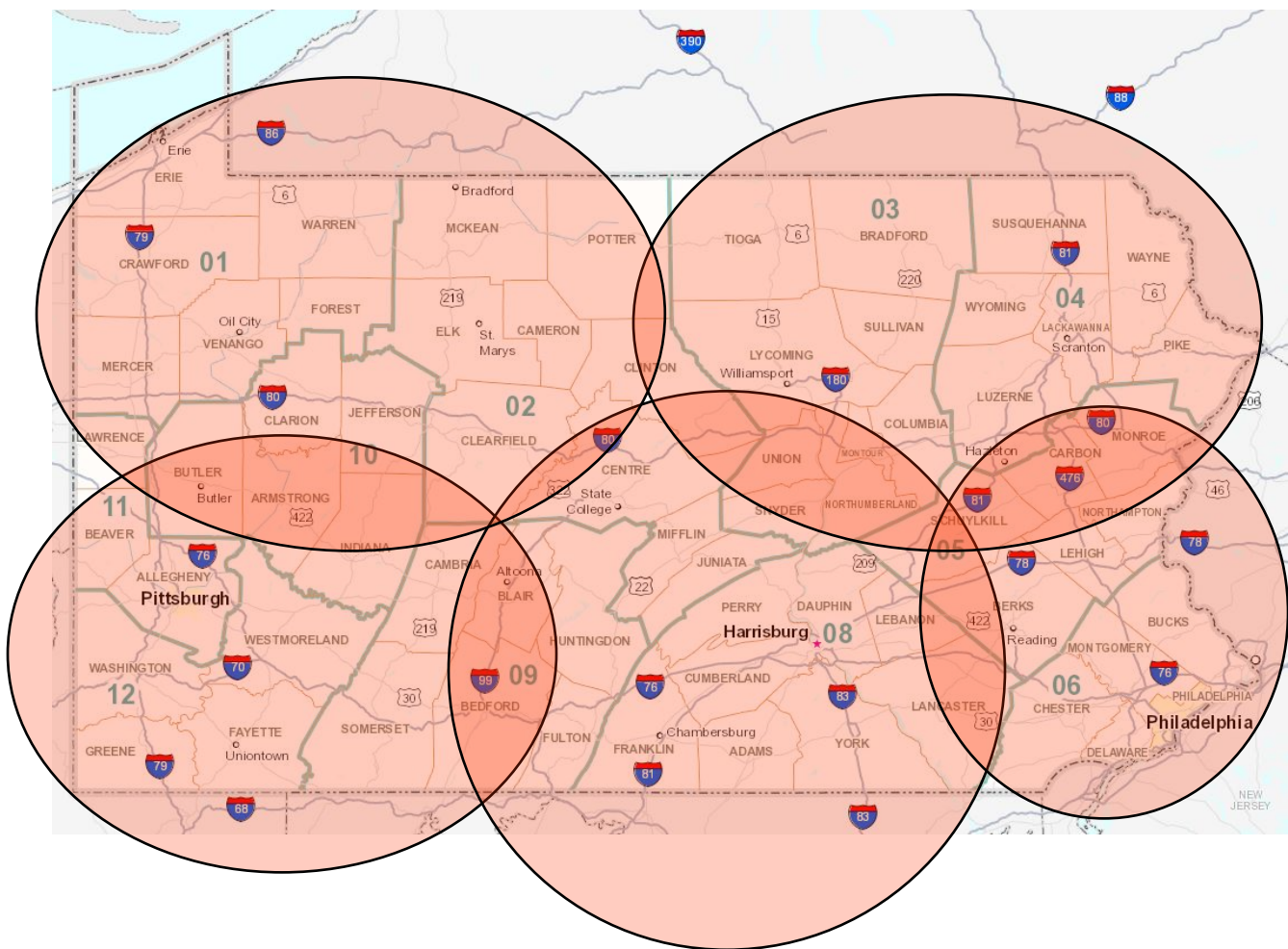
Western Region			
PennDOT Districts 1, 2, 10, 11, 12 Turnpike Mainline (I-70/I-76) from Ohio Gateway (2) to Bedford (146) All Turnpike Western Extensions (Beaver Valley I-376, Mon-Fayette TPK 43, Greensburg Bypass TPK 66, Southern Beltway TPK 576)			
Name	Role	Phone	Email
Denise Bologa	Program Administrator Western Region Lead	(717) 886-5294	dbologa@gfnet.com
Abby Rodgers	Program Administrator Western Scheduling	(412) 258-9622	arodgers@hntb.com
Ada Peng	Program Administrator Western Scheduling	(267) 881-5235	yipeng@hntb.com

Some Districts may be shown in more than one region. These Districts are split between those regions.



Redflex Depot Locations	
Location	Approximate Coverage Area (by PennDOT District/PTC Roadway)
Pittsburgh	PennDOT Districts: 9 (west and central), 10 (south), 11 (south), 12 PTC Roadways: Mainline 2-161, I-376, TPK 43, TPK 66, TPK 576
Harrisburg	PennDOT Districts: 2 (central and southeast), 3 (south), 5 (west), 8, 9 (central and east) PTC Roadways: Mainline 146-298
Philadelphia	PennDOT Districts: 5, 6 PTC Roadways: Mainline 266-359, NE Ext. A20-A74, 95 Connector
Northeast (Scranton)	PennDOT Districts: 2 (east), 3, 4, 5 (north and west) PTC Roadways: NE Ext. A56-A131
Northwest (TBD)	PennDOT Districts: 1, 2 (except southeast), 10 (north), 11 (north) PTC Roadways: Mainline 2-28, I-376 15-26

Redflex Depot and Coverage Map



Appendix B – Standard Drawings









PennDOT PATA Figures

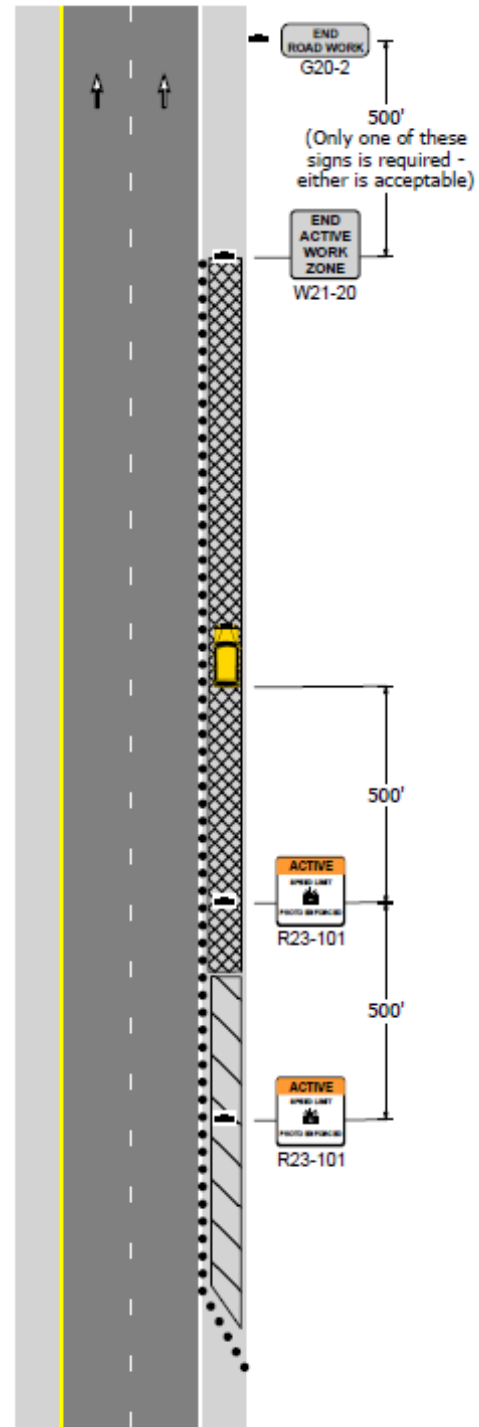
Automated Speed Enforcement Systems In Active Work Zones Work Space On Shoulder - Freeways and Expressways

Notes:

1. This standard applies only to the Automated Work Zone Speed Enforcement (AWZSE) vendor once an active work zone has been established. This standard applies only for the placement of signing required for the AWZSE vendor operator. All signs shown as "greyscale" are provided by the Department or the Department's contractor and are included in a pre-selected Publication 213 PATA figure, a Department's approved Traffic Control Plan (TCP) or, additional signing installed at the direction of the Department. The AWZSE vendor operator will verify any reduced work zone speed limit signing along with the required signing signifying the end of the active work zone are in place prior to beginning automated speed enforcement.
2. Distances shown for placement of AWZSE signing are minimum requirements and may be adjusted to fit field condition. The AWZSE vendor operator will coordinate with the Department's representative or the Department's contractor as indicated in Section 105.07 of Publication 408.
3. Prior to beginning or ending any automated speed enforcement, the AWZSE vendor operator will contact the State Traffic Management Center (STMC) at 717.346.4400 to provide notification that automated speed enforcement will be commencing.
4. The AWZSE vendor operator will complete the field deployment field verification prior to beginning any automated speed enforcement.
5. Prior to and during automated speed enforcement, the AWZSE vendor's operator will maintain communication with the Department representative and/or with the Department's contractor representative to communicate worker presence, work area activities and all arrival and departure times of the vendor's operator during automated speed enforcement.
6. The Speed Enforcement Device/Vehicle will be placed within or adjacent to the active work zone and at a location where the minimum roll-ahead distance for the shadow vehicle with a TMA will not be obstructed. AWZSE signing will be placed so that they are not obstructed by a Shadow Vehicle with TMA and not placed within the roll-ahead space as defined in Publication 213. Shadow vehicles with TMAs are furnished by the Department or the Department's contractor.

Legend

Item	Description
	Signing required to be provided and installed by AWZSE Vendor
 OR 	Signing required to be provided and installed by Primary Contractor or PennDOT Maintenance
	Channelizing Devices
	Sign support
	Speed Enforcement Device/Vehicle with identifying sign provided and installed by AWZSE Vendor
	Active Work Zone
	Transition Area, Buffer Space, Shadow Vehicle with TMA and Roll Ahead Space











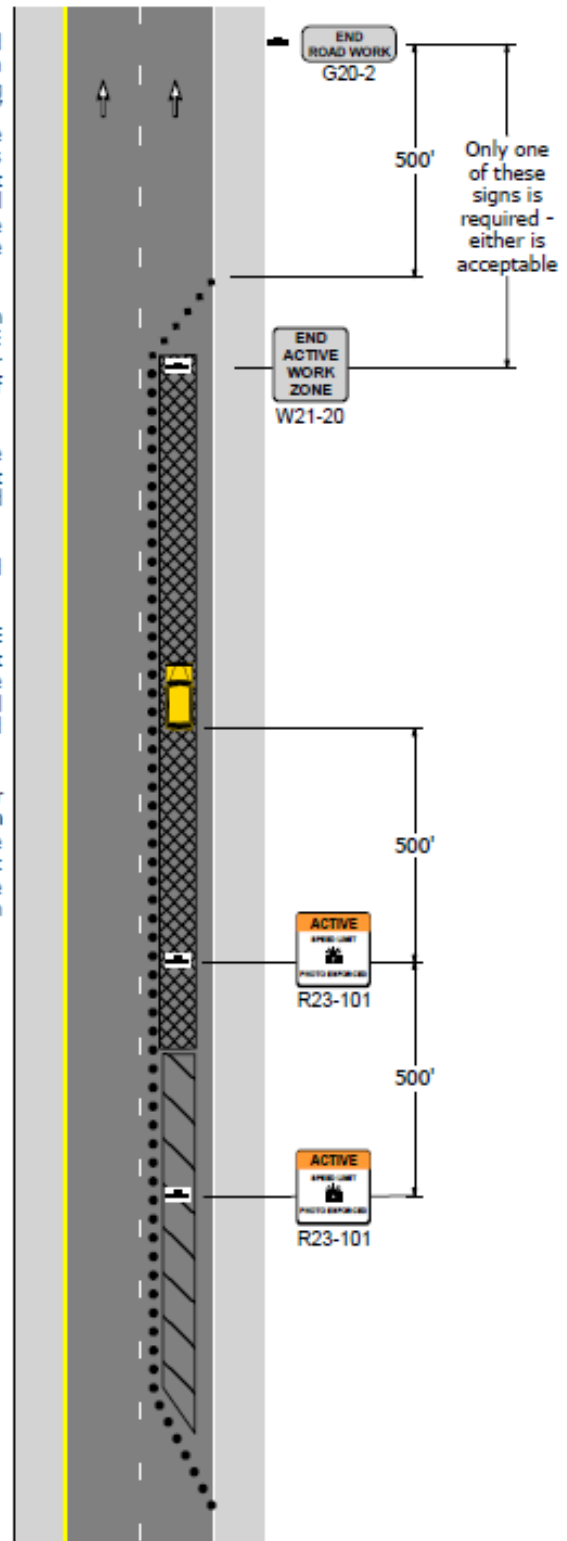
Automated Speed Enforcement Systems In Active Work Zones Work Space In Right Lane - Freeways and Expressways

Notes:

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Item	Description
	Signing required to be provided and installed by AWZSE Vendor
 or 	Signing required to be provided and installed by Primary Contractor or PennDOT Maintenance
	Channelizing Devices
	Sign support
	Speed Enforcement Device/Vehicle with identifying sign provided and installed by AWZSE Vendor
	Active Work Zone
	Transition Area, Buffer Space, Shadow Vehicle with TMA and Roll Ahead Space


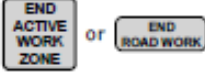






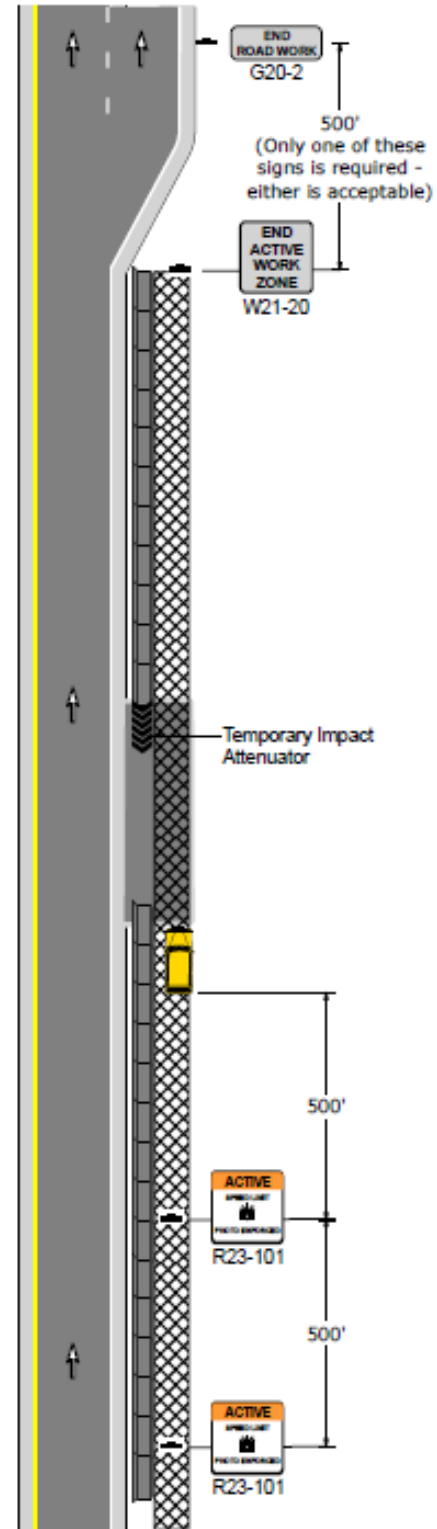
AWZSE Long-Term Lane/Shoulder Closure with Barrier near Construction Vehicle Access Point

Notes:

1. This standard applies only to the Automated Work Zone Speed Enforcement (AWZSE) vendor once an active work zone has been established. This standard applies only for the placement of signing required for the AWZSE vendor operator. All signs shown as "greyscale" are provided by the Department or the Department's contractor and are included in a pre-selected Publication 213 PATA figure, a Department's approved Traffic Control Plan (TCP) or, additional signing installed at the direction of the Department. The AWZSE vendor operator will verify any reduced work zone speed limit signing along with the required signing signifying the end of the active work zone are in place prior to beginning automated speed enforcement.
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6. Signing placed for AWZSE will be installed on temporary sign supports that ensure they will be visible to approaching road users. Signs must be placed at a sufficient height so that they will not be obstructed by temporary barrier and/or temporary glare screen.
7. For projects that include emergency pull-offs or temporary construction entrances, the AWZSE vendor will coordinate placement of the speed enforcement device/vehicle and the required signing for AWZSE with the Department's representative and/or the Department's contractor representative prior to deployment.

Legend

Item	Description
	Signage required to be provided and installed by AWZSE Vendor
	Signage required to be provided and installed by Primary Contractor or PennDOT Maintenance
	Temporary Barrier
	Sign support
	Speed Enforcement Device/Vehicle with identifying sign provided and installed by AWZSE Vendor
	Active Work Zone










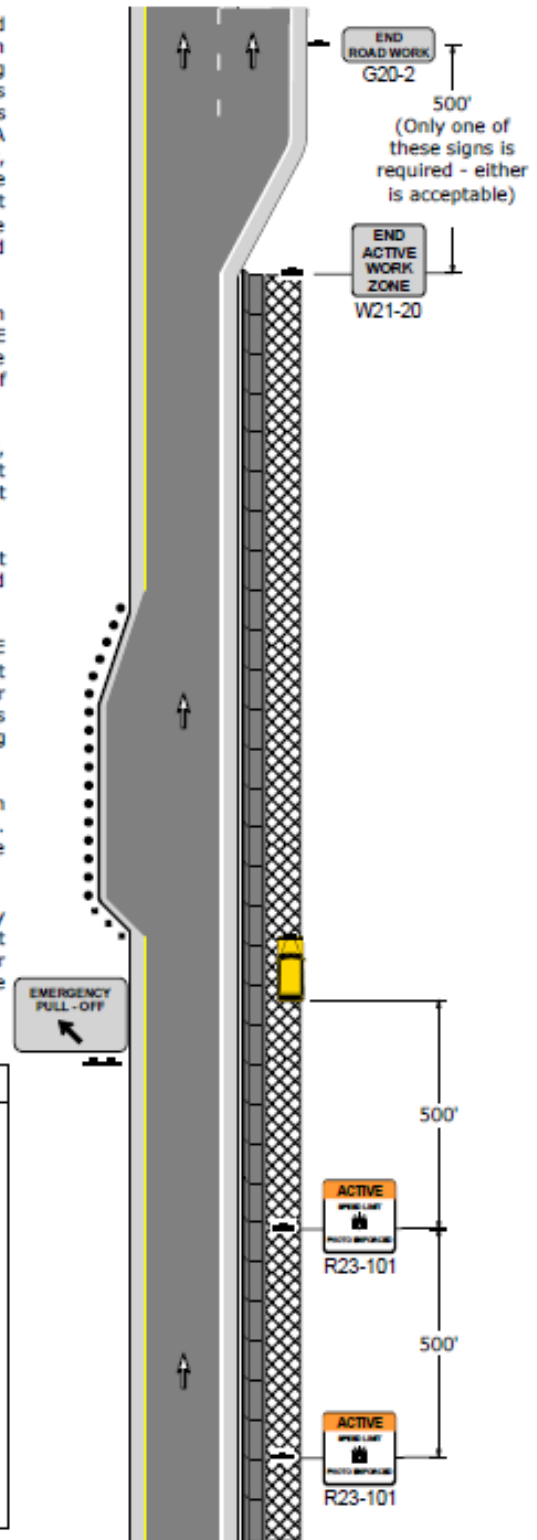
AWZSE Long-Term Lane/Shoulder Closure with Barrier near Emergency Pull-Off

Notes:

1. This standard applies only to the Automated Work Zone Speed Enforcement (AWZSE) vendor once an active work zone has been established. This standard applies only for the placement of signing required for the AWZSE vendor operator. All signs shown as "greyscale" are provided by the Department or the Department's contractor and are included in a pre-selected Publication 213 PATA figure, a Department's approved Traffic Control Plan (TCP) or, additional signing installed at the direction of the Department. The AWZSE vendor operator will verify any reduced work zone speed limit signing along with the required signing signifying the end of the active work zone are in place prior to beginning automated speed enforcement.
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Legend

Item	Description
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 or 	Signing required to be provided and installed by Primary Contractor or PennDOT Maintenance
	Temporary Barrier
	Sign support
	Speed Enforcement Device/Vehicle with identifying sign provided and installed by AWZSE Vendor
	Active Work Zone










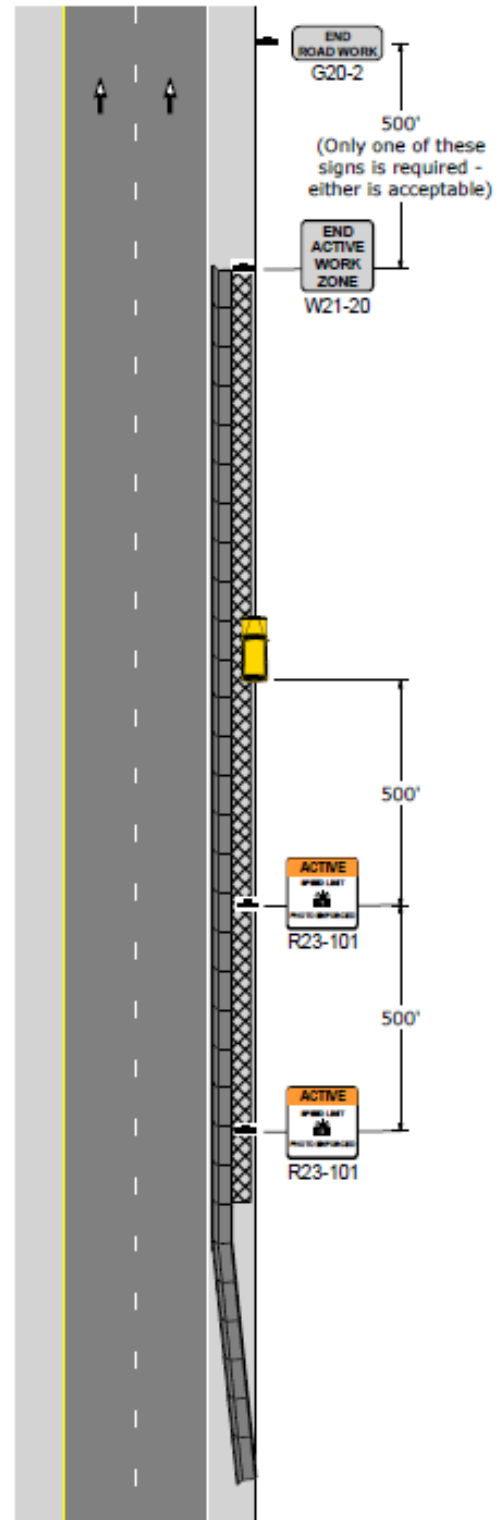
Automated Speed Enforcement Systems In Active Work Zones Shoulder Closure - All Work Behind Traffic Barrier - Freeways and Expressways

Notes:

1. This standard applies only to the Automated Work Zone Speed Enforcement (AWZSE) vendor once an active work zone has been established. This standard applies only for the placement of signing required for the AWZSE vendor operator. All signs shown as "greyscale" are provided by the Department or the Department's contractor and are included in a pre-selected Publication 213 PATA figure, a Department's approved Traffic Control Plan (TCP) or, additional signing installed at the direction of the Department. The AWZSE vendor operator will verify any reduced work zone speed limit signing along with the required signing signifying the end of the active work zone are in place prior to beginning automated speed enforcement.
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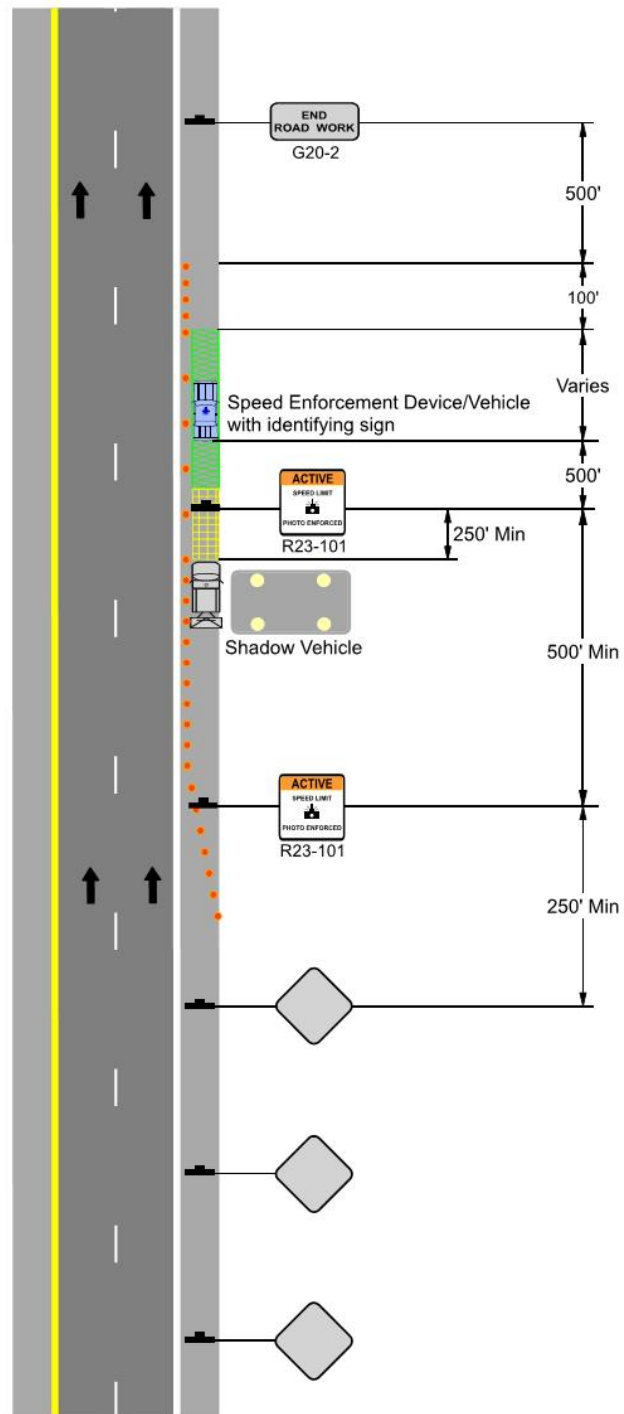
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Item	Description
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 or 	Signing required to be provided and installed by Primary Contractor or PennDOT Maintenance
	Temporary Barrier
	Sign support
	Speed Enforcement Device/Vehicle with identifying sign provided and installed by AWZSE Vendor
	Active Work Zone



PTC PTS Figures

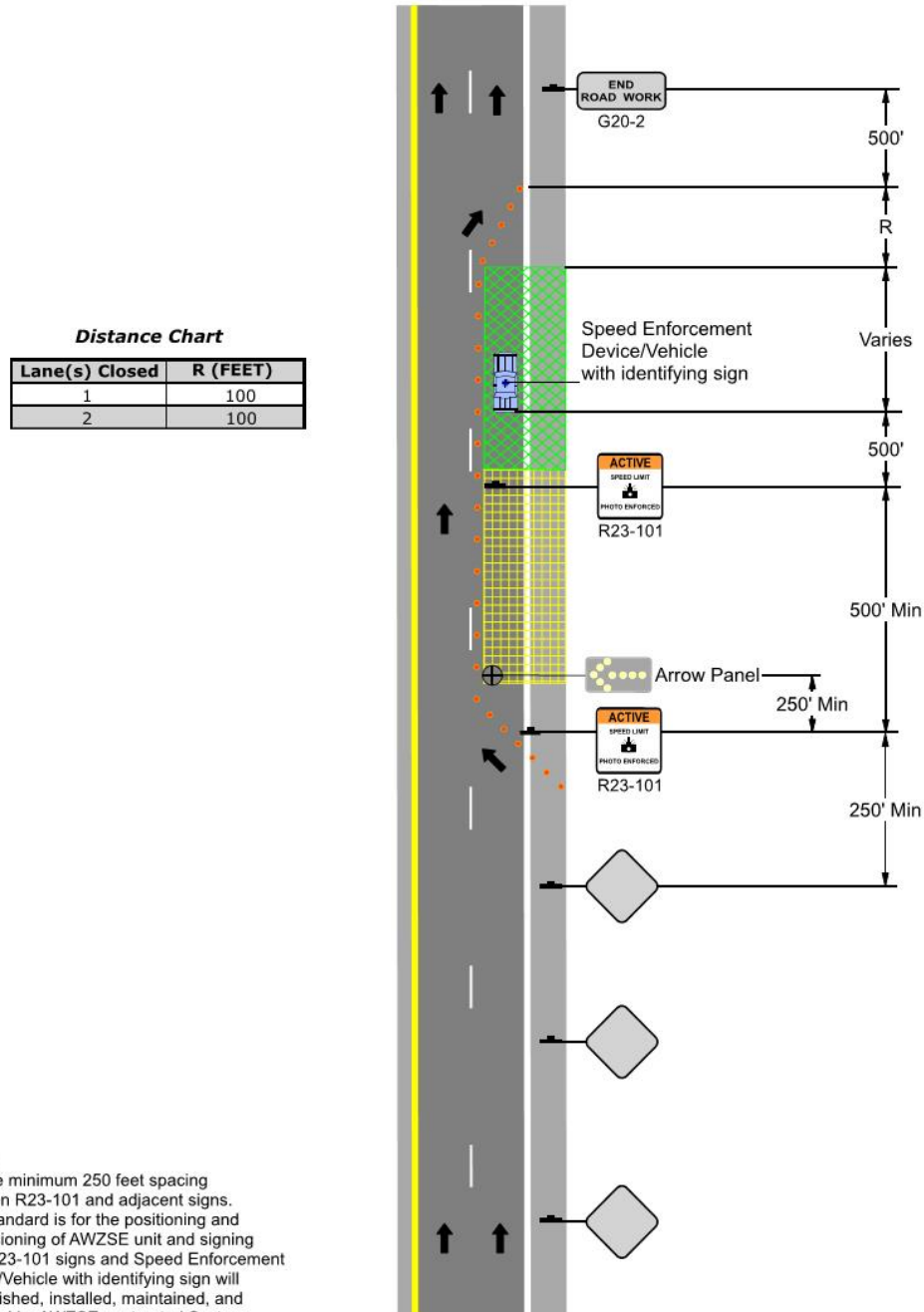
PTS 011 AWZSE Shoulder Closure with Channelizing Devices



NOTE:
Provide minimum 250 feet spacing between R23-101 and adjacent signs. This standard is for the positioning and dimensioning of AWZSE unit and signing only. R23-101 signs and Speed Enforcement Device/Vehicle with identifying sign will be furnished, installed, maintained, and removed by AWZSE contracted System Administrator. R23-101 sign is not required to be located within the buffer zone, but minimum distance from Speed Enforcement Device/Vehicle must be maintained. All other traffic control will be per the appropriate standard.

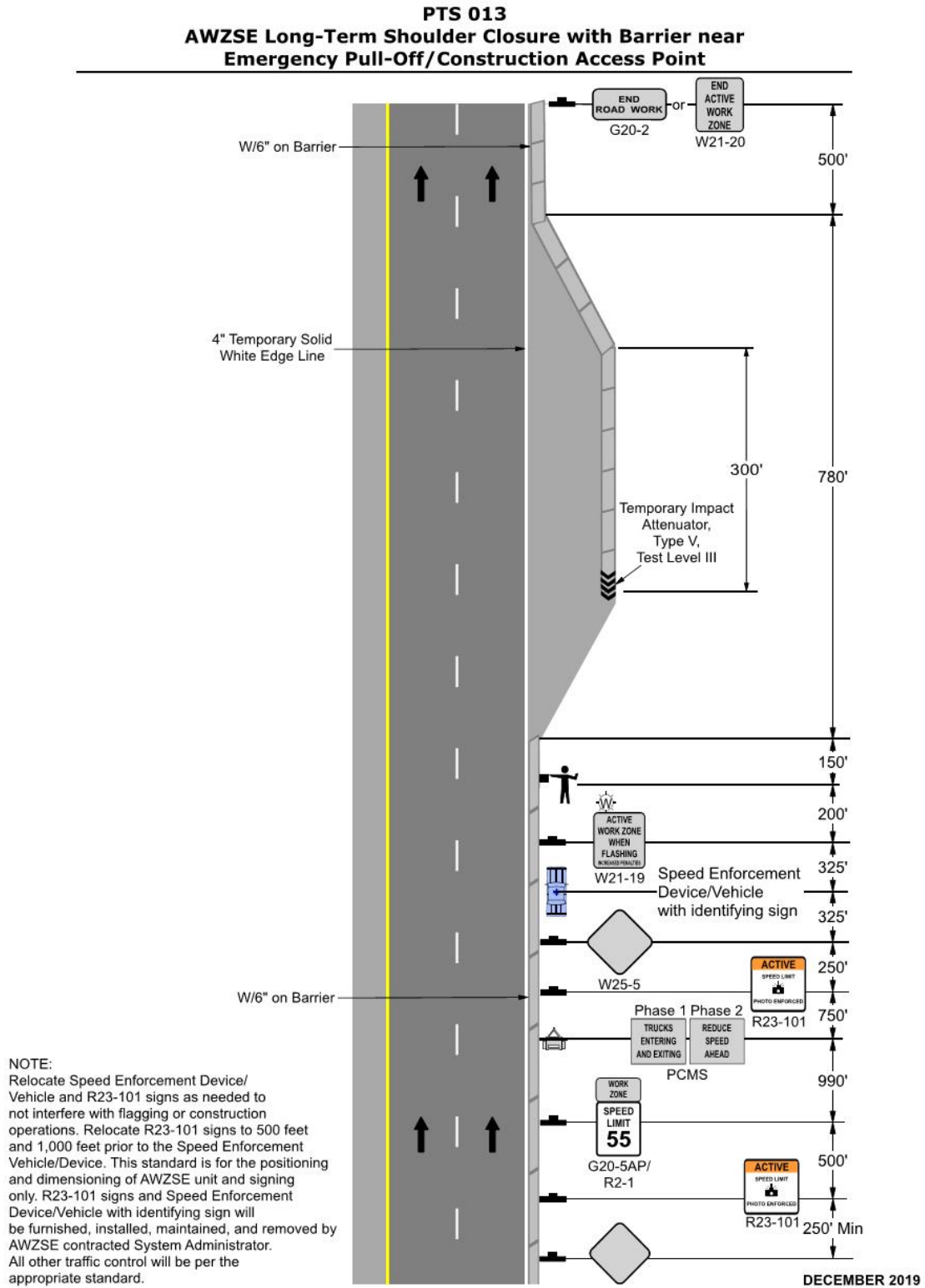
DECEMBER 2019

PTS 012
AWZSE Lane Closure(s) with Channelizing Devices

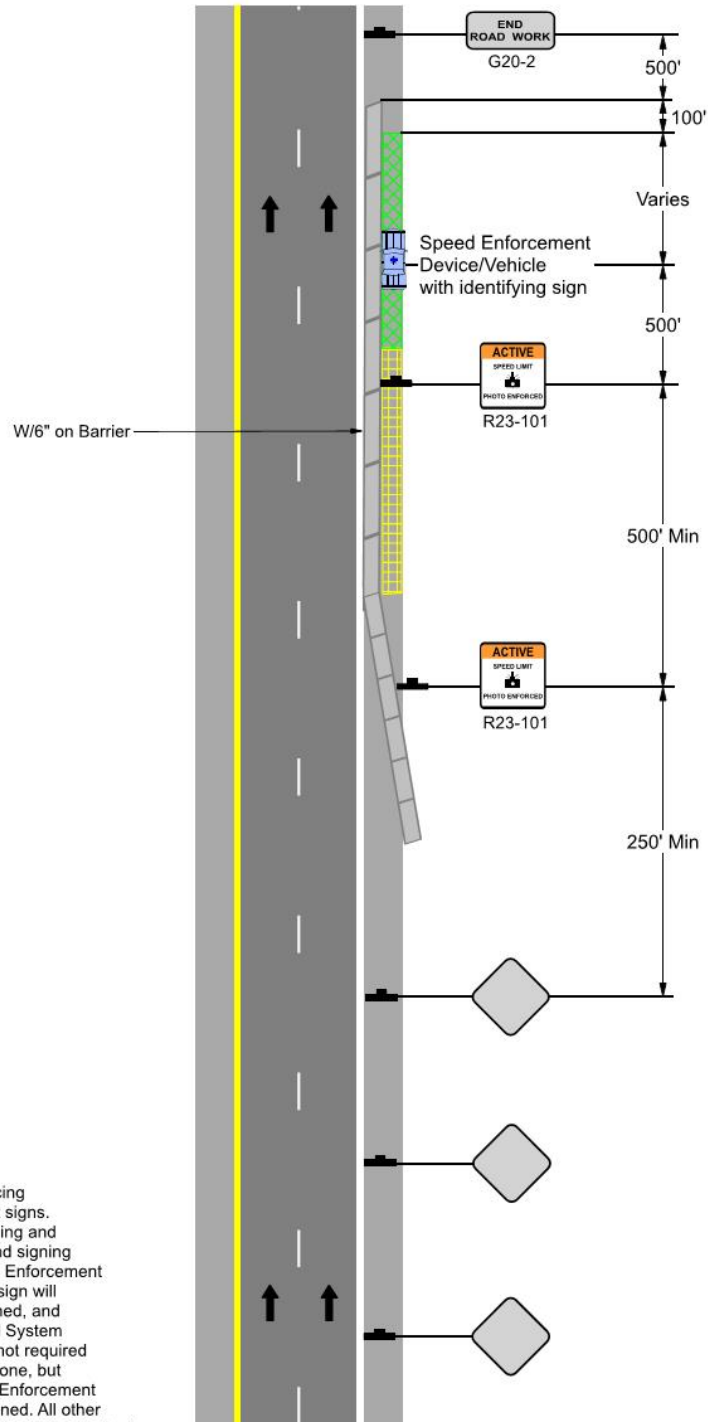


NOTE:
Provide minimum 250 feet spacing between R23-101 and adjacent signs. This standard is for the positioning and dimensioning of AWZSE unit and signing only. R23-101 signs and Speed Enforcement Device/Vehicle with identifying sign will be furnished, installed, maintained, and removed by AWZSE contracted System Administrator. R23-101 sign is not required to be located within the buffer zone, but minimum distance from Speed Enforcement Device/Vehicle must be maintained. All other traffic control will be per the appropriate standard.

DECEMBER 2019



PTS 014
AWZSE Long-Term Shoulder Closure with Barrier



NOTE:
Provide minimum 250 feet spacing between R23-101 and adjacent signs. This standard is for the positioning and dimensioning of AWZSE unit and signing only. R23-101 signs and Speed Enforcement Device/Vehicle with identifying sign will be furnished, installed, maintained, and removed by AWZSE contracted System Administrator. R23-101 sign is not required to be located within the buffer zone, but minimum distance from Speed Enforcement Device/Vehicle must be maintained. All other traffic control will be per the appropriate standard.

DECEMBER 2019

Appendix C – Project Request Information

<i>Category/Metric</i>	<i>Subcategories and/or Selections (if applicable)</i>
Requestor Information	
Name	
Address	
Telephone	
E-Mail	
Department/Group/Office	
Title/Role	
Location Information	
MPMS/ECMS/PTC Project Number	
PennDOT/PTC District	
County	
Municipality	
Route Number	
From Segment/Offset or Milepost	
To Segment/Offset or Milepost	
Other Location Information	
Attachments	
Project Location Map	
Work Zone Regulatory Speed Limit Reduction Approval (PennDOT Projects Only)	
Traffic Control Plan or Applicable PATA Figures	
Transportation Management Plan	
Traffic Volumes	
Traffic Engineering and Safety Study	
Current Project Schedule	
Other	
Work Zone Information	
Entity Performing Work	PennDOT/PTC, Contractor, Utility, Other
Type of Work Zone	Long-Term, Short-Term, Other
Type of Work Being Done	New Construction, Total Reconstruction, Resurfacing, Maintenance, Utility, Drainage, Other (please describe)
List Particularly Dangerous, Risky, or Unusual Activities	
Duration of Work Zone	
Proposed Work Zone Speed Limit	
Location of Work Zone	Median, Travel Lane(s), Shoulder(s), Off-Roadway
Type of Proposed Traffic Control Devices	Temporary Barrier, Channelizing Devices, TMA Only, None, Other (please describe)
Night Work?	Yes/No
Travel Lane Width Restrictions?	Yes/No
Lane Shifts?	Yes/No
Lane Splits/Crossovers?	Yes/No
Reduced Accel/Decel Lanes?	Yes/No
Closure or Detour of Ramps?	Yes/No
Site Data	
Regular (non-Work Zone) Speed Limit	
ADT	
Peak Hourly Volume	
Truck Percentage	

Appendix D – Data-Driven Prioritization Categories

<i>Category/Metric</i>	<i>Description of Metric</i>
Project and Work Zone Information	
Roadway Owner	PennDOT or PTC
District	PennDOT Engineering District or PTC District
County	County where the work area is located
Route	Route where the work area is active
Section	Additional project identifier
ECMS/MPMS Number	Unique project identification number
Direction	Direction of traffic passing the work zone
Project Start	Start of work by Segment/Offset or Milepost
Project End	End of work by Segment/Offset or Milepost
Entity Performing Work	Responsible party doing work within the work zone
Description of Work	General description of work being done
Let Date	Let Date for the working entity
NTP Date	Notice-to-Proceed date for the working entity
Duration of Work Zone (Construction Seasons/Years)	How long the work zone pattern will be in place
Work Zone Speed Limit	Speed limit when the work zone is in place and active
Speed Limit Reduction	Difference between the standard and the work zone speed limits
Activity	Primary activity within the work zone
Contract Value (\$ Million)	Contract value
Standard (non-WZ) Speed Limit	Normal speed limit when work zone is not in place
Geometrics and Roadway Restrictions	
Working Days	Number of days per week workers are anticipated to be present
Working Hours	Anticipated hours of work per day
Standard (non-Work Zone) # of lanes	Number of lanes provided on the roadway when the work zone is not in place
# of Lanes during Active Work	Number of lanes provided on the roadway when the work zone is in place and active
Narrowed Lanes	Lane widths provided within the work zone are narrower than the non-Work Zone condition
Lanes Split	Travel lanes in the same direction split from one another within the work zone
Lanes Shift	Travel lanes shift from their normal alignment through the work zone
Crossover/Contraflow	One or more travel lanes cross the median and utilize the opposing direction of travel roadway
Shoulder Closure	Work zone includes shoulder closure or restriction
Lane(s) Closure	Work zone include lane closures or restrictions
Reduced Acceleration/Deceleration Lane	Has an acceleration or deceleration lane been shortened or eliminated within the work zone?
Other Lateral Clearance Restriction	Some other condition present within the work zone that restricts lateral mobility
Ramp Closure/Ramp Detour	Ramp closures, detours, or other ramp restrictions are present within the work zone
Type of Worker Protection	Type of worker protection within the work zone
Worker Vulnerability	Vulnerability of workers based on other metrics

Category/Metric	Description of Metric
Operational Considerations	
Traffic Volume/ADT	Traffic volume on the roadway at the work zone location
Peak Hourly Volume	Peak Hourly Volume at the work zone location
Truck %	Truck percentage on the roadway at the work zone location
DAY 25 th percentile speed without Work Zone	Data pulled from RITIS
DAY 50 th percentile speed without Work Zone	Data pulled from RITIS
DAY 85 th percentile speed without Work Zone	Data pulled from RITIS
DAY 95 th percentile speed without Work Zone	Data pulled from RITIS
DAY difference between 85 th and 50 th % speeds w/o Work Zone	Calculation with data pulled from RITIS
DAY difference between 95 th and 25 th % speeds w/o Work Zone	Calculation with data pulled from RITIS
DAY difference between 95 th and 50 th % speeds w/o Work Zone	Calculation with data pulled from RITIS
DAY difference between 25 th % speed and Standard Speed Limit	Calculation with data pulled from RITIS
DAY difference between 50 th % speed and Standard Speed Limit	Calculation with data pulled from RITIS
DAY difference between 95 th % speed and Standard Speed Limit	Calculation with data pulled from RITIS
NIGHT 25 th percentile speed without Work Zone	Data pulled from RITIS
NIGHT 50 th percentile speed without Work Zone	Data pulled from RITIS
NIGHT 85 th percentile speed without Work Zone	Data pulled from RITIS
NIGHT 95 th percentile speed without Work Zone	Data pulled from RITIS
NIGHT difference between 85 th and 50 th % speeds w/o Work Zone	Calculation with data pulled from RITIS
NIGHT difference between 95 th and 25 th % speeds w/o Work Zone	Calculation with data pulled from RITIS
NIGHT difference between 95 th and 50 th % speeds w/o Work Zone	Calculation with data pulled from RITIS
NIGHT difference between 25 th % speed and Standard Speed Limit	Calculation with data pulled from RITIS
NIGHT difference between 50 th % speed and Standard Speed Limit	Calculation with data pulled from RITIS
NIGHT difference between 95 th % speed and Standard Speed Limit	Calculation with data pulled from RITIS
DAY 25 th percentile speed with Work Zone	Data pulled from RITIS
DAY 50 th percentile speed with Work Zone	Data pulled from RITIS
DAY 85 th percentile speed with Work Zone	Data pulled from RITIS
DAY 95 th percentile speed with Work Zone	Data pulled from RITIS
DAY difference between 85 th and 50 th % speeds w/ Work Zone	Calculation with data pulled from RITIS
DAY difference between 95 th and 25 th % speeds w/ Work Zone	Calculation with data pulled from RITIS
DAY difference between 95 th and 50 th % speeds w/ Work Zone	Calculation with data pulled from RITIS
DAY difference between 25 th % speed and Work Zone Speed Limit	Calculation with data pulled from RITIS
DAY difference between 50 th % speed and Work Zone Speed Limit	Calculation with data pulled from RITIS
DAY difference between 95 th % speed and Work Zone Speed Limit	Calculation with data pulled from RITIS
NIGHT 25 th percentile speed with Work Zone	Data pulled from RITIS

Category/Metric	Description of Metric
NIGHT 50 th percentile speed with Work Zone	Data pulled from RITIS
NIGHT 85 th percentile speed with Work Zone	Data pulled from RITIS
NIGHT 95 th percentile speed with Work Zone	Data pulled from RITIS
NIGHT difference between 85 th and 50 th % speeds w/ Work Zone	Calculation with data pulled from RITIS
NIGHT difference between 95 th and 25 th % speeds w/ Work Zone	Calculation with data pulled from RITIS
NIGHT difference between 95 th and 50 th % speeds w/ Work Zone	Calculation with data pulled from RITIS
NIGHT difference between 25 th % speed and Work Zone Speed Limit	Calculation with data pulled from RITIS
NIGHT difference between 50 th % speed and Work Zone Speed Limit	Calculation with data pulled from RITIS
NIGHT difference between 95 th % speed and Work Zone Speed Limit	Calculation with data pulled from RITIS
Fatal and Serious Injury Crashes	Number of fatal and serious injury crashes while the work zone has been in place
Monthly Number of Crashes (Crashes/mo)	Total number of crashes divided by the number of months that the work zone has been in place
# of Crashes with Speed or Work Zone Geometry as a Factor	Number of crashes where speed or work zone geometry was explicitly stated as a contributing factor
Has AWZSE been deployed here previously?	Has the AWZSE unit been deployed to this work zone previously?

Appendix E – Notification Tree

Pre-Deployment
Normal Operation
PDN1 – Redflex Operator calls and confirms work is occurring with project representative.
Modified Operation
PDM1 – If project representative states work is not occurring, Redflex Operator to contact Redflex Manager who will contact PA for Alternative Deployment Location. PA to notify owning agency.
PDM2 – If contractor changes work schedule that impacts a deployment, contractor will contact project representative, and notification will then follow PDM1.
PDM3 – If owning agency changes planned work schedule around, owning agency will contact PA, PA will contact Redflex Manager, Redflex Manager will contact Redflex Operator.
Cancelled Operation
PDC1 – If project is unable to be enforced due to issues beyond Redflex control and no Alternative Location can be provided per PDM1, deployment will be cancelled.
PDC2 – If project is unable to be enforced due to errors within Redflex control, Redflex Operator to contact Redflex Manager, Redflex Manager will contact PA, PA will contact owning agency.
Entering Enforcement
Normal Operation
EEN1 – Redflex Operator calls and notifies the owning agency TMC when entering enforcement.
Modified Operation
EEM1 – If Redflex Operator is in area without cellular service, TBD
Cancelled Operation
None
During Enforcement
Normal Operation
DEN1 – Redflex Operator will confirm advance warning signs are still in place and visible at regular intervals during enforcement, not to exceed two hours between confirmation checks. If sign is not in place or visible, the Redflex Operator should effort to rectify the situation in the field. If the Redflex Operator cannot rectify the situation in the field, the Redflex Operator will follow DEM1.
Modified Operation
DEM1 – If enforcement must stop for any reason, the Redflex Operator must notify the owning agency TMC. The Redflex Operator will contact the Redflex Manager, Redflex manager will contact PA, PA will contact owning agency.
DEM2 – If enforcement must stop due to contractor causation (ceasing work, lack of worker presence, etc.), the contractor or project representative will contact the Redflex Operator. Notification will then follow DEM1.
Cancelled Operation
None
Post-Enforcement
Normal Operation
PEN1 – Redflex Operator calls and notifies the owning agency TMC when ending enforcement.
Modified Operation
PEM1 – If Redflex Operator is in area without cellular service, TBD
PEM2 – If AWZSE device does not pass end of enforcement self-test, Redflex Operator will contact the Redflex Manager, Redflex Manager will contact PA, PA will contact owning agency.
Cancelled Operation
None

Appendix F – AWZSE Operator Checklist with Work Zone Considerations

Note: AWZSE Operator Checklist is in black while Work Zone considerations are identified in blue.

AWZSE Operator Checklist

- (1) Prior to departing the Depot complete Deployment Pre-Arrival Checklist
 - **Worker Attire**
 - Hard Hat to be worn when outside of the vehicle.
 - High-Visibility Apparel – ANSI Class 3 to be worn when outside the vehicle. ANSI Class E reflective leggings or chaps may be worn in combination with an ANSI Class 2 vest to meet requirements. Safety apparel must meet the current requirements of ANSI/ISEA 107 publication.
 - Shirts must have unaltered sleeves that are 6 inches or longer from the seam. See through clothing is prohibited.
 - Full length trousers are required (sweatpants and capris are prohibited).
 - Work shoes shall be of above the ankle design and have good tread to help prevent slips, trips, and falls. Athletic footwear, such as sneakers and tennis shoes, are prohibited.
 - Flashlight and/or other employee light apparel is required for night time activities.
 - Other safety apparel such as glasses
 - Ensure two “Active Speed Limit Photo Enforced” advance warning signs are in the vehicle.
 - Ensure two approved sign stands are in the vehicle.
 - Ensure an adequate number of sandbags are in the vehicle to ballast the two advance warning sign stands.
 - Verify that the “Photo Enforcement Vehicle” sign is either attached to the vehicle or provided to be placed onto the vehicle for checklist number (19).
 - Verify that flashing amber beacon(s) on the vehicle are working properly.
 - Verify that back-up alarm is working properly.
 - Verify Deployment Contact Information and meeting location is established prior to departure.
- (2) Send 10-7 Email to #nocmobilemonitoring@redflex.com
- (3) Start Travel
- (4) End Travel
- (5) Confirm posted speed limit and End of work zone sign.
 - Ensure regulatory speed limit is posted and document posted speed limit.
 - Ensure that there are no conflicting regulatory speed limits present in the work zone.
 - If “End Road Work” or “End Active Work Zone” sign isn’t visible or present, notify project contact immediately. Enforcement cannot begin until this has been resolved.
 - Ensure proper driving patterns while within the work zone:
 - Do not use median crossovers.
 - Do not utilize construction access points unless authorized by the Project Contact.
 - Do not travel in the opposite direction of travel.
 - Do not back up more than 100 feet unless otherwise authorized by field staff to get into a safe enforcement location. If greater distances are needed please utilize appropriate ramps to get vehicle into position.
 - Workers are not permitted to cross live traffic lanes.
 - U-Turns and crossing live travel lanes with vehicles and equipment are prohibited.

- U-Turns at interchanges are prohibited.
 - In no case will workers be permitted to ride on the outside of any vehicle.
 - Flashing amber beacon(s) shall be operated when approaching, entering, and departing from the work zone.
 - Ensure that all equipment or vehicles approaches, enters, and departs from the work zone in the direction of the adjacent traffic flow.
- (6) Proceed to work zone site entry point
- (7) Check in with site manager and verify deployment site, worker presence and work schedule.
- Verify the deployment location. Ensure placement is not within any work zone buffer space and/or roll ahead space.
 - Verify type of protection and determine where vehicle location should be used (Placement on shoulder may need to occur for situations where channelizing devices are protecting the work zone.)
 - Understand Work Operation and potential conflicts with the enforcement vehicle. If repositioning during the enforcement cycle, verify if signs need to be adjusted and readjust accordingly before going into enforcement again in the repositioned location.
 - Understand Work Schedule and whether any worker stoppages are anticipated.
- (8) Determine where to deploy the 2 warning signs and ASES in the work zone.
- (9) Conspicuously deploy the active speed limit photo enforced warning sign B per established procedure and record the distance from the ASES (Minimum of 1,000ft)
- Verify that placement of the sign isn't within 250 ft of any other work zone signs. If a conflict exists, then the "Active Speed Limit Photo Enforced" sign should be adjusted beyond the minimums.
 - Properly install the sign stand per the manufacturer specifications.
 - Properly open the "Active Speed Limit Photo Enforced" sign.
 - Properly install the "Active Speed Limit Photo Enforced" sign to the sign stand.
 - Verify and adjust height of the sign to ensure that it can be clearly seen above positive protection. If behind channelizing devices, please place to a height of 5 ft from the ground to the bottom of the sign.
 - Verify and Adjust lateral placement related to positive protection – 2 ft minimum, but 4 ft desirable.
 - Place sandbags onto the sign stand to ensure proper ballasting of the sign.
 - Take a photo of the sign and document the exact location within the work zone. Additional use of marking paint may be utilized to ensure that the sign hasn't moved from your original placement and to confirm sign spacing is accurate.
 - Confirm that sign deployment is within conformance of AWZSE Standard Drawings.
- (10) Attach Photograph of Sign B
- Verify that the sign is properly placed each hour with documentation on the log along with the photo.
- (11) Conspicuously deploy the active speed limit photo enforced warning sign A per established procedure and record the distance from the ASES (Minimum of 500ft)
- Verify that placement of the sign isn't within 250 ft of any other work zone signs. If a conflict exists, then the "Active Speed Limit Photo Enforced" sign should be adjusted beyond the minimums while maintaining a minimum 500 ft distance to Sign B in accordance with the AWZSE Standard Drawings.
 - Properly install the sign stand per the manufacturer specifications.
 - Properly open the "Active Speed Limit Photo Enforced" sign.

- Properly install the “Active Speed Limit Photo Enforced” sign to the sign stand.
 - Verify and adjust height of the sign to ensure that it can be clearly seen above positive protection. If behind channelizing devices, please place to a height of 5 ft from the ground to the bottom of the sign.
 - Verify and Adjust lateral placement related to positive protection – 2 ft minimum, but 4 ft desirable.
 - Place sandbags onto the sign stand to ensure proper ballasting of the sign.
 - Take a photo of the sign and document the exact location within the work zone. Additional use of marking paint may be utilized to ensure that the sign hasn’t moved from your original placement and to confirm sign spacing is accurate.
 - Confirm that sign deployment is within conformance of AWZSE Standard Drawing.
- (12) Attach Photograph of Sign A
- Verify that the sign is properly placed each hour with documentation on the log along with the photo.
- (13) Are two warning signs conspicuously placed before the active work zone?
- Confirm that sign deployment is within conformance of AWZSE Standard Drawings.
- (14) Does at least one of the warning signs indicate the ASES is active?
- (15) Park and align vehicle parallel to traffic
- Ensure that vehicle is minimum two feet away from barrier and at least 4 ft away from channelizers. Note: Placement of vehicle on shoulder should be considered especially when channelizers are used.
 - Verify that vehicle is in the deployment location as discussed within checklist number (7).
- (16) Measure front and rear wheels to identified road marking to establish parallel orientation to the roadway.
- (17) Notate mile marker, segment or notes on where the ASES is deployed in the work zone.
- (18) Deploy the notice identifying the location of the ASES posted at the active work zone
- Ensure that the sign is visible and can be seen above any barrier or channelizing devices.
- (19) Attach Photograph of the Enforcement Vehicle notification
- (20) Is there a notice identifying the location of the ASES posted at the active work zone?
- (21) Are workers present in the Automated Speed Enforcement Work Area as defined in 75 PA Code Â§102?
- (22) Attach photo of workers present in the work zone
- (23) Access the Speedvan software and setup the ASES per the deployment checklist
- (24) Is the ASES set-up in accordance with the deployment checklist?
- (25) Initiate and Confirm the Manufacturer self-test passed
- (26) Did you initiate the manufacturer specified self-test of the ASES?
- (27) Contact Traffic management Center (PTC 866-332-5889 or PennDOT 717-346-4400) to advise of the start of deployment.
- Provide TMC with work zone location, hours of operation, and the start of AWZSE deployment.
- (28) Select Start enforcement
- (29) Add the Work Order number at the prompt
- (30) Perform pre-deployment tuning fork test.
- (31) Did you perform a pre-deployment check of the ASES using the radar target simulator?

- (32) Send 10-8 Email to #nocmobilemonitoring@redflex.com.
- (33) Select Stop enforcement
- (34) Did you perform a post-deployment check of the ASES using the radar target simulator?
- (35) Were workers present in the Automated Speed Enforcement Work Area as defined in 75 PA Code Â§102 for the duration of the deployment?
- (36) Notate any disruptions to deployment. i.e. system paused, workers not present, system issues etc.
- (37) Contact Traffic management Center (PTC 866-332-5889 or PennDOT 717-346-4400) to advise of end of deployment.
 - **Provide TMC with work zone location and the completion of AWZSE deployment.**
- (38) Prior to departing the work zone complete the Site Departure Checklist
 - **Contact Project Contact to notify that enforcement has ended and that deployment teardown will occur shortly.**
 - **Properly remove and collapse the “Active Speed Limit Photo Enforced” signs and place into vehicle.**
 - **Properly collapse and remove sign stands and place into vehicle.**
 - **Properly remove sandbags and place into vehicle.**
- (39) Check out with site manager and notify them of the end of deployment
 - **Remove your vehicle safely from the work zone.**
- (40) Return to depot
 - **Re-evaluate materials needed for checklist number (1).**
- (41) Sign and finish the work order and Log-out of Alcyon Field Service