

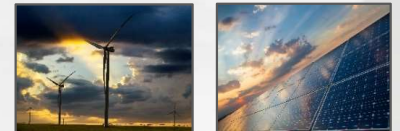


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Safety Best Practices for Work Zone Protection

Jarrett Johnson, CSP

June 2, 2023



AN INNOVATIVE AND TRUSTED ENERGY PARTNER

NiSource[®]

~3.3M

GAS CUSTOMERS

~500K

ELECTRIC CUSTOMERS

~7,300

EMPLOYEES

NEWSWEEK'S AMERICA'S MOST RESPONSIBLE COMPANIES
DOW JONES SUSTAINABILITY INDEX
MSCI AA ESG RATING
FORBES' AMERICA'S BEST LARGE EMPLOYERS
FORBES' AMERICA'S BEST EMPLOYERS FOR DIVERSITY
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Columbia Gas[®]
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Work Zone Protection – Mitigating Vehicle Intrusions



Work zone risks consistently represent one of the most significant hazards our employees and contractors face each day. At NiSource, we are always seeking to reduce risks in our work zones and to keep everyone safe.

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Work Zone Protection – Mitigating Vehicle Intrusions

What are the most common causes of work zone Intrusions?

- Impatient - Disgruntled Drivers - Intentional
- Inattention - Distracted Drivers
- Driver Intoxication
- Medical Events
- Confused Motorists
- Miscellaneous

Why focus on mitigating vehicle intrusions?

- Prevent injuries
- Prevent vehicular crashes
- Establish safe work practices
- Ensure public safety
- Reduce risk

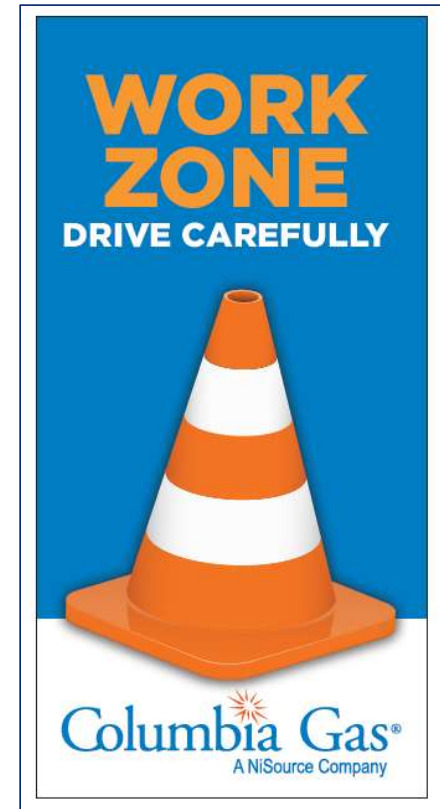


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Work Zone Safety - Daily Challenges – NiSource

- Consistent Significant Hazards – Employees & Contractors
- SIF – Serious Injury & Fatality Exposure
- OSHA Focus Four – Struck By – Caught Between
- 1,000 + Work Zones Daily Across NiSource
- Hundreds of Traffic Control Personnel Daily
- High Risk Work – Set Up/Tear Down
- Compliance ≠ Protection ≠ Zero Risk
- Work Zone Protection – Incessant Vigilance & Teamwork
- Multiple Open Excavations
- Significant Risk - False Sense of Security
- Increased Risk Potential – Damage to Gas Facilities & Infrastructure – Public Safety
- Always Looking to Improve WZ Safety
- Ultimate Goal - Keep Everyone Safe



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Work Zone Attributes - NiSource

NiSource Work Zone Profile

- Minimal Highway Work – Urban, Suburban & Rural
- Transient – Set Up and Tear Down in Same Day – Short Term
- Type II or III Barricades
- Jersey, Concrete or Water-Filled Traffic Control Barriers
- 28” Safety Cones – Retroreflective Striping
- Steel Road Plates – 2,000+ Pounds
- Focus on Road Closures
- Heavy Equipment & Large Trucks – Positive Protection
- Two-Person Flagging Crews
- MUTCD Compliant – High Risk Still Exists



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Work Zone Protection – Mitigating Vehicle Intrusions

Stop Work Authority - SWA

Please continue to use Stop Work Authority when you observe an employee or contractor not following appropriate safety protocols that could put others in danger. Remember, you, your employees and our contractors can use your Stop Work Authority in the following situations:

- When a situation arises due to an unsafe action, condition, behavior or non-action and may potentially lead to harm
- In the event that an activity could lead to an incident
- When Stop Work Authority is applied in good faith
- When timing is critical (don't delay in calling a Stop Work action if the need arises)



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Temporary Traffic Control - Contractor Prequalification

Contractor Prequalification - ISNetworld

NiSource Grading Criteria

A: 90 to 105 Points

Recommended to use this contractor

B: 80 to 89.99 Points

Acceptable to use this contractor

C: 70 to 79.99 Points

Marginally acceptable to use this contractor

F: -300 to 69.99 Points

Chief Safety Office approval required and variance must be in place to use this contractor

Grade Scorecard		Points		Gaps	
Written HSE Program Review	RAVS score is 100	20 / 20			✓
Contractor Questionnaire	Exceptional	20 / 20			✓
TRIR	Incident Rate is less than or equal to 100% of the BLS Average	15 / 15			✓
DART	DART is less than or equal to 100% of the BLS Average	20 / 20			✓
Experience Modifier	Rate is 0.87	5 / 5			✓
Citations	No citations in the past three years	5 / 5			✓
Serious Injuries	No Serious Injuries Reported	15 / 15			✓
Fatalities	No fatalities in the past three years or Not in Business	0 / 0			✓
Acknowledgement of HSE Manual	NiSource Contractor Safety Manual (2.0) is Acknowledged	0 / 0			✓
Site Tracker	Status is Complete	0 / 0			✓
Subcontractor Management Plan (if Applicable)	Subcontractor Management Plan is Required and 100% or Not Required	0 / 0			✓
RAVS Plus Implementation Assessment	RAVS Plus Implementation Assessment score is 100	5 / 5			✓
Total		105 / 105			

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Work Zone Protection – NiSource Life Saving Rule

- Life saving rules are linked to the prevention of a majority of fatal incidents reported in the public utilities industries.
- Leaders must show their commitment through leading by example, setting clear expectations, monitoring compliance and showing zero tolerance for non-compliance.
- Leaders must create work conditions so workers can comply.
- All employees and contractors must understand they have the authority to stop work whenever a life saving rule is violated and whenever they are in doubt or uncertain about the safety of a work activity.
- Compliance is vital since non-compliance could possibly result in serious injury or death.
- Understand that the life saving rules describe actions that may be the last barrier to prevent a fatality.
- These rules enable workers to discuss worksite risks and collaborate with their leaders and co-workers.



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Work Zone Protection – Energy-Based Hazard Recognition

Energy-Based Hazard Recognition

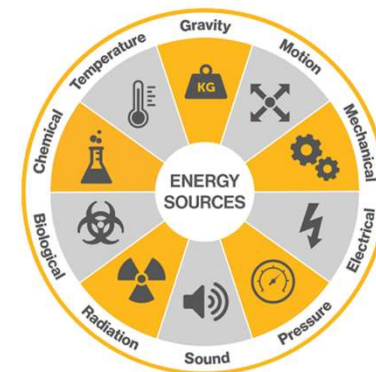
- **L-SIF:** Incident with a release of low energy in the absence of a direct control where a serious injury is sustained
- **P-SIF:** Incident with a release of high energy in the absence of a direct control where a serious injury is not sustained
- **Capacity:** Incident with a release of high energy in the presence of a direct control where a serious injury is not sustained

Direct Control: An adequate control against a life-threatening (high-energy) hazard that has all the following features:

- The control is specifically targeted to the high-energy source
- The control effectively mitigates exposure to the high energy source when installed, verified, and used properly (i.e., a SIF event cannot reasonably occur)
- The control is effective even if there is unintentional human error during the work period (unrelated to the installation of the control)



Mobile Equipment
and Workers on Foot



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Work Zone Protection – Mitigating Vehicle Intrusions

- WZ Intrusion Reporting – Leader & Safety Professional
- WZ Intrusion – Safety M
- Incident Alert Communi
- Post-Incident Investigat
- Root Cause Completion Indicator
- SIF & Severe PVC Progr
- Lessons Learned – Learning Opportunities
- Causation & Trending
- Leader Learning Reviews
- Daily Work Zone Intrusion Report

Open Work Zone Intrusions Report

This report shows every open work zone intrusion in DevonWay that needs to be completed. Please take action to close out any records assigned to you, or follow-up as necessary with the assigned front line leader. For questions on what to do with these records please reach out to Terri Burrows or ims@nisource.com.

[Run Search](#)

Please do not respond to this automated message. Emails sent to this address are not monitored. Notification created using the "Open Work Zone Intrusions Report" saved search which was created by [Robert Meier](#).

Work Zone Report: Incident Alert (Contractor): Contractor Work Zone Intrusion

or Work Zone Intrusion

Contractor

/2023

s: [Redacted]

er: [Redacted]

plumbia Gas of Pennsylvania

fety Cmplnce & Risk Mgmt CPA

Street Address: Wheatfield St & Pequea Ave

City: York

State: Pa

Description: The Traffic Control Contractor was in the process of establishing a Closed Road Work Zone, for a pipe contractor, performing Tie-In Verifications. A local resident on foot, walked by and told the flagger that the flagger was not permitted to close alleys. The flagger did not engage with the individual and continued establishing the Work Zone. Next, the local resident entered his truck and drove through two closed road barricades, hitting and dragging cones several yards. The police were contacted and will issue a citation when the resident returns home. The incident is pending a full investigation.

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Job Site Safety Observation Process

- Safety Leading Indicator
- Key Performance Indicator for Leaders & Inspectors
- 53,448 Observations in 2022
- Executive Observation Program
- Work Zone Safety Considerations - Template Observation Criteria
- Electronic - Digital Observation Platform - Photos
- Observation Categories - **Meets – Exceeds – Coach – Stop Work**

Most Common Coach – Stop Work Observation Categories

- Flags, Cones, & Work Zone Signage
- Work Zone - Documentation
- Flaggers – Traffic Control Personnel
- Pedestrian Traffic – Cyclists
- Vehicles & Equipment Placed Properly



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Work Zone Protection – Corporate Safety Policy

- Work zone intrusions are an increasing risk to all NiSource employees and contractors working in the field.
 - Distracted and impatient drivers are becoming a more common occurrence, and instances of the public entering our protected workspaces on streets and roads have followed this same trend.
 - NiSource is committed to ensuring a safe work environment for all employees, as well as keeping the communities that we work in safe. Whether it is our company crews or contractors, we all use traffic control business partners and safety within the work zone requires teamwork and effort by everyone. This effort is supported through all levels of the Company.
 - Prevent injuries in work zones
 - Prevent vehicular crashes in work zones
 - Establish safe work practices in work zones
 - Ensure public safety
 - Reduce risk
- NiSource Corporate Safety Policy – Work Zone Protection Policy – April 2023



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Work Zone Protection – Definitions

- **Work Zone-** A work zone is an area of a traffic way with road construction, maintenance, or utility-work activities. A work zone is typically marked by signs, channeling devices, barriers, pavement markings, and/or work vehicles. It extends from the first warning sign or flashing lights on a vehicle to the "End of Road Work" sign or the last traffic control device.

For example, typical locating and inspection activities would not fall under the work zone definition unless there is a need to direct traffic by the use of a vehicle, signs, flaggers, etc. However, sufficient safeguards should be used to protect the safety of our employees when performing these tasks (e.g., spotter, mobile survey at night, etc.).

- **Work Zone Encroachment –** When an event occurs inside the work zone but does not require a stoppage of work activity. I.e., Minor fender bender between two publicly owned vehicles.
- **Work Zone Intrusion –** When an unauthorized vehicle or pedestrian enters an established work zone requiring a stoppage of work activity.

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Work Zone Protection – Road Closures

- Full Road closures shall always be explored during work zone planning. The use of cones, cone bars and/ or saddles barriers shall be used to enhance awareness of road closure.
- In the event a roadway is not able to be closed while performing work, the requirements corresponding to each risk level shall be followed.
- Cone Bars = Visual deterrent
- False Sense of Sanctuary



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Low Risk - Work Zone Level 3 – Less Than 35 MPH

WZ Level	Risk Level	Speed Limits	Risk Mitigation
3	Moderate	<p>35 MPH or Less</p> <p><u>If exposed to two of the below, elevate to Risk Level 2:</u></p> <ul style="list-style-type: none"> • <i>High Traffic Volume</i> • <i>Low Visibility</i> • <i>Poor Weather (Snow, Ice, Rain)</i> • <i>High Risk Road Design (Intersections, blind approaches, hills, curves)</i> • <i>Night Work</i> • <i>Long Duration (Greater than 5 days)</i> 	<p>Requirements:</p> <ul style="list-style-type: none"> - Standard work zone following MUTCD and local requirements <p>Consider:</p> <ul style="list-style-type: none"> - Portable speed bumps/portable rumble strips - Work zone intrusion alarm system - Radar Speed Indicator - Traffic Control Contractor

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Medium Risk - Work Zone Level 2 – 40 – 45 MPH

WZ Level	Risk Level	Speed Limits	Risk Mitigation
2	Medium	<p>40 – 45 MPH</p> <p><u>If exposed to any of the below, elevate to Risk Level 1:</u></p> <ul style="list-style-type: none"> • <i>High Traffic Volume</i> • <i>Low Visibility</i> • <i>Poor Weather (Snow, Ice, Rain)</i> • <i>High Risk Road Design (Intersections, blind approaches, hills, curves)</i> • <i>Night Work</i> • <i>Long Duration (Greater than 5 days)</i> 	<p>Requirements:</p> <ul style="list-style-type: none"> - Shadow vehicle during set-up and tear down - Additional Signs- “Active Work Zone- Reduce Speed” - Law enforcement shall be requested and used when available <p>Consider:</p> <ul style="list-style-type: none"> - Portable speed bumps/portable rumble strips - Positive protection (<i>Crash truck with attenuator or Jersey Barriers</i>) - Automated flagger assist devices - AFAD - Work zone intrusion alarm system - Arrow boards during single lane shifts - Radar speed indicator - Traffic Control Contractor

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High Risk - Work Zone Level 1 – Greater than 45 MPH

WZ Level	Risk Level	Speed Limits	Risk Mitigation
1	High	Greater than 45 MPH	<p>Requirements:</p> <ul style="list-style-type: none"> - Positive protection (<i>Crash truck with attenuator or Jersey Barriers</i>) - Law enforcement shall be requested and used when available - Shadow vehicle during set-up and tear down - Additional Signs- “Active Work Zone- Reduce Speed” <p>Consider:</p> <ul style="list-style-type: none"> - Portable speed bumps/portable rumble strips - Automated flagger assist devices - AFAD - Work zone intrusion alarm system - Arrow boards during single lane shifts - Radar speed indicator

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Annual Employee Training – WZ Intrusion Awareness

- **Annual Employee Safety Training**
 - WZ Protection CBT
 - WZ Intrusion Awareness CBT
 - Flagger Training – State Requirements
- **Life Saving – SIF Potential**
- **Communication & Incident Reporting**
- **Risk – Always Present**
- **Not Theoretical**
- **Difficult to Control Actions of Others**
- **Teamwork - “Be Thy Brother’s/Sister’s Keeper**
- **Stop Work Authority**

Recall	Recall why preventing work zone intrusions is a priority for all employees and expectations from leadership supporting the work.
Understand	Understand why preventing work zone intrusions is important, what steps can be taken now, and how we will continuously improve work zones at NiSource.
Explain	Explain the reasons and events that are shaping the drive to reduce work zone intrusions.
Give	Give examples of actions and precautions that should be taken to ensure a safe work zone in the field.
Describe	Describe the conditions and responsibility to use stop work authority.
List	List the ways in which we will continuously improve work zones as we learn.
Understand	Understand what is changing in the corporate work zone safety policy.

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Work Zone Planning

- Required Prior to Start of Work
- Full Road Closures Considered
- Identify & Determine Posted Speed
- Risk Level of Work Zone – Speed & Existing WZ Hazards
- Identify Required & Additional Hazard Control Methods
- Elevate Risk Level – Discretion
- Leading Coach/Stop Work Job Site Observation Finding

NiSource		Work Zone Planning Form	
Location:		Date:	
City:	State:	Lead Person/Job Scout	
Job Number:		Job Description	
Risk Evaluation			
Directions: Full Road Closure Shall always be explored during Work Zone Planning. In the event a full road closure is not feasible, the work zone shall be assessed according to the chart below to identify the appropriate risk ranking and required controls.			
What is the Posted Speed Limit:			
Risk level identified using the chart below:			
Planning Verification			
Date:	Time:	Signature:	
WZ Level	Risk Level		Risk Mitigation
1	High	Greater than 45 MPH Speed Limit	Requirements: <ul style="list-style-type: none"> - Positive Protection (Crash truck with Attenuator or Jersey Barriers) - Law Enforcement shall be requested and used when available. - Shadow vehicle during set-up and tear down - Additional Signs- "Active Work Zone- Reduce Speed" Consider: <ul style="list-style-type: none"> - Portable Rumble Strips/Portable Speed bump - Automated Flagger Assist Devices - Work zone intrusion alarm system - Arrow Board during single lane shift - Radar Speed Indicator - Traffic Control Contractor
2	Medium	40-45 MPH Speed Limit <u>If exposed to any of the below, elevate to Risk Level 1:</u> High Traffic Volume Low Visibility Poor Weather (Snow, Ice, Rain) High Risk Road Design (Intersections, blind approaches, hills, curves) Night Work Long Duration (Greater than 5 days)	Requirements: <ul style="list-style-type: none"> - Shadow vehicle during set-up and tear down - Law Enforcement shall be requested and used when available. - Additional Signs- "Active Work Zone- Reduce Speed" Consider: <ul style="list-style-type: none"> - Portable Rumble Strips/Portable Speed bump - Positive Protection (Crash truck with Attenuator or Jersey Barriers) - Automated Flagger Assist Devices - Work zone intrusion alarm system - Arrow Board during single lane shift - Radar Speed Indicator - Traffic Control Contractor
3	Moderate	35 MPH Speed Limit or Less <u>If exposed to two or more of the below, elevate to Risk Level 2:</u> High Traffic Volume Low Visibility Poor Weather (Snow, Ice, Rain) High Risk Road Design (Intersections, blind approaches, hills, curves) Night Work Long Duration (Greater than 5 days)	Requirements: <ul style="list-style-type: none"> - Standard work zone following MUTCD and local requirements Consider: <ul style="list-style-type: none"> - Portable Rumble Strips/Portable Speed Bumps - Work zone intrusion alarm system - Radar Speed Indicator - Traffic Control Contractor
Discretion may be used to elevate the risk level for hazards not listed in the exposures above.			

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Work Zone Protection – Program Summary

- NiSource Life Saving Rule
- Corporate Work Zone Protection Policy
- Stop Work Authority
- Work Zone Intrusion Incident Management & Investigation
- Work Zone Protection – Observation Data – Opportunities & Trending
- Annual Employee Training
- Cooperative Contractor Safety Committee – Temporary Traffic Control
- Work Zone Awareness Television - Radio - Commercial
- National Work Zone Awareness Week – Go Orange Day – April 17 – 21, 2023



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Moving Forward

Continuous Improvement Opportunities – 2023 & Beyond

- New Work Zone Protection Policy – Communication & Implementation – April 2023
- Roles & Responsibilities – Shadow Vehicle – Set Up/Tear Down
- Socializing & Securing Additional Temporary Traffic Control Personnel
- Enhanced Pre-Job Planning – Work Zone Classification & Set Up
- Completion of Work Zone Planning & Inspection Forms – Drive –Through Inspection
- Trending & Analysis - Work Zone Intrusion Causation – Safety Management System
- Flagger De-escalation Training
- Cone Spacing – Road Closures – Creating Opportunities for Motorists
- Human Performance – Flagger Behavior - Not Facing or Turning Back to Traffic
- Motorists – Residents – Customers – Existing Driveways – Already Inside the Work Zone
- Utilizing Air Horns & Storm Whistles to Alert Others
- Use of Cone Bars – Cone Toppers - for Road Closures & Securing Adjacent Roadways
- Company Personnel Parking in Work Zone – Buffer Zone
- Increased Quality & Learning – Safety Observation Data & Work Zone Intrusion Post-Incident Investigations
- Safety Technology - Improving Work Zone Safety or Influencing Driver Behaviors
- Work Zone Awareness & Education – Young Drivers & General Public
- Advocating for Work Zone Legislation – SB 614



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Proposed Legislation – Pennsylvania – SB 614

Violators disregarding flaggers and speeding through work zones may be more effectively held accountable with the addition of an effort to proactively address violations rather than in retrospect or after significant harm is done. The language includes a requirement for law enforcement to investigate infractions corroborated by (1) no less than two witnesses OR (2) body, dash, or roadside cameras.

My proposed penalties for non-contact with a vehicle or construction employee are as follows:

1st Infraction:

- 2 points on the offender's license
- \$400 fine
- Mandatory completion of PennDOT driver safety course

2nd Infraction:

- 90-day driver's license suspension
- \$800 fine
- Mandatory completion of PennDOT driver safety course

3rd Infraction

- 1-year driver's license suspension
- \$1,200 fine
- Mandatory completion of PennDOT driver safety course

While primarily a preventative effort, this legislation also increases penalties for striking a worker or construction vehicle/equipment as follows:

- 6-month driver's license suspension
- Mandatory completion of PennDOT driver safety course
- Allocations of revenue from the fines are as follows:
- 50% for PennDOT to provide driver safety courses
- 50% for reimbursement of investigating police force

NEWS RELEASE

Senator Elder Vogel
47th Senatorial District

Harrisburg Office • 457 Main Capitol, Harrisburg, PA 17120 • (717) 787-3076
Rochester District Office • 488 Adams Street, Rochester, PA 15074 • (724) 774-0444
New Castle Office • 1905 W. State Street, New Castle, PA 16101 • (724) 654-1444
evogel@psen.gov • senatorelder vogel.com



FOR IMMEDIATE RELEASE

Vogel Bill Would Improve Work Zone Safety for Workers, Motorists

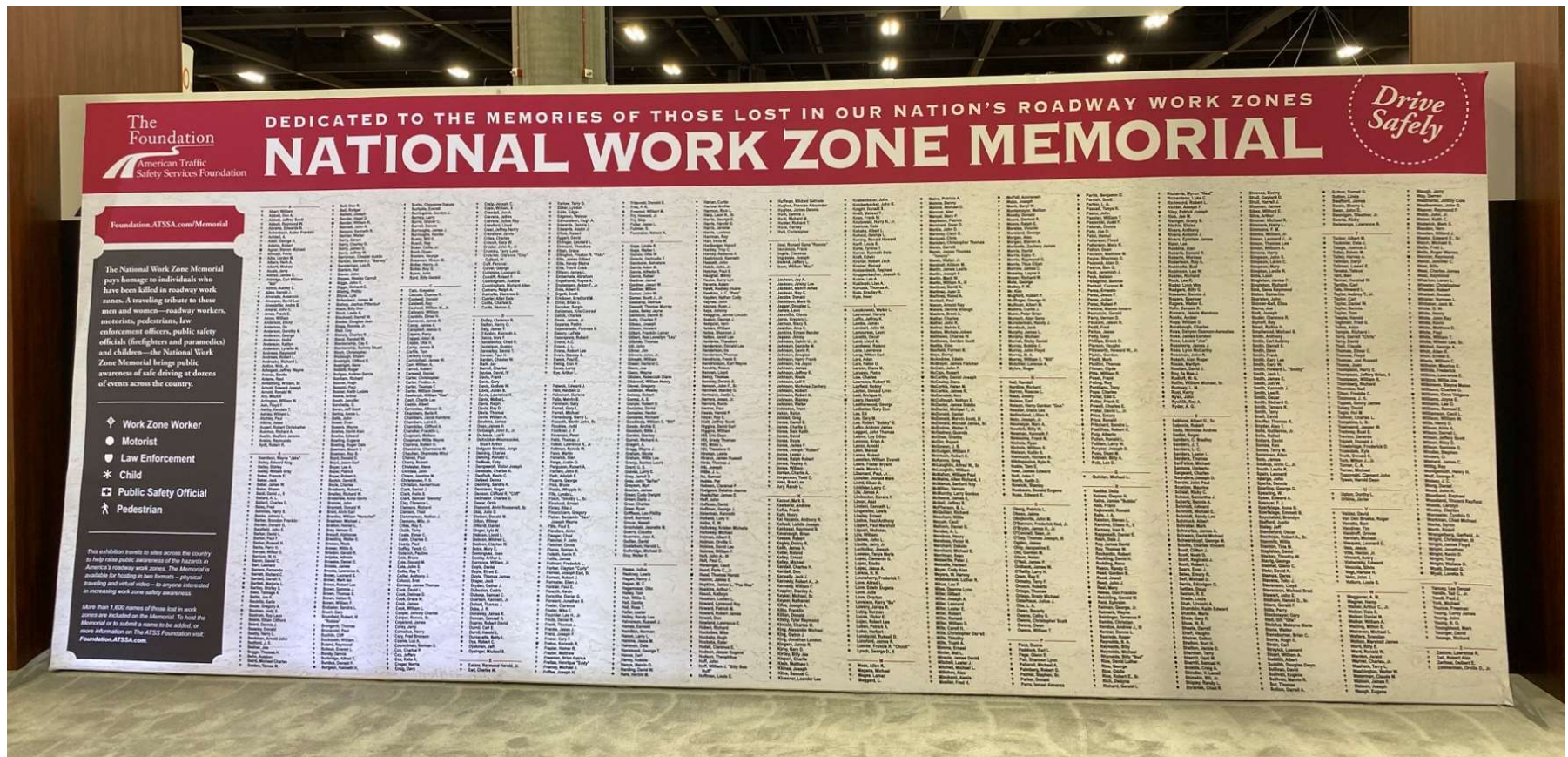
Even as Pennsylvania recognizes National Work Zone Awareness Week from April 26-30, Senator Elder Vogel (R-47) is introducing legislation intended to provide workers with a safe environment and prevent accidents.

"Pennsylvania's road work is often a topic of discussion. Between tolls, bridges and future projects, we spend a lot of time talking about our infrastructure, but not enough time focusing on the safety of the workers," said Senator Vogel. "In connection with National Work Zone Awareness Week, I am introducing Senate Bill 614 to enhance penalties for offenses in active work zones that do not result in an accident. By addressing the drivers who currently get away with threatening the safety of our work zones, we increase the overall safety of everyone involved."

Under Senate Bill 614, motorists who disregard flaggers and/or speed through work zones – without contacting a vehicle or construction employee – would face significant penalties as long as the infractions are corroborated by at least two witnesses or by body, dash, or roadside cameras.

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Thank You!

Questions?

Hindsight explains the incident that foresight would have prevented...



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