



Work Zone Innovations

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Resources

www.Michigan.gov/mdotworkzones



Work Zone Mobility

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The Michigan transportation system is critical to supporting a vibrant economy by moving traffic and freight safely and efficiently.

Growing congestion on Michigan roads with an increased need to perform rehabilitation and reconstruction is resulting in complex challenges to maintain work zone safety and mobility.

Learn more about [Work Zone Safety](#) in Michigan.

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[Work Zone Mobility E-mail Signup](#)



Traffic Regulating

The role of a traffic regulator is crucial to the success of a well-run traffic operation. Traffic regulating is a full-time job. Careless use of the sign or distraction from duty could cause serious injury to yourself, other workers, or the public.

By performing your duty diligently, you can do your part to prevent traffic incidents in your work area.

[Traffic Regulator Instruction Manual >](#)

Manuals

[Work Zone Safety and Mobility Manual](#)

[Maintenance Work Zone Traffic Control Guidelines](#)

[MDOT 2020 Standard Specifications for Construction](#)

[MMUTCD Part 6 - Temporary Traffic Control](#)

Resources

[Work Zone Transportation Management Plans](#)

[Work Zone Safety and Mobility FHWA Final Rule](#)

[Mobility Impact Map](#)

[CO³ Analysis](#)

Documents

[Work Zone Audit Report](#)

[MDOT Traffic and Safety Typicals](#)

[Traffic Regulating Manual, June 2010](#)

[Work Zone Device MASH Plan](#)

[Manual for Assessing Safety Hardware Compliance Guidance for Temporary Traffic Control Devices in Work Zones](#)

[Roadside Safety Hardware Assessment and Implementation Plan](#)

[MDOT Special Details](#)

[MDOT Special Provisions](#)

Additional Contacts

Local Agency Programs

[Bruce Kadzban](#) | 517-335-2229

Utility and Construction Permits

[Joe Rios](#) | 517-241-2103

Railroad Infrastructure

[Nisia Tebbe](#) | 517-599-4014

Resources

Pedestrian Devices

Audible Devices

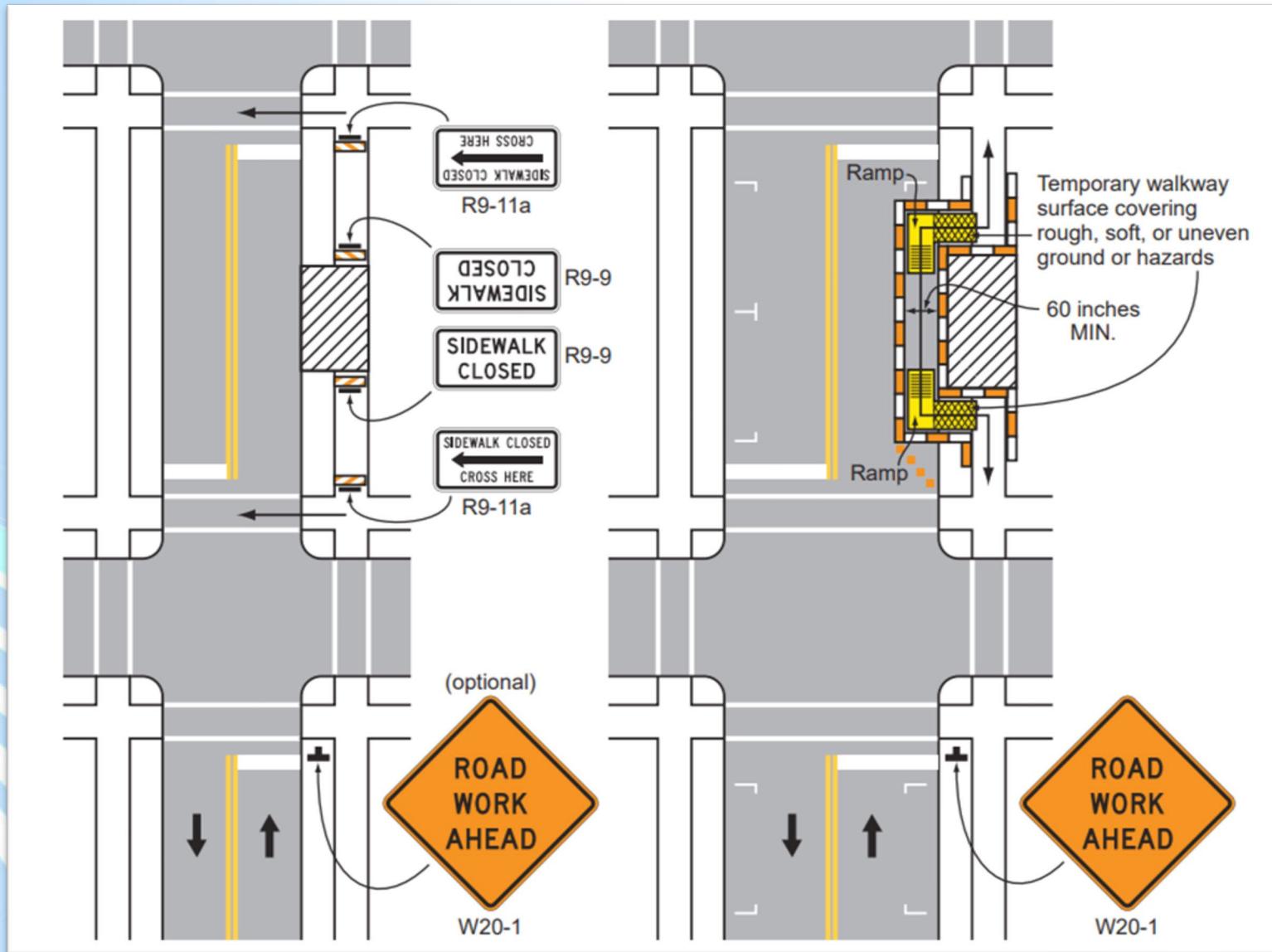
Included in MUTCD 11th Edition:

“SIDEWALK CLOSED CROSS HERE signs shall include audible information devices to provide adequate communication to pedestrians with vision disabilities”

“Audible information devices shall be provided where midblock sidewalk closings and changed crosswalk areas cause inadequate communication to be provided to pedestrians with vision disabilities.”



Audible Devices





Portable HAWK System

Quick and Easy Installation of Pedestrian Crosswalks

Permanent HAWK systems have been increasingly popular across the United States in recent years and have proven to be a safe and effective solution for midblock crossings in urban areas and for events. But despite the increased acceptance and adoption of these systems, a reliable temporary HAWK system was not available -- until now.

Our Portable HAWK system adopts the proven HAWK technology and takes it to the next level to allow for fast deployment, portability, and ease of use. The device is effective for the motorist, safer for the pedestrian and far less costly to install than permanent HAWK systems.

[PRODUCT INFORMATION](#)

[FIND A DISTRIBUTOR](#)

Safety Strategies:

How can we improve work zone safety for workers and motorists?

Connected Arrow Boards

- SP is approved and available for use as a FUSP
- Use is optional for Local Agency projects
- Industry is ready for boards to be included in projects
- Pay item & pay item codes have been created
 - 8120155: Connected Arrow Board, Type C, Furn
 - 8120156: Connected Arrow Board, Type C, Oper



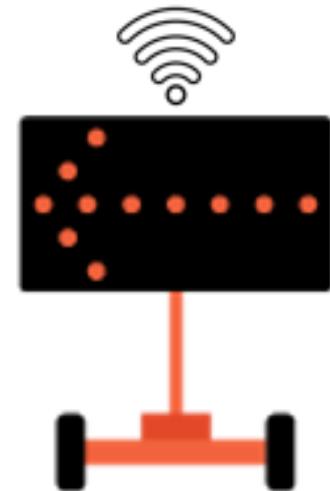
Connected Arrow Board Benefits

CONNECTED ARROW BOARDS

REAL-TIME ACTIVE LANE CLOSURE INFORMATION
ENHANCED DRIVER AWARENESS = SAFER WORK ZONES

BENEFITS

- Know **WHERE** lane closures are in **real time**.
- Log **WHEN** lane closures happened.
- Alert drivers of **WHICH** way to **merge**.
- Reduce crashes before **closure/taper**.
- Add to **ANY** existing equipment (in less than an hour).
- Nothing new to learn for field personnel.
- Real-time data using **WZDx** protocols for **ACTIVE** lane closures.



WZDx

Work Zone Data Exchange

Connected Vehicles & Apps



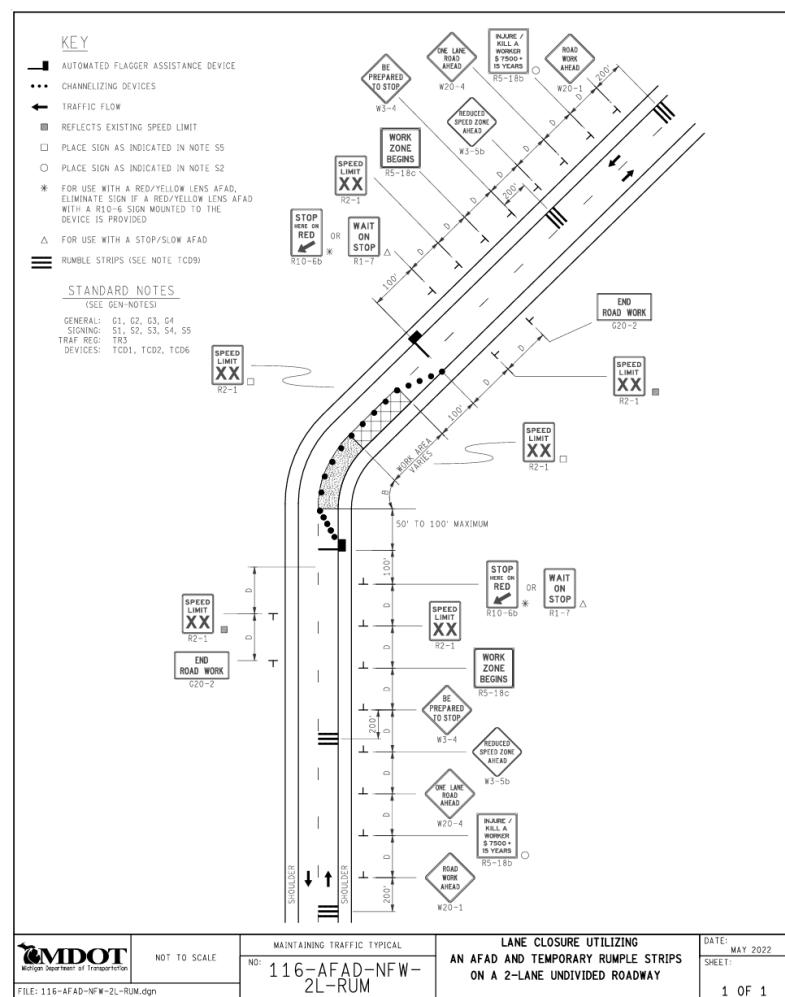
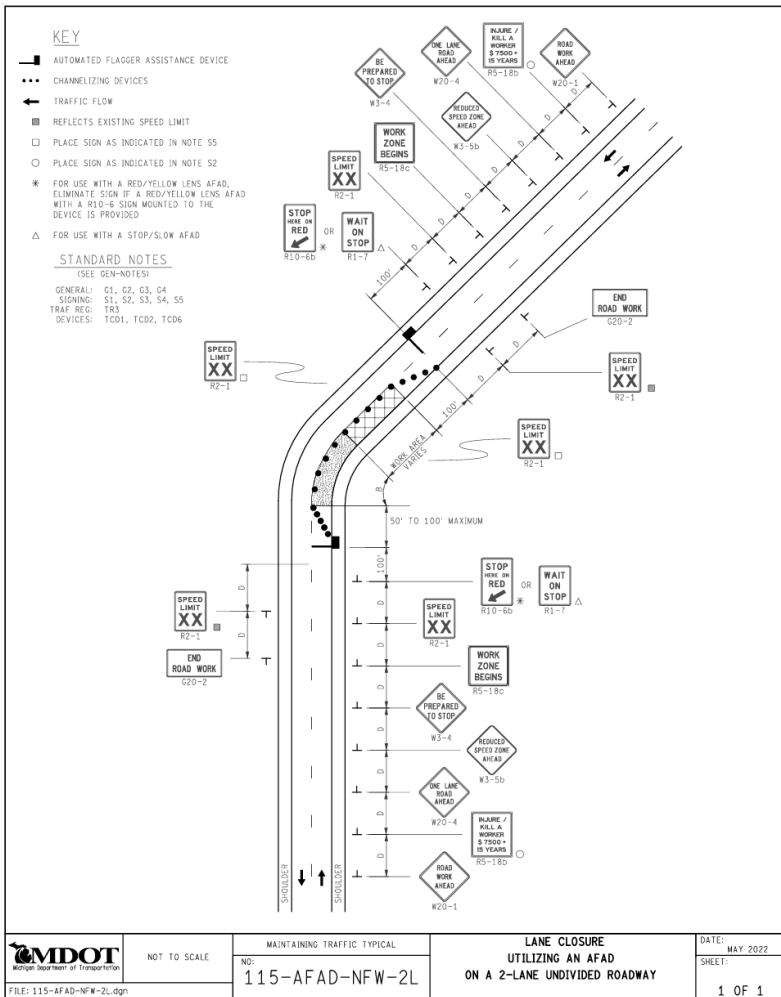
Traffic Management Centers, Navigation Systems & 511

AFADs

- Automated Flagger Assistance Devices
 - Optional use
 - Previously approved SP available
 - Typicals 115 and 116 available



AFAD Typicals – 115 & 116



Temporary Portable Rumble Strips

- FUSP 812D – Optional for Local Agency



Temp Rumble Strips (Orange)

- Included in 812.03.D.14



Radar Speed Trailers



- Use in all freeway projects where the existing speed limit is 55 mph or higher and a speed reduction is required during construction for longer than 3 days.
- Optional use for local agency and all other trunkline projects.
- MSU March 2024 Study for placement

New Work Zone Devices

New Advance Warning System



Pilots for Alternate Queue Detection Systems

- Basic Queue Warning System
 - 2026 pilot goal
- Overhead Stopped Traffic Advisory System Pilot
 - Currently in place on I-696
 - STOP OR SLOW TRAFFIC WHEN FLASHING
 - Good feedback from construction staff



Permanent Attenuator Pilot



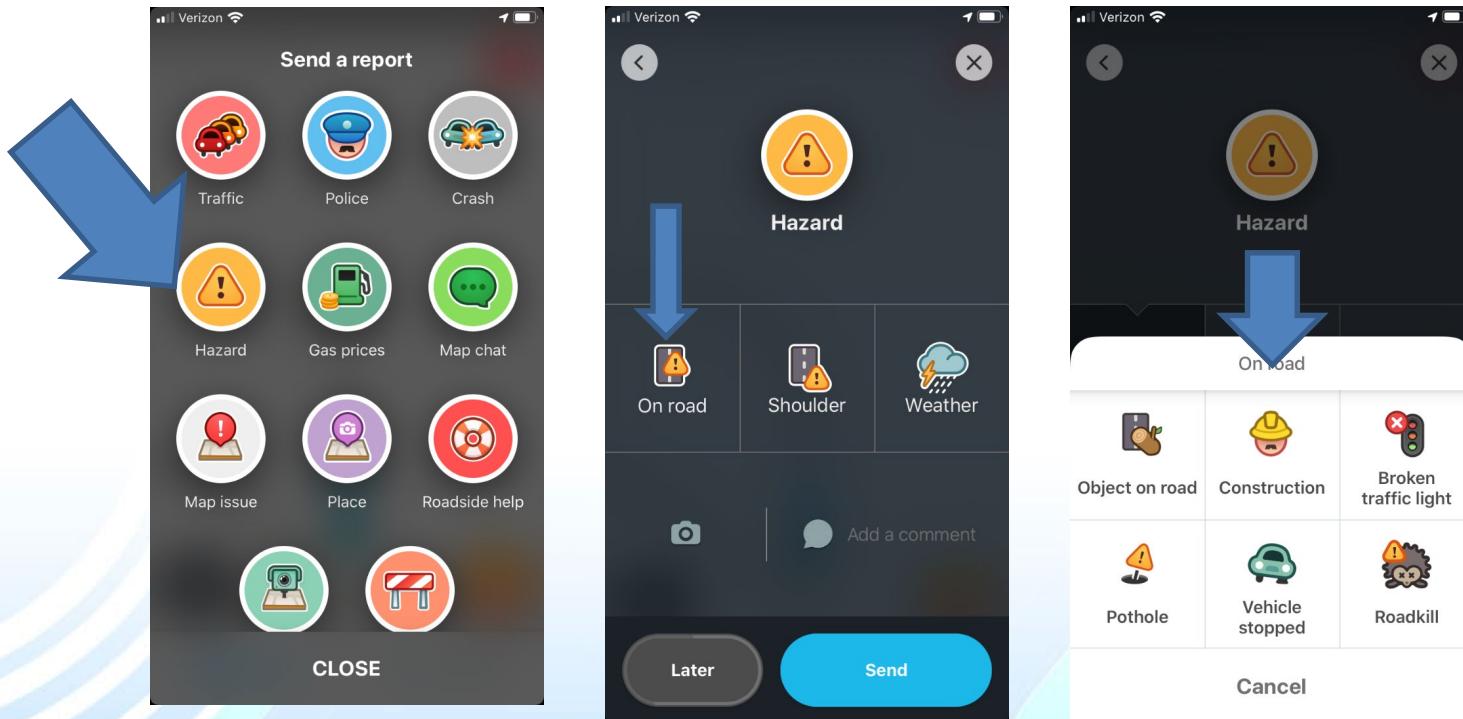
Over Winter Projects



What can we do to help prevent crashes?

- Connected Work Zones
 - Having work zone which talk to vehicles and warn drivers
 - This technology is ready today!
 - MDOT I-96 Connected Work Zone Demo
- Make sure MiDrive is up to date
 - Promote the use of WAZE by crews until we have work zone devices.

Using Waze to Improve Safety



WZDx is...

WZDx is a simple, open standard for sharing data about planned and active work zone events.

WHAT IS WZDx



Work zone data gathered using a common specification



Aggregated by infrastructure owners and operators (100s)

Published in a common format



Picked up by mapping companies



Delivered directly to roadway users

THE NEXT STEPS

- Utilizing a common passenger vehicle such as a Chevrolet Tahoe
- Testing worker presence in live construction zones
- Utilizing smart work zone devices for information in real time



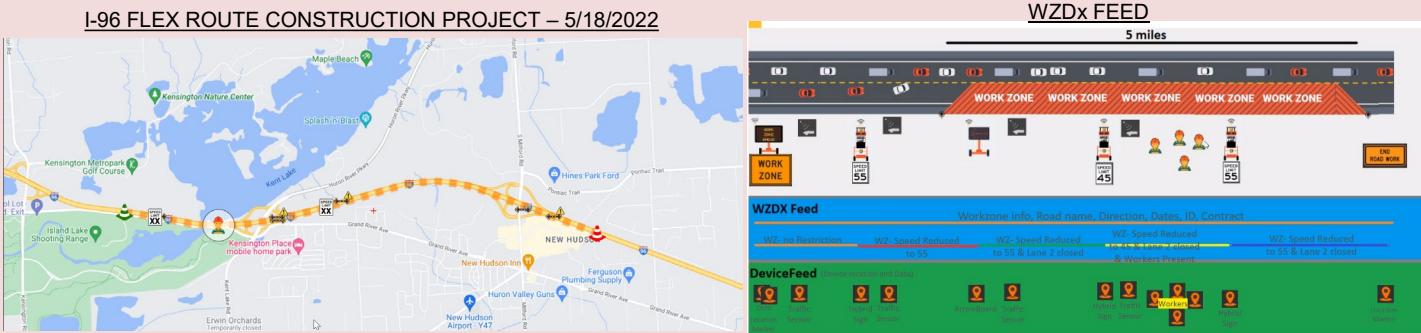
LEVERAGING CONNECTED VEHICLE TECHNOLOGY TO IMPROVE WORK ZONE SAFETY



Trial our use of new WZDx 4.0 JSON data structures in a GM Chevy Tahoe:

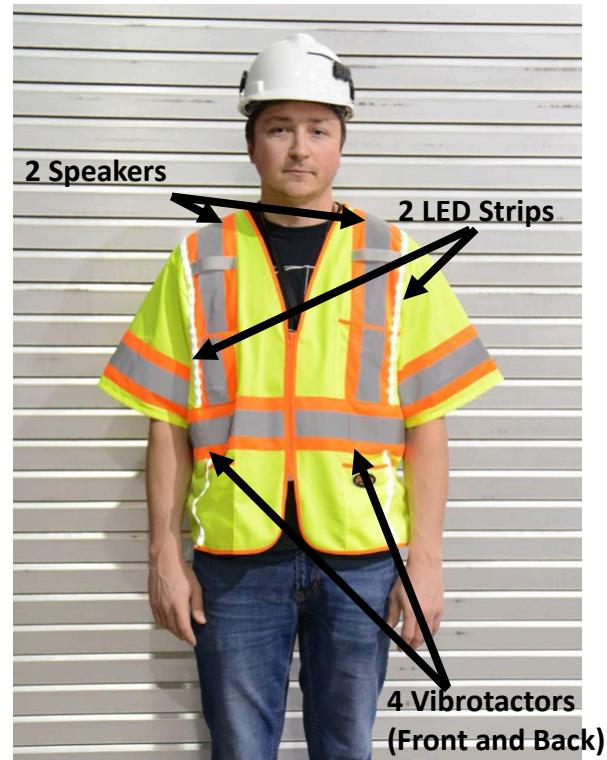
- Workers Present
- Lane Closures from arrow boards
- Variable speed limit
- Road construction start/end points

Type	Status	Name	Value	Voltage	Road	Mile Post
		EB I-96 Novi		3.691 mi.	I-96	151.94
		WZLS G2		6.66 V	I-96	151.94
		W-2	80	12.59 V	I-96	152.2
		Ver-Mac GM Demo		12.96 V	I-96	152.22
		Demo worker			I-96	152.68
		W-1	80	12.53 V	I-96	153.48
		WZLS R2		6.75 V	I-96	155.71

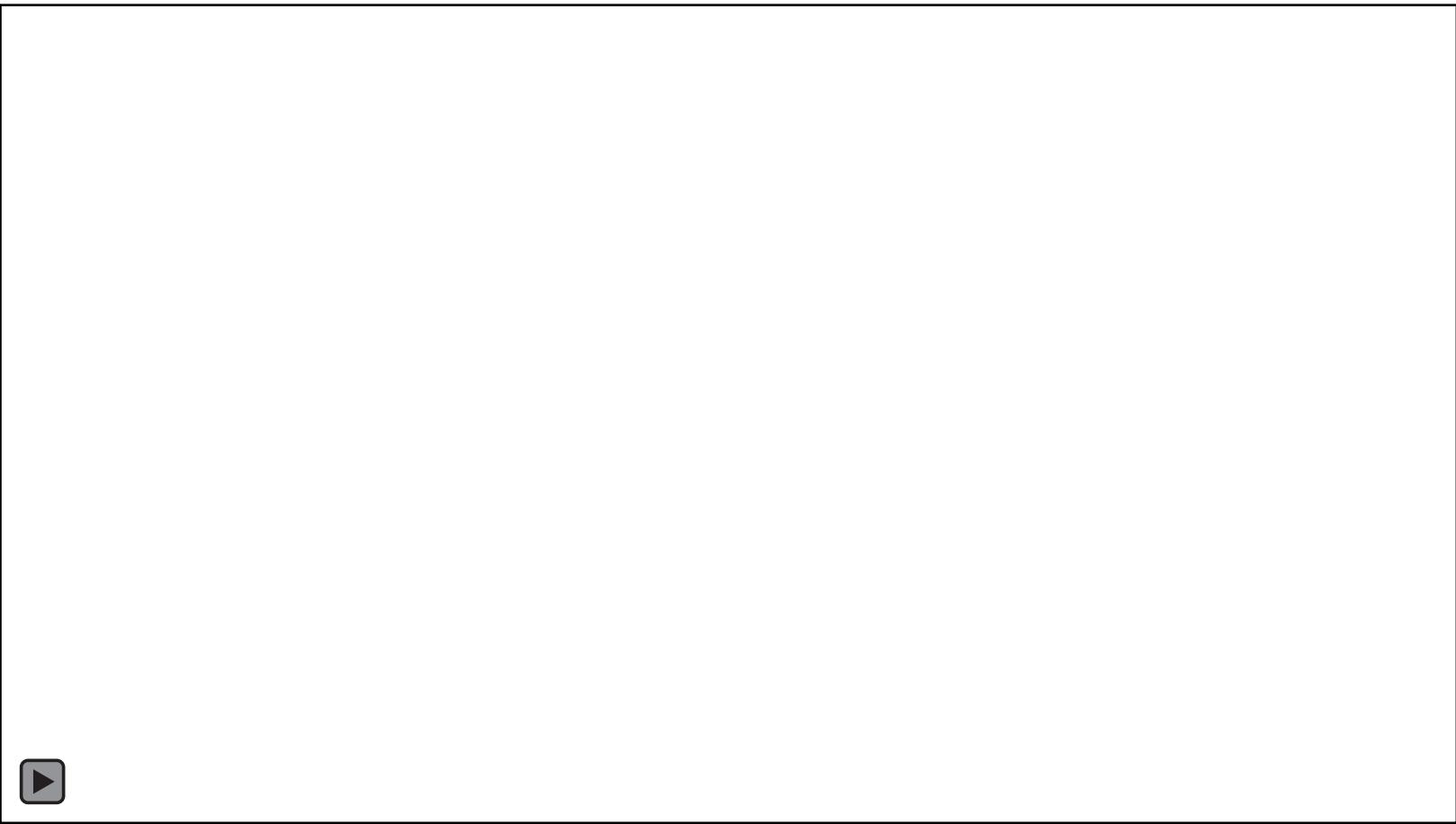


Smart Vest

- Wearable ANSI Class 3 system to localize and communicate with roadside workers
- Wireless mesh network integrates to base station
- GPS+RTK module
- Inertial measurement unit
- Redundant modes of warning
 - Vibrating motors
 - Chirping buzzer
 - LED illumination
- 8 oz, 22 hours battery life



[Video](#)



Guardian Cone Pro



Long-Range Roadside Protection Increase your site awareness and enable new job economics

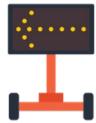
The Guardian Cone Pro ensures that workers are alerted well in advance of approaching vehicles. This long-range capability is crucial for high-speed or busy roads where early warning is essential for safety.

Protect Your People

Safely Establish the Work Zone

The Guardian Cone Pro safeguards workers as they set up and operate their traffic control. This proactive safety measure not only enhances the overall protection of the crew but also streamlines the setup process, allowing workers to focus on deploying their traffic control efficiently and safely.

Commercial Vehicle FMCSA Grants



Connected Traffic Control Objects



Vendor Backend Data Aggregation



Agency Backend Data Publication



CMV Data Distribution



Real-time In-vehicle And Work Zone Alerts

MIXON HILL **HNTB** **MH CORBIN** **INTEGRAL BLUE**

Kimley-Horn **iCone** **VER-MAC** **Mediums**
of Michigan, Inc. **ROAD COMMISSION** **PK CONTRACTING** **HAAS ALERT**

Safety Alerts for Work Zones (SAFZONE)

Figure 6: Safety Alerts For work ZONE (SAFZONE) system overview

1) Detect Vehicle Traffic Volume & Speeds
→ On-Camera video analytics
→ RADAR detection (optional)
→ Low light and inclement weather tolerant

2) Communications
→ Cellular modem (4G LTE)
→ DSRC (802.11p)
→ C-V2X

3) Secure Backend Cloud Services
→ Data collection, monitoring, and analytics
→ Data and alert dissemination to 3rd parties
→ Technical Support

4) Real-time in-vehicle and work zone alerts
→ CMVs' transponders, on-board systems, cell phone apps, and/or CMV routing and dispatch systems

- FMCSA grant awarded in 2021
- Improving static work zones

Partnering Automated Work Zones (PAWZ)

- Interstates 94, 96, 696, 75, and 275
- Improving mobile work zones for CMV

Work Zone Awareness Week

April 20th – 24th 2026

- 2026 Michigan Event:
April 20th at Dow Diamond Field



Work Zone Awareness Week

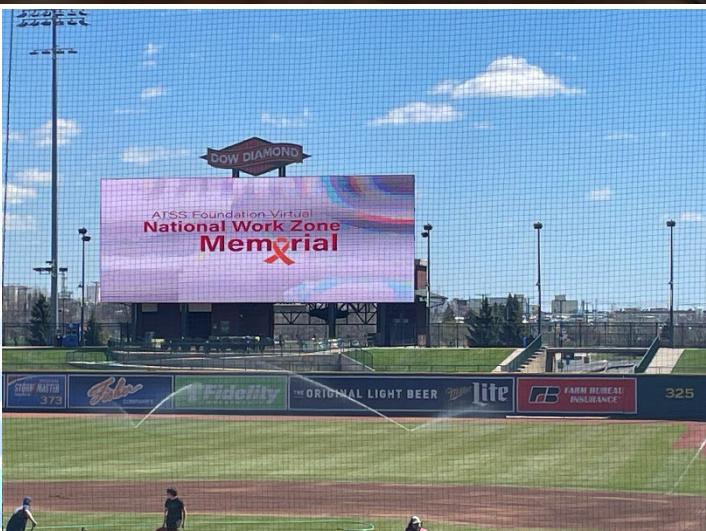


Scan the QR or use link to register



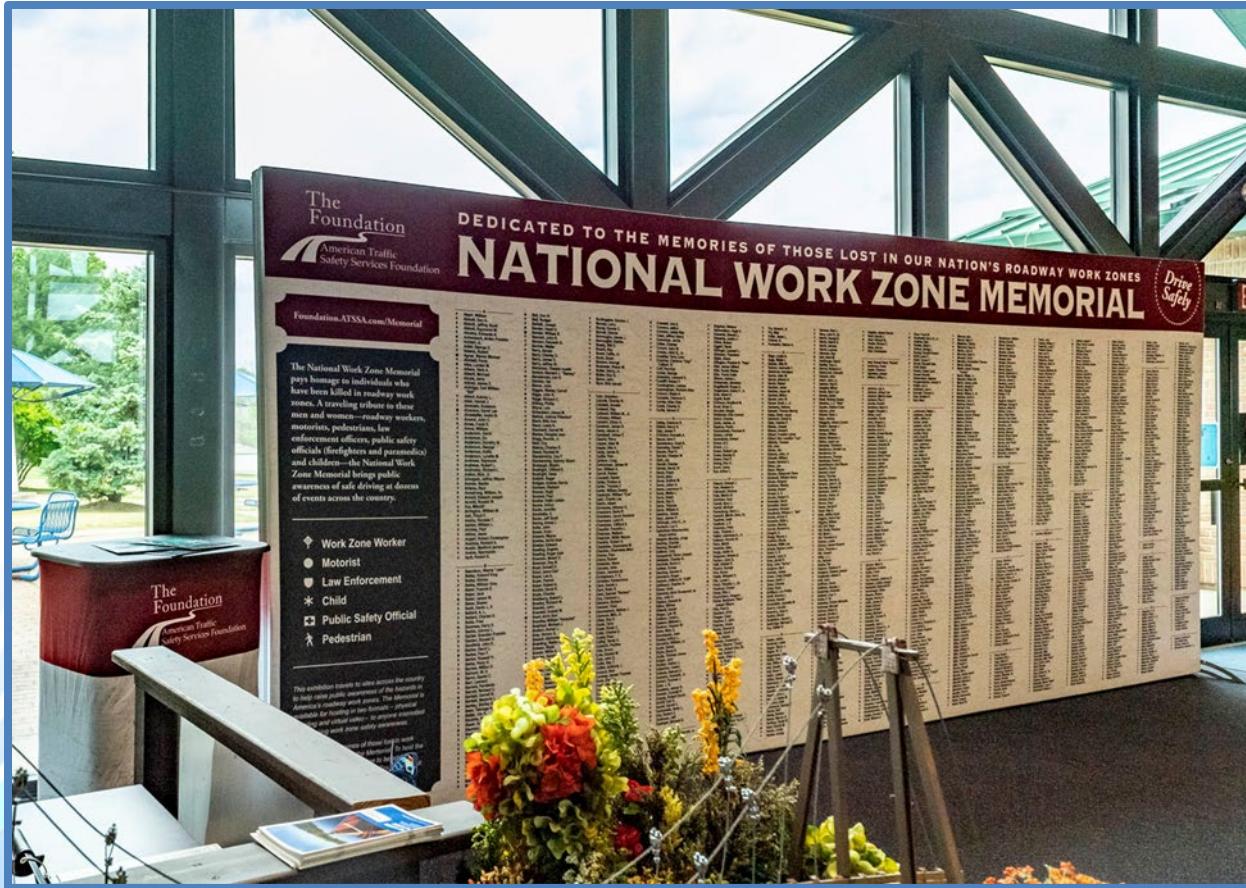
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National Work Zone Memorial

Clare Welcome Center: July 2nd – July 12th , 2026



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Questions?

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