WI ASPHALT PAVING ASSOC.- WORK ZONE SAFETY CONTRACTORS PERSPECTIVE

Ryan Spies, Rock Road Companies, Inc.
Mike Delfava, Walbec Group (Payne & Dolan)
Rockie Reuter, Mathy Construction Co.

TOPICS FOR DISCUSSION

1. How are companies using technology to achieve a safe work zone for their company and their employees.
2. What work zone techniques were used this past season to enhance safety and the overall quality of paving.
3. How has law enforcement been used to enhance the safety of your work zone.

WAPA & WI DOT-TECHNOLOGY ADVANCEMENTS THAT ARE NOW GUILDELINE OR SPECIFICATIONS-PAST PILOT PROJECTS

- Temporary Portable Rumble Strips
  - 2017- Required for Static Flagging Operations and two arrays consisting of 3 rumble strips on each end of the project
  - 2019- All Flagging Operations and one array consisting of 3 strips on each end of project

Temporary Portable Rumble Strips – One Array

Wisconsin Department of Transportation / Bureau of Traffic Operations

In 2017, to enhance the safety of highway workers and motorists, the Wisconsin Department of Transportation (WisDOT) implemented the use of temporary portable rumble strips (TPRS) on all static flagging operations that are in place for longer than two hours. The rumble strips provide an audible and vibratory warning to motorists entering a construction zone and have helped to reduce speeds in Wisconsin.

The policy developed in 2017 was based off a study completed by WisDOT that looked at several flagging operations to determine the effectiveness of the strips. Based on the results, the policy required TPRS be used during all static flagging operations where they were working for 2 hours or more. Advanced signs alert motorists of the upcoming work zone and presence of the temporary rumble strips. This policy required six rumble strips (2 arrays consisting of 3 strips each) to be placed at each end of the work zone which has since been updated. A standardized special provision was also developed, 643-020.

During the last year, WisDOT heard several concerns from internal staff as well as external partners with regards to the TPRS policy. Below is a list of some of those concerns:

1. Interpretation of what a static flagging operation is and what a moving operation is.
2. Difficulty in determining how a contractor would complete the work, whether static or moving, which then made it difficult to determine when to include TPRS in the contract.
3. Difference between two arrays and one array (6 TPRS or 3 TPRS).
4. Placement of arrays in advance of the flagger.

Based on these concerns, WisDOT decided to update the policy and make TPRS required for all flagging operations, static or moving, to eliminate any issues with determining when to use them. The department also decided to revise the requirement from two arrays to one array at each end of the flagging operation. This change in array requirement is based on information mentioning there is no significant difference in speeds between the number of arrays used. Since there is not a significant difference between one array and two arrays, the department decided to update the policy to require one array to get better compliance and consistency with the use of the TPRS for all flagging operations.

Effective with the December 2019 letting, this policy will be in place for improvement projects. This policy will be implemented for county work starting in January 2020. A revised standard detail drawing was published and can be found at the link below that shows one array as well as the new placement locations.

https://wisconsindot.gov/rdwy/sdd/sd-15c12.pdf#sd15c12


RUMBLE
STRIPS
RUMBLE
STRIPS


PSS
ROADQUAKE
RAPTOR
LIFT HERE
LIFT HERE

TOPICS FOR DISCUSSION

1. How are companies using technology to achieve a safe work zone for their company and their employees.
2. What work zone techniques were used this past season to enhance safety and the overall quality of paving.
3. How has law enforcement been used to enhance the safety of your work zone.

VER-MAC®

CONNECTED WORKER PILOT PROJECT

WisDOT – I-43 Waukesha Co 1090-09-76

- STH 164 to Moorland Road
- Approx. 6 miles of Night Milling and Paving Operations
- Erin Schwark, Statewide Work Zone Operations Engineer

SCOPE OF PILOT PROJECT

Demonstrate how worker presence detection can automate digital speed limit (DSL) signs to enhance worker safety and improve motorists' compliance and awareness

IMPROVING SPEED ACCURACY

- Assisted speed changes based on worker presence data
- Manually changing speeds based on work schedule
- Manually covering / uncovering signs

WZ SPEED MANAGEMENT

- Bi-directional
- Remote speed management in JamLogic

Work day starts	7-8-2024 7:03:36 AM	DSL #7071	55
	7-8-2024 7:03:37 AM	DSL #7068	55
	7-8-2024 7:03:37 AM	DSL #7073	55
	7-8-2024 7:03:37 AM	DSL #7083	55
	7-8-2024 7:03:37 AM	DSL #7091	55
	7-8-2024 7:03:38 AM	DSL #7077	55
	7-8-2024 7:03:38 AM	DSL #7098	55
	7-8-2024 7:03:38 AM	DSL #7112	55
	7-8-2024 7:03:38 AM	DSL #7114	55
	7-8-2024 7:03:38 AM	DSL #7115	55
	7-8-2024 7:03:38 AM	DSL #7116	55
	7-8-2024 7:03:38 AM	DSL #7117	55
Work day ends	7-8-2024 9:27:04 PM	DSL #7068	65
	7-8-2024 9:27:04 PM	DSL #7112	65
	7-8-2024 9:27:04 PM	DSL #7114	65
	7-8-2024 9:27:04 PM	DSL #7115	65
	7-8-2024 9:27:05 PM	DSL #7071	65
	7-8-2024 9:27:05 PM	DSL #7073	65
	7-8-2024 9:27:05 PM	DSL #7083	65
	7-8-2024 9:27:05 PM	DSL #7091	65
	7-8-2024 9:27:05 PM	DSL #7098	65
	7-8-2024 9:27:05 PM	DSL #7116	65
	7-8-2024 9:27:05 PM	DSL #7117	65

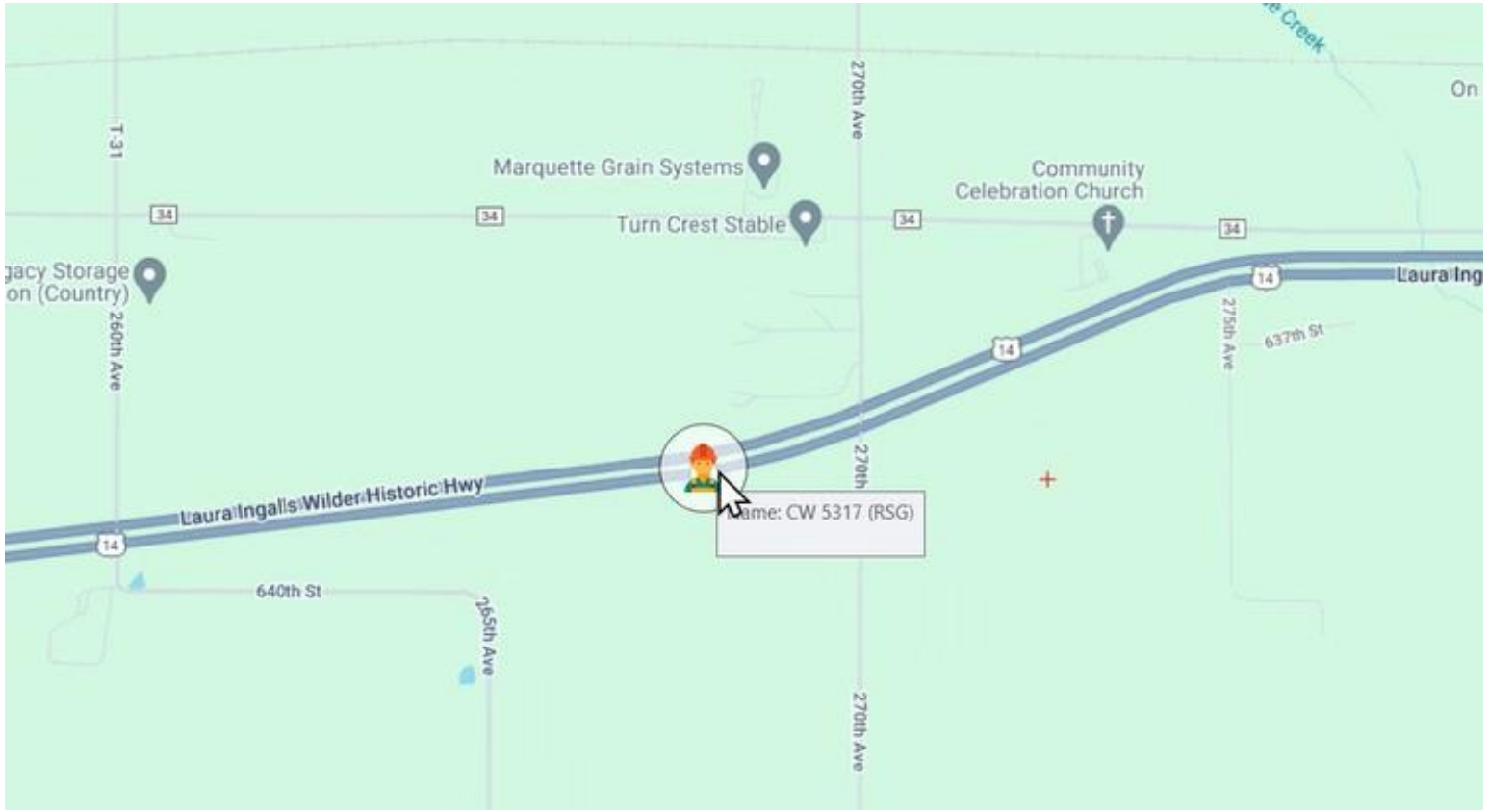
THE CONNECTED WORKER MODULE (CWM)

- Worker presence is a critical piece of information
- The CWM turns this into a virtual data point
- Can be integrated into the speed management process
- Can be used to trigger various automations, actions and decisions.

DATA-ASSISTED SPEED MANAGEMENT

- When the CWM is used in combination with Digital Speed Limit (DSL) signs:
  - Speeds are lowered only when and where relevant
  - Reinforces public's trust & compliance
  - Improves clarity of information communicated
  - Brings awareness to worker presence

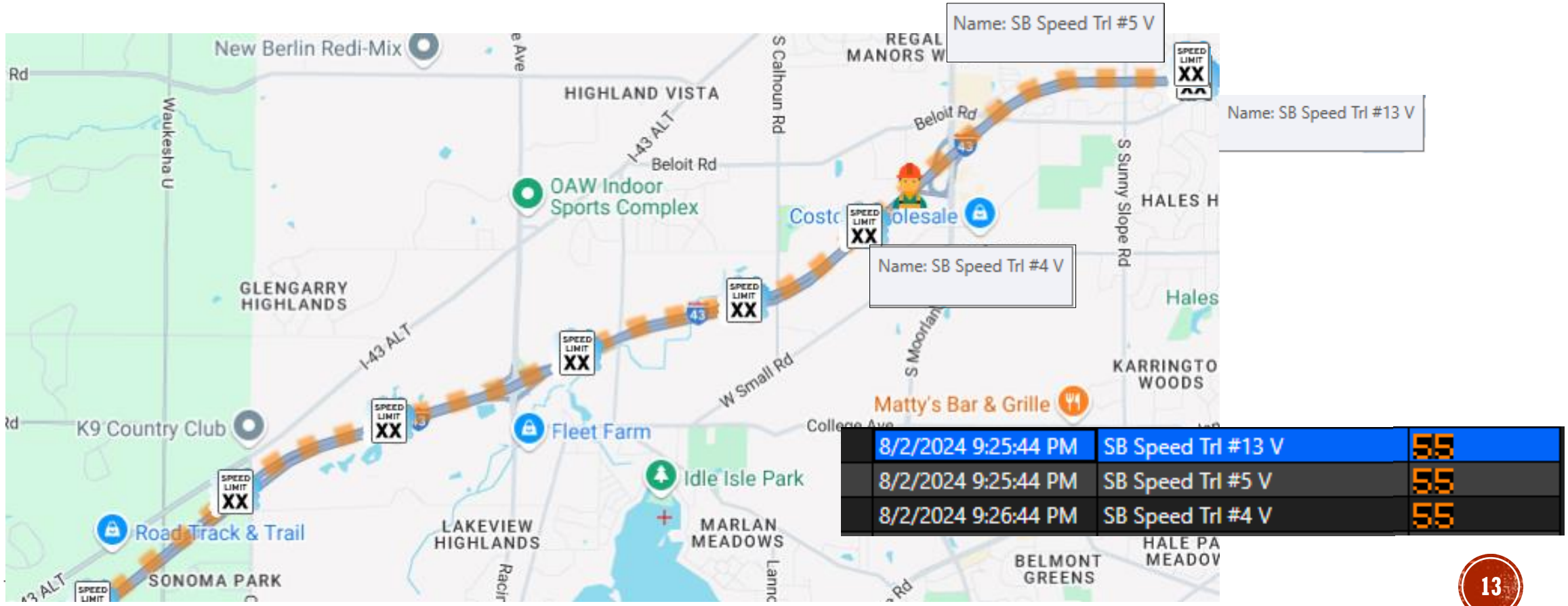
WHAT HAPPENED IN THE VIRTUAL SET UP



- A worker is detected entering the zone

VIRTUAL SIGN LOGIC & CONDITIONS

- Area of influence was 11,600 ft (2.2 miles) downstream and 700 ft upstream
- Can be customized to have smaller segments or even cover the whole WZ



WISDOT TRIAL WITH DATA-ASSISTED WORK ZONE SPEED MANAGEMENT

Project:

- Bi-directional job
- 16 DSLs, 8 per direction, 22 Days
- Night paving/widening job
- **Virtual** speed limit signs were triggered by worker presence

Results:

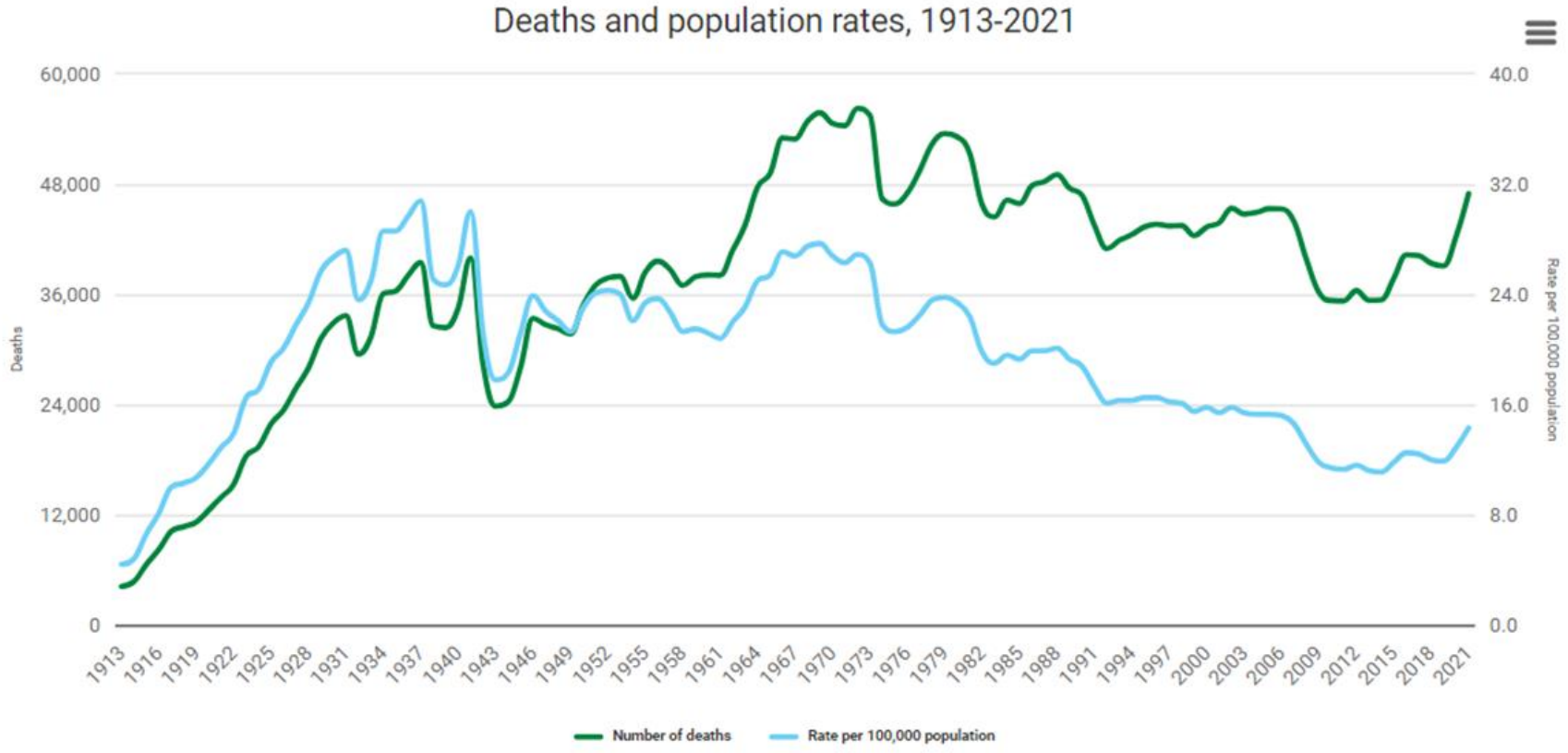
- No speed reduction information on this project (Past NAPA Pilot Projects- Average 8 MPH Speed Reduction)
- Based on the Virtual Data Collected, the DSL only changed in the worzone when workers were present. (this information was presented to Erin Schwark, WisDOT)

TOPICS FOR DISCUSSION

1. How is your company using technology to achieve a safe work zone for your company and/or employees.
2. What work zone techniques were used this past season to enhance safety and the overall quality of paving.
3. How has law enforcement been used to enhance the safety of your work zone.

3 MAJOR SPIKES IN FATALITIES

- First few decades of the 20th century
- The 1960's
- Currently



BEHAVIORS

- Speed
- Seatbelts
- Impairment
- Distraction


15413
GF60

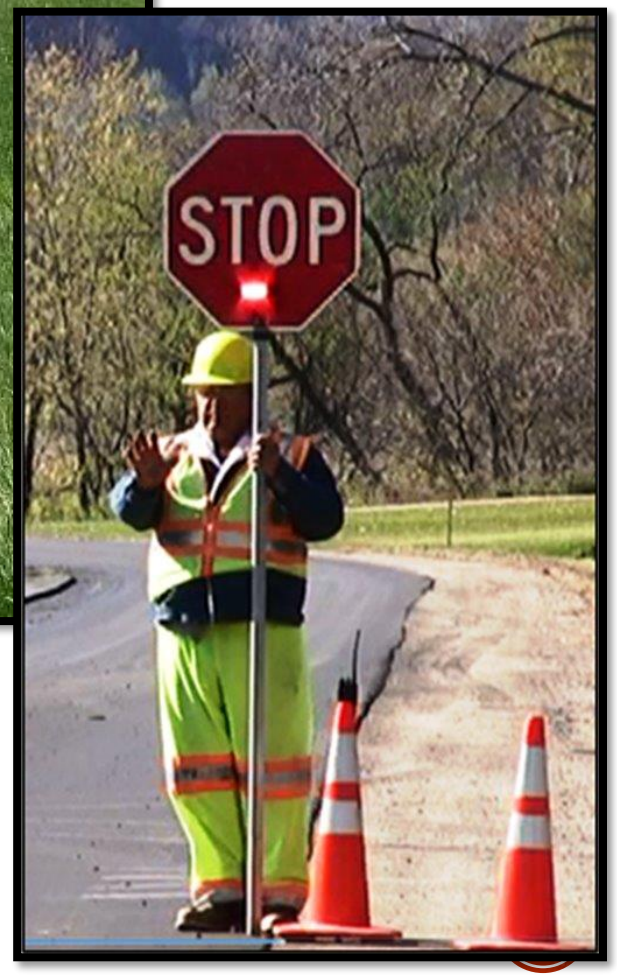

soul
WISCONSIN

TOPICS FOR DISCUSSION

1. How is your company using technology to achieve a safe work zone for your company and/or employees.
2. What work zone techniques were used this past season to enhance safety and the overall quality of paving.
3. How has law enforcement been used to enhance the safety of your work zone.


STOP


STOP


STOP

IOWA STATE PATROL PARTNERSHIP

SPEEDING / DISTRACTED DRIVING ENFORCEMENT

HIGHWAY 20, WEST OF DUBUQUE, IOWA
MARKED UNIT IN THE APPROACH TAPER, 55MPH ZONE

08/01/24

22 Stops

22 Total Citations

2 hours on Project

- 22 for Speed
  - 68, 69, 69, 70, 70, 70, 70, 70, 71, 71, 71, 71, 72, 74, 75, 75, 76, 77, 79, 79

08/09/24

28 Stops

28 Total Citations

2 Hours on Project

22 for Speed

- *65, 68, 68, 69, 69, 69, 70, 70, 71, 71, 71, 71, 72, 73, 73, 73, 73, 74, 78, 80, 86*

4 Seatbelts, 1 Window Tint, 1 Texting

PORTAGE COUNTY SHERIFF PARTNERSHIP

SPEEDING / DISTRACTED DRIVING ENFORCEMENT

I-39, STEVENS POINT / PLOVER
MARKED UNIT IN SPEED REDUCTION ZONE, 55 SPEED LIMIT

08/20/24

8 Stops for Speed

4 Total Citations, 6 Warnings

8 Hours on Project

High Speed of 72mph

08/21/24

9 Stops

4 Total Citations, 10 Written Warnings

Unknown Hours on Project

08/28/24

10 Stops for Speed

4 Total Citations, 6 Warnings

8 Hours on Project

15, 17, 19, 35 mph over in work area

High Speed of 90mph, $900 ticket

08/29/24

4 Stops for Speed

2 Total Citations, both 15mph over

Unknown Hours on Project

Traffic Generally Slower Due to High Holiday Volume