
Oregon
Department
of Transportation

ODOT Work Zone Current Events

2023 ODOT Inspector Training

Work Zones – Current Events

Work Zones – Dynamic Environments

Work Zones – Current Events

Training – Traffic Control Plans Design

-ODOT Design course for Temporary Traffic Control Plans - Workday

-Selfpaced, 6-8 hours

-Consultant Designers required to take

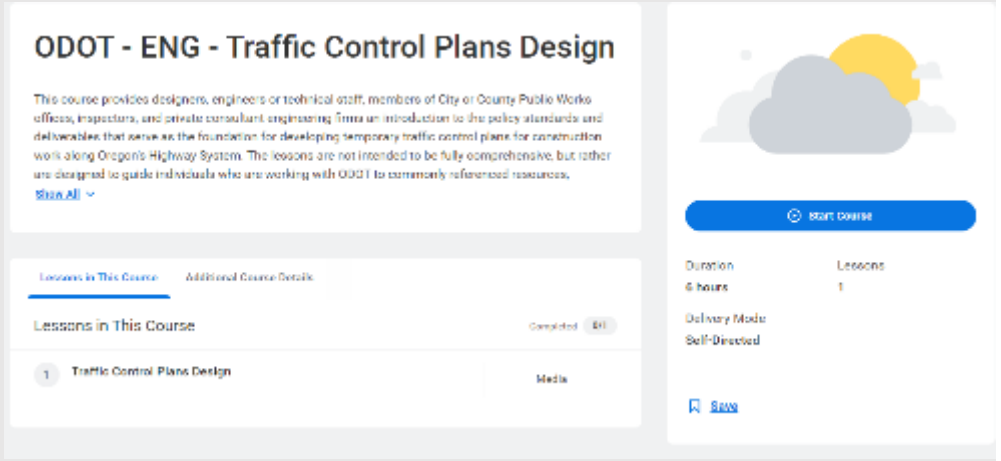
Work Zones – Current Events

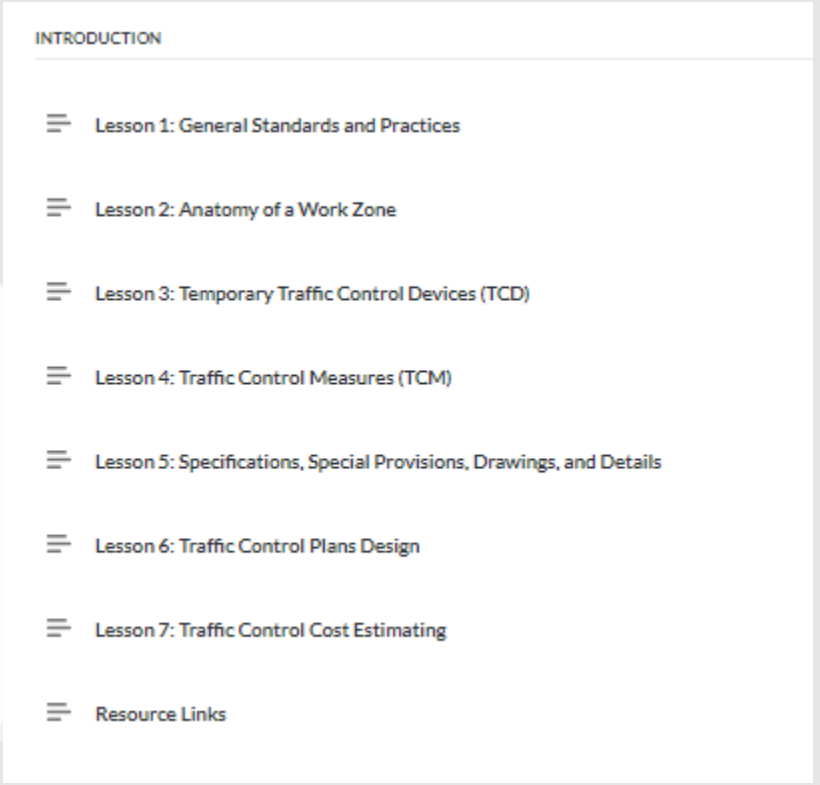
Training – Traffic Control Plans Design

-Broad overview of ODOT design

-7 lessons, basics of TTC and PS&E

-Roadmap





Work Zones – Current Events

Training – TPAR Design

-ODOT Design course for Temporary Pedestrian Accessible Routes - Workday

-Ready approx. July 2023

-Selfpaced, 2-4 hours

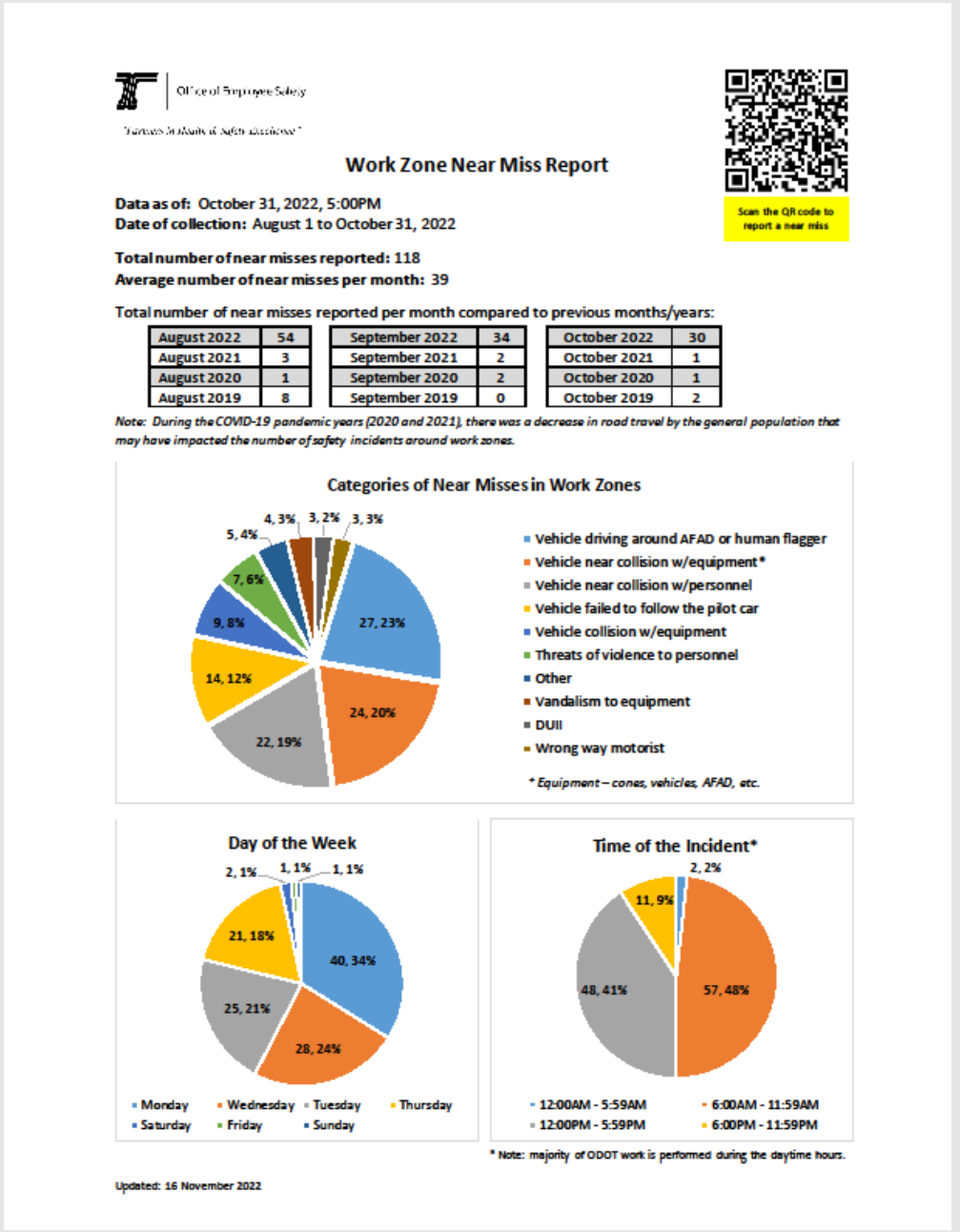
-Consultant Designers required to take

Work Zones – Current Events

Near Misses – Pilot Program

ODOT Transportation Safety/Maintenance collected Near Misses in Work Zones from August – October 2022.

-Expand to all ODOT



Office of Employee Safety

"Partners in Health & Safety Excellence"

Work Zone Near Miss Report

Scan the QR code to report a near miss

Data as of: October 31, 2022, 5:00PM
Date of collection: August 1 to October 31, 2022

Total number of near misses reported: 118
Average number of near misses per month: 39

Total number of near misses reported per month compared to previous months/years:

August 2022	54	September 2022	34	October 2022	30
August 2021	3	September 2021	2	October 2021	1
August 2020	1	September 2020	2	October 2020	1
August 2019	8	September 2019	0	October 2019	2

Note: During the COVID-19 pandemic years (2020 and 2021), there was a decrease in road travel by the general population that may have impacted the number of safety incidents around work zones.

* Note: majority of ODOT work is performed during the daytime hours.

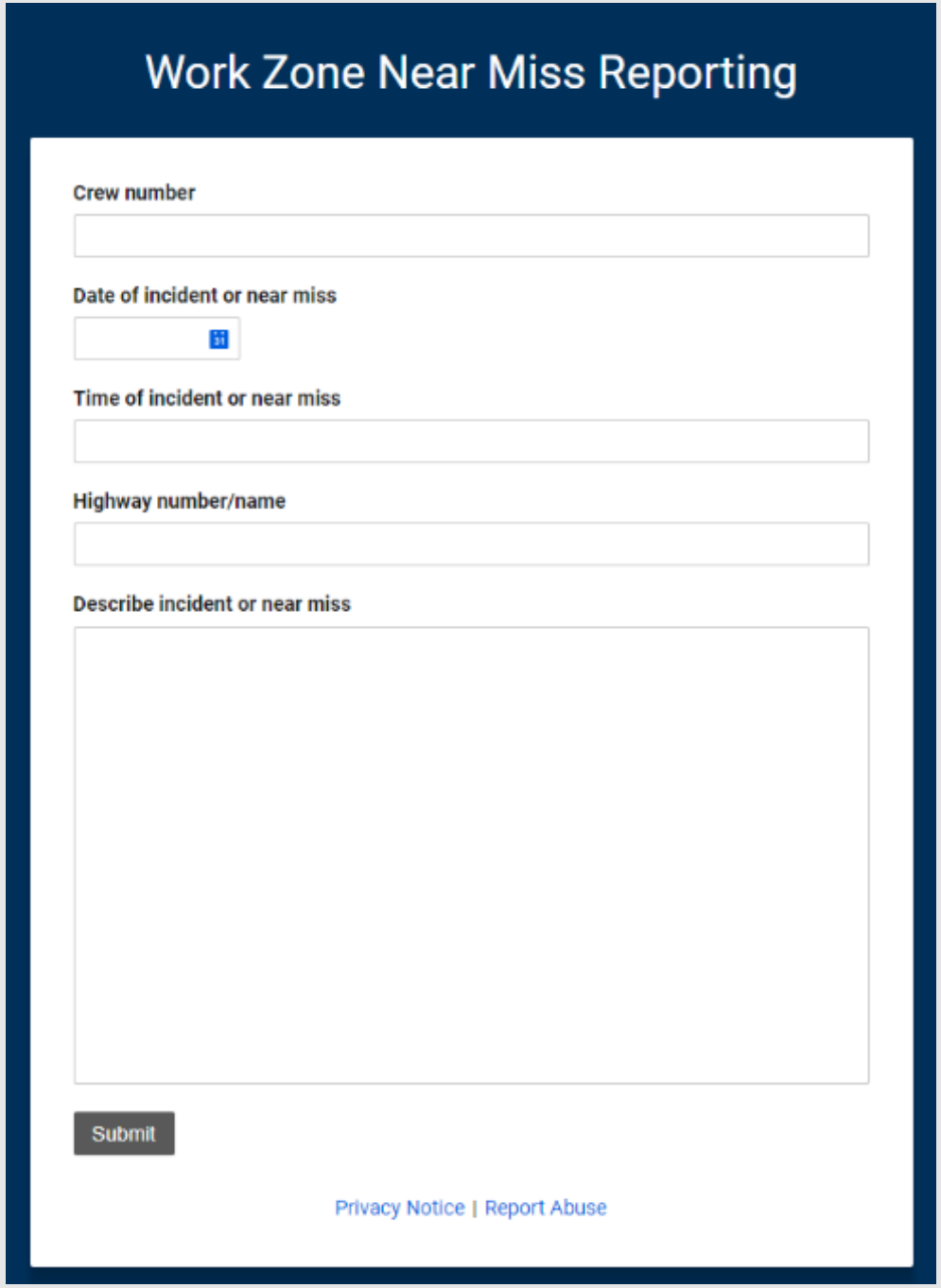
Updated: 16 November 2022

Work Zones – Current Events

Near Misses – Pilot Program

- Work Zone Near Miss Reporting (smartsheet.com), https://app.smartsheet.com/b/form/d9101a5458bc465aaded9ca47c186736

Scan the QR code to report a near miss

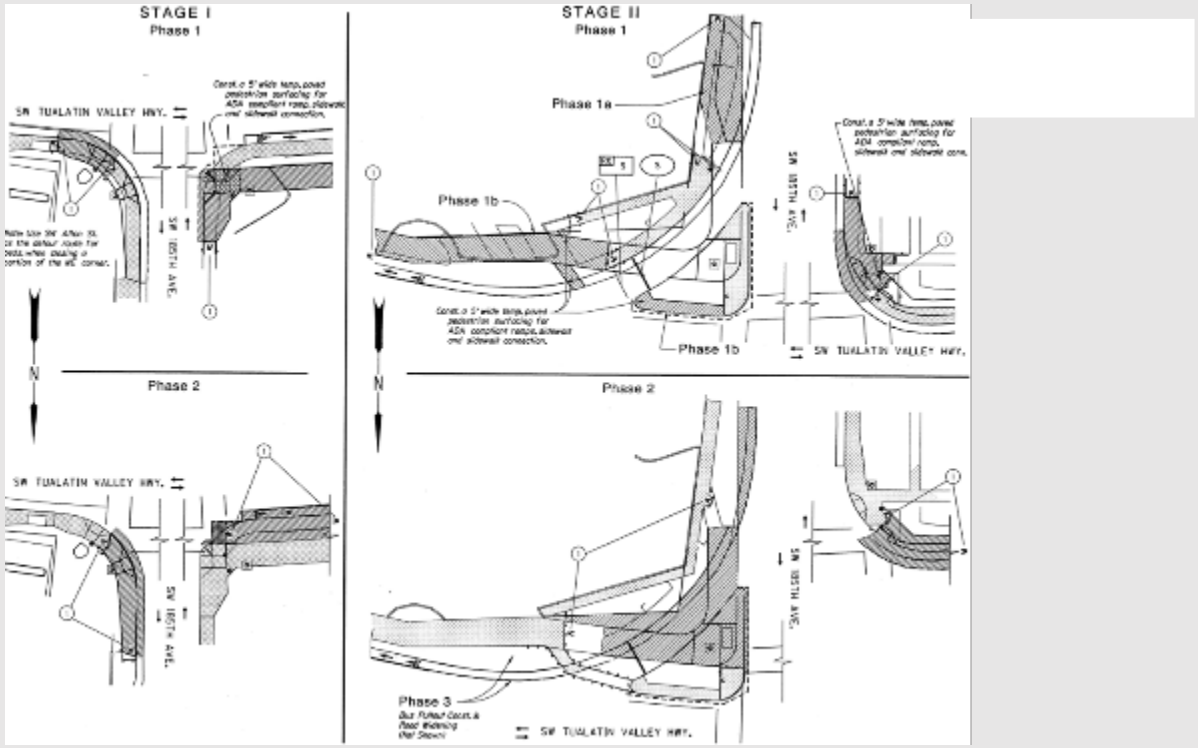


Work Zone Current Events
TPAR – Construction Considerations

- **TPAR's**

Work Zone Current Events
TPAR – Construction Considerations

- If Contractor modifies the Traffic Control Plan, need to include a modified TPAR plan.
- ODOT/APWA specs requires modified plans, including TPAR's, to be Stamped by an Engineer.



Work Zone Current Events
TPAR – Construction Considerations

- **It IS Required!**
- **Document TPAR in the Daily Traffic Control Inspection Report / Inspectors Diary (Compliance Reviews)**

Work Zone Current Events
TPAR – Construction Considerations

- It HAS to work!
- Shopping Cart

Work Zone Current Events
TPAR – Construction Considerations

- It HAS to work, AT ALL TIMES
- Maintained, at a minimum check before and after each shift

Work Zone Current Events
TPAR – Construction Considerations

- **It HAS to be maintained**

Work Zone Current Events
TPAR – Construction Considerations

- **It HAS to be Continuous**

Work Zones – Current Events
TPAR – Construction Considerations

- **Caution Tape is not a approved device for TPAR**

Work Zones – Current Events
2022 TPAR Deficiences

- TPAR Consultant

Suggestions for 2023

- Ramps
  - Develop a qualified products list
  - Asphalt, if used, must be firm
- Sidewalk closures
  - Training to enforce closure of entire width of sidewalk
  - Require mounting of Sidewalk Closure sign on Ped Channelizer
- TPAR
  - Training on minimum width of 48”
  - Require surfaces be firm, smooth and slip resistant
- Eliminate use of caution tape
- Daily review of TPAR for condition PCDs

Work Zones – Current Events

2022 TPAR Deficiences

- Temporary Ramps –
  - Develop QPL for Ramps - Boardwalk
  - No cold mix asphalt

Work Zones – Current Events

2022 TPAR Deficiences

- Sidewalk Closures
  - Close entire width
  - Signs mounted on PCD

Work Zones – Current Events

2022 TPAR Deficiences

- TPAR
  - Width 48”
  - Smooth, firm, and slip resistant surface

Work Zones – Current Events

2022 TPAR Deficiences

- Eliminate Use of Caution Tape

Work Zones – Current Events

2022 TPAR Deficiences

- Daily review of TPAR for conditions – maintenance
  - TCIR Reports

Work Zones – Current Events

TPAR – Crosswalk Closures – LD's

Region 5 Piloting Liquidated Damages, $51/day/curb ramp, for curb ramp work that closes a adjacent crosswalk past certain amount of time, i.e. 14 days.

Work Zones – Current Events

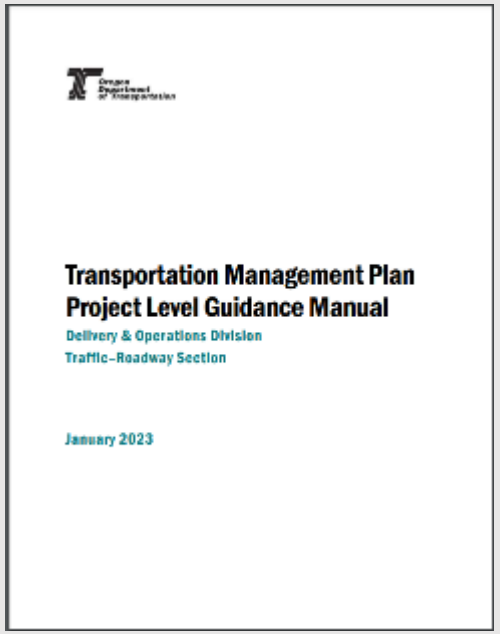
TPAR – Q&A

Q: Support for TPAR ramps as "same or better than original" condition – enforcement. Hard to enforce as an inspector?

A: Enforce the plans. TPAR details should be in the plans.

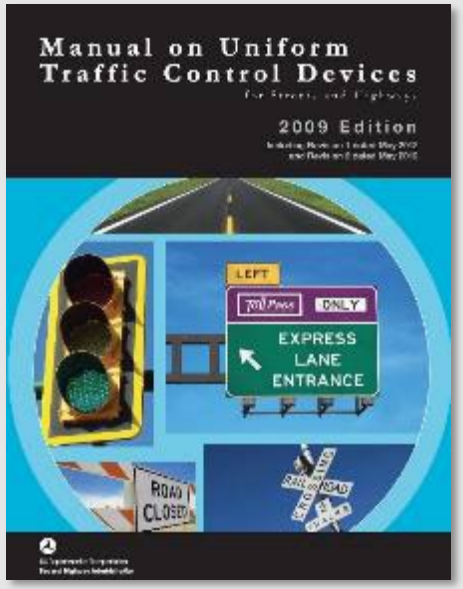
Q: How is inspector to know original condition if no evidence for TPAR "same or better than original" condition?

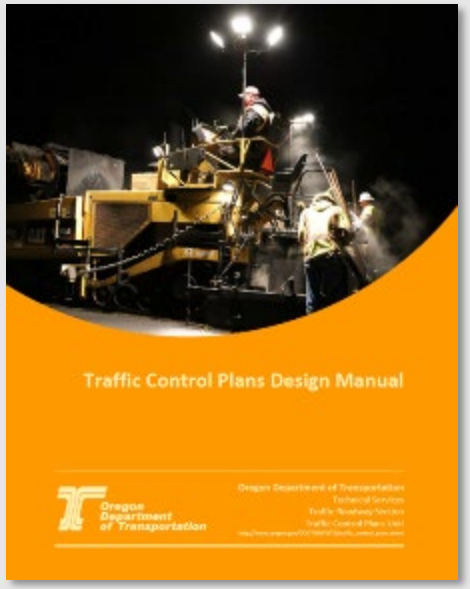
A: The Transportation Management Plan (TMP) contract supporting document is supposed to document the existing condition and the plans should reflect what standard to meet.



TPAR
Additional Information

https://www.oregon.gov/ODOT/Engineering/Pages/Accessibility.aspx
https://www.oregon.gov/ODOT/Engineering/Pages/Work-Zone.aspx
WorkZoneStandards@odot.state.or.us
Monthly TPAR Meeting, 3rd Tuesday of every other month, 1 PM, ODOT TLC



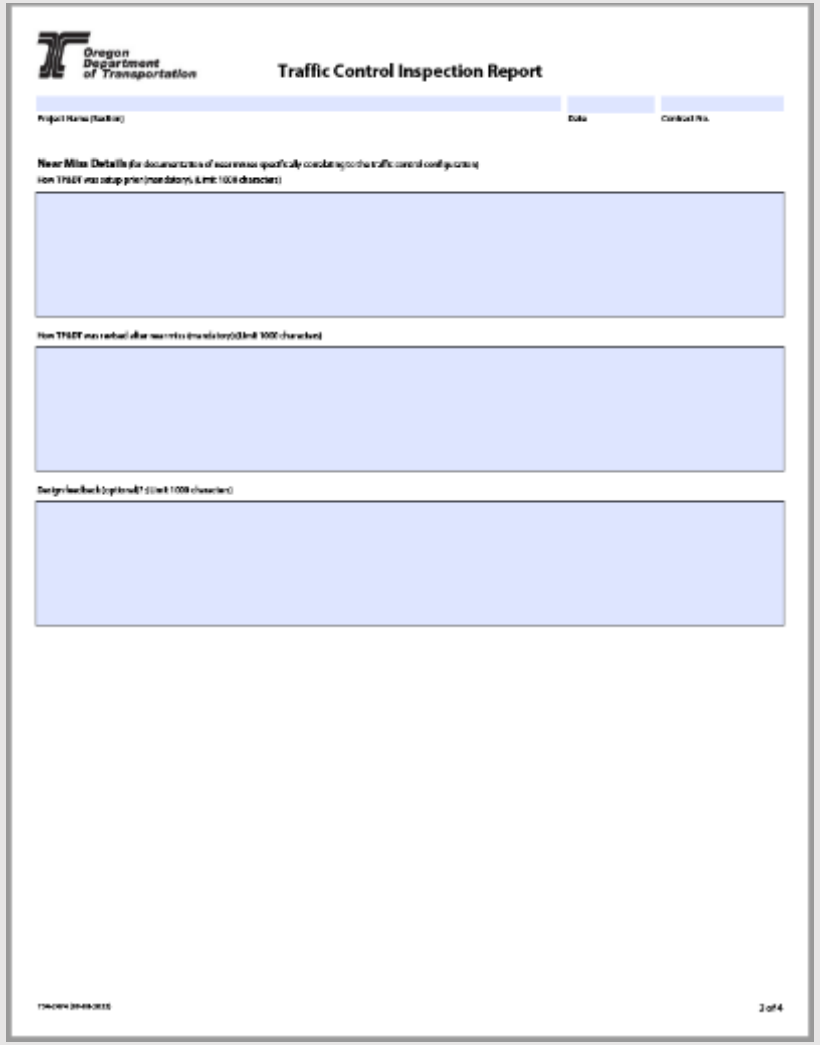


Work Zones – Current Events

TCIR Reports - Update

-Near Miss

-Photos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Traffic Control Inspection Report

Project Name (Section) | Date | Contract No.

Near Miss Details (for documentation of occurrences specifically concerning work zone traffic control configuration)
from TPAET was setup prior (max distance, Limit: 1000 characters)

How TPAET was worked after near miss (mandatory) (Limit: 1000 characters)

Design feedback (optional) (Limit 1000 characters)

734-2474 (09-08-2022)

2 of 4


Traffic Control Inspection Report
PHOTOGRAPHS

Project Name (Section) | Date | Contract No.

insert photo in this box. (Click in box and upload photo from computer or source.) X

Photo #

Brief Description

Add a Photo Page

Delete a Photo Page

734-2474 (09-08-2022)

Work Zones – Current Events

QPL/NTMAG

NTMAG – known issue

-Temporary Sign Posts

-Temporary Guardrail

- Historically, there has been no quality documentation requirements for temporary wood post and temporary sign supports for temporary signs. Industry standard has long been to reuse wood posts for temporary signs and wood temporary sign supports, as long as they are in acceptable condition, or to run down and purchase lumber at the local hardware store. The most recent version of the NFTMAG for 00222 Sign Supports refers you to Section 00910 which requires a Quality document of the lumber grading.

Work Zones – Current Events

AFAD

- Purpose of an AFAD: Control traffic, enable flagger to be positioned out of traffic lane.

OREGON DEPARTMENT OF TRANSPORTATION
TECHNICAL SERVICES

Traffic–Roadway Section **Advisory**

TOPIC	NUMBER	SUPERCEDES OR RESCINDS
Automated Flagger Assistance Devices	*TR20-01(A)*	*New*

APPROVAL	EFFECTIVE DATE	VALIDATION DATE
Original signed by: *Michael Kimlinger, PE* *State Traffic-Roadway Engineer*	*03/04/2020*	

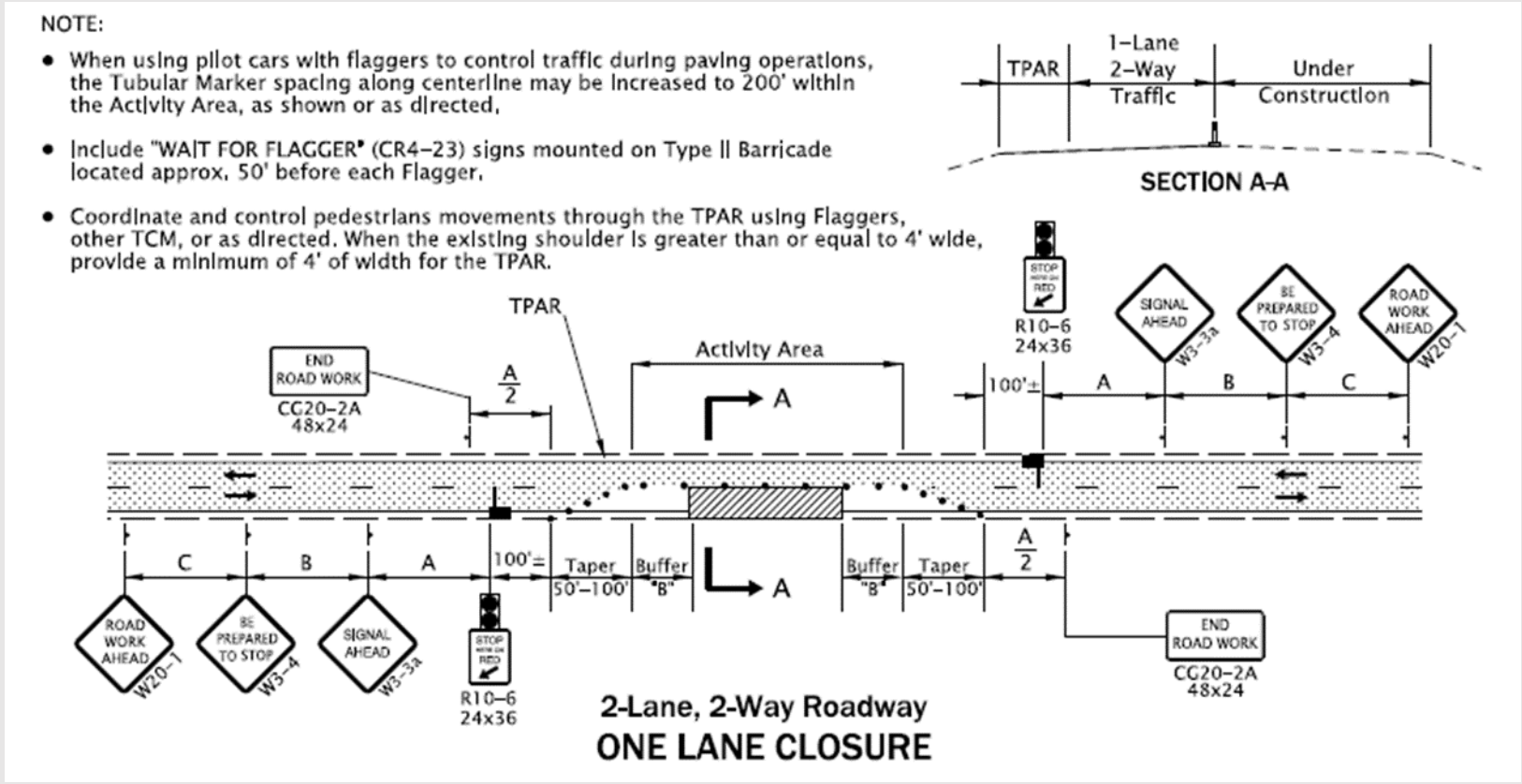
Topic

Automated Flagger Assistance Device (AFADs). AFADs are the preferred temporary traffic control when traffic is being controlled through a two-way, one-lane configuration.

Work Zones – Current Events

AFAD

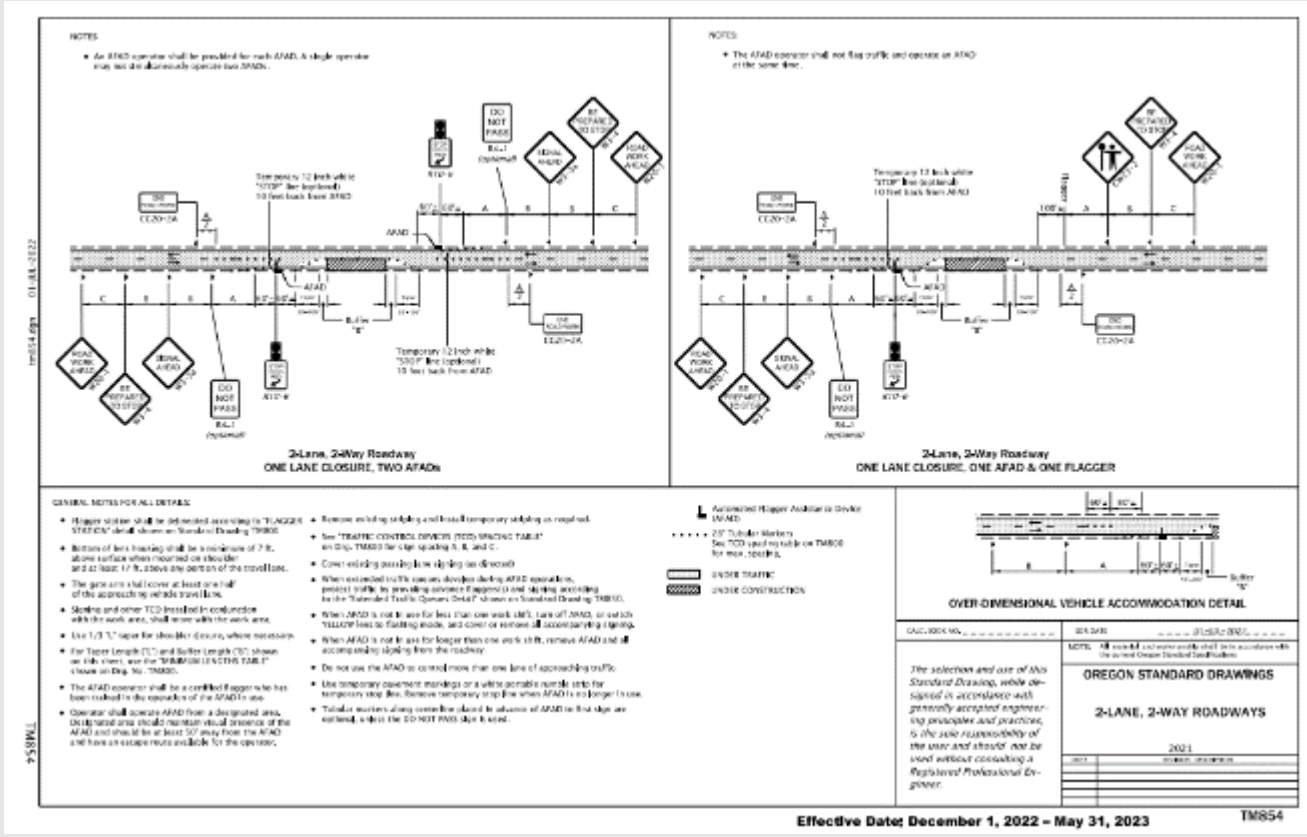
- Standard Drawings, AFAD vs Flagger



Work Zones – Current Events

AFAD

- Best Practices / Lessons Learned
  - Public Familiarity/Respect
  - Enhancements
    - Stop Bar
    - Cones on Centerline, No Passing Sign
    - Rumble Strips
    - Pilot Car
    - Police Enforcement
    - Public Vehicles following Trucks into work zone.



Work Zones – Current Events

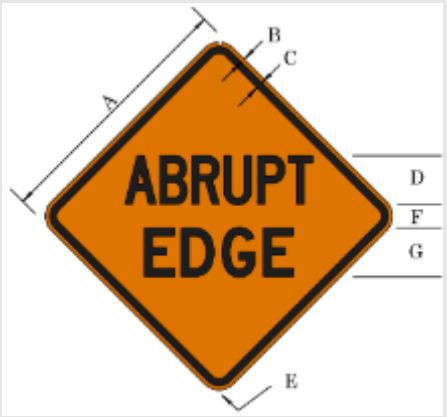
Flaggers – Work Zone Tour Deficiency

- Flagger Best Practices
  - No distractions, phones
  - Escape Routes
  - Visibility
  - Proper Equipment – PPE, radio, stop/slow sign
  - Q: ORS 807.020 has exemptions from requirement to have a driver's license for work. How does this affect flagger qualifications 00223.30?
    - A: ODOT wants flaggers to be familiar with driving, as a basic part of training, use the drivers license as a proxy for understanding how to drive. Requirement for drivers license will remain.

Work Zones – Current Events

Temporary Digitally Printed Signs

Temporary Signs



TPAR's

Maintenance/Permanent

Work Zones – Current Events

- Work Zone Presence Lighting

What is it?

Source: Ver-Mac Inc.

Oregon Department of Transportation

Work Zones – Current Events

- Work Zone Presence Lighting
  With and Without

Source: Ver-Mac Inc

Work Zones – Current Events

- Work Zone Presence Lighting

Objectives

- Inform drivers of “Active” work zone.
- Improve “conspicuity” through the lane closure.
- Create “uniform” speeds through the lane closure.
- Improve visibility.

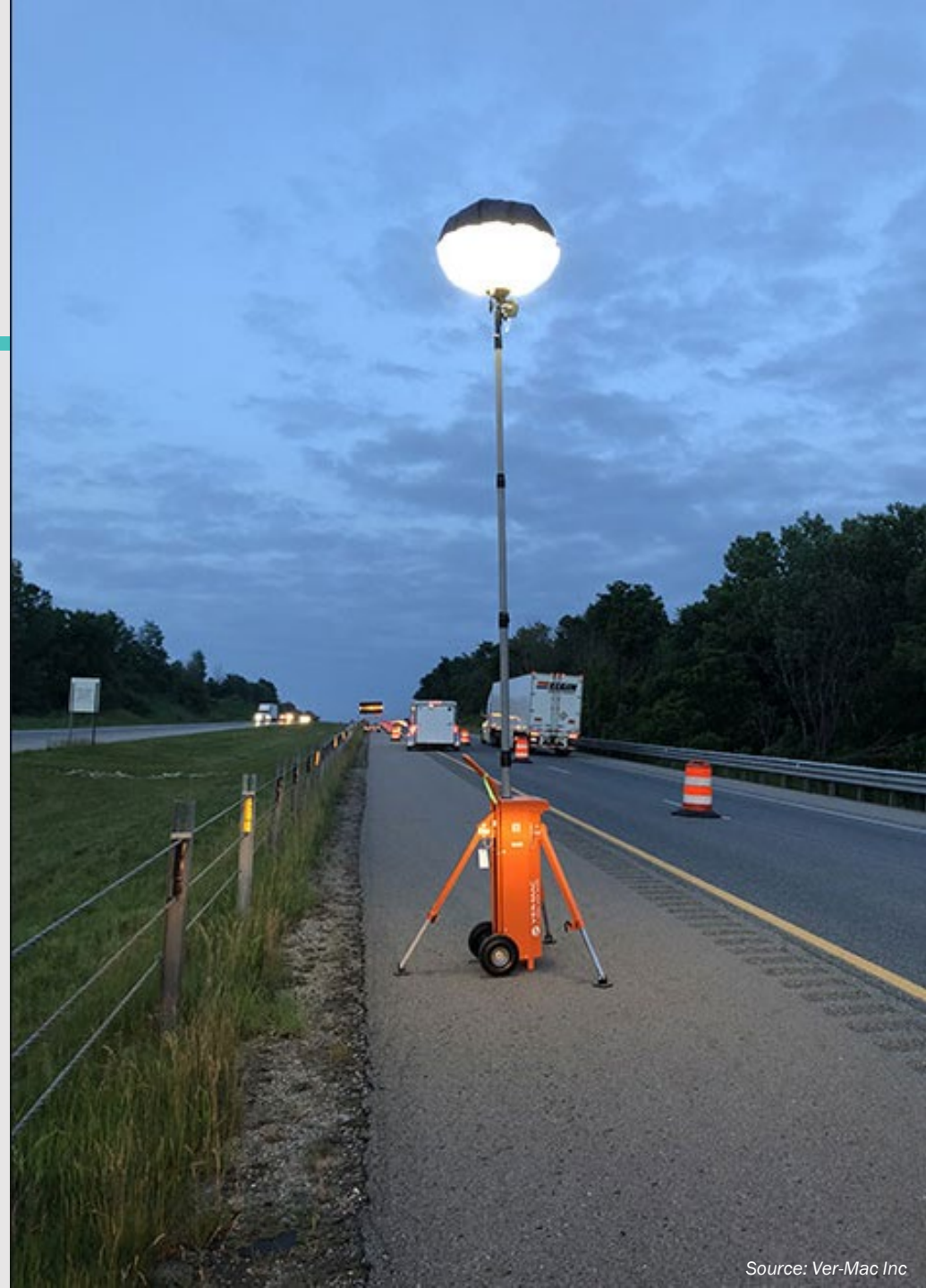
Source: Ver-Mac Inc

Work Zones – Current Events

- Work Zone Presence Lighting

Work Zone Applications

- Where:
  - Freeway or high speed divided roadways.
- When:
  - Existing ambient lighting is non-existent or very limited.
  - Any nighttime application where lane are taken intermittingly.
- Possible future use:
  - Rural roadway with poor visibility.



Source: Ver-Mac Inc

Work Zones – Current Events

- Work Zone Presence Lighting

Field Trials by Other States

- 2019 – 2020
  - Demo (1 night “before”, 1 night “after”)
    - Michigan
    - Texas
    - New Hampshire
    - Massachusetts
    - Pennsylvania
    - North Carolina
    - Virginia

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Data Results

Freeway	Sample Size	WZ Speed	Speed Before	Speed After	Speed Reduction
MI (I-75, Bay City)	3,213	65	77.37	71.14	6.23
MI (US 23, Tawes)	1,678	55	56.92	51.27	5.65
MI (I-94, Kalamazoo)	11,191	60	65.19	57.94	7.25
MI (I-94, Jackson)	7,192	60	67.78	62.82	4.96
TX (I-35, Austin)	27,342	55	63.23	58.47	4.76
			63.85	59.68	4.17
			68.80	64.89	3.91
PA (I-76, PA Turnpike)	5,509	50	56.10	52.16	3.94
NC (US17, Wilmington)	3,869	55	57.70	51.94	7.25
TN (I-40, Haywood)	7,865	65	68.76	63.82	4.94
TN (I-75, McMinn County)	12,248	70	74.76	68.89	5.87
VA (I-64, Charlottesville)	36,244	65	67.47	60.62	6.85

Average= 5.48 mph

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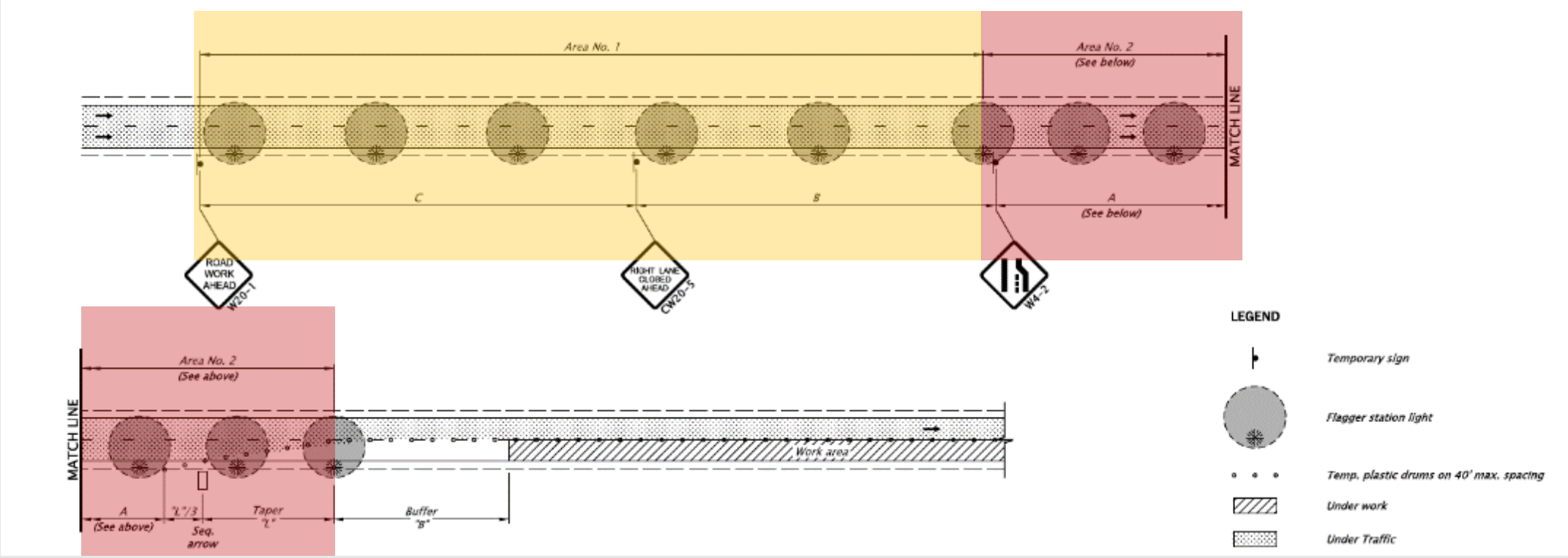
Work Zones – Current Events

- Work Zone Presence Lighting

Field Setup



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Work Zones – Current Events

- Work Zone Presence Lighting

Spacing of Presence Lighting

PRESENCE LIGHTING SPACING TABLE

Light output (Lumens)	Minimum Illuminated Fixture Surface Area (sq. ft.)	Maximum Spacing (ft.)	
		Area No. 1	Area No. 2
14K to 35K	4	640	480
35.1K to 60K	5	800	640
60K +	6	1000	800

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Work Zones – Current Events

- Work Zone Presence Lighting

Benefits

- Increase awareness of entering a work zone.
- Guides motorist through the merge area improving safety.
- Reduces speed differential through transition.
- Better visibility for both motorist and workers.

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References

- Kite, S. (2019). An Evaluation of the Effectiveness of Digital Speed Limit Signs and Work Zone Presence Lighting on Speed Compliance During Lane Closure Operations. *North Carolina Department of Transportation (NCDOT).*
- Sakhare et al. (2021). Evaluation of the Impact of Presence Lighting and Digital Speed Limit Trailers on Interstate Speeds in Indiana Work Zones. *Journal of Transportation Technologies, 11, 157-167*
- Ver-Mac (2019). Portable Presence Light: Concept & Results.

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Work Zones – Current Events

Mobile Barrier

- Positive Protection
- Small Work Areas
- Portable
- Examples
  - Bridge Joints
  - Pavement Patching
  - Overhead sign work

Work Zones – Current Events

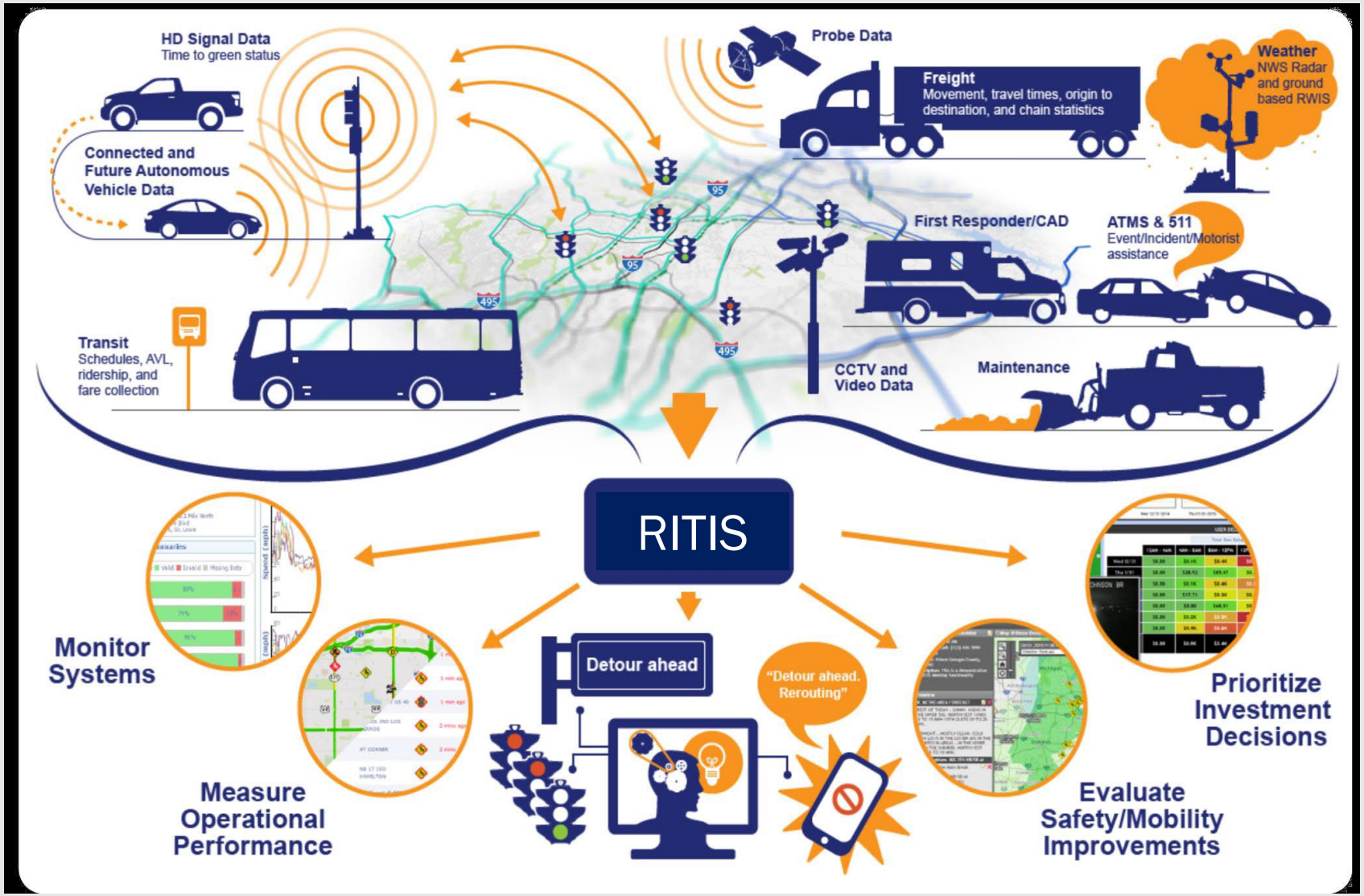
Law Enforcement

- Program Update
  - New Process, STIP funds vs Grants
  - Built into project development process
  - Planning – forecasting needs for OSP
  - Lessons Learned
    - Early coordination is key
    - WZLE plan

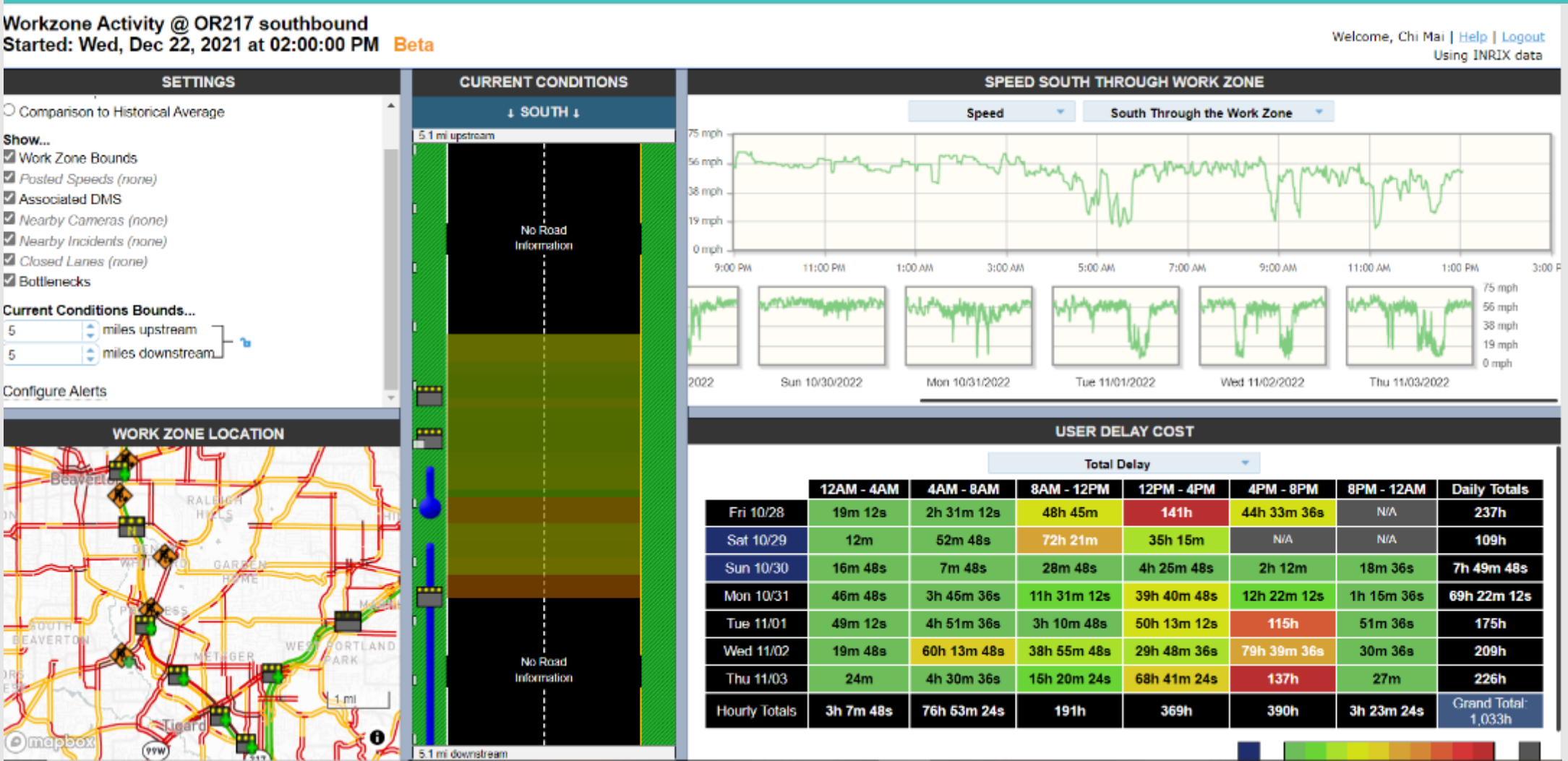
RITIS for a Work Zone

Oregon Department of Transportation

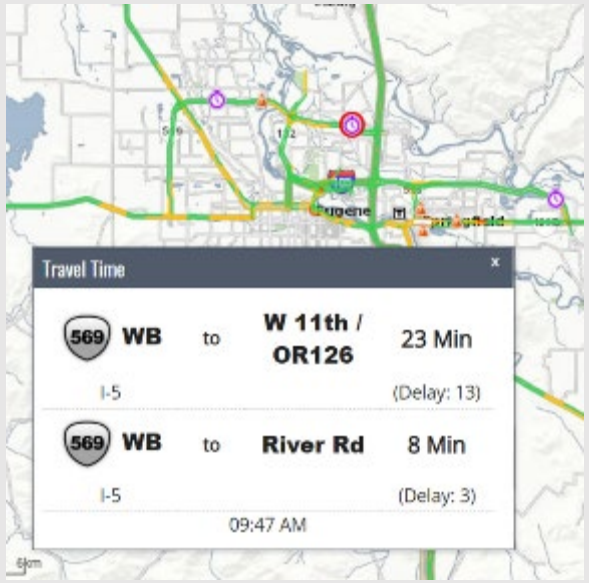
Regional Integrated Transportation Information System (RITIS)

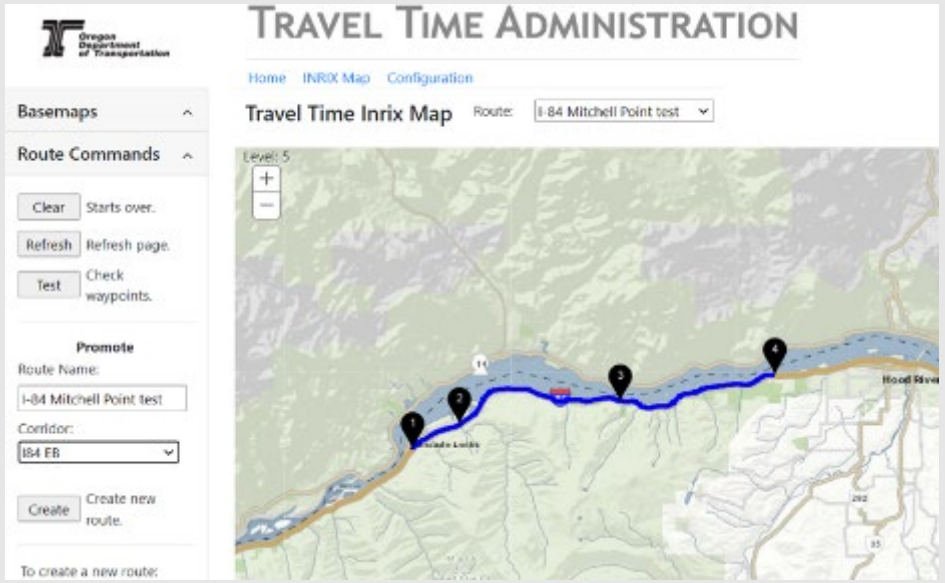


RITIS Work Zone Dashboard



Probe Data Applications for Traveler Information, Work Zone Delay, and Queue Detection





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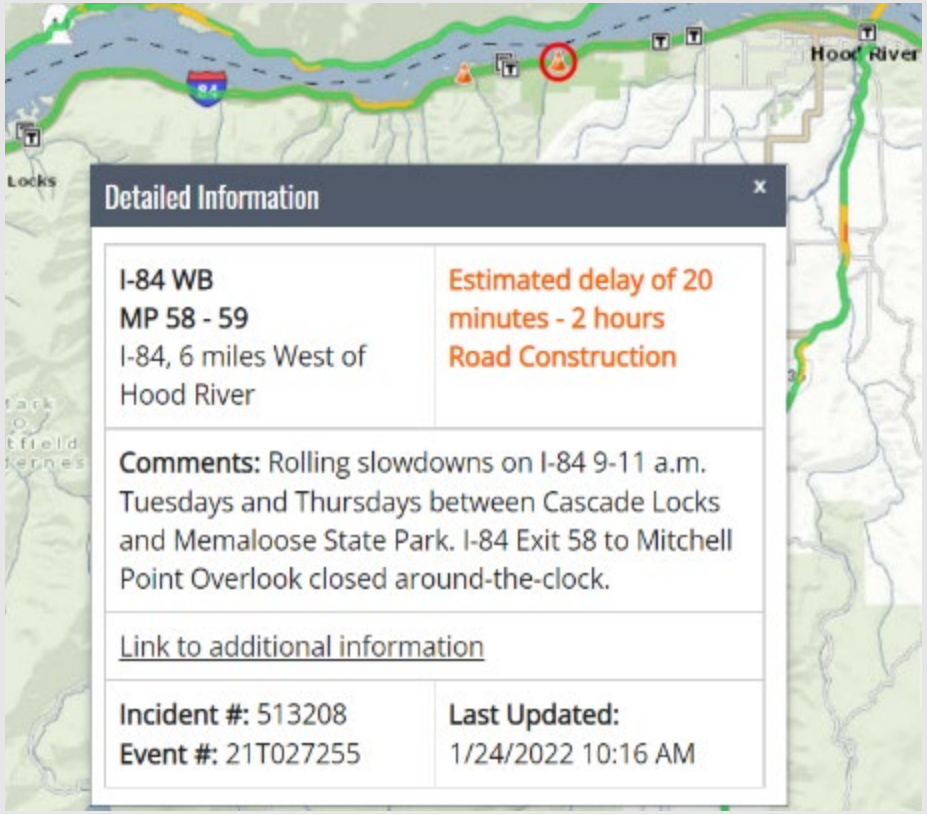
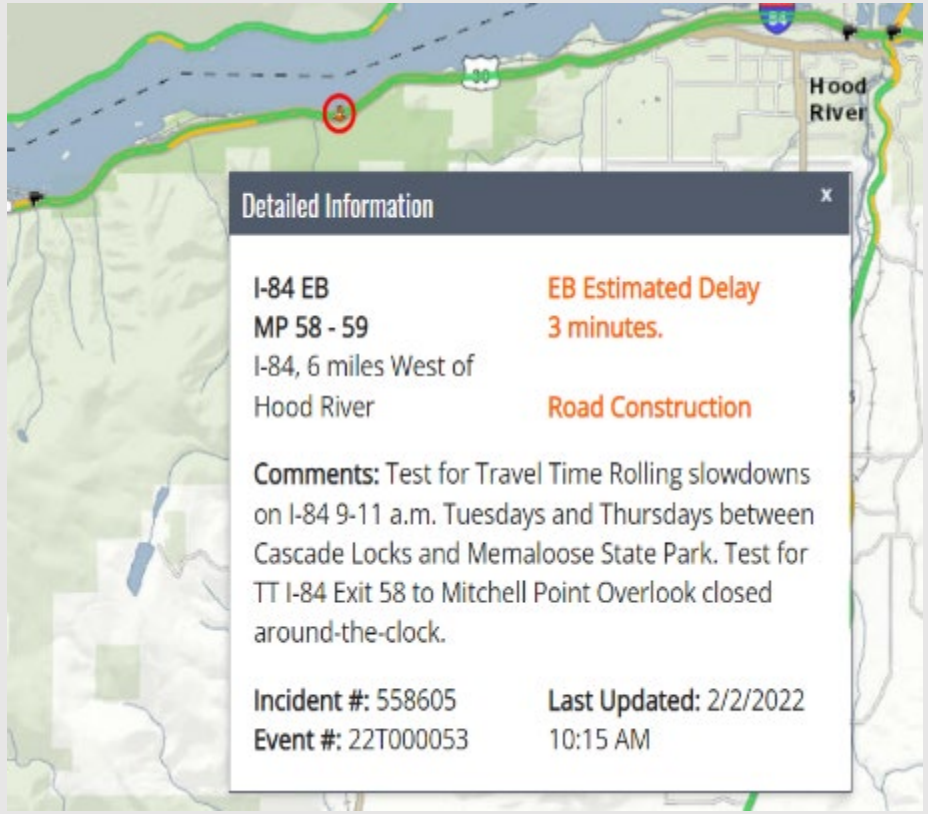
TripCheck Event Information



Before

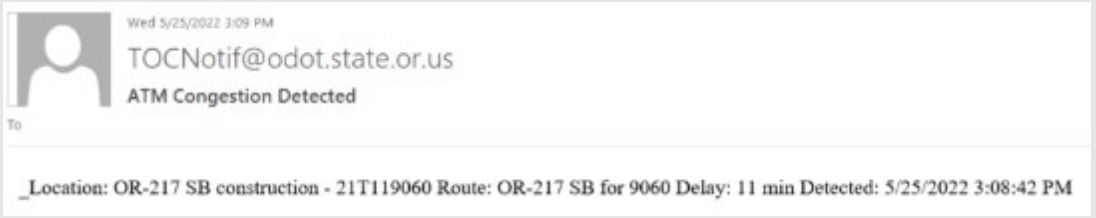


After

Congestion notifications

Assigned

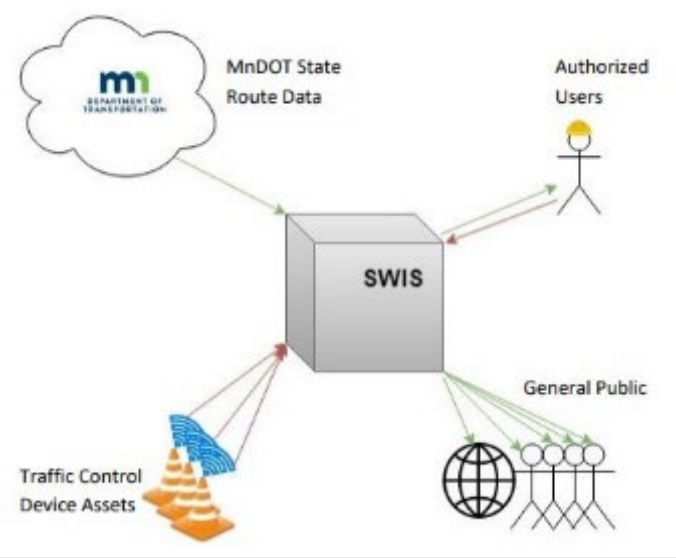
Automated Congestion Cleared
Automated Congestion Detected
Automated Congestion Persists

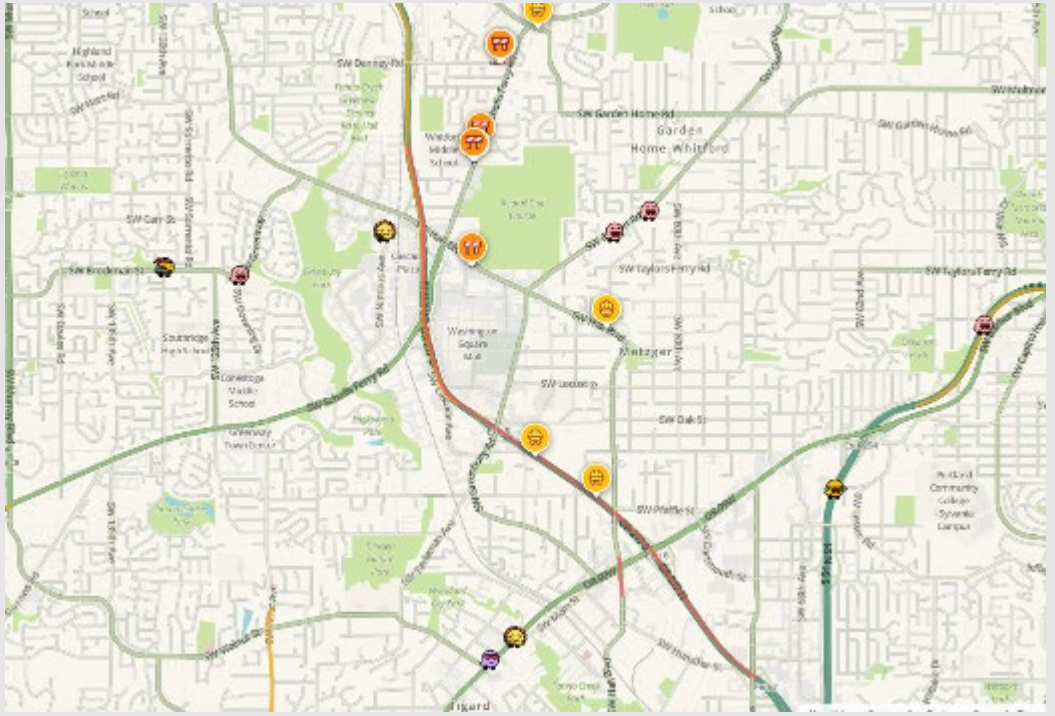


Work Zones – Current Events

ODOT Smart Work Zones

- Realtime Workzone and Traveler Information
- Network
- SPR860 – Real-time Lane Closure Info

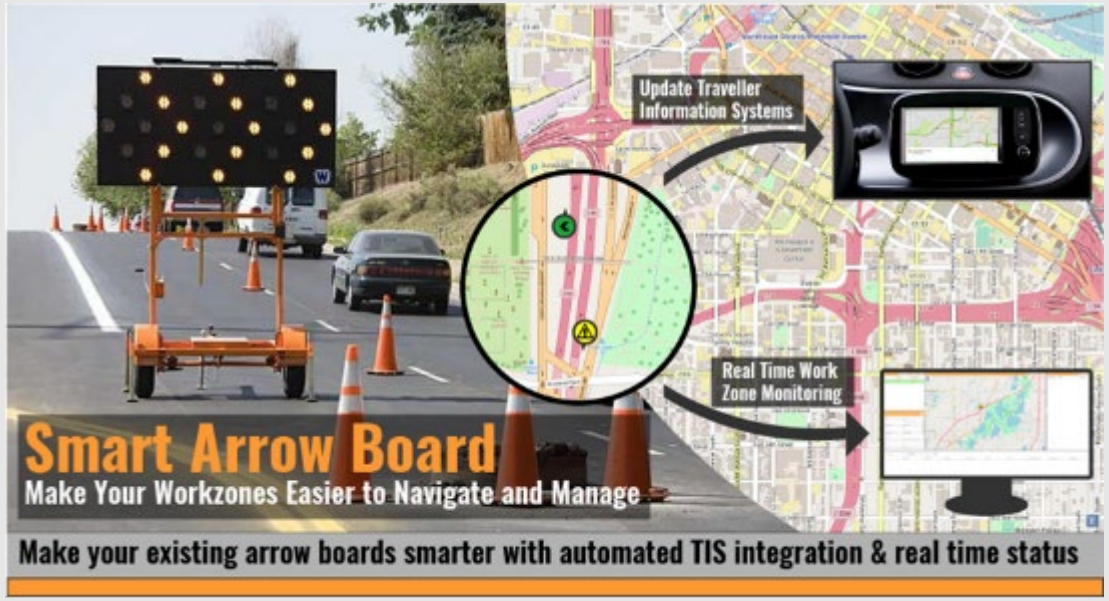




Work Zones – Current Events

ODOT Smart Work Zones

- Smart Lane Closures, multilane highways
  - Arrow Boards

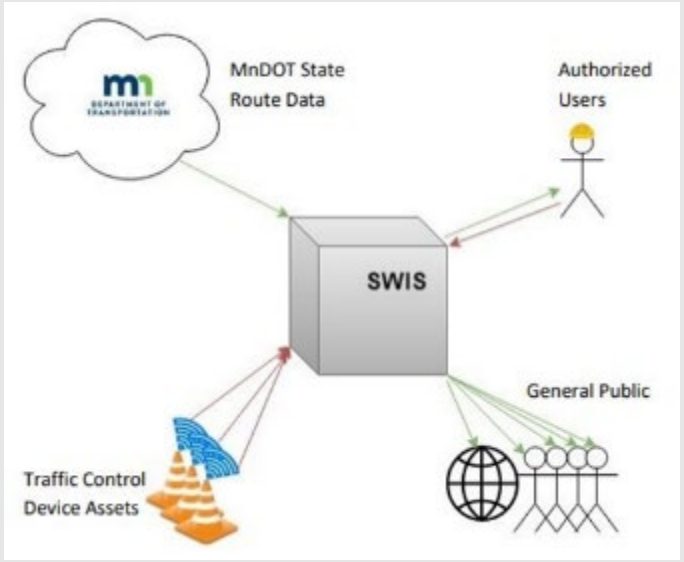


https://www.streetsmartrental.com/smart-work-zones/smart-arrow-boards/

Work Zones – Current Events

ODOT Smart Work Zones

- Smart Lane Closures, 2 lane roads
  - Lane Closure Virtual Identification



Work Zones – Current Events

Current ODOT Research

- SPR839 – Work Zone Setup

- SPR855 – Residual Lane Markings

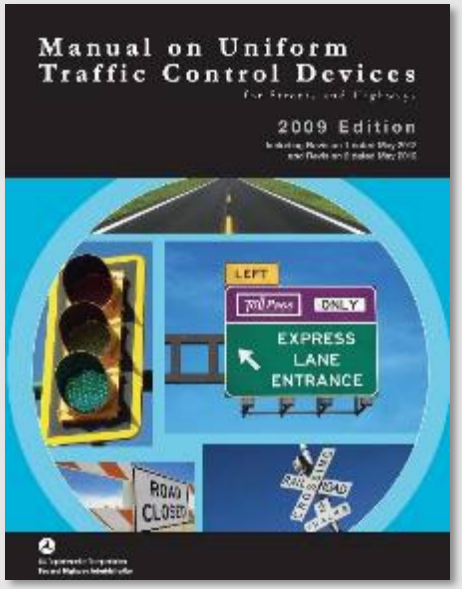
- SPR860 – Real-time Lane Closure Info

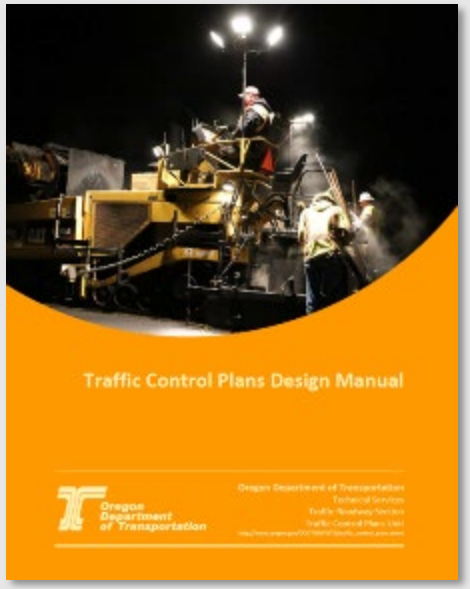
Work Zone Resources

Additional Information

https://www.oregon.gov/ODOT/Engineering/Pages/Work-Zone.aspx

Email: WorkZoneStandards@odot.state.or.us





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Questions?

Thank you.