





ODOT Work Zone Inspection

2024 ODOT Inspector Training

Justin King

State Work Zone Engineer

Work Zones – Inspection

Work Zones – Dynamic Environments



Work Zones – Inspection

Inspectors Duties – Safety

-Safety

- Who: Workers, Public Traffic, Inspectors
- How: Understanding TCP and making sure implemented correctly in field.
- When: Before and during operation

Inspector should know what operations are occurring and the associated Traffic Control Plans, before arriving on the jobsite

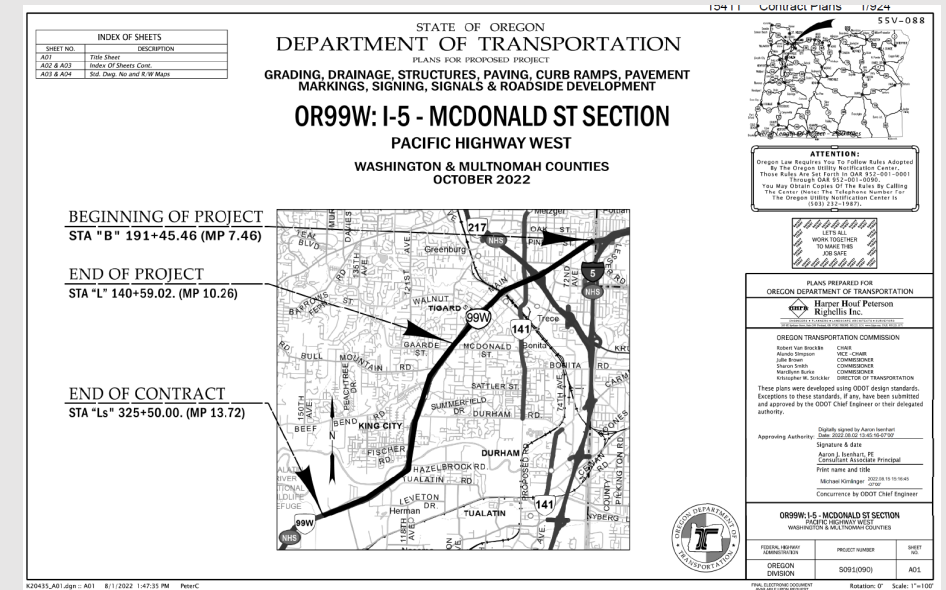


Work Zones – Inspection

Inspectors Duties – Plans, Spec, and Estimate

-Plans

- Traffic Control Plans
 - Project Specific: Details, Detours, TCP's, Stages
 - Standard Drawings, TM800's
- Specs
 - Standard Specifications, Section 00220 - 00229
 - Special Provisions
- Estimate
 - Measurement/Payment included in Standard Specifications
- Traffic Control Inspection Reports
- Qualified Products List



Work Zones Inspection

Near Misses – Pilot Program

- [Work Zone Near Miss Reporting \(smartsheet.com\)](https://app.smartsheet.com/b/form/d9101a5458bc465aaded9ca47c186736),
<https://app.smartsheet.com/b/form/d9101a5458bc465aaded9ca47c186736>



Scan the QR code to
report a near miss

Work Zone Near Miss Reporting

Crew number

Date of incident or near miss

Time of incident or near miss

Highway number/name

Describe incident or near miss

Submit

[Privacy Notice](#) | [Report Abuse](#)

Work Zones – Ins

Plans - EOR

-Plans

- Use PS&E supp

- Contractor foll

(a) **Traffic Control Plan** - Submit one of the following, 5 Calendar Days before the preconstruction conference:

(1) **Agency Traffic Control Plan** - If the Contractor intends to **use the Agency TCP** without modification, a written notification indicating that the Agency TCP will be used without modification.

(2) **Contractor-Modified Traffic Control Plan** - **The Contractor may request to use a Contractor-modified Agency TCP, or a TCP developed by the Contractor. Do not use a modified TCP, or a TCP developed by the Contractor, unless approved by the Engineer.** Use the Agency TCP unless a modified TCP, or a TCP developed by the Contractor is accepted.

The Engineer is not obligated to consider any modified Agency TCP or a TCP developed by the Contractor. The Agency will not be liable to the Contractor for failure to accept or act upon any request for a modified Agency TCP or a TCP developed by the Contractor.

To conserve time and funds, the Contractor may first **submit a written request for a preliminary review by the Engineer.** The request should contain a description of the proposal together with a rough estimate of anticipated dollar and time impacts. The Engineer will, within a reasonable time, respond to the Contractor in writing whether or not the request would be considered by the Agency.

If requesting a Contractor-modified Agency TCP, or a TCP developed by the Contractor, at a minimum the request shall meet all requirements of the Contract documents and comply with the Project transportation management plan (TMP). Provide the following information:

- **Stamped Working Drawings** according to 00150.35 that include the proposed TCP showing all TCM and quantities of TCD.
- A **TPAR plan** that includes:
 - Details and features used to provide pedestrian accessibility.
 - Pedestrian staging Plans at a scale no smaller than 1 inch = 50 feet.
 - Temporary alternate facilities or detour routes for pedestrian traffic.
- Staging sequences and details for Work affecting vehicular, pedestrian, and bicycle traffic.
- Proposed order and duration of the TCM.
- A detailed temporary striping plan.

If the Contractor's request to use a Contractor-modified Agency TCP, or a TCP developed by the Contractor is approved in whole or in part, **acceptance will be made by a Change Order.**

The Engineer will establish prices that represent a fair measure of the value of Work to be added, changed, or deleted as a result of any accepted modifications to the Agency TCP or an accepted TCP developed by the Contractor.

Once a TCP has been accepted by the Engineer, any additional modifications must be submitted by the Contractor for Agency review following the procedure described above. The Engineer is not obligated to consider additional modifications to a previously approved TCP.

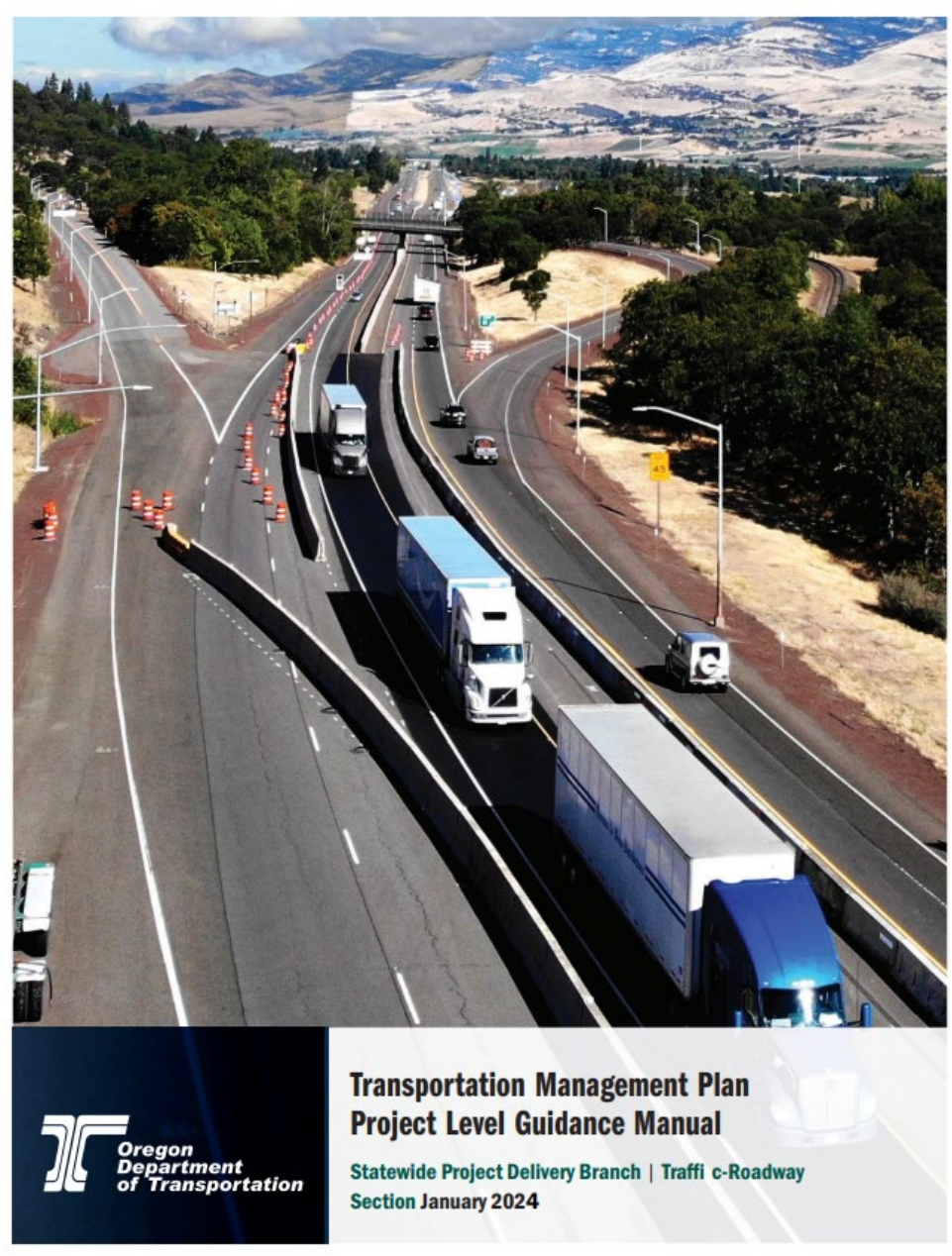


Work Zones – Inspection

Transportation Management Plan (TMP)

-TMP

- What is it?
- How can Inspector use it?
- Where do I find it?





Highlights of Common Traffic Control Issues

Traffic Control Issues that are easily avoidable

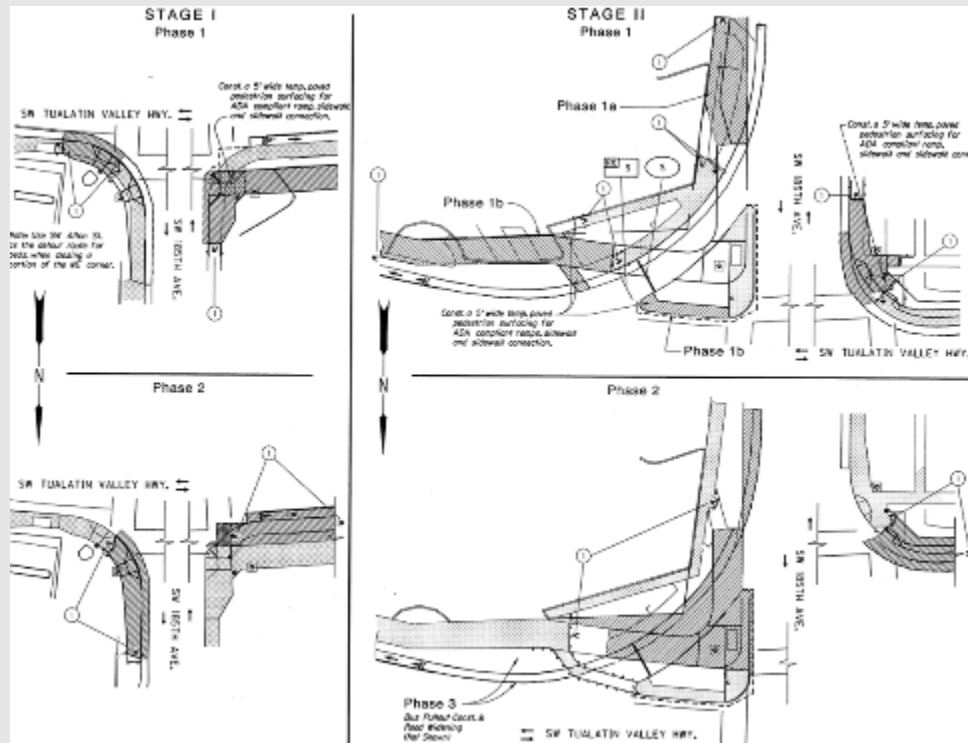
Work Zone Inspection

- TPAR's



TPAR – Inspection

- 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.



TPAR – Inspection

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



TPAR – Inspection

- It HAS to work!
- Shopping Cart



TPAR – Inspection

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



TPAR – Inspection

- It HAS to be maintained



TPAR – Inspection

TPAR – Route through Project, Continuous



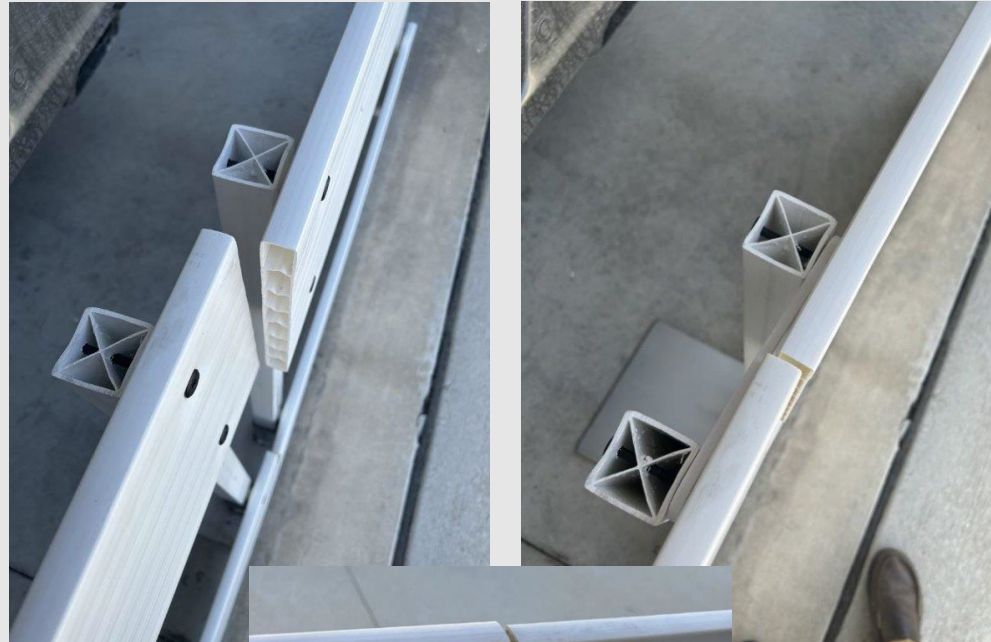
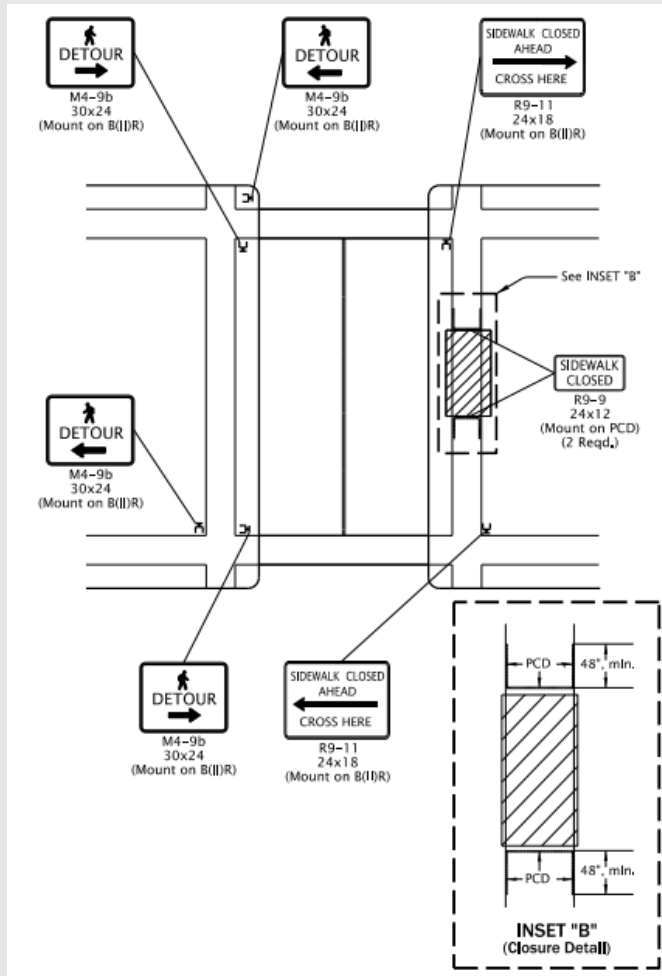
TPAR – Inspection

TPAR – Guidance, Signs and PCD



TPAR – Inspection

TPAR – Guidance, Signs and PCD



TPAR – Inspection

- Temporary Ramps –
 - QPL for Ramps - Boardwalk
 - Other solid, nonslip flat surface, No cold mix asphalt



TPAR – Inspection

TPAR – Closures

- Close entire width
- Signs mounted on PCD



TPAR – Inspection

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



Provide non-slip, 60 inch minimum wide surface through entire pedestrian route. If not possible, provide 48" min. width with 60" x 60" passing spaces every 200 feet along the route.

TPAR – Inspection

TPAR – Caution Tape, not an approved TCD for TPAR.



Work Zones – Inspection

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 – Inspection

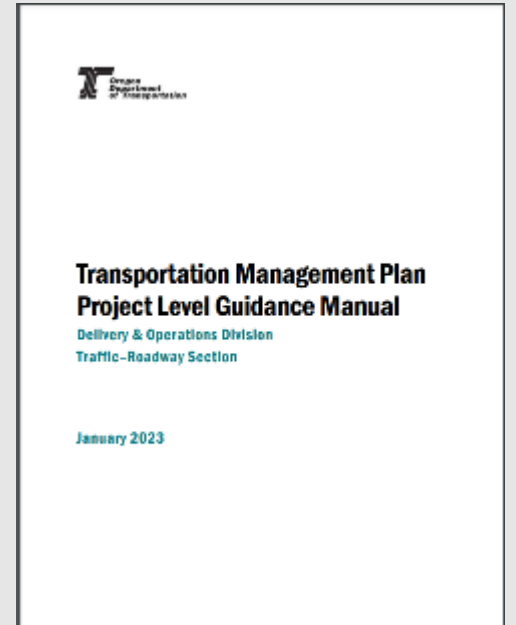
TPAR – Q&A

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

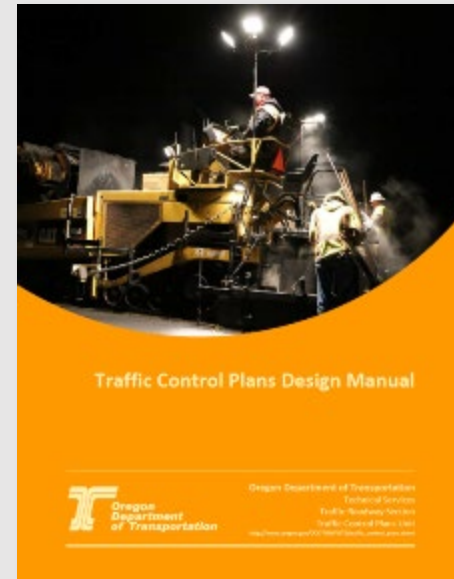
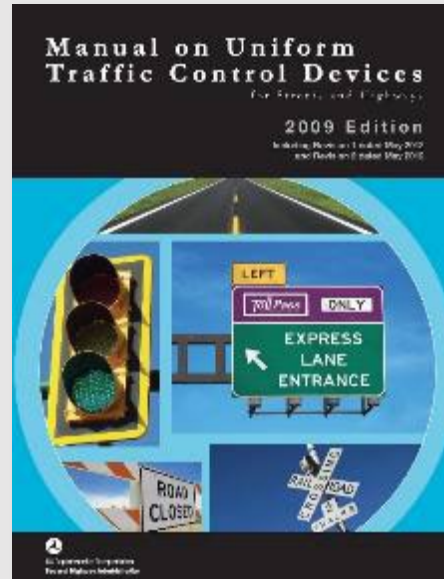
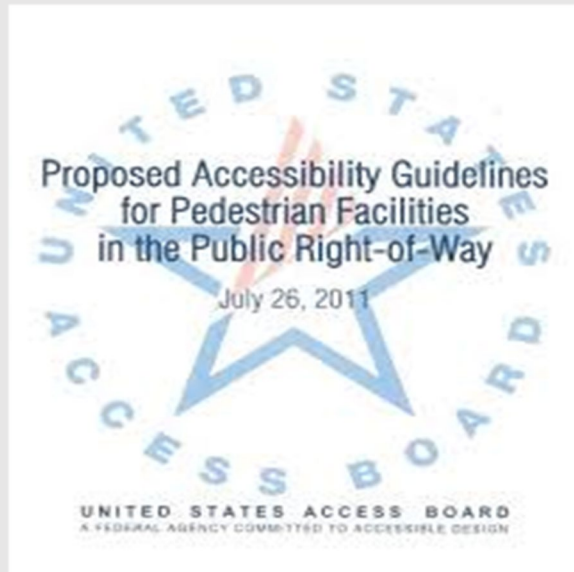
Additional Information

<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



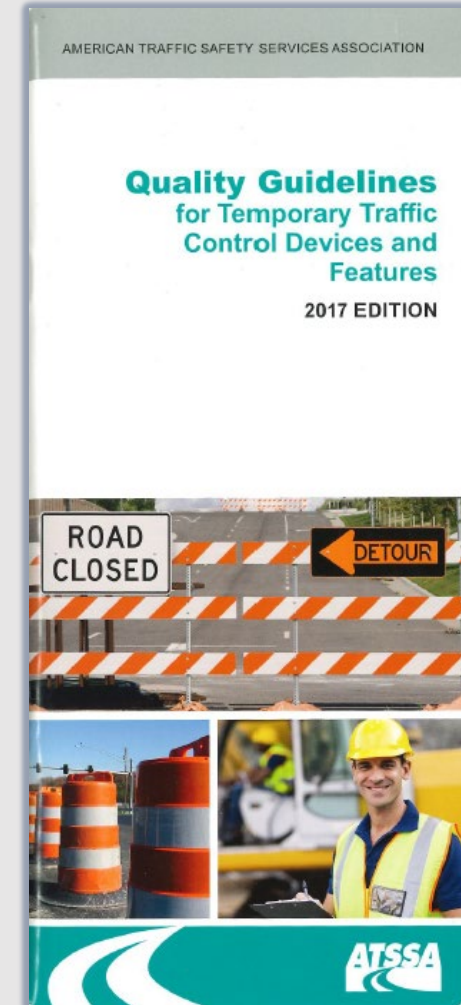
Work Zones – Inspection

American Traffic Safety Services Association (ATSSA)

- Referenced in the Standard Specifications
- “Use New TCD or TCD meeting the “Acceptable” quality category of the ATSSA publication for ALL installations unless otherwise specified”

00221.10 General - Evaluate the condition of TCD using the criteria shown in the most current version in effect of the **American Traffic Safety Services Association (ATSSA)** publication titled *Quality Guidelines for Temporary Traffic Control Devices and Features*, available from the ATSSA website (see 00110.05(e)). **Use new TCD or TCD meeting the "Acceptable" quality category of the ATSSA publication for all installations unless otherwise specified.** Provide test results, quality compliance certificates, Equipment lists, and drawings when specified. Acceptance will be by the QPL, test results, quality compliance certificates, Equipment lists, drawings, and testing as necessary to assure compliance with the Specifications. After TCD have been installed and accepted on the Project, inspect and maintain the condition of the devices.

All Work Zone TCD shall comply with the crashworthiness requirements of the *National Cooperative Highway Research Program (NCHRP) Report 350* or with the *AASHTO Manual for Assessing Safety Hardware (MASH)*.



Work Zones – Inspection

Truck Mounted Attenuator (TMA)

- Spec language on TMA usage requirement
- Mindful about usage during various operations

00226.43 Truck Mounted Attenuator - When workers or construction Equipment are operating in a closed Traffic Lane or Shoulder, are exposed to Public Traffic, and are not located behind a rigid, longitudinal barrier system, use a truck mounted impact attenuator (TMA). Place the TMA in advance of the exposed workers or Equipment, located as shown in the TMA Support Vehicle Placement tables, or as directed. If the TMA is not available when the Work requires its use, postpone the Work until the TMA is available.



Work Zones – Inspection

Temporary Pavement Markings

- Review new layouts before opening to traffic
- Maintain temporary pavement markings and travel lane delineation
- Record existing striping as needed



Work Zones – Inspection

Type III Barricades

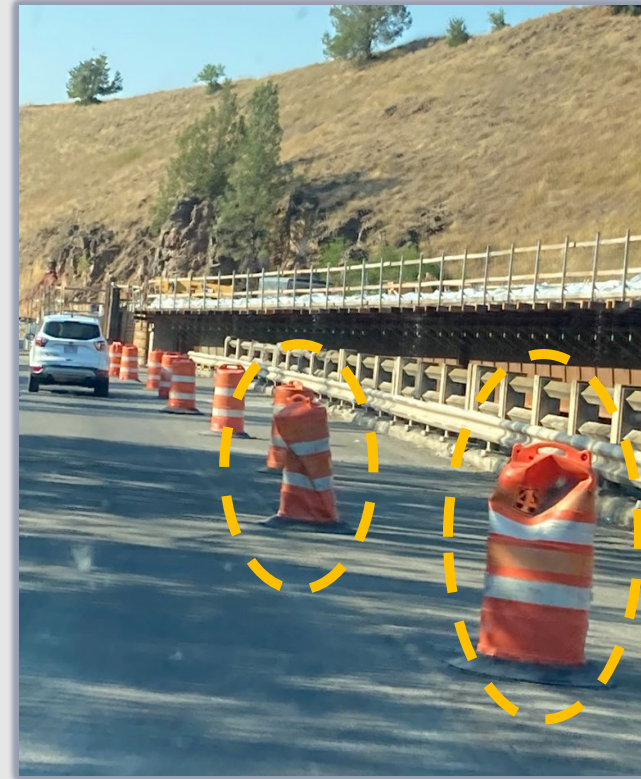
- Check devices before going out and after setup
- Be able to make changes for incorrect items



Work Zones – Inspection

Plastic Drums

- Mix of device “quality” on projects
- Often deal with “re-actively” rather than “pro-actively”
- Device spacing often an issue



Work Zones – Inspection

TCD Maintenance (TP & DT)

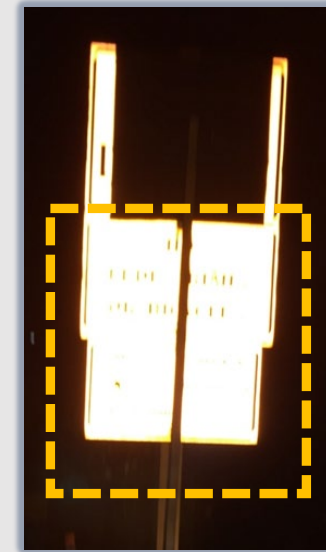
- Can be a safety hazard
- Devices not checked regularly



Work Zones – Inspection

Temporary Work Zone Signs & Sign Covers

- Review placement – reach out ahead of time with concerns
- Attention to detail matters
- Need to use the correct sign covers



Work Zones – Inspection

Temporary Concrete Barrier

- Lots of “beat-up” and “rough-looking” barrier used
- Can require additional work on-site to patch/repair



Work Zones – Inspection

Blue Cone Markers for Businesses

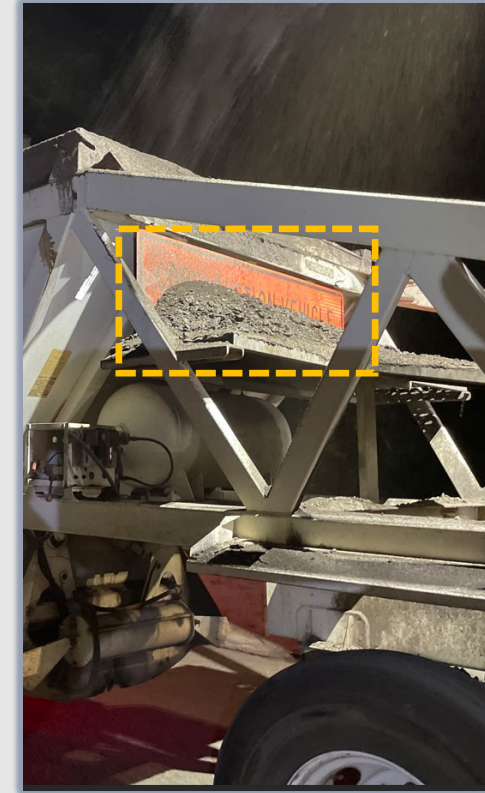
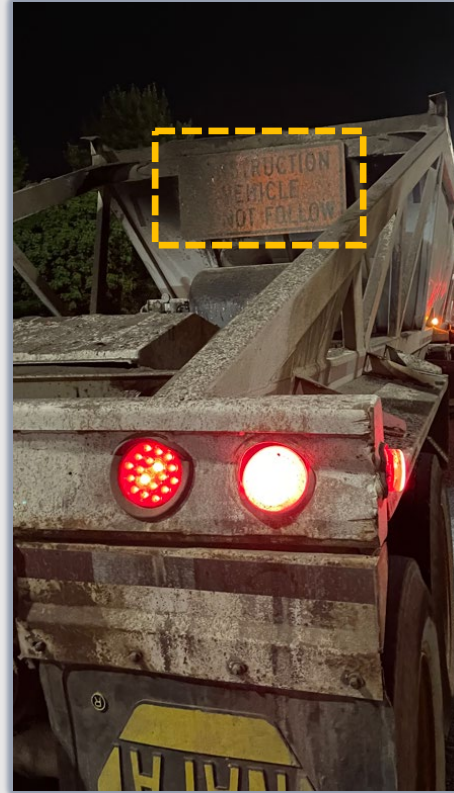
- Need to make sure they are installed and maintained
- Check at beginning/end of shift
- Be mindful of placement



Work Zones – Inspection

“Construction Vehicle – Do Not Follow” Signs

- Encountered on most projects!
- Safety concern with vehicles following construction vehicles into work zones
- Need to be maintained and enforced on trucks



Work Zones – Inspection

How to be Successful?

- Quality Control!
 - Be Proactive with maintaining acceptable TCDs
- Plan Ahead & Review the Work → Review the Details!
- Follow Agency Provided Traffic Control Plans and ODOT Standard Drawings
- Check with Construction Office in **advance** of the Work!
 - See a change you want to make?
 - Have a question about the setup?



Work Zones – Current Events

AFAD

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



OREGON DEPARTMENT OF TRANSPORTATION

Traffic–Roadway Section

TECHNICAL SERVICES
Advisory

TOPIC <i>Automated Flagger Assistance Devices</i>	NUMBER <i>TR20-01(A)</i>	SUPERCEDES OR RESCINDS <i>New</i>
APPROVAL <i>Original signed by: Michael Kimlinger, PE State Traffic-Roadway Engineer</i>	EFFECTIVE DATE <i>03/04/2020</i>	VALIDATION DATE

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.

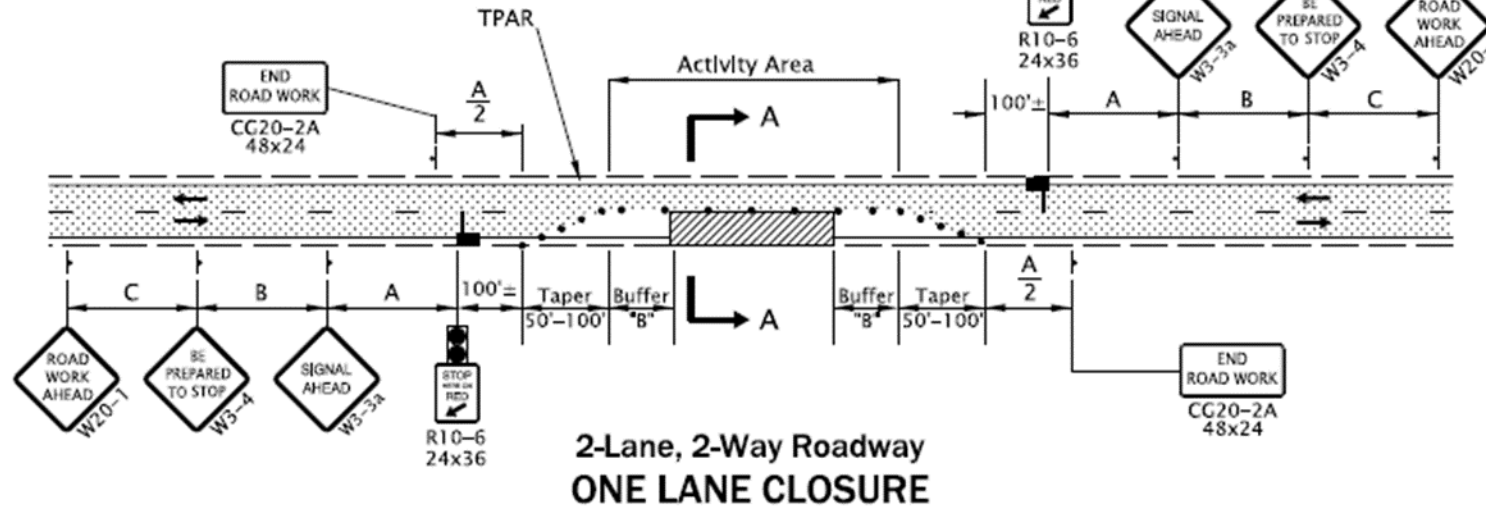
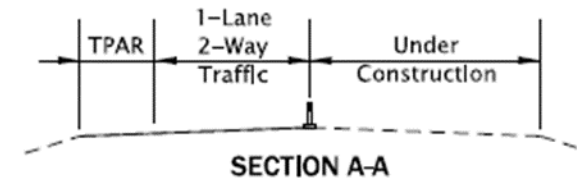
Work Zones – Current Events

AFAD

- Standard Drawings, AFAD vs Flagger

NOTE:

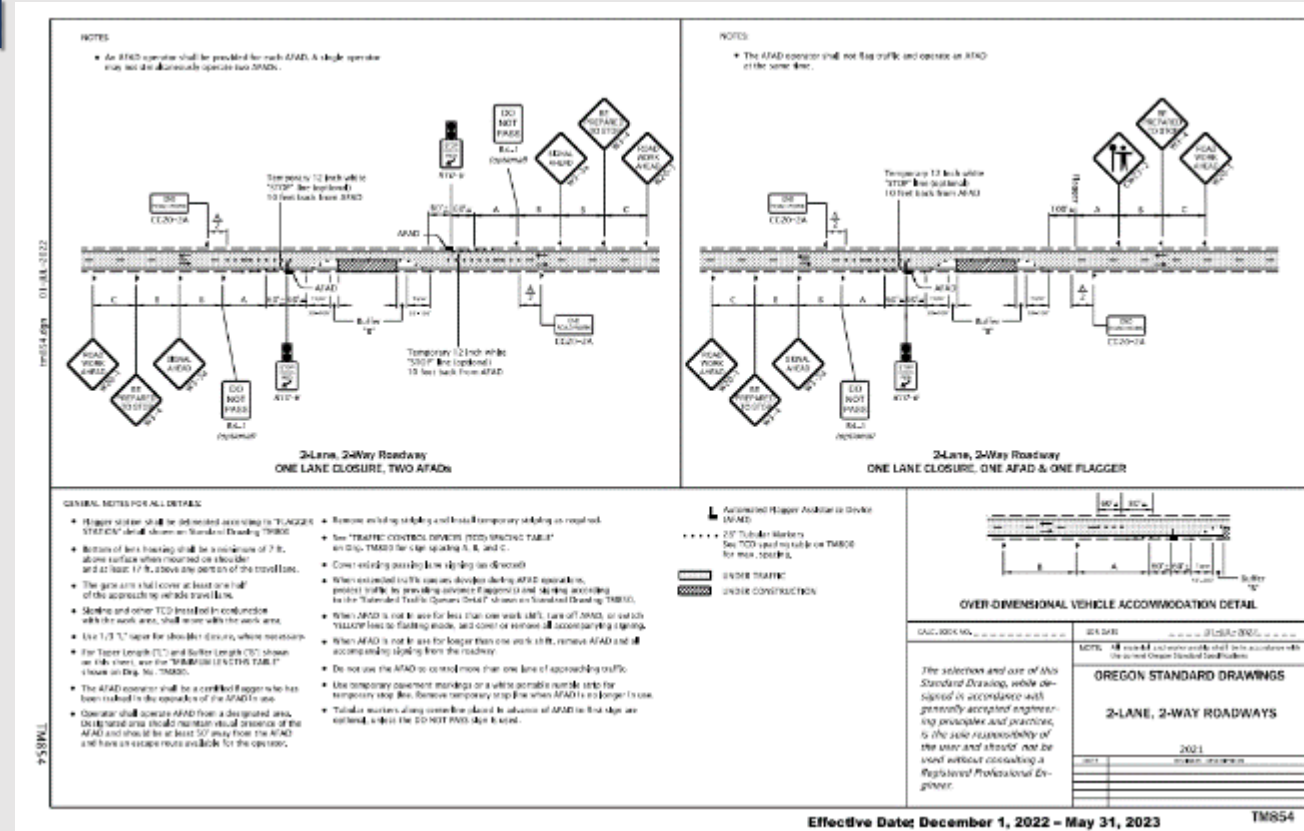
- When using pilot cars with flaggers to control traffic during paving operations, the Tubular Marker spacing along centerline may be increased to 200' within the Activity Area, as shown or as directed,
- Include "WAIT FOR FLAGGER" (CR4-23) signs mounted on Type II Barricade located approx. 50' before each Flagger,
- Coordinate and control pedestrians movements through the TPAR using Flaggers, other TCM, or as directed. When the existing shoulder is greater than or equal to 4' wide, provide a minimum of 4' of width for the TPAR.



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

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

Portable Temporary Transverse Rumble Strips

RAISED TRANSVERSE RUMBLE STRIPS (For use on wearing courses)

RUMBLE STRIP CLUSTER

$$X = \frac{W - 10}{2}$$

W = Width of travel lane in feet

★ Where a significant number of motorcyclists can be expected, consider providing a 2 foot gap as shown.

Thermoplastic Type A (black, non-reflectORIZED)

SECTION A-A

MILLED TRANSVERSE RUMBLE STRIPS (For use on base course *)

RUMBLE STRIP CLUSTER

$$X = \frac{W - 10}{2}$$

W = Width of travel lane in feet

* When project includes pavement overlay, rumble strips may be milled into existing surfacing.

Pavement surface

Milled rumble strip

SECTION A-A

PORTABLE TRANSVERSE RUMBLE STRIPS (For use on pavement surfaces)

RUMBLE STRIP CLUSTER

$$X = \frac{W - S}{2}$$

W = Width of travel lane in feet

S = Portable rumble strip length in feet (10'-11')

Y = N*Z

N = Number of Strips

Z = Manufacturer recommended spacing

Portable Rumble Strip from QPL or Conditional Use List (black, non-reflectORIZED)

Pavement surface

SECTION A-A

RUMBLE STRIP LOCATION

Rumble Strip Cluster (See details above)
2nd Strip Optional when AADT less than 4,000

Warning sign used for approaching condition or as directed.
(Designer - Specify which sign or device the rumble strips will be located from.)

Rumble Strip Cluster (See details above)

Warning sign used for approaching condition or as directed.
(Designer - Specify which sign or device the rumble strips will be located from.)

GENERAL NOTES:

- Approval is not required for portable transverse rumble strips during short-term daylight work. Region Traffic Engineer approval is required for portable transverse rumble strips during intermediate-term work, including night work. State Traffic-Roadway Engineer approval is required for all other installations. See ODOT Traffic Manual for further information.
- DO NOT use white or other colored material for temporary rumble strips. Use black material only.
- Multilane roadways shall have rumble strips clusters in each thru lane.
- As directed, "BUMP" signs (W8-1) may be placed at each rumble strip cluster for additional warning.

The selection and use of this detail, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without consulting a Registered Professional Engineer.

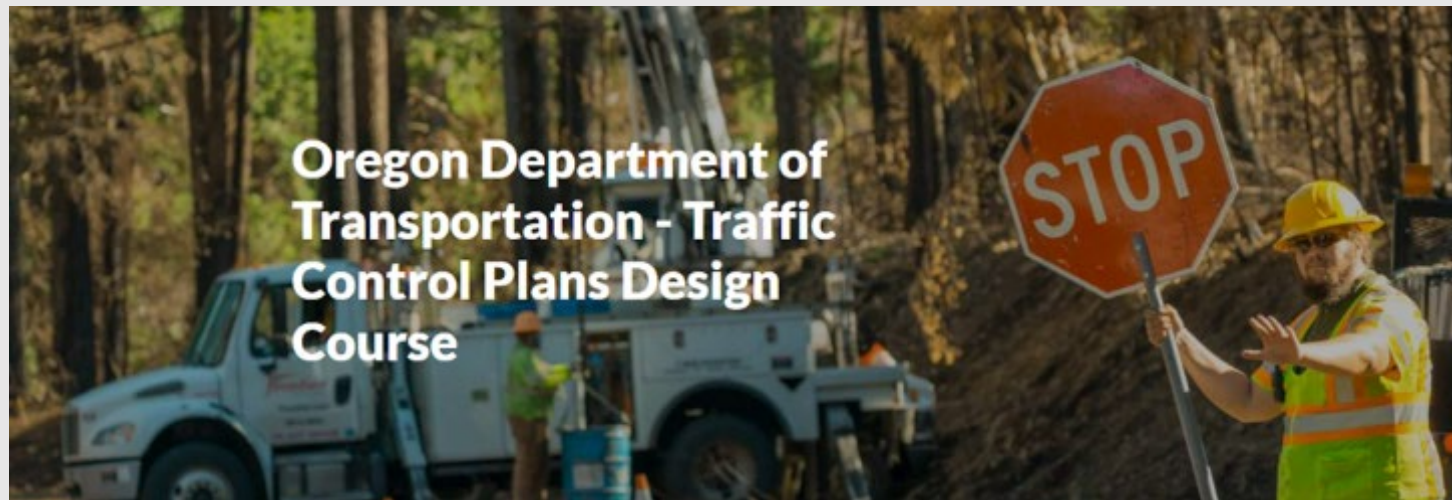
OREGON DEPARTMENT OF TRANSPORTATION
TECHNICAL SERVICES
DETAILS

TEMPORARY TRANSVERSE RUMBLE STRIPS	DETAIL NO. DET4710
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Work Zones – Inspection

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 – Inspection

Training – Traffic Control Plans Design

- Broad overview of ODOT design
- 7 lessons, basics of TTC and PS&E
- Roadmap

ODOT - ENG - Traffic Control Plans Design

This course provides designers, engineers or technical staff, members of City or County Public Works offices, inspectors, and private consultant engineering firms an introduction to the policy standards and deliverables that serve as the foundation for developing temporary traffic control plans for construction work along Oregon's Highway System. The lessons are not intended to be fully comprehensive, but rather are designed to guide individuals who are working with ODOT to commonly referenced resources.

[Show All](#)

[Lessons in This Course](#) | [Additional Course Details](#)

Lessons in This Course Completed 5/1

Lesson	Media
1 Traffic Control Plans Design	Media

START COURSE

Duration: 6 hours | Lessons: 1

Delivery Mode: Self-Directed

[Show](#)

INTRODUCTION

- Lesson 1: General Standards and Practices
- Lesson 2: Anatomy of a Work Zone
- Lesson 3: Temporary Traffic Control Devices (TCD)
- Lesson 4: Traffic Control Measures (TCM)
- Lesson 5: Specifications, Special Provisions, Drawings, and Details
- Lesson 6: Traffic Control Plans Design
- Lesson 7: Traffic Control Cost Estimating
- Resource Links

Work Zones – Inspection

Workday Oregon – TPAR Design/Inspection class



Oregon Department of Transportation – Temporary Pedestrian Accessible Route (TPAR) Design Course

Welcome to the Oregon Department of Transportation's (ODOT) Temporary Pedestrian Accessible Route Design course! This training provides Designers, Engineers or Technical Staff, members of City or County Public Works offices, Inspectors, and private Consultant Engineering Firms an introduction to the policy standards and deliverables that serve as the foundation for developing Temporary Pedestrian Accessible Route (TPAR) Plans for construction activities along Oregon's Highway System.

The lessons below are not intended to be fully comprehensive, but rather are designed to guide individuals who are working with ODOT to commonly referenced resources, materials, and standard practices to be utilized in the development of temporary pedestrian accessible route plans for use on Oregon's Highway System. Professionals conducting work outside of ODOT for other agencies should exercise caution in applying standards and practices within these lessons and resources as differences in design policy and standards may exist between ODOT and those established by other agencies.

Choose an activity below to get started!

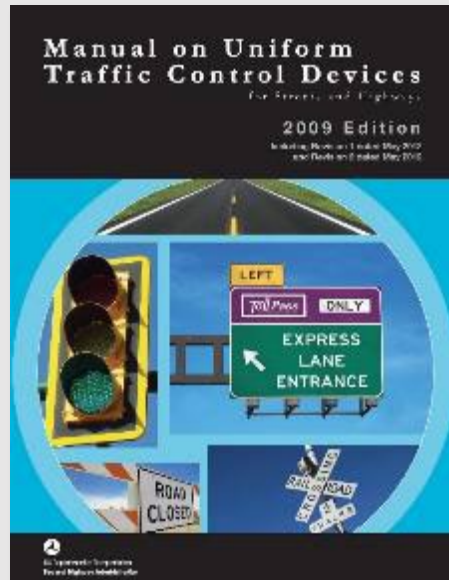


Work Zone Resources

Additional Information

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

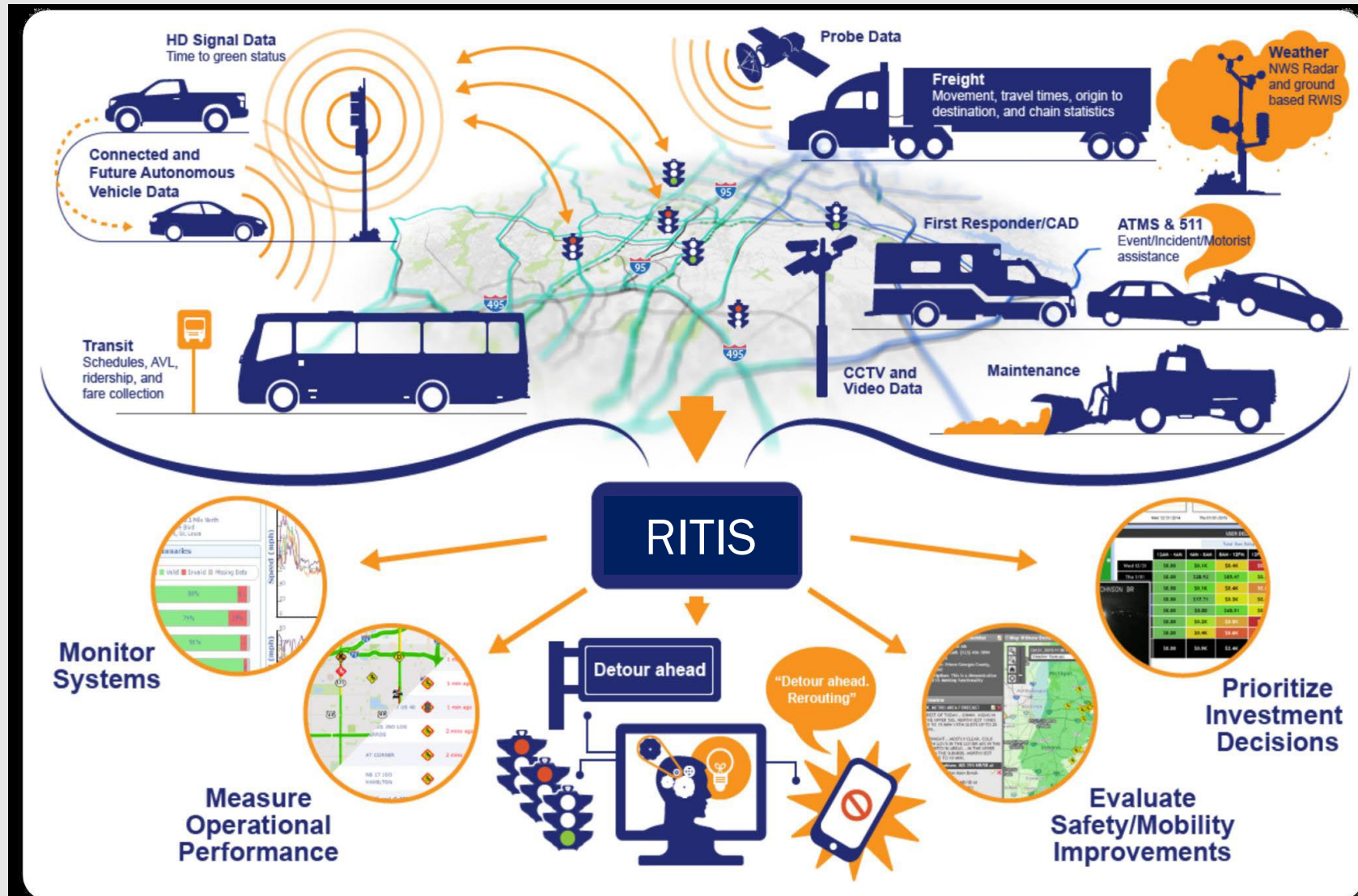
Email: WorkZoneStandards@odot.state.or.us



A worker wearing a red safety suit and a hard hat is positioned on a blue aerial lift bucket. The worker is facing away from the camera, looking towards a large steel bridge structure. The bridge consists of several large, dark-colored steel beams and girders. The background is a dense forest of green trees. The entire image has a dark blue overlay.

RITIS for a Work Zone

Regional Integrated Transportation Information System (RITIS)



RITIS Work Zone Dashboard

Workzone Activity @ OR217 southbound
 Started: Wed, Dec 22, 2021 at 02:00:00 PM **Beta**

Welcome, Chi Mai | [Help](#) | [Logout](#)
 Using INRIX data

SETTINGS

Comparison to Historical Average

Show...

- Work Zone Bounds
- Posted Speeds (none)
- Associated DMS
- Nearby Cameras (none)
- Nearby Incidents (none)
- Closed Lanes (none)
- Bottlenecks

Current Conditions Bounds...

5 miles upstream

5 miles downstream

Configure Alerts

CURRENT CONDITIONS

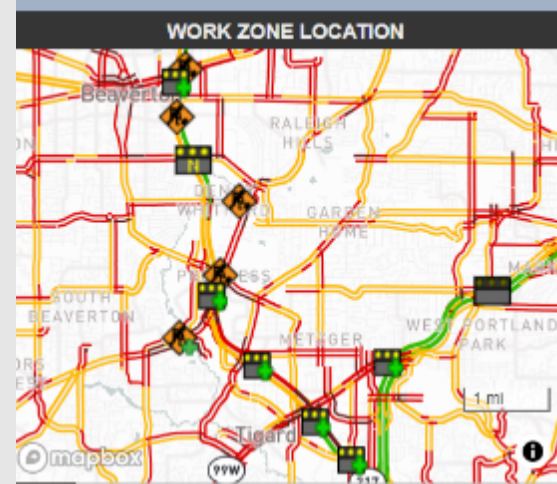
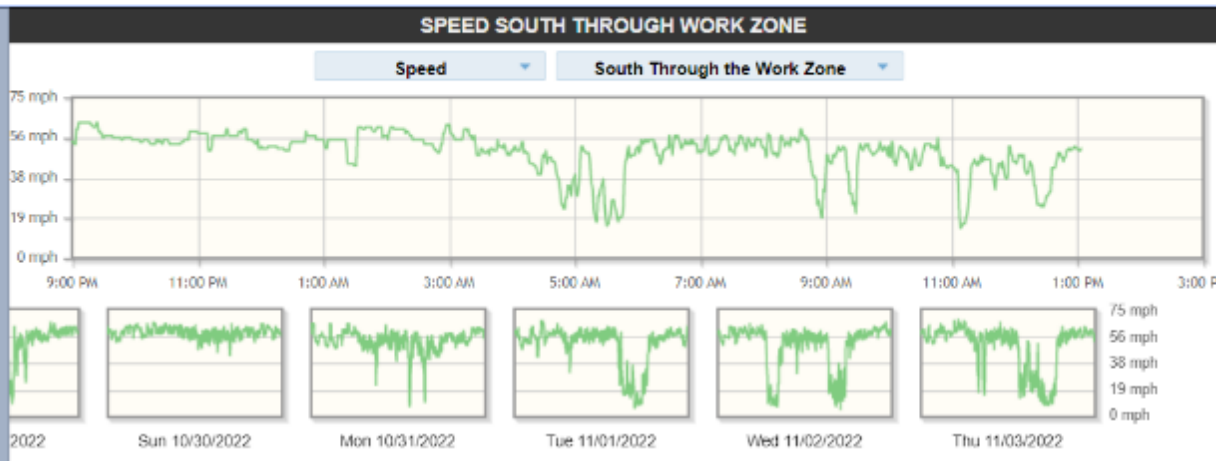
↓ SOUTH ↓

5.1 mi upstream

No Road Information

No Road Information

5.1 mi downstream

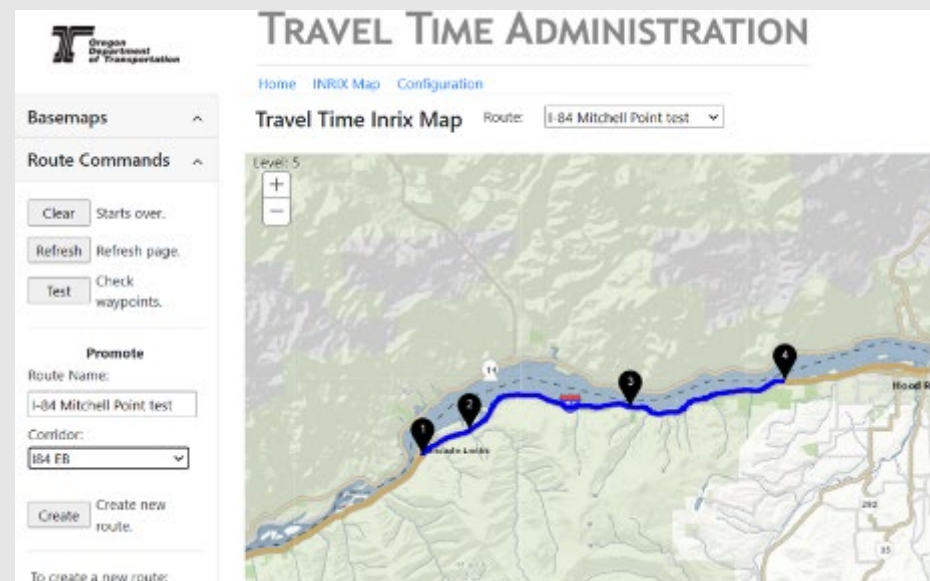
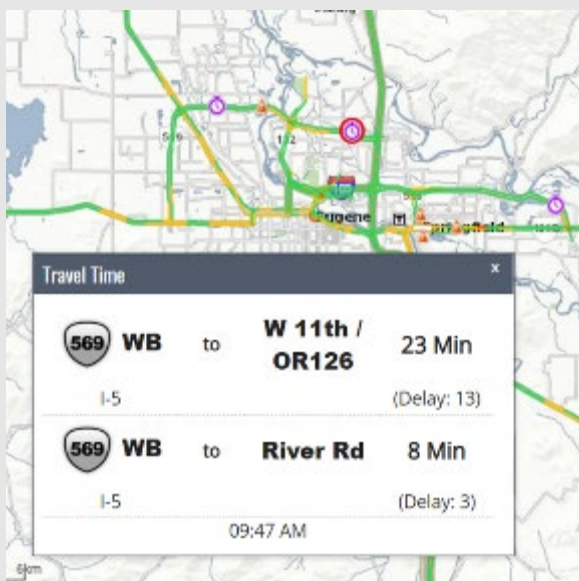


USER DELAY COST

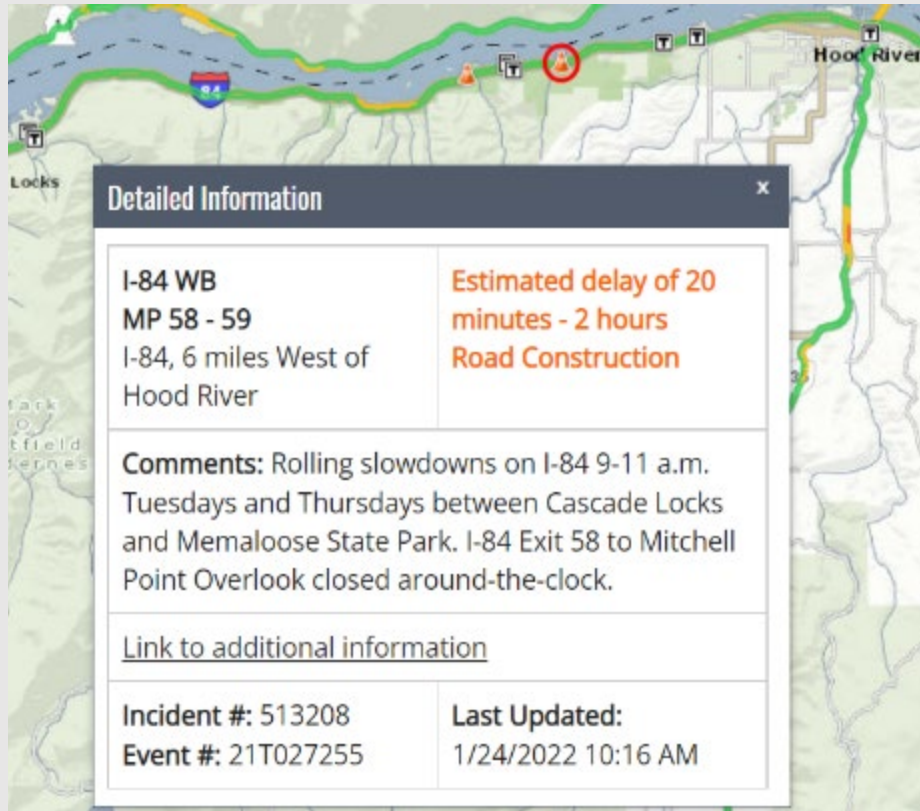
Total Delay

	12AM - 4AM	4AM - 8AM	8AM - 12PM	12PM - 4PM	4PM - 8PM	8PM - 12AM	Daily Totals
Fri 10/28	19m 12s	2h 31m 12s	48h 45m	141h	44h 33m 36s	N/A	237h
Sat 10/29	12m	52m 48s	72h 21m	35h 15m	N/A	N/A	109h
Sun 10/30	16m 48s	7m 48s	28m 48s	4h 25m 48s	2h 12m	18m 36s	7h 49m 48s
Mon 10/31	46m 48s	3h 45m 36s	11h 31m 12s	39h 40m 48s	12h 22m 12s	1h 15m 36s	69h 22m 12s
Tue 11/01	49m 12s	4h 51m 36s	3h 10m 48s	50h 13m 12s	115h	51m 36s	175h
Wed 11/02	19m 48s	60h 13m 48s	38h 55m 48s	29h 48m 36s	79h 39m 36s	30m 36s	209h
Thu 11/03	24m	4h 30m 36s	15h 20m 24s	68h 41m 24s	137h	27m	226h
Hourly Totals	3h 7m 48s	76h 53m 24s	191h	369h	390h	3h 23m 24s	Grand Total: 1,033h

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



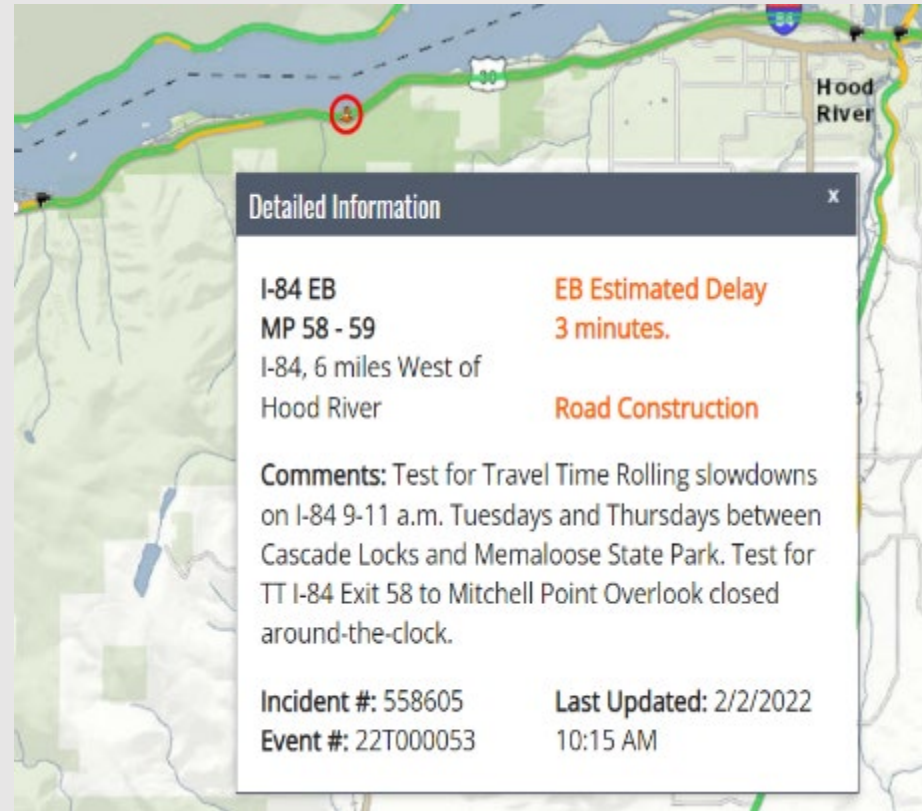
TripCheck Event Information



A screenshot of a TripCheck event information window. The window is titled "Detailed Information" and contains the following text:

I-84 WB MP 58 - 59 I-84, 6 miles West of Hood River	Estimated delay of 20 minutes - 2 hours Road Construction
Comments: Rolling slowdowns on I-84 9-11 a.m. Tuesdays and Thursdays between Cascade Locks and Memaloose State Park. I-84 Exit 58 to Mitchell Point Overlook closed around-the-clock.	
Link to additional information	
Incident #: 513208 Event #: 21T027255	Last Updated: 1/24/2022 10:16 AM

Before



A screenshot of a TripCheck event information window. The window is titled "Detailed Information" and contains the following text:

I-84 EB MP 58 - 59 I-84, 6 miles West of Hood River	EB Estimated Delay 3 minutes. Road Construction
Comments: Test for Travel Time Rolling slowdowns on I-84 9-11 a.m. Tuesdays and Thursdays between Cascade Locks and Memaloose State Park. Test for TT I-84 Exit 58 to Mitchell Point Overlook closed around-the-clock.	
Incident #: 558605 Event #: 22T000053	Last Updated: 2/2/2022 10:15 AM

After

Congestion notifications

Assigned

Automated Congestion Cleared
Automated Congestion Detected
Automated Congestion Persists

Wed 5/25/2022 3:09 PM
 TOCNotif@odot.state.or.us
ATM Congestion Detected
To

_Location: OR-217 SB construction - 21T119060 Route: OR-217 SB for 9060 Delay: 11 min Detected: 5/25/2022 3:08:42 PM

Wed 5/25/2022 3:39 PM
 TOCNotif@odot.state.or.us
ATM Congestion Persists
To

_Location: OR-217 SB construction - 21T119060 Route: OR-217 SB for 9060 Delay: 13 min Detected: 5/25/2022 3: 38:42 PM

Wed 5/25/2022 4:49 PM
 TOCNotif@odot.state.or.us
ATM Congestion Cleared
To

Congestion is all Clear. Location: OR-217 SB construction - 21T119060 Route: OR-217 SB for 9060 Timestamp: 5/25/2022 4:48:42 PM



Questions?

Thank you.
