



MnDOT Work Zone Training Plan

MCEA Summer Conference

June 12, 2025

Speakers



Jon Jackels, SRF
*Project Manager – Traffic &
Technology*



Alyssa Rubenstrunk, MnDOT
*State Aid Communications
Program Manager*

Agenda

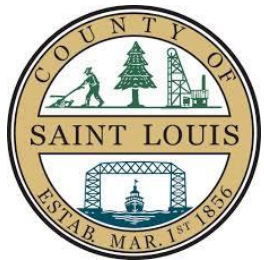
Topic	Speaker
Phase 1 <i>Background and Phase 1</i>	Jon Jackels
Phases 2 <i>Project overview</i>	Alyssa Rubenstrunk
Demonstrations and resources	Alyssa Rubenstrunk and Jon Jackels
Q & A	



Background and Phase 1

Jon Jackels | SRF

Project partners and contributors



TAP members (Phase 2)

- State Aid
 - Alyssa Rubenstrunk
 - Mark Vizecky
 - Girma Feyissa
 - Tom Prew
- Traffic Engineering
 - Ken Johnson
 - Michelle Moser
 - Jeff Morey
- OCIC (Construction)
 - Kevin Kosobud
 - Joe Bruer
- Maintenance
 - Bob Vasek
 - Steve Blaufuss
 - Tony Marshall
- Districts
 - Metro
 - Matt Miller (Traffic Services)
 - Matt Wessling (Maintenance)
 - D7
 - Cole Albrecht (Maintenance)
- Other
 - E-Learning - Steve Gritton
 - Video services - Joel Wenz
 - IT (State Aid) - Lowell Schafer
- LTAP
 - Andrew Wrucke
 - Katherine Stanley
 - LTAP/Scott County - Curt Anderson
- Local agencies
 - St. Louis County - Vic Lund
 - City of Eagan - Tim Plath
 - Northland ATSSA Chapter – Tim Lewis, Warning Lights

2018 work zone training initiative

Technical Advisory Panel


- **Mark Vizecky**, MnDOT – SALT
- **Alyssa Rubenstrunk**, MnDOT – SALT
- **Sue Lodahl**, MnDOT – Maintenance
- **Ken Johnson**, MnDOT – OTE
- **Mindy Carlson**, U of M – CTS
- **Ted Ulven**, MnDOT – OCIC
- **Bob Vasek**, MnDOT – Maintenance
- **Reed Leidle**, Safety Signs of Minnesota, Inc.
- **Kathy Schaefer**, MnDOT – Maintenance
- **Vic Lund**, St. Louis County
- **Tim Plath**, City of Eagan
- **Lou Aune**, Marshall County
- **Samuel Budzyna**, City of Rochester
- **Jackie Brown**, MnDOT – OCIC
- **Katherine Stanley**, U of M – CTS
- **Jeff Morey**, MnDOT – OTE
- **Tara Olds**, MnDOT – SALT
- **Girma Feyissa**, MnDOT – SALT
- **Renae Kuehl**, SRF
- **Jon Jackels**, SRF



Phase 1 – training plan development

- 40 years of work zone training history
- 2018 work zone training initiative
- Eight training courses recommended
- Three training levels defined

40 years of work zone training history

 1983	1985	1986	1988	1989
<ul style="list-style-type: none">• “Appendix B” (aka Field Manual)	<ul style="list-style-type: none">• First recording of training videos	<ul style="list-style-type: none">• Statewide Training Program began (MnDOT National Award)	<ul style="list-style-type: none">• Work Zone Safety Seminars (Industry & LTAP)	<ul style="list-style-type: none">• Industry & FHWA travel to each District
1993	2000	2002	2004	2006
<ul style="list-style-type: none">• Northland Chapter of ATSSA was formed (1st Multi-State Chapter)	<ul style="list-style-type: none">• “ABC’s of Work Zone Safety” video	<ul style="list-style-type: none">• Flagger Train the Trainer BEGINS	<ul style="list-style-type: none">• Work Zone Seminars BEGINS	<ul style="list-style-type: none">• NLATSSA & MCEA Memo of Understanding
2007	2011	2018	2024	2026 
<ul style="list-style-type: none">• MnDOT TCS Class BEGINS	<ul style="list-style-type: none">• CTAP Field Manual Training BEGINS	<ul style="list-style-type: none">• “Minnesota Comprehensive Work Zone Training Initiative” TAP formed	<ul style="list-style-type: none">• Minnesota Comprehensive Work Zone Training Initiative IMPLEMENTATION BEGINS	<ul style="list-style-type: none">• Minnesota Comprehensive Work Zone Training Initiative FULLY IMPLEMENTED

2018 work zone training initiative

Gathering efforts included:

- Listening sessions with state and local agencies and consultants
- Individual meetings with three private utility companies
- Online survey of local city, county, and MnDOT construction, maintenance, and design staff

Eight training courses recommended:

1. Fundamentals of Temporary Traffic Control (TTC) and Work Zone Safety
2. Flagging
3. Core TTC Knowledge
4. Advanced TTC Knowledge
5. TTC Control Supervisor
6. TTC Plan Development Skills
7. Transportation Management Plan Development - **NEW**
8. Work Zone Safety Information for Managers – **NEW**

Training levels defined

1. Informed

- Student attends an event
- No formal record of attendance

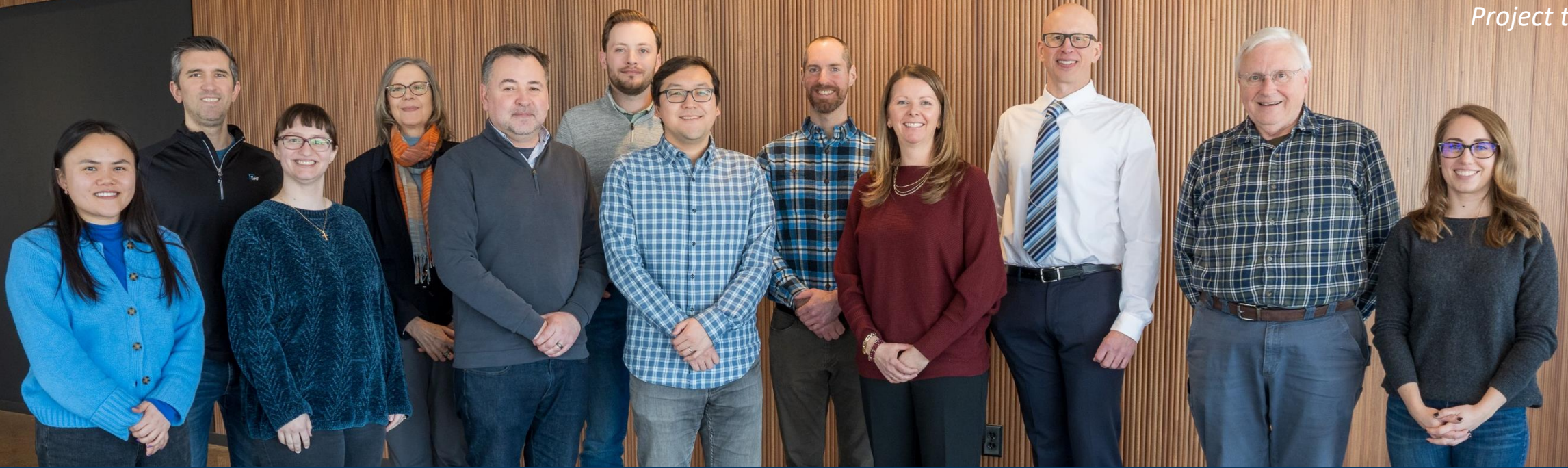
2. Trained

- Record of attendance
- May include demonstration of understanding
- Receives an attendance acknowledgement

3. Certified

- Record of attendance
- Student demonstrates acceptable level of understanding
- Receives certificate
- Certification expires and requires additional recertification

Project team



Phase 2 Project overview

Alyssa Rubenstrunk | MnDOT

Program overview

Putting recommendations in action

Develop, create, and launch a series of temporary traffic control trainings, utilizing a multi-faceted training approach.



Multi-faceted approach



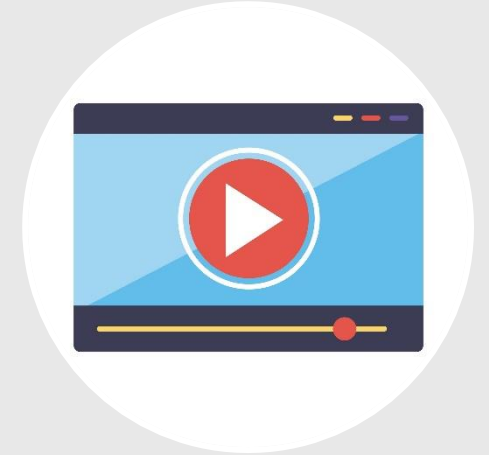
Classroom



E-Learning



Webinar



Video



Phased
rollout

Timeline

2025-2026

Availability and timeline



Available

Classroom

- Temporary Traffic Control, Train the Trainer (Spring 2025)
- Core Temporary Traffic Control (Winter 2025)



Q1 2026

- Classroom
 - Traffic Control Technicians
 - Transportation Management Plan Development
- E-Learning (13 modules)
- Webinar
- Work Zone Traffic Control and Safety Needs
- Videos

1. Traffic Control Technicians
2. Transportation Management Plan Development
3. Core Temporary Traffic Control
4. Temporary Traffic Control, Train the Trainer



Traffic Control Technician

- Facilitator: MnDOT
- Course on essential traffic control practices and on MN MUTCD standards and guidelines, including the Field Manual.
- Duration: 1 day
- Audience: field workers and field supervisors
- Training level: Certified



Transportation Management Plan Development

- Facilitator: MnDOT
- Course provides guidance for developing an effective Transportation Management Plan (TMP) for road projects.
- Duration: ½ day
- Audience: State, consultant, or city and county project managers responsible for TMPs.
- Training level: Trained



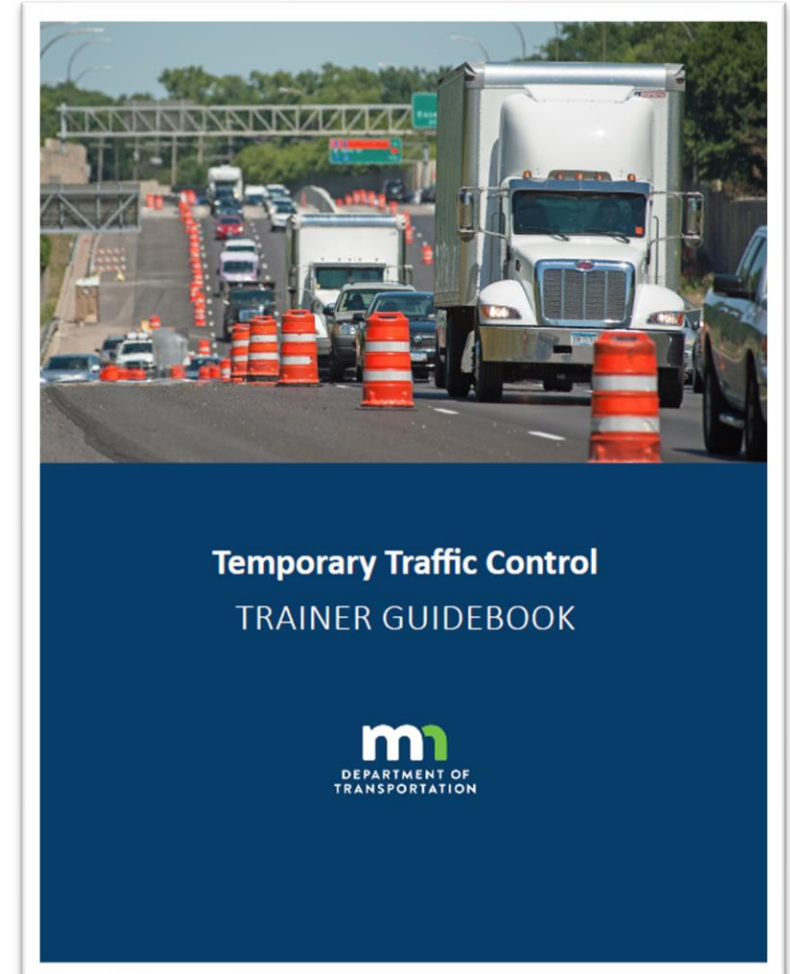
Core Temporary Traffic Control

- Facilitator: MnLTAP, certified instructors
- Course focuses on the Field Manual and how to apply concepts and standards to TTC and work zones.
 - Course tailored by instructor to meet the needs of the agency.
- Duration: ½ day
- Audience: field workers and field supervisors
- Training level: Trained



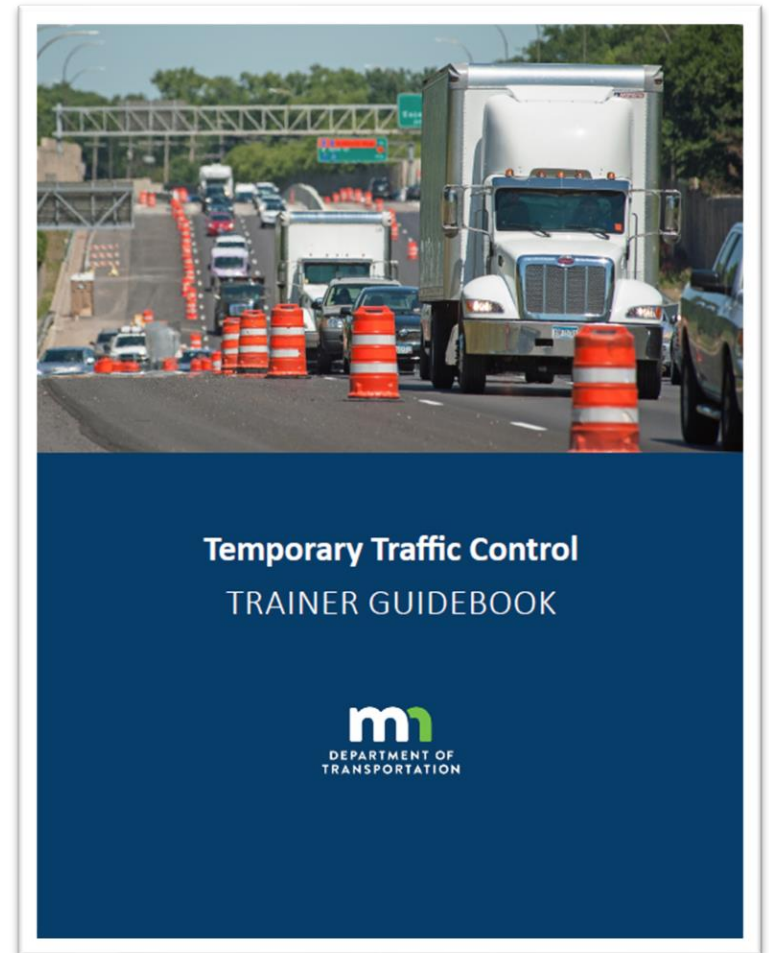
Temporary Traffic Control, Train the Trainer

- Facilitator: MnDOT
- Course used to certify personnel to teach Core Temporary Traffic Control to employees in their agency or other agencies.
- This course will cover the Field Manual in detail and provide participants with advanced subject knowledge and teaching strategies to lead the Core TTC class.
- Duration: 1 day
- Audience: state, county, city, and consultant professionals responsible for the implementation of traffic control, including supervisors, lead workers, or any responsible individual who trains others in temporary traffic controls.
- Training level: Certified



Temporary Traffic Control, Train the Trainer (continued)

- MnDOT hosting four sessions for CY 2025
 - Mankato – May 29, 2025
 - St. Cloud – June 11, 2025
 - Arden Hills – July 9, 2025 – *limited availability*
 - Arden Hills – August 20, 2025 – *limited availability*
- Cost: \$100 local gov agencies, \$500 non-gov/private sector
- Registration and details at mndot.gov/maintenance/ttc-trainer.html



Hands on materials

- Field Manual
- Trainer Guidebook
- Roadway figures (1 set)
- Temporary traffic control devices (1 set)
- Matchbox cars (4 ct.)
- Orange wire nuts - cones (25 ct.)
- USB drive



Trainer kits



Roadway figures

- 17 figures/set
 - 30 x 46, laminated
- 36 x 48 portfolio bag with shoulder strap

Trainer kits (continued)

Core temporary traffic control – agency training intake

This temporary traffic control training has been developed to provide a focused customized classroom session that meets the needs of individual highway agencies. This is accomplished by tailoring the course for each agency. To accomplish this the following information is requested for this course at [fill in the location/agency](#) on [fill in the date](#) from [fill in the time](#).

Please provide the following before [fill in the date](#). Thank you for your attention and I am looking forward to meeting you and your staff to provide training on TTC and improve work zone safety on your highway/street system. Please do not hesitate to [contact me](#) with any questions.

Roadway system

Check all that apply to the streets and highway types in your jurisdiction.

Two-Lane, Two-Way

- Low volume (less than 400 ADT)
 - Urban (30 mph or less)
 - Rural
- Low speed (40 mph or less)
- High speed (45 mph or greater)

Two-Way, Continuous Left Turn Lane

- Three [lane](#)
- Five [lane](#)

Temporary traffic control devices

Check all TTC devices in your inventory.

Signs

- Rigid signs
- Roll-up signs

Arrow boards

- Type A (48 x 24)
- Type B (60 x 30)
- Type C (96 x 48)

Trailer Mounted Electronic Devices

- Portable Changeable Message Sign (PCMS)
- Portable traffic signal
- Automated Flagger Assist Device (AFAD)

Multi-Lane Undivided

- Low speed (40 mph or less)
- High speed (45 mph or greater)

Multi-Lane Divided

- Low speed (40 mph or less)
- High speed (45 mph or greater)

Roundabouts

- Single lane
- Multi-lane

Flagging

- Enhanced STOP/SLOW Paddle

Channelizing devices

- Cones - 18 in.
- Cones - 28 in.
- Weighted Channelizers - 42 inch
- Barricades – Type I
- Barricades – Type II
- Barricades – Type III
- Vertical panels
- Drums

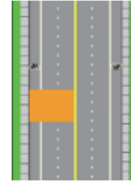
Agency intake form

Undivided multi-lane

Exercise 1

You are re-stripping the driving, bike, and parking lanes along both sides of a 4-lane urban road, along a 8 mile stretch with several intersections.

Instructor	Recommended	Chosen
Posted speed	35 mph	
ADT	16,750	
Sight distance	½ mile	
Day/night	Day	
Duration	1 mph	
Model	4LTW +B+P or +B+P+C	
Lane width	12 ft.	
Shoulder	3 ft.	



Exercise 2

You are adding several ped ramps in front of bus stops so that they are ADA and Watershed compliant along a 4-lane undivided road.

A. The bus stop is mid-block, coming out of a grocery store parking lot.

Instructor	Recommended	Chosen
Posted speed	20 or 35 mph	
ADT	22,000	
Sight distance	½ mile	
Day/night	Day	
Duration	2 days	
Model	4LTW +C or TLOW+C	
Lane width	11 ft.	
Shoulder	1.5 ft.	



B. The bus stop is 50 ft. north and/or south of an intersection.

Instructor	Recommended	Chosen
Posted speed	20 or 35 mph	
ADT	22,000	
Sight distance	½ mile	
Day/night	Day	
Duration	2 days	
Model	4LTW X+C or 3LOW+C	
Lane width	11 ft.	
Shoulder	1.5 ft.	



In-person training instructions & examples

Electronic files on UBS drive

- Trainer Guidebook
- Core Temporary Control - course materials
 - 1) Agenda and outline
 - 2) Agency intake form
 - 3) Course confirmation and agency intake request
 - 4) Course PowerPoint
 - 5) In-person training instructions and examples
 - 6) Roadway figures
 - 7) Temporary traffic control device cards
 - 8) Quiz
 - 9) Quiz – answer key
 - 10) Course evaluation form

Trainer kits (continued)

1. Orientation to Work Zone Safety (2)
2. Core Temporary Traffic Control (11)

Training level: Trained



Orientation to Work Zone Safety | Core Temporary Traffic Control



MnLTAP



(Internal staff)
Learning Center

E-Learnings will be offered on both platforms

E-Learning – MnLTAP training partnership

MnLTAP will administer e-Learnings for public and private organizations.

- Cost: Free
- Registration will be required
- Credit can be counted towards ***Roads Scholar Program***
 - Maintenance Operations and Technical Certificate
 - <https://mnltp.umn.edu/programs/roadsscholar/maintenance>



Orientation to Work Zone Safety

Transportation workers

- Provides work zone employees fundamental safety training and emphasize the development of safe practices on the job.
- Topics include: what to do before entering a work zone, how to safely enter and exit, and how to be cautious while working in the work zone.

Non-transportation workers

- For workers whose duties may place them on, or near roadways
 - Example: utility companies, tree care companies, etc.
- Introductory traffic safety course that covers basic roadway safety practices, including how to protect yourself, your co-workers, and the traveling public.

Core Temporary Traffic Control

- Modules will focus on the basics of temporary traffic control and work zone safety.
- (11) modules
 1. Into to TTC
 2. Basics of TTC
 3. Low volume roads
 4. Two-lane, two-way roads
 5. Two-way, continuous left turn lane
 6. Multi-lane undivided roads
 7. Multi-lane divided roads
 8. Moving and mobile operations
 9. Road closures and detours
 10. Work in intersections
 11. Special cases



E-Learning

- Modules will cover fundamentals, principles, and essential concepts of TTC
- Content compliant with new MN MUTCD and Field Manual
- Will serve as the foundation for classroom training - not a replacement for classroom training

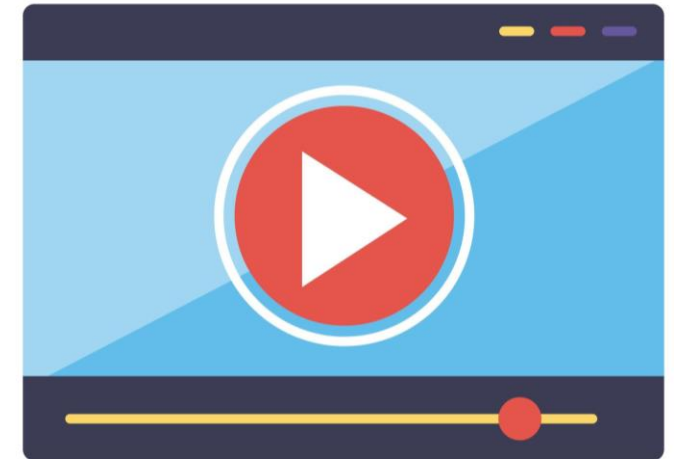


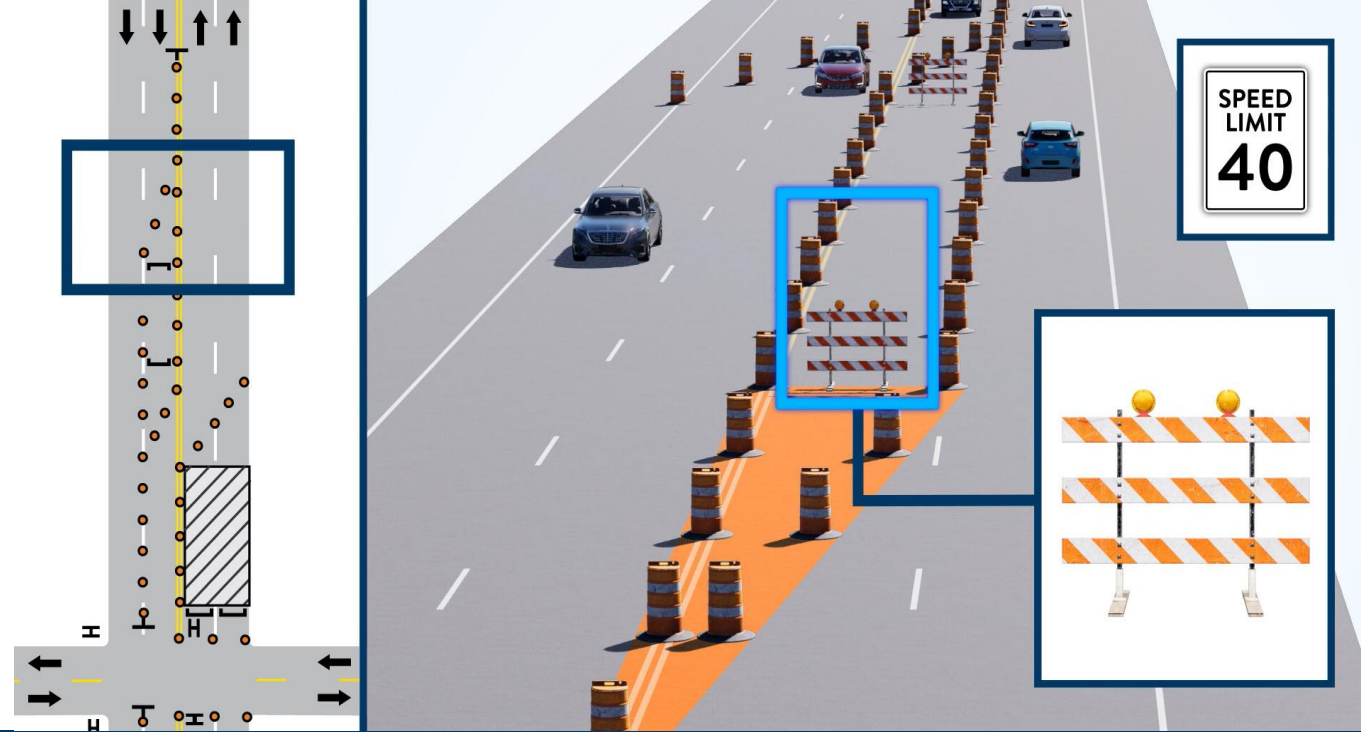
Work Zone Traffic Control and Safety Needs

- Facilitator: MnDOT
- Provide managers with key information to help make informed decisions when creating an effective work zone traffic control and safety program for their agency/company.
 - Webinar is designed for managers at public agencies and private companies whose teams work on, or near roadways.
- Duration: 1 hour
- Audience: State, city, county, contractor, and consultant managers responsible for TTC design, operations, and safety.
- Training level: Informed



- Not a standalone training method
- Designed to integrate directly in (13) E-learning modules and classroom courses
 - Training videos will be divided into smaller, topic-focused lessons





Demonstrations and resources

Alyssa Rubenstrunk | MnDOT

Jon Jackels | SRF

E-Learning module preview

The screenshot displays the user interface for an e-learning module. On the left is a dark sidebar with the Minnesota Department of Transportation logo and a menu. The main content area features a blue header with the title 'Two-Lane, Two-Way Roads' and a graphic of a person with a stop sign and road construction equipment. The title 'Two-Lane, Two-Way Roads' is prominently displayed in white text on the right side of the main area. At the bottom right, there is a gear icon and a 'NEXT >' button.

m1 DEPARTMENT OF TRANSPORTATION

Two-Lane, Two-Way Roads

RESOURCES

MENU GLOSSARY

- Two-Lane, Two-Way Roads
 - Introduction ✓
 - Disclaimer ✓
 - Individual Responsibilities ✓
 - Course Controls ✓
 - Course Roadmap ✓
 - Stay Safe ✓
 - Definition ✓

gear icon NEXT >

Training video preview





Hands on
learning

State Aid for Local Transportation

Temporary traffic control trainings

- Home
- Administration
- Programs
- CSAH
- MSAS
- Traffic Safety
- CAV
- Project Delivery
- Pavement
- Construction
- Training
- Contact Us

Temporary traffic control trainings

The following temporary traffic control (TTC) training levels are for employees of state government, local agencies, private contractors, traffic control contractors, utility companies, and consulting firms. The levels of training were developed to address the needs of personnel based on basic work duties and responsibilities, not by job classification.

The recommended training levels are based on their job duties and responsibilities and are independent of their classification or employer.

Resources

- Minnesota Temporary Traffic Control Field Manual
- Minnesota Manual on Uniform Traffic Control Devices

Training levels

- Level 1: Fundamentals of TTC and Work Zone Safety
- Level 2: Flagging
- Level 3: Core TTC Knowledge
- Level 4: Advance TTC Knowledge
- Level 5: TTC Supervisor
- Level 6: TTC Plan Development Skills
- Level 7: Develop Transportation Management Plan
- Level 8: Managers

Training matrix

- Matrix of training levels (PDF)

MOCKUP ONLY (NOT LIVE)

WZ training resources

Level 1: Fundamentals of TTC and Work Zone Safety

Audience/primary job duties

Perform work on public right of way intended for travel without the need for lane closures

Suggested training courses

- Work zone safety orientation**
 - Facilitator:** MnLTAP
 - Training format:** e-Learning
 - Description:** Provides work zone employees with an understanding of the most basic aspects of safety in a work zone and encourage them to develop safe habits. It begins with how a worker should prepare before entering the work zone, and it doesn't end until the worker is off site and out of the work zone area.
- Orientation to work zone safety (MnDOT staff only)**
 - Facilitator:** MnDOT
 - Training format:** e-Learning (course number SFTY00081)
 - Description:** Provides MnDOT employees with an understanding of the most basic aspects of safety in a work zone. There is danger in the work zone and your attention to safe practices can protect you, your co-workers, and the traveling public from injury or even death. Course will help you develop safe habits by providing important information in these areas: what you need to know before you go into a work zone, entering and exiting the work zone, and using caution in the work zone.

Level 2: Flagging

Training levels

- Suggested courses
- Facilitator
- Format
- Description
- Link to training webpage

Description of your work	Level 1 Fundamentals of TTC and Work Zone Safety	Level 2 Flagger Training & Certificate	Level 3 Basic TTC Knowledge	Level 4 Advanced TTC Knowledge	Level 5 Certified Temporary Traffic Control Supervisor	Level 6 TTC Plan Development Skills	Level 7 Traffic Management Plan Development	Level 8 Work Zone Safety Information
Your work requires Temporary Traffic Control (TTC)	REQUIRED	OPTIONAL	OPTIONAL	OPTIONAL	N/A	N/A	N/A	N/A
Your work is in the public right-of-way but you typically hire another	REQUIRED	OPTIONAL	OPTIONAL	OPTIONAL	N/A	N/A	N/A	N/A
You are a flagger or supervise flaggers	REQUIRED	REQUIRED	RECOMMENDED	RECOMMENDED	OPTIONAL	N/A	N/A	N/A

THANK YOU! ANY QUESTIONS?

Alyssa Rubenstrunk MnDOT
alyssa.rubenstrunk@state.mn.us
651-366-3837

Mark Vizecky, MnDOT
mark.vizecky@state.mn.us
651-336-5969

Jon Jackels, SRF
jjackels@srfconsulting.com
763-249-6722

Rena Kuehl, SRF
rkuehl@srfconsulting.com
763-249-6783