

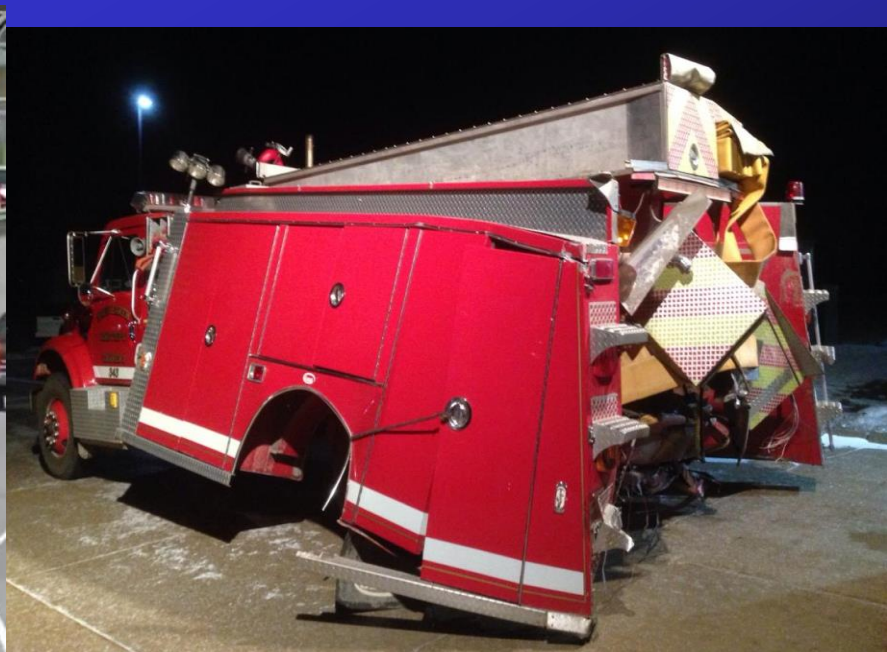
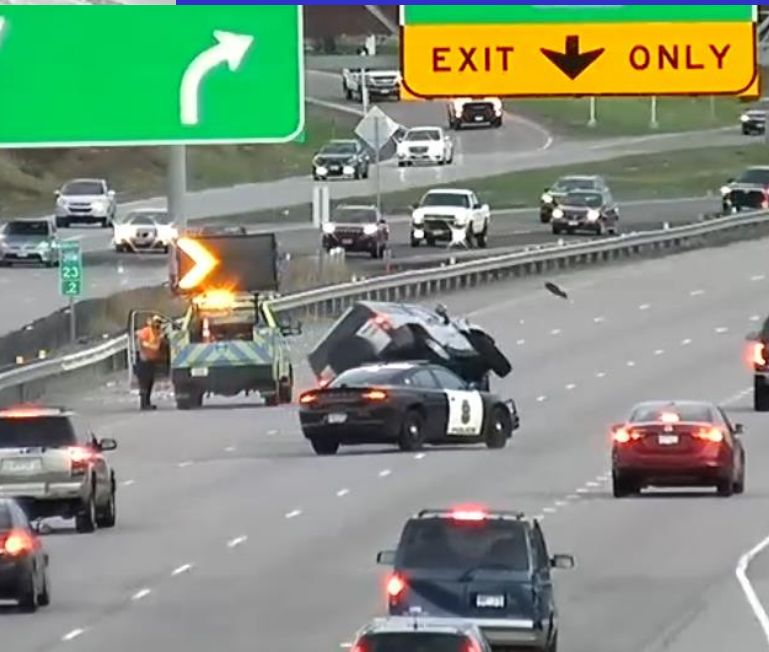
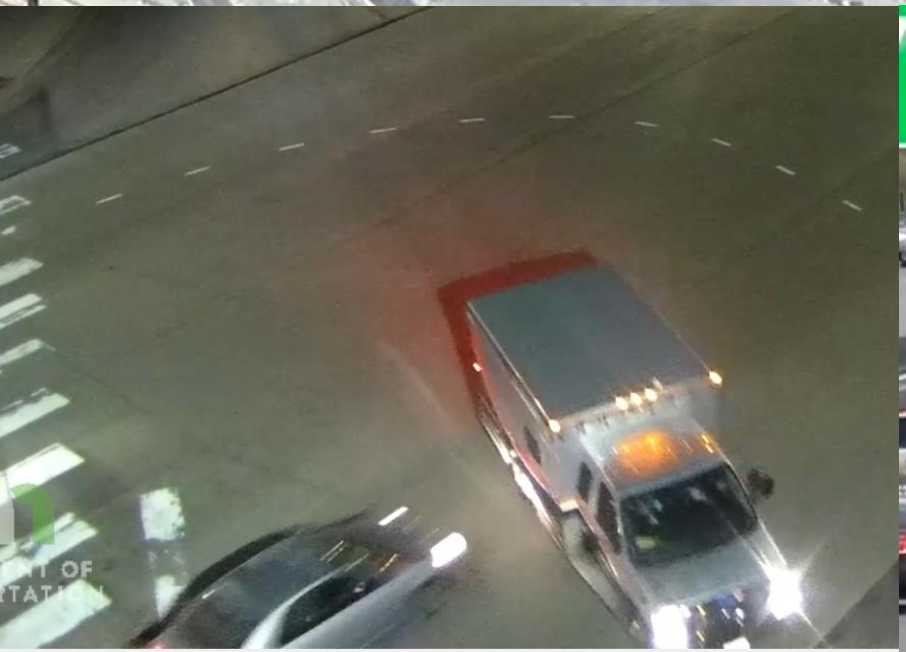


# Highway Safety for Emergency Responders 2023 Towards Zero Deaths





**TZD. It's not just for the public...**



# Intros

- **John McClellan MNDOT**
- **Chief Judy Thill – Inver Grove Heights FD**
- **Sgt Rick Denneson – West Hennepin PD/Maple Plain FD**
- **Lt. Andrew Martinek – State Patrol**
- **Tony Kasella – MNDOT Statewide TIM**





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# Role / roll call:

- **FD**
  - **PD**
  - **EMS**
  - **Tow**
  - **Other responders?**
- 
- **Urban**
  - **Rural**

**Reality:** Responders are faced with the probability of serious **secondary** incident on a daily basis from:

- Drunk, drugged, distracted, drowsy, **disturbed**, and just plain dumb drivers...
- We have no choice other than to train and implement.
- Complacency is a **KILLER**.



# Traffic incidents are a leading cause of traumatic death and injury to emergency responders.

- Struck on-scene (secondary crashes)
- Crashes while enroute
- Crashes during regular patrol / transport

## Nationally:

- Motor vehicle crashes are the leading cause of *traumatic* death to **Firefighters!**
- More **Police Officers** are killed in motor vehicle crashes than in shootings.
- Leading cause of death for tow operators.

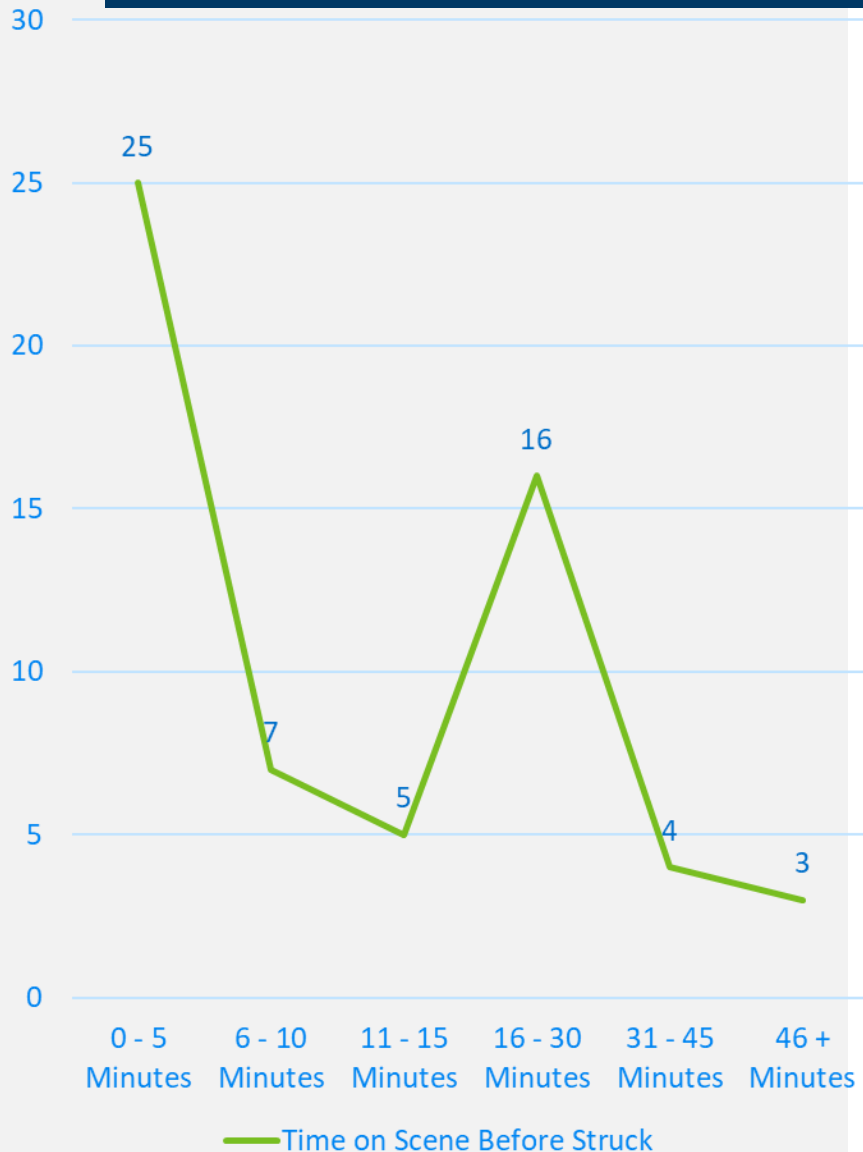
# 16 MN responders killed in last 26 years

## 10 struck on foot / 6 in vehicles



- 1997 Minneapolis Fire – FF struck
- 1997 Minneapolis PD – Ofc struck (died 2010)
- 1999 Hinckley EMS – EMT struck
- 2000 State Patrol – Trooper struck
- 2002 Boyd Fire – POV crash
- 2002 Esko Fire – FF struck
- 2003 St Cloud Fire – FF struck
- 2005 Roseau EMS – ambulance crash
- 2005 Lino Lakes PD – Officer struck
- 2006 Melrose Fire – POV crash
- 2007 Minneapolis PD – Officer struck
- 2009 Ramsey Co – Reserve struck
- 2017 Wayzata – Officer struck
- 2017 Brooklyn Center – ambulance crash
- 2021 Lawrence twnshp – squad crash
- 2021 Lawrence twnshp – ambulance crash

# Greatest Risk to State Troopers Occur During:



- Poor weather and road conditions
- Troopers responding to vehicle off roads and/or motor vehicle crashes
- Event occurring on multi-lane highways
- **Within the first few minutes of arriving, and again 15+ minutes on scene**
- Lack of early warning devices in place
- Squad parked on the roadway (in the lanes or on the shoulder)

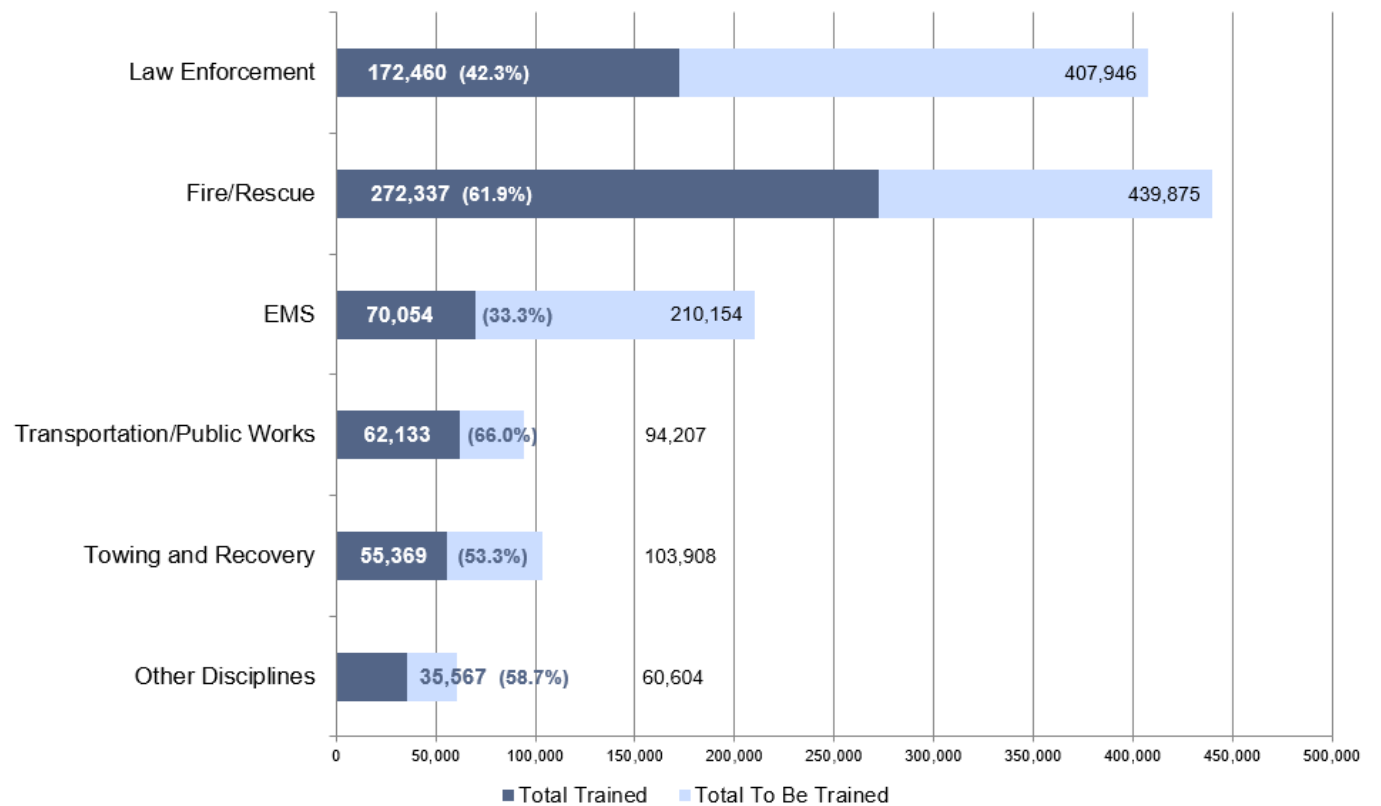
# Traffic Incident Management (TIM)

- *Coordinated effort by all responders to accommodate their safety, the victim's safety, the incoming traffic's safety, and overall mobility.*
- **Get there, do what you need to do, safely and efficiently – and get out!**

# MN and National Push

- MN training since 2003
- FHWA SHRP-2 “TIMS Training” 2012
  - 4 hour classroom sessions

**TIM Training Program Implementation Progress**  
**Total Trained By Discipline**  
- As of August 14, 2023



# Today - overview and some take-aways...

## Current TIM Training options:

- **MN version runs about 2 hours.**
  - **Single discipline**
- **Fed's version is 4 hours / MN version is in production**
  - **Intended for multi discipline group audience**
- **Scene Safe video (2013) on Youtube.**
  - **Revised version is in process.**

# The only thing certain



You have a 100% chance of not being hurt if  
you aren't out there...

Otherwise: It's about adjusting  
probabilities



# TIM goals – all responders

- Respond to who's asking for help
- Safety for your crew & yourself
- Safety for all the rest of the drivers
  - “Public” in public safety
- Not screw up traffic any more than necessary

# Three Basic TIM Principles

## 1. Protect those on foot

- Something metal between you & traffic

## 2. Provide a clear path for incoming traffic

- **SHOW** them where to go – don't let them guess!
- Advance warning, cones/flare buffer, good parking.

## 3. Prevent secondary incidents

- Demobilizing a priority, light discipline, advance warning for queue.

# Traffic can be like flowing water

- Sometimes it's fast, sometimes it's slow.
  - Creek vs. River
  - Gentle vs. Raging
  - Surprises lurking
- It will always keep coming
- Better to channel or divert than just dam & forget.



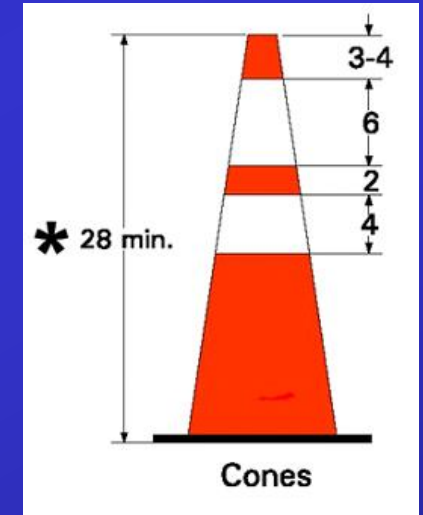
83rd Ave N  
49th Ave N

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# Traffic Control Tools

- **Cones**
  - 28 inch high – with reflectorized collars
  - Carry at least 5 per rig/unit
  - 10lbs base
  - Pops up an option for space limits
- **Pink signs – 48” – not 36” – advance warning**
- **Flares & LED-flares (Pi-Lights)**



# Stop / Slow Paddles

- **Minimum - 18" x 18"**
- **Recommended - 24" x 24"**
- **Minimum = 5 ft staff**
- **Recommended = 7 ft staff**



**Flashlights with traffic wands**

**Radios – on SOA or FD Tac?**

**Class 2 vest or class 3 jacket**

**Class E reflective pants**

**FD helmet**

**Portable air horns**



# High viz vests

PD – lots of exceptions

FD – a couple exceptions

EMS – Pretty much only if it's Ebola.

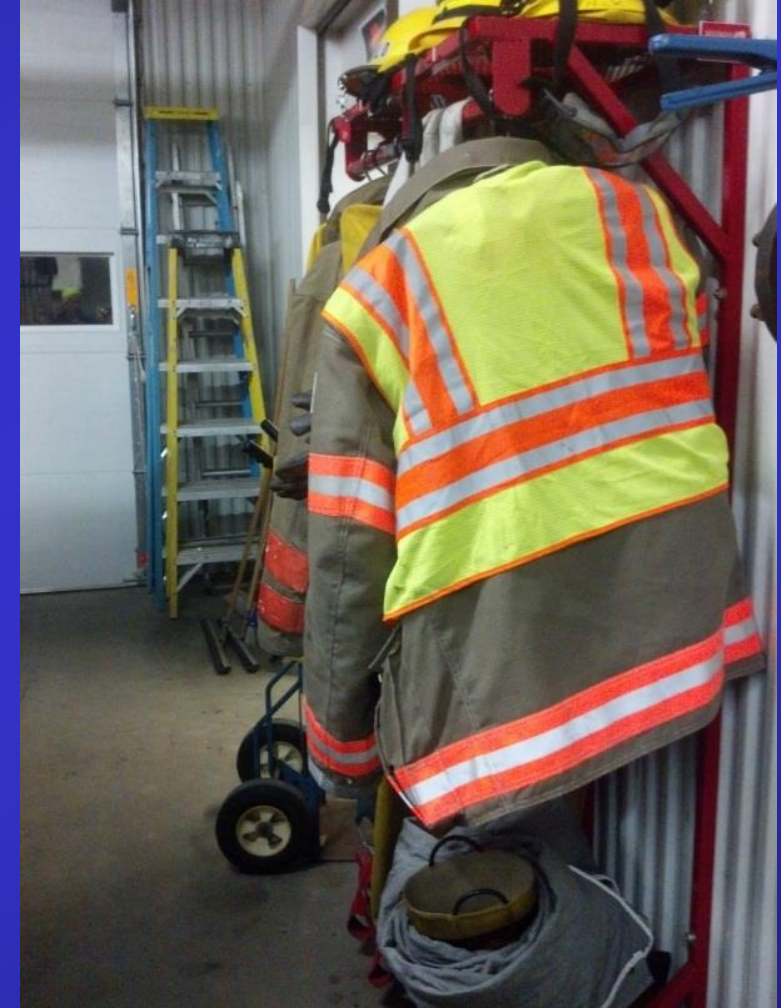
Tow – always always always

ANSI Class 2 – vest

ANSI Class 3 – if sleeves/jacket

“Public Safety 207” – shorter vest

Exceptions for **fire** – basically if on the nozzle or hazmat



FD - Leave vests on?

**But I don't want  
to!!!**



**If something bad happens to you:**

- **Could impact criminal charges**
- **Could impact civil recourse**
- **Could impact your workers comp!**



# Who's in charge?



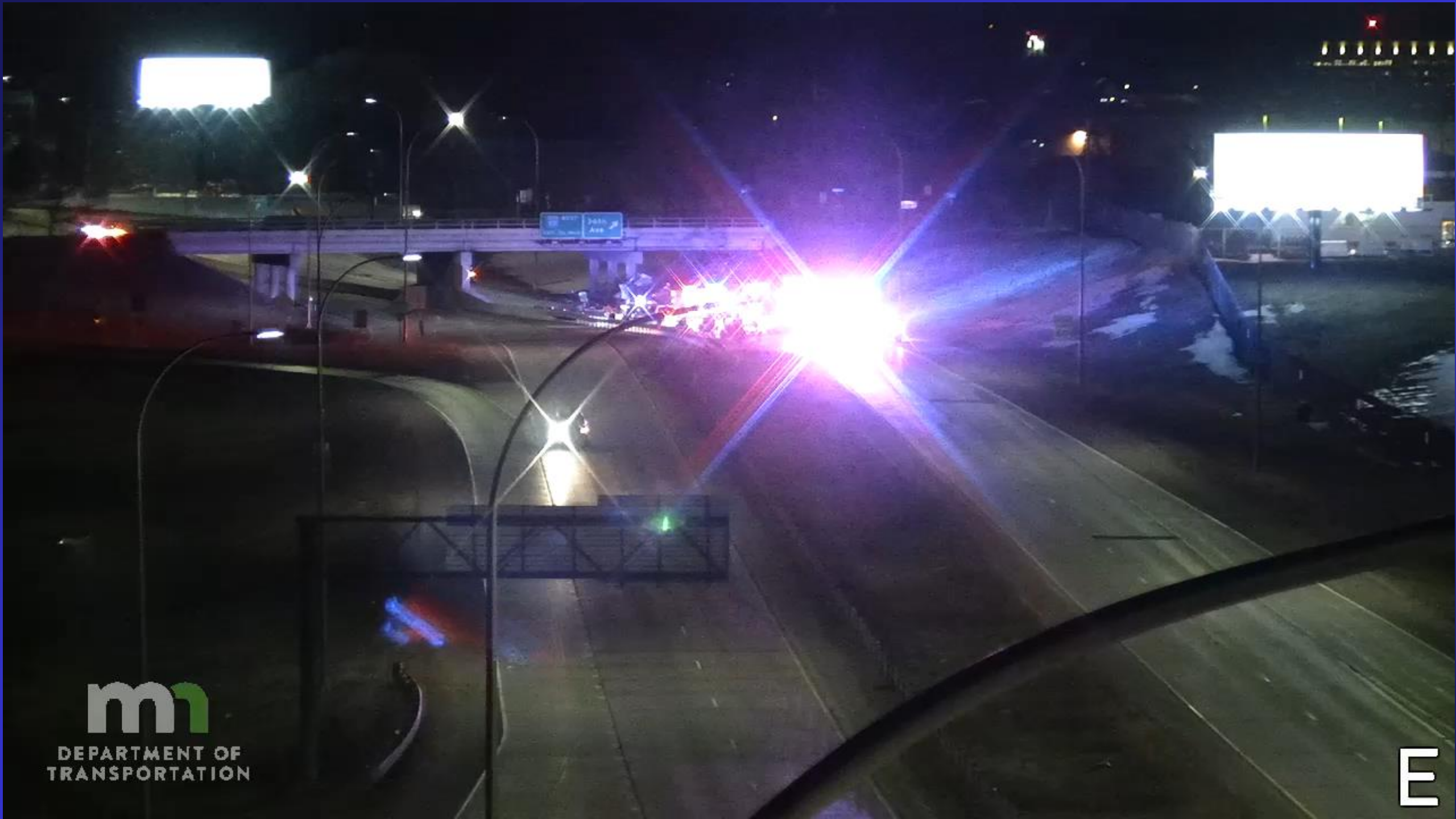
# Who's in Charge of What?

- Need to share!
- **Way too many things going on at same time for single command.**
- **Face to face communication – A MUST!**
- **PD cut slack on FD taking lanes**
- **FD cut slack about keeping traffic moving.**
- **If issues – deal with them BEFORE on-scene.**

# Safe Response

- **Being a good driver isn't good enough**
- **Don't assume with pre-emption**
- **Remember other responders on the road**
- **We see what we're looking to see**





# Traffic Control Key Points

- Give oncoming enough **TIME & SPACE** to react **SAFELY**
- Give yourself enough space to react when they don't
- Provide **CLEAR** instructions to traffic what you want.
  - Keep coming, pay attention
  - Keep coming, but slow down
  - Move over there
  - Stop here.

Standard lighting announces **presence**  
but doesn't give **instruction**.



VS.



Which is why using cones, flares, and  
good placement are necessary.

# Arrival – where to park

## #1 Block to protect where you'll be on foot

- Size up and communicate to **dispatch/others**
  - Where are you
  - What do you have
  - What do you need \ where do you want them?
  - What can be cancelled?
- High visibility vest on



# Move it or work it?

No injuries?

Vehicles drivable?

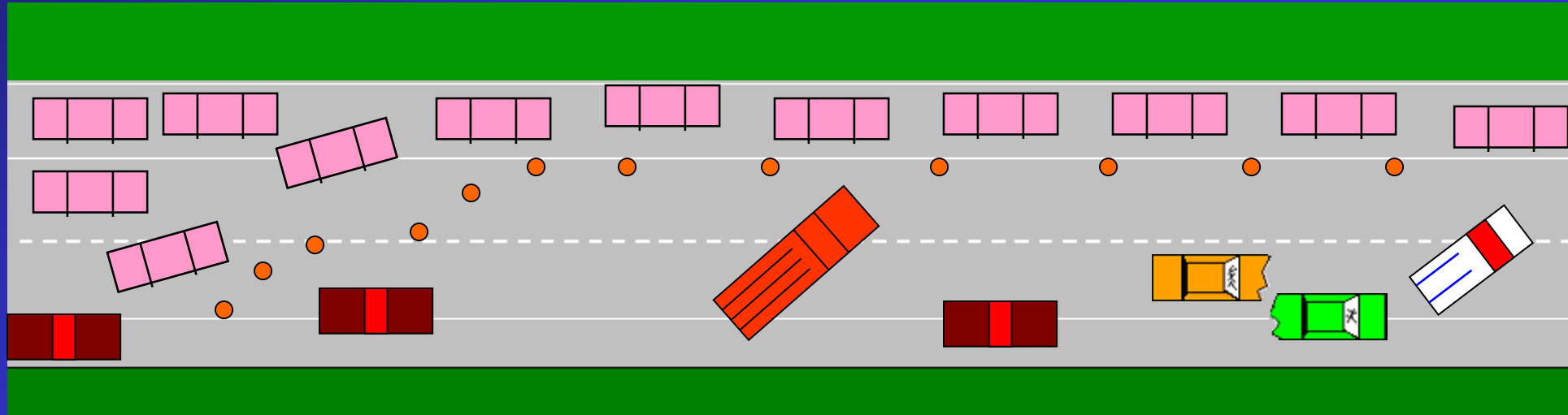
**Can they be relocated off the highway?**

Communicate to LE & Tow !

Push or drag?

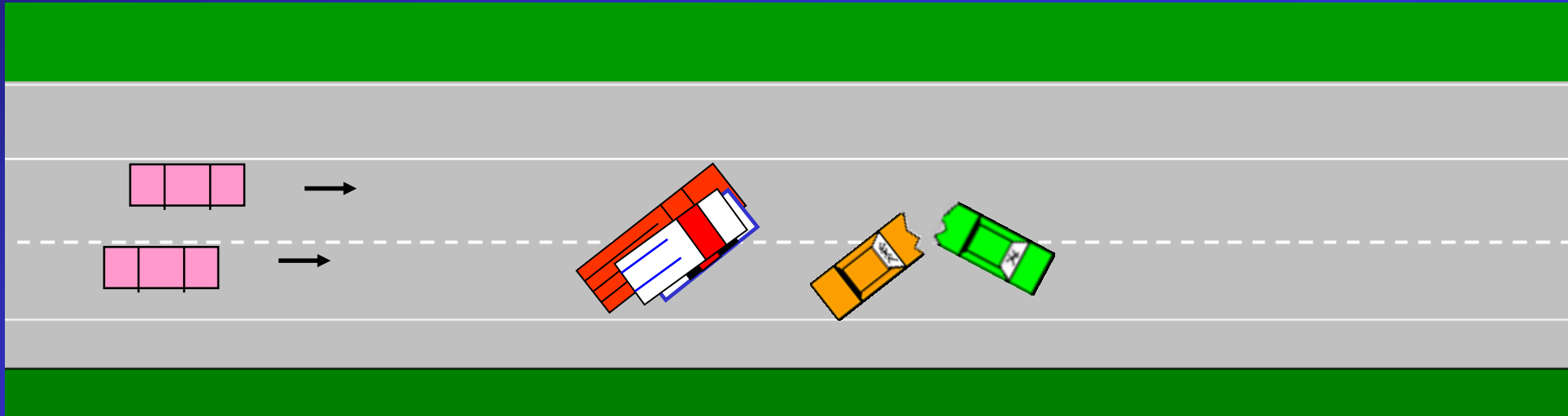
**Parking,  
positioning  
& blocking.**

# Components of Emergency Traffic Control (Example Divided Highway)



<b>Advance Warning</b>	<b>Transition Area</b>	<b>Buffer Space</b>	<b>Shadow Vehicle</b>	<b>Roll Ahead Space</b>	<b>Work Space</b>	<b>Staging Area</b>
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# Park with a purpose



- **Protect where you will be working on foot.**
- **Park your rig between you and incoming traffic (upstream / before incident)**
- **If possible, leave a channel for traffic flow**

# Angle parking

## Plus

- **All - More visible & intuitive that you are stopped**
- **Fire - Allows multiple lanes to be blocked with one rig**
- **Fire - Pump panel? Rescue equipment?**

## Minus

- **All - Increases some traffic side exposure**
- **All - Lighting & high viz on sides? Or just rear?**

# Is what it is....

- You are more likely to be **hit** in the lane than on the shoulder
- The more lanes you block:
  - More likely you'll get hit – esp in freeflow.
  - More likely you'll cause another crash
- You will need to block lanes to:
  - Protect a scene that can't be moved
  - Provide a protected area for workers that need to be in the lanes
  - Restrict traffic to lower speeds (CAREFUL)

# Deploying cones

- **Taper**
- **Channelizer**
- **Fill car-sized gaps**

# Cones vs. Flares

- **Flares:**
  - Good “pop” esp. at night
  - Lighter & easier to carry.
  - Burn themselves out. (good & bad)
  - Obvious fire hazard
- **Cones:**
  - Don’t burn out
  - Heavier / bulkier
  - Recognizable as work zone.

**Both require exposure – so BE CAREFUL**



# Taper



- Tells traffic you're not moving
- Points them the direction you want them to go
- If they hit something, it's soft & cheap – instead of your stuff.

# Channelizer



- **Decorative fence around boundary**
- **Reminds traffic to stay in their lane**
- **Reminds your folks not to walk in traffic.**

Downtown Hudson  
EXIT 1

Hudson  
1/4 MILE  
EXIT ↓ ONLY

EXIT 1

EAST  
94  
EAST  
12



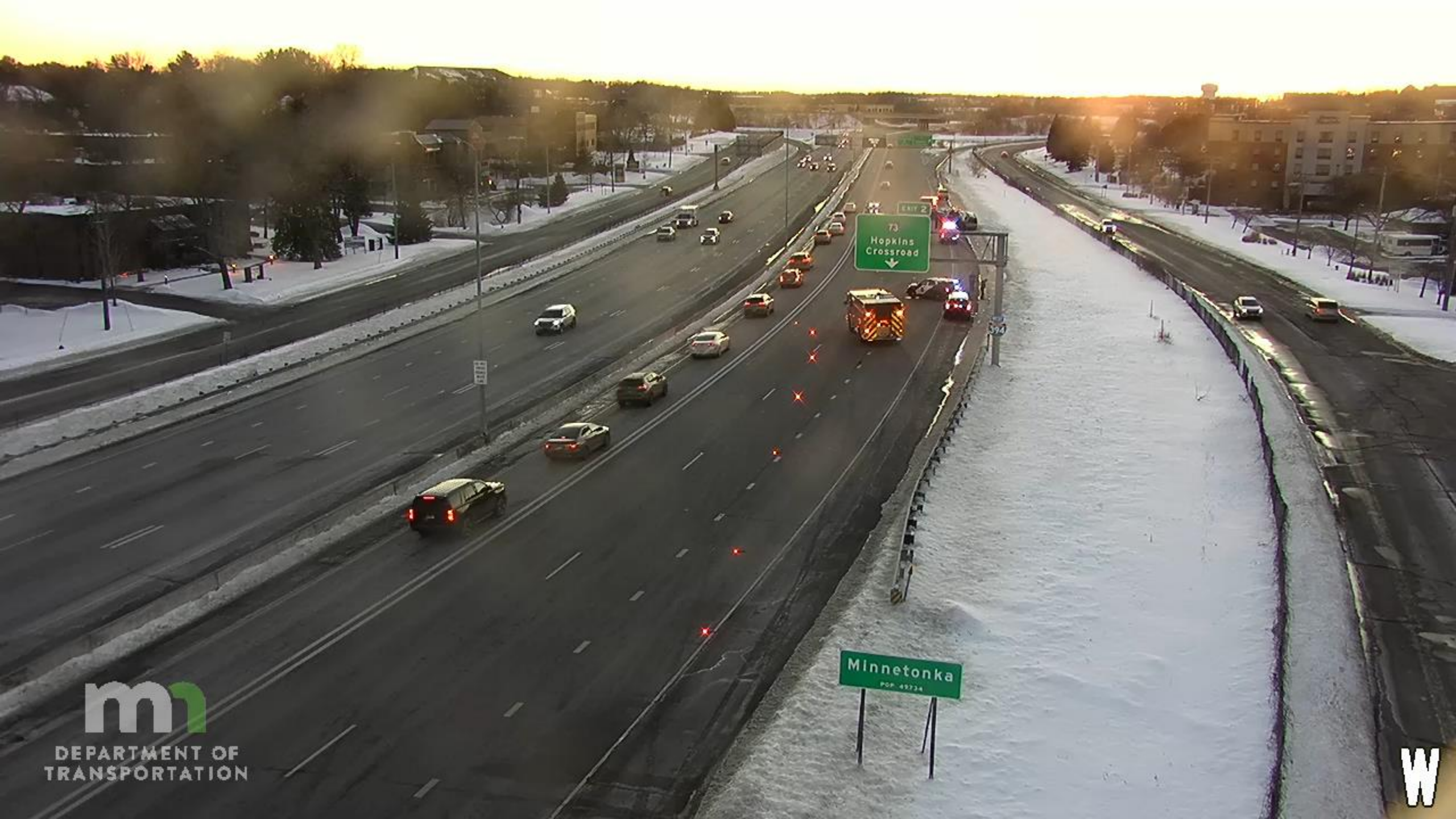
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160° - 34°



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EXIT 2  
73  
Hopkins  
Crossroad  
↓

Minnetonka  
POP. 49,734





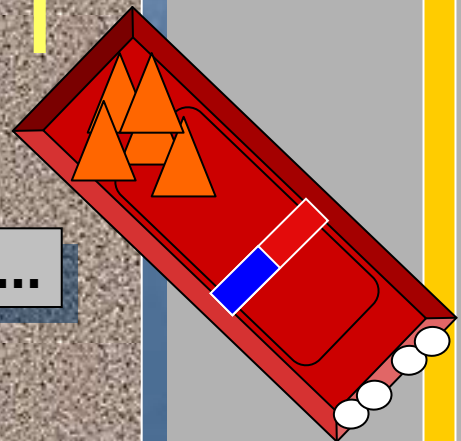


**Walk along  
shoulder  
to furthest  
Advance  
Warning  
point...**

**10 paces linear;  
then  
1 pace to the side,  
  
10 more paces  
then  
2 paces to side,  
  
etc...**

**Using the  
10:1 deployment guide  
with 5 cones (or flares)**

**Gather cones...**



**Not worth getting killed over!**

# Spreading the scene out – How far?

Advance lane blocking

Vs.

Advance warning



**3/6/22 I-90 Blue Earth MN – rig hit by semi**



**3/6/22 I-90 Blue Earth MN – rig hit by semi**



11/21/2018 5:41:15 PM



SW

3/13/2018 6:57:23 PM



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ONE HOUR  
AT A TIME

ONE HOUR

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# Advance Warning

- Critical in high speed areas...
- Can you see traffic coming at least 10 seconds away?
- Work together to get it done!



# Emergency Lights



- **You need the brightest lights during daytime**
- **Less is needed at night.**
  - **High / low power option for LED's?**
  - **Shut off front facing lights if possible.** (Reference MUTCD 6I if CYA is needed).



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PRESET 1



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# Don't forget tows!

- High viz!
- Tow mounted message boards
- Good, smart lightning – not too crazy.



# Clearing

- **Protect ALL responders, including tow**
- **Reopen lanes – as safe and practical to do so**
- **Communicate with ALL responders on what's gong to change.**
- **Advance warning is LAST to clear.**

# RECAP

- **Blocking – move it or work it?**
- **Protect where you will be on foot**
- **Tapers – Cones & Flares**
- **Advanced warning**
- **Keep your eyes open....**

# Electric vehicles

- **Very heavy & very strong!**
- **Battery is part of the frame**
- **Lots of odd security stuff by manufacturer.**
- **Be very careful if pushing/dragging – very very very slowly (3mph)**

# Li-Ion & EV battery fires

- Very rare!
- Tools to scooters to EV's
- Thermal runaway
- White/grey smoke – can look like steam
- Poisonous & highly flammable / explosive
- Can get bad very quick
- Fire extinguisher will not help
- Water & lots of it to cool off
- Potential to re-ignite



# Electric Vehicle Fires

- **EV fires can require 3,000-40,000 gals of water**
  - Hydrants vs tenders?
  - Long term fire operation / traffic control (hours+)
  - Letting it burn out may be considered.
- **Li-ion tools at the shop? At home?**
  - Watch for damage, don't abuse, segregate, don't modify, RTFM, supervise charging, don't overcharge, smoke dets.
  - Kids? Scooters, phones, etc.



Google: “NTSB electric vehicle fires” & “New York City Fire Department Li-ion Fires”

# Final words

- **We all have specific jobs to do on scene**
  - **Yours might be different**
- **Coordinate**
- **Communicate**
- **Cooperate**
- **Goal – Everyone goes home in one piece at end of the shift**



# National Near Miss data collection

- Responder safety.com
  - Struck by near miss web page
  - Report hits & close calls (near misses)
  - Doesn't need to be injuries!

**1. Incident Time & Date (Please estimate if exact time not known)**

A. Hour

B. Minute

C. AM/PM

D. Date  
Please click the box and select a date from the calendar.

E. Day of the Week



# **Crash Responder Safety Week**

## **Nov 13-17th, 2023**

- **USDOT-FHWA**
- **7<sup>th</sup> year.**
  
- **MN this year - social media messaging.**

# TIM Website

## Minnesota Traffic Incident Management (TIM) | Minnesota Toward Zero Deaths (minnesotatzd.org)



TZD REGIONS ▾ EVENTS ▾ PROGRAMS ▾ RESOURCES ▾ ABOUT ▾

[Home](#) > [Programs](#) > Minnesota Traffic Incident Management (TIM)



### Minnesota Traffic Incident Management (TIM)

[TIM Home](#) [Know the Law](#) [Training](#) [Dashboard](#) [Focus Areas](#) [News & Resources](#) [Contact](#)

**Traffic incident management**, or TIM, is a coordinated effort by all responders to accommodate their safety, victims' safety, incoming traffic's safety, and overall mobility.

Responders include those working in communications, emergency medical services, fire and rescue, law enforcement, towing and recovery, and transportation and public works.

# Resources & Contact info

- **Respondersafety.com**
- **Scene Safe Video - Google “MN Scenesafe”**
  - Youtube
  - MN DPS website
- **Contact info: John McClellan**
  - 651-234-7025
  - John.mcclellan@state.mn.us





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EXIT  
25

NW

1/4 MILES  
EXIT ONLY

(R)

SPEED LIMIT  
70  
MINIMUM  
40

m  
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# REPORT A STRUCK BY & OR NEAR MISS

