



Highway Safety for Emergency Responders – Towards Zero Deaths 2015



SCENE SAFE

Roadway Incident Management



**Fire Marshal's webpage for Youtube link
Or Google: 'MN Scenesafe'**

Intros

- **Sgt Scott Wahl**

- **MN State Patrol 4550 (Minneapolis)**

- **John McClellan**

- **MNDOT RTMC**

Where does this come from?

- **Requirements for DOT's for traffic control**
- **Daily incident management & response / traffic cameras / FIRST / traffic management**
- **Doing this training since 2004 / Feedback from responders**
- **Family member in the business**

Who all is here?

- **LE / FD / EMS/ tow ?**
- **What departments?**
- **Response to Interstate, 4 lane, 2 lane?**

These are best practices!



Not the gospel!

Rural vs. Urban

- **Yes there are differences between Urban & Rural traffic!**
- **HUGE deal in Metro due to population**
- **Is it a big deal in your area??**
- **Key safety issues the same:**
 - **Speed, Distraction, Tailgating, Alcohol/Drugs**
 - **Big trucks!!**
- **More similarities in safety tactics than differences.**

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SW
237°

8°

Response

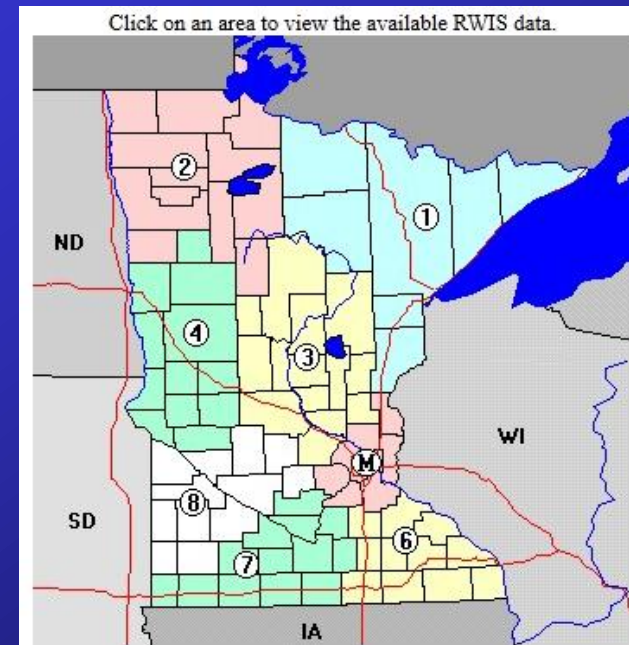
- **Starts with Dispatchers!**
- **First question: Where is it?**
 - No street addresses on freeway!
 - Usually it's behind where the caller say it is.
 - What is it? Witness vs. involved.
 - Language barriers
- **Scene safety starts with good info**



www.511mn.org

YES - THERE IS AN AP FOR THAT!

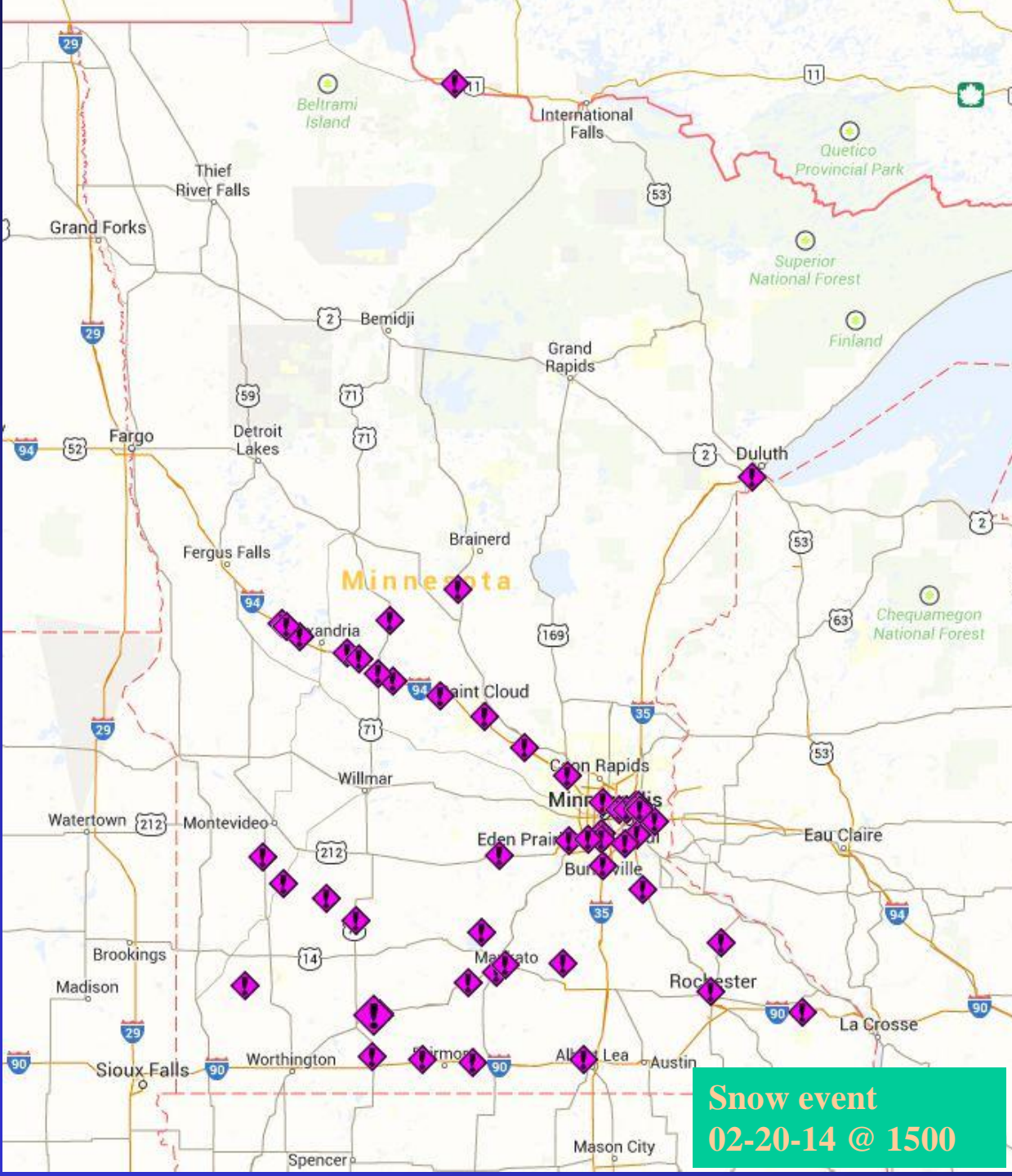
- From the mobile laptop – 511mn.org
- Smartphone Ap - Google or Apple store
 - [511mn \(Castle Rock\)](#)
- **RWIS cameras coming soon**





**Incident data
directly fed from
State Patrol CAD
– 24/7**

www.511mn.org



**Snow event
02-20-14 @ 1500**

#1 Responder Safety



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.

FBI Law Enforcement Officers Killed & Assaulted report

	Total	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Firearms related	493	45	54	50	46	56	35	45	55	63	44
Motor vehicle	593	76	70	59	61	69	62	47	64	45	40



12 MN Responders killed in last 17 years 9 struck on foot / 3 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**



Close calls / Others

- 2010 Clearwater FF struck – **severe** leg injuries
- 2011 Savage PD officer squad crash – **severe** head injury
- 2012 N35W/42 – 2 contractors **killed** – struck by car.
- 2013 E694-Silver Lk – MNDOT worker struck, H&R, broken leg.
- 2013 S94-Dowling – MNDOT worker struck – serious injuries
- 2013 Vesta - FF run over by rig, **severe** leg injuries (2 kids killed in fire).
- 2014 Buffalo – Allina rig hit head-on, 130am, medic severe head inj, other medic leg injuries, other driver killed.
- 2014 N35W-Cliff – MNDOT worker struck – severe head injury
- 2014/15 – Multiple weather related squad hits...
- 2015 – Carver - Deputy serious injury head on crash.

There is no perfect solution!



Only way to be 100% safe is to not show up

- **It's about adjusting probabilities**
 - More or less likely something bad could happen?
 - And if it does – how bad will it be & for who?
 - Are you making it - More safe or less safe?
 - **KEEP YOUR EYES OPEN!**

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3 basic safety 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.**

2 x Clearwater incidents

- **I – 94 west of TH 24**
- **2 miles**
- **8 months**
- **7 AM & 7 PM**
- **One westbound, one eastbound**
- **Both are fully involved car fires**

**Firefighter Struck
EB I-94 West of Clearwater**

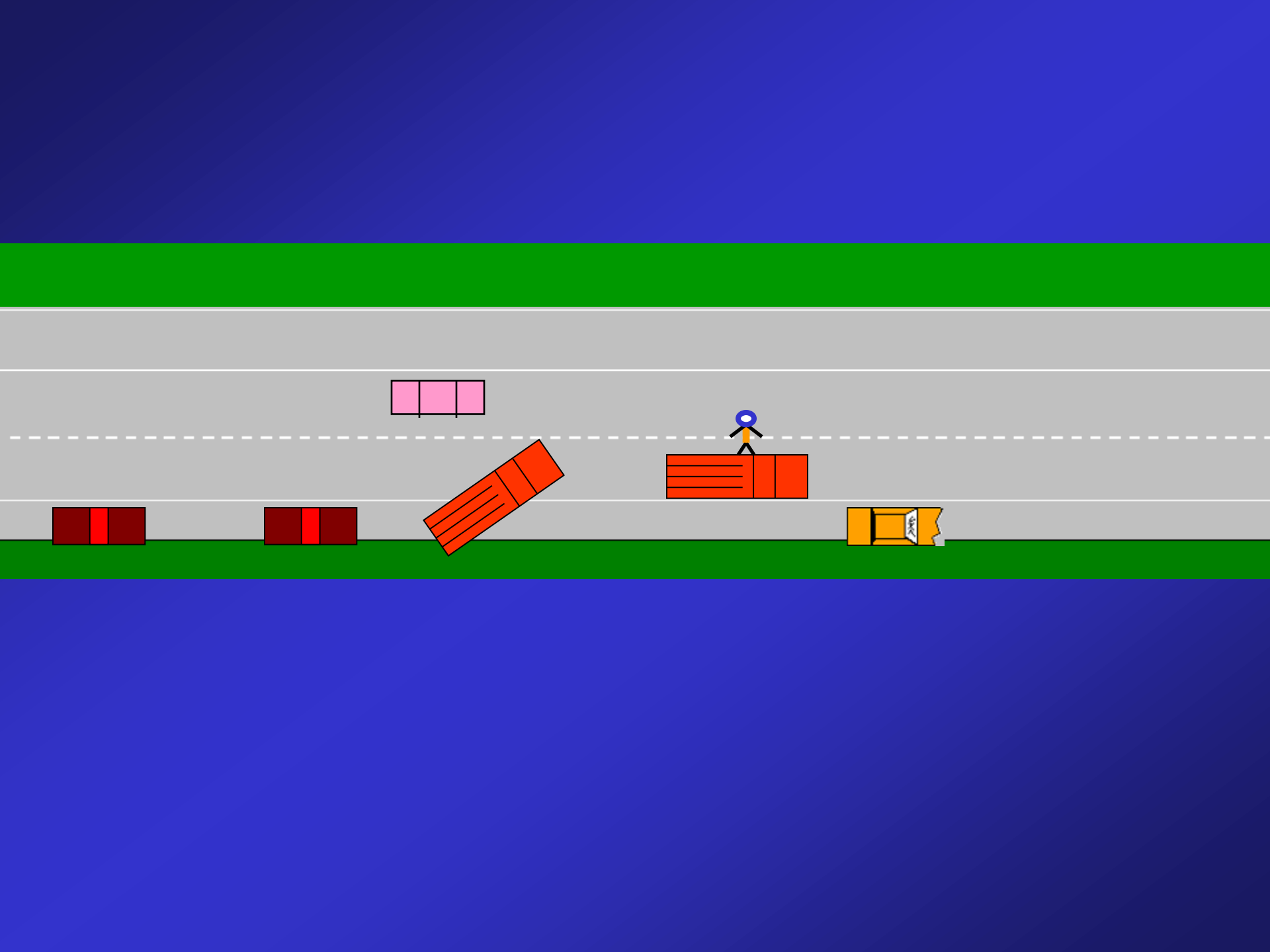
1/26/2010 - 7:17 AM

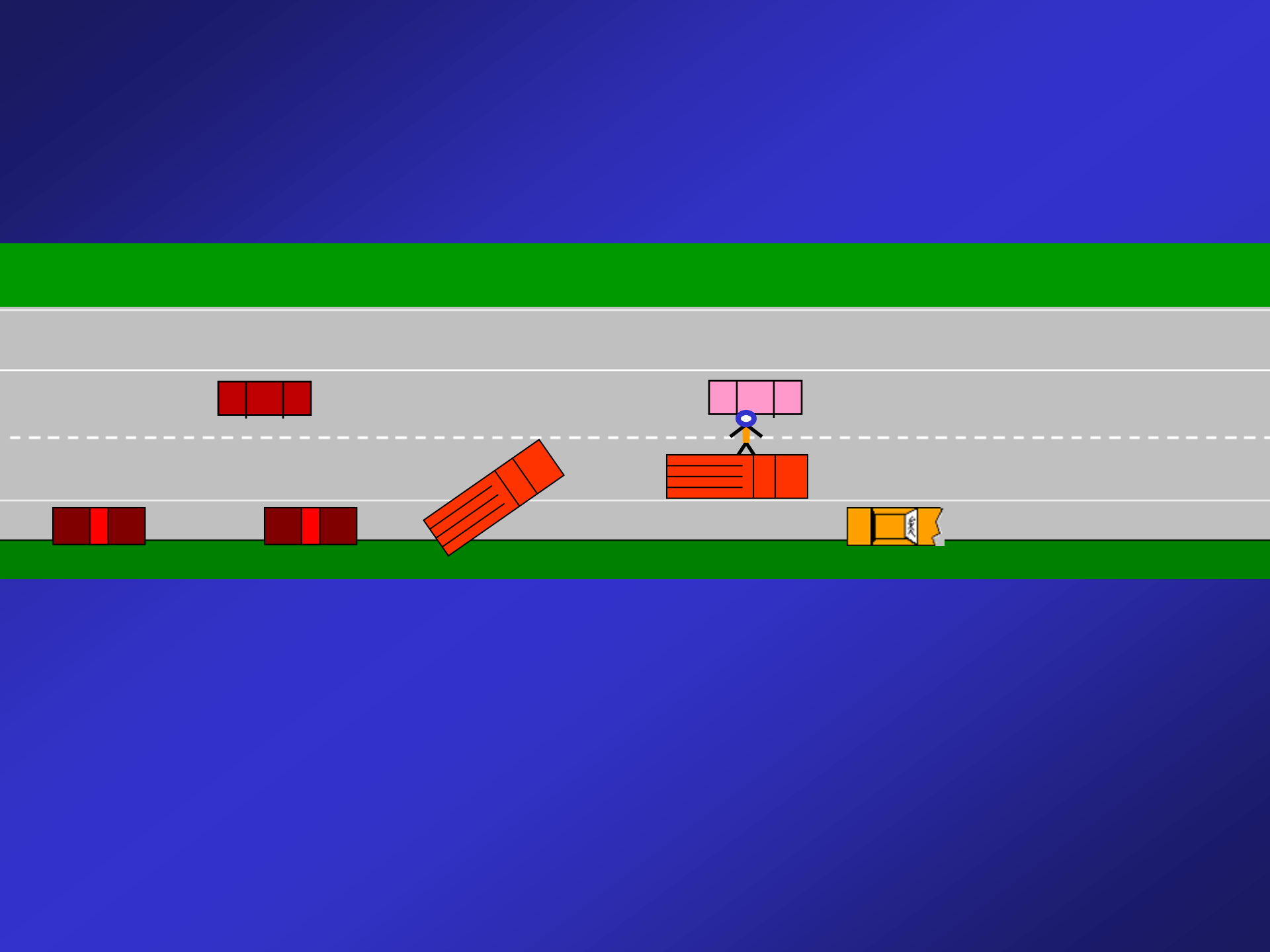
EB 94 - MP 177

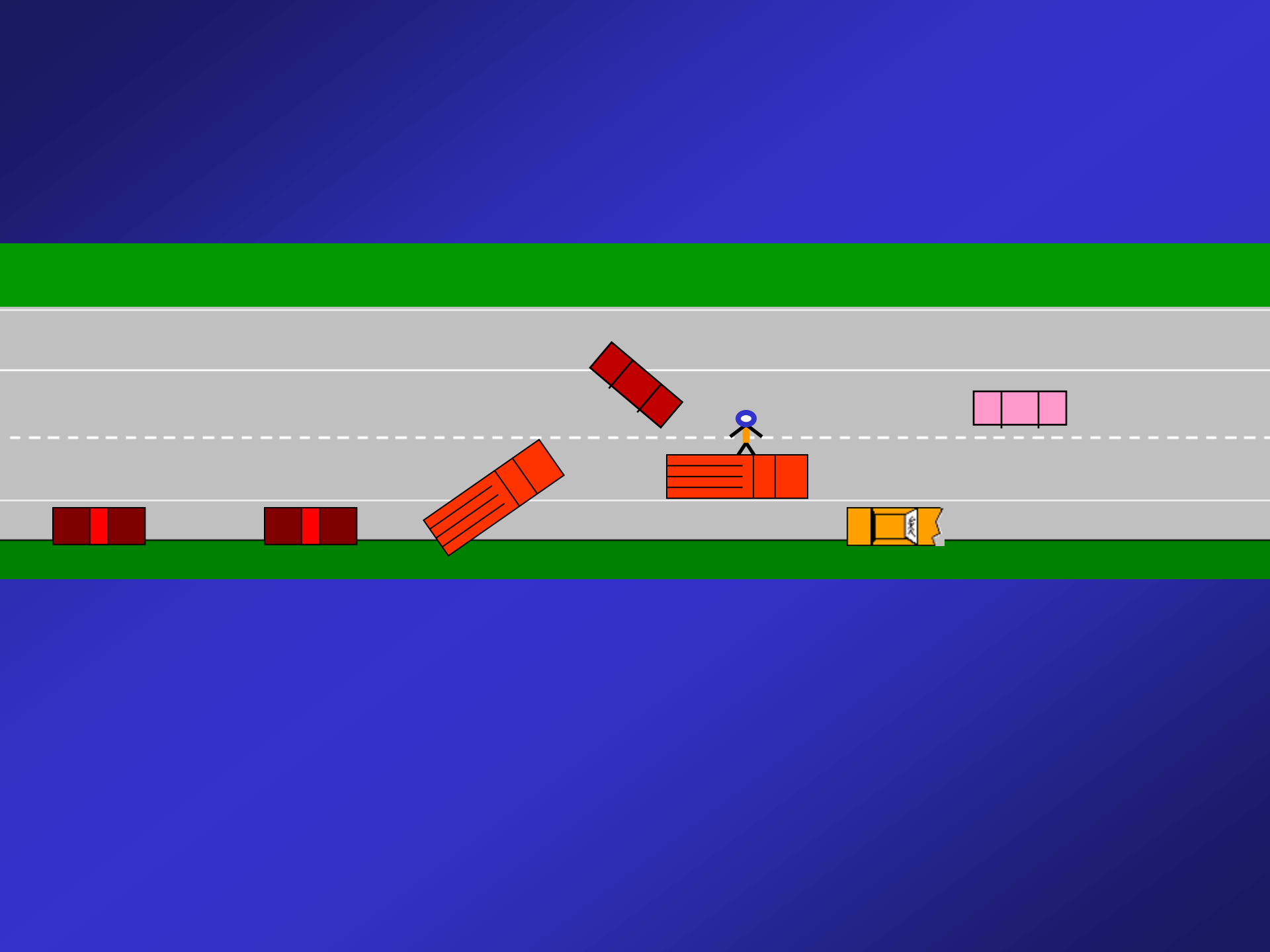
- **Vehicle fire**
 - **Fire out, just wrapping up overhaul**
 - **Enclosed cab & pump panel**
 - **In process of removing line from rig.**
- **28 year old firefighter – Clearwater FD**
- **43 year old female from Cold Spring**
 - **2007 Chev Malibu**











07498 1:45 TROOPER 184
01/26/2010 L 07:59:47
M1 M2





WB 94 / West of Clearwater

- **10/3/10, 7:30pm, W94, MP175**

2010-10-03 19:06:39



2010-10-03 19:33:09



W94 / West of Clearwater

- 10/3/10, 7:30pm, W94, MP175
- Car fire, just about to clear
- Semi hits back to queue.
- 5 vehicles involved:
 - Veh 1 – Semi – No injuries
 - Veh 2 – Volvo – **1 critical**
 - Veh 3 – Chrysler minivan – **2 killed, 1 critical**
 - Veh 4 – Corolla – 3 minor injuries
 - Veh 5 – Lasabre – 3 minor injury

The Big Picture

- **Congestion can be a good and a bad thing.**
 - Unexpected congestion can change a minor event to a MAJOR EVENT.
- **Be aware of the impact you are having!**
 - Sudden slow downs next to you
 - The “big one” behind you

2014-09-28 11:54:05 AM



Different playbook than city streets!

- **Do not block lanes unless you need to.**
 - If people have to work in the lane
 - If the lane is blocked and can't be moved.
- **Remember - You are more likely to be struck in the lane than on a shoulder**
- **Drivers not expecting stopped traffic in rural areas.**

Who's in Charge?

Or

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.**

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Emergency Traffic Control basics

On arrival

#1 Protect where you will be on foot.

#2 Clear the lanes if you can (if no injuries...)

#3 Don't trust traffic & don't turn your back on it.

#4 Always have an escape plan!

01-29-04 07:36:04
35W/110TH ST W
610



#5 If road conditions caused the first crash - it can cause another!

2010-11-22 01:07:02 PM



Traffic Control Key Points

- Give oncoming traffic enough **TIME & SPACE** to react **SAFELY**
- Provide **CLEAR** instructions to oncoming traffic on what you want.
 - Keep coming, pay attention
 - Keep coming, but slow down
 - Move over there
 - Stop here.
- **Physically protect your scene**

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



VS.



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

- **When are LIGHTS most important?**
 - Duh – when it's dark!!
- **When are EMERGENCY LIGHTS most important?**
 - When it's brightest!! Noon, sun rise/set glare, snow glare
- **Need a lot during day - be careful at night.**
 - High / low power option for LED's?
- **Cut down on front facing lights at night if possible.**

Clear direction critical at NIGHT!

- **Visual clues not there.**
- **Emergency lighting adds to confusion**
- **Drunks?**

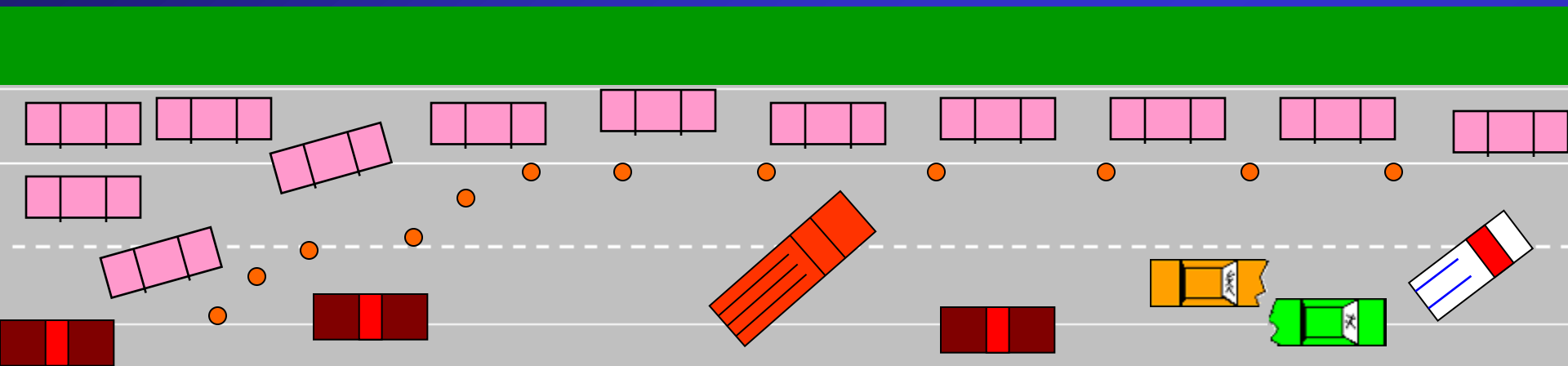
- **Traffic direction must be kept as simple and straight forward as possible.**

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NE

Components of Emergency Traffic Control (Example Divided Highway)



**Advanced
Warning**

**Transition
Area**

**Buffer
Space**

**Shadow
Vehicle**

**Roll
Ahead
Space**

**Work
Space**

**Staging
Area**

Make scene LONGER not WIDER

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

Tapers & Channelizers



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.

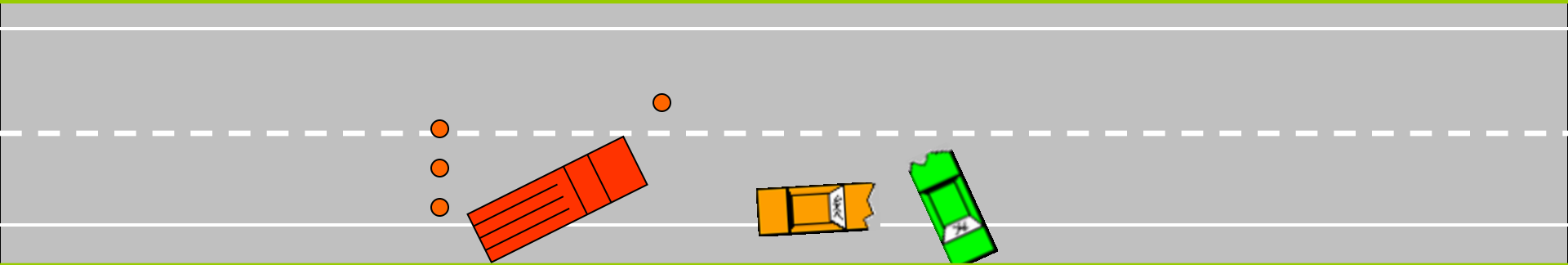


Channelizer

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

Basics - Setting up a taper

Not so good use of cones/flares



Cones are not a barrier or a “force field” - they are a means to communicate to traffic what you want them to do!

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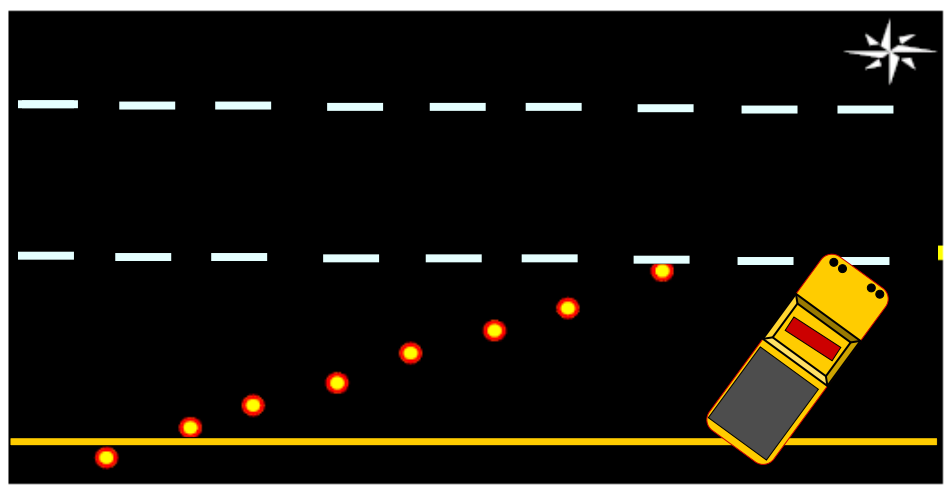
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How far back?

Balance

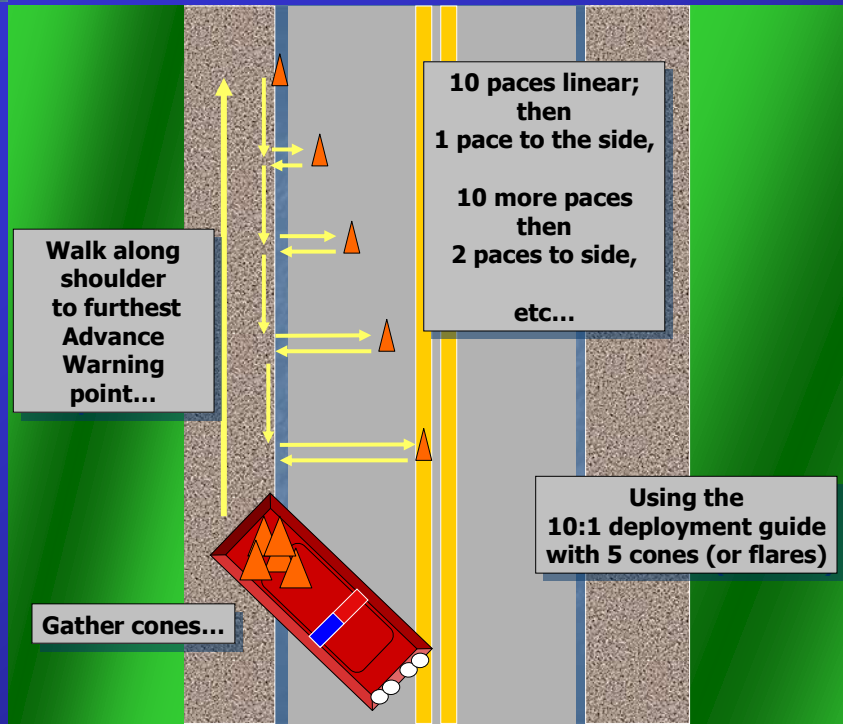
- How many cones/flares do you have?
- How many can you carry?
- How far back can you safely walk carrying all that?
- And you need to be able to pick them up safely too!



EXAMPLE OF CONE OR FLARE DEPLOYMENT PATTERN FOR TRANSITION OF ONE(1) LANE

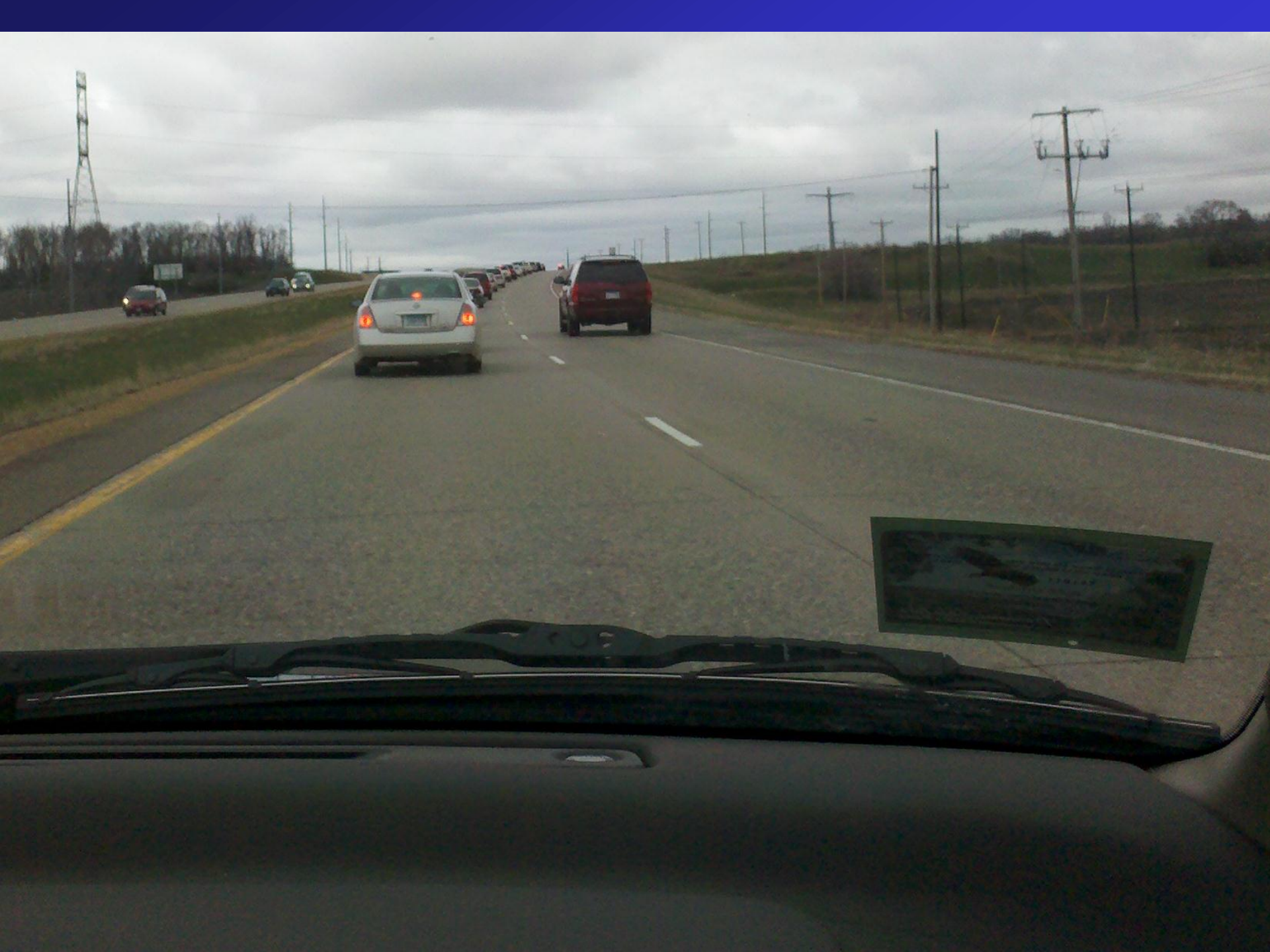
From: Respondersafety.com

Model SOG Cone Flare Deployment at Roadway Incidents.docx



Advance Warning!!

- **Your opportunity to reduce any surprises!**
- **Snap the driver out of the FOG!**

















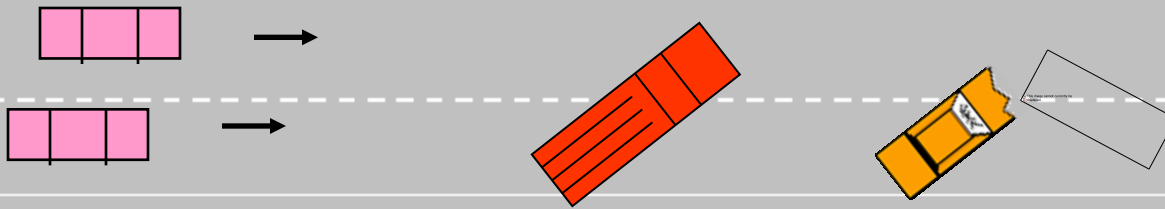


Advanced Warning

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

**Parking,
positioning
& blocking.**

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**

Positioning #1

Angled parking?

- Allows lane plus
- Very obvious you are stopped.

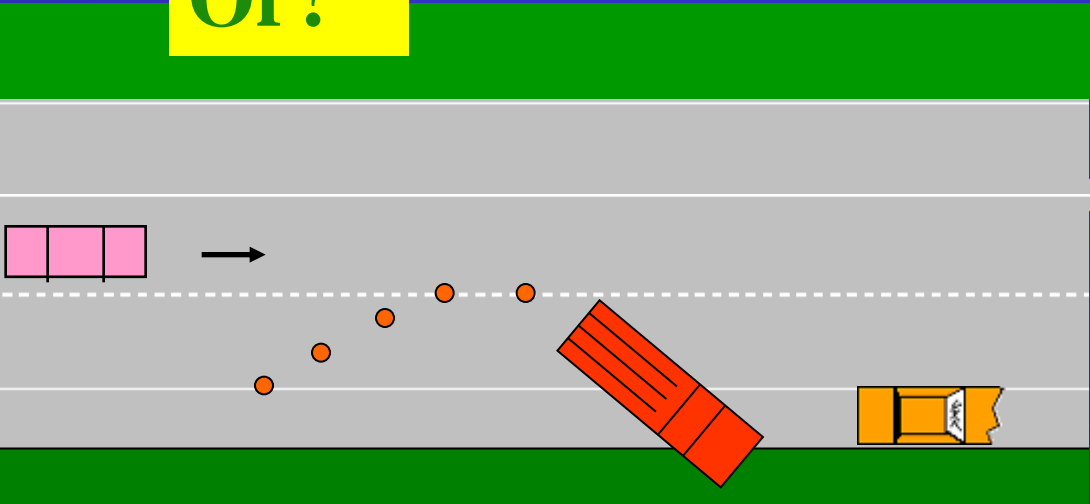
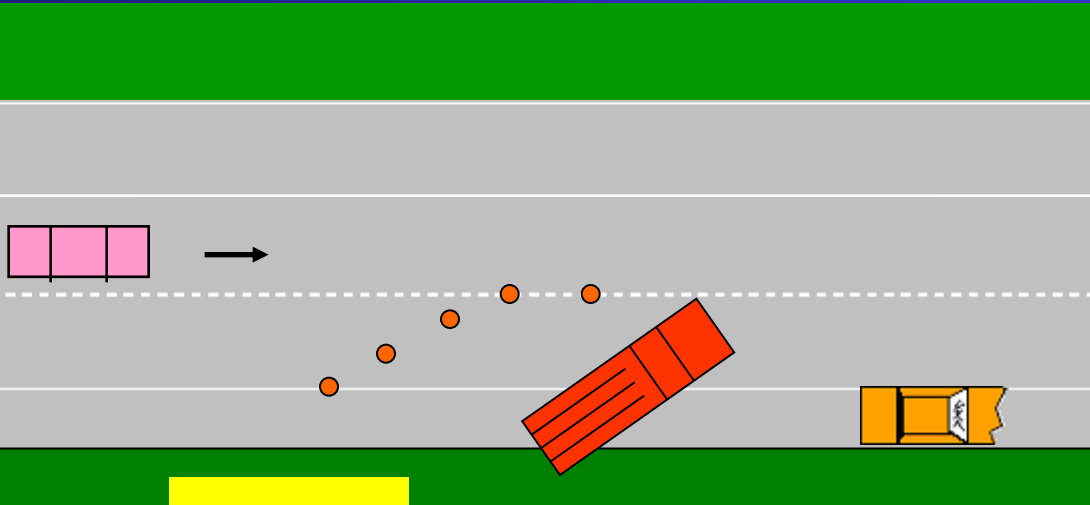
Block Left

- Communicates some traffic direction.
- Driver door & pump panel exposed

Block Right

- Protects pump & door access
- LCD driver might be directed through scene

Or?



Positioning #2

No angle

- One lane blocked
- Max view of emerg lights
- No protection for access

Shoulder only

- Minimizes impact on traffic
- Limited protection





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Some other stuff

Other concerns...

- **Weather**
- **Day of Week**
- **Time of day**
- **Time of year (thaw /re-freeze)**
- **Events (concerts / sports)**

Close or leave open?

- **Scene dictates**
- **If possible, generally better to leave them on highway choked down – rather than forcing all on to your city streets.**
- **Let State know as soon as you can if you need it closed – and for how long (minutes vs. hours)**

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Don't stop on the opposite side of the road!

- **UNLESS – You absolutely are needed there right now to save a life.**
- **Who is your rig protecting?**
- **More exposures to protect / liabilities**

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NW02

Wearing your Seatbelt?

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- **80% of Firefighters killed in motor vehicle collisions NOT BELTED!**

- **Seat belts must be worn at all times – no excuses!**
- **Primary seat belt law** applies to you too!

Reflective Safety Vests



High Viz

Federal OSHA requirement!

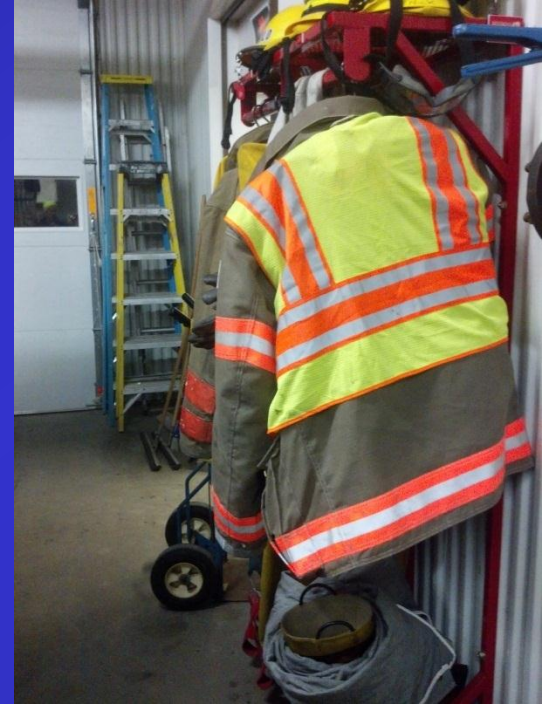
PD – lots of exceptions

FD – a couple exceptions

EMS – Pretty much only if it's Ebola.

Class 2 vest or class 3 jacket

ANYTIME exposed to traffic – not just freeway!

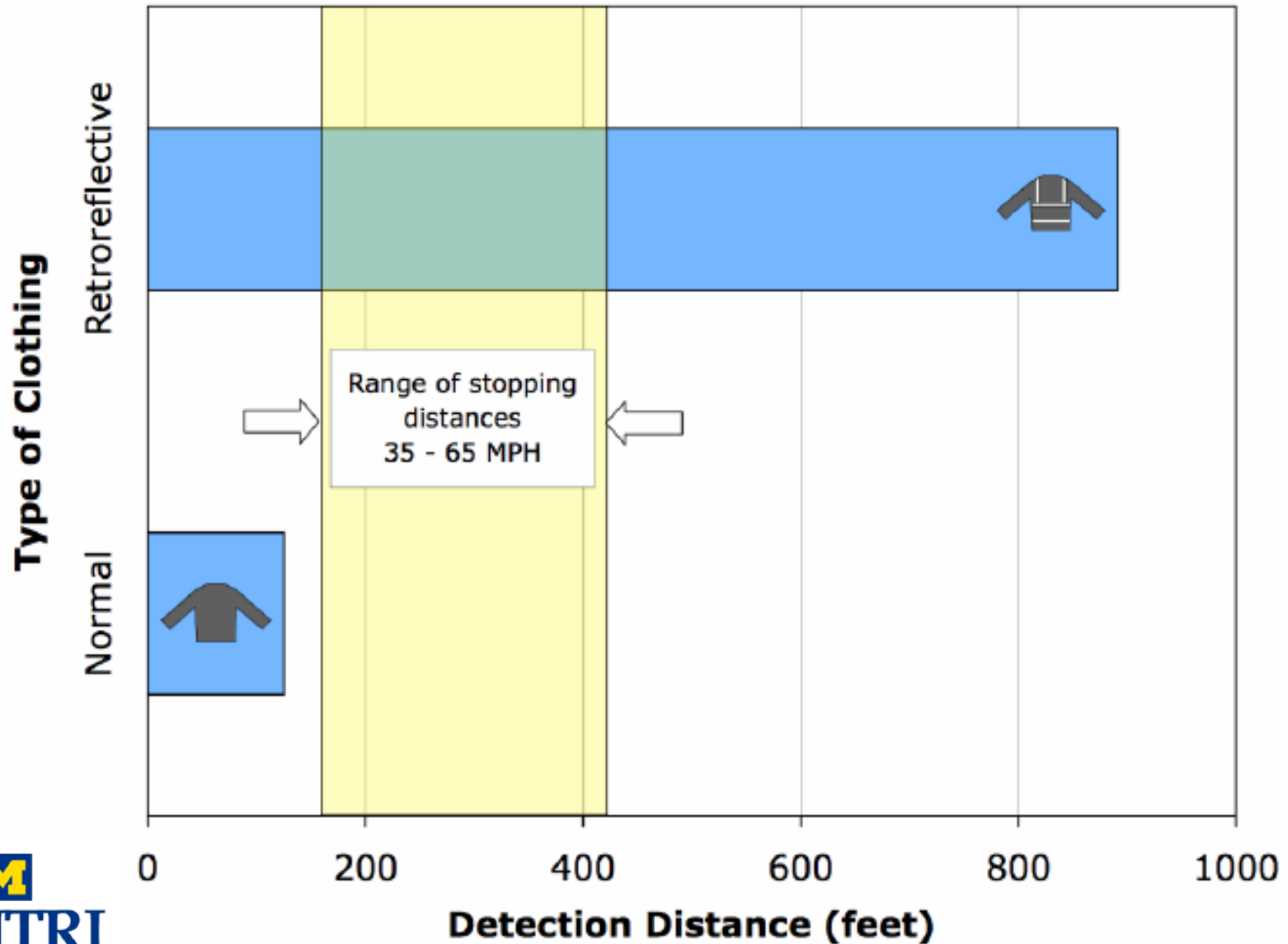


But I don't want to!!!

If something bad happens to you:

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

Seeing distances and stopping distances



The giant checkbook!

- **Response liability**
- **On scene liability**
- **Criminal & Civil!**

•**169.17 EMERGENCY VEHICLE.**

•*The speed limitations set forth in sections 169.14 to 169.17 do not apply to an authorized emergency vehicle responding to an emergency call. Drivers of all emergency vehicles shall sound an audible signal by siren and display at least one lighted red light to the front, except that law enforcement vehicles shall sound an audible signal by siren or display at least one lighted red light to the front. This provision does not relieve the driver of an authorized emergency vehicle from the duty to drive with due regard for the safety of persons using the street, nor does it protect the driver of an authorized emergency vehicle from the consequence of a reckless disregard of the safety of others.*

Crime Scenes



247/

-4 x12.2

SW

Wrap up

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**

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2013-12-12 01:20:13 PM



T.H. 100 / CO RD 81 W
223



The End

Any questions?



SCENE SAFE

Roadway Incident Management



Fire Marshal's office webpage for Youtube link