



Lesson 1	Strategic Highway Research Program 2 (SHRP 2)
<ul style="list-style-type: none"> <li>• Congress authorized SHRP 2 in 2005 to investigate the underlying causes of highway crashes and congestion in a short-term program of focused research <ul style="list-style-type: none"> <li>— Safety</li> <li>— Reliability</li> <li>— Renewal</li> <li>— Capacity</li> </ul> </li> <li>• The National TIM Responder Training Program is the first reliability product being rolled out under SHRP 2</li> </ul>	

Traffic Safety Devices
<p>For having 6 members of your Department attend the 4 hour TIM class you will receive 2 Signs, 6 Vests, and 1 Set of Collapsible Cones</p> <p>The image shows a pink diamond-shaped sign that says "EMERGENCY SCENE AHEAD", a high-visibility yellow vest, and a set of collapsible cones. A firefighter is also shown pointing towards the devices.</p>

Lesson 1
National TIM Responder Training

- Designed to establish the foundation for and promote consistent training of all responders to achieve the three objectives of the TIM National Unified Goal (NUG):
  - Responder Safety
  - Safe, Quick Clearance
  - Prompt, Reliable, Interoperable Communications

Lesson 1
Course Overview

1. Introduction
2. TIM Fundamentals and Terminology
3. Notification and Scene Size-Up
4. Safe Vehicle Positioning
5. Scene Safety
6. Command Responsibilities
7. Traffic Management
8. Special Circumstances
9. Clearance and Termination

Lesson 1
Injury Crashes

Each injury crash can require...

- ✓ 2 Law Enforcement
- ✓ 4 Fire/Rescue
- ✓ 2 EMS
- ✓ 1 Towing & Recovery

---

**= 9 Responders**

Lesson 1
Injury Crashes

That's potentially 27 responders rolling out to a new injury crash every minute of every hour, 24/7/365

Lesson 1 Injury Crashes

That's potentially 27 responders rolling out to a new injury crash every minute of every hour, 24/7/365


**Exposures to**  
**1600 each hour**  
**38,000 per day**  
**14.1 million per year**  
**... on *injury crashes alone***



Lesson 1 "D" Drivers

"D" Drivers are killing us...

- ✓ Drunk,
- ✓ Drugged,
- ✓ Drowsy,
- ✓ Distracted, or
- ✓ Just plain... Dumb



Lesson 1 Responder Struck-By Fatalities

In a typical year, the following number of responders are struck and killed:

- 12 Law Enforcement
- 5 Fire and Rescue Personnel
- 60 Towing and Recovery
- Several transportation professionals from DOTs, Public Works, and Safety Service Patrol Programs

**This equals one responder fatality every six days.**

Lesson 1 Responder Struck-By Crashes





## Lesson 1

## Secondary Crashes

MD Family killed in NE  
September 9, 2012  
I-80 near Sidney



## Semi Hits North Platte Fire Truck



LEAD H264 Eval Decoder

## Semi Hits North Platte Fire Truck



FIRE TRUCK USED AS A SHIELD DURING ACCIDENT

## Lesson 1

## TIM Defined

- TIM consists of a planned and coordinated multidisciplinary process to detect, respond to, and clear traffic incidents so that traffic flow may be restored as safely and quickly as possible
- Effective TIM reduces the duration and impacts of traffic incidents and improves the safety of motorists, crash victims, and emergency responders





## Lesson 2: TIM Fundamentals and Terminology

### Lesson 2

### Safe, Quick Clearance

#### Safe, Quick Clearance...

Second of the three main NUG objectives, it is the practice of rapidly, safely, and aggressively removing temporary obstructions from the roadway

- Disabled vehicles
- Wrecked vehicles
- Debris
- Spilled cargo

### Lesson 2

### Nebraska's Move Over Law



- Applies on controlled-access, four-lane highways
- Drivers shall move over if able
- Or, drivers shall slow down if unable to move to the adjacent lane

Nebraska Revised Statute 60-6378 § 1

### Lesson 2

### Driver Removal Laws

- Also referred to as:
  - Fender Bender
  - Move It
  - Steer It, Clear It
- Require motorists involved in minor crashes (where there are no serious injuries and the vehicle can be driven) to move their vehicles out of the travel lanes to the shoulder or other safe area



## Lesson 2

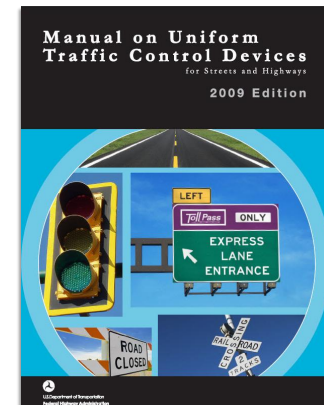
## Authority Removal Laws

- Provide authority (and immunity from liability in general) for designated public agencies to remove vehicles and/or spilled cargo from the roadway to restore traffic flow
- Serious injury or fatality does not always preclude removal
- Often contain a Hold Harmless clause
- Implemented in a number of states

## Lesson 2

## Manual on Uniform Traffic Control Devices (MUTCD)

- Federal guideline for all traffic control nationwide
- It also covers all "workers" on all streets, roadways, or highways
- This course addresses what is required to adhere to MUTCD standards



## Lesson 2

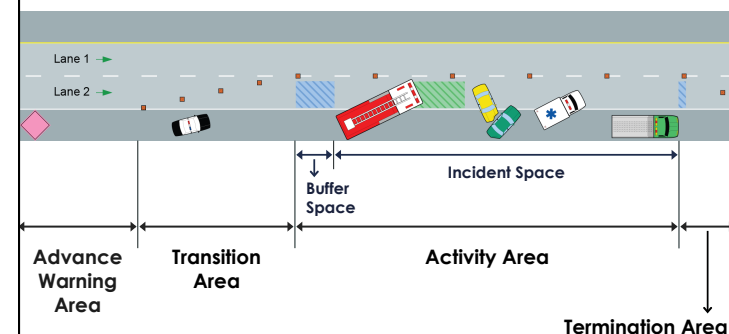
## MUTCD Chapter 6I

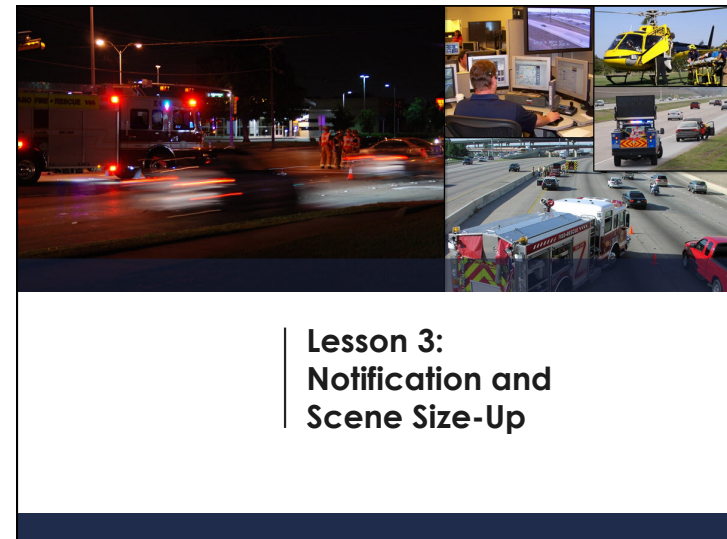
### Control of Traffic through Traffic Incident Management Areas

- Includes the following 5 Sections:
  - 6I.01 – General (Information)
  - 6I.02 – Major Traffic Incidents
  - 6I.03 – Intermediate Traffic Incidents
  - 6I.04 – Minor Traffic Incidents
  - 6I.05 – Use of Emergency-Vehicle Lighting

## Lesson 2

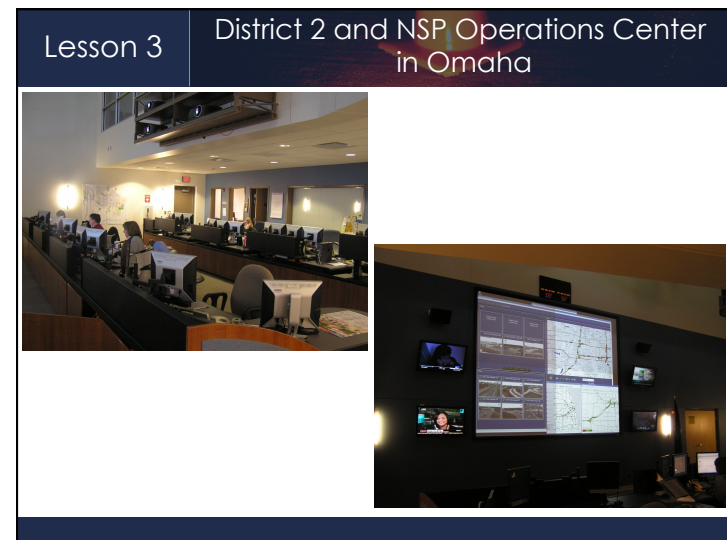
## Traffic Incident Management Area





Lesson 3 Verification

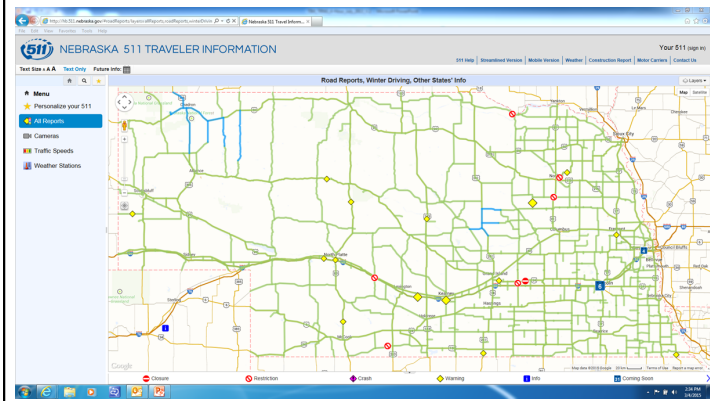
- Verification involves collecting sufficient information on the nature of the incident including identifying:
  - Type and level of incident
  - Exact physical location
  - Number of vehicles involved
    - Color and type if possible
  - Lanes affected
  - Injuries, entrapment





### Lesson 3

<http://www.511.nebraska.gov>



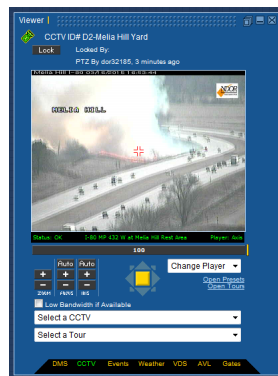
### Lesson 3

Dynamic Message Signs



### Lesson 3

511 Cameras



### Lesson 3

Initial/Windshield Size-Up

#### Typical Windshield Size-Up Report

- Unit identification
- Exact location of incident
- Number and type of vehicles involved
- Degree of damage
- Number of lanes closed
- Hazards or problems
- Establishment of command

Lesson 3

Initial/Windshield Size-Up



**Typical F/R Windshield Size-Up Report:**

"Unit one on-scene... Main Street... Minivan fully engulfed in flames in the right lane... The vehicle is leaking fuel... Assuming Main Street command "

Lesson 3

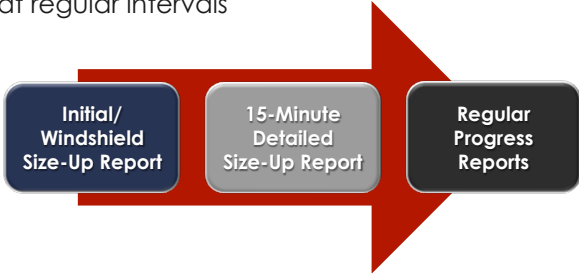
What Is Your Windshield Size-Up Report?



Lesson 3

Progress Reports


- A detailed scene size-up should be provided within 15 minutes
- Additional progress reports should be provided at regular intervals



Lesson 3

Incident Duration Classifications

Minor	→	< 30 minutes
Intermediate	→	30 min - 2 hrs
Major	→	> 2 hours



### Lesson 3

### Road Closures

- The NDOR retains statutory discretion (39-145) to determine when closing a state highway is justified; and the NDOR makes all reasonable efforts to keep traffic on state maintained highways moving at all times.
- Law Enforcement may initiate road closures on state highways and shall notify the NDOR immediately. Law Enforcement is then responsible for traffic control until NDOR personnel arrive. Jointly, NDOR and Law Enforcement will determine the need for a detour route.



### Lesson 3

### Utilize Your Roads Dept. Resources

- Safety is NDOR's (and your local road department's) main objective, too
- Reduced incident duration reduces risk
- Road department staff and assets are available
- It takes time to deploy staff and assets
- Call sooner not later...we can't assist unless asked



### Lesson 4: Safe Vehicle Positioning

### Lesson 4

### Move It or Work It?

**Move It:** This refers to moving vehicles involved in an incident to a secondary location before being worked

**Work It:** This refers to a situation where the vehicles involved cannot be moved to a secondary location before being worked



Lesson 4

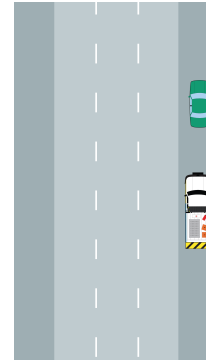
Move It or Work It?



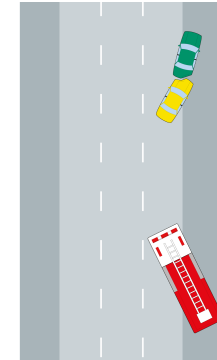
Lesson 4

Linear vs. Multi-Lane Blocking

Linear Blocking



Multi-Lane Blocking



Lesson 4

Angled Multi-Lane Blocking



Lesson 4

Parallel Linear Blocking





Lesson 4

Lane +1 Blocking

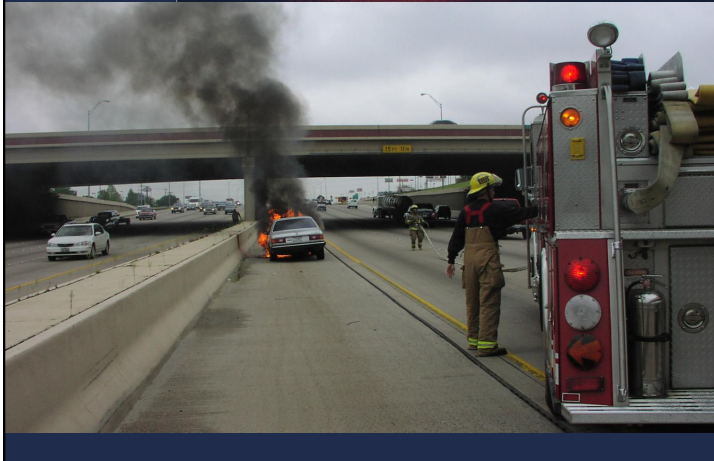
- By the very nature of fire/rescue and EMS work, additional space to work is typically required
- Lane +1 blocking occurs when responders block the involved lane(s) plus one additional lane to provide a protected lateral space for safety





#### Lesson 4

#### Lane +1 Blocking – Vehicle Fires



#### Lesson 4

#### Progressively Open Lanes

Take only as many lanes as you need for as long as you need them – as the incident is cleared, lanes can be progressively opened

#### Lesson 4

#### Critical Wheel Angle

- Turn front wheels of vehicles away from the incident space

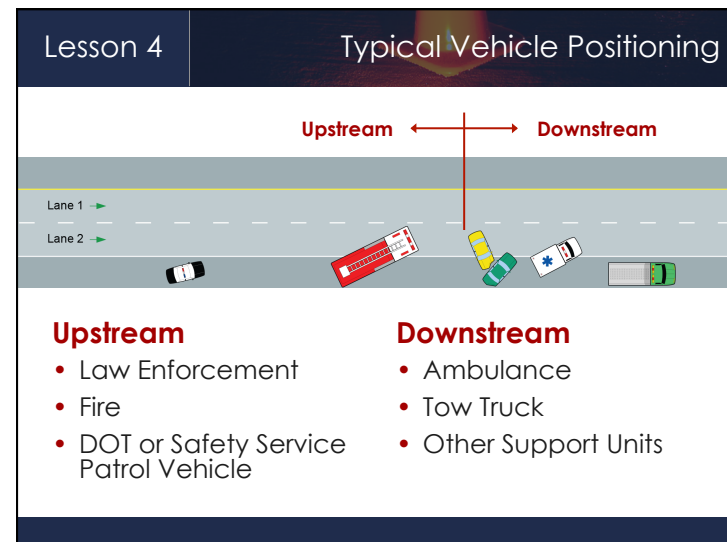
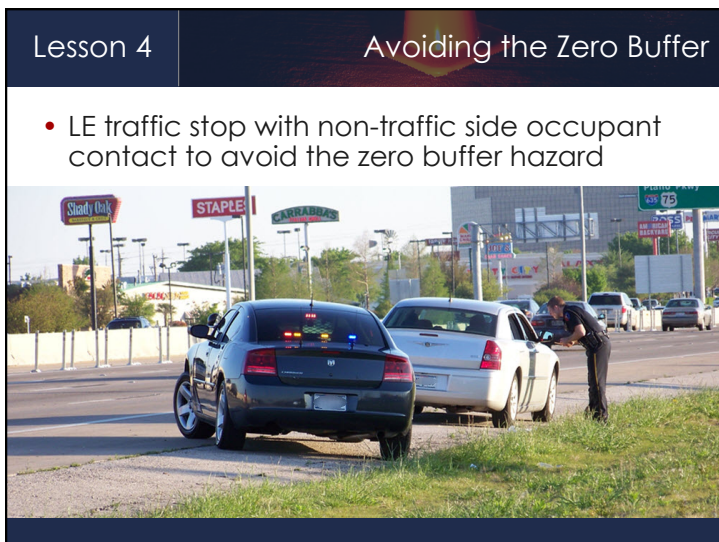
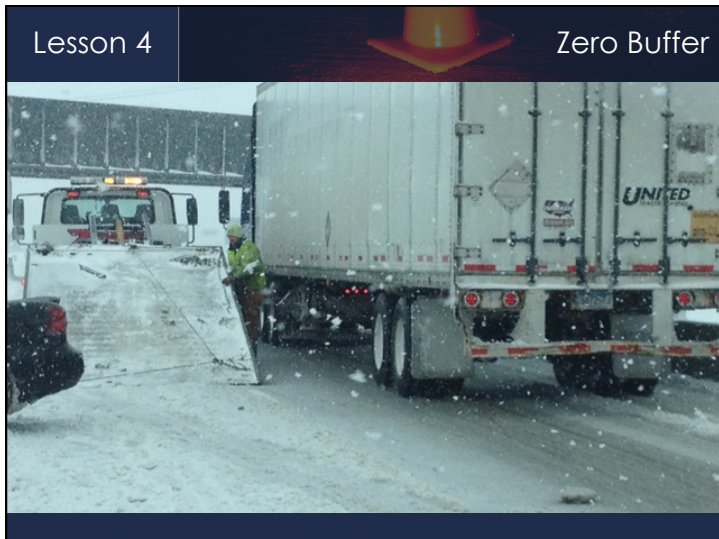


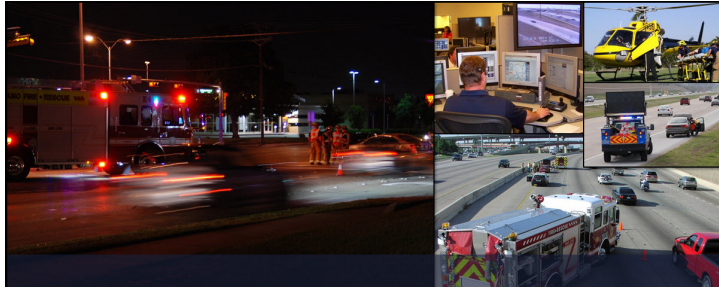
#### Lesson 4

#### Zero Buffer









## Lesson 5: Scene Safety

## Lesson 5

## Emergency Vehicle Markings

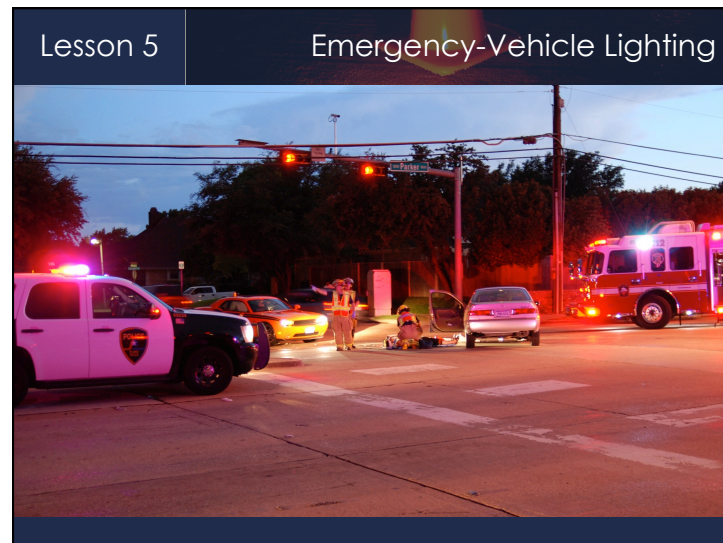


## Fire Apparatus Vehicle Markings



## Lesson 5

## Emergency-Vehicle Lighting





## Lesson 5

## Responder Visibility

### MUTCD Section 6D.03 states:

All workers, including emergency responders, within the right-of-way of a roadway who are exposed either to traffic (vehicles using the highway for purposes of travel) or to work vehicles and construction equipment **SHALL** wear high-visibility safety apparel...

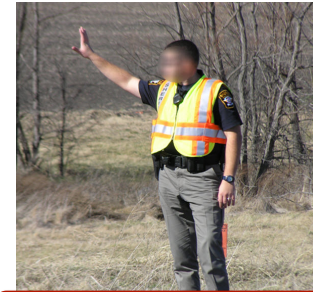
## Lesson 5

## ANSI 107 vs. ANSI 207

ANSI 107 Class II Vest



ANSI 207 Public Safety Vest

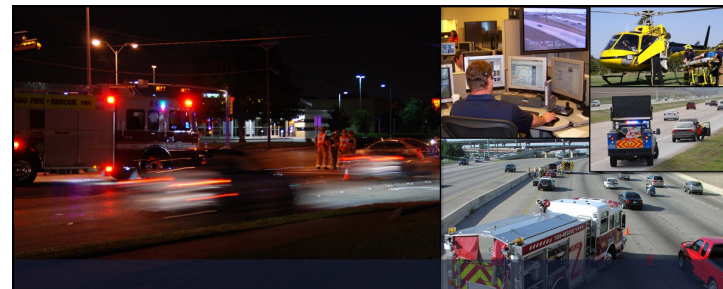


Note shorter length to allow access to items on belt

## Lesson 5

## MUTCD Section 6D.03 Exceptions

- Firefighters or other responders engaged in emergency operations that directly expose them to flame, fire, heat, and/or hazardous materials



## Lesson 6: Command Responsibilities

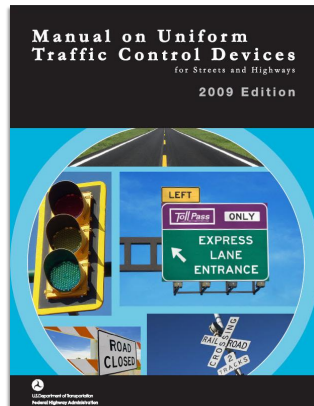


## Lesson 6

## ICS and MUTCD Chapter 6I

### Section 6I.01 – General

- The National Incident Management System (NIMS) requires the use of ICS at traffic incident management scenes
- A traffic incident is an emergency road user occurrence, a natural disaster, or other unplanned event that affects or impedes the normal flow of traffic



## Lesson 6

## Command Structures

### Single Command

- Incident Commander has complete responsibility for incident management

### Unified Command

- Utilized when incidents require multi-jurisdictional or multi-agency response
- Allows all agencies to:
  - Work together without affecting authority, responsibility, or accountability
  - Manage an incident together by establishing a common set of incident objectives and strategies

## Lesson 6

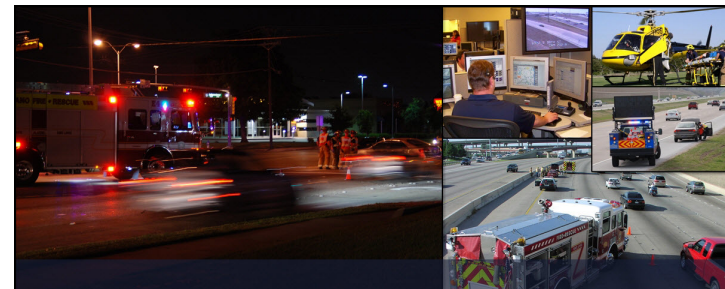
## Physical Organization

### Incident Command Post (ICP)

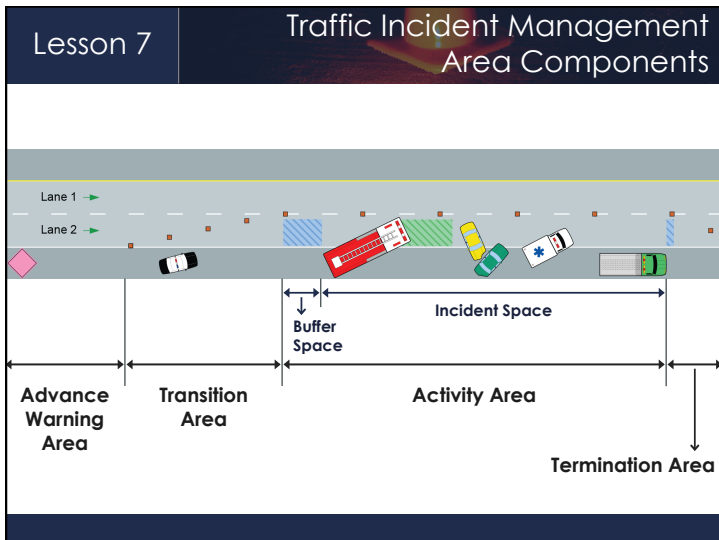
- The field location at which the primary tactical-level, on-scene incident command functions are performed

### Staging Area

- Location established where resources can be placed while awaiting a tactical assignment



## Lesson 7: Traffic Management



Lesson 7 Transition Area and Tapers

- Section of roadway where drivers are redirected out of their normal path
- Transition Areas usually involve the strategic use of tapers
- Tapers can be set up using cones or flares
  - Skip lines provide a useful guide for measuring distances
- Any taper is better than no taper

A diagram of a two-lane road showing a transition area where traffic is being redirected. It includes a diagram of a vehicle involved in an incident and a diagram of a taper setup using cones or flares.

## Lesson 7

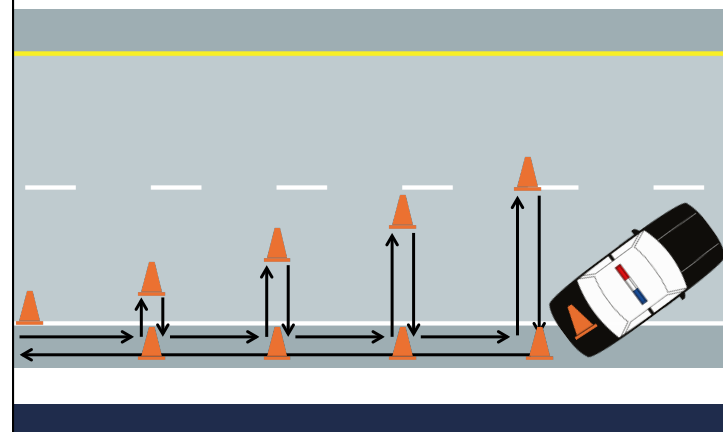
## Tapers

- At incident scenes, cones or flares used to establish a taper are typically placed no further apart in feet than the speed limit
  - 35 mph = 35' apart
  - 45 mph = 45' apart
  - 55 mph = 55' apart
- An alternative guideline is to place a cone at every skip line
- Skips lines are 10' in length and 30' between on highways
- 6' lines and 18' space in town



## Lesson 7

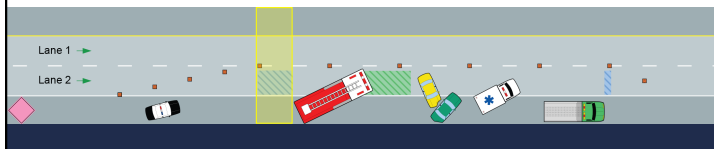
## Taper Setup



## Lesson 7

## Upstream (Longitudinal) Buffer Space

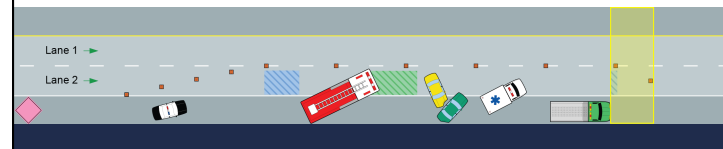
- Separates the Transition Area from the Incident Space
- No vehicles should be positioned within the upstream Buffer Space
- Provides recovery area for errant vehicles
- Speed of passing traffic and sight distance should be considered when determining the length of the buffer space



## Lesson 7

## Termination Area

- Used to notify drivers that the Traffic Incident Management Area is ending and they may resume normal driving
- Includes the downstream buffer space and taper
- Protects emergency responders working at the end of the Incident Space
- Remember drivers will likely be frustrated from being stuck in traffic and may quickly accelerate







## Lesson 8: Special Circumstances

## Lesson 8

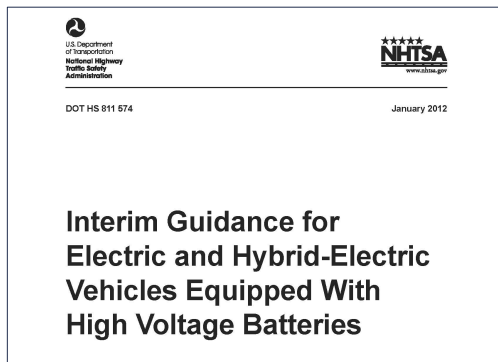
## Stay Clear of the Danger Zone



## Lesson 8

## Electric and Hybrid-Electric Vehicles (EV and HEV)

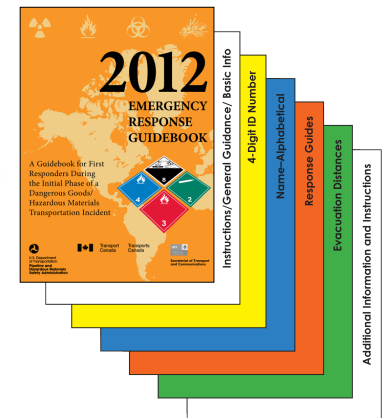
### National Highway Traffic Safety Administration Guidance



## Lesson 8

## Emergency Response Guidebook

- Instructions/General Guidance/Basic Info
- 4-Digit Number
- Name - Alphabetical
- Response Guides
- Evacuation Distances
- Additional Info and Instructions



## Lesson 8

### Spill Response – Vehicle Fluids

Once the spill has been identified as a vehicle fluid that does not meet reportable quantity thresholds:

1. Stop leaking material at the source
2. Contain and limit the spill from spreading
3. Apply available absorbents
4. Remove material from travel lanes
5. Gradually restore traffic flow

## Lesson 8

### Off-Site Landing Zones

- Use of an off-site landing zone is acceptable if there will be no delay to patient care



## Lesson 8

### Always Ask: Evidence or Debris? – Evidence Until LE Says Otherwise



## Lesson 8

### Fatality Investigations







## Lesson 9: Clearance and Termination

## Lesson 9

## Move It – Push Bumper Case Study



## Lesson 9

## WA Quick Clearance Case Study



## Lesson 9

## WA Quick Clearance Case Study – Opened Almost 5 Hours Sooner





## Lesson 9

### Off-site Extrication – Incident Cleared Almost 8 Hours Sooner



## Lesson 9

### Towing and Recovery

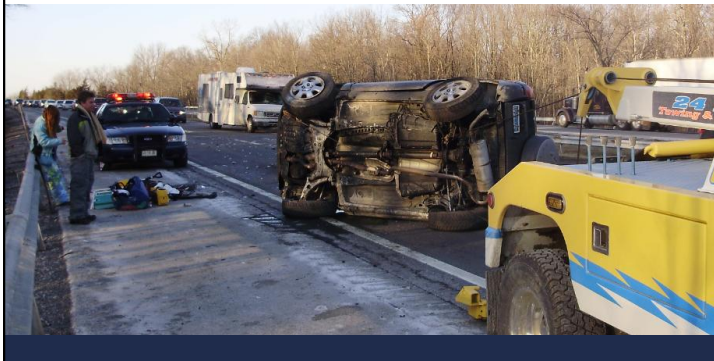
- Tow operators depend on getting timely, accurate information from those on the scene



## Lesson 9

### Towing and Recovery Communications

- Called in as a "Hyundai with minor side damage"



## Lesson 9

### Towing and Recovery Communications

- Requested a "flatbed for a vehicle off the road"



## Lesson 9

## Towing and Recovery Communications

- “Flatbed needed for arrest tow/safe keeping”



## Lesson 9

## TRAA Vehicle Identification Guide

- Vehicle Class
  - Light-Duty
  - Medium-Duty
  - Heavy-Duty
- Location
- Reason for tow
- Additional vehicle or crash details



## Lesson 9

## Termination

- Final stage of incident response
- Termination includes:
  - Demobilizing and removing equipment, personnel, and response vehicles
  - Restoring traffic flow to normal or close to normal

## Lesson 9

## Termination Checklist

- ☒ Let other responders know when you're leaving
- ☒ Protect towers while they finish up
- ☒ Check with Incident Commander prior to leaving
- ☒ Make sure all personnel are accounted for
- ☒ Let the TMC know that lanes are open