

Responder Training Program

Student Handout



LESSON 1: INTRODUCTION

1.1 Describe the purpose of the National TIM Responder Training Program

The National TIM Responder Training Program was designed to establish the foundation for and to promote consistent training of all responders to achieve the TIM National Unified Goal (NUG). The TIM NUG is a commitment to:

- The Safety of Responders and All Road Users
- Safe, Quick Clearance
- Communication, Coordination, and Cooperation

1.2 Identify the dangers encountered by responders working in or near traffic

Each year, dozens of responders are struck and killed while working at roadway incidents. Many more are struck and injured. Drivers who are drunk, drugged, drowsy, or distracted are dangerous for responders both in and out of their vehicles at incident scenes.

1.3 Define TIM and safe, quick clearance

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. **Safe, quick clearance** is the practice of rapidly, safely, and aggressively removing temporary obstructions from the roadway to enhance safety, minimize delay, and restore traffic.



LESSON 2: TIM LAWS, STANDARDS, AND TERMINOLOGY

2.1 List the principal laws that relate to responder safety and safe, quick clearance

There are three principal laws that support safe, quick clearance and responder safety:

1. **Move Over Laws** – require drivers change lanes when possible and/or reduce vehicle speed when approaching emergency vehicles stopped on or next to a roadway.
2. **Driver Removal Laws** – require drivers to move their vehicles out of travel lanes when they are involved in minor crashes with no serious injuries.
3. **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.

2.2 Describe how the Manual on Uniform Traffic Control Devices (MUTCD) relates to TIM

The MUTCD is a national standard to promote uniformity in traffic control signs, signals, and markings throughout the United States. Part 6 of the Manual describes temporary traffic control zones and specifically traffic incident management areas.

2.3 Identify common roadway and lane designation terminology

Plain English is a useful way to describe locations, roadway features, and incident characteristics. **Upstream** describes vehicles approaching an incident scene, while **downstream** describes those that have already past. A **queue** is a backup of traffic, either stopped or slowing, resulting from an incident. **Lane numbering** can simplify describing the location on a roadway, numbering lanes beginning with 1 on the inside-most lane, in the direction of travel. **Managed lanes** are like highways within a highway, often requiring a vehicle type, number of occupants, or payment of a toll to use. When present, managed lanes are referred to as such, and **general-purpose lanes** are subsequently numbered beginning with 1.



LESSON 3: COMMUNICATION AND COMMAND

3.1 Describe the important role public safety communications centers play in incident response

Public safety communications centers, like public safety answering points (911), are often the first to learn of a traffic incident from an involved person or a passing motorist. They gain specific information about the incident and dispatch appropriate resources, working with allied agencies as needed.

3.2 Identify the typical responsibilities of a Transportation Management Center (TMC)

- Monitor traffic conditions (CCTV, roadway detectors, public safety contacts)
- Provide real-time traveler information (511, social media, changeable message signs)
- Provide traffic and incident information (media, public safety partners, other transportation centers)
- Control traffic management devices (traffic signals, ramp meters)
- Monitor traffic management and intelligent transportation system devices to ensure proper function

3.3 List the key information that should be included in a scene size-up report

Upon first arriving on-scene, an initial or windshield size-up report should be given to the communications center that includes:

- Unit identification
- Exact location of incident
- Number and type of vehicles involved
- Degree of damage
- Number of lanes closed
- Hazards or unique safety concerns
- Establishment of Command

3.4 Describe both the need and the requirements for establishing and participating in the Incident Command System (ICS)

Required by the MUTCD and the National Incident Management System (NIMS), ICS is a standardized, on-scene, all-hazards incident management concept that allows users to adopt an organizational structure for handling an incident without being hindered by jurisdictional boundaries. The goals of ICS are:

- Safety of responders and others
- Achievement of tactical objectives
- Efficient use of resources

3.5 Identify when it is appropriate to implement Unified Command

Unified Command is a joint management and authority structure in which two or more individuals share the role of Command. Unified Command typically is fulfilled by a team of individuals already having authority within their discipline or responding agency. Unified Command is most appropriate for major incidents involving multiple agencies.



LESSON 4: VEHICLE POSITIONING

4.1 Differentiate between Move It and Work It incidents

When possible, moving the incident is preferred since it clears the roadway and reduces responder exposure. Determining if a vehicle or vehicles can be relocated is called “move it” or “work it.”

Move it refers to moving an incident to a safer location like a shoulder or parking lot.

Work it is a term that reflects a situation where involved vehicles cannot be moved because of damage, injury to occupants, or other issues.

4.2 Describe vehicle positioning and blocking

Positioning emergency vehicles to establish a safe work area is a foundational decision for responders arriving at an incident scene, and it is critical to protecting both emergency responders and motorists. **Safe-positioned**, as defined by the MUTCD, is the positioning of emergency vehicles at an incident in a manner that attempts to:

- Protect the responders performing their duties
- Protect road users traveling through the incident scene
- Minimize, to the extent practical, disruption of the adjacent traffic flow

The first emergency vehicle that arrives at an incident scene is responsible for positioning their vehicle as an initial block.

Blocking is the act of positioning a responder vehicle upstream of an incident to obstruct the flow of moving traffic in one or more lanes, and/or the shoulder. Blocking begins with just those lanes that are involved in the incident, including the shoulder, and can be accomplished with the responder vehicle positioned parallel to travel lanes or angled.

4.3 Define Lane +1 blocking and describe the need for it

To protect responders and motorists at an incident scene, it may be necessary to close additional lanes for a brief time. This protocol is referred to as **Lane +1 blocking** and occurs when responders block the involved lane(s), including the shoulder, plus one additional lane to provide a protected lateral space for safety. Patient treatment and movement, extrication, firefighting, crash investigations, and recovery operations are all examples of situations that may require Lane +1 blocking.

Once response activities no longer require the extra space for safety, blocking should be reduced to the involved lanes only. A good rule of thumb is to take only as many lanes as you need for as long as you need them and then give them back as soon as safely possible.



LESSON 5: SCENE SAFETY

5.1 Describe the value of emergency vehicle markings and lighting as it relates to scene safety

Making responder vehicles more visible improves safety by reducing the chances they will be hit at incident scenes.

Conspicuity refers to the ability of a vehicle to draw attention to its presence, even when other road users are not actively looking for it.

Vehicle markings are passive treatments that complement emergency lighting by using:

- Contrasting colors that make the vehicle stand out
- Fluorescent colors to increase daytime visibility
- Retro-reflective materials to maximize nighttime visibility

Section 6I.05 of the MUTCD specifically covers the use of emergency-vehicle lighting and recognizes that the use of emergency-vehicle lighting is essential, especially in the initial stages of a traffic incident, for the safety of responders and motorists approaching the incident.

Although an important tool for warning drivers, most emergency-vehicle lighting does little to augment traffic control or guide drivers, therefore more is not always better where emergency-vehicle lighting is concerned. The use of too many lights at an incident scene can distract and create confusion for approaching road users (and other responders), especially at night.

The MUTCD recommends that the use of emergency-vehicle lighting be reduced if good traffic control has been established at a traffic incident scene.

5.2 Describe high-visibility safety apparel (HVSA) requirements for responders

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 (HVSA)...”

MUTCD Section 6D.03 specifically addresses the use of HVSA by law enforcement and states that when uniformed law enforcement personnel are used to direct traffic; to investigate crashes; or to handle lane closures, obstructed roadways, and disasters, HVSA shall be worn. The MUTCD does not require the use of HVSA for law enforcement activities such as traffic stops.

Firefighters and other responders are exempt from MUTCD HVSA requirements when they are engaged in emergency operations that directly expose them to flame, fire, heat, and/or hazardous materials.

5.3 Describe safe practices for working around moving traffic

All responders are encouraged to remain on the non-traffic side of response and incident vehicles as much as possible.

General Safety Considerations:

- Always wear your seat belt
- Never trust approaching traffic in either direction
- Never turn your back to approaching traffic
- Maintain an awareness of:
 - Where you are

- Where you can go (escape route)
- Where you cannot go (bridges, on-coming traffic, etc.)
- Never stand between vehicles
- Instruct civilians where to stay, out of harm's way



LESSON 6: TRAFFIC MANAGEMENT

6.1 Identify the four main components of a Traffic Incident Management Area

A Traffic Incident Management Area is a type of temporary traffic control zone that is described in MUTCD Part 6. Although a highway work zone and a Traffic Incident Management Area have similarities, the time available to plan and the availability of resources results in significant differences between the two. Despite differences, the four main components of a Traffic Incident Management Area are the same as any temporary traffic control zone:

- **Advance Warning Area** – established upstream of the incident to alert drivers of the upcoming incident scene. All advance warning devices should also be upstream of any traffic queues so that warning is given to road users before encountering stopped traffic.
- **Transition Area** – section of roadway where drivers are redirected out of their normal path. Transition Areas usually involve the strategic use of tapers, which can be set up using cones or flares.
- **Activity Area** – section of the roadway where incident response activities take place and is comprised of the:
 - **Upstream (Longitudinal) Buffer Space** – which separates the Transition Area from the Incident Space and provides a recovery area for errant vehicles.
 - **Incident Space** – location where the incident has occurred and emergency responders are working. A blocking vehicle should be positioned at the upstream end of the Incident Space to protect workers from impacts by errant vehicles.
- **Termination Area** – used to notify drivers that the Traffic Incident Management Area is ending and they may resume normal driving. The Termination Area includes the downstream buffer space and taper, which is in place to protect emergency responders working at the end of the Incident Space.

6.2 Summarize the importance of advance warning and protecting the queue

Wet roads can double the average motorist's stopping distance over that for dry road conditions, and poor visibility can lengthen driver reaction time. Therefore, additional or extended advance warning may be necessary during adverse conditions, such as rain, snow, ice, smoke, fog, or darkness.

Additional or earlier advance warning may also be necessary due to limited sight distances created by roadway geometries, such as hills, curves, bridges, or intersections.

A well-positioned responder vehicle, upstream of the incident scene with its lights on, can serve as advance warning until signs or other traffic control devices are in place.

6.3 Describe the need for, and how to set up, a taper

Tapers are used in Transition Areas to redirect drivers out of their normal path. Tapers can be set up using cones, flares, reflectors, or other channelizing devices. Channelizing devices used to establish a taper are typically placed no further apart in feet than the speed limit (i.e., in a 35 mph zone the cones would be placed 35 feet apart). However, responders can also use roadway skip lines of 10 walking paces to establish uniform spacing when setting up a taper.

Taper Setup Methodology:

1. The responder retrieves available cones from the trunk, placing one a reasonable distance from the responder vehicle on the edge line, allowing for a buffer.
2. Walking along the shoulder, facing traffic, a cone is subsequently placed on the edge line at each skip line (alternatively, they can be placed every 10 paces).
3. When the last cone has been placed on the edge line, the responder begins walking backward until the next cone is reached.
4. The responder takes one lateral step into the travel lane and places the cone, immediately returning to the shoulder – facing traffic.
5. The responder again walks backward until the next cone is reached and then takes two lateral steps into the travel lane to place the cone, immediately returning to the shoulder.
6. The steps are repeated until all cones are deployed.

6.4**Describe the purpose of buffer spaces and how they are impacted by vehicle positioning**

At an incident scene, the two types of buffers that may be established as part of the Traffic Incident Management Area are longitudinal buffer spaces and lateral buffer spaces. The Upstream (Longitudinal) Buffer Space covers the distance between the Transition Area and the Incident Space. By definition, it is a recovery area for errant vehicles, so no responder vehicles should be parked in the Upstream Buffer Space.

The Upstream Buffer Space in TIM applications will typically be fairly short due to the limited availability of channelizing devices. When additional resources are available, the buffer should be expanded to better accommodate errant vehicles.

Lateral Buffer Space is the area between the Incident Space and the adjacent travel lanes and can be beneficial because it allows more room for responders to work. The lateral buffer space can be increased through the use of Lane +1 blocking when necessary. When lateral buffer spaces are used, it is recommended that the entire lane be closed and that partial lane closures be avoided.

**LESSON 7: SCENE HAZARDS AND OTHER CONSIDERATIONS****7.1****Identify the safety concerns related to responding to an incident involving a vehicle fire**

A vehicle fire presents a danger zone that specifically includes the area directly in front of and behind the burning vehicle where projectiles, like pistons, may launch from the vehicle. Non-firefighting responders should remain clear of all sides of a burning vehicle and remain uphill and upwind of the incident.

The smoke created by a vehicle fire and the steam created while extinguishing the fire can affect both responder and motorist visibility at the incident scene.

7.2**Summarize how hazardous materials and vehicle fluid spills can impact incident response activities**

Hazardous materials (hazmat) can be identified through labels, markings, or placards. Labels are placed on the actual item or the individual package containing the material.

The presence of a hazmat placard does not always mean a hazmat response is required.

Accurately identifying that a hazmat team response is not required means quicker clearance of the incident.

Agencies should be capable of the following actions when hazardous materials are involved in a traffic incident:

- Identify reportable quantities
- Determine what response is required
- Understand the capabilities of local responders

Individual responders should limit themselves to only working on spills or leaks of a magnitude that are within their capabilities, training, and equipment.

Dedicated hazmat teams should be used to deal with those incidents that fall outside of the capabilities of on-scene responders.

For vehicle fluids, it is important to make every effort to stop the spill from reaching any type of waterway, including catch basins, sewers, and/or storm drains.

Absorbent materials and other equipment to assist with vehicle fluids are usually carried by towing and fire departments.

7.3**Describe the primary goal of a crash investigation and the importance of preserving short-lived evidence**

The foundation of traffic crash investigations involves the collection of information that ultimately helps understand when, where, and why crashes occur.

It is the responsibility of all incident responders to ensure that the incident scene is preserved by refraining from removing, moving, or eradicating physical evidence. Responders should take only those actions needed to complete their own area of responsibility with minimal disturbance to the scene unless authorized or assigned.

Short-Lived Evidence – evidence that will most likely be lost, destroyed, or compromised once the scene has been cleared. Examples of short-lived evidence include fire marks, debris fields, gouges, scrapes, fluid trails, blood, hair, and fibers. Critical short-lived evidence can disappear when walked on by responders, driven over, flushed away with water, or unintentionally swept away with a broom.

**LESSON 8: CLEARANCE AND TERMINATION****8.1****Describe quick clearance strategies for both minor incidents and incidents that involve tractor trailers and/or spilled cargo**

For minor incidents, if an involved vehicle is still functional, having the driver move it out of travel lanes is a simple, quick clearance strategy. If the vehicle is not operational or is damaged, a responder vehicle with a push bumper can clear it out of the roadway. When a tow truck is required, the request must be made as soon as possible, even if the vehicle has been relocated to the shoulder.

Typically, when a commercial vehicle has spilled cargo, the trucking company and/or insurance provider must be contacted, and they may request that the cargo be salvaged. However, salvage operations can result in significant clearance and traffic delays. If authority removal legislation is in place, determine if the vehicle and/or spilled cargo can be pushed to the shoulder to open travel lanes more quickly.

Safe, Quick Clearance Strategies:

- Work with a sense of urgency to reduce the exposure to risks for both responders and motorists
- Use Unified Command and incorporate safe, quick clearance into the incident objectives
- Complete tasks concurrently whenever possible
- Regularly assess traffic control and on-scene activities to determine if additional lanes can be opened
- Use all available resources for clearance activities
- Think outside of the box and consider how things could be done differently

8.2 List the type of information that must be provided to towing and recovery to facilitate their response

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

For requesting responders, do not tell towing what you need, tell them what you have.

The Towing and Recovery Association of America (TRAA) Vehicle Identification Guide lists the information that towing dispatchers need to secure the appropriate towing vehicle, including:

- Year, make, and model of vehicle
- DOT classification
- Location and scene access
- Reason for tow
- Additional vehicle or crash details

8.3 Describe the major activities that take place during termination and identify safety related considerations for scene breakdown

Termination is the final stage of incident response and includes demobilizing and removing all equipment, personnel and response vehicles, and restoring traffic flow to normal.

Termination Checklist

- Protect towers while they finish up
- Remove temporary traffic control devices
- Lift the detour or alternate route
- Let communications centers and TMC know that lanes are open
- Ensure all personnel are accounted for
- Check with Incident Commander before leaving