LESSON PLAN

Roadway Incident Safety Teaching Topic Package 1: **SETTING UP A TIMA**

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Overview & Purpose:

Learn/Practice how to set up a traffic incident management area (TIMA)

Topics:

- NFPA 1091
- PPE / high visibility apparel
- Traffic Incident Management Area (TIMA)

Pre-Class Assignment:

Complete the following modules on learning.respondersafety.com. Bring certificates to class.

- Understanding the New NFPA 1091
- Manual on Uniform Traffic Control Devices (MUTCD)
- Advance Warning
- Blocking Procedures at Roadway Incidents
- The First 15 Minutes
- Termination
- Traffic Incident Management on Rural Roads (if applicable to your response area)

Mention that the National TIM Training Certificate is available from ResponderSafety.com by taking ten online training modules (more information here: https://learning.respondersafety.com/Clusters/National-TIM-Training-Certificate.aspx)

Materials:

- Department SOP handouts (see Appendix B for model SOPs)
- Copy of NFPA 1091
- Traffic Incident Management Area (TIMA) diagram (see Appendix C)
- High visibility apparel for all personnel
- Traffic control equipment
- Sufficient space to practice setting up a TIMA
- Blocking vehicle, if possible

Note: If you cannot practice the exercise in an outdoor space, use a tabletop format instead.

Learning Objectives:

- Understand the importance of traffic control management
- Understand the role of your department in providing traffic control
- Describe the purpose of NFPA 1091 and its relevance to the department's work
- Demonstrate proper use of PPE at a roadway incident scene
- Demonstrate how to properly establish and demobilize a TIMA

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NFPA 1091 JPRs:

- 4.2.2 Position a vehicle to establish a TIMA at a traffic incident
- 4.2.3 Establish a TIMA at a traffic incident
- 4.2.4 Establish advance warning for the traffic incident
- 4.2.5 Operate as a member of a team within a TIMA
- 4.2.7 Monitor and adjust the TTC measures at a traffic incident
- 4.2.8 Adapt the TIMA in response to a hazard
- 4.2.9 Perform TIMA demobilization functions

Correlations to Dept Training Rotations:

To be filled in by Instructor

Related SOPs/SOGs:

Titles to be filled in by Instructor

Introduction (15 min):

Introduce the concept of a TIMA:

- Show the TIM in a Minute video.
- Discuss a struck by or near miss case related to traffic incident management (or lack thereof), local if possible. See Appendix A for suggested cases.

SOP Review (10 min):

- Distribute a copy of the department's TIM SOP(s).
- Review the SOP(s) with the group. Discuss and answer questions about the expectations set by the SOP(s).
- Explain what the MUTCD is, how it relates to traffic control duties at the scene, and how training in manual traffic control relates to the standard.
  - Include specific requirements from any state supplement that applies
- Explain what NFPA 1091 is, how it relates to traffic control duties at the scene, and how training in manual traffic control relates to the standard.

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Discussion (10 min):

- Distribute TIMA diagram and refresh students on the purpose of a TIMA and its anatomy
- Discuss with the group how traffic control assignments are made.

A TIMA has four areas:

- Advance Warning Area, where signage, arrow boards, message boards, an emergency vehicle and/or other devices warn oncoming traffic that an emergency scene is ahead.
- Transition Area, where channelizing devices like cones, close lanes of traffic and notify oncoming traffic how to navigate around the incident.
- Activity Area, where the first element is a large, heavy emergency vehicle blocking the incident space from intrusion by oncoming vehicles and the remainder incident space is where the incident is worked.
- Termination Area, where channelizing devices are used to terminate the TIMA and reopen closed lanes of traffic.

Exercises (variable time)

Note: Tabletops can be used to comprise the entire exercise for this unit if a full-scale practical exercise is not possible. Or, tabletops can be used as a warm up activity prior to the practical exercise. Or, the training can be split into two sessions: tabletops first then a full-scale practical exercise in a second session.

TABLETOPS

Tabletop 1:

1. Set up a two-car crash on a one lane each way roadway on the tabletop where the position of the vehicles blocks one direction of travel.
2. Ask the group to set up a TIMA to close the lanes necessary to work this incident. Have them decide how many lanes should be closed and how to handle this closure, especially if it closes the entire roadway and necessitates detours.
3. Have the group safe-position an arriving ambulance and tow truck.
4. Revise the incident to have one vehicle removed that allows the lane of travel in the opposite direction to be re-opened.
5. Ask the group to revise the TIMA to reopen that lane in the opposite direction while keeping one lane closed. Challenge them to do this in the sequence that would be needed in real life. Remind them to account for the need for manual traffic control on the open lane if they intend for that traffic to be two-way.
6. Finally, ask the group to demobilize the TIMA (e.g.: traffic control devices, blocking vehicle) as would be done to properly terminate the incident.

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Tabletop 2:

1. Set up a multi-vehicle crash spanning at least two lefthand lanes of a multi-lane limited access highway on the tabletop.
2. Ask the group to position suitable blocking vehicles as the initial blocking vehicles for that crash. Make sure they use only vehicles reasonably available to them in your department within your response resource constraints.
3. Have the group fill in the remainder of the traffic control devices to complete a full TIMA.
4. Partially clear vehicles from the accident scene so that one lane can be reopened. Ask the group to adjust the TIMA to reopen the lane.
5. Clear the incident vehicles and ask the group to demobilize the TIMA as would be done to properly terminate the incident.

Tabletop 3:

1. Set up a vehicle crash in a challenging location, such as on a bridge or an overpass, blocking one lane and the shoulder.
2. Have the group set up a TIMA.
3. Discuss the challenges of working this incident with limited escape routes if a car intrudes into the lane. Consider whether that impacts the configuration of the TIMA and how many lanes to close.
4. Notify the group that one of the victims requires a medevac helicopter. Advise the group that there is no pre-determined landing zone within suitable distance from this location and therefore the helicopter will have to land on the roadway. Have the group select a suitable location and set up a second TIMA to create a landing zone in accordance with local policy.
5. Ask the group to demobilize the helicopter TIMA first, then clear the incident vehicles and have them demobilize the original TIMA to reopen the roadway. Make sure they practice this in the order in which devices and vehicles should be removed for safety. Practice a rolling block to reopen, if needed.

PRACTICAL

1. Assemble the group in an area large enough to set up a TIMA (such as a parking lot). Make sure that the chosen area is not subject to moving traffic, unless that is part of the exercise and suitably controlled for safety.
2. Have all personnel don high visibility apparel that is MUTCD-compliant.
3. Mark an area where a two-vehicle accident has taken place.
4. Assign each team member a specific traffic control duty, for example:
   - Driver/operator to set a blocking vehicle
   - Personnel to set advance warning devices
   - Personnel to set cone tapers (Transition Area and Termination Area)
5. Practice proper vehicle entry and exit (downstream side) protocols. Also practice how to safely pass through the zero buffer area.
6. Instruct the group to close "lane +1" with a TIMA. Rotate to give each person a chance to practice each task they are qualified to perform.
7. Once the TIMA is set up, and if an apparatus is available, walk through the actual response to that scene (for example, conducting an extrication or extinguishing a car fire, or rendering patient care), stopping to ask students to point out their two escape routes from different positions or to show how to access equipment while maintaining situational awareness and staying in the protected area.
8. Interject and announce that a vehicle has hit the blocking vehicle. Reassign personnel and ask them to adjust the TIMA to account for this new situation.
9. If available, have an ambulance arrive to care for a victim in the vehicle that hit the parked blocking vehicle. Have personnel safely park that ambulance in the proper place in the TIMA.
10. Advance forward in the life of the incident and ask students to reopen one lane and adjust the TIMA accordingly.
11. Challenge students to demobilize the remaining TIMA according to termination best practices.

Wrap Up (10 min):

Discuss the need for coordinating traffic control with other agencies who respond with your department, and how this is done (including the involvement of a local TIM Team, if one exists in your area).

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Resources:

Additional resources available at:

https://learning.respondersafety.com/Training_Programs/Understanding_the_New_NFPA_1091.aspx

https://learning.respondersafety.com/Training_Programs/Manual_on_Uniform_Traffic_Control_Devices_MUTCD.aspx

https://learning.respondersafety.com/Training_Programs/Advance_Warning.aspx

https://learning.respondersafety.com/Training_Programs/Blocking.aspx

https://learning.respondersafety.com/Training_Programs/The_First_15_Minutes_at_Roadway_Incidents.aspx

https://learning.respondersafety.com/Training_Programs/Traffic_Incident_Management_on_Rural_Roads.aspx

https://learning.respondersafety.com/Training_Programs/Termination.aspx

Appendix A: Suggested Case Studies

Volunteer Fire Fighter Struck and Killed While Directing Traffic at an Interstate Highway Incident – Iowa https://www.cdc.gov/niosh/fire/reports/face201123.html

Volunteer Fire Chief Struck and Killed on Interstate Highway While Directing Traffic – Pennsylvania https://www.cdc.gov/niosh/fire/pdfs/face201312.pdf

Forest Fire Service Fire Fighter Monitoring Prescribed Burn from Roadway is Struck and Killed When Smoke Obscures Visibility Following a Wind Shift — New Jersey https://www.cdc.gov/niosh/fire/pdfs/face201306.pdf

Career Fire Fighter Struck and Killed While Working a Crash Scene on Ice Covered Interstate Overpass – Texas https://www.cdc.gov/niosh/fire/reports/face201406.html

Volunteer Fire Fighter Killed When Struck While Operating at Scene of Multiple Vehicle Crash on Interstate Highway – Illinois https://www.cdc.gov/niosh/fire/reports/face201305.html

Career fire captain killed, fire fighter and police officer injured at the scene of a motor vehicle crash - Arkansas https://www.cdc.gov/niosh/fire/reports/face201209.html

Career Fire Captain Dies When Struck by a Pickup Truck While Working at the Scene of Two Traffic Incidents - California https://www.cdc.gov/niosh/fire/reports/face201207.html

Volunteer Fire Police Captain Dies From Injury-Related Complications After Being Struck By Motor Vehicle While Directing Traffic - New Jersey https://www.cdc.gov/niosh/fire/reports/face200316.html

A Volunteer Fire Fighter Died After Being Struck by a Motor Vehicle While Directing Traffic-New York https://www.cdc.gov/niosh/fire/reports/face200107.html

Volunteer Fire Police Captain Dies After Being Struck by a Motor Vehicle at a Controlled Roadway - Pennsylvania https://www.cdc.gov/niosh/fire/reports/face201006.html

Volunteer Assistant Chief Killed When Struck by Tractor-Trailer While Operating at a Motor Vehicle Crash – North Carolina https://www.cdc.gov/niosh/fire/pdfs/face200817.pdf

Volunteer Fire Fighter Killed While Walking Across an Interstate Highway Responding to a Motor Vehicle Incident - Texas https://www.cdc.gov/niosh/fire/reports/face200313.html

Off-duty Career Fire Fighter Dies and Another Off-duty Career Fire Fighter Is Injured After Being Struck by a Truck While Assisting at a Highway Traffic Incident - Florida https://www.cdc.gov/niosh/fire/reports/face200235.html

Volunteer Fire Fighter Dies After Being Struck by Motor Vehicle on Interstate Highway - Mississippi https://www.cdc.gov/niosh/fire/reports/face200213.html

A Volunteer Fire Fighter Died After Being Struck by a Motor Vehicle While Directing Traffic - New York https://www.cdc.gov/niosh/fire/reports/face200107.html

Volunteer Fire Fighter Died After Being Struck by an Eighteen-Wheel Tractor Trailer Truck - South Carolina https://www.cdc.gov/niosh/fire/reports/face9938.html

One Fire Fighter Died and a Second Fire Fighter Was Severely Injured After Being Struck by a Motor Vehicle on an Interstate Highway - Oklahoma
https://www.cdc.gov/niosh/fire/reports/face9927.html

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Appendix B: Model SOP for Safety Apparel While Working in or Near Moving Traffic

_____X_____ FIRE DEPARTMENT

STANDARD OPERATING PROCEDURE

Safety Apparel While Working In or Near Moving Traffic

PROCEDURE # XXX.XX

EFFECTIVE DATE:

PURPOSE
The purpose of this Policy is to describe the required personal protective apparel to be worn by _____ Fire Department members when working at an incident that places the member in or near moving traffic. Incidents such as vehicle collisions/ injury crashes, extrications, fluid spills, dangerous conditions, and vehicle fires are typical situations where this policy is applicable.

BACKGROUND
For incidents where exposure to the hazards of moving traffic are present for fire department personnel working on foot, this department policy can be summarized in the statement. "If your feet are on the street, your vest is on your chest." Conforming to this policy places the member in compliance with the Federal Highway Administration's Manual on Uniform Traffic Control Devices (MUTCD).

PROCEDURE
Specifically, when the nature of the incident requires the member to work in or near moving traffic, the following personal protective apparel shall be worn:

- Structural fire helmet with chin strap properly donned
- NFPA compliant turnout gear for firefighting or rescue operations
- ANSI 107-compliant Type R or Type P Class II or Class III garment
- Protective footwear

If a member prefers to wear a structural turnout coat due to inclement weather; i.e. rain, cold, etc, or is required to wear structural turnout gear due to duties assigned at the incident scene, the ANSI compliant safety vest must be donned over the turnout coat. Turnout coats are not acceptable as high-visibility highway safety apparel when donned without the ANSI-compliant vest on the outside of the coat, unless personnel are exposed to fire, flame, heat or hazardous materials.

Structural bunker pants and boots may be worn in lieu of standard protective footwear.

NON-VEST INCIDENTS

Several unique incident types may be encountered where the donning of a highway safety vest may actually increase risk of injury for the fire department member or where wearing of a vest may in fact be otherwise impractical. Under these limited situations, the requirement for donning ANSI-compliant vests by members directly involved in hazard area "Hot Zone" activities is modified.

The exemptions for wearing a highway safety vest applies only to members directly involved in activities within an established "Hot Zone" and only when the "Hot Zone" is protected from the hazards of moving traffic by apparatus blocking, lane closures, etc.

The required ANSI-compliant Highway Safety vest need not be worn when a member is required to:

1. Don structural PPE and/or SCBA to work in close proximity to a source of heat, flame, or fire such as during suppression of a vehicle fire
2. Don hazardous material personal protective equipment to avoid potential exposure to chemicals or other contaminants, or
3. Don technical rescue PPE and/or equipment for a technical rescue incident such as extrication, high or low-angle rope rescue, swift water rescue, etc.

All members on-scene performing duties or involved with activities other than those listed above are required to don ANSI-compliant garments when working in or near moving traffic.

Members directly involved in source of heat, chemical, or technical rescue activities as listed above who complete their activities within the designated Hot Zone are required to don ANSI-compliant vests once their activities within the Hot Zone are completed or they leave the immediate "Hot Zone" area of the incident scene.

Appendix B: Safe Positioning SOP

I. Overview

This guideline identifies vehicle positioning practices for Fire Department apparatus and emergency vehicles that provides maximum protection and safety for personnel operating in or near moving vehicle traffic. In addition, these procedures emphasize efforts to maintain lanes of moving traffic around the incident scene to minimize the traffic queue and the inherent probability of secondary collisions. Efforts to complete safe and efficient clearance of the incident scene in as short a timeframe as possible are recommended.

It shall be the policy of the Fire Department to initially position apparatus and other emergency vehicles at an incident on any street, road, highway or expressway in a manner that best protects the incident scene while at the same time providing for traffic movement past the incident scene as much as reasonably possible. Such positioning shall afford protection to fire department personnel, law enforcement officers, tow service operators, other emergency personnel while working in or near moving traffic.

All personnel should understand and appreciate the high risk that personnel are exposed to when operating in or near moving vehicle traffic. Responders should always operate within a protected environment at any roadway incident.

Always consider moving vehicles as a threat to your safety. At every roadway emergency scene, personnel are exposed to passing motorists of varying driving abilities. Responders must accept that motorists approaching the incident scene on the roadway may be a 'D' driver; drunk, drugged, drowsy, distracted, or just plain dumb. It is the 'D' driver that may be completely oblivious to your presence due to distractions or impairments. Distracted motorists will often be looking at the scene and not the roadway in front of them where you might be operating. Assume that all approaching traffic is a 'D' driver and is out to get you until proven otherwise.

Nighttime incidents and inclement weather conditions are particularly hazardous. Visibility is reduced and driver reaction time to hazards in the roadway is slowed. Adjust operations accordingly.

II. Terminology

1. **Advance Warning-** notification procedures that advise approaching motorists to transition from normal driving status to that required by the temporary emergency traffic control measures ahead of them.
2. **Block-** positioning a fire department apparatus on an angle to the lanes of traffic creating a physical barrier between upstream traffic and the work area. Includes 'block to the right' or' block to the left.'
3. **Buffer Zone-** the distance or space between personnel and vehicles in the protected work zone and nearby moving traffic.
4. **Downstream-** the direction that traffic is moving as it travels away from the incident scene.

5. **Flagger-** a fire department member assigned to monitor or direct approaching traffic and activate an emergency signal if the actions of a motorist do not conform to established traffic control measures in place at the highway scene
6. **Linear-** positioning a fire department apparatus parallel to or within a travel lane or shoulder of a roadway. Linear positioning only creates a physical barrier within that lane or shoulder of the roadway.
7. **Taper-** the action of merging lanes of moving traffic into fewer moving lanes.
8. **Temporary Traffic Control Zone-** the physical area of a roadway within which emergency personnel perform their fire, EMS and rescue tasks at a vehicle-related incident.
9. **Transition Zone-** the lanes of a roadway within which approaching motorists change their speed and position to comply with the traffic control measures established at an incident scene.
10. **Upstream-** the direction that traffic is traveling from as the vehicles approach the incident scene.

III. 'Move It' Incidents

All emergency personnel are at great risk of injury or death while operating in or near moving traffic. There are several specific tactical procedures that should be taken to protect all responders and emergency service personnel at the incident scene including;

1. Consider that all approaching drivers are 'D' drivers
2. Establish an initial "block" with the first arriving emergency vehicle or fire apparatus while the initial size-up survey is completed
3. Always wear high visibility, florescent and reflective garments (vest or jacket) during roadway operations. When full protective NFPA compliant clothing is required by department SOG, high-visibility vests must be worn over structural turnout gear except for members combatting a fire situation or dealing directly with hazardous materials.
4. All fire department members must wear structural firefighting helmet with chinstrap donned properly.
5. Operators of emergency vehicles at the scene should complete 'light shedding'; turning off all lights such as vehicle headlights, forward-facing warning lights, or spotlights that might create vision impairment to approaching motorists at nighttime incidents.
6. Employ the 'Move It' or 'Work It' strategy. Determine if vehicles involved can be moved out of the travel lanes to an off-roadway location. Moving to an off-roadway location improves responder safety, minimizes congestion, and assists with safe, quick clearance; the "Move It" strategy
7. If vehicles can be moved out of the travel lanes of the roadway, attempt to clear the travel lanes in less than 30 minutes; Minor duration incident.

IV. 'Work It' Incidents

The following are benchmarks for Safe Positioning of apparatus and emergency vehicles when the crash-damaged vehicle cannot be moved out of the travel lanes of the roadway and crews must work the incident at the location found upon arrival. If incident is a 'Work It' situation, establish Command according to ICS protocols, employ upstream advance warning and temporary traffic control transition measures to warn approaching motorists, and attempt to reduce their vehicle speed. Incident duration is anticipated to exceed 30 minutes.

1. Position first-arriving apparatus to protect the scene, patients, and emergency personnel.
    a. Initial apparatus placement should create an initial incident area protected from traffic approaching in at least one direction. Intersections or where the incident may be near the middle lanes of a multi-lane roadway require two or more sides of the incident to be protected.
    b. Angle apparatus on the roadway with a "block to the left" or a "block to the right" to create a physical barrier between the crash scene and approaching traffic. Block at least one additional traffic lane more than that already obstructed by the crashed vehicle(s); obstructed Lane + 1 strategy. Shoulder of the highway can be counted as a lane.
    c. The front wheels of blocking vehicles should be turned away from the downstream work area
    d. For first arriving fire department units where a charged hoseline may be needed, block so that the pump panel is downstream, on the opposite side of on-coming traffic. This will protect the pump operator.
2. Ambulances should be positioned within the protected work area and have their rear patient loading area angled away from the nearest lanes of moving traffic
3. Additional responder vehicles and personnel working the incident should either support advanced warning efforts or be positioned within the protected area created by the blocking apparatus.
4. Command shall stage unneeded emergency vehicles off the roadway, place them in a Staging area on the downstream side of the incident, or return these units to service.
5. Lanes of traffic shall be identified numerically as "Lane 1", "Lane 2", etc., beginning from the left to the right when considered from the motorist's point of view driving in those lanes.
6. Traffic cones or cones with flares alongside should be deployed upstream to increase the advance warning for approaching motorists. Cones and flares identify but only suggest the transition and tapering actions that are requested of the approaching motorist.
7. Personnel shall place cones and flares as well as shall retrieve cones while facing oncoming traffic. A Buddy system is recommended for deployment and retrieval.

8. Adequate advance warning to approaching motorists should be put in place using flares or traffic cones deployed at intervals of no greater than 40' apart upstream of the blocking apparatus. The furthest traffic cone that begins the taper and closing of a travel lane should be positioned upstream along the edge or shoulder of the roadway.
9. Additional personnel may extend the advanced warning area by placing additional emergency vehicles, traffic cones, flares, deployable signs, and arrow boards to build upon initial traffic control measures as the incident duration exceeds 30 minutes. Placing flares, where safe to do so, adjacent to and in combination with traffic cones for nighttime operations greatly enhances motorist warning and scene safety.
10. Progressively open lanes of traffic as safely and efficiently as practical as the incident is dealt with. Once cleared of vehicles, patients and debris, opening of a traffic lane will reduce the queue and minimize the chances of secondary collisions.

V. Incident Command Benchmarks

The initial-arriving company officer and/or the Incident Commander must complete critical benchmarks to assure that a safe and protected work environment for emergency scene personnel is established and maintained including;

1. Assure that the first-arriving apparatus establishes an initial block to create an initial safe work area
2. Determine if incident is a 'Move It' situation where vehicles can be relocated out of the normal travel lanes thereby reducing responder exposure to moving traffic and improving incident clearance time.
3. Determine if the incident is a 'Work It' situation in which the vehicles involved must remain in their present location as fire, rescue, and medical activities take place.
4. Assure that all ambulances on-scene are placed within the downstream, protected work area of the larger apparatus.
    a. Assure that all patient loading into ambulances is done from within a protected work area.
5. The initial company officer and/or Incident Commander must operate as the Scene Safety Officer until this assignment is delegated.
6. Command shall assure that 'light-shedding' protocols including Opticom strobe systems and high-beam headlights are turned OFF and that other emergency lighting remains ON as necessary.

VI. Emergency Crew Personnel Benchmarks

Listed below are benchmarks for safe actions of individual personnel when operating in or near moving vehicle traffic.

1. Always maintain an acute awareness of the high risk of working in or near moving traffic. They are out to get you!
2. Never trust the 'D' driver in the moving traffic that is approaching you.
3. Always look before you move!
4. Avoid turning your back to moving traffic.
5. Personnel arriving in crew cabs of fire apparatus should exit and enter the apparatus from the protected, downstream side, away from moving traffic.
6. Officers, apparatus operators, crew members in apparatus with individual jump seat configurations and all ambulance personnel must exit and enter their units with extreme caution remaining alert to moving traffic at all times.
7. Protective clothing, high-visibility safety garment, and helmet with chin strap in position should be donned prior to exiting the emergency vehicle.
    a. During normal daylight conditions, don helmet and high visibility garment or NFPA compliant turnout PPE and high-visibility vest when operating in or near moving traffic.
    b. During dusk to dawn operations or when ambient lighting is reduced due to inclement weather conditions, don helmet, full NFPA compliant protective clothing and high-visibility vest.
    c. All staff personnel and any other personnel arriving on an apparatus or emergency vehicle should don assigned helmet and high-visibility garment prior to exiting their vehicle.
8. Always look before opening doors and stepping out of apparatus or emergency vehicle into any moving traffic areas. When walking around fire apparatus or emergency vehicle, be alert to your proximity to moving traffic.
    a. Stop at the corner of a blocking position unit, check for moving traffic, and then proceed along the unit remaining as close to the emergency vehicle as possible.
    b. Maintain a 'reduced profile' when moving through any area where a minimum 'buffer zone' condition exists.

VII High-Volume, Limited Access Highway Operations

High-volume, limited access divided highways include expressways, turnpikes, freeways, tollways, and other multi-lane roadways within the response area. A desire to keep the traffic moving on these high-volume thoroughfares is inherent in all operations. When in the judgement of Command (or Unified Command), it becomes essential for the safety of operating personnel and the patients involved, any or all lanes, shoulders, and entry/exit ramps of these limited access highways can be completely shut down. This, however, should rarely occur and should be for as short a period of time as practical.

Unique Safe Positioning procedures at locations such as expressway, freeway, and limited-access, high-volume multi-lane roadway incidents include;

1. Travel lanes are typically 12 feet in width. First-arriving engine company apparatus should establish an initial Lane +1 block position.
2. A large and heavy second fire apparatus such as a ladder truck shall be automatically dispatched to all incidents on all limited-access, high-volume expressways, tollways, freeways, and highways.
3. The primary assignment of this second unit shall be to;
    a. Establish an upstream block occupying a minimum of two 12' lanes plus the paved shoulder of the highway or blockage of three 12' driving lanes of traffic upstream of the initial block provided by the first-due apparatus.
    b. The position of this apparatus shall take into consideration all conditions that might limit sight distance of the approaching traffic including ambient lighting conditions, weather-related conditions, road conditions, curves, bridges, hills and over- or underpasses.
    c. Traffic cones and/or cones illuminated by flares and the NFPA-compliant retro-reflective pink Emergency Scene Ahead deployable sign should be placed upstream of the second vehicle by its crew at the direction of the company officer.
    d. Traffic cones on limited-access, high-volume roadways can be placed at 40' intervals with the furthest cone and or flare approximately 200 feet "upstream", to allow adequate warning to drivers. When incident duration exceeds two hours, advance warning efforts should be as compliant with the Manual of Uniform Traffic Control Devices (MUTCD) requirements as possible.
    e. A flagger/spotter person should be positioned if available to monitor the response of approaching motorists as they are directed to transition to a slower speed and taper into merged lanes of traffic.
    f. Command should be notified by this flagger/spotter on the incident operating channel of any approaching traffic that is not responding to the speed changes, transition, tapering and merging directions.
    g. Flagger/spotter should have the capability of activating a pre-determined audible warning to operating personnel of a non-compliant motorist approaching.

4. Vehicles from law enforcement and transportation departments can be used to provide additional blocking of additional traffic lanes as needed as incident duration exceeds 30 minutes; MUTCD minor duration.
5. When an incident duration exceeds 30 minutes, it becomes an Intermediate duration incident as defined by the MUTCD. During this period of time, efforts should evolve around clearing the scene as expeditiously as possible. For extended duration incidents such as hazardous materials situations, Command should request appropriate traffic incident management personnel and resources. When the lane or road closure exceeds two hours in duration, MUTCD-compliant traffic control measures should be in place. This can include traffic control center protocols, transportation department arrow board trucks, road detours, changeable message sign notifications, media contacts, etc, as appropriate.
6. Fire Department Command officer should establish a liaison with the Police Department supervising officer as soon as possible. This Unified Command team will jointly coordinate activities and determine how to most efficiently resolve the extended duration incident and clear the obstructed travel lanes in as safe and efficient manner as practical.
7. Termination of the incident should be managed with the same aggressiveness as initial actions. Crews, apparatus, and equipment must be removed from the highway in a coordinated process to reduce exposure to moving traffic and minimize traffic congestion.

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Officer's Safe Parking "Cue Card"

"Block" with first-arriving apparatus to protect the scene, patients, and emergency personnel.

- ❑ Block at least one additional lane
- ❑ Block so pump panel is "down stream"
- ❑ Block most critical or highest traffic volume direction first
- ❑ Consider requesting additional PD assistance

Crews wear proper PPE w/Helmet

- ❑ High-visibility garments at all times
- ❑ Helmet at all times
- ❑ Full PPE plus high-visibility vest between dusk and dawn or inclement weather
- ❑ NFPA Compliant turnout gear is appropriate PPE whenever the crew is directly exposed to fire, heat, flame and/or hazardous materials.

Establish more than adequate advance warning

- ❑ Traffic cones at up to 40' intervals
- ❑ Deploy minimum 5 cones upstream
- ❑ Cones only "Suggest" they don't Block!
- ❑ Expand initial safe work zone as temporary traffic control devices are available

Direct placement of ambulances

- ❑ Assure ambulances park within shadow of blocking apparatus as directed
- ❑ Lane 1 is furthest left lane, next is Lane 2, then Lane 3, etc. from approaching motorist's point of view
- ❑ Direct ambulance to "block to the right" or "block to the left" to protect loading doors
  - Place ambulance patient loading area facing away from closest lane of moving traffic
- ❑ All patient loading into ambulances is done from within a protected work zone

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Officer's Safe Parking "Cue Card"

You are the Scene Safety Officer

- ❑ Consider assigning FF as upstream "Spotter" as necessary for approaching traffic

Night or Reduced Light Conditions

- ❑ Turn OFF vehicle headlights
- ❑ Turn OFF Opticom
- ❑ Provide overall scene lighting
- ❑ All personnel in appropriate PPE w/helmets
- ❑ Illuminate cones with flares
- ❑ Consider additional Truck company for additional upstream "Block"

Limited access, high-volume highway incidents

- ❑ Limited access, high-volume highway incidents
- ❑ Establish initial block: minimum two lanes
- ❑ Ladder truck establishes upstream block
  - two lanes plus paved shoulder or
  - three driving lanes
- ❑ Place cones and/or cones illuminated by flares upstream of larger upstream blocking vehicle with the furthest cone approximately 200 feet "upstream" of apparatus
- ❑ Establish Flagger position
  - monitor approaching traffic
  - sound emergency signal as necessary
- ❑ Use police department and/or transportation department vehicles for additional blocking , advance warning, and traffic incident management.
- ❑ Stage additional companies off highway
- ❑ Establish liaison with Police Department to form Unified Command at scene.
- ❑ Terminate incident aggressively with safe, quick clearance strategies.

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Appendix B: Model Advance Warning & Transition Areas SOP

- MODEL –
Standard Operating Guideline (SOG)
Cone, Flare, or Sign Deployment at Traffic-Related Incidents

OFFICE of the CHIEF

Date:

Attention: Fire Officers, Fire Rescue Specialists, EMS Crewmembers, Technical Rescue Squad members

Subject

Guidelines for Establishing Advance Warning and Transition Areas at Highway-Related Incidents where Members are Working In or Near Moving Traffic

Effectively immediately, utilize the following Standard Operating Guideline (SOG) when establishing Advance Warning and Transition Areas at highway-related incidents.

Per orders of: Chief XXXXXXXXX

Effective Date: _____

PURPOSE:

It shall be the intent of this Standard Operating Guideline (SOG) that the safety of operating personnel working in or near moving traffic shall be assured. Balanced with concerns for member safety and the safety of those persons exposed to moving traffic, department personnel are encouraged to comply with applicable local, state, and MUTCD Temporary Traffic Control Zone criteria when operating in or near moving traffic at street, roadway, or highway- related incidents.

It is understood that a compliant MUTCD Temporary Traffic Control Zone includes an incident scene with clearly identifiable areas such as the Advance Warning, Transition, Buffer, Work, and Termination Areas.

When the determination has been made that fire department personnel are to use available portable traffic control equipment, such as 28-inch or taller traffic cones, highway flares, retro-reflective pink deployable signs, or other signaling devices to establish the Advance Warning and/or Transition Area, it is understood by all that for the personnel involved, this is a high risk and potentially life-threatening activity. The member(s) performing this work is typically outside of the protected work area and may be working in close proximity to moving traffic.

RESPONSIBILITY

The following conditions are assumed to be in place prior to the person or persons assigned to establish the Advance Warning or Transition Area beginning their assignment;

- A suitable responder vehicle is on location within the Temporary Traffic Control Zone and the vehicle is positioned in a blocking position so as to create a protected Work Area and Buffer Space
- Portable traffic control equipment (cones, flares, deployable sign, etc) are available and readied for use
- Fire Department member performing task has been assigned to specifically deploy portable devices to create an Advance Warning and/or Transition Area, not a freelance effort, and
- Fire Department member is wearing proper PPE including high-visibility garment and helmet. During periods of low light level or reduced visibility weather conditions, member has operating hand light with them and it is turned ON during this activity

OPERATIONAL STEPS

The following operational steps can serve as a recommended guideline for performing this assigned function;

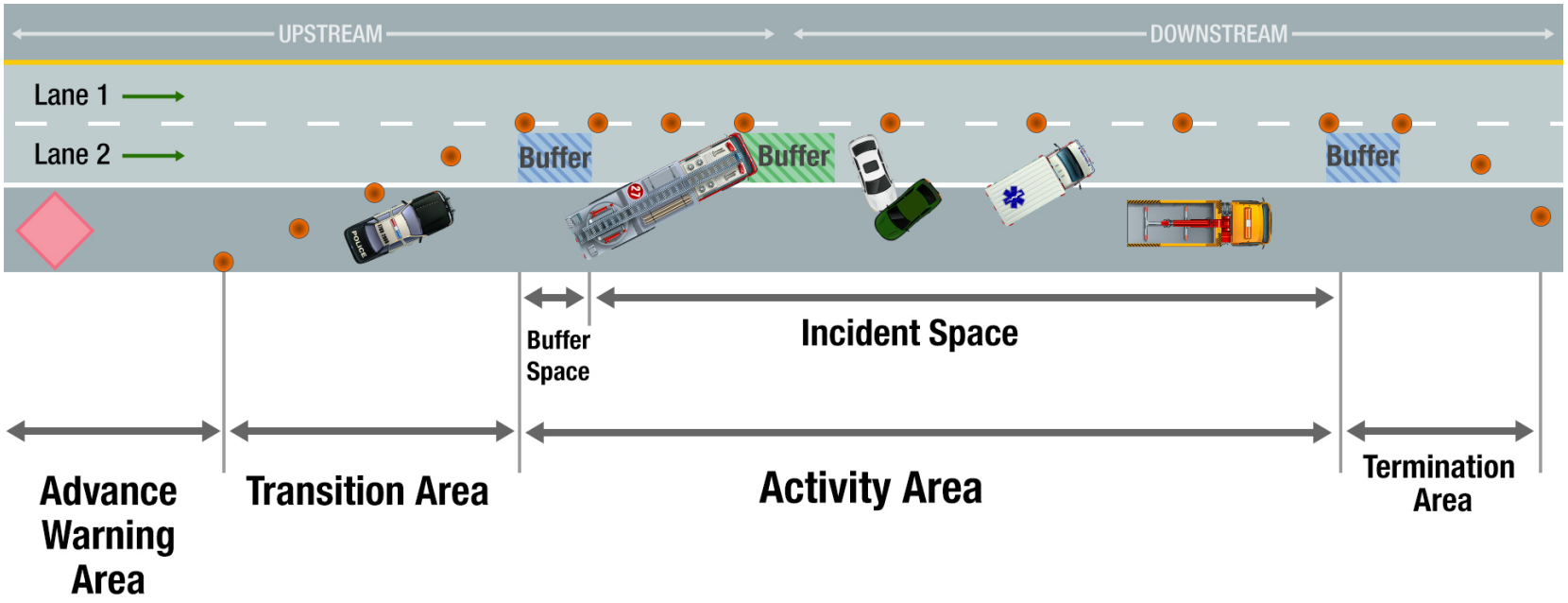
- Gather portable equipment while member is inside protected Work Area.
- Coordinate activity with an assigned "Watch Out" or safety partner, if staffing permits.
- The member gathers equipment, faces on-coming traffic, and moves along a linear, safe pathway on the shoulder or median area of street, road, or highway to furthest upstream location where first device is to be deployed.
- The member shall deploy the first device along shoulder/edge of lane of street, road, or highway while standing in the Safe Area.
  - This initial deployment point should be approximately 100 to 120 feet for deployment of five (5) devices
  - Deployment point should be up to 200 to 240 feet upstream for deployment of eight (8) devices
  - The initial deployment point should take into considerations environmental weather or poor lighting conditions and any visual obstructions for approaching motorists including hills, curves, or other visual obstructions. Furthest traffic control device can be extended further upstream according to these sight-limiting conditions.

OPERATIONAL STEPS (continued)

- The member shall move a distance of ten (10) paces back toward the incident scene along this safe pathway area. When determined safe to do so, the member may enter into the nearest travel lane a distance of one (1) pace or approximately three (3) feet and deploy the second traffic control device.

NOTE: When deploying highway flares, ignition of the flare should take place while member is standing in the safe pathway area. Once lit, the member can move the appropriate distance into the nearest travel lane and deploy the flare.

- The member shall immediately return to the shoulder or median Safe Area and move an additional ten (10) paces along the safe area back towards the incident scene.
- When determined safe to do so, the member may enter into the travel lane being closed a distance of two (2) paces or approximately six (6) feet and deploy the third traffic control device.
- This pattern of 10 paces back towards the incident scene and a distance of three (3) additional feet into the travel lane each time a cone or flare is deployed creates an effective diagonal line of cones or flares across a travel lane of the street, road, or highway. Ideally, the final device shall be near the rear of the responder vehicle that is in a blocking position at the incident scene.
- If using a retroreflective, pink deployable sign to comply with NFPA 1500, Standard on Fire Department Occupational Safety and Health Program, carry the sign in the folded condition upstream along the safe area (shoulder or median). Deploy the sign along the shoulder or median at a location ten (10) additional paces further upstream of the initial cone or flare.



Appendix C: TIMA Diagram