

I. INTRODUCTION

- A. Introduce yourself as the instructor
- B. Give title of the lesson: “Traffic Safety – Protecting People While Stabilizing the Incident.”
- C. State lesson objectives:
 - 1. Perform an incident scene safety Risk Assessment.
 - 2. Develop a Risk Management plan to address scene safety.
 - 3. Identify stopping distances for various sizes of vehicles
 - 4. Identify Components of a Temporary Traffic Control Zone
 - 5. Establish a safe working environment using effective traffic control devices.
 - 6. Identify safety procedures when working in or near moving traffic.

II. IDENTIFYING, ASSESSING & MANAGING RISK

- A. When emergency responders approach an incident scene, identifying traffic hazards and developing a plan for protecting the scene and its workers should be considered with, at least, the following variables in mind:
 - 1. Expect other drivers to make mistakes (i.e. contingencies)
 - 2. The type of roadway you are operating on (Freeway, city-street, 2 lane highway, etc.)
 - 3. Weather conditions with dry vs. wet road surface or good vs. poor visibility.
 - 4. Time of day (or night). Visibility is a concern after dark as well as the proper use of emergency and scene lighting.
- B. Risk Assessment is defined as “Assessing or determining the possibility of suffering harm or loss, and to what extent.”

Note: *Assessing risk is the first step in determining your plan of action*

- C. Risk Management is defined as “The development of strategy and tactical plans based on an accurate risk assessment taking into consideration current and potentially changing scene conditions.”

Note: *Plan for the worst case scenario and protect your scene as much as possible from the time of arrival.*

III. DRIVER REACTION TIME

- A. As covered in Section 4, the components of reaction time are:
1. Mental Processing Time:
 - a. Sensation
 - b. Perception/Recognition
 - c. Situational Awareness
 - d. Response Selection
 2. Movement Time (The time required to perform the selected action).
 3. Device Response Time (The functional time of a mechanical device to activate).

IV. STOPPING DISTANCES

- A. Refer to the chart shown in section 4.
1. A vehicle traveling at 40 MPH is moving at 59 feet per second and requires a stopping distance of 164 feet on dry pavement.
 2. A vehicle traveling at 60 MPH is moving 88 feet per second and requires a stopping distance of 303 feet on dry pavement.
 3. These numbers are based on a passenger vehicle sedan. A significant increase in stopping distance is required for vehicles that are larger.
 4. This does not take into account the human factors or vehicle maintenance factors that may increase total stopping distance.
 5. Adverse weather and night time driving may also increase total stopping distance.

V. TEMPORARY TRAFFIC CONTROL ZONE¹

- A. The primary function of a Temporary Traffic Control Zone (TTC Zone) is to provide for the reasonably safe and efficient movement of road users through or around TTC Zones while reasonably protecting workers, responders to traffic incidents, and their equipment.
- B. Emergency workers should always be aware of their visibility to oncoming traffic and take measures to move the traffic incident as far off the traveled roadway as possible or to provide for appropriate warning.
- C. Components of a TTC Zone:
 - 1. Advance Warning Area – Tells traffic drivers what to expect ahead. Typical distances for placement of advance warning signs on freeways and highways should be longer because drivers are conditioned to uninterrupted flow.
 - 2. Transition Area – Moves traffic out of its normal path and away from the Activity area.
 - 3. Activity Area – This is where the incident scene work takes place. Inside the activity area is where the work space and the buffer space are located.
 - 4. Buffer Space – This is an area that separates the traffic from the emergency responders work area. The buffer space may also provide some recovery area for an errant vehicle. Neither work activity, nor storage of equipment or vehicles should occur within a buffer space.
 - 5. Termination Area – This area returns traffic back to their normal path beyond the incident scene. The termination area should include a buffer space for added safety to incident scene personnel.
- D. TTC Zone diagram

VI. TRAFFIC CONTROL DEVICES¹

- A. Traffic control devices are defined as all signs, signals, markings, and other devices used to regulate, warn, or guide road users, placed on, over, or adjacent to a street, highway, pedestrian facility, or bikeway by authority of a public body or official having jurisdiction.
- B. The purpose of traffic control devices, as well as the principles for their use, is to promote highway safety and efficiency by providing for the orderly movement of all road users on streets and highways.
- C. Traffic control devices provide advanced warning and guidance needed for the reasonably safe, uniform, and efficient operation of all elements of the traffic stream.
- D. To be effective, a traffic control device should meet five basic requirements:
 - 1. Fulfill a need
 - 2. Command attention
 - 3. Convey a clear, simple meaning
 - 4. Command respect from road users
 - 5. Give adequate time for proper response
- E. Limit responder exposure to the hazards and potential hazards of moving traffic.

VII. CHANNELIZING DEVICES

- A. Provide for smooth and gradual vehicular traffic flow from one lane to another. They are also used to separate vehicular traffic from the work space.
- B. Traffic cones are commonly used to channelize road users.
- C. Steps should be taken to minimize the possibility of cones being blown over or displaced by wind or moving vehicular traffic.
- D. Traffic cones may be doubled up to increase their weight.
- E. Traffic cones should have a retro reflective band on the cone that is no less than 4 inches in height.

- F. The U.S. DOT Federal Highway Administration requires a minimum height of traffic cones to be 28 inches for use on freeways and other high speed roadways and whenever used during hours of darkness. It is recommended that the fire service follow the same requirements.
- G. Placing a flare in front of a traffic cone will increase the visibility of the traffic cone after dark.

VIII. PLACEMENT AND OPERATION OF TRAFFIC CONTROL DEVICES

- A. The location of the traffic control device should be such that a road user has adequate time to make the proper response in both day and night conditions.
- B. Traffic control devices should be placed and operated in a uniform and consistent manner.
- C. Emergency responder apparatus will also serve as a traffic control device. Proper placement of the apparatus within the TTC Zone is essential in keeping personnel safe.

IX. PLACEMENT OF APPARATUS

- A. Apparatus shall be placed within the Activity Area in a manner that is consistent and uniform with the other traffic control devices. This will serve as a physical protection barrier to secondary collisions.
 - 1. Protection of the pump operator
 - 2. Protection of the crew
 - 3. Protection of other responders
- B. Fire engines or other large emergency vehicle apparatus should be placed at the beginning of the Activity Area.
 - 1. Park these apparatus at a 45 degree angle.
 - a. Exposes more surface area of the apparatus to absorb an impact from an errant vehicle.

- b. Provides a larger “wall” of protection for the activity area.
- C. Transport vehicles (Aid car, ambulance, medic unit) should be parked at the downstream end or in the shadow of the fire engine or larger apparatus, and within the Activity Area.
 1. Park these vehicles parallel with the flow of traffic.
 2. Parking transport vehicles at the downstream end of the Activity Area will allow for:
 - a. Ease of loading a gurney into the vehicle.
 - b. Clear access to roadway when leaving the scene to transport.
- D. If the fire engine is to be used with a pump engineer/operator located at that apparatus, park the apparatus at a 45 degree angle with the pump panel (driver’s side) facing the Activity Area.
 1. This will provide physical protection for the pump engineer/operator from an errant vehicle.
- E. If the fire engine or other large emergency vehicle apparatus located at the beginning of the Activity Area is to be un-staffed during the operations, park at a 45 degree angle so the driver’s side is facing oncoming traffic.
 1. If an errant vehicle hits the apparatus it will be deflected away from the Activity Area.

X. NIGHT TIME VISIBILITY

- A. Common misconception – “The more warning lights that are flashing, the better we can be seen.”

1. Fact - The warning lights can be seen very well.
 2. Fact - Drivers get “drawn in” to the lights.
 3. Fact - The visibility of personnel is reduced when they are overcome by excessive emergency lights.
- B. Turn off all unnecessary warning lights. Excessive warning light may:
1. Cause a distraction to traffic drivers and cause them to lose concentration on driving safely.
 2. Act as a deadly attraction to drivers who are under the influence of drugs or alcohol.
- C. Turn off all unnecessary headlights. Excessive headlights may:
1. Be blinding to oncoming traffic when the emergency apparatus is parked.
 2. Cause personnel to be nearly invisible to oncoming drivers when personnel stand or walk in-between the headlights and the oncoming traffic.
- D. Use vehicle mounted floodlights to light the scene.
1. Provides a safer working environment
 2. Reduces the distraction to traffic drivers caused by warning lights.
 3. Do not aim the floodlights into the path of traffic drivers.
 4. Ensure that the floodlighting does not produce a disabling glare to traffic drivers.

XI. KEY ELEMENTS OF PERSONELL SAFETY

- A. Training – All emergency responders should be trained on how to properly perform a traffic safety risk assessment and how to establish a safe working environment using effective traffic control methods.

- B. Emergency responder safety apparel – All personnel exposed to the risks of moving traffic shall wear a high visibility vest day or night.
 - 1. Provides more retro-reflective area for better visibility than firefighting turnout gear.
 - 2. Visibility of personnel is increased during the day time with the use of high visibility vests.
 - 3. It's The Law!
- C. Incident scene traffic barriers – Traffic barriers, devices, and signs should be appropriately placed giving consideration to:
 - 1. Clearance of personnel from moving traffic.
 - 2. Speed of traffic.
 - 3. Duration and type of operations.
 - 4. Time of day.
 - 5. Volume of traffic.
- D. Speed reduction – Reducing the speed of vehicular traffic should be considered whenever possible. This minimizes the vulnerability of personnel at the scene. This can be accomplished by:
 - 1. Lane reduction.
 - 2. Funneling traffic
 - 3. Uniformed officers or flaggers to control traffic.
 - 4. Electronic signs.
 - 5. DOT incident response vehicles.
- E. The responsibility for safety is shared among all personnel from the moment the emergency brake is set until it is released to clear the scene after the incident.

Sources:

- 1. U.S. Department of Transportation Federal Highway Administration “Manual on Uniform Traffic Control Devices for Streets and Highways”

