

Roadway Safety S.O.G. and Training Outline

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Oak Creek Fire Department

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Abstract

Every year dozens of fire fighters and emergency workers are killed or injured while working on or near roadways. The information included in this guideline is designed to establish and maintain the safest possible work environment for all members of the Oak Creek Fire Department and those assisting us on or near roadways. By educating and training our personnel to this guideline Oak Creek Personnel will be better prepared to work safely at all incidents on or near roadways. This can be done with equipment we already have on our vehicles and will bring Oak Creek in line with the new state and federal standards.

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Oak Creek Fire Department Roadway Safety



1. PURPOSE:

To establish and maintain a safe working environment for all personnel who respond to and work at scenes along or in close proximity to roadways.

2. SCOPE:

These guidelines shall apply to all personnel operating at the scene of an emergency incident or training exercise.

3. APPLICATION:

All personnel are to be made aware of the dangers associated with working along roadways. Many times personnel are required to work at emergency scenes which are along or in near proximity to roadways. **Personnel are often too busy or concerned for the care of a patient, to be concerned for their own safety.** Personnel wearing SCBA or working in a smoke filled environment have limited vision and may not be aware of traffic. **Fire fighters responding to and operating in close proximity to roadways need to operate as if someone is trying to run them over.**

There are several things, which can be done to provide the safest possible work environment. Personnel should use whatever means necessary within reason to provide for a safe working environment. **Personnel must understand that even when all protective measures are in place "roadway scenes" are still extremely dangerous places to work.**

3.1 Establish and use the incident command system on every incident. Command must account for all personnel working at scene. Command must size up scene and place incident into one of the three following categories.

- Major—expected duration of more than 2 hours;
- Intermediate—expected duration of 30 minutes to 2 hours; and
- Minor—expected duration under 30 minutes.

3.1.1 Major traffic incidents; are typically traffic incidents involving hazardous materials, fatal traffic crashes involving numerous vehicles, and other natural or man-made disasters. These traffic incidents typically involve closing all or part of a roadway facility for a period exceeding 2 hours.

3.1.2 Intermediate traffic incidents; typically affect travel lanes for a time period of 30 minutes to 2 hours, and usually require traffic control on the scene to divert road users past the blockage. Full roadway closures might be needed for short periods during traffic incident clearance to allow traffic incident responders to accomplish their tasks.

3.1.3 Minor traffic incidents; are typically disabled vehicles and minor crashes that result in lane closures of less than 30 minutes. On-scene responders are typically law enforcement and towing companies, and occasionally highway agency service patrol vehicles. (MUTCD 2003)

Once it is determined which type of scene you are operating at, Command must follow the guideline for scene set up and safety for that type of incident.

3.2 Personnel are to wear reflective clothing on all roadway scenes at all times.

One of the following is required.

- Reflective vest
- Turnout gear coat or complete turnout gear. **Reflective vest is to be worn over turnout gear when SCBA is not in use.**
- Fire helmet.

3.3 Develop a safe work area.

Personnel must be aware of the 5 components of an accident scene. All 5 of these components must be established as soon as possible at all incident scenes. These components are;

1. **Advance warning area**
2. **Transition area**
3. **Buffer space**
4. **Work Space.**
5. **Termination area**

(Transportation Information Center 2003)

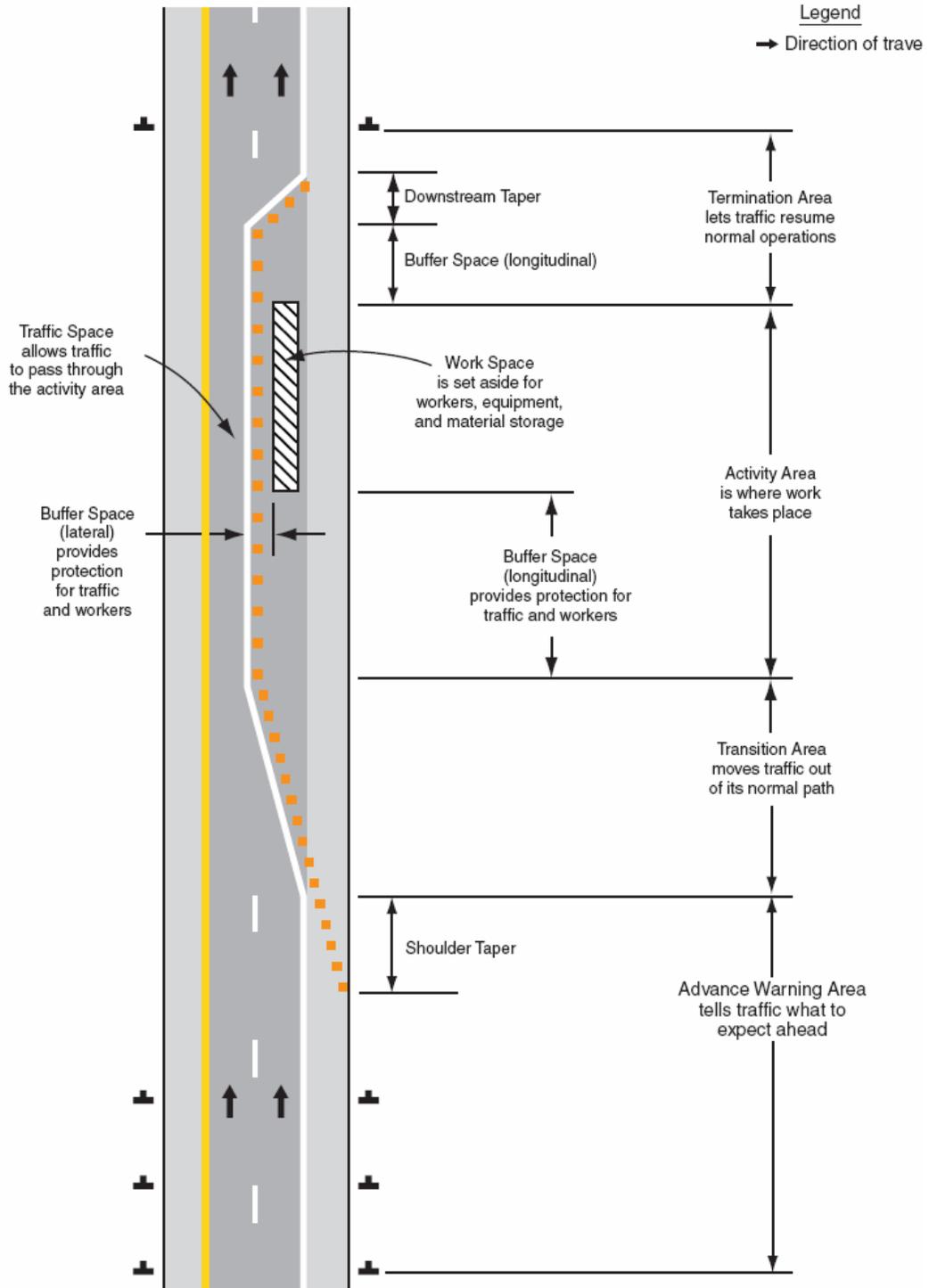


Fig. 1 (MUTCD 2003)

3.3.1 Advance warning area; area set up to warn oncoming traffic of incident scene and danger ahead. This is the motorist first warning of an incident. Warning signs and or squad cars must be placed by using the following table.

- **Low speed / Urban roads** 25-35 mph 300 feet from transition area
- **Moderate speed / Rural roads** 35-45 mph 1000 feet from transition area
- **High speed / Freeways** 45-65 mph 5000 feet from transition area (MUTCD 2003)

3.3.2 Transition area; area used to assist oncoming traffic in navigating the incident scene. **Show them where you want them to go.**

- Cone placement
- Vehicle directional lighting (arrows)
- Squad car and apparatus placement

3.3.3 Buffer space; area used to protect work area, barriers such as large apparatus and squad cars are placed in this area.

Vehicles or other barriers are to be used as protective barrier between personnel and traffic when possible. This can often be accomplished by properly spotting vehicles upon arrival at the scene. **The proper spotting of vehicles along with the use of traffic cones is essential in developing a safe work area.**

When spotting apparatus, drivers should angle vehicle to protect themselves from the traffic. Pumping apparatus should be placed with pump panel protected. Other vehicles should be angled to protect tool access areas or vehicle entry and exit areas. Once the vehicle is spotted and at a complete stop **the driver must turn front tires to 45-degree angle (as far as possible) away from scene.** This will prevent the apparatus from entering the safe work area if struck from behind.

The following may be used for blocking to develop a safe work area.

- Fire Engines
- Ambulances
- Law enforcement vehicles
- Other barriers concrete median (K-rail)
- Other vehicles involved in or at scene
- Traffic barricades

Command as well as other personnel on scene should constantly be aware of changes to safety barriers, for example, law enforcement vehicle or ambulance leaves scene. Safe work area must be maintained until command determines it is no longer necessary.

3.3.4 Work Space; area containing the incident scene, vehicles, patients, equipment.
Command needs to develop as safe of work space as possible.

- Fire apparatus with extrication equipment should be placed at the upstream end of the work space. This will allow for access to equipment and blocking.
- E.M.S. vehicles should be placed at the downstream end of the work space.

3.3.5 Termination area; area where traffic returns to normal

- Area prone for secondary accidents
- Drivers accelerate to make up for long time navigating the incident.
- E.M.S. vehicles leaving the scene may need assistance.

3.4 Scene / work areas should be properly lit. Be aware of the possibility of scene lights blinding traffic.

- Vehicles with special lighting. 1865, 1866, and 1871
- Ambulance scene lights
- Vehicle spot lights
- Vehicle head lights
- Hand lights and portables
- Law enforcement vehicles (Cohen 1999)

3.5 Other considerations;

3.5.1 Assign personnel to a traffic safety / watch sector.

3.5.2 Request additional companies to the scene, to assist in traffic control and scene safety.

3.5.3 Turn off some of the Emergency lighting.

In some cases it has been found that several vehicles with flashing lights cause drivers either to be blinded by the light or diverts their attention from safely navigating the scene. Until recently the “more lights are better” approach was used.

Research has found that colored strobes, revolving beacons, and a multitude of brilliant flashing lights may:

- Blind motorist
- Attract impaired (drunk, drugged, or dozing) motorist.
- Emphasize apparatus but obscure personnel

- Studies have also shown that out of control motorist will steer towards a focus point such as the bright lights of an incident scene. (Cohen 1999)

3.6 Develop an escape plan.

3.6.1 Personnel should maintain awareness to traffic and **prepare an escape plan to a safe area** in the event of a secondary collision.

3.6.2 Personnel should avoid or at least **be aware of situations in which there is no avenue of escape** to a safe area away from traffic.

3.6.3 Safe areas would include:

- Between “K-rails”
- In front of Fire apparatus- away from traffic.
- Concrete bridge structures and concrete culverts.

3.7 Develop a de-commit plan. Command must monitor and control the dismantling of the scene. **Plan to remove personnel, apparatus, victims, bystanders and vehicles safely from scene.**

3.7.1 Considerations while removing personnel and apparatus from scene.

- Ambulance leaving scene with or without traffic control.
- Dismantling your safe work area.
- Blocking apparatus leave the scene
- Picking up traffic cones safely.

3.7.2 Personnel must realize as incident terminates conditions change.

- Safe area many no longer be intact.
- Frustrated drivers increase speed to make up for lost time.
- Frustrated drivers enter gaps in safe work area.
- Vehicles, i.e. ambulances, leaving scene may be too busy watching traffic to see personnel on scene.

Dismantle scene from the “Termination area” backwards to the “Advance warning area”. (MUTCD 2003)

3.8 Beware of “Rubbernecks”. Fire Fighters and EMTs are experienced in working at emergency scenes. Passersby are often times in awe of what they are seeing. **These people are not aware that their presence creates danger for everyone involved at the scene.**

4. ENFORCEMENT:

Primary responsibility for adherence to these guidelines rests with all personnel on the scene. Shift Officers and Acting Officers are responsible for enforcement of these guidelines within their respective shifts. Authority to deviate from these guidelines rests solely with those persons who then bear full responsibility for the results of any deviation.

Oak Creek Fire Department Training Outline



Chapter ? Firefighter Review: Roadway Safety Instructor Guide

Session Reference: 1

Topic: Road way Safety

Level of Instruction: Basic

Time Required: Two Hours

Materials:

- Dry erase board
- Power point projector
- Traffic cones
- Ambulance
- Engine
- Misc. Vehicles

References:

- Department Roadway Safety SOG
 - Wisconsin Transportation Information Center Hand Book
 - Manual on Uniform Traffic Control Devices Part 6
 - US Fire Administration Protecting Emergency Responders on Highways - A White Paper
 - Department Driving Emergency Apparatus SOG
- =====

PREPARATION:

Motivation: Improve Fire Fighter and Occupant Safety

Objective: The student will demonstrate a basic understanding of equipment and techniques for creating a safe work zone on all roadway incidents.

Overview:

- Need for SOG
- History of emergency workers injuries and deaths
- Terminology
- Areas of Roadway scene
- Types of Roadway incidents
- Types of Roads (speed)

- Equipment needed
- Techniques

Session 1

Roadway Safety

The student will demonstrate a basic understanding of equipment and techniques for creating a safe work zone for roadway incidents in a practical setting.

- Describe need for SOG
- Review fire fighter fatality and injury statistics
- Discuss terminology - SOG, Manual on Uniform Traffic Control Devices part 6 (MUTCD), Wisconsin Transportation Information Center Hand Book
- Discuss functions and responsibilities of Command
- Demonstrate types of reflective clothing.
- Discuss areas of safe work zone
 - Advance warning area
 - Transition area
 - Buffer space
 - Work space
 - Termination area
- Describe general layout of scene
- Demonstrate scene layout using department equipment and vehicles
- Walk through and discuss scene layout and functions of equipment
 - Show 5 areas of scene
- Demonstrate scene lighting
- Adjust scene, equipment and lighting as needed, discuss reasons
- Develop escape plans
- Develop a de-commit plan
- Discuss other considerations

- Demonstrate de-commit plan

Review:

- Need for SOG
- History of emergency workers injuries and deaths
- Terminology
- Areas of Roadway scene
- Types of Roadway incidents
- Types of Roads (speed)
- Equipment needed
- Techniques

Instructors Comments:

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EVALUATION:

Reference

Cohen, Howard S. (1999) Protecting Emergency Responders on the Highways, A White Paper with assistance from the U.S. Fire Administration

Transportation Information Center. (January 2003) Guideline for Construction Maintenance, and Utility Operations. University of Wisconsin-Madison

U.S. Department of transportation. Manual on Uniform Traffic Control Devices (MUTCD) (2003) [Electronic version]Retrieved January 20, 2005 from [Http://MUTCD.FHWA.DOT.GOV:/PDFS/2003](http://MUTCD.FHWA.DOT.GOV:/PDFS/2003)

Appendix

The Manual on Uniform Traffic Control Devices (MUTCD) is approved by the Federal Highway Administrator as the National Standard in accordance with Title 23 U.S. Code, Sections 109(d), 114(a), 217, 315, and 402(a), 23 CFR 655, and 49 CFR 1.48(b)(8), 1.48(b)(33), and 1.48(c)(2).

Federal Highway Administration Report Center

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National Committee on Uniform Traffic Laws and Ordinances (NCUTLO)

Alexandria, VA 22314

www.ncutlo.org

Occupational Safety and Health Administration (OSHA)

U.S. Department of Labor

Washington, DC 20210

www.osha.gov

Standard:

The Manual on Uniform Traffic Control Devices (MUTCD) is incorporated by reference in 23 Code of Federal Regulations (CFR), Part 655, Subpart F and shall be recognized as the national standard for all traffic control devices installed on any street, highway, or bicycle trail open to public travel in accordance with 23

U.S.C. 109(d) and 402(a). The policies and procedures of the Federal Highway Administration (FHWA) to obtain basic uniformity of traffic control devices shall be as described in 23 CFR 655, Subpart F. Any traffic control device design or application provision contained in this Manual shall be considered to be in the public domain. Traffic control devices contained in this Manual shall not be protected by a patent, trademark, or copyright, except for the Interstate Shield and any other items owned by FHWA.