North Carolina Department of Labor
Occupational Safety and Health

Raleigh, NC

Field Information System CPL 02-01-054

Subject: Inspection and Citation Guidance for Roadway and Highway Construction Work Zones

A. **Discussion.**

This directive provides guidance for the safe inspection of work sites where employees engaged in construction work on and near roadways or highways are exposed to struck-by hazards from vehicular traffic.

This directive provides guidance for proper citation under 29 CFR 1926, Subpart G Signs, Signals, and Barricades, which incorporates by reference Part VI of the Federal Highway Administration's Manual of Uniform Traffic Control Devices (MUTCD) 1988 Edition, Revision 3 as well as the Millennium Edition, December 2000. This directive also provides general enforcement guidance on issuing citations for NCGS 95-129(1) - General Duty Clause violations.

B. **Action.**

CSHO will use the guidance in this directive when conducting work zone inspection activity. Because NCDOL conducts its own CSHO work zone training, the information in this directive regarding CSHO training will not apply. Currently, there is no approved OSHA work zone training as mentioned in this directive. When OSHA provides information on an approved course, NCDOL will review the curriculum to determine if additional CSHO training is necessary. NCDOL will not have an individual assigned as Traffic Control Coordinator; however trained compliance supervisors will serve this function as appropriate.

It is not standard practice in North Carolinas to have law enforcement present in construction work zones. CSHO's are not expected to contact law enforcement prior to work zone inspections but should coordinate with any law enforcement authority present at the worksite.

References to federal administrators or supervisors will mean the appropriate equivalent NCDOL OSH Division management person. References to the FIRM will mean the NCDOL OSH Division Field Operations Manual. Additionally, the NCDOL OSH Division does not have a de minimis citation category. Any other enforcement policies referenced in this directive which the NCDOL OSH Division has not "adopted" as policy as part of the Field Information System, do not apply.

C. **Effective Date.**

This CPL is effective on the date of signature. It will remain in effect until revised or canceled by the director.

Signed on Original
Ed Lewis
Safety Standards Officer

Signed on Original
Allen McNeely
Director

2/28/2013
Date of Signature

OSHA INSTRUCTION

U.S. DEPARTMENT OF LABOR — Occupational Safety and Health Administration

DIRECTIVE NUMBER: CPL 02-01-054	EFFECTIVE DATE: October 16, 2012

SUBJECT: Inspection and Citation Guidance for Roadway and Highway Construction Work Zones

ABSTRACT

Purpose: This Instruction provides guidance for the safe inspection of work sites where employees engaged in construction work on and near roadways or highways are exposed to struck-by hazards from vehicular traffic.

Scope: This Instruction applies OSHA-wide.

References: See Paragraph IV.

Cancellations: None.

State Impact: Notice of Intent and Equivalency required. (See Paragraph VII).

Action Offices: National, Regional, and Area Offices.

Originating Office: Directorate of Construction.

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By and Under the Authority of

David Michaels, PhD, MPH
Assistant Secretary

Executive Summary

This Instruction is intended to help Compliance Safety and Health Officers (CSHOs) safely inspect roadway and highway construction work zones and to issue consistent citations for violations. Working near fast-moving public traffic presents obvious hazards for CSHOs performing inspections.

This Instruction provides guidance for proper citation under 29 CFR 1926, Subpart G Signs, Signals, and Barricades, which incorporates by reference Part VI of the Federal Highway Administration's Manual of Uniform Traffic Control Devices (MUTCD) 1988 Edition, Revision 3 as well as the Millennium Edition, December 2000. This Instruction also provides general enforcement guidance on issuing citations for § 5(a)(1) General Duty Clause violations.

Significant Changes

This is the first OSHA instruction on inspection procedures in roadway and highway construction work zones.

Table of Contents

I. Purpose. This Instruction provides general enforcement policy and guidance to assist OSHA compliance personnel in safely inspecting work sites where employees are engaged in construction work on and near roadways or highways (hereinafter "work zones"), and in ensuring consistent enforcement of OSHA requirements. This Instruction covers any construction activity on and near roadways or highways, such as road, highway, sidewalk, or utility construction, where public and/or construction vehicular traffic exposes construction workers to struck-by hazards. This Instruction supplements guidance provided in OSHA Instruction CPL 02-00-150, *Field Operations Manual (FOM)*.

II. Scope. This Instruction applies OSHA-wide.

III. Cancellations. None.

IV. References.

A. 23 CFR Part 634, *Worker Visibility*, November 21, 2008.

B. American National Standards Institute, Inc., ANSI/ISEA 107-2004, *American National Standard for High Visibility Safety Apparel and Headwear*, September 15, 2004.

C. American National Standards Institute, Inc., ANSI/ASSE A10.47-2009, *American National Standard for Construction and Demolition Operations: Work Zone Safety for Highway Construction*, February 24, 2010.

D. American Traffic Safety Services Association, *Worker Protection: The Installation and Removal of Traffic Control Devices from Moving Vehicles*, December 2002.

E. National Institute for Occupational Safety and Health, Publication No. 2001-128, *Building Safer Highway Work Zones: Measures to Prevent Worker Injuries From Vehicles and Equipment*, April 2001.

F. National Institute for Occupational Safety and Health Website, *NIOSH Safety and Health Topic: Highway Work Zone Safety – Construction Equipment Visibility*.

G. OSHA Instruction CPL 02-00-150, *Field Operations Manual*, April 22, 2011.

H. OSHA Instruction PER 04-00-004, *Hearing Conservation Program*, June 23, 2008.

I. OSHA Letter of Interpretation #20080829-8611, *Whether use of high-visibility warning garments by construction workers in highway work zones is required*, August 5, 2009.

J. Safety Standards for Signs, Signals, and Barricades, Federal Register 67 FR

57722, September 12, 2002.

K. U.S. Department of Transportation, Federal Highway Administration, *Manual on Uniform Traffic Control Devices*, Part VI, 1988 Edition, Revision 3, September 3, 1993.

L. U.S. Department of Transportation, Federal Highway Administration, *Manual on Uniform Traffic Control Devices*, Part VI, Millennium Edition, December 18, 2000.

M. U.S. Department of Transportation, Federal Highway Administration, *Manual on Uniform Traffic Control Devices*, Part VI, 2009 Edition, January 15, 2010.

V. Expiration Date. This instruction will remain in effect until canceled or superseded by an OSHA Directive.

VI. Action Offices.

A. Responsible and Information Office. Directorate of Construction, Office of Construction Services.

B. Action Offices. Regional and Area Offices—Regional Administrators and Area Directors must ensure that CSHOs performing inspections at roadway and highway construction work zones receive proper training and understand these guidelines.

VII. Federal Program Change. Notice of Intent and Equivalency Required. This Instruction describes a Federal Program Change. States with OSHA-approved State plans must have their own enforcement policies and procedures that are at least as effective as those in this Instruction.

States are required to notify OSHA whether they intend either to adopt policies and procedures identical to those set out in this Instruction, or to adopt or maintain alternative policies and procedures that are at least as effective. If a state adopts different policies and procedures, the state may either post its different policies on its state plan website and provide a link to OSHA or provide an electronic copy to OSHA with information on how the public may obtain a copy from the state. If the state adopts identical policies and procedures, it must provide the date of adoption to OSHA. OSHA will provide summary information on the state responses to this Instruction on its website.

VIII. Definitions. A glossary of definitions and acronyms is located in Appendix A.

IX. Background.

Each year, more than 100 construction work zone crewmembers are killed and over

20,000 are injured.[1] According to the Bureau of Labor Statistics (BLS), from 2007-2009, 253 fatal occupational injuries occurred in highway, street, and bridge construction. In 2010, 68 workers died. Moving vehicles that strike workers on foot cause the majority of work zone deaths.[2]

The 2009 American Recovery and Reinvestment Act (ARRA) resulted in an increase in construction work zones. ARRA authorized approximately $26.6 billion for highway projects. In December 2009, the Federal Highway Administration (FHWA) announced that $21.8 billion had been obligated to 10,000 projects nationwide – and that 6,092 highway projects were underway.

FHWA's Manual on Uniform Traffic Control (MUTCD) includes instruction on the design and use of safe temporary traffic control based on adequate warning and channelization of traffic in order to decrease injury and fatality rates of workers in work zones. A fundamental principle of the MUTCD is that drivers reduce their speeds only if they clearly perceive a need to do so. The FHWA has revised the MUTCD a number of times. In 2002, OSHA updated its standards at 29 CFR 1926 Subpart G Signs, Signals, and Barricades to incorporate by reference two more recent editions of the MUTCD. [67 FR 57722]

This Instruction clarifies existing general enforcement policy in work zones using OSHA's Subpart G – Signs, Signals and Barricades (which incorporates by reference Part VI of the MUTCD, 1988 Edition, Revision 3 or Millennium Edition, December 2000) and Section 5(a)(1) of the Occupational Safety and Health Act of 1970 (OSH Act).

X. Significant Changes. None.

XI. Compliance Personnel Training and Safety.

A. OSHA Traffic Control Coordinator.

Each Region shall designate someone, such as the Construction Coordinator, to serve as the Region's Traffic Control Coordinator (TCC).

1. Roles of the OSHA TCC. The TCC shall have specialized knowledge of temporary traffic control measures in local roadway and highway construction work zones. The TCC shall provide support to investigations related to traffic control, including developing traffic control hazard abatement methods. In addition, the TCC shall assist in ensuring

1 NIOSH Publication No. 2001-128, *Building Safer Highway Work Zones: Measures to Prevent Worker Injuries From Vehicles and Equipment*, p. iii, available at http://www.cdc.gov/niosh/docs/2001-128/pdfs/2001-128.pdf.

2 Data compiled from Bureau of Labor Statistics searchable database for *Occupational Injuries and Illnesses and Fatal Injuries Profiles*, http://www.bls.gov/iif/oshcfoi1.htm. Search limited to worker fatalities in Highway, Street, and Bridge Construction activities.

Compliance Safety and Health Officers (CSHOs) are adequately trained to inspect construction work zones.

2. OSHA TCC Training. The Regional Administrator shall approve appropriate training for the TCC in accordance with OSHA's Policy for Local Occupational Safety and Health Training Courses (TED 01-00-017). The TCC should have at least 40 hours of classroom training or equivalent to equip the TCC with knowledge of typical temporary traffic control application and design, the standards applicable to roadway and highway construction work (including the standards in Part VI of the MUTCD), and the information set forth in this Instruction. The training shall be relevant to each state within the Region's jurisdiction, as state and local laws, standards, and practices vary with respect to temporary traffic controls.

B. CSHO Training.

The training requirements for OSHA compliance personnel who inspect, or supervise the inspection of, construction work zones are as follows:

1. Mandatory CSHO Training. Before performing any inspection at a highway or roadway construction work zone with speed limits *above* 45 mph, the CSHO *must* successfully complete a course for road work zone inspections approved by the OSHA Training Institute (OTI) in accordance with OSHA's Policy for Local Occupational Safety and Health Training Courses (TED 01-00-017). This requirement goes into effect six months after OTI approves a course.

2. Recommended CSHO Training. Before performing any inspection at a work zone with speed limits *at or below* 45 mph, the CSHO should successfully complete a course approved by the OSHA Training Institute for work zone inspections.

C. High-Visibility Safety Apparel and Personal Protective Equipment (PPE).

When performing inspections of work zones, the CSHO shall wear high-visibility apparel and protective equipment as follows:

1. High-Visibility Safety Apparel.

a. During the day, the CSHO shall wear, at a minimum, a Class 2 high-visibility safety vest. (See ANSI/ISEA 107-2004 at 5.2.2, 5.2.7; see also Appendix B, Figure 1, below).

b. During the night, the CSHO shall wear, at a minimum, a Class 3 high-visibility safety coverall/jumpsuit or a Class 3 high-visibility safety jacket and Class E high-visibility pants, or bib overalls. (See ANSI/ISEA 107-2004 at 5.2.1, 5.2.7; see also

Appendix B, Figure 2, below).

2. Head Protection. The CSHO shall wear, at a minimum, a Type I hard hat, in accordance with ANSI Z89.1. For night inspections, the CSHO's hard hat shall have a retroreflective band or other retroreflective material that provides 360-degree visibility.

3. Footwear. The CSHO shall wear safety-toe footwear.

4. Eye and Face Protection. The CSHO shall wear appropriate eye and face protection, such as safety glasses.

5. Hearing Protection. The CSHO shall have ready access to hearing protection while in the work zone. The CSHO shall evaluate noise levels and wear adequate hearing protection as set out in OSHA Instruction PER 04-00-004, *Hearing Conservation Program*.

6. Respiratory Protection. The CSHO shall wear respiratory protection where appropriate. As explained in Chapter 3, Paragraph II.D.2 of the FOM, the CSHO should conduct a pre-inspection evaluation for potential exposure to chemicals, coordinating with the Regional or Area Office's industrial hygienists, if necessary. The CSHO should determine the presence of any airborne contaminants and, when possible, stay upwind. If airborne contaminants are present, the CSHO shall make a health referral.

D. Other Equipment.

The CSHO shall use the following equipment, if needed:

1. Camera. Using a flash can distract or blind motorists, equipment operators and other workers in the work zone. The CSHO should avoid taking pictures with the flash when directing the camera towards oncoming drivers.

2. Video Camera. The CSHO should be mindful of passing motorists and be careful when using any lighting. Although additional lighting is helpful when videotaping at night, the light may distract or blind passing motorists, equipment operators, or workers.

3. Flashlight. The CSHO shall carry a flashlight for night inspections.

4. Measuring Wheel/Tape Measure. In addition to a standard tape measure, a large-diameter measuring wheel is useful for the longer distances in highway work zones. Digital measuring wheels and tape measures also reduce exposure time in the work zone.

5. Vehicle and Amber Beacon Light. The Area Office shall issue a rotating amber beacon light (or equivalent) to place atop each vehicle that will enter a work zone. (See Pre-Inspection Procedures, below, for further guidance on the use of the beacon light).

E. Arrival, Inspection, and Departure Safety Procedures.

1. General Procedures.

a. Where feasible, two CSHOs should conduct inspections of larger work zones as the passenger will be free to observe working conditions.

b. The CSHO should communicate the work zone's location to the Area Office once it has been identified.

c. Training should enable the CSHO to observe and identify the four typical components of a roadway work zone while driving by:

i. The advance warning area;

ii. The transition area;

iii. The activity area (including buffer spaces); and

iv. The termination area.

2. Arrival at the Work Zone. Before beginning the inspection, the CSHO shall take the following steps for personal safety:

a. Initial Drive-By(s). The CSHO(s) shall initially drive through the entire work zone, preferably in both directions, to observe the work zone and determine where to safely pull off and park.

b. Single CSHO Drive-By. When only one CSHO conducts the inspection, they shall focus on driving and locating the route into the active work zone to park. The CSHO should observe the surrounding areas and driving conditions, including the general layout of the work zone and location of temporary traffic controls. Hazards and potential violations should be identified *only* when the opportunity exists for the CSHO to look around *and* drive safely.

c. Two (or More) CSHO Drive-By. When two or more CSHOs conduct the inspection, one CSHO shall focus on driving while the other observes the work zone.

d. CSHO Checklist:

i. Are traffic controls in place? Appendix C illustrates four component areas in a typical lane closing. Section 6C-2 of the MUTCD provides further details. The CSHO should be mindful that work zones vary; some have no transition area, such as when work takes place on the shoulders or behind barriers.

During the drive-by, the CSHO should determine whether:

- Advance warning signs are in place.
- Transition area tapers are at a safe distance.
- Buffer spaces exist (an optional work zone component). Vehicles or equipment should not occupy buffer spaces (longitudinal or lateral).
- Cones are spaced correctly.
- The control devices indicate a clear path of travel.

For the CSHO's safety, the CSHO should pay particular attention to:

- Dangerous conditions that would require abrupt driving maneuvers.
- The posted speed limit and actual speeds of passing traffic.
- The presence of skid marks, as potential evidence of unclear or confusing traffic controls.

ii. What type of work? The type of construction work will help determine the CSHO's safety and inspection strategy. For example, during paving operations, the CSHO may have to park at the end of the work zone because of closure of long stretches of roadway. If the CSHO observes fall or excavation hazards, the inspection should address these hazards first.

Certain construction work may create respiratory hazards, such as silica dust exposure from cutting concrete. When the type of construction work potentially exposes the CSHO to such hazards, they shall wear appropriate respiratory

protection.

iii. Where is a safe place to pull off and park? During the initial drive-by, the CSHO should identify a safe area to pull off and park, in order to don any necessary PPE, whether at the work zone or at another location.

- The CSHO should consider parking by the general contractor's trailer, as it is often located in a more protected area of the worksite.
- The CSHO should look for an employee parking area or the material staging/storage area.
- If these are unavailable, the CSHO should consider a parking area that is beyond the worksite, and away from public traffic lanes and construction traffic.
- If no other safe parking is available, then the CSHO may park within the work zone.

When locating a parking spot within the work zone, the CSHO shall take the following precautions:

- Do not park in the advance warning area, the transition or taper area, or in an area that requires crossing lanes open to public traffic.
- Stay clear of buffer spaces, if any. The buffer space is for the separation of traffic flow from the work activity or a potentially hazardous area and provides space for an errant vehicle. Work activity should not occur in this space and vehicles should not be parked there.
- Do not park in front of shadow trucks or other impact attenuator vehicles (i.e., between the attenuator or shadow vehicle and approaching traffic, or in front of the front bumper of the attenuator or shadow vehicle).
- Do not park in an area that interferes with work activity or the internal traffic controls in the work zone.
- Park the vehicle behind barriers whenever possible.

If no barrier exists, park at a safe distance from the public traffic lane or construction traffic.

- Plan an exit strategy for leaving the work zone and for emergencies.

iv. Putting on PPE. The CSHO must have on adequate PPE *prior* to entering the work zone.

v. Amber beacon light. After donning PPE, the CSHO shall place a rotating amber beacon light (or equivalent) on top of the vehicle. However, the CSHO shall not turn on the beacon light at this time.

vi. Looping around. With the amber beacon light (turned off) atop the vehicle, the CSHO should next pull out of the offsite parking spot and drive to the work zone.

vii. Pulling off the roadway. Upon sight of the first advance warning sign (if any) and in advance of the work zone, the CSHO shall then turn on the amber beacon light atop the vehicle. The CSHO should pull off the roadway or highway at the predetermined site by using closed lanes or the shoulders to decelerate incrementally. If available and safe, the CSHO should use the contractor/visitor entrance and continuously observe rear traffic.

viii. Parking for the inspection. At the opening conference, the CSHO should verify with the employer whether the vehicle is parked in a safe place.

e. Approaching the Activity Area. To ensure personal safety while walking to the work zone activity area, the CSHO shall:

i. Face traffic as much as possible;

ii. Stay as far away from the live lane of traffic as possible;

iii. Stay away from work activity;

iv. Stay out of construction equipment "blind spots";

v. Stay out of the swing radius of construction equipment;

vi. Stay outside a "safety circle" around construction equipment. If the CSHO cannot see the operator, the operator cannot see the CSHO;

vii. Only approach equipment after the operator acknowledges the CSHO's presence (eye contact), stops the equipment, and indicates it is safe to approach;

viii. Be aware of the presence of construction equipment in operation throughout the work zone;

ix. Not stand in the backup (reverse) zone of any vehicles or construction equipment. Backup alarms may be inoperable or not provide sufficient warning; and

x. Follow internal traffic controls, including instructions from spotters, signalers, flaggers, or observers.

3. Inspection.

a. While performing the inspection, the CSHO shall take the following precautions:

i. Be alert to traffic at all times.

ii. Have an escape plan in case errant vehicles enter the work zone.

iii. Never step outside of the work zone into the traveled way.

iv. Interviews. Whether onsite or offsite, the CSHO shall perform interviews in a safe or protected area (e.g., in a car well off the roadway).

v. The CSHO shall not approach workers performing flagger operations. Prior to interviewing a flagger, ensure that a replacement flagger is available and arrange with site personnel for a time and safe place to interview the flagger in an area away from the flagger station.

b. Upon arrival at the activity area of the work zone, the CSHO shall perform the inspection as set out in Chapter 3 of the FOM.

4. Departure from the Work Zone.

a. Returning to the Vehicle. The CSHO should ask if the contractor has an escort plan in place that covers moving vehicles in and out of the work zone. If a plan exists, the CSHO should request an escort (ride) back to the CSHO's vehicle and traffic assistance when pulling out of the parking area. If there is no escort plan and if local law enforcement is on site, the CSHO should request

an escort from the officer back to the CSHO's vehicle and assistance when pulling out. (See Paragraph XI.F.3, Law Enforcement, below).

b. Pulling Out the Vehicle. Before pulling out of the parking spot, the CSHO should turn on the rotating amber beacon light and assess the vehicle's acceleration ability, traffic flow and posted speed limit. When pulling out, the CSHO should proceed in the closed lanes, if any, or the shoulders for as long as possible in order to accelerate to an appropriate merging speed.

Once outside of the work zone, the CSHO should turn off the beacon light, although the light may remain on top of the vehicle. If the CSHO wants to remove his or her PPE, the CSHO shall first find a safe, *offsite* place to park.

F. Coordination with Other Governmental Entities.

1. Local Traffic Engineering Departments. OSHA recommends that Area Offices coordinate with the local traffic engineering (or equivalent) departments which are a valuable source of traffic-related information, such as collision data, records of valid permits, traffic patterns, and schedules of roadway construction. In addition, many jurisdictions require that the city or county traffic engineer review and approve employer traffic control plans.

2. Department of Transportation (DOT). OSHA recommends that Area Offices coordinate with the corresponding federal and state DOTs. Many state DOTs also act as the general/controlling contractor on state projects, and may have designed the traffic control plans for these projects.

State DOTs responsible for administering the FHWA MUTCD or their adopted MUTCD standards can provide Area Offices and the CSHO with assistance by answering questions and providing information about local application of the MUTCD.

3. Law Enforcement.

NOTE: This section does not apply to fatality investigations. For fatality investigations, follow the procedures set out in Chapter 11, Section II, of the FOM.

OSHA recommends that Area Offices coordinate with local law enforcement departments, particularly the traffic divisions of police and county sheriff's departments.

a. Initiating Coordination. The Area Director or designee Office

should meet in person with a representative of the law enforcement agency to discuss OSHA's objectives with respect to inspecting work zones and CSHO safety. The Area Director should establish this relationship through a written statement of understanding or partnership, such as an informal Memorandum of Understanding and maintain a current list of contact phone numbers.

b. On-Site Coordination. Large construction projects on major highways and arteries will often have police officers onsite to provide assistance with traffic control and safety.

The CSHO should consider contacting the local police department before arriving at the work zone to request a police escort into or out of the work zone in potentially dangerous environments like rainy, slippery conditions, or high traffic congestion.

NOTE: Local coordination must not give advance notice of the inspection to the employer, as explained in Chapter 3, Paragraph II.E of the FOM.

XII. General Inspection Procedures.

Inspections of roadway and highway construction work zones have two aspects: inspections of the construction work and inspections of the temporary traffic controls.

A. Inspecting the Construction Work.

Inspections of roadway construction work are generally no different from inspections of other construction sites. This instruction covers any construction work where employees are working near traffic or other roadway conditions. Upon arrival at the activity area of the work zone, the CSHO should perform the inspection as set out in Chapter 3 of the FOM. The CSHO may stop and potentially open an inspection of a roadway or highway construction work zone after observing potential violations from the public way.

The CSHO should pay particular attention, however, to potential violations of the following conditions commonly found at construction work zones:

- Noise (§ 1926.52)
- Dust (Silica) (§ 1926.55)
- Illumination (§ 1926.56)
- Personal Protective Equipment (§§ 1926.95 et seq.)
- Scaffolds (§§ 1926.450 et seq.), particularly during bridge construction

- Fall Protection (§§ 1926.500 et seq.)
- Equipment (§§ 1926.600 et seq.)
- Excavations (§§ 1926.650 et seq.)
- Precast / Poured Concrete (§§ 1926.700 et seq.)
- Steel Erection (§§ 1926.750 et seq.)
- Cranes (§§ 1926.1400 et seq.)

B. Inspecting the Temporary Traffic Controls.

Highway construction work zones require the use of temporary traffic control signs, devices, and procedures. When inspecting these work zones, the CSHO should refer to the specific provisions in Part VI of the MUTCD for more detailed inspection guidance.

If OSHA is conducting an inspection following a worksite accident or there is an independent basis for believing that a hazard exists, the CSHO shall request a copy of the traffic control plan (TCP) for the work zone during the opening conference, in addition to other normally requested documentation. An employer's TCP describes which temporary traffic control measures it uses for facilitating road use through a work zone. The degree of detail in a TCP depends entirely on the complexity of the situation. TCPs are not required for every work zone, but the general contractors of most major roadway construction projects will have detailed TCPs in place. Many local jurisdictions require approved TCPs for construction work on their public roadways. In general, the traffic control engineer for the jurisdiction that owns the roadway designs or approves the TCP according to MUTCD specifications. Smaller, short duration jobs may call for atypical MUTCD application. The TCP should be part of the contract documentation.

The CSHO should refer to the TCP to assist in establishing employer recognition of hazards and the feasibility of abating those hazards, including for § 5(a)(1) violations. For example, TCPs will often identify the location in the work zone where temporary pavement markings should be. Should a hazardous working condition exist due to the employer's failure to use temporary pavement markings, the CSHO may then refer to the TCP as evidence of employer recognition of the hazard and the feasibility of abatement.

XIII. Standards and Citation Policy.

A. Traffic signs - 29 CFR § 1926.200(g)(1)

Section 1926.200(g)(1) (*Traffic signs*) provides: "Construction areas shall be posted with legible traffic signs at points of hazard."

This section establishes a general requirement for employers to post legible traffic signs to warn road users and workers of hazardous conditions that can be present

in construction areas. Cite § 1926.200(g)(1) when NO traffic sign warns of a point of hazard *or* when a traffic sign at a point of hazard is illegible.

CSHOs may use provisions of the MUTCD, including non-mandatory provisions, to identify points of hazard in construction areas that the employer, the industry, or where the CSHO's judgment recognizes a dangerous condition.

CSHOs should reference the source, whether the MUTCD or another source, used to identify a point of hazard when citing § 1926.200(g)(1). (See Appendix D for sample citation language).

B. Traffic control signs and devices - 29 CFR § 1926.200(g)(2)

Section 1926.200(g)(2) provides: "All traffic control signs or devices used for protection of construction workers shall conform to Part VI of the Manual of Uniform Traffic Control Devices …, 1988 Edition, Revision 3…or Part VI of the Manual on Uniform Traffic Devices, Millennium Edition, which are incorporated by reference…."

This section incorporates two editions of the MUTCD by reference. Employers must comply with one or the other. These are 1988 Edition, Revision 3 and the Millennium Edition.

Cite § 1926.200(g)(2) for violations of *mandatory* ("shall" or "must") MUTCD provisions pertaining to signs or devices used for protection of construction workers and reference the *mandatory* provision(s) of the MUTCD.

When OSHA revised § 1926.200(g)(2) in 2002, it stated, "OSHA is amending the safety and health regulations for construction to adopt and incorporate Revision 3 (and the option to comply with the Millennium Edition)" 67 FR 57722-01. Therefore, by default, cite the 1988 Edition, Revision 3.

Note: Only cite the Millennium Edition when the employer indicates this is the Edition used at the work zone.

The most recent edition of the MUTCD is the 2009 Edition. Under OSHA's *de minimis* policy, compliance with more current DOT requirements, or with more current ANSI or other applicable nationally recognized consensus standards, is acceptable so long as such standards are at least as protective as the OSHA requirement.

C. Signaling (flagging) - 29 CFR § 1926.201(a)

Section 1926.201(a) provides: "Signaling by flaggers and the use of flaggers, including warning garments worn by flaggers, shall conform to Part VI of the Manual on Uniform Traffic Control Devices, (1988 Edition, Revision 3 or the Millennium Edition), which are incorporated by reference in § 1926.200(g)(2)."

Cite § 1926.201(a) for violations of *mandatory* MUTCD standards pertaining to flagging and reference the *mandatory* provision(s) of the MUTCD.

D. Barricades and barriers - 29 CFR § 1926.202

Section 1926.202 provides: "Barricades for protection of employees shall conform to Part VI of the Manual on Uniform Traffic Control Devices, (1988 Edition, Revision 3 or the Millennium Edition), which are incorporated by reference in § 1926.200(g)(2)."

Cite § 1926.202 for violations of *mandatory* MUTCD standards pertaining to the use of barricades and reference the *mandatory* provision(s) of the MUTCD.

Section 1926.203 defines "barricade" as "an obstruction to deter the passage of persons or vehicles." The Type I, II, and III barricades specified in the MUTCD fall within this definition, as they deter traffic by restricting access to the roadway. In addition, the temporary/portable barrier systems described in the MUTCD are included in the § 1926.203 definition of "barricade," because these systems can be used as a channelizing and/or physical deterrent of traffic. Therefore, cite violations of *mandatory* MUTCD standards pertaining to either barricades or barriers under § 1926.202.

E. Citation Policy.

Where appropriate, follow the procedures for combining and grouping violations as set out in Chapter 4, Section X of the FOM. (See Appendix D for sample citation language).

F. Clarification of Standards.

The following clarifications of select provisions of the MUTCD and OSHA standards will assist the CSHO in conducting inspections and issuing citations. Appendix D contains sample citation language to assist the CSHO in drafting citations.

When citing *mandatory* (shall or must) provisions of the MUTCD, this directive lists the section in the 1988 Edition, Revision 3 first, followed by the corresponding section in the Millennium Edition. Note that each edition of the MUTCD may have different requirements or may use different language to require the same thing. Therefore, when citing § 1926.200(g)(2) and the MUTCD, use the specific language of the edition cited.

1. Advance Warning Area. The advance warning area is the section of highway used to inform road users about what to expect next. Section 1926.200(g)(1) requires advance warning signs at all points of hazard.

   Section 1926.200(g)(2) requires that all signs and devices used to protect

construction workers conform to the MUTCD. The MUTCD explains the function, design and application, and spacing requirements and recommendations for advance warning signs and gives examples of signs to place at points of hazard (Section 6F-1b/6F.15).

The following are examples of when the standard requires advance warning:

a. Closed Shoulder.

When no advance warning signs are used at points of hazard to indicate a closed shoulder, cite § 1926.200(g)(1). Reference Section 6G-2b(2)/6G.06 of the MUTCD.

When advance warning signs are used for a closed shoulder, but do not conform to the *mandatory* ("shall" or "must") provisions of the MUTCD, cite § 1926.200(g)(2) and Section 6F-1b(2)/6F.15 of the MUTCD.

b. Work on the Traveled Way.

When no advance warning signs are used at points of hazard to indicate work on the traveled way, cite § 1926.200(g)(1). Reference Section 6G-2b(4)/6G.03 of the MUTCD.

When advance warning signs are used for work on the traveled way, but do not conform to the *mandatory* ("shall" or "must") provisions of the MUTCD, cite § 1926.200(g)(2) and Section 6F-1b(2)/6F.15 of the MUTCD.

c. Closed Lanes.

When no advance warning signs are used at points of hazard to indicate work on closed lane(s), cite § 1926.200(g)(1). Reference Section 6F-1b(2)/6F.21 of the MUTCD.

When advance warning signs are used for work on closed lane(s), but do not conform to the *mandatory* ("shall" or "must") provisions of the MUTCD, cite § 1926.200(g)(2) and Section 6F-1b2/6F.15 of the MUTCD.

2. Transition Area for Mobile Operations.

In mobile operations, the transition area moves with the work space. When no signs, channelization devices, or other appropriate warning devices are used at points of hazard to indicate a transition area during a mobile operation, cite § 1926.200(g)(1). Reference Section 6C-2b/6C.05

of the MUTCD.

When advance warning signs are used during mobile operations, but do not conform to the *mandatory* ("shall" or "must") provisions of the MUTCD, cite § 1926.200(g)(2) and Section 6F-1b(2)/6F.15 of the MUTCD.

When channelizing devices are used during mobile operations, but do not conform to the *mandatory* ("shall" or "must") provisions of the MUTCD, cite § 1926.200(g)(2) and Section 6F-5a/6F.55 (channelizing devices), Section 6F-5b/6F.56 (cones), Section6F-5c/6F.57 (tubular markers), Section 6F-5d/6F.58 (vertical panels), Section 6F-5e/6F.59 (drums), and/or Section 6F-5h/6F.63 (temporary raised islands). Cite § 1926.202 for improper use of barricades in a transition area for mobile operations.

3. Pedestrian/Worker Safety. The MUTCD includes several standards that provide for the safety of roadway construction workers who must move around or within the work zone "afoot." When signs and devices to protect pedestrians AND workers do not conform to the *mandatory* ("shall" or "must") provisions of the MUTCD, cite § 1926.200(g)(2) and the relevant Section 6D MUTCD standard.

4. Knowledgeable Persons and Engineering Judgment.

When a qualified/knowledgeable person has not applied the provisions regarding signs and devices (including signaling by flaggers and the use of barricades) used to protect workers after appropriate engineering studies and with sound engineering judgment, cite the appropriate 1926 standard (§ 1926.200(g)(2), 1926.201(a), or 1926.202) and Section 6D-2/6D.01 of the MUTCD.

5. High-Visibility Clothing. Cite § 1926.201(a) and Section 6E-3/6E.02 of the MUTCD when *flaggers* lack the requisite high-visibility clothing. Cite § 1926.651(d) when workers engaged in excavation activities are exposed to traffic. For all other workers exposed to vehicular traffic who are not wearing appropriate high-visibility clothing, § 5(a)(1) of the OSH Act would apply (see, Section 5(a)(1) General Duty Clause Citations, below).

6. Flagger Procedures. Section 6E-5/6E.04 of the MUTCD sets out the appropriate flagger hand-signaling (flagging) procedures. When used, flaggers must perform these procedures in the prescribed manner. Cite § 1926.201(a) and Section 6E-5/6E.04 of the MUTCD when signaling by flaggers and the use of flaggers do not conform to the procedures set out in the MUTCD.

A flagger's improper hand-signaling may be evidence that the employer has failed to instruct the flagger properly in the recognition and avoidance

of unsafe work zone conditions. The CSHO should interview employees and the employer to determine if employees received adequate training regarding identified hazards. If training was not provided, the CSHO shall cite the construction training standard, § 1926.21(b)(2), and not § 1926.201(a).

7. Protective vehicles/shadow trucks. If used, protective vehicles must be located properly in advance of the workers and/or equipment they are protecting. Vehicles should not be able to travel around the protective vehicle and strike the workers and/or equipment. When protective vehicles are used but are not located properly in advance of workers and/or equipment, cite § 1926.200(g)(2) and Section 6F-8a(2)/6F.76 of the MUTCD.

XIV. Construction vs. General Industry (Maintenance).

A. Definition of Construction. "Construction work" is defined in both § 1910.12(b) and in § 1926.32(g) as "work for construction, alteration, and/or repair, including painting and decorating." In contrast, "maintenance" can be defined as making or keeping a structure, fixture, or foundation (substrates) in proper condition in a routine, scheduled, or anticipated fashion. Make the distinction between construction and maintenance on a case-by-case basis, taking into account all information available at the work zone.

Employer or industry use of the term "road maintenance" is not dispositive. Many road maintenance activities (e.g., crack sealing, overlaying, surface treatments) are considered construction and not maintenance. Construction work is not limited to new construction, but can include the repair of existing roads or the replacement of structures and their components (OSHA letters of interpretation: Stanley, 1994; Ellis, 1999; Tindell, 1999; Knobbs, 2003). Factors to consider include: (1) whether the task improves the original condition or preserves it (improvement indicates construction, preservation indicates maintenance), (2) whether the task is scheduled at regular intervals (indicating maintenance), (3) the scale and complexity of the task (large scale tasks and objects indicate construction), and (4) the system-wide impact of the task (major disruptions indicate construction).

B. Examples. Following are some examples of situations in which the issue of road construction vs. road maintenance may arise.

1. Moving an existing power line and supporting utility poles, even without alteration or replacement of parts, a few feet to the side to allow for the widening of a roadway is a layout "alteration" and is considered construction. If longer power lines (with longer power line spans) or different sized poles (e.g., 35-foot to 40-foot pole replacement) are installed to cross the widened span of a roadway, then this operation is

also construction due to the changes in design specification. Part 1926 and the MUTCD cover temporary traffic controls set up in these situations.

2. The replacement of a utility pole with a new utility pole to reduce the number of power lines or transformers is an "improvement" and is therefore construction. Part 1926 and the MUTCD govern temporary traffic controls set up in this scenario. In contrast, the mere replacement of a single rotted wooden utility pole with a newer wooden utility pole is a one-for-one replacement and considered maintenance work.

3. Scheduled touch-up and periodic spot painting to maintain a small portion of roadway is not construction. Thus, pavement striping operations done on a relatively short stretch of roadway in order to refine existing, faded pavement stripes are maintenance activities not covered by the MUTCD. However, putting down new pavement stripes where none existed before is construction. Additionally, a complete re-striping job of a two-mile stretch of roadway is construction, and temporary traffic controls used for such operation is covered by Part 1926 and the MUTCD.

4. Pavement overlaying (resurfacing) operations, whether bonded or unbonded, are typically construction activities as it is a procedure designed to improve the condition of existing pavement. In contrast, spray-patching of minor potholes is generally maintenance because the activity is designed to keep the roadway in proper condition. Minor potholes are anticipated roadway defects that require routine maintenance. Accordingly, Part 1926 and the MUTCD apply to overlaying operations, but not to the spray-patching of individual minor potholes.

5. Bridge rehabilitation projects are usually construction activities, although the specific activity performed ultimately controls. Bridge rehabilitations are typically large-scale and complex projects, often involving engineering analysis for the repair of stay cables, floor beams, and substructures. Therefore, Part 1926 and the MUTCD usually cover the use of temporary traffic controls on bridge rehabilitation projects.

XV. Violations of §1926.20(b)(1) and 1926.21(b)(2).

A. Section 1926.20(b)(1).

"It shall be the responsibility of the employer to initiate and maintain such programs as may be necessary to comply with this part."

CSHOs should consider citing § 1926.20(b)(1) if the presence of a particular hazard indicates that the employer has not reasonably conformed its safety program to known duties, including measures for detecting and correcting hazards that a reasonable similar employer would adopt.

B. Section 1926.21(b)(2).

"The employer shall instruct each employee in the recognition and avoidance of unsafe conditions and the regulations applicable to his [or her] work environment to control or eliminate any hazards or other exposure to illness or injury."

CSHOs should consider citing § 1926.21(b)(2) if an employer fails to instruct its employees in the recognition of hazards that reasonable similar employers would know to potentially exist based on work operations.

Note: The CSHO may cite these standards independently, but they are at times grouped with the citation of a standard that addresses a specific hazard.

XVI. Section 5(a)(1) General Duty Clause Citations.

The CSHO should follow the guidance in Chapter 4, Section III of the FOM for issuing §5(a)(1) citations and consult with the Regional Solicitor prior to issuance.

The following are examples of conditions where a §5(a)(1) citation may be appropriate:

- Setting and Retrieving Traffic Cones (Devices) -- exposes employees to the hazards of being struck by public traffic or construction vehicles and equipment and/or falling from construction vehicles or equipment.
- Crossing Live Lanes of High-Speed Traffic -- exposure to the hazard of being struck by public traffic or construction vehicles and equipment.
- High-Visibility Apparel -- employees may be exposed to the hazard of being struck by public traffic or construction vehicles and equipment. A citation under § 5(a)(1) of the OSH Act may be issued for struck-by hazards resulting from the failure of employers to ensure that workers (except flaggers[3] and workers engaged in excavation activities[4]) exposed to public and construction traffic wear high-visibility safety apparel. See OSHA's letter of interpretation #20080829-8611 dated August 5, 2009: *Whether use of high-visibility warning garments by construction workers in highway work zones is required*.[5]

3 Flaggers are required to wear high-visibility apparel under § 1926.201(a) and Section 6E-3 of the MUTCD. (See Paragraph XIII.F.5, High-Visibility Clothing, above).

4 Section 1926.651(d) (Subpart P – Excavations) states that employees exposed to public vehicular traffic shall be provided with, and shall wear, warning vests or other suitable garments marked with or made of reflectorized or high-visibility material.

5 OSHA letter of interpretation #20080829-8611 is available at

The following are examples of documentation the CSHO should use to establish hazard recognition:

- Instructions and specifications in the operator's manual of a construction vehicle or piece of equipment.
- ANSI/ASSE A10.47-2009, *Work Zone Safety for Highway Construction*.
- ATSSA brochure *Worker Protection: the Installation and Removal of Traffic Control Devices from Moving Vehicles*.
- Obvious hazards that an employer should recognize.
- Hazards addressed in the 2009 Edition of the MUTCD that are not addressed in Part VI of the 1988 Edition, Revision 3 or Part VI of the Millennium Edition.

(Note: If all the elements of a 5(a)(1) violation cannot be documented for the potential hazards present, a Hazard Alert letter shall be issued to the employer).

https://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=INTERPRETATIONS&p_id=27155.

Appendix A: Glossary of Industry Terms

Acronyms

ARRA	American Recovery and Reinvestment Act of 2009
ANSI	American National Standards Institute, Inc.
ASSE	American Society of Safety Engineers
ATSSA	American Traffic Safety Services Association
AVD	Alleged Violation Description
CFR	Code of Federal Regulations
CPL	Enforcement and Compliance Directive
CSHO	Compliance Safety and Health Officer
DOT	Federal or State Department of Transportation
FHWA	Federal Highway Administration
FOM	OSHA Instruction CPL 02-00-150, *Field Operations Manual*, April 22, 2011
ISEA	International Safety Equipment Association
MUTCD	Part VI of the Manual on Uniform Traffic Control Devices, 1988 Edition, Revision 3 or the Millennium Edition
NIOSH	National Institute for Occupational Safety and Health
OSHA	Occupational Safety and Health Administration
OSH Act	Occupational Safety and Health Act of 1970
PPE	Personal Protective Equipment
TCC	OSHA Traffic Control Coordinator
TCP	Traffic Control Plan
TMA	Truck-Mounted Attenuator

Definitions

These definitions should familiarize CSHOs with common terms used in the MUTCD. Definitions are from The Manual on Uniform Traffic Control Devices (MUTCD), 2009 Edition. A comprehensive list of terms used in the MUTCD is located in the 2009 Edition.

Activity Area: The section of the highway where the work activity takes place. It is comprised of the work space, the traffic space, and the buffer space.

Advance Warning Area: The section of highway where road users are informed about the upcoming work zone or incident area.

Channelizing Devices: The function of channelizing devices is to warn road users of conditions created by work activities in or near the roadway and to guide road users. Channelizing devices include cones, tubular markers, vertical panels, drums, barricades, and longitudinal channelizing devices.

Flagger: A person who actively controls the flow of vehicular into and/or through a temporary traffic control zone using hand-signaling devices or an Automated Flagger Assistance Device (AFAD).

Freeway: A divided highway with full control of access.

Highway: A general term for denoting a public way for purposes of vehicular travel, including the entire area within the right-of-way.

Pedestrian: A person afoot, in a wheelchair, on skates, or on a skateboard.

Retroreflectivity: A property of a surface that allows a large portion of the light coming from a point of source to be returned directly back to a point near its origin.

Roadway: The portion of a highway improved, designed, or ordinarily used for vehicular travel and parking lanes, but exclusive of the sidewalk, berm, or shoulder even though such sidewalk, berm, or shoulder is used by persons riding bicycles or other human-powered vehicles. In the event a highway includes two or more separate roadways, the term roadway as used herein shall refer to any such roadway separately, but not to all such roadways collectively.

Roadway Work Zone (includes "**Highway Work Zone**" and "**Temporary Traffic Control Zone**"): An area of a highway where road user conditions have changed because of a work zone or incident by the use of temporary traffic control devices, flaggers, police, or other authorized personnel.

Rural Highway: A type of roadway normally characterized by lower volumes, higher speeds, few turning conflicts, and less conflict with pedestrians.

Sidewalk: That portion of a street between the curb line, or the lateral line of a roadway, and the adjacent property line or on easements of private property that is paved or improved intended for use by pedestrians.

Sign: Any traffic control device that is intended to communicate specific information to road users through a word or symbol legend. Signs do not include traffic control signals, pavement markings, delineators, or channelization devices.

Temporary Traffic Control Zone: See "Roadway Work Zone," above.

Termination Area: The section of the highway where road users are returned to their normal driving path.

Traffic: Pedestrians, bicyclists, ridden or herded animals, vehicles, streetcars, and other conveyances singularly or together while using for purposes of travel any highway or private road open to the public.

Traffic Control Device: A sign, signal, marking, or other device used to regulate, warn, or guide traffic, placed on, over, or adjacent to a street, highway, private road open to public travel, pedestrian facility, or shared-use path by authority of a public agency having jurisdiction, or, in the case of a private road open to public travel, by authority of the private owner or private official having jurisdiction.

Transition Area: That section of highway where road users are redirected out of their normal path.

Traveled Way: The portion of the roadway for the movement of vehicles, exclusive of the shoulders, berms, sidewalks, and parking lanes.

Urban Street: A type of street normally characterized by relatively low speeds, wide ranges of traffic volumes, narrower lanes, frequent intersections and driveways, significant pedestrian traffic, and more businesses and houses.

Vehicle: Every device in, upon, or by which any person or property can be transported or drawn upon a highway, except trains and light rail transit operating in exclusive or semi-exclusive alignments. Light rail transit operating in a mixed-use alignment, to which other traffic is not required to yield the right-of-way by law, is a vehicle.

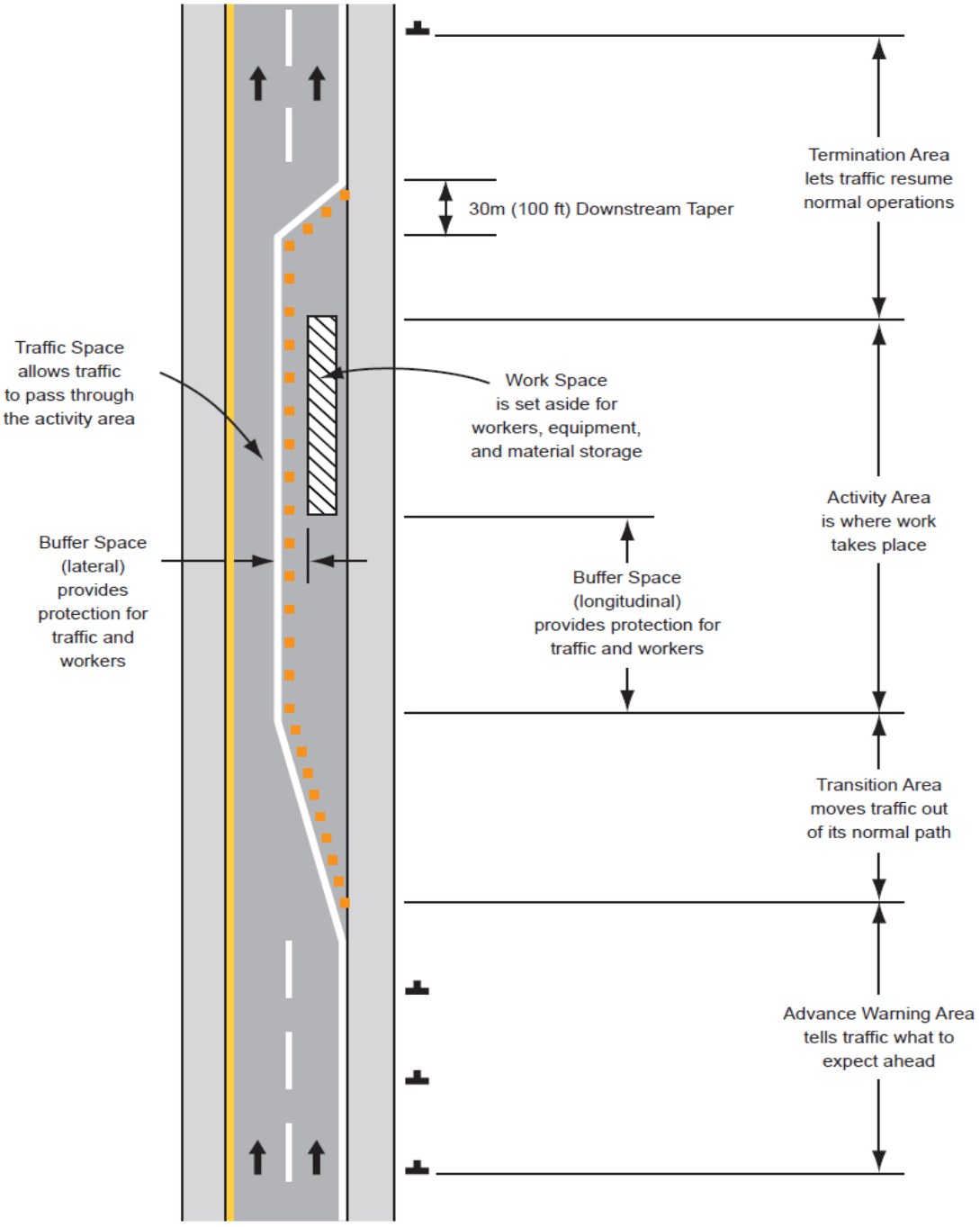
Warning Sign: A sign that gives notice to road users of a situation that might not be readily apparent.

Appendix B: High-Visibility Apparel

Figure 1 – *Daytime Vest-Wear*

Figure 2 – *Night Vest-Wear*

Appendix C: Component Parts of a Roadway Work Zone (Lane Closing)



Manual on Uniform Traffic Control Devices, Part VI, 2009 Edition, January 15, 2010.

Appendix D: Sample SAVEs and AVD

NOTE: The sample Standard Alleged Violation Elements (SAVEs) and Alleged Violation Description (AVD) language provided below is a model to assist the CSHO in developing citations and OSHA-1B worksheets. Take care to tailor citations to reflect the conditions found at particular construction work zones and to give notice to cited employers of the violative conditions.

Scenario: The CSHO performs a night inspection of a highway construction work zone. The two left lanes and the left shoulder of a four-lane highway are closed for repaving. The right lanes are still open to road users. Approximately two hundred feet in advance of the work zone, traffic cones have been set up to channel traffic from the left lanes to the right lanes. However, there are no advance warning signs posted. The original lane markings of the closed lanes were obliterated due to the paving work, and new markings are striped in to indicate a new path for road users driving next to the closed lanes. These new lane markings consist of faded, broken white lines unevenly spaced apart. Moreover, the markings are not retroreflective and are barely visible at that time of night. Workers are present on the closed shoulder and two left lanes.

Citing the Violations: The employer did not conform with three different provisions of the MUTCD: Section 6G-2b(2)/6G.06 for failure to post an advance warning sign for shoulder closure; Section 6G-2b(4)/6G.04 for failure to post an advance warning sign for work conducted on the traveled way; and Section 6F-6a/6F.65 for failure to maintain adequate pavement markings. Section 1926.200(g)(1) applies when the employer fails to protect workers with legible signs at points of hazard. When citing this standard, CSHOs may use the applicable MUTCD provision as a reference (this provision does not incorporate Part VI of the MUTCD). Section 1926.200(g)(2) applies when the employer fails to ensure signs and devices used to protect workers conform to Part VI of the MUTCD. When citing this standard, also cite the applicable MUTCD provision.

In this scenario, the violations of MUTCD Sections 6G-2b(2)/6G.06 and 6G-2b(4)/6G.04 are sufficiently related as to constitute a single hazardous condition, as they both involve failure to post a sign in advance warning of work activity (see Chapter 4, Section X of the FOM). Group these two violations of 1926.200(g)(1) (because the employer did not ensure proper signage at a point of hazard). In contrast, the violation of MUTCD Section 6F-6a involves the possibility of vehicles entering the work space due to inadequate pavement markings. Cite this hazard as a separate violation of 1926.200(g)(2)/Section 6F-6a/6F.65 (because the sign or device used to protect workers did not conform to a *mandatory* provision of the MUTCD).

SAVEs Examples

Title Advance Warning Sign for Shoulder Closure

Description 29 CFR 1926.200(g)(1): The employer did not provide at least one advance warning sign for a shoulder closure.

AVD (a) (Location) (Date) (Describe the roadway construction work being conducted, including whether work was occurring on the shoulders and/or adjacent traffic lanes) (Describe the shoulder that was closed, making sure to identify that the shoulder was at least 8 feet wide) (Identify that the employer failed to provide at least one advance warning sign, thereby exposing employees to struck-by hazards)

Notes Reference the MUTCD standards (6G-2b(2)/6G.06) that require advance warning or advance warning signs to show point of hazard.

Title Advance Warning for Work on the Traveled Way

Description 29 CFR 1926.200(g)(1): The employer did not provide the requisite advance warning of construction work being conducted on the traveled way.

AVD (a) (Location) (Date) (Describe the roadway construction work being conducted, specifically identifying that the activity being done was not a short-duration or mobile operation) (Identify that no advance warning was in place or that the advance warning did not inform road users that work is taking place or what actions the road user must take to drive through the work zone, thereby exposing employees to struck-by hazards)

Notes Reference the MUTCD standards (6G-2b(4)/6G.04) that require advance warning or advance warning signs to show point of hazard.

Title Pavement Markings

Description 29 CFR 1926.200(g)(2) / MUTCD Section 6F-6a/6F.65: The employer did not provide adequate pavement markings to provide the necessary guidance and information to road users.

AVD (a) (Location) (Date) (Time) (Describe visibility conditions if it is an issue) (Describe the construction work being conducted, specifying any relevant lane, shoulder, and pavement work) (Describe the pavement markings) (Identify that the markings are inadequate, thereby exposing employees to struck-by hazards)

Citation AVD Examples

Citation: 1 **Item:** 1a **Type of Violation:** Serious

AVD/Variable Information:

29 CFR 1926.200(g)(1): Legible signs are not posted in construction areas at points of hazard:

(a) The violation was most recently observed on or about March 26, 2010, on west Interstate 10 at or about Gessner Rd., where the employer did not provide at least one advance warning sign to warn road users of a closed shoulder 8’ wide, thereby exposing employees in the work zone to struck-by hazards.

Proposed Adjusted Penalty: $5,000

Instance Description – Describe the following:

a) **Hazards-Operation/Condition-Accident**
At least one advance warning sign was not in place, at the point of hazard. The employer had closed the left shoulder, which was 8 feet wide, in order to perform pavement work on the left shoulder. Six employees were working on the closed shoulder, approximately 10 feet after the point of closure. The employer posted no advance warning sign to warn road users that road work was taking place. Therefore, the employees were exposed to the hazard of being struck by errant vehicles.

b) **Equipment**
N/A

c) **Location**
Along the shoulder throughout the work zone

d) **Injury/Illness**
Broken bones, internal injuries, death

e) **Measurements**
Shoulder width was 8 feet; see video on file

Citation: 1 **Item:** 1b **Type of Violation:** Serious

AVD/Variable Information:

29 CFR 1926.200(g)(1): Legible signs are not posted in construction areas at points of hazard:

(a) The violation was most recently observed on or about March 26, 2010, on west Interstate 10 at or about Gessner Rd., where the employer did not provide advance warning to road users that road work (not short-duration or mobile) is taking place or what actions the road user must take to drive through the work zone, thereby exposing employees in the work zone to struck-by hazards.

Proposed Adjusted Penalty: Grouped

Instance Description – Describe the following:

a) **Hazards-Operation/Condition-Accident**
Advance warning of road work on the traveled way was not in place, as required by the MUTCD. Employees were performing pavement operations on the two left lanes of westbound I-10 near Gessner. This work was of neither short duration nor a mobile operation. Although cones were set up just before the work zone, no advance warning sign was posted by the employer. Approximately fifteen employees were observed working within the traveled way. Therefore, the employees were exposed to the hazard of being struck by errant vehicles.

b) **Equipment**
N/A

c) **Location**

The two left lanes throughout the work zone

d) **Injury/Illness**
Broken bones, internal injuries, death

e) **Measurements**
N/A

Citation: 1 **Item:** 2 **Type of Violation:** Serious

AVD/Variable Information:

29 CFR 1926.200(g)(2) / MUTCD Section 6F-6a/6F.65: All traffic control signs or devices used for the protection of construction workers do not conform to Part VI of the Manual on Uniform Traffic Control Devices (MUTCD), 1988 Edition, Revision 3 or Millennium Edition, in that the employer does not provide adequate pavement markings to separate the traveled way from the work zone:

(a) The violation was most recently observed on or about March 26, 2010, at approximately 12:45 a.m., on west Interstate 10 at or about Gessner Rd., where the employer did not place visible and conforming pavement markings to demarcate the live traffic lane from the adjacent work zone, thereby exposing employees in the work zone to struck-by hazards.

Proposed Adjusted Penalty: $5,000

Instance Description – Describe the following:

a) **Hazards-Operation/Condition-Accident**
Adequate pavement markings were not in place, as required by the MUTCD. Employees were performing pavement operations on the two left lanes of westbound I-10 near Gessner. These two lanes were adjacent to the two right lanes with live traffic. The original lane markings had been removed due to pavement work, and new markings had been put in place to indicate a new vehicular path adjacent to the work zone. These pavement markings were not plainly visible at night. Section 6f-6a(1) requires that all markings shall be a solid line in accordance with part III A and part III B, except as indicated under 6F-6b (Interim Markings) of [the MUTCD]. These markings were comprised of broken lines unevenly spaced apart. Approximately fifteen employees were observed working within the closed lanes. Therefore, the employees were exposed to the hazard of being struck by errant vehicles.

b) **Equipment**
N/A

c) **Location**
The two left lanes throughout the work zone

d) **Injury/Illness**
Broken bones, internal injuries, death

e) **Measurements**
N/A

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