

SUBJECT: Temporary Traffic Controls

Purpose: To clarify the application of safety standards for traffic control during mobile and stationary temporary operations under the Final Rule, "Safety Standards for Signs, Signals, and Barricades," (Part 1926 Subpart G), effective March 10, 2003.

Scope: This instruction applies MNOSHA-wide.

References: Federal OSHA Instruction CPL 02-02-054, 10/16/12

Cancellation: This instruction replaces and cancels STD 3-5.1, "Traffic Controls-Mobile and Stationary Operations," dated November 19, 2009.

General Considerations: "The primary function of temporary traffic control is to provide for the safe movement of vehicles, bicyclists, and pedestrians through or around temporary traffic control zones while reasonably protecting workers and equipment." (MUTCD) The safety of the workers within the traffic control zone is OSHA's primary function. There is no one set of temporary traffic control rules or devices that can satisfy all conditions for a given project. Defining details that would be adequate to cover all situations is not practical. OSHIs must consider the type of highway, road conditions, duration of the project, physical restrictions, and nearness of work space to road users for each project.

Background:

- A. The standard requires compliance with Part VI of the Federal Highway Administration's Manual on Uniform Traffic Control Devices (MUTCD) 1988 Edition, Revision 3 (1993 version) or Millennium Edition (December 2000). Hard copies of the 2000 version are available in each MNOSHA office. The criteria apply to both rural and urban settings. The updated MUTCD can also be viewed on the DOT website at: http://mutcd.fhwa.dot.gov/pdfs/2009r1r2/pdf_index.htm
- B. In some instances, the traffic control manual requirements are "should" standards. However, since the wording of 1926.200(g) (2) indicates that traffic control devices "...shall conform to..." MNOSHA considers these paragraphs mandatory and enforceable.
- C. MNMUTCD - Minnesota Manual on Uniform Traffic Control Devices (most recent edition is January 2014) is the current MNDOT update to, or the equivalent to, the Millennium Edition, but is not enforceable using the MNOSHA standards. The MNMUTCD does meet or exceed the Millennium and 1993 criteria. It is very helpful to use as an aid to better understand the 1993 version of the MUTCD or Millennium Edition. It can still be used in support of General Duty violations. It can be viewed on the MN DOT website at: <http://www.dot.state.mn.us/trafficeng/publ/mutcd/>
- D. An employer can use Part VI of the MUTCD, 1993 or 2000 versions to ensure compliance with the latest safety regulations regarding traffic control safety. While there are discernable differences between the manuals for MNDOT purposes, for MNOSHA enforcement purposes, the differences are very slight. In order to avoid duplication and unnecessary work, MNOSHA personnel will cite all violations related to temporary traffic controls referencing only the 1993 or 2000 versions.
- E. MN Rules 5207.0100 requires employees working on streets, highways, and adjacent areas to wear high visibility personal protective equipment unless protected from traffic by permanent or semi-permanent barricades such as concrete J-barriers or roadway guardrails.
- F. MN Rules 5207.1000 requires employers to train operators of mobile earth-moving equipment, and all other employees exposed to that equipment, in safe work procedures and in the

recognition of unsafe or hazardous conditions pertaining to that equipment. Employers must also develop and document the training programs utilized for the training.

ACTION:

A. Coordination with Other Governmental Entities. If the site is difficult to access, the OMT Supervisor shall call the MN State Patrol or local law enforcement agency for assistance in developing a plan of action.

B. MNOSHA Staff Training and PPE Requirements.

1. Before performing any inspection at a work zone, all MNOSHA staff who inspect, or supervise the inspection of construction work zones, must successfully complete a mandatory training course for road work zone inspections given by MNOSHA training staff.
2. During the day, the OSHI shall wear, at a minimum, a Class 2 high-visibility safety vest.
3. During the night, the OSHI 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.
4. For night inspections, the OSHI's hard hat shall have a retroreflective band or retroreflective material that provides 360-degree visibility.

C. Arrival, Inspection and Departure Safety Procedures.

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

- a. Initial Drive-by: The OSHI 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, if possible.

The OSHI shall focus on driving and locating the route into the active work zone to park. The OSHI 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 OSHI to look around and drive safely].

b. During the drive-by determine:

- i. If advance warning signs are in place.
- ii. If transition area tapers are at a safe distance.
- iii. If Buffer spaces exist (an optional work zone component). Vehicles or equipment should not occupy buffer spaces (longitudinal or lateral).
- iv. If the control devices indicate a clear path of travel.
- v. If there are dangerous conditions that would require abrupt driving maneuvers.
- vi. The posted speed limit and actual speeds of passing traffic.
- vii. If skid marks are present, as potential evidence of unclear or confusing traffic controls.

2. Type of work. The type of construction work will determine the OSHI'S safety and inspection strategy.

3. Find a safe place to pull off and park.

- a. Consider parking by the general contractor's trailer, as it is often located in a more protected area of the worksite.
- b. Look for an employee parking area or the material staging/storage area.
- c. Consider a parking area that is beyond the worksite, and away from public traffic lanes and construction traffic.

- d. If no other safe parking is available, then you may park within the work zone.
 - e. Park the vehicle behind barriers whenever possible. If no barrier exists, park at a safe distance from the public traffic lane or construction traffic.
 - f. Plan an exit strategy for leaving the work zone and for emergencies.
4. Approaching the Activity Area. To ensure personal safety while walking to the work zone activity area, the OSHI shall:
- a. Face traffic as much as possible;
 - b. Stay as far away from the live lane of traffic as possible;
 - c. Stay away from work activity;
 - d. Stay out of construction equipment “blind spots”;
 - e. Stay out of the swing radius of construction equipment;
 - f. Stay outside a “safety circle” around construction equipment. If you cannot see the operator, the operator cannot see you.
 - g. Only approach equipment after the operator acknowledges your presence, stops the equipment, and indicates it is safe to approach;
 - h. Be aware of the presence of construction equipment in operation throughout the work zone;
 - i. Do not stand in the backup (reverse) zone of any vehicles or construction equipment. Backup alarms may be inoperable or not provide sufficient warning; and
 - j. Follow internal traffic controls, including instructions from spotters, signalers, flaggers, or observers.
5. Inspection. While performing the inspection, take the following precautions:
- a. Be alert to traffic at all times.
 - b. Have an escape plan in case errant vehicles enter the work zone.
 - c. Never step outside of the work zone into the traveled way.
 - d. Whether onsite or offsite, perform the employee interviews in a safe or protected area. (e.g., in a car well off the roadway).
 - e. Do 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 for the flagger station.
6. Departure from the Work Zone.
- a. Before returning to the vehicle, 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, request an escort (ride) back to the vehicle and traffic assistance when pulling out of the parking area.
 - b. When pulling the vehicle out of the parking area, proceed in the closed lanes, if there are any, or the shoulders for as long as possible in order to accelerate to an appropriate merging speed.
- D. General Inspection Procedures. Inspections of roadway and highway construction work zones have two aspects: inspections of the construction work and inspection of the temporary traffic controls.
- 1. Inspecting the Construction Work. Inspections of roadway construction work are generally no different from inspection of other construction sites. The OSHI may stop and potentially open an inspection of a roadway or highway construction work zone after observing potential violations from the public way.
 - 2. 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, refer to the specific provisions in the Part VI of the MUTCD, 1993 or 2000 versions for more detailed inspection guidance.

Request a copy of the traffic control plan (TCP) for the work zone during the opening conference, in addition to other normally requested documentation. TCP's are not required for every work zone, but most major roadway construction projects will have detailed TCP's in place.

3. Construction vs. General Industry (Maintenance). 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" does not mandate the correct term to use. 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.

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).

E. Standards and Citation Policy.

1. Traffic Signs. 29 CFR 1926.200 (g)(1): Construction areas shall be posted with legible traffic signs at point 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. Reference the Part VI of the MUTCD, 1993 or 2000 versions, used to identify a point of hazard when citing 1926.200 (g)(1).

2. Traffic control signs and devices. 29 CFR 1926.200 (g)(2): All traffic control signs or devices used for protection of construction workers shall conform to Part VI of the MUTCD, 1993 or 2000 versions which are incorporated by reference. Citations for 1926.200(g)(2) should reference the applicable section of the Part VI of the MUTCD, 1993 or 2000 versions and use that wording in the AVD where possible. When an unsafe condition cannot be adequately cited by using the Part VI of the MUTCD, 1993 or 2000 versions, the OSHI may cite the General Duty clause per FCM guidelines.
3. Training. The MUTCD Millennium Edition, Section 6B.01, discusses Fundamental Principles of Temporary Traffic Control. Only trained and/or certified individuals can be assigned the responsibility for safety in temporary traffic control zones. Cite the General Duty clause per FCM guidelines and reference the applicable section of the Part VI of the MUTCD, 1993 or 2000 versions for the lack of training in those cases where it would be warranted, but not for written verification of that training. MNDOT, and others, offer regular training presentations contractors on temporary traffic control zone safety.

Refer to Appendix A to see examples for citing more commonly noted unsafe situations involving temporary traffic controls.

4. High Visibility Personal Protective Equipment. Employees exposed to or working adjacent to moving motor vehicles shall wear a high visibility warning vest or other high visibility garment. Cite 5207.0100 for lack of warning vests or other high visibility clothing.

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Attachments: Appendix A - Citation Examples

NOTICE: Minnesota OSHA Directives are used exclusively by MNOSHA personnel to assist in the administration of the OSHA program and in the proper interpretation and application of occupational safety and health statutes, regulations, and standards. They are not legally binding declarations and they are subject to revision or deletion at any time without notice.

Appendix A: Examples for citing more commonly noted unsafe situations involving temporary traffic controls:

EXAMPLE 1: A work crew is doing a cold patch repair to a pot hole on eastbound State Highway 97, east of Manning Trail. An employee is observed repairing the pot hole. He is working at the rear of the service truck and he is wearing a warning vest. There is no shadow vehicle with a flashing light and the road lane is not closed or blocked off to barricade the employee from the eastbound traffic. The OSHI should refer to the Millennium Edition, review Section 6H, Typical Application (TA) 17 and all its support information.

The SAVE and AVD could read:

29 CFR 1926.200(g)(2): Traffic control and signs or devices used for protection of construction workers did not conform to Part VI of the Manual on Uniform traffic Control devices, Millennium Edition, 2000, FHWA, specifically:

A shadow vehicle displaying a 360° flashing beacon and proper advance signs was not located ahead of the work vehicle where employees were engaged in cold patching operations on State Highway 97, east of Manning Trail.

EXAMPLE 2: A survey crew worker was using survey instruments in the middle of the eastbound lane, or on the road centerline, on the same road in Example 1 above. Neither lane was closed to traffic. The workers were wearing a warning vest and the OSHI noted only a couple of orange cones ahead and one behind them. There also was a small white van parked on the shoulder with a flashing light, about 100 feet before the worker on the road. There are some obvious problems with this scenario and some less obvious.

For the best resolution of this item go to TA 16. The OSHI must also determine if this road is high or low volume traffic for this item. High volume is 1500 ADT (average daily traffic). High volume requires more protection than low volume. The MNDOT Traffic Volume Maps website at: <http://www.dot.state.mn.us/traffic/data/> includes information on State highways and some county/state funded roads. OSHIs can also contact the appropriate MNDOT area office or affected cities, and get volume information. OSHIs may also review the MNDOT Field Manual to further assist them in evaluating the conditions noted. State Highway 97 is high volume.

NOTE: Most State Highways, and any highways near population centers, will be high volume, while most rural county roads are low volume.

NOTE 2: Surveyors can usually do the work off the shoulder of the road which allows for much more relaxed rules.

The SAVE stays the same as in Example 1; the AVD could read:

Survey crew workers were working in the eastbound lane of State Highway 97, east of Manning trail, without adequate protection from both east and west bound traffic. Deficiencies included: Eastbound lane not closed to traffic; No One Lane Road and Survey Crew Ahead signs in place; No flagger utilized at each end of the work area; Insufficient delineating devices/cones used.

EXAMPLE 3: OSHI notes that workers from a small company are cutting out a section of pavement prior to digging for some utility work on a low volume, two-lane road in Boon Dock, MN. The workers are wearing their high visibility vests, and have installed cones in what appears to be the correct taper and number of cones to close that north bound lane of the road to traffic. They

placed a dented, worn out, hard to read sign an adequate distance before the work area--their version of "Advance Warning," and no other devices are used.

There are problems with this scenario and there are multiple options for improving safety in this scenario. The most critical would be to verify whether the roadway is high or low volume, and if it is a low speed area. In most urban streets it will be low speed, less than 40 mph. OSHIs can usually judge volume by noting the gaps in the traffic flow for drivers to see around the traffic control zone and drive safely around the work without the need for flaggers. Rush hour would obviously be high volume. There may never be a rush hour in some cases.

Millennium TA 10 and 11 address the given scenario. OSHIs should remember, however, that MNDOT can exceed the editions which MNOSHA can enforce as the minimum required to ensure safety. The MNDOT Manual also has almost all the distances required to properly set up the Traffic Control Zone already calculated into various scenarios; the Millennium Edition provides the formulas.

The Millennium Edition Section 6F.01 defines traffic control devices, and states that "all traffic control devices used on street and highway construction, maintenance, utility or incident management operations shall conform to the applicable provisions of this Manual." It goes on to list virtually every type of sign there is. To address the hard to read sign, look at Section 6F.04, Sign Maintenance: "Signs shall be properly maintained for cleanliness, visibility, and correct positioning. Signs that have lost significant legibility shall be promptly replaced." TA 10 and 11 also require that "One Lane Road," and "Yield," signs along with a Type-Three barricade device are properly positioned. A work vehicle with a flashing light could be substituted for the Type Three barricade. While there could be other smaller issues, the most common items to address in this scenario have been noted. Reference Sections 6F.01 and 6H.01, Typical Applications 10 and 11.

The SAVE stays the same as the examples above; the AVD could read:

Adequate traffic control devices were not used for the road cutting operation on the North bound lane of Lake Boulevard, exposing employees to traffic hazards. Deficiencies included: North bound lane: worn out advance warning sign, no "One Lane Road" sign utilized, and no Type Three barricade utilized in front of the work space. South bound lane: No advance warning sign and no "One Lane Road" signs utilized.