

National Work Zone Awareness Week - April 19-23, 2010 and The New 2009 MUTCD Edition, Part VI

By William Moroski

The National Work Zone Awareness Week is held each year in April. The purpose is to create national attention to the hazards of work zones by educating motorists and workers to safety issues in work zones. Since 1999, the FHWA has partnered with transportation entities to support NWZAW. Disseminating public information is an important element in educating drivers to variable traffic patterns of work zones. States and local municipalities are encouraged to promote their own work zone awareness programs. Various program resources are available at the national level. The FHWA provides the Work Zone Public Information and Outreach Strategies Guide, which contains tips, examples and practices on designing public awareness information and strategies for outreach. The FHWA work zone State initiative focus has two elements: '1) an FHWA-sponsored workshop held to discuss work zone public information and outreach; and 2) technical support to assist the focus States with implementing enhanced public information and outreach for their work zone projects.'

As of 06/01/09, the IMSA has certified approximately 37,000 people in work zone specific programs. The IMSA remains "dedicated to providing quality certification programs for the safe installation, operation and maintenance of public safety systems; delivering value for members by providing the latest information and education in the industry."

The final rule on the 2009 Edition of the Manual on Uniform Traffic Control Devices (MUTCD) was adopted and published in the Federal Register on 12/16/09. The 09 MUTCD will become effective 01/15/10. States have two years to adopt the Manual as their legal State standard for traffic control devices. The following is from the FHWA PowerPoint presentation on changes to the new Manual:

Temporary Traffic Control changes to Part VI of the 2009 MUTCD

1. Guidance on lengths of short tapers and downstream tapers -

To provide practitioners with more information regarding taper lengths, Guidance has been added that the length of a short taper should be a minimum of 50 feet and that a downstream taper with a length of 100 feet should be used to guide traffic back into their original lane.

In concert with this change, minimum taper lengths are added to several figures in Chapter 6H.

2. Minimum length for one-lane, two-way traffic taper added to Table 6C-3 -

Minimum taper lengths for one-lane, two-way traffic tapers are added to Table 6C-3. The previous table contained only maximum lengths, and it is important to also specify minimum lengths. Taper length, L, is based on speed and width of offset.

3. High-visibility safety apparel -

New provisions are incorporated into the MUTCD that require the use of high visibility safety apparel by all workers

(including flaggers) within the public right-of-ways of all federal-aid and non-federal-aid streets and highways. This is an expansion of the 23 CFR revisions adopted in 2006, to extend the applicability from just federal-aid highways to all roads open to public travel.

- A new option is added that allows first responders and law enforcement personnel to use safety apparel meeting a newly-developed ANSI standard (ANSI 107-2010) for "public safety vests" because this type of vest will better meet the special needs of these personnel.
- Firefighters or other emergency responders engaged in emergency operations that directly expose them to flame, fire, heat, and/or hazardous materials may wear retro-reflective turn-out gear that is specified and regulated by other organizations.
- Also, a recommendation is added that all on-scene responders and news media personnel in traffic incident areas should wear high-visibility apparel.
- The FHWA establishes a target compliance date of December 31, 2011 (approximately two years from the effective date of this final rule) for flagger apparel on non-Federal-aid highways. Required compliance of apparel for workers, including law enforcement officers, on Federal-aid highways has been in effect since November 24 2008 pursuant to Title 23 CFR Part 634.

4. Automated flagger assistance device

a. Type 1: STOP/SLOW paddle AFAD -

- A new device called an automated flagger assistance device (AFAD) is added, which enables a flagger to be positioned out of the lane of traffic when controlling road users through temporary traffic control zones. The provisions are based on the FHWA's Interim Approval, dated January 28, 2005 and the devices have been used without any operational problems being reported.
- There are two types of AFADs that are adopted for use in the MUTCD. One type of AFAD (shown here) uses a remotely controlled STOP/SLOW sign on either a trailer or a movable cart system to alternately control the right-of-way. If gate arms are used, they shall be fully retro-reflectORIZED on both sides and have vertical alternating red and white stripes.

b. Type 2: Red/Yellow lens AFAD -

The other type of AFAD uses remotely controlled red and yellow lenses and a gate arm to alternatively control the right-of-way. The gate arm descends to a down position across the approach lane of traffic when the steady CIRCULAR RED lens is illuminated and ascends to an upright position when the flashing CIRCULAR YELLOW lens is illuminated.

5. Flaggers shall use a paddle, flag or AFAD, not just hand signals -

A new requirement is added that flaggers shall use a STOP/SLOW paddle, a red or fluorescent orange/red flag, or an Automated Flagger Assistance Device to control road users

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through TTC zones. This change explicitly deletes the use of hand movements alone from the list of permitted methods to control traffic, except for law enforcement personnel or emergency responders at incident scenes.

- The STOP/SLOW paddle should be the primary and preferred hand-signaling device because the STOP/SLOW paddle gives road users more positive guidance than red flags. Use of flags should be limited to emergency situations.
- GUIDANCE is also added that flaggers should stand alone, away from other workers, work vehicles, or equipment.

6. Paddles should be placed on a rigid staff, high enough to be seen by approaching or stopped traffic –

A new SUPPORT statement is added to clarify that it is optimal to place the STOP/SLOW paddle on a rigid staff that is tall enough that when the end of the staff is resting on the ground, the message is high enough to be seen by approaching or stopped traffic. In the NPA, a minimum height of 7 feet was recommended, but that Guidance was not adopted in this final rule.

7. Clarified Option for self-regulating traffic movement through a one-lane, 2-way constriction, if work space is short with adequate sight distance, if on low volume street–

A new OPTION is added that explicitly allows for the movement of traffic through a one-lane, two-way constriction on a low-volume street or road to be self-regulating, provided that the work space is short enough that road users from both directions are able to see the traffic approaching from the opposite direction through and beyond the work site. This change provides practitioners with more flexibility on low-volume, low-speed roads.

8. Two flaggers should be used for one-lane, 2-way constriction unless TTC zone is short enough for the flagger to see from one end to the other –

A recommendation is added that traffic should be controlled by a flagger at each end of a constricted section of roadway, unless a one-lane, two-way TTC zone is short enough to allow a flagger to see from one end of the zone to the other. This change emphasizes that the preferred method of flagger control is the use of two flaggers.

9. New optional and recommended signs and plaques to accompany SPEED LIMIT signs in TTC zones (G20-5aP) –

A new WORK ZONE plaque is added that may be mounted above a Speed Limit sign to emphasize that a reduced speed limit is in effect within a TTC zone.

- In addition to the existing FINES HIGHER plaque, optional FINES DOUBLE and \$XX FINE plaques are added that may be mounted below the Speed Limit sign if increased fines are imposed for traffic violations within the TTC zone.
- New BEGIN and END HIGHER FINES ZONE signs are recommended to be installed at the upstream end and downstream end of a work zone where increased fines are imposed for traffic violations.

10. Center Lane Closed Ahead symbol sign has been removed from the MUTCD –

The symbolic version of the message for Center Lane Closed Ahead (W9-3a) that was in the 2003 edition has been removed from the MUTCD in the 2009 edition, because the symbol sign was confusing in its meaning. This symbol has not undergone human factors testing to confirm that its meaning can be comprehended by road users. The word message version can continue to be used as appropriate.

11. New sign to warn road users of a change in the traffic pattern –

A new section is added describing the use of the NEW TRAFFIC PATTERN AHEAD sign to provide advance warning of a change in traffic patterns, such as revised lane usage, roadway geometry, or signal phasing. This change reflects current practice in many States and numerous local jurisdictions as documented in the Sign Synthesis Study and provides a uniform legend for this purpose.

- To retain its effectiveness, the W23-2 sign should be displayed for up to 2 weeks, and then it should be covered or removed until it is needed again.

12. New symbol sign and supplemental plaque for shoulder drop-off (W8-17 & W8-17P) –

A new symbol version of the Shoulder Drop Off sign is added to warn road users of a low shoulder to be consistent with Chapter 2C. This replaces the previous SHOULDER DROP OFF word message sign.

- An option is also added to permit the use of an educational SHOULDER DROPOFF supplemental plaque with the new Shoulder Drop Off symbol sign.

13. New alternating diamond display to indicate caution on an arrow board –

An alternating diamond display is added as one of the options on an arrow board for a flashing caution display, based on successful experimentation. This is sometimes called “dancing diamonds”.

14. Temporary lane separators and temporary raised islands –

A new section is added that contains provisions regarding the use of optional temporary lane separators that may be used to channelize road users, to divide opposing vehicular traffic lanes, or divide lanes when two or more lanes are open in the same direction, and to provide continuous pedestrian channelization.

- Temporary lane separators shall have a maximum height of 4 inches and a maximum width of 1 foot, and shall have sloping slides in order to facilitate crossover by emergency vehicles. They may be supplemented with approved channelizing devices, such as tubular markers or vertical panels.
- Concerning temporary raised islands, the recommended width is reduced from 18 inches to 12 inches to facilitate the use of existing devices that have been successfully used in many applications.

15. Temporary Markings –

- Delineate path through the TTC zone when the permanent markings are either removed or obliterated during the work activities.

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- Should not be left in place longer than 14-days
- Some allowable exceptions to longitudinal markings requirements

Exceptions to normal markings standards that are allowed for temporary markings (in place 14 days or less):

- Half-cycle lengths with a minimum of 2-foot stripes may be used on roadways with severe curvature for broken line center lines in passing zones and for lane lines.
- For a two- or three-lane road, no-passing zones may be identified by using DO NOT PASS (R4-1), PASS WITH CARE (R4-2), and NO PASSING ZONE (W14-3) signs rather than pavement markings.
- If the State's or highway agency's policy so provides, DO NOT PASS, PASS WITH CARE, and NO PASSING ZONE signs may be used instead of pavement markings on roads with low volumes for periods longer than 14 days.

16. Temporary RPMs in TTC zones –

- More provisions on colors, patterns and spacing, consistent with Part 3
- Colors and patterns shall simulate the markings for which they substitute
- May be used to substitute for solid lines
- Option to use a less expensive pattern of temporary RPMs to substitute for broken line segments
- Should not be used more than 14-days

Provisions are added to provide more information regarding the color, patterns, and spacing of raised pavement markers in temporary traffic control zones. The changes repeat certain requirements and recommendations from Chapter 3B.

- The colors and markings of temporary RPMs must simulate the color and patterns of markings for which they substitute. If used to substitute for solid lines, the markers must be equally spaced and spacing requirements are provided.
- A new OPTION allows temporary short-term (usually no longer than 14 days) use of a less expensive pattern of raised pavement markers to substitute for a broken line marking.

17. Deleted from the MUTCD –

- Steady burn electric lamps
- Vehicle arresting systems

Retained in the MUTCD –

- Floodlights
- Crash cushions
- Screens

The section regarding steady-burn electric lamps in the 2003 MUTCD is deleted because most jurisdictions are using other types of warning lights, therefore making steady-burn electric lamps obsolete. The section regarding vehicle arresting systems is also deleted because these are not traffic control devices and it is not appropriate for the MUTCD to have regulatory language regarding their design or use.

- The FHWA proposed in the NPA to delete existing sections regarding floodlights, crash cushions, and glare screens because the FHWA does not consider these

items to be traffic control devices. The FHWA decided in the final rule to leave these types of devices in the MUTCD until a clear definition of traffic control devices is established in a future edition. The three sections on floodlights, crash cushions, and screens are retained with the text from the 2003 MUTCD.

18. Preemption of temporary signals in TTC zones –

New provisions are added that require temporary traffic signals that are placed within 200 feet of a grade crossing or to have preemption or unless a uniformed officer or flagger is provided at the crossing to prevent vehicles from stopping within the crossing. This is for consistency with the provisions in Parts 4 and 8.

19. Orange and black are acceptable colors for transverse rumble strips in TTC zones –

A new standard is added that black and orange are acceptable colors for transverse rumble strips in TTC zones, in addition to white. This is based on successful experimentation.

20. TTC plan should be developed for planned special events that will impact traffic –

In Section 6G.01 Typical Applications, a new GUIDANCE statement is added recommending that a TTC plan should be developed for planned special events that will have an impact on the traffic on any street or highway. The TTC plan should be developed in conjunction with and be approved by the agency or agencies having jurisdiction over the affected roadways.

- This new GUIDANCE helps assure that proper traffic controls are installed when planned special events, such as parades, street fairs, farmers' markets, etc. impact traffic, and responds to a National Transportation Safety Board (NTSB) report on this subject.

21. Typical Application (TA) drawings –

- Except for the TA "Notes", information in the TA drawings can generally be regarded as Guidance
- TA 4 - stationary signs may be omitted for mobile work if the work vehicle displays high-intensity strobe lights
- TA 7 - ROAD CLOSED sign eliminated
- TA 16 - lanes should be at least 10 feet wide

In the NPA, the FHWA proposed to change the order of Chapters 6H and 6I. Based on comments, in the final rule the existing order of the chapters is retained, so Chapter 6H is still Typical Applications.

- Clarification is added that except for the typical application notes, the information presented in the typical applications can generally be regarded as Guidance.
- Typical Application 4 is clarified to note that stationary warning signs may be omitted for short duration or mobile operations if the work vehicle displays high-intensity rotating, flashing, oscillating, or strobe lights.
- A new recommendation is added to Typical Application 16 that all lanes should be a minimum of 10 feet in width to be consistent with guidance in other typical applications.
- In Typical Application 41, a new recommendation is added that channelizing devices should be placed to

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physically close the ramp when an exit is closed. This change is made to reflect existing practice, and to provide for positive closure rather than just relying on signs.

22. TAs with freeway lane closures –

- TAs 37, 38, 39, 42 and 44
- Arrow boards shall be used for all freeway lane closures
- Separate arrow board shall be used for each closed lane for multi-lane closures

In Typical Applications 37, 38, 39, 42, and 44, a new requirement is added that requires that an arrow panel be used for all freeway lane closures and that a separate arrow panel be used for each closed lane when more than one freeway lane is closed. The FHWA believes that an arrow panel is essential for safety at all lane closures on freeways due to the high speeds.

23. Provisions for traffic incident management –

- Reference is made to the Incident Command System (ICS)
- All on-scene responders and news media personnel should wear high-visibility apparel
- Light sticks may be used in lieu of flares

Chapter 6I provides information on the control of traffic through traffic incident management areas.

- A new SUPPORT is added that the National Incident Management System (NIMS) requires the use of the Incident Command System (ICS) at traffic incident management areas. This language is per The Department of Homeland Security and Presidential Directives (DHSPD) #5 and #8, which require the adoption of the National Incident Management System and the Incident Command System by all Federal, State, tribal and local governments. These two systems are required for all planned and unplanned incidents in the United States.
- A new recommendation is added that all on-scene responders and news media personnel should wear high-visibility apparel.
- New GUIDANCE and OPTION statements are added regarding the use of light sticks at incidents to reflect the increasingly common use of light sticks by emergency responders as a more convenient and effective device than flares. When light sticks or flares are used to establish the initial traffic control at incident scenes, channelizing devices should be installed as soon thereafter as possible. The light sticks or flares may supplement the channelizing devices until the incident is terminated.

OSHA –

On 09/11/09, OSHA announced the renewal of the Roadway Work Zone Safety and Health Partners alliance. OSHA provides construction industry employers and employees with information, guidance and access to training resources on safety hazards in order to reduce and/or prevent exposure to work zone hazards. The Alliance primarily focuses on flagger safety, safer deployment of traffic control devices, positive protection, night work, work zone speeding, prevention of workers being run over and backed over. A word to the wise - OSHA inspectors might also be monitoring work zone activities more closely.

Every IMSA member should be an advocate for work zone safety education and legislative reform. Please consider approaching your risk management and training departments regarding the many benefits of agency-wide IMSA Construction Work Zone Safety certification. Work Zone safety awareness should always be foremost in the minds of our employers and fellow employees, especially as we approach the Spring construction season.



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