

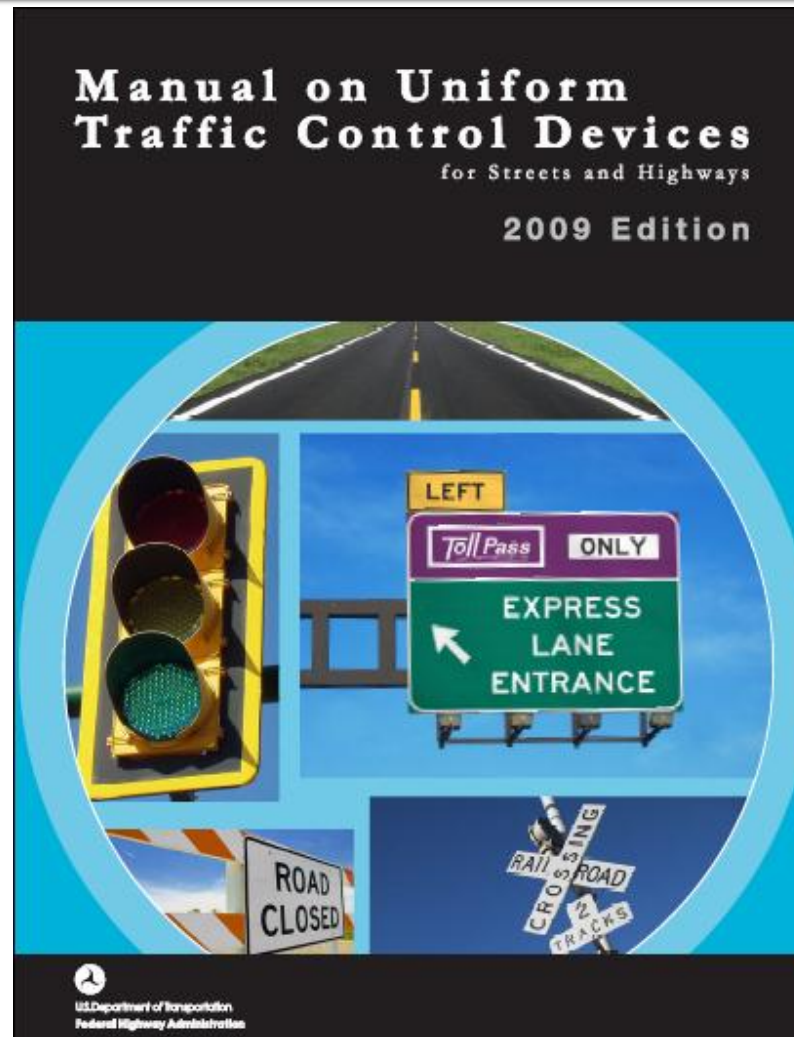
Changes in MUTCD 2009

Chapter 6 - Temporary Traffic Control (TTC)

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PART 6

TEMPORARY TRAFFIC CONTROL



Definition Change

- **Standard:**
- 01 Traffic control devices shall be defined as all signs, signals, markings, and other devices used to regulate, warn, or guide traffic, placed on, over, or adjacent to a street, highway, pedestrian facility, bikeway, or private road open to public travel (see definition in Section 1A.13) by authority of a public agency or official having jurisdiction, or, in the case of a private road, by authority of the private owner or private official having jurisdiction.

Definition Change

- **National Standard**
- **For All Traffic Control Devices**
- **Installed On Any**
 - **Street,**
 - **Highway,**
 - **Bikeway, or**
 - **Private road**
- **Open to public travel**

Target Compliance Dates for New Requirements in 2009 MUTCD

- **§ 6D.03 Worker Safety Considerations**
 - All workers within the right-of-way shall wear high-visibility apparel
 - December 31, 2011
- **§ 6E.02 High-Visibility Safety Apparel**
 - All flaggers within the right-of-way shall wear high-visibility apparel
 - December 31, 2011

New Definition

- **159. Private Road Open to Public Travel—**
 - Private Toll Roads and Roads (including any adjacent sidewalks that generally run parallel to the road)
 - Within shopping centers, airports, sports arenas, and other similar business and/or recreation facilities
 - That are privately owned,
 - But where the public is allowed to travel without access restrictions.
 - Roads within Private Gated Properties (except for gated toll roads)
 - Where access is restricted at all times, parking areas, driving aisles within parking areas, and private grade crossings shall not be included in this definition.

New Definition

- **Standard statements shall not be modified or compromised based on engineering judgment or engineering study.**
- **Standard statements are sometimes modified by Options**
- **? ? ? ?**

New Definition

- **Flagger—**
 - **A PERSON**
 - **Who actively controls the flow of vehicular traffic**
 - **Into and/or through a TTC zone using**
 - **Hand-signaling devices or**
 - **An Automated Flagger Assistance Device (AFAD).**
 - **Automatic flagging devices are not permitted.**

New Definition

- **Road User—**
- **A vehicle operator, bicyclist, or pedestrian,**
- **Including persons with disabilities,**
- **Within the highway, OR**
- **On a private road open to public travel.**

New Definition

- **Worker—**
 - **A person on foot**
 - Whose duties place him or her within the right-of-way of a street, highway, or pathway,
 - Such as:
 - Street, highway, or pathway construction and maintenance forces,
 - Survey crews,
 - Utility crews,
 - Responders to incidents, **and**
 - **Law Enforcement Personnel** when directing traffic, investigating crashes, and handling lane closures, obstructed roadways, and disasters.

6A General

- **Inclusion of private roads open to public traffic**
- **Use of ITS in TTC zones**
- **Determination of High or Low volume roadway by governing official**

Chapter 6B. Fundamental Principles

- **Deletes**
 - The “Needs and control of road user” statement at each Chapter.
 - “Reasonably safe” statement and replaces it with “effectiveness” statements, and *mobility and positive guidance to the road user* .

Chapter 6C. Temporary Traffic Control Elements

- **§6C.02 Temporary Traffic Control Zones**
 - TTC zone includes an incident zone, or a planned special event
 - New paragraph on planning for a Planned Special Event
 - Traffic pattern changes and volumes
 - Size
 - Duration

Chapter 6C. Temporary Traffic Control Elements

- **§ 6C.04 Advance Warning Area**
 - *The distances contained in Table 6C-1 are approximate, are for guidance only, and should be applied with engineering judgment.*
- **§ 6C.05 Transition Area**
 - “Channelized” changed to “directed”
 - Use more dominant devices for mobile ops

Chapter 6C. Temporary Traffic Control Elements

- **§ 6C.06 Activity Area**
 - Arrow Panel changed to Arrow Board
 - Deleted section excluding emergency and incident response vehicles from the buffer space.
- **§ 6C.07 Termination Area**
 - Changed from a Standard to a Support

Chapter 6C. Temporary Traffic Control Elements

- **§ 6C.08 Tapers**
 - Changed length of downstream taper to 50 feet minimum to 100 ft. maximum per lane.
- **§ 6C.10 One-Lane, Two-Way Traffic Control**
 - Changed wording for self-regulating traffic and made it an Option

CHAPTER 6D. PEDESTRIAN AND WORKER SAFETY

- **§ 6D.01 Pedestrian Considerations**
 - Many changes and additions and deletions due to relocation of paragraphs to or from other areas.
 - **New Requirement**
 - Either maintain existing pedestrian foot paths **OR**
 - Provide alternate transportation e.g., buses

CHAPTER 6D. PEDESTRIAN AND WORKER SAFETY

- **§ 6D.02 Accessibility Considerations**
 - Many D6.01 sections relocated here.
 - Disabled pedestrian sections relocated to § D6.01.
- **§ 6D.03 Worker Safety Considerations**
 - Safety Apparel requirements now a Standard
 - Includes Law Enforcement Personnel, etc.

Chapter 6E. Flagger Control

- **§ 6E.01 Qualifications for Flaggers**
 - Definition relocated to 1A.13.
- **§ 6E.02 Hi-Vis Safety Apparel**
 - Use revised to meet the ANSI Standards
 - ANSI 107-2004 now includes headwear
 - Law Enforcement Personnel
 - REQUIRED to wear in TTC
 - Can use ANSI 207-2006 apparel

Chapter 6E. Flagger Control

- **§ 6E.03 Hand-Signaling Devices**
 - Deleted Support for multiple devices
 - Revised Standard for STOP/SLOW Paddle
 - New Support statement for height of the staff.
 - Flag Standard changed to red or fluorescent orange/red in color
 - New Standard for use of flagging at night for emergencies without a lighted flagger station.

Chapter 6E. Flagger Control

■ § 6E.05 STOP/SLOW Automated Flagger Assistance Devices

Figure 6E-1. Example of the Use of a STOP/SLOW Automated Flagger Assistance Device (AFAD)

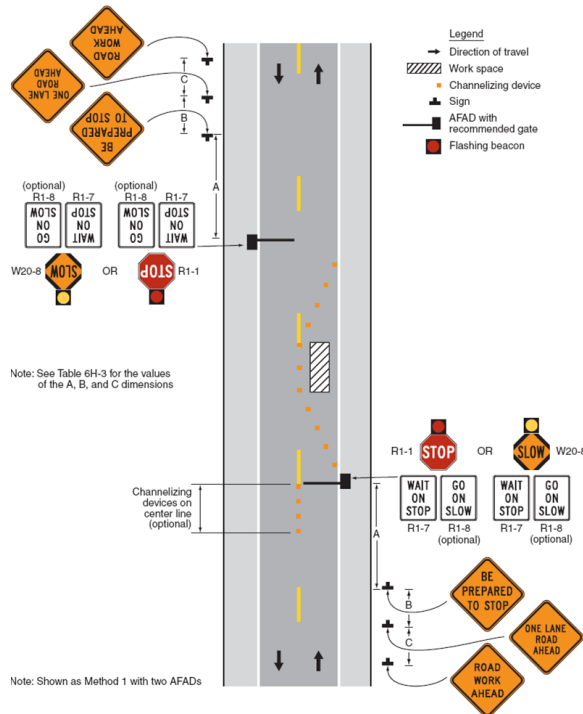
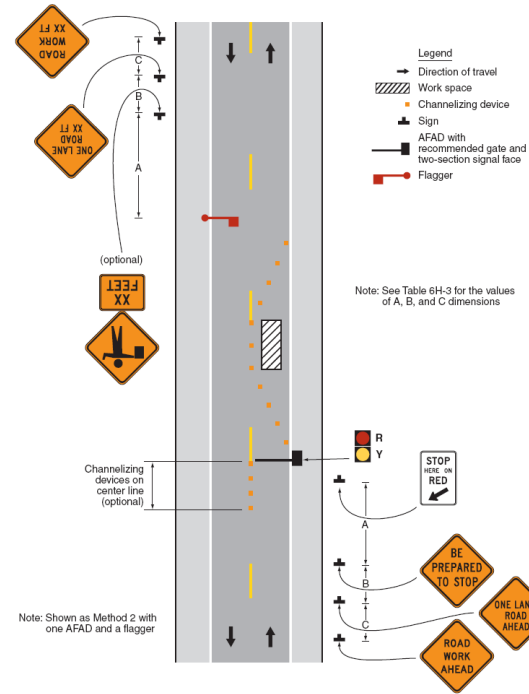


Figure 6E-2. Example of the Use of a Red/Yellow Lens Automated Flagger Assistance Device (AFAD)



Chapter 6F. TTC Zone Devices

- **§ 6F.01 Types of Devices**
 - Crashworthiness apply to:
 - Private roads open to public travel &
 - Certain other roadside appurtenances
 - All Traffic Control Devices (TCD's) must comply with this Manual including private roads open to public travel

Chapter 6F. TTC Zone Devices

- **§ 6F.02 General Characteristics of Signs**
 - Colors – required or recommended vs. permitted
 - For orange, only other is fluorescent orange
 - Sizes – “minimum” permitted only at < 35 mph
 - Messages – variations permitted in 2A.06

Chapter 6F. TTC Zone Devices

- **§ 6F.03 Sign Placement**
 - Minimum heights descriptions changed
 - Rural – 5 ft. above near edge of pavement (e. o. p.)
 - Urban – 7 ft above near e. o. p. or curb
 - Above Sidewalks – 7 ft. everywhere.
 - Max. Duration for non-standard ht. = 3 Days
- **§ 6F.04 Sign Maintenance**
 - Changed from Standard to Guidance

Chapter 6F. TTC Zone Devices

■ § 6F.08 ROAD (STREET) CLOSED Sign (R11-2)



- Shall not be used
 - Where road user flow is maintained through the TTC zone with a reduced number of lanes on the existing roadway **OR**
 - Where the actual closure is some distance beyond the sign.
- Urban Areas: may use name of intersection or well-known destination vs. XX MILES AHEAD

Chapter 6F. TTC Zone Devices

- **§ 6F.12 Work Zone and Higher Fines Signs and Plaques**

- Entirely new section with new requirements and options

- **§ ~~6F.16~~ 6F.17 Position of Advance Warning Signs**



- For multiple advance warning signs at approach to a TTC zone, the ROAD WORK AHEAD (W20-1) sign should be the first advance warning sign encountered by road users.

Chapter 6F. TTC Zone Devices

■ Deleted Sections

- § 6F.23 CENTER LANE CLOSED AHEAD Sign - Deleted the symbol sign
- THRU TRAFFIC MERGE LEFT (RIGHT) Sign (W4-7) - Deleted the sign



■ Newly Added Sections –

- § 6F.29 EXIT ONLY Sign (E5-3)
- § 6F.30 NEW TRAFFIC PATTERN AHEAD Sign (W23-2)

Chapter 6F. TTC Zone Devices

- ~~§ 6F.29~~ 6F.31 Flagger Signs (W20-7a, W20-7a)
 - Reversed letters for symbol and word signs
 - Deleted Standard:
 - The Flagger sign shall be removed, covered, or turned away from road users when the flagging operations are not occurring.

Chapter 6F. TTC Zone Devices

■ New Signs

- § 6F.44 Shoulder Supplemental Plaque
- § 6F.46 STEEL PLATE AHEAD Sign (W8-24)
- § 6F.47 NO CENTER ~~STRIPE~~ LINE (W8-12)
- § 6F.48 Reverse Curve Signs (W1-4 Series) – completely revised
- § 6F.49 Double Reverse Curve Signs (W24-1 Series) – Speed limits and number of lanes
- § 6F.54 Motorcycle Plaque (W8-15P)

Chapter 6F. TTC Zone Devices

- **§ 6F.60 Portable Changeable Message Signs**
 - **Standard:**
 - Portable changeable message signs shall comply with the applicable design and application principles established in Chapter 2A.
 - Portable changeable message signs shall display only traffic operational, regulatory, warning, and guidance information, and shall not be used for advertising messages.

Chapter 6F. TTC Zone Devices

- **§ 6F.60 Portable Changeable Message Signs**
 - **Standard:**
 - Colors used for legends shall comply with those shown in Table 2A-5.
 - Animation, rapid flashing, dissolving, exploding, scrolling, travelling horizontally or vertically across the face of the sign, or other dynamic elements shall not be used.

Chapter 6F. TTC Zone Devices

■ § 6F.61 Arrow ~~Panels~~ Boards

■ Standard:

- Shall have the following three mode selections:
 - A Flashing Arrow, Sequential Arrow, or Sequential Chevron mode;
 - A flashing Double Arrow mode; and
 - A flashing Caution or Alternating Diamond mode.
- Arrow boards shall only be used to indicate a lane closure.
- Arrow boards shall not be used to indicate a lane shift.

Chapter 6F. TTC Zone Devices

■ § 6F.63 Channelizing Devices

■ Standard:

- All channelizing devices shall be crashworthy.

■ Option:

- A series of sequential flashing warning lights may be placed on channelizing devices that form a merging taper in order to increase driver detection and recognition of the merging taper.
- See § 6F.83 Warning Lights for standards and guidance.

Chapter 6F. TTC Zone Devices

■ § 6F.65 Tubular Markers

■ Standard:

- Less than 42" high require two 3-inch wide bands
- Equal to or greater than 42" high require four 4- to 6-inch wide alternating orange and white stripes with the top stripe being orange

■ § 6F.68 Type ~~I, II, or III~~ 1, 2, or 3 Barricades

- *Roman numeral designations change to Arabic numerals throughout this Section*

Chapter 6F. TTC Zone Devices

- **§ 6F.70 Temporary Traffic Barriers as Channelizing Devices**
 - **Standard:**
 - When necessary to use for a merging taper in low-speed urban areas or for a constricted/restricted TTC zone, the taper shall be delineated.

Chapter 6F. TTC Zone Devices

- **§ 6F.72 Temporary Lane Separators**
- **New Section !!!!**
 - **Standard:**
 - Crashworthy
 - Maximum 4" high & 12" wide
 - Sloping sides for crossover by emergency vehicles
 - Need channelizing devices or retroreflectorization
 - Openings \geq 60" wide at pedestrian crossings

Chapter 6F. TTC Zone Devices

- **§ 6F.79 Steady-Burn Electric Lamps**
 - *Section deleted in its entirety*
- **§ 6F.84 Temporary Traffic Control Signals**
 - Must comply with provisions of Part 4
 - Shall not be located within 200 feet of a grade crossing unless:
 - Has Preemption OR
 - Police Officer or Flagger to prevent stopping on tracks

Chapter 6F. TTC Zone Devices

- **§ 6F.85 Temporary Traffic Barriers**
 - Substantial rewording but no major changes
- **Former § 6F.83 Vehicle-Arresting Systems**
 - *Deleted in its entirety*
- **Former § 6F.86 Future & Experimental Devices**
 - *Deleted in its entirety*

Chapter 6F. TTC Zone Devices



END PRESENTATION

PART 6

TEMPORARY TRAFFIC CONTROL

- **THANK YOU**
- **ANY QUESTIONS?**
- **Ask the Chairman.**