MUTCD 2000

Manual on Uniform Traffic Control Devices

millennium edition

December 2000

Incorporating:
Proposed Revision No. 2
Revision No. 1 dated December 28, 2001
Errata No. 1 dated June 14, 2001

U.S.Department
of Transportation

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

Addresses for Publications Referenced in the MUTCD

American Association of State Highway and Transportation Officials
444 North Capitol Street, NW, Suite 249
Washington, DC 20001

American Railway Engineering and Maintenance-of-Way Association
8201 Corporate Dr., Suite 1125
Landover, MD 20785-2230

Federal Highway Administration Report Center
Facsimile number: 301.577.1421

Illuminating Engineering Society
120 Wall Street, Floor 17
New York, NY 10005

Institute of Makers of Explosives
1120 19th St., NW, Suite 310
Washington, DC 20036-3605

Institute of Transportation Engineers
1099 14th St., NW, Suite 300 West
Washington, DC 20005

International Organization for Standards
c/o Mr. Gerard Kuso
Austrian Standards Institute
Heinestrabe 38
Postfach 130
A-1021
Wien, Austria

ISEA - The Safety Equipment Association
1901 N. Moore St., Suite 808
Arlington, VA 22209

National Committee on Uniform Traffic Laws and Ordinances
107 S. West St., #110
Alexandria, VA 22314

Occupational Safety and Health Administration
U.S. Department of Labor
200 Constitution Ave., NW
Washington, DC 20210

Transportation Research Board
The National Academies
2101 Constitution Avenue, NW
Washington, DC 20418

U.S. Architectural and Transportation Barriers Compliance Board (The U. S. Access Board)
1331 F Street, NW, Suite 1000
Washington, DC 20004-1111

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MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES

INTRODUCTION

Standard:

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, or bikeway by authority of a public agency having jurisdiction.

The Manual on Uniform Traffic Control Devices (MUTCD) is incorporated by reference in 23 Code of Federal Regulations (CFR), Part 655, Subpart F and shall be recognized as the national standard for traffic control devices on all public roads open to public travel in accordance with 23 U.S.C. 109(d) and 402(a). The policies and procedures of the Federal Highway Administration (FHWA) to obtain basic uniformity of traffic control devices shall be as described in 23 CFR 655, Subpart F.

Any traffic control device design or application provision contained in this Manual shall be considered to be in the public domain. Traffic control devices contained in this Manual shall not be protected by a patent, trademark, or copyright, except for the Interstate Shield and any other items owned by FHWA.

Support:

The need for uniform standards was recognized long ago. The American Association of State and Highway Officials (AASHO), now known as the American Association of State Highway and Transportation Officials (AASHTO), published a manual for rural highways in 1927, and the National Conference on Street and Highway Safety (NCSHS) published a manual for urban streets in 1930. In the early years, the necessity for unification of the standards applicable to the different classes of road and street systems was obvious. To meet this need, a joint committee of AASHO and NCSHS developed and published the original edition of this Manual of Uniform Traffic Control Devices (MUTCD) in 1935. That committee, now called the National Committee on Uniform Traffic Control Devices (NCUTCD), though changed from time to time in name, organization, and personnel, has been in continuous existence and has contributed to periodic revisions of this Manual. The FHWA has administered the MUTCD since the 1971 edition. The FHWA and its predecessor organizations have participated in the development and publishing of the previous editions. There were seven previous editions of the MUTCD, and several of those editions were revised one or more times. Table I-1 traces the evolution of the MUTCD, including the two manuals developed by AASHO and NCSHS.

Standard:

The U.S. Secretary of Transportation, under authority granted by the Highway Safety Act of 1966, decreed that traffic control devices on all streets and highways open to public travel in accordance with 23 U.S.C. 109(d) and 402(a) in each State shall be in substantial conformance with the Standards issued or endorsed by the FHWA.

Table I-1. Evolution of the MUTCD

Year	Name	Month / Year Revised
1927	Manual and Specifications for the Manufacture, Display, and Erection of U.S. Standard Road Markers and Signs (for rural roads)	4/29, 12/31
1930	Manual on Street Traffic Signs, Signals, and Markings (for urban streets)	No revisions
1935	Manual on Uniform Traffic Control Devices for Streets and Highways (MUTCD)	2/39
1942	Manual on Uniform Traffic Control Devices for Streets and Highways — War Emergency Edition	No revisions
1948	Manual on Uniform Traffic Control Devices for Streets and Highways	9/54
1961	Manual on Uniform Traffic Control Devices for Streets and Highways	No revisions
1971	Manual on Uniform Traffic Control Devices for Streets and Highways	11/71, 4/72, 3/73, 10/73, 6/74, 6/75, 9/76, 12/77
1978	Manual on Uniform Traffic Control Devices for Streets and Highways	12/79, 12/83, 9/84, 3/86
1988	Manual on Uniform Traffic Control Devices for Streets and Highways	1/90, 3/92, 9/93, 11/94, 12/96, 6/98, 1/00
2000	Manual on Uniform Traffic Control Devices for Streets and Highways — Millennium Edition	12/01

Support:

23 CFR, Part 655.603 adopts the MUTCD as the national standard for any street, highway, or bicycle trail open to public travel in accordance with 23 U.S.C. 109(d) and 402(a). The "Uniform Vehicle Code (UVC)" is one of the documents referenced in the MUTCD. The UVC contains a model set of motor vehicle codes and traffic laws for use throughout the United States. The States are encouraged to adopt Section 15-117 of the UVC, which states that, "No person shall install or maintain in any area of private property used by the public any sign, signal, marking, or other device intended to regulate, warn, or guide traffic unless it conforms with the State manual and specifications adopted under Section 15-104."

The Standard, Guidance, Option, and Support material described in this edition of the MUTCD provide the transportation professional with the information needed to make appropriate decisions regarding the use of traffic control devices on streets and highways. The material in this edition is organized to better differentiate between Standards that must be satisfied for the particular circumstances of a situation, Guidances that should be followed for the particular circumstances of a situation, and Options that may be applicable for the particular circumstances of a situation.

Throughout this Manual the headings Standard, Guidance, Option, and Support are used to classify the nature of the text that follows. Figures, tables, and illustrations supplement the text and might constitute a Standard, Guidance, Option, or Support. The user needs to refer to the appropriate text to classify the nature of the figure, table, or illustration.

Standard:

When used in this Manual, the text headings shall be defined as follows:

1. **Standard—a statement of required, mandatory, or specifically prohibitive practice regarding a traffic control device. All standards are labeled, and the text appears in bold large type. The verb shall is typically used. Standards are sometimes modified by Options.**

2. **Guidance—a statement of recommended, but not mandatory, practice in typical situations, with deviations allowed if engineering judgment or engineering study indicates the deviation to be appropriate. All Guidance statements are labeled, and the text appears in large type. Guidance text is the same size as Standard text, but it is not bold. The verb should is typically used. Guidance statements are sometimes modified by Options.**

3. **Option—a statement of practice that is a permissive condition and carries no requirement or recommendation. Options may contain allowable modifications to a Standard or Guidance. All Option statements are labeled, and the text appears in small type. The verb may is typically used.**

4. Support—an informational statement that does not convey any degree of mandate, recommendation, authorization, prohibition, or enforceable condition. Support statements are labeled, and the text appears in small type. The verbs shall, should, and may are not used in Support statements.

Support:

Throughout this Manual all dimensions and distances are provided in the International System of Units, a modernized version of the Metric system, and their English equivalent units are shown in parentheses.

Guidance:

Before laying out distances or determining sign sizes, the public agency should decide whether to use the International System of Units (Metric) or the English equivalent units. The chosen units should be specified on plan drawings. Care should be given to ensure that the chosen unit of measurement is known to those responsible for designing, installing, or maintaining traffic control devices.

Support:

The following information will be useful when reference is being made to a specific portion of text in this Manual.

There are ten Parts in this Manual and each part is comprised of one or more Chapters. Each Chapter is comprised of one or more sections. Parts are given a numerical identification, such as Part 2-Signs. Chapters are identified by the Part number and a letter, such as Chapter 2B-Regulatory Signs. Sections are identified by the Chapter number and letter followed by a decimal point and a number, such as Section 2B.03-Size of Regulatory Signs.

Each Section is comprised of one or more paragraphs. The paragraphs are indented but are not identified by a number or letter. Paragraphs are counted from the beginning of each Section without regard to the intervening text headings (Standard, Guidance, Option, or Support). Some paragraphs have lettered or numbered items. As an example of how to cite this Manual, the phrase “Not less than 12 m (40 ft) beyond the stop line” that appears on page 4D-24 of this Manual would be referenced in writing as “Section 4D.15, P7, D1(a),” and would be verbally referenced as “Item D1(a) of Paragraph 7 of Section 4D.15.”

Standard:

In accordance with 23 C.F.R. 655.603(b)(1), States or other Federal agencies shall adopt changes to the MUTCD within 2 years of issuance. For new devices or replacement of damaged devices, compliance shall be required effective immediately upon adoption by the State or other Federal agency. For devices in good condition, the following list of special compliance dates shall apply.

Section 2B.03 Size of Regulatory Signs—increased sign sizes and other changes to Table 2B-1—proposed 10 years from effective date of Final Rule.

Section 2B.04 STOP Sign (R1-1)—4-WAY plaque requirement—January 17, 2004.

Section 2B.16 Removal of R2-5 Series Reduced Speed Ahead signs and use of W3-5 or W3-5a warning signs instead—proposed 10 years from effective date of Final Rule.

Section 2B.23 Reversible Lane Control Signs (R3-9d, R3-9f through R3-9i)—removal of R3-9c and R3-9e signs—proposed 10 years from effective date of Final Rule.

Section 2B.32 ONE WAY Signs (R6-1, R6-2)—placement requirement at intersecting alleys—January 17, 2008.

Section 2B.46 Hazardous Material Signs (R14-2, R14-3)—change in sign legend—proposed 5 years from effective date of Final Rule.

Section 2B.49 High-Occupancy Vehicle (HOV) Lanes—new section in Millennium Edition—January 17, 2007.

Section 2B.50 High-Occupancy Vehicle Sign Applications and Placement—new section in Millennium Edition—January 17, 2007.

Section 2B.51 Photo Enforced Signs (R10-18, R10-19)—new section—proposed 10 years from effective date of Final Rule.

Section 2B.52 Yield Here to Pedestrians Signs (R1-5, R1-5a)—new section—proposed 10 years from effective date of Final Rule.

Section 2C.04 Size of Warning Signs—increased sizes of W4-1, W5-2, W6-3, and W12-1 signs—January 17, 2008.

Section 2C.04 Size of Warning Signs—sizes of W1 Series Arrows signs, W7 Series truck runaway signs, W12-2P low clearance signs, and W10-1 advance grade crossing sign—proposed 10 years from effective date of Final Rule.

Section 2C.23 PAVEMENT ENDS Sign (W8-3)—removal of symbol sign—January 17, 2011.

Section 2C.24 Shoulder and UNEVEN LANES Signs (W8-4, W8-9, W8-9a, and W8-11)—removal of symbol signs—January 17, 2011.

Section 2C.28 Merge Signs (W4-1, W4-1a)—Entering Roadway Merge sign (W4-1a)—proposed 10 years from effective date of Final Rule.

Section 2C.29 Added Lane Signs (W4-3, W4-3a)—Entering Roadway Added Lane sign (W4-3a)—proposed 10 years from effective date of Final Rule.

Section 2C.30 Lane Ends Signs (W4-2, W9-1), W9-2)—new design of W4-2 sign—proposed 10 years from effective date of Final Rule.

Section 2C.34 Intersection Warning Signs (W2-1 through W2-6)—new design of Circular Intersection (W2-6) sign—proposed 10 years from effective date of Final Rule.

Section 2C.37 Nonvehicular Signs (W11-1, W11-2, W11-3, W11-4, W11-11, W11-14, W11-14a, W11-15)—elimination of crosswalk lines from Crossing signs and use of diagonal downward pointing arrow supplemental plaque (W16-7) if at the crossing—January 17, 2011.

Section 2C.37 Nonvehicular Signs (W11-1, W11-2, W11-3, W11-4, W11-11, W11-14, W11-14a, W11-15)—W11-1, W11-14, W11-14a, and W11-5 signs—proposed 10 years from effective date of Final Rule.

Section 2C.49 PHOTO ENFORCED Plaque (W16-10)—new section—proposed 10 years from effective date of Final Rule.

Section 2C.51 Speed Reduction Signs (W3-5, W3-5a)—new section—proposed 10 years from effective date of Final Rule.

Section 2C.54 Truck Rollover Warning Signs (W1-13, W1-13a)—new section—proposed 10 years from effective date of Final Rule.

Section 2D.38 Street Name Sign (D3-1)—letter and symbol sizes, all other provisions—January 9, 2012.

Section 2D.39 Advance Street Name Signs (D3-2)—new section—January 9, 2012.

Section 2D.45 General Service Signs (D9 Series)—Traveler Info Call 511 (D12-5) sign, Channel 9 Monitored (D12-3) sign—proposed 10 years from effective date of Final Rule.

Section 2D.46 Reference Location Signs (D10-1 through D10-3)—location and spacing of Reference Location signs, design of enhanced location reference sign (D10-7) and intermediate enhanced location reference sign (D10-8)—proposed 10 years from effective date of Final Rule.

Section 2E.28 Interchange Exit Numbering—size of exit number plaque—January 17, 2008.

Section 2E.28 Interchange Exit Numbering—LEFT on exit number plaques for left exits—proposed 15 years from effective date of Final Rule.

Section 2E.30 Advance Guide Signs—advance placement distance—January 17, 2008.

Section 2F.05 Size of Lettering—minimum height of letters and numerals on specific service signs—January 17, 2011.

Section 2I.03 EVACUATION ROUTE Sign (EM-1)—new design and size of EM-1 sign—proposed 10 years from effective date of Final Rule.

Section 3B.01 Yellow Centerline Pavement Markings and Warrants—new section in Millennium Edition—January 3, 2003.

Section 3B.07 Warrants for Use of Edge Lines—new section in Millennium Edition—January 3, 2003.

Section 3B.14 Raised Pavement Markers Substituting for Pavement Markings—spacing requirements—proposed 10 years from effective date of Final Rule.

Section 3C.01 Object Marker Design and Placement Height—width of stripes on Type 3 striped marker—proposed 10 years from effective date of Final Rule.

Section 4D.01 General—location of signalized midblock crosswalks—proposed 10 years from effective date of Final Rule.

Section 4D.05 Application of Steady Signal Indications—Item B.4 in STANDARD—proposed 5 years from effective date of Final Rule.

Section 4D.12 Flashing Operation of Traffic Control Signals—duration of steady red clearance interval in change from red-red flashing mode to steady (stop-and-go) mode—proposed 5 years from effective date of Final Rule.

Section 4E.04 Size, Design, and Illumination of Pedestrian Signal Head Indications—removal of outline-style symbolic pedestrian signal indications—proposed 10 years from effective date of Final Rule.

Section 4E.06 Accessible Pedestrian Signals—new section in Millennium Edition—January 17, 2005.

Section 4E.07 Countdown Pedestrian Signals—new section—proposed 10 years from effective date of Final Rule.

Section 4E.09 Accessible Pedestrian Signal Detectors—new section in Millennium Edition—January 17, 2005.

Section 4E.10 Pedestrian Intervals and Signal Phases—pedestrian clearance time sufficient to travel to far side of the traveled way—proposed 5 years from effective date of Final Rule.

Section 4F.04 Emergency Beacon—new section—proposed 10 years from effective date of Final Rule.

Section 4L.03 In-Roadway Lights at Highway-Rail Grade Crossings and Highway-Light Rail Transit Grade Crossings—new section—proposed 10 years from effective date of Final Rule.

Section 6D.01 Pedestrian Considerations—all new provisions for pedestrian accessibility—proposed 5 years from effective date of Final Rule.

Section 6D.02 Worker Considerations—high-visibility apparel requirements—proposed 5 years from effective date of Final Rule.

Section 6E.02 High-Visibility Clothing—high-visibility apparel requirements for flaggers—proposed 5 years from effective date of Final Rule.

Section 6F.55 Channelizing Devices—requirements for detectability by users of long canes—proposed 5 years from effective date of Final Rule.

Section 6F.56 Cones—width of retroreflective stripes—proposed 5 years from effective date of Final Rule.

Section 6F.60 Type I, II, or III Barricades—provisions for pedestrian accessibility—proposed 5 years from effective date of Final Rule.

Section 6F.63 Temporary Raised Islands—requirements for pedestrian accessibility—proposed 5 years from effective date of Final Rule.

Section 7B.08 School Advance Warning Sign (S1-1)— elimination of crosswalk lines from Crossing signs and use of diagonal downward pointing arrow supplemental plaque (W16-7) if at the crossing—January 17, 2011.

Section 7E.04 Uniform of Adult Guards and Student Patrols—requirement for high-visibility apparel for adult guards—proposed 5 years from effective date of Final Rule.

Section 8B.02 Highway-Rail Grade Crossing (Crossbuck) Signs (R15-1, R15-2, R15-9)—retroreflective strip on crossbuck support—January 17, 2011.

Section 8B.02 Highway-Rail Grade Crossing (Crossbuck) Signs (R15-1, R15-2, R15-9)—Crossbuck Shield sign (R15-9)—proposed 10 years from effective date of Final Rule.

Section 8B.03 Highway-Rail Grade Crossing Advance Warning Signs (W10 Series)— removal of existing W10-6 series signs—January 17, 2006.

Section 8D.07 Traffic Control Signals at or Near Highway-Rail Grade Crossings—pre-signals—proposed 10 years from effective date of Final Rule.

Section 9B.04 Bicycle Lane Signs (R3-17, R3-17a, R3-17b)—deletion of preferential lane symbol (diamond) for bicycle lane signs—January 17, 2006.

Section 9B.17 Bicycle Crossing Warning Sign (W11-1)—elimination of crosswalk lines from Crossing signs and use of diagonal downward pointing arrow supplemental plaque (W16-7) if at the crossing—January 17, 2011.

Chapter 9C Markings—deletion of preferential lane symbol (diamond) for bicycle pavement markings—January 17, 2007.

Part 10 Traffic Controls for Highway-Light Rail Transit Grade Crossings—automatic gates, flashing-light signals, and blank-out signs—January 17, 2006.

Section 10C.15 Highway-Light Rail Transit Grade Crossing Advance Warning Signs (W10 Series)—removal of existing W10-6 series signs—January 17, 2006.