New Developments with the MUTCD

BY H. GENE HAWKINS JR.

The first *Manual on Uniform Traffic Control Devices* (MUTCD)[1] was published in 1935, and subsequent editions of the MUTCD were published in 1942, 1948, 1961, 1971, 1978 and 1988. During its lifetime, the MUTCD has demonstrated that it is a dynamic document, adapting itself to advances in traffic control, technology and the needs of practitioners and road users. Some editions represent an update or refinement of the previous edition, while at least three editions (1948, 1961 and 1971) have been significantly different than their predecessors. The current MUTCD shares many similarities with its 1971 ancestor. Despite the refinements and additions that have taken place in the past 22 years, the basic content and structure of the current MUTCD is the same today as it was in 1971. However, the next edition of the MUTCD will be significantly different from the current edition.

Several factors will account for these differences. Some factors include: revisions and changes to the 1988 MUTCD; publication of a revised Part VI; reformatting and rewriting of the entire MUTCD; development of retroreflectivity standards for signs and pavement markings; transition to a metric-based system of traffic control devices; and the publication of a new MUTCD.

Organizations and the MUTCD

Before describing current activities related to the MUTCD, it is appropriate to provide some background information about the MUTCD and the processes by which it is changed. During its first 35 years, the MUTCD was the responsibility of the Joint Committee on Uniform Traffic Control Devices (later known as the National Joint Committee on Uniform Traffic Control Devices). Soon after publication of the 1971 edition, the Federal Highway Administration (FHWA) assumed responsibility for the MUTCD. As a result of this shift in responsibility, the name of the committee changed to the National Advisory Committee on Uniform Traffic Control Devices (NAC) and its function changed to an advisory nature. The NAC was disbanded by the federal government in 1979. Later that year, the former members of the NAC created the National Committee on Uniform Traffic Control Devices (NCUTCD).

The NCUTCD is a private organization that has no official association with the federal government. The majority of its members are employees of governmental agencies directly involved in traffic engineering activities. Its membership also includes representatives of other organizations who have a major interest in traffic control. The members of the NCUTCD are all volunteers and receive no compensation for their contributions. The purpose of the NCUTCD is to provide input to the FHWA on the MUTCD. Members of the NCUTCD meet twice a year to discuss the manual and develop comments that are submitted to FHWA. These comments come from 150 to 200 experts who work daily in the operation of a highway or street system.

The FHWA continues to have the responsibility for making changes to the MUTCD. The process for requesting a change to the manual is explained in Section 1A-6 of the 1988 MUTCD. Before a change or revision to the MUTCD becomes official, it must go through the *Federal Register* rulemaking process. This process normally consists of the following sequence:

1. *Advance Notice of Proposed Rulemaking (ANPRM)*—A problem or situation is described that implies a possible regulatory action. Public comment is invited concerning the necessity for regulatory action and the adequacy of the agency's position. The public response is used by the FHWA in any future development of the regulatory action.

2. *Notice of Proposed Rulemaking (NPRM)*—Identifies and describes a specific request to change the MUTCD, presents the FHWA's proposed regulatory action and invites public comment. The public comments are considered in making a final decision.

3. *Final Ruling (FR)*—Identifies the specific request to change the MUTCD, the FHWA position at the time of the NPRM, summarizes the public comments and announces the official regulatory action.

The public comment aspect of the first two steps is an important part of the rulemaking process. It provides the public with an opportunity to state their

opinions on the proposed changes to the MUTCD and to have an impact on the content of the MUTCD. Each and every public comment is considered by the FHWA before a Final Rule is issued. Comments from the NCUTCD are considered in the same manner as comments from any other organization or private citizen.

Revisions and Changes to the 1988 MUTCD

At various times in the past, it has been necessary to revise the MUTCD. Typically, these revisions were not significant enough to justify the publication of a completely new MUTCD, and the revisions were issued as supplements to the MUTCD or as replacement pages. The 1935 and 1948 editions were each revised once, while the 1971 MUTCD was revised eight times and the 1978 MUTCD has been revised five times (the fifth revision was the 1988 MUTCD).

In announcing the publication of the 1988 MUTCD, FHWA stated that it did not intend to make routine, incremental changes to the 1988 MUTCD.[2] Only those changes having a direct impact on the motoring public or pedestrians would be advanced through rulemaking. To date, the FHWA has issued three revisions to the 1988 MUTCD. The first revision relates to the use of short-term pavement markings in work zones,[3] the second revision relates to the use of "stop" and "yield" signs at railroad-highway grade crossings,[4] and the third is the complete revision of Part VI, which is described later. The first and second revisions are reproduced in the (see page 20). The second revision (stop and yield signs at grade crossings) was mandated by Congress in Section 1077 of the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA).[5] In addition to these revisions, FHWA has issued three errata for the 1988 MUTCD. The dates of the errata are Nov. 2, 1989, May 12, 1992, and Aug. 5, 1992. Copies of the errata can be obtained by contacting the Federal Highway Administration, Office of Highway Safety (HHS-21), 400 Seventh St., S.W., Washington, DC 20590.

Since the publication of the 1988 MUTCD, FHWA has received more than 40 requests for changes to the MUTCD. These requests are currently being analyzed. Those changes deemed appropriate will be processed through rulemaking for inclusion in the next edition of the MUTCD.

Publication of a Revised Part VI

Part VI of the MUTCD (Traffic Controls for Street and Highway Construction, Maintenance, Utility and Emergency Operations) addresses traffic control for construction and maintenance operations, plus other temporary situations. This part of the manual has been undergoing intense scrutiny during the past few years in an effort to improve the information presented in Part VI. This scrutiny includes seven different *Federal Register* notices related to a revised Part VI.[6–12] The first four notices invited comment on drafts

Table 1. Reformatting Guidelines for the MUTCD

Categories	*Description*	*Typical Phrases*
Standard	Mandatory actions, which are required without exceptions or with exceptions so noted, under this heading. All words shall be in bold print.	Shall, shall mean, shall be satisfied, shall consist
Guidance	Advisory usage, recommended but not mandatory with deviations allowed where engineering judgment indicates the deviation to be appropriate. All words shall be in italic print under this heading.	Should, should be used, should be considered, should be given
Option	Includes those procedures and devices that are allowed, but carry no recommendation or mandate. The user is free to use or refrain from their use. All words shall be in normal print.	May, may be used, may be considered
Support	Includes all introductory or explanatory language. It may occur before, within or after any heading, but shall be clearly marked as "Support." All words shall be in normal print.	Is, are, warrants, considered, required[1]

Notes: [1]Support words may be used provided there is no intention of mandating, recommending, or authorizing any procedure or device under this heading.
Source: Reference 14

of a revised Part VI. The fifth notice was an ANPRM for the revised Part VI and the sixth notice was an NPRM. The draft of the revised Part VI, which accompanied the NPRM, was prepared by the Construction and Maintenance Operations Technical Committee of the NCUTCD. The Dec. 10, 1993, *Federal Register*[12] contained the final rule for the revised Part VI, which became effective on Jan. 10, 1994. The revised Part VI has been issued as 1988 MUTCD Revision 3 and is available as a stand-alone document from the FHWA Office of Highway Safety. The revised Part VI uses the same format as the 1988 MUTCD and retains most of the design and application standards contained in the 1988 MUTCD. However, the revised Part VI is much larger than the Part VI in the 1988 MUTCD. Six new traffic control devices have been added, the number of typical applications has significantly increased and more guidance information has been added.

MUTCD Reformat and Rewrite

On June 9, 1986, FHWA published an ANPRM to solicit comments on the need for a new MUTCD and a new format.[13] The NCUTCD responded to this ANPRM by appointing a blue ribbon committee in January 1989 to look at ways to improve the MUTCD. One of the charges of this committee was to look at the need for revising the text of the MUTCD to eliminate inconsistent and ambiguous language, such as "it is desirable that," "shall preferably be," "may be required," "may be justified," "shall be permitted," "it is necessary that," "normally should" and "is intended for use." The committee determined that such a need existed and recommended that the NCUTCD undertake the task. By July 1990, the NCUTCD had prepared a trial application of a reformatted MUTCD and submitted it to the FHWA. The NCUTCD then began the process of preparing a draft of a revised MUTCD. The general procedure being used by the NCUTCD is to reformat the existing language in each part of the MUTCD, then to rewrite each part. Once the NCUTCD completes its revision effort, the draft MUTCD will be submitted to FHWA for consideration.

The current guidelines being used by the NCUTCD[14] to reformat the MUTCD classifies the language in the manual into four categories: standard, guidance, option and support, as shown in Table 1. The material in the first three categories corresponds to the use of shall, should and may, respectively, in the current manual. Currently, the NCUTCD has completed the reformatting process for Parts I, II, III, IV and VIII. In the Jan. 10, 1992, *Federal Register* notice,[10] the FHWA described the NCUTCD format and also proposed an alternative format, which contains only standards and supplemental information. All material that could not be classified as a standard or supplemental information would be put in a separate document, which would not be a standard. The NCUTCD responded that it believed the four categories are important and there was informal agreement to proceed in that manner.

The NCUTCD has established a target date of 1995 for completing the reformatting/rewriting process. At that time, the NCUTCD will forward its draft to the FHWA with the recommendation that it be adopted as the new MUTCD. The FHWA will then use the draft to begin the rulemaking process through the *Federal Register*. However, the FHWA might elect to make additional changes to the NCUTCD draft before beginning the rulemaking process. Once the rulemaking process is begun, a year or two will be required before a Final Rule is issued and a new MUTCD can be published. It is hoped that the next edition of the MUTCD will be completed in 1996. However, there are numerous obstacles that must be overcome before the next manual can be rewritten, approved and published. Some of these obstacles could delay publication beyond the expected date.

Retroreflectivity Standards

In an Apr. 26, 1985, ANPRM[15] the FHWA requested public comment regarding retroreflective standards. The NCUTCD expressed great interest in this request and asked the FHWA to extend the period for comment. Except for the extension, no additional rulemaking action was taken until Congress, in the Department of Transportation and Related Agencies Appropriations Act of 1992, enacted legislation requiring the MUTCD to be revised to include "a standard for a minimum level of retro-reflectivity that must be maintained for pavement markings and signs which apply to all roads open to public travel."[16] During the past several years, the FHWA has been conducting research related to the retroreflection of signing, pavement marking materials and other traffic control devices. Most of the technical aspects of this research have been completed and some minimum standards have been suggested.[17]

The FHWA currently is considering a number of implementation approaches to meet driver needs and the intent of this legislation and will be assessing the potential impacts of the proposed standards on state and local agencies. Numerous state and local agencies will participate in evaluations of the proposed standards. Among the factors to be considered are the impacts of minimum retroreflectivity standards on cost and safety, as well as the potential impacts on the traveling public.[18] Once these evaluations are completed, FHWA will publish the proposed standards for minimum retroreflection in the *Federal Register* and invite public comment before a Final Rule is issued. It is expected that the final standards will be included in the next edition of the MUTCD.

Metrics and the MUTCD

The Omnibus Trade and Competitiveness Act of 1988[19] requires metric conversion for all federal government procurements, grants and other business-related activities, except when such use is impractical or likely to cause significant inefficiencies or loss of markets to U.S. firms. A Presidential Executive Order No. 12770, signed July 25, 1991,[20] requires all federal agencies to formulate transition plans. The FHWA recently published a notice of its metric conversion policy and plan in the *Federal Register* .[21] Currently, the FHWA is considering a number of approaches to meet the intent of the

1988 MUTCD REVISION 1

Jan. 17, 1990
Text changes to the MUTCD discussed in Final Rule Docket No. 87-21, Notice No. 3, *Federal Register*, Jan. 24, 1990, Vol. 55, No. 19, pages 2373-2374.

Request VI-57(C) Temporary Pavement Markings in Construction and Maintenance Areas.

1. Revise Section 6D-3 (page 6D-2), the first paragraph. Delete the first sentence and replace with the following two sentences to read:
   Short-term pavement markings are those that may be used until the earliest date when it is practical and possible to install pavement markings that meet the full MUTCD standards for pavement markings. Normally, it should not be necessary to leave short-term pavement markings in place for more than two weeks.
2. Revise Section 6D-3 (page 6D-3), the last paragraph. Delete the first sentence and replace with the following sentence to read:
   Each highway agency should develop a policy that will, within the scope of this Section, provide more detailed criteria and describe the conditions where short-term pavement markings will be used.

1988 MUTCD REVISION 2

March 17, 1992
Text changes to the MUTCD discussed in Final Rule Docket No. 92-11, *Federal Register*, Nov. 6, 1992, Vol. 57, No. 216, pages 53029-53030.

Request VIII-32 (C) Stop or Yield Signs at Highway-Rail Grade Crossings.
Delete Section 8B-9 (page 8B-7) in its entirety and replace with the following:

8B-9 STOP or YIELD Signs at Grade Crossings (R1-1, W5-1, R1-2, W5-2)

STOP or YIELD signs may be used at highway-rail grade crossings, at the discretion of the responsible State or local jurisdiction, for crossings that have two or more trains per day and are without automatic traffic control devices.

For other crossings with passive protection, STOP or YIELD signs may be used after need is established by a traffic engineering study. The study should take into consideration such factors as: volume and character of highway and train traffic, adequacy of stopping sight distance, crossing accident history, and need for active control devices.

For all highway-rail grade crossings where STOP or YIELD signs are installed, the placement shall conform to the requirements of MUTCD Section 2B-9 ***Location of Stop Sign and Yield Sign****. STOP AHEAD or YIELD AHEAD Advance Warning signs shall also be installed.*

metric legislation. To date, no decision has been made regarding the coordinated effort required to provide an orderly transition to metric signing. An Aug. 31, 1993, *Federal Register* notice[22] solicited comments on three options for converting to metric sign legends. The options included converting to metric signs through routine maintenance throughout a period of four to seven years; converting to metric signs throughout a period of six months to one year; and initial use of dual unit signs to be replaced with metric signs at a later date. In addition to the metric conversion activities at the FHWA, the American Association of State Highway and Transportation Officials is developing a position on this issue through its Subcommittee on Traffic Engineering.

Publication of the Next MUTCD

Once the NCUTCD completes the rewriting process, it will submit the draft of the MUTCD to the FHWA and request that it become the next edition of the MUTCD. The FHWA will consider the NCUTCD request in preparing a NPRM. The FHWA will use the *Federal Register* rulemaking process to obtain public comment on the revision before the next edition of the MUTCD is published. The actual publication date of the next MUTCD depends upon many factors, including NCUTCD progress on preparation of the draft, the FHWA review of the draft and the *Federal Register* rulemaking process. It is hoped that the revised MUTCD will be published in 1996, about the same time that the United States completes the metric transition.

In addition to being completely reformatted and rewritten, the next MUTCD is likely to have a different appearance. The traditional paper version of the manual will be published. However, additional options being considered include a CD-ROM version. With the CD-ROM version, the entire manual could be contained on a read-only compact disk. Users with the appropriate hardware would be able to search the MUTCD for specific items, print portions of the manual in any format and convert text from the MUTCD into files that can be used with word processors.

The MUTCD continues to evolve over time, and it is hoped that the next edition will provide transportation professionals with the type of traffic control information needed to enter the 21st century, and to do so in a manner consistent with current communication technology.

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