NCUTCD Proposal for Changes to the Manual on Uniform Traffic Control Devices

TECHNICAL COMMITTEE: Edit Committee, with input from all technical committees and a task force
ITEM NUMBER: Edit #1
TOPIC: Site Roadways Open to Public Travel (SROPT)
ORIGIN OF REQUEST: Needed due to changes in the 2009 MUTCD applying the MUTCD to private roads open to public travel

DEVELOPMENT HISTORY:
- Approved by Edit Committee, April 30, 2015, revised and approved June 17, 2015
- Approved by NCUTCD Council: June 18, 2015 (Edit, GMI and Signals) and January 8, 2016 (R&W, Markings, TTC and GMI)
- Reviewed by task force and Edit Committee for editorial consistency June 8, 2016.

This is a proposal for recommended changes to the MUTCD that have been approved by the NCUTCD Council. This proposal does not represent a revision of the MUTCD and does not constitute official MUTCD standards, guidance, or options. It will be submitted to FHWA for consideration for inclusion in a future MUTCD revision. The MUTCD can be revised only through the federal rulemaking process.

SUMMARY:
In 2007 the FHWA approved federal rule making that made the Manual on Uniform Traffic Control Devices applicable to “roads open to public travel.” By the end of 2009, FHWA issued federal rule making on the MUTCD that further defined the application of the MUTCD to private roads open to public travel but left much of the detail to be developed. As currently written, all provisions of the MUTCD apply to both public roads and private roads open to public travel. Some characteristics of roads off of the public right-of-way that are open to public travel are different from other roadway environments and for this reason some existing MUTCD provisions are impractical for these roadways. For purposes of these recommend changes to MUTCD language, these roadways are described as “Site Roadways Open to Public Travel” or “Site Roadways.” Not all site roadways are on private property. Some are on public property (educational campuses, government facilities, airports, etc.), making the term private roadway imprecise in describing this category of roadways. The purpose of the described recommended MUTCD changes is to provide additional flexibility in selected provisions of the MUTCD for roadways that are not in the public right-of-way but are open to public travel.
These proposed changes were initially developed by a task force that worked with all of the NCUTCD technical committees. The task force work was then reviewed by the Edit Committee and packaged as recommended MUTCD changes to submit to sponsors for review and comment.

We believe that the safety, efficiency and convenience of road travel in the United States – by all road users – can be enhanced by the uniform and consistent application of traffic control devices. For owners of site roadways, these recommended changes increase the flexibility in providing traffic control devices that are consistent with the needs of the users of those facilities, which may be different from the needs of users of roadways in the public right-of-way.

DISCUSSION

For many years, the Code of Federal Regulations (23CFR655) included the statement that the MUTCD is “the national standard for all traffic control devices installed on any street, highway, or bicycle trail open to public travel.” This language is also mentioned in the 2000 and 2003 MUTCDs. In December 2006, the FHWA revised the language in 23 CFR 655.603 to clarify that, for the purpose of MUTCD applicability, the phrase “open to public travel” includes toll roads and roads within shopping centers, parking lots, airports, sports arenas, and other similar business and recreation facilities that are privately or publicly owned but where the public is allowed to travel without full-time access restrictions.

The Final Rule making in 2009 for the MUTCD provides the following definition:

Part 1 General 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, 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.

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 all traffic control devices installed on any street, highway, bikeway, or private road open to public travel (see definition in Section 1A.13) 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.

In accordance with 23 CFR 655.603(a), for the purposes of applicability of the MUTCD:

A. Toll roads under the jurisdiction of public agencies or authorities or public-private partnerships shall be considered to be public highways;

B. Private roads open to public travel shall be as defined in Section 1A.13; and
C. Parking areas, including the driving aisles within those parking areas, that are either publicly or privately owned shall not be considered to be “open to public travel” for purposes of MUTCD applicability.

Section 1A.13 Definitions

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.

As pointed out in the comments to the NPA of the 2009 MUTCD, there are many challenges associated with applying the MUTCD to sites open to public travel. While some sites open to public travel share similar characteristics with public streets and highways, other sites open to public travel possess characteristics that were not considered when developing criteria for the application, placement, and other aspects of traffic control devices on public roadways and highways. Examples of sites open to public travel characteristics that make some of them different from public roads include (but are not limited to):

- Lack of right-of-way defining limits of the “highway.”
- Low-speed travel.
- No posted or statutory speed limit.
- High volumes of pedestrians.
- No applicable law enforcement for failure to comply with traffic control devices.
- Individual property rights.

Guiding Principles

Five guiding principles were followed in the development of proposed edits to the MUTCD to address Site Roadways Open to Public Travel (SROPT). These include:

1. MUTCD applies to roads – public or private. With guidance (provided in edits to definitions in the MUTCD and the ITE Traffic Control Device Handbook) designers and proper authorities can make decision about what is a road;
2. In many cases on site roadways (due to their lower speed conditions), traffic control devices are not necessary with proper geometric and site design. However, where traffic control devices are utilized they need to comply with the MUTCD;
3. Editing of the MUTCD to include site roadways in the existing text was preferred versus a separate new Part (Chapter) to avoid redundancy and achieve streamlining.
   This was determined after prototyping out a new Part to the MUTCD and discovering that the issues were not as extensive as to require a new Part;
4. While the decision was made to not expand the MUTCD by adding a new Part, there was desire to highlight site roadways items such that a user could rapidly find discussion unique to site roadways without having to scan the entire MUTCD. To
accomplish this, it was decided to use the term “site roadways” or the acronym “SROPT” (for Site Roadways Open to Public Travel) and place it in front of new text specifically addressing conditions for site roadways to allow users to rapidly search future MUTCDs for “SROPT” related statements.

5. Carve outs to address SROPT flexibility was the preferred approach to the editing. This was particularly relevant in size exceptions, which used lower speeds as a condition for the flexibility, given that the function of these traffic control devices would not be affected in these circumstances.

Outreach

The Technical Committee outreach process framed numerous issues that people identified for consideration. The top five comments are summarized below as well as how they were addressed:

- Standards for shape, color, size and those for placement, font, letter heights, number of signs
  - Where traffic control devices are used, they need to comply with shape, color and size specified by the MUTCD, unless specifically indicated otherwise. Flexibility for placement, fonts, letter heights and number of signs are called out in several sections to address SROPT conditions
- Determining if/how smaller sizes are possible
  - Specific carve outs that address slower speed conditions are made for SROPT. However, where SROPTs have roads with speeds that are consistent with the higher speeds of public roadways, the traffic control devices that are used need to comply with the MUTCD.
- Crosswalks in SROPT
  - Crosswalk use in SROPTs is a designer’s choice in many cases. Where crosswalk traffic control devices are used, they need to comply with the MUTCD (including the carve outs defined in signing and markings). Many cases for SROPT, proper design of the crossing areas from the front doors of buildings to parking areas can reduce or eliminate the need for traffic control devices. This is the preferred approach and it is highlighted in the ITE Traffic Control Device Handbook chapter on SROPT.
- Retroreflectivity of signs and markings
  - Sign retroreflectivity for regulatory and warnings signs needs to comply with the MUTCD, where such traffic control devices are used.
- Applicability to sidewalks, ferries, and other areas where the rule only states roads, streets and bicycle trails
  - The Federal rule making applies to roads as defined (see above definition #271). Designers have discretion to extend MUTCD application to sidewalks, ferries, and other areas if they choose to use traffic control devices in some capacity for these areas.
- Who enforces traffic control devices on private roads?
  - In the Federal Register final rule, the FHWA noted it did not believe it is necessary for State and/or local highway agencies to have specific authority or enforcement
responsibility for traffic control devices on private roads. This change to 23CFR655 does not require State or local agencies to police the private properties open to public travel to ensure compliance with the MUTCD. However, this change does make it clear that private roads open to public travel are subject to the same traffic control standards as public streets and highways. Therefore, owners or parties who are responsible for such private roads who decide to utilize traffic control devices are encouraged to bring them into compliance with the MUTCD and other applicable State manuals.

Wrap-Up

The addition of site roadways to the MUTCD is aimed at making the road user experience more uniform and consistent by providing a comprehensive application of the MUTCD for travelers regardless of the facility or ownership of the facility. This was already the case for many states across the United States prior to the change in 23CFR655. That change was not aimed at imposing government regulation upon private property. Rather, the majority of road users do not know where they cross jurisdiction lines or move from a public street or highway to a site roadway open to public travel.

Uniformity in traffic control devices for these circumstances is beneficial, reducing the potential for collisions, injuries, and potential fatalities. Uniformity enhances traffic safety and convenience by assuring that road users are able to navigate effectively with high recognition and minimal confusion. Lack of recognition and the potential for confusion contribute to distractions which are significant in collisions, property damage, and injuries. If the goal is to reduce collisions, injuries, and fatalities associated with our transportation system it is hard to argue against the premise that having road users encounter consistent and uniform messages to regulate, warn, or guide them, no matter where they travel in the United States is better at meeting this goal than an inconsistent, non-uniform alternative.

For site roadways open to public travel, the responsible parties are different than with public streets and highways. Public streets and highways have a public agency or jurisdiction that operates and maintains traffic control devices and is held accountable to consistency with the MUTCD by the potential for design liability and by the US DOT through its funding allocations. SROPT have different accountability. For example, a port or toll road may be responsible to a quasi-public agency (such as a Port or Toll Authority) that has some relationship to the US and state DOTs. However, an office building or shopping center would be the responsibility of the property owner. The FHWA noted that enforcement can only occur when States or municipalities include the requirement to comply with MUTCD in State ordinances, local building codes, development approvals, site plans, etc., and, as a result, potential tort liability to the owners of the private roads in the event of non-compliance. The FHWA believes that public agency traffic engineers are not expected to enforce this provision for existing conditions on site roads open to public travel. Owners, designers and contractors have responsibilities to address and/or manage these risks for SROPT. In closing, this proposal is focused on providing clarifications to the MUTCD to address Federal rulemaking of the past decade. For state or local DOT traffic engineers, while the need for these changes may not affect highways and roadways under their jurisdiction, the resulting uniformity will benefit all road users.
RECOMMENDED MUTCD CHANGES

The following present the proposed changes to the MUTCD within the context of the current MUTCD language. Proposed additions to the MUTCD are shown in blue underline and proposed deletions from the MUTCD are shown in red strikethrough. Changes previously approved by NCUTCD Council are shown in green double underline for additions and green double strikethrough for deletions. Changes to previously approved NCUTCD text are shown blue underline and red strikethrough within the green text.

INTRODUCTION

Standard:

01 Traffic control devices shall be defined as all signs, signals, markings, channelizing
devices or other devices that use colors, shapes, symbols, words, sounds and/or tactile
information for the primary purpose of communicating a regulatory, warning, or guidance
message to road users on a highway, pedestrian facility, bikeway, pathway, or site roadway
private road open to public travel. [Previously approved by NCUTCD Council 6/23/11]

02 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 all traffic control devices installed on any street,
highway, bikeway, or site roadways private-road open to public travel (SROPT) (see
definition in Section 1A.13) 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.

03 In accordance with 23 CFR 655.603(a), for the purposes of applicability of the
MUTCD:

A. Toll roads under the jurisdiction of public agencies or authorities or public-private
partnerships shall be considered to be public highways;

B. Private roads open to public travel shall be as defined in Section 1A.13; and

C. Parking areas, including the driving aisles within those parking areas, that are
either publicly or privately owned shall not be considered to be "open to public
travel" for purposes of MUTCD applicability.

D. Roads within private gated properties where access is restricted at all times (except
for gated toll roads or roads where the general public is able to pay to access the
facility), parking areas, parking aisles within parking areas, private grade
crossings and pedestrian ways internal to buildings shall not be included in this
definition.

03 In accordance with 23 CFR 655.603(a), the MUTCD shall apply to all of the following
facilities:
A. Any street, roadway, or bikeway open to public travel, either publicly and
privately owned;

B. Streets and roadways on sites that are off the public right-of-way that are open to
public travel without full-time access restrictions. Examples include roadways
within shopping centers, office parks, airports, sports arenas, other similar
business and/or recreation facilities, governmental office complexes, schools,
universities, airports, recreational parks, and other similar publicly owned
complexes and/or recreation facilities. The above-described examples of streets
and roadways are referred to in this Manual as Site Roadways Open to Public
Travel (SROPT);

C. Publicly-owned toll roads, including those under the jurisdiction of a public
agency, public authority, or public-private partnership;

D. Privately-owned toll roads where the public is allowed to travel without access
restriction. This includes gated toll roads or roadways where the general public is
able to pay to access the facility; and

E. Grade crossings of publicly-owned roadways with railroads or light rail transit.

The MUTCD shall not apply to the following facilities:

A. Roadways within private gated properties where access to the general public is
restricted at all times;

B. Grade crossings of privately-owned roadways with railroads;

C. Parking areas, including the driving aisles within those parking areas, that are
either publicly or privately owned; and

D. Pedestrian ways internal to buildings.

Support: 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, highways, bikeways, and site roadways private roads open to public travel (see definition in Section 1A.13).

PART 1: GENERAL

Chapter 1A. General

Section 1A.01 Purpose of Traffic Control Devices

Support:

The purpose of traffic control devices, as well as the principles for their use, is to promote
highway safety and efficiency by providing for the orderly movement of all road users on streets,
highways, bikeways, and site roadways private roads open to public travel throughout the
Nation.

Traffic control devices notify road users of regulations and provide warning and guidance
needed for the uniform and efficient operation of all elements of the traffic stream in a manner
intended to minimize the occurrences of crashes.

Standard:

Traffic control devices or their supports shall not bear any advertising message or any
other message that is not related to traffic control.

Support:
04  Tourist-oriented directional signs and Specific Service signs are not considered advertising; rather, they are classified as motorist service signs.

05  The UVC Section 11-206 (a) does not allow persons to place or maintain any unauthorized device that is or resembles an official traffic control devices on or within view of any highway.

Section 1A.02 Principles of Traffic Control Devices

Support:

01  This Manual contains the basic principles that govern the design and use of traffic control devices for all streets, highways, bikeways, and site roadways private roads open to public travel (see definition in Section 1A.13) regardless of type or class or the public agency, official, or owner having jurisdiction. This Manual's text specifies the restriction on the use of a device if it is intended for limited application or for a specific system. It is important that these principles be given primary consideration in the selection and application of each device.

Guidance:

02  To be effective, a traffic control device should meet five basic requirements:

A.  Fulfill a need;
B.  Command attention;
C.  Convey a clear, simple meaning;
D.  Command respect from road users; and
E.  Give adequate time for proper response.

Standard:

08  SROPT: All traffic control devices used on site roadways open to public travel shall have the same shape, color, and meaning as those required by the MUTCD for use on public highways, except as allowed by the guidance in Section 1A.03, paragraph 05. Sign size exceptions are noted in each Chapter as applicable.

Section 1A.03 Design of Traffic Control Devices

Guidance:

01  Devices should be designed so that features such as size, shape, color, composition, lighting or retroreflection, and contrast are combined to draw attention to the devices; that size, shape, color, and simplicity of message combine to produce a clear meaning; that legibility and size combine with placement to permit adequate time for response; and that uniformity, size, legibility, and reasonableness of the message combine to command respect.

02  Aspects of a device's standard design should be modified only if there is a demonstrated need.

Support:

03  An example of modifying a device's design would be to modify the Combination Horizontal Alignment/Intersection (W1-10) sign to show intersecting side roads on both sides rather than on just one side of the major road within the curve.

Option:

04  With the exception of symbols and colors, minor modifications in the specific design elements of a device may be made provided the essential appearance characteristics are preserved.

05  SROPT: On site roadways open to public travel, sign sizes may be modified where space limitations dictate.
Section 1A.07 Responsibility for Traffic Control Devices

Standard:

01 The responsibility for the design, placement, operation, maintenance, and uniformity of traffic control devices shall rest with the public agency or the official having jurisdiction, or, in the case of site roadways or private toll roads private roads open to public travel, with the private owner or official having jurisdiction. 23 CFR 655.603 adopts the MUTCD as the national standard for all traffic control devices installed on any street, highway, bikeway, or site roadways private roads open to public travel (see definition in Section 1A.13). When a State or other Federal agency manual or supplement is required, that manual or supplement shall be in substantial conformance with the National MUTCD.

02 23 CFR 655.603 also states that traffic control devices on all streets, highways, bikeways, and site roadways private roads open to public travel in each State shall be in substantial conformance with standards issued or endorsed by the Federal Highway Administrator.

Support:

03 The Introduction of this Manual contains information regarding the meaning of substantial conformance and the applicability of the MUTCD to site roadways private roads open to public travel.

Section 1A.08 Authority for Placement of Traffic Control Devices

Standard:

01 Traffic control devices, advertisements, announcements, and other signs or messages within the highway right-of-way shall be placed only as authorized by a public authority or the official having jurisdiction, or, in the case of site roadways or private toll roads private roads open to public travel, by the private owner or official having jurisdiction, for the purpose of regulating, warning, or guiding traffic.

02 When the public agency or the official having jurisdiction over a street or highway or, in the case of site roadways or private toll roads private roads open to public travel, the private owner or official having jurisdiction, has granted proper authority, others such as contractors and public utility companies shall be permitted to install temporary traffic control devices in temporary traffic control zones. Such traffic control devices shall conform with the Standards of this Manual.

Section 1A.09 Engineering Study and Engineering Judgment

Guidance:

04 Jurisdictions, or owners of site roadways or private toll roads private roads open to public travel, with responsibility for traffic control that do not have engineers on their staffs who are trained and/or experienced in traffic control devices should seek engineering assistance from others, such as the State transportation agency, their county, a nearby large city, or a traffic engineering consultant.

Section 1A.10 Interpretations, Experimentations, Changes, and Interim Approvals

Support

09 A request for permission to experiment will be considered only when submitted by the public agency or toll facility operator responsible for the operation of the road or street on which the experiment is to take place. For a site roadway private road open to public travel, the request
will be considered only if it is submitted by the private owner or private official having jurisdiction.

**Standard:**

17. A jurisdiction, toll facility operator, or owner of a site roadway private road open to public travel that desires to use a traffic control device for which FHWA has issued an interim approval shall request permission from FHWA.

**Guidance:**

20. A local jurisdiction, toll facility operator, or owner of a site roadway private road open to public travel using a traffic control device or application under an interim approval that was granted by FHWA either directly or on a statewide basis based on the State’s request should inform the State of the locations of such use.

21. A local jurisdiction, toll facility operator, or owner of a site roadway private road open to public travel that is requesting permission to experiment or permission to use a device or application under an interim approval should first check for any State laws and/or directives covering the application of the MUTCD provisions that might exist in their State.

**Section 1A.13 Definitions of Headings, Words, and Phrases in this Manual**

**Standard:**

02. Unless otherwise defined in this Section, or in other Parts of this Manual, words or phrases shall have the meaning(s) as defined in the most recent editions of the "Uniform Vehicle Code," "AASHTO Transportation Glossary (Highway Definitions)," and other publications mentioned in Section 1A.11.

03. The following words and phrases, when used in this Manual, shall have the following meanings:

94. Intersection—intersection is defined as follows:

(a) The area embraced within the prolongation or connection of the lateral curb lines, or if none, the lateral boundary lines of the roadways of two highways that join one another at, or approximately at, right angles, or the area within which vehicles traveling on different highways that join at any other angle might come into conflict.

(b) The junction of an alley, or driveway with a public roadway or highway shall not constitute an intersection, unless the public roadway or highway at said junction is controlled by a traffic control device.

(c) If a highway includes two roadways that are 30 feet or more apart (see definition of Median), then every crossing of each roadway of such divided highway by an intersecting highway shall be a separate intersection.

(d) If both intersecting highways include two roadways that are 30 feet or more apart, then every crossing of any two roadways of such highways shall be a separate intersection.

(e) At a location controlled by a traffic control signal, regardless of the distance between the separate intersections as defined in (c) and (d) above:

(1) If a stop line, yield line, or crosswalk has not been designated on the roadway (within the median) between the separate intersections, the two intersections and the roadway (median) between them shall be considered as one intersection;
Where a stop line, yield line, or crosswalk is designated on the roadway on the intersection approach, the area within the crosswalk and/or beyond the designated stop line or yield line shall be part of the intersection; and

Where a crosswalk is designated on a roadway on the departure from the intersection, the intersection shall include the area extending to the far side of such crosswalk.

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. [see new definition for Site Roadways Open to Public Travel #265]

Road User—a vehicle operator, bicyclist, or pedestrian, including persons with disabilities, within the highway or on a site roadway private road open to public travel.

Traffic—pedestrians, bicyclists, ridden or herded animals, vehicles, streetcars, and other conveyances either singularly or together while using for purposes of travel any highway or site roadway private road open to public travel.

Traffic Control Device—a sign, signal, marking, or other device used to regulate, warn, or guide traffic, placed on, over, or adjacent to a street, highway, private road open to public travel, pedestrian facility, or shared-use path by authority of a public agency or official having jurisdiction, or, in the case of a private road open to public travel, by authority of the private owner or private official having jurisdiction. Traffic Control Device - a sign, signal, marking, channelizing device or other device that uses colors, shapes, symbols, words, sounds and/or tactile information for the primary purpose of communicating a regulatory, warning, or guidance message to road users on a highway, pedestrian facility, bikeway, pathway, or site roadway private road open to public travel. [Previously approved by NCUTCD Council 6/23/11]

ADD THE FOLLOWING DEFINITIONS

Driveway – a private access from a roadway to a building, site, or abutting property. [Previously approved by NCUTCD Council 6/26/14]

Driving Aisle – circulation area for motor vehicles within a parking area, typically between rows of parking spaces. Driving aisles provide one-way or two-way travel. Driving aisles are exempted from compliance with MUTCD provisions.

Loading Zone – a specially marked, signed or designated area for the loading or unloading of vehicles (passenger or freight)

On-Street Parking – parking adjacent to and accessed directly from a site roadway or a public roadway.

Parking Space – an area marked or designated for storage of a vehicle while the driver is not present.

Site Roadways Open to Public Travel – also referred to as Site Roadways, Roadways and bikeways on sites of shopping centers, office parks, airports, schools, universities, sports arenas, recreational parks, and other similar
business, governmental and/or recreation facilities that are publically or privately owned but where the public is allowed to travel without full-time access restrictions. Two types of roadways are not included in this definition: 1) roadways where access is restricted at all times by gates and/or guards to residents, employees or other specifically authorized persons; and 2) private highway-rail crossings. Site roadways open to public travel does not include parking areas, including the driving aisles within those parking areas.

Section 1A.14 Meanings of Acronyms and Abbreviations in this Manual

Standard:

01 The following acronyms and abbreviations, when used in this Manual, shall have the following meanings:

36. SROPT – Site Roadways Open to Public Travel

PART 2: SIGNS
CHAPTER 2A. GENERAL

Section 2A.01 Function and Purpose of Signs

Support:

01 This Manual contains Standards, Guidance, and Options for the signing of all types of highways, and site roadways private roads open to public travel. The functions of signs are to provide regulations, warnings, and guidance information for road users. Words, symbols, and arrows are used to convey the messages. Signs are not typically used to confirm rules of the road.

Section 2A.03 Standardization of Application

Standard:

05 Each standard sign shall be displayed only for the specific purpose as prescribed in this Manual. Determination of the particular signs to be applied to a specific condition shall be made in accordance with the provisions set forth in Part 2. Before any new highway, site roadway private road open to public travel (see definition in Section 1A.13), detour, or temporary route is opened to public travel, all necessary signs shall be in place. Signs required by road conditions or restrictions shall be removed when those conditions cease to exist or the restrictions are withdrawn.

Section 2A.06 Design of Signs

Option:

13 State and local highway agencies and owners of site roadways open to public travel may develop special word message signs in situations where roadway conditions make it necessary to provide road users with additional regulatory, warning, or guidance information, such as when road users need to be notified of special regulations or warned about a situation that might not be readily apparent. Unlike colors that have not been assigned or symbols that have not been approved for signs, new word message signs may be used without the need for experimentation.

Section 2A.11 Dimensions

Standard:

02 The sign dimensions prescribed in the sign size tables in the various Parts and Chapters in this Manual and in the “Standard Highway Signs and Markings” book (see Section
1A.11) shall be used unless engineering judgment determines that other sizes are appropriate. Except as provided in Paragraph 3, where engineering judgment determines that sizes smaller than the prescribed dimensions are appropriate for use, the sign dimensions shall not be less than the minimum dimensions specified in this Manual. The sizes shown in the Minimum columns that are smaller than the sizes shown in the Conventional Road columns in the various sign size tables in this Manual shall only be used on low-speed roadways, alleys, and site roadways private roads open to public travel where the reduced legend size would be adequate for the regulation or warning or where physical conditions preclude the use of larger sizes.

Guidance:

08 When supplemental plaques are installed with larger sized signs, a corresponding increase in the size of the plaque and its legend should also be made. The resulting plaque size should be approximately in the same relative proportion to the larger sized sign as the conventional sized plaque is to the conventional sized sign.

Option:

08a SROPT: The minimum sign sizes for site roadways open to public travel roads with operating speeds less than 25 MPH may be 6 inches less in both width and height than the single-lane conventional road size shown in Tables 2B-1 and 2C-2 (but not less than 18” high or 9” wide). This does not apply to supplemental plaques. Where a Site Roadway open to public travel intersects with a street or highway the sign size for the regulatory STOP or YIELD sign shall be sizes shown in Table 2B-1.

CHAPTER 2B. REGULATORY SIGNS, BARRICADES, AND GATES

Section 2B.03 Size of Regulatory Signs

Guidance:

09 The minimum sizes for regulatory signs facing traffic on exit and entrance ramps at major interchanges connecting an Expressway or Freeway with an Expressway or Freeway (see Section 2E.32a) (Council Approved 6-23-11) should be as shown in the column of Table 2B-1 that corresponds to the mainline roadway classification (Expressway or Freeway). If a minimum size is not provided in the Freeway column, the minimum size in the Expressway column should be used. If a minimum size is not provided in the Freeway or Expressway Column, the size in the Oversize column should be used.

10 The minimum size for all regulatory signs facing traffic on exit and entrance ramps at all interchanges (See section 2E.A(b) B and C) should be the regulatory sign size shown in Table 2B-1 Conventional Road Single Lane column for single lane ramps and Multi-Lane for multi-lane ramps (Council Approved 6-23-11)

Option:

10a SROPT: The minimum sign sizes for site roadways open to public travel with operating speeds less than 25 MPH may be 6 inches less in both width and height than the single-lane conventional road size except for supplemental plaques identified by “P” in the sign designation in Table 2B-1.

Standard:

10b SROPT: Where a Site Roadway open to public travel intersects with a street or highway the sign size for the regulatory STOP or YIELD sign shall be sizes shown in Table 2B-1.
Section 2B.06 STOP Sign Applications

Guidance:

01 At intersections where a full stop is not necessary at all times, consideration should first be given to using less restrictive measures such as YIELD signs (see Sections 2B.08 and 2B.09).

02 The use of STOP signs on the minor-street approaches should be considered if engineering judgment indicates that a stop is always required because of one or more of the following conditions:

A. The vehicular traffic volumes on the through street or highway exceed 6,000 vehicles per day;

B. A restricted view exists that requires road users to stop in order to adequately observe conflicting traffic on the through street or highway; and/or

C. Crash records indicate that three or more crashes that are susceptible to correction by the installation of a STOP sign have been reported within a 12-month period, or that five or more such crashes have been reported within a 2-year period. Such crashes include right-angle collisions involving road users on the minor-street approach failing to yield the right-of-way to traffic on the through street or highway.

Support:

03 The use of STOP signs at grade crossings is described in Sections 8B.04 and 8B.05.

Option:

03a SROPT: At the ends of driving aisles connecting to site roadways open to public travel, the word STOP on the pavement when accompanied with a stop line may be used in the place of a STOP sign.

Section 2B.07 Multi-Way Stop Applications

Guidance:

03 The decision to install multi-way stop control should be based on an engineering study.

Option:

03a SROPT: The decision to install a multi-way stop control on site roadways open to public travel may be based on engineering judgment.

Section 2B.10 STOP Sign or YIELD Sign Placement

Standard:

01 The STOP or YIELD sign shall be installed on the near side of the intersection on the right-hand side of the approach to which it applies, except as provided in paragraph 20a.

When the STOP or YIELD sign is installed at this required location and the sign visibility is restricted, a Stop Ahead sign (see Section 2C.36) shall be installed in advance of the STOP sign or a Yield Ahead sign (see Section 2C.36) shall be installed in advance of the YIELD sign.

Option:

20 For a yield-controlled channelized right-turn movement onto a roadway without an acceleration lane and for an entrance ramp onto a freeway or expressway without an acceleration lane, a NO MERGE AREA (W4-5P) supplemental plaque (see Section 2C.40) may be mounted below a Yield Ahead (W3-2) sign and/or below a YIELD (R1-2) sign when engineering judgment indicates that road users would expect an acceleration lane to be present.
SROPT Recommendations Approved by NCUTCD Council

20a SROPT: At the junction of two site roadways open to public travel when the operating speeds are less than 25 mph on both roadways, a STOP or YIELD sign may be installed at a location on other than the right hand side as-necessitated by physical constraints.

Section 2B.37 **DO NOT ENTER Sign (R5-1)**

Option:

04 The DO NOT ENTER sign may be installed where it is necessary to emphasize the one-way traffic movement on a ramp or turning lane.

04a SROPT: A DO NOT ENTER sign may be omitted only if an R4-7 or R6-1 sign is installed for divided roadway median openings when the operating speeds are less than 25 mph on a site roadway open to public travel.

Section 2B.40 **ONE WAY Signs (R6-1, R6-2)**

Option:

14 The BEGIN ONE WAY (R6-6) sign (see Figure 2B-13) may be used notify road users of the beginning point of a one direction of travel restriction on the street or roadway. The END ONE WAY (R6-7) sign (see Figure 2B-13) may be used notify road users of the ending point of a one direction of travel restriction on the street or roadway.

14a SROPT: A ONE-WAY sign may be omitted for site roadways open to public travel that intersect one-way driving aisles when wrong way pavement marking arrows and/or stop line the full width of the aisle and/or stop markings are used.

Section 2B.68 **Gates**

Standard:

14 If red lights are attached to a traffic gate, the red lights shall be steadily illuminated or flashed only during the period when the gate is in the horizontal or closed position and when the gate is in the process of being opened or closed.

15 Except as provided in Paragraph 16, rolling sections of fence, if used, shall include either a horizontal strip of retroreflectorized sheeting on both sides of the fence with vertical stripes alternately red and white at 16-inch intervals measured horizontally to simulate the appearance of a gate arm in the horizontal position, or one or more Type 4 object markers (see Section 2C.66), or both. If a horizontal strip of retroreflectorized sheeting is used, the bottom of the sheeting shall be located 3.5 to 4.5 feet above the roadway surface.

15a SROPT: If a chain, cable, or other device is used to restrict access to a portion of a site, it shall be clearly marked with a Type 1 object marker or a retroreflective sign suspended from or attached to the chain, cable, or other device. (See Section 2C.63 for object marker sizes).

CHAPTER 2C. WARNING SIGNS AND OBJECT MARKERS

Section 2C.01 **Function of Warning Signs**

Support:

01 Warning signs call attention to unexpected conditions on or adjacent to a highway, street, or site roadways open to public travel and to situations that might not be readily
apparent to road users. Warning signs alert road users to conditions that might call for a
reduction of speed or an action in the interest of safety and efficient traffic operations.

Section 2C.05 Placement of Warning Signs

### Table 2C-4. Guidelines for Advance Placement of Warning Signs

<table>
<thead>
<tr>
<th>Posted or 85th-Percentile Speed</th>
<th>Condition A: Speed reduction and lane changing in heavy traffic</th>
<th>Condition B: Deceleration to the listed advisory speed (mph) for the condition</th>
</tr>
</thead>
</table>
| 20 mph or less                   | 225 ft                                                        | 0
to 10
to 20
to 30
to 40
to 50
to 60
to 70 |
| 25 mph                           | 325 ft                                                        | 115 ft     N/A     —     —     —     —     —     —     —     —     —     —     — |

(Remainder of table remains the same, Council Approved table 6-22-12)

CHAPTER 2D. GUIDE SIGNS – CONVENTIONAL ROADS

Section 2D.01 Scope of Conventional Road Guide Sign Standards

**Standard:**

01 The provisions of this Chapter shall apply to any road or street other than low-volume roads (as defined in Section 5A.01) [Deleted by Council 1/10/14], other than expressways and freeways.

**Option:**

02 SROPT: Except as noted in Section 1A.03, for site roadways open to public travel with operating speeds of less than 25 miles per hour, provisions of this Chapter may be modified.

**Standard:**

03 SROPT: When a modification is made, it shall be based upon engineering judgment that considers speed, traffic characteristics and other site specific considerations.

PART 3: MARKINGS

Chapter 3A. General

Section 3A.01 Functions and Limitations

**Support:**

01 Markings on highways and on private roads open to public travel have important functions in providing guidance and information for the road user. Major marking types include pavement and curb markings, delineators, colored pavements, channelizing devices, and islands. In some cases, markings are used to supplement other traffic control devices such as signs, signals, and other markings. In other instances, markings are used alone to effectively convey regulations, guidance, or warnings in ways not obtainable by the use of other devices.
Section 3A.02 Standardization of Application

Guidance:

Before any new highway, site roadway private road open to public travel (see definition in Section 1A.13), paved detour, or temporary route is opened to public travel, all necessary markings should be in place.

Chapter 3B. Pavement and Curb Markings

Section 3B.02 No-Passing Zone Pavement Markings and Warrants

Standard:

On roadways with center line markings, no-passing zone markings shall be used at horizontal or vertical curves where the passing sight distance is less than the minimum shown in Table 3B-1 for the 85th-percentile speed or the posted or statutory speed limit.

The passing sight distance on a vertical curve is the distance at which an object 3.5 feet above the pavement surface can be seen from a point 3.5 feet above the pavement (see Figure 3B-4). Similarly, the passing sight distance on a horizontal curve is the distance measured along the center line (or right-hand lane line of a three-lane roadway) between two points 3.5 feet above the pavement on a line tangent to the embankment or other obstruction that cuts off the view on the inside of the curve (see Figure 3B-4).

Table 3B-1. Minimum Passing Sight Distances for No-Passing Zone Markings

<table>
<thead>
<tr>
<th>85th-Percentile or Posted or Statutory Speed Limit</th>
<th>Minimum Passing Sight Distance</th>
</tr>
</thead>
<tbody>
<tr>
<td>20 mph 25 mph</td>
<td>400 feet 450 feet</td>
</tr>
<tr>
<td>30 mph</td>
<td>500 feet</td>
</tr>
<tr>
<td>35 mph</td>
<td>550 feet</td>
</tr>
<tr>
<td>40 mph</td>
<td>600 feet</td>
</tr>
<tr>
<td>45 mph</td>
<td>700 feet</td>
</tr>
<tr>
<td>50 mph</td>
<td>800 feet</td>
</tr>
<tr>
<td>55 mph</td>
<td>900 feet</td>
</tr>
<tr>
<td>60 mph</td>
<td>1,000 feet</td>
</tr>
<tr>
<td>65 mph</td>
<td>1,100 feet</td>
</tr>
<tr>
<td>70 mph</td>
<td>1,200 feet</td>
</tr>
</tbody>
</table>

Guidance:

The minimum lane transition taper length should be 100 feet in urban areas and 200 feet in rural areas.

Option:

SROPT: The minimum taper length may be less than 100 feet on site roadways open to public travel where the operating speed is less than 25 mph.

Section 3B.09 Lane-Reduction Transition Markings

Option:

On low-speed urban roadways and on site roadways open to public travel with operating speeds less than 25 mph where curbs clearly define the roadway edge in the lane-reduction
transition, or where a through lane becomes a parking lane, the edge line and/or delineators shown in Figure 3B-14 may be omitted as determined by engineering judgment.

**Option:**

**05a** SROPT: Based on engineering judgement, the minimum taper length may be less than 100 feet on site roadways open to public travel where the operating speed is less than 25 mph.

### Section 3B.10 Approach Markings for Obstructions

**Guidance:**

**05** The minimum taper length should be 100 feet in urban areas and 200 feet in rural areas.

**Option:**

**05a** SROPT: Based on engineering judgement, the minimum taper length may be less than 100 feet on site roadways open to public travel where the operating speed is less than 25 mph.

### Section 3B.20 Pavement Word, Symbol, and Arrow Markings

**Option:**

**12** On narrow, low-speed shared-use paths, the pavement words, symbols, and arrows may be smaller than suggested, but to the relative scale.

**12a** SROPT: On site roadways open to public travel where the operating speed is less than 25 mph, the pavement words, symbols, and arrows may be reduced in size to no less than ¼ size, but in relative proportion to the associated full-size word, symbol, or arrow.

**13** Pavement markings simulating Interstate, U.S., State, and other official highway route shield signs (see Figure 2D-3) with appropriate route numbers, but elongated for proper proportioning when viewed as a marking, may be used to guide road users to their destinations (see Figure 3B-25).

### Standard:

**14** Except at the ends of aisles in parking lots, the word STOP shall not be used on the pavement unless accompanied by a stop line (see Section 3B.16) and STOP sign (see Section 2B.05). At the end aisle in parking lots, the word STOP shall not be used on the pavement unless accompanied by a stop line.

**1514** The word STOP shall not be placed on the pavement in advance of a stop line, unless every vehicle is required to stop at all times.

**Option:**

**15** SROPT: At the ends of driving aisles connecting to site roadways open to public travel, the word STOP on the pavement may be used in the place of a STOP sign when accompanied with a stop line.

### Section 3B.24 Chevron and Diagonal Crosshatch Markings

**Guidance:**

**05** The chevrons and diagonal lines used for crosshatch markings should be at least 12 inches wide for roadways having a posted or statutory speed limit of 45 mph or greater, and at least 8 inches wide for roadways having posted or statutory speed limit of less than 45 mph. The longitudinal spacing of the chevrons or diagonal lines should be determined by engineering judgment considering factors such as speeds and desired visual impacts. The chevrons and
diagonal lines should form an angle of approximately 30 to 45 degrees with the longitudinal lines that they intersect.

\[ \text{SROPT: Chevrons and diagonal lines used for crosshatch markings should be at least 4 inches wide on site roadways open to public travel where the operating speed is less than 25 mph.} \]

**PART 4: SIGNALS**

**Chapter 4D. Traffic Control Signal Features**

**Section 4D.02 Responsibility for Operation and Maintenance**

**Guidance:**

1. Prior to installing any traffic control signal, the responsibility for the maintenance of the signal and all of the appurtenances, hardware, software, and the timing plan(s) should be clearly established by the agency or owner of site roadways open to public travel. They should provide for the maintenance of the traffic control signal and all its appurtenances in a competent manner.

2. To this end the agency or site roadway owner should:

   A. Keep every controller assembly in effective operation in accordance with its predetermined timing schedule; check the operation of the controller assembly frequently enough to verify that it is operating in accordance with the predetermined timing schedule; and establish a policy to maintain a record of all timing changes and that only authorized persons are permitted to make timing changes;

   B. Clean the optical system of the signal sections and replace the light sources as frequently as experience proves necessary;

   C. Clean and service equipment and other appurtenances as frequently as experience proves necessary;

   D. Provide for alternate operation of the traffic control signal during a period of failure, using flashing mode or manual control, or manual traffic direction by proper authorities as might be required by traffic volumes or congestion, or by erecting other traffic control devices;

   E. Have properly skilled maintenance personnel available without undue delay for all signal malfunctions and signal indication failures;

   F. Provide spare equipment to minimize the interruption of traffic control signal operation as a result of equipment failure;

   G. Provide for the availability of properly skilled maintenance personnel for the repair of all components; and

   H. Maintain the appearance of the signal displays and equipment.

**Section 4D.07 Size of Vehicular Signal Indications**

**Standard:**

1. There shall be two nominal diameter sizes for vehicular signal indications: 8 inches and 12 inches.

2. Except as provided in Paragraph 3 below, 12-inch signal indications shall be used for all signal sections in all new signal faces.
Option:

03 Eight-inch circular signal indications may be used in new signal faces only for:

A. The green or flashing yellow signal indications in an emergency-vehicle traffic control signal (see Section 4G.02);

B. The circular indications in signal faces controlling the approach to the downstream location where two adjacent signalized locations are close to each other and it is not practical because of factors such as high approach speeds, horizontal or vertical curves, or other geometric factors to install visibility-limited signal faces for the downstream approach;

C. The circular indications in a signal face that is located less than 120 feet from the stop line on a roadway with a posted or statutory speed limit (or operating speed on site roadways open to public travel) of 30 mph or less;

D. The circular indications in a supplemental near-side signal face:

E. The circular indications in a supplemental signal face installed for the sole purpose of controlling pedestrian movements (see Section 4D.03) rather than vehicular movements; and

F. The circular indications in a signal face installed for the sole purpose of controlling a bikeway or a bicycle movement.

04 Existing 8-inch circular signal indications that are not included in Items A through F in Paragraph 3 may be retained for the remainder of their useful service life.

PART 6: TEMPORARY TRAFFIC CONTROL

Chapter 6A. General

Section 6A.01 General

Standard:
02 The needs and control of all road users (motorists, bicyclists, and pedestrians within the highway, or on site roadways private roads open to public travel (see definition in Section 1A.13), including persons with disabilities in accordance with the Americans with Disabilities Act of 1990 (ADA), Title II, Paragraph 35.130) through a TTC zone shall be an essential part of highway construction, utility work, maintenance operations, and the management of traffic incidents.

Support:
03 When the normal function of the roadway, or a site roadway private road open to public travel, is suspended, TTC planning provides for continuity of the movement of motor vehicle, bicycle, and pedestrian traffic (including accessible passage); transit operations; and access (and accessibility) to property and utilities.

Standard:
10 TTC plans and devices shall be the responsibility of the authority of a public body or official or the owners of site roadways open to public travel authority having jurisdiction for guiding road users. There shall be adequate statutory authority for the implementation and enforcement of needed road user regulations, parking controls, speed zoning, and the management of traffic incidents. Such statutes shall provide sufficient flexibility in the application of TTC to meet the needs of changing conditions in the TTC zone.
Chapter 6C. Temporary Traffic Control Elements

Section 6C.01 Temporary Traffic Control Plans

Guidance:

This alternate or modified plan should have the approval of the responsible highway agency or owner of site roadways open to public travel authority prior to implementation.

Section 6C.04 Advance Warning Area

Table 6C-1. Recommended Advance Warning Sign Minimum Spacing

<table>
<thead>
<tr>
<th>Road Type</th>
<th>Distance Between Signs**</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>A</td>
</tr>
<tr>
<td>Urban (low speed)*</td>
<td>100 feet</td>
</tr>
<tr>
<td>Urban (high speed)*</td>
<td>350 feet</td>
</tr>
<tr>
<td>Rural</td>
<td>500 feet</td>
</tr>
<tr>
<td>Expressway / Freeway</td>
<td>1,000 feet</td>
</tr>
</tbody>
</table>

* Speed category to be determined by the highway agency or owner of site roadways open to public travel authority.

** The column headings A, B, and C are the dimensions shown in Figures 6H-1 through 6H-46. The A dimension is the distance from the transition or point of restriction to the first sign. The B dimension is the distance between the first and second signs. The C dimension is the distance between the second and third signs. (The “first sign” is the sign in a three-sign series that is closest to the TTC zone. The “third sign” is the sign that is furthest upstream from the TTC zone.)

Chapter 6D. Pedestrian and Worker Safety

Section 6D.01 Pedestrian Considerations

Support:

It must be recognized that pedestrians are reluctant to retrace their steps to a prior intersection for a crossing or to add distance or out-of-the-way travel to a destination. This is especially true for site roadways open to public travel where pedestrians will seek the shortest route, e.g., from a site building to their parked vehicle.

Guidance:

Consideration should be made to separate pedestrian movements from both worksite activity and vehicular traffic. Unless an acceptable route that does not involve crossing the roadway can be provided, pedestrians should be appropriately directed with advance signing that encourages them to cross to the opposite side of the roadway. In urban and suburban areas with high vehicular traffic volumes, these signs should be placed at intersections (rather than midblock locations) so that pedestrians are not confronted with midblock worksites that will induce them to attempt skirting the worksite or making a midblock crossing.
Due to the likelihood of high pedestrian presence in site roadways open to public travel, TTC zones should be designed to minimize conflicts between vehicular and pedestrian movements.

Section 6F.01 Types of Devices

Support

Various Sections of the MUTCD require certain traffic control devices, their supports, and/or related appurtenances to be crashworthy. Such MUTCD crashworthiness provisions apply to all streets, highways, and site roadways private roads open to public travel. Also, State Departments of Transportation and local agencies might have expanded the NCHRP Report 350 crashworthy criteria to apply to certain other roadside appurtenances.

Standard

Traffic control devices shall be defined as all signs, signals, markings, and other devices used to regulate, warn, or guide road users, placed on, over, or adjacent to a street, highway, site roadways private roads open to public travel (see definition in Section 1A.13), pedestrian facility, or bikeway by authority of a public body or official having jurisdiction.

All traffic control devices used for construction, maintenance, utility, or incident management operations on a street, highway, or site roadway private road open to public travel (see definition in Section 1A.13) shall comply with the applicable provisions of this Manual.