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

TECHNICAL COMMITTEE: Regulatory/Warning Signs Technical Committee

ITEM NUMBER: 16B-RW-04

TOPIC Figure 2C-3, Example of Advisory Speed Signing for an Exit Ramp

ORIGIN OF REQUEST: Gerard Gerhard letters of June 23, 2014 and November 2, 2015

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AFFECTED SECTIONS OF MUTCD: Figure 2C-3, Example of Advisory Speed Signing for an Exit Ramp

Section 2C.14 Advisory Exit and Ramp Speed Signs (W13-2 and W13-3)

DEVELOPMENT HISTORY: Task Force: Revised 5-26-16, revised 12-28-16, revised 1-4-17, revised 6-29-17

- Approved by Technical Committee: 06/09/2016
- Approved by RWSTC following sponsor comments: 01/04/2017
- Approved by RWSTC: 06/29/2017
- Approved by NCUTCD Council: TABLED BY COUNCIL 01/06/17
- Approved by NCUTCD Council: 06/30/2017

This is a proposal for recommended changes to the MUTCD that has 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 edition.
SUMMARY:

On June 23, 2014, Mr. Gerard Gerhard of Lexington, Kentucky wrote to the Director of Office of Transportation Operations of the Federal Highway Administration (FHWA). The letter had 22 numbered sections recommending changes to the Manual on Uniform Traffic Control Devices (MUTCD). He followed this up with a November 2, 2015 letter to Mr. William Lambert, Chair of the Regulatory and Warning Sign Technical Committee (RWSTC) of the National Committee on Uniform Traffic Control Devices (NCUTCD). This letter contained two more comments recommending changes.

The FHWA had transmitted the original letter to the NCUTCD for consideration. The NCUTCD assigned the overview of these letters to the RWSTC because the majority of the issues related to Regulatory and Warning Signs.

DISCUSSION:

In Comment 19, Mr. Gerhard writes:

Figure 2C-3. Example of Advisory Speed Signing for an Exit Ramp

Figure 2C-3 should be revised consistent with the reasoning below.

The “Examples” shown in Figure 2C-3 of “Advisory Speed Signing for an Exit Ramp” provide “examples” of placement not just of Advisory Speed Signing, but also of directional warning signs (W1-6R and W1-8R).

Figure 2C-3 has several problems.

First, at the beginning of the deceleration lane, either a W13-2 or a W13-6 is shown for placement. If an exit ramp involves a curve that cannot be viewed by a driver as it is approached, e.g., a curve, hairpin curve, or loop, a driver would benefit from having early warning and repeated or confirming warning of such condition. Accordingly, I believe the example of sign placement at the
beginning of a deceleration lane should show placement of signage indicating the character of the ramp being approached.

Placement of warning signage regarding an exit ramp specific to a curve, hairpin curve, or loop (together with an appropriate speed advisory, e.g., a W13-1P or a W13-2), in addition to the signage specific to the condition (e.g., W1-11, W1-15) must, at a minimum, be shown at the beginning of a deceleration lane, and opposite the beginning of the gore.

Second, Figure 2C-3 shows as example an E13-1P as optional for display together with an E5-1A. For the sake of uniformity, the E13-1P should be required, rather than optional, for a ramp where advisory speed is posted.

Third, either a W1-8R or a W1-6R is shown as being the first warning sign in a series of W1-8 signs. The W1-6 should only be used where there is an abrupt change of horizontal direction, such as in a tight radius 90 degree turn. If a ramp involves a curve (a curve, hairpin curve, or loop with a radius such that Chevrons would be more appropriate to provide directional guidance to a driver throughout a curve), the W1-6R is inappropriate. Suffice it to say, the W1-6R should not be shown as preceding a series of Chevrons (W1-8), since an inconsistent message is presented to a driver.

Fourth, the example shows as optional, placement of a W1-13R (Truck Rollover Warning sign) well into a hairpin ramp. Such placement does not consider PRT. If such placement is the first, or even a supplemental warning of a truck rollover hazard, it would be obvious that a driver of a vehicle with a high center of gravity might be in the process of rolling over when the sign comes into view. There is no showing of advance placement of a Truck Rollover sign in Figure 2C-3. See the recommendations and reasoning regarding amendment or revision of Section 2C.13, Truck Rollover Warning Sign (W1-13), set forth above.

Appropriate changes should be made in Figure 2C-3 consistent with the reasoning expressed above.

(End of Quote)

Mr. Gerhard suggests a number of changes to this Section.
Taking them in order, the first is in the second paragraph (lines 59 – 61) where Mr. Garhard says that Figure 2C-3 is more than an “Example of Advisory Speed Signing for an Exit Ramp”. It contains Guide signing along with W1-8R Chevrons and W1-6 One Direction Large Arrow signs. We disagree with Mr. Gerhard. The E5-1 Exit sign is supplemented with a E13-1P Recommended Speed Plaque. Consequently it can be considered to be a type of Speed Signing. Similarly, the use and placement of the W1-8R Chevrons and W1-6 One Direction Large Arrow signs are determined by speeds. See Table 2C-5 and Table 2C-6. They should also be considered Speed Signing.

In Mr. Garhard’s first listed disagreement with this Figure (lines 63 -69), he is advocating the use of W1-11 Hairpin Curve or W1-15 Loop signing at the beginning of the ramp. The RWSTC disagrees. The use of these signs at this location could easily cause confusion along the mainline. The purpose of using the W13-2, W13-3, W13-6 and W13-7 Exit and Ramp Advisory Speed Signs is to avoid confusing the through traffic. The W13-6 and W13-7 signs may be adapted to curves, loops and hairpin curves (Section 2C.15)

In Mr. Garhard’s second listed disagreement with this Figure (lines 75 -77), he is advocating requiring the use of the E13-1P Recommended Speed plaque shown below the E5-1 Exit sign at all locations. The RWSTC disagrees. The use of this sign is not required at all locations. It should be reserved for situations where additional emphasis is needed.

In Mr. Gerhard’s third listed disagreement with this Figure (lines 78-85), he states the MUTCD should not show the One Direction Large Arrow sign (W1-6R) preceding a series of Chevrons (W1-8). He believes that this usage presents an inconsistent message to a driver. The RWSTC disagrees. This usage is consistent with Section 2C.12(01) which states that “A One Direction Large Arrow sign may be used either as a supplement or alternative to Chevron Alignment Signs in order to delineate a change in horizontal alignment.” Table 2C-5 and Section 2C.14 (06) also use these signs interchangeably. The MUTCD is giving the engineer the flexibility to determine the best sign and sign pattern for the geometry at a specific location. This Figure is an example. It should not be treated as a template for all locations.

In Mr. Gerhard’s fourth and final listed disagreement with this Figure (lines 86-93), he questions the placement of the Truck Rollover sign (W1-13). He says that the placement of this sign on this Figure in the middle of a curve does not provide the
necessary advance placement of the sign. If the Truck Rollover sign shown is for the curve shown on the drawing, he is correct. Since a sharp curve with Chevrons and Exit signing with a low recommended speed is shown, the figure is at a minimum misleading. While, it is an example and not a template, it should be revised to place the Truck Rollover sign before the curve.

**RECOMMENDATION:**

Revise Figure 2C-3 to place the Truck Rollover sign (W1-13) in advance of the curve. Place it along the parallel portion of the deceleration lane. Label the sign as “Optional”

Eliminate the Hairpin Curve sign (W1-11) along the parallel portion of the deceleration lane. It conflicts with the Loop curve shown on the W13-6 and W13-7. Its use at this location may cause confusion for through traffic on the mainline. Move the W1-11 sign to near the end of the ramp gore. Add a W13-7 Combination Horizontal Alignment/Advisory Ramp Speed sign and a W13-3 Ramp Speed sign as optional signs at this location. Label all three signs as “Optional”.

Capitalize the T in Table at the beginning of paragraph 04 in Section 2C.14 Advisory Exit and Ramp Speed Signs (W13-2 and W13-3)

**RECOMMENDED WORDING:**

The following present the proposed changes to the current 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 (but not yet adopted by FHWA) are shown in green double underline for additions and green double strikethrough for deletions. In some cases, background comments may be provided with the MUTCD text. These comments are indicated by [highlighted light blue in brackets]. Revisions in the proposal text and MUTCD Figure made on the basis of sponsors comments have been highlighted in yellow.

Two figures are shown. The first is the proposed revised Figure 2C-3. The second is the original Figure 2C-3, 2009 MUTCD
Figure 2C-3. Example of Advisory Speed Signing for an Exit Ramp

Figure 2C-3 is revised as shown below:

Revised Figure 2C-3. Example of Advisory Speed Signing for an Exit Ramp

Notes:
1. See Table 2C-4 for advance placement distance guidelines
2. See Table 2C-5 for the selection of horizontal alignment signs. The selected arrow symbol should be consistent with curve alignment.
3. See Table 2C-6 for spacing of W1-4 signs
4. The advisory speed signs are shown for illustrative purposes only.
Original Figure 2C-3 2009 MUTCD is shown below: Deleted and replaced with figure above.

Section 2C.14 Advisory Exit and Ramp Speed Signs (W13-2 and W13-3)

Standard:
Advisory Exit Speed (W13-2) and Advisory Ramp Speed (W13-3) signs (see Figure 2C-1) shall be vertical rectangles. The use of Advisory Exit Speed and Advisory Ramp Speed signs on freeway and expressway ramps shall be in accordance with the information shown in Table 2C-5.

Guidance:

If used, the Advisory Exit Speed sign should be installed along the deceleration lane and the advisory speed displayed should be based on an engineering study. When a Truck Rollover (W1-13) sign (see Section 2C.13) is also installed for the ramp, the advisory exit speed should be based on the truck advisory speed for the horizontal alignment using recommended engineering practices.

If used, the Advisory Exit Speed sign should be visible in time for the road user to decelerate and make an exiting maneuver.

Support:

Table 2C-4 lists recommended advance sign placement distances for deceleration to various advisory speeds.

Guidance:

If used, the Advisory Ramp Speed sign should be installed on the ramp to confirm the ramp advisory speed.

Option:

If used, Chevron Alignment (W1-8) signs and/or One-Direction Large Arrow (W1-6) signs should be installed on the outside of the exit curve as described in Sections 2C.09 and 2C.12.

Option:

Where there is a need to remind road users of the recommended advisory speed, a horizontal alignment warning sign with an advisory speed plaque may be installed at or beyond the beginning of the exit curve or on the outside of the curve, provided that it is apparent that the sign applies only to exiting traffic. These signs may also be used at intermediate points along the ramp, especially if the ramp curvature changes and the subsequent curves on the ramp have a different advisory speed than the initial ramp curve.

Support:

Figure 2C-3 shows an example of advisory speed signing for an exit ramp.

Section 2C.15 Combination Horizontal Alignment/Advisory Exit and Ramp Speed Signs (W13-6 and W13-7)

Option:

A horizontal alignment sign (see Section 2C.07) may be combined with an Advisory Exit Speed or Advisory Ramp Speed sign to create a combination Horizontal
Alignment/Advisory Exit Speed (W13-6) sign or a combination Horizontal Alignment/Advisory Ramp Speed (W13-7) sign (see Figure 2C-1). These combination signs may be used where the severity of the exit ramp curvature might not be apparent to road users in the deceleration lane or where the curvature needs to be specifically identified as being on the exit ramp rather than on the mainline.