

May 14, 2021

Stephanie Pollack, Acting Administrator
Federal Highway Administration
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RE: ASCE Comments on Notice of Proposed Amendment for Proposed 11th Edition of the Manual on Uniform Traffic Control Devices (MUTCD)

Dear Acting Administrator Pollack:

The American Society of Civil Engineers (ASCE) submits the following comments to the Federal Highway Administration's (FHWA) "National Standards for Traffic Control Devices; the Manual on Uniform Traffic Control Devices (MUTCD) for Streets and Highways; Revision" Notice of Proposed Amendment for Proposed 11th Edition of the MUTCD issued on December 14, 2020.

Founded in 1852, ASCE is the oldest national civil engineering organization and represents more than 150,000 civil engineers in private practice, government, industry, and academia. Our members are dedicated professionals who hold paramount public health, safety, and welfare as they design, build, construct, operate, and maintain the built environment. It is through this commitment that our members recognize the impact of evolving technology on our roadways, support efforts to update Traffic Control Device (TCD) standards, and to advocate for policies that enhance human safety.

As a sponsoring organization of the National Committee on Uniform Traffic Control Devices (NCUTCD), ASCE strongly believes that many MUTCD proposed changes are substantial and will help ensure uniformity, consistency, and user safety. The current MUTCD was written nearly thirteen years ago and an update is desperately needed. This will allow for the implementation of new practices and applications that will improve safety for all users of the roadway system. Any delay in finalizing the proposed revisions would be harmful and put human safety at risk. We encourage a much-needed update that considers recent developments with a particular focus on supporting the needs of all roadway users as well as supporting flexibility and innovation within transportation technology. Lastly, ASCE also encourages FHWA to update the MUTCD on a more frequent basis to account for the growing advances in roadway technology and practices.

ASCE's *2021 Infrastructure Report Card*¹, which gave our nation's roads a "D," recommends prioritizing federal action that can improve the safety and security and systems across our nation's communities. This includes setting minimum standards and providing guidance which ensures uniformity of TCD standards across the nation. Addressing this key solution would help improve our nation's roadways, enhance safety, and reduce our 10-year \$1.2 trillion surface transportation investment deficit.

Furthermore, in ASCE's Public Policy Statement 367, "Highway Safety," it is encouraged that Vision Zero principles, along with regular inspection of existing roadway systems and enhancing the organizational

¹ www.infrastructurereportcard.org

prominence of highway safety within all transportation agencies, can improve system performance and reduce roadway crashes.

In conclusion, ASCE supports efforts to update the MUTCD. We urge FHWA to complete review of comments and issue a final rule for an 11th edition of the MUTCD in this docket before the end of 2021. Revisions should consider recent transportation developments by focusing on supporting the needs of all roadway users as well as support innovation within transportation technology. This would bring the MUTCD up to date and support significant efforts to improve roadway safety.

**Comments on Docket No. FHWA-2020-0001 National Standards for Traffic Control Devices;
the Manual on Uniform Traffic Control Devices for Streets and Highways; Revision**

Please use this form to provide comments on the Notice of Proposed Amendments for the MUTCD.

INSTRUCTIONS:

1. Add your name or organization name where indicated in the footer of this form.
2. Use Table 1 to provide your original comments.
3. Use Table 2 to indicate your agreement with a comment that another commenter has submitted to the docket.
4. Do not adjust formatting of the rows and columns; text will automatically wrap and expand the row height as you type.
5. To add rows to this form, use the "Insert Rows" function, or hover just outside the left edge of the row below which you would like to add a row and click the encircled "+" that appears.
6. If you choose to provide a letter to accompany this comment form, please **print the document as a PDF; please do not scan a hard copy**. This will assist FHWA with cataloging your comments.

TABLE 1. ORIGINAL COMMENTS ON PROPOSED CHANGES. Please indicate the applicable proposed Section numbers in the far-left column. In the next three columns, please indicate your agreement, disagreement, or whether the column is applicable to your response by placing a, "YES," "NO," or "N/A" in the appropriate column of the row. If you agree with a proposed change, then there is no need to fill out the additional columns beyond the first two. However, it can be helpful to explain why you agree with a proposed change based on your objective experience as a roadway operator and/or empirical data. If you disagree in part or in whole, then please provide additional information that FHWA may find helpful.

| Proposed Section Number(s) | Agree with concept and text as proposed | Agree with concept; suggested rewording of text in Comments | Disagree with concept | Comments <i>Please include justification for your position based on objective experience and empirical data. If there is a specific statement with which you take exception, please provide the Page and Line numbers from the mark-up version of the proposed MUTCD text.</i> |
|----------------------------|---|---|-----------------------|--|
| Table 2E-5 | N/A | N/A | NO | Overhead Arrow-Per-Lane Signs, Arrow Height, is shown at 66 inches which is exceeding the necessary arrow height necessary for drivers. The height of this arrow, designed per standards, is causing signs to be tall for existing structures and undue burden of cost in structurally designing signs of this height. |
| 2L.02, p. 319 line 7 | YES | YES | NO | "Section 2H.03" should read "Section 2H.04." |
| 2L.02, p. 319 line 43 | YES | YES | NO | "Section 6F.61" should read "Section 6L.05." |
| 2L.09, p.324 line 13 | YES | YES | NO | "Section 6F.60" should read "Section 6L.05." |

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| 3A.03, p. 336, line 26 | YES | N/A | N/A | Agree with relocating the paragraph on black markings being used to enhance contrast from paragraph 8 to paragraph 2. Contrast markings are being used more often now for both human and machine vision, and it's beneficial to users to find this "may statement" earlier in this Color section. |
| 3A.04, p. 337, line 29 | YES | N/A | N/A | Agree with increasing normal width line from 4 inches to 6 inches for freeways, expressways, and ramps. Supported by NCHRP 20-102(6) "Evaluation of the Effects of Pavement Marking Characteristics in Detectability by Machine Vision". |
| 3A.04, p. 337, lines 30-31 | NO | NO | YES | Disagree with increasing normal width line from 4 inches to 6 inches for all other roadways with speed limits > 40 mph. Suggest requiring 6 inch edge lines only for all other roadways with speed limits > 50 mph. FHWA report (FHWA-HRT-12-048) shows reduction in several crash types with 6 inch wide edge lines for rural two-lane roads |
| 3B.07, p. 345, lines 20-39, Figures 3B-8 and 3B-9 | YES | N/A | N/A | Agree with changing the "normal width dotted white line extension through the taper area" at ramps from an Option to a Standard. Consistently placing a dotted line at these locations (which often isn't done) will make it easier for AV technology to understand lane placement. |
| 3B.25, p. 363, lines 23-37 | NO | YES | N/A | Agree with chevrons no longer being an Option, but think that they should be a Standard rather than Guidance. Article by VSI labs (Magney 2021) describes an example of AV technology mistaking the boundary line between a pavement material surface change as a pavement marking line and driving through a gore without chevrons and crashing. Chevrons would be an inexpensive means to prevent that accident and to effectively and consistently communicate a non-driving pavement surface. |
| 4C.01, p.413 lines 12-14 | NO | YES | NO | Omitting the previous guidance puts the novice user at risk. |
| 5A.02, p. 510 line 28 | NO | N/A | YES | The features listed here are more solidly referred to as ADAS, not AV. A loose definition of AV could be applied to these, but that is a stretch. |
| 5A.02, p. 510 line 28 | NO | N/A | YES | "Adaptive headlights" are not really related to AV capabilities as human drivers don't currently "manually" adjust the direction headlights are pointing. |
| 5A.03, p. 510 line 41 | YES | N/A | NO | Suggest adding definitions for ODD, OEDR, DDT-FB, and MRC |
| 5A.04, p.511 lines 40- | NO | N/A | YES | This is a very general statement, which is certainly NOT true for all DAS technologies. |

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| 41 | | | | |
| 5A.04, p.512 lines 13 | YES | N/A | NO | "Sections 1A.12" should read "Sections 1D.12." |
| 5B.01, p.513 lines16-17 | YES | N/A | NO | In order to comply with this requirement, it would take significant amount of time and financial resources to upgrade the existing DMSs that are using LEDs. |
| 5B.03, p. 514 lines 8-9 | YES | N/A | NO | In order to comply with this requirement, it would take significant amount of time and resources to upgrade the existing traffic signal heads that are using LEDs. |
| 5B.04, p. 514 line 28 | YES | N/A | NO | "Section 6F.78" should read "Section 6J.02." |
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TABLE 2. AGREE WITH ANOTHER COMMENTER. If you agree with another commenter, please indicate the commenter with whom you agree with and note any additional information FHWA may find helpful or any exceptions.

| Docket Comment Number and/or Commenter Name | Agree with commenter's comments as written | Agree with commenter ; with exception(s) | Additional information helpful to FHWA, or exceptions to commenter's comments |
|---|--|---|---|
| (EXAMPLE) FHWA-2020-0001-59 | YES | N/A | |
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