

# 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>
1A.04	yes	N/A	No	CTDOT agrees with Standard of minimum qualifications for decisions.
1A.05	No	Yes	No	The Standard Highway Signs publication will need to be updated at the same time as the publication of the new edition of the MUTCD. There are new signs where details will be needed in order to comply with the MUTCD. We do not support the addition of Reference No. 14 - "Guidelines for Determining Traffic Signal Change and Clearance Intervals: A Recommended Practice of Institute of Transportation Engineers," 2020 (Institute of Transportation Engineers – ITE). We have concern about the research used for these guidelines; the lack of a substantial peer review; and potential safety concerns regarding the calculation for the yellow change interval. In addition, there is further research underway.
2A.20.8	No	Yes	N/A	Update guidance from an <u>or</u> to an <u>and</u> , see statement below: "...of a sign, an opaque and non-retroreflective material shall be used.
2A.22.27	Yes	N/A	N/A	New guidance on the paths of opposing left turns is a positive change, since it goes beyond the arbitrary 30' threshold.
2B.19.14-16	No	N/A	Yes	CTDOT does not agree with the change from guidance to a standard that yield (stop) lines and Yield Here to (Stop Here For) Pedestrian signs, if used, shall be placed 20 to 50 feet in advance if the nearest crosswalk line. CTDOT is suggesting keeping the statement as guidance and consider engineering judgement for the placement given other factors such as the proximity of commercial or private driveway locations to crosswalks.

**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**

2B.38.20-26	Yes	N/A	N/A	CTDOT strongly agrees with the update to the option and guidance for the use of KEEP RIGHT EXCEPT TO PASS signs where there are two lanes in one direction,
2B.50.27-40.	Yes	N/A	N/A	CTDOT strongly agrees with the changes to the existing standard for the placement of ONE WAY signs. This change to the description of crossings at divided highways, also updated in other sections, focuses on how the intersection functions rather than the size/width of the median on a divided highway. The CTDOT agrees that locations should be reviewed and selected for signing under functionality.
2B.50.con td	No	No	Yes	CTDOT disagrees with the replacement of the Roundabout Directional Arrow Sign Series and section with the new standard and option for the use of a One-Direction Large Arrow warning sign in the central island of a circular intersection. The CTDOT proposes that the Roundabout Directional Arrow Sign Series remains with more clarity on its effective use and function at a roundabout. See comments for section 2C.10.
2C.03	No	Yes	N/A	CTDOT agrees with the new guidance for minimum size of signs on the exit ramp sign placement. Additionally, we suggest that an associated footnote be added to Table 2C-1 for ramp guidance as provided in this section. A sample of the footnote wording is "The minimum size for all diamond-shaped warning signs facing traffic on exit and entrance ramps connecting to non-Expressway or non-Freeway road should be 36" by 36" as per Section 2C.03."
2C.07	Yes	No	N/A	CTDOT agrees with the changes to the tables for Selection of Devices for Changes in Horizontal Alignment, changing existing Table 2C-5 to Tables 2C-4a and 2C-4b will improve consistency.
2C.10	No	No	Yes	CTDOT disagrees with the option in line 13 due to the fact that a Roundabout is a type of intersection and thus is not the same thing as a change in horizontal alignment. TDOT recommends the use the black on white Roundabout directional arrow that is currently included in Chapter 2B. Additionally, Chapter 2B indicates that if a One Direction Large Arrow is used at a roundabout then a supplemental regulatory message sign to indicate direction of movements will also need to be provided, this type of treatment would serve to increase the total number of signs at a roundabout.
2C.13	Yes	No	N/A	CTDOT agrees that guidance should be provided for Vehicle Speed Feedback signs to maintain consistency,
2C.45	No	No	Yes	The proposed guidance along with Figure 2C-14 could be misleading to drivers on the entering roadway. The W4-1 sign for the entering roadway may be misunderstood as to which roadway is entering and which roadway is merging with the other as the figure shows signs that do not match the geometry of the roadway. In addition, there may be a benefit to recommending the use of 1 sign (W4-1R) when placed in the gore area and can be seen from both roadways.
2C.47	Yes	N/A	N/A	CTDOT agrees with the additional guidance for Lane Ends Signs in advance of an intersection with the addition of a subplate.

**Comments on Docket No. FHWA-2020-0001 National Standards for Traffic Control Devices;  
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2C.66	Yes	N/A	N/A	CTDOT agrees with the change to the “Share the Road” plaque to a “In Road/In Street” plaque.
2D.05	Yes	No	No	CTDOT agrees with the proposed new Standard statement and corresponding Table 2D-5.
2D.55	Yes	No	No	CTDOT agrees with the new Guidance in on Page 189 Lines 39-43 and Page 191 Lines 45-47. CTDOT is also in agreement with the new Standard on Page 192 Lines 4-12.
2D.56	Yes	No	No	CTDOT agrees with the proposed Support paragraph between highway names and memorial, honorary, or secondary names.
2E.12	No	No	Yes	Page 184 Line 21-24: CTDOT disagrees with the proposed Standard that the larger letter and numeral height be used. This would increase the width of signs on many overhead sign supports where the signs and arrows on the signs will not be aligned over the correct lanes. The increased sign sizes would likely require new sign supports in many situations due to the additional loading of the larger signs. Additionally, the added sign width will likely increase the number of lanes that will need to be closed to perform maintenance and inspections. The proposed change will increase costs for new installations and maintenance of sign and sign support assets.
2E.18	No	No	Yes	Page 186 Line 15-16: CTDOT disagrees with the proposed Standard to locate the arrow on the post-mounted Exit Direction sign at the bottom of the sign. CTDOT recommends revising this to an Option to use when placing the arrow at the right of the sign will decrease the sight line to the sign. The current proposed Standard would increase the height of post mounted exit direction signs. In many cases, the signs are already too tall for typical breakaway sign posts due to the slope adjacent to the roadway. The proposed Standard would also reduce consistency with the design of overhead signs.
2E.50	No	Yes	No	Recommend revising proposed Standard “No more than four supplemental traffic generator destinations shall be signed from a single interchange...” to clarify if the intent is 4 total destinations and clarify the types of signs this is referring to (supplemental, exit, tourist oriented, and/or attraction signs).
2E.53	No	Yes	No	Page 211 Line 14-19: CTDOT agrees with the standard sequence of signs for Weigh Stations; however, it is recommended to revise the proposed Standard statement to a Guidance statement. Sign spacing can become a concern when Weigh Stations are mixed with closely spaced interchanges as is the case at some Weigh Stations in Connecticut. Additionally, the Standard states that ½ MILE be displayed, and Figure 2E-61 (noted as 2E-59 in the proposed language) shows NEXT RIGHT instead of ½ MILE.
2H.03	No	No	Yes	Allow international airports to use their custom logos or pictographs on signs. Many airports have existing signs with pictographs that help guide motorists.
2H.14	No	Yes	No	Page 260 Line 29-33: This is a Guidance statement but is noted in bold instead of italic. CTDOT agrees with this statement as Guidance not Standard.

**Comments on Docket No. FHWA-2020-0001 National Standards for Traffic Control Devices;  
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2J.01	No	No	Yes	Page 271 Line 8-9: CTDOT disagrees with the proposed removal of current MUTCD language that allows the use of Specific Service signs in urbanized areas where adequate sign spacing can be maintained. Due to the urban characteristics of a large percentage of the limited-access highway system within Connecticut, the Connecticut Specific Service sign program will effectively be administered contrary to the proposed guidance. CTDOT recommends retaining the current language.
2J.01	No	No	Yes	Page 271 Line 35-36: CTDOT disagrees with the proposed removal of alternative fuels from the Guidance included in the criteria for the statewide policy for Specific Service Signs. With the increased utilization of alternative fuel vehicles and likely industry expansion, CTDOT recommends retaining the current language to allow additional flexibility within State Policy to include alternative fuel signage as part of Specific Service Signs.
2J.02	No	No	Yes	Page 272 Line 27-35: CTDOT disagrees with proposed Standard that alternative fuels not be signed using Specific Service signs. With the increased utilization of alternative fuel vehicles and likely industry expansion, CTDOT recommends allowing State Policy to include alternative fuel signage as part of Specific Service Signs.
2J.03	No	No	Yes	Page 274 Line 8-10: CTDOT recommends allowing a supplemental message identifying an alternative fuel on all categories of Specific Service signs, not just on GAS Specific Service signs as currently proposed. In Connecticut, many alternative fuel locations can be found at hotels or restaurants currently included in the Specific Service Sign program. CTDOT recommends allowing State Policy to determine which service types an alternative fuels supplemental message will be allowed on.
2J.11	Yes	No	No	Page 277 Line 42-44: CTDOT agrees with this new standard as it will be helpful in instances when a business disagrees with a denial due to sign spacing on the conventional road network.
2K.01	Yes	N/A	N/A	CTDOT agrees with Clarity to the application.
2L	no	No	yes	<p>The Connecticut Highway Safety Office (CTHSO) is concerned with the new MUTCD revisions regarding the use of CMS.</p> <p>The biggest obstacle to these revisions appears to be that without empirical evidence that any messaging outside of the approved NHTSA enforcement campaign slogans is “effective” it will not be allowed under the new MUTCD revision. The</p> <p>CTHSO opposes these changes due to the lack of empirical evidence that ANY “messaging” has an appreciable effect on driver behavior but is allowable with many other PAID media messaging using federal funds. CMS boards can provide real time fatal counts and or messaging that may hit closer to home if they can be custom tailored by regions or States. The use of CMS is a reliable and easy way to educate drivers and passengers about important traffic safety messages. The messages can be changed quickly and can allow for emerging traffic issues each week (such as in increase in speeding crashes or pedestrian fatalities). When they are used during high visibility enforcement periods, they work to</p>

**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**

				reinforce the safety message that we are using during the enforcement period. The CTHSO suggests that The GHSA provide a unified opposition to these revisions.
2M.10	No	No	Yes	Allow use of "Memorial" wording on signs to maintain consistency with exiting signing and keep sign sizes to the minimum.
2M.10	No	Yes	N/A	Vanity signs are not clearly defined. Recommend adding definitions and examples of vanity signs in chapter 2H or 2M.
3A.03	No	Yes	N/A	Include language for an exception when applied to an alternating one-way traffic operation, since yellow markings will not be installed on the left-hand edge of the roadway in this instance.
3A.04	No	No	Yes	CTDOT disagrees with requiring 6" markings on non-freeway roadways due to the following: -Speed limit could change along the same section of the roadway requiring different marking width. -Wider markings may not be warranted due to street lighting, low volumes and crash history. -wider markings have greater risk for bicyclists to slip during rain. -Significant increase in maintenance cost.
3B.03	No	Yes	N/A	Add condition "D" to proposed list of no-passing zone marking uses to add approaches to crosswalks. This comment applies to page 304, lines 20-23.
3B.07	No	No	Yes	Normal width dotted white line extension from the downstream end of the dotted white lane line to the downstream end of the acceleration taper should remain as a "may" statement due to confusion/issues with merging of on-ramp vehicles. CT previously installed the proposed dotted lines and had to change our standards due to reported issues with merging. Latest research does not show any impact on the ability for the automated vehicles to merge.
3B.09	No	No	Yes	Proposed Guidance that 6" wide edge lines should be used on page 309 lines 31-33 should be revised to an Option statement based on the following: <ul style="list-style-type: none"> <li>Proposed requirement conflicts with Sections 3A.04 and 3B.10, as well as the "shall" statement above.</li> <li>Wider edge lines will increase maintenance cost and States can provide improved retroreflectivity for markings by reinstalling 4" wide markings more often.</li> </ul> Pavement markings are more slippery than pavement and may create issues for bikes on roadways with narrow shoulders.
3B.12 and 3G.03	No	Yes	N/A	Part A of the guidance statement on page 312, lines 2-5 and the guidance statement on page 342 that delineators should be installed along the lane reduction transition should be revised to an option statement. Pavement markings provide sufficient guidance in the merge areas on non-freeway highways. CTDOT crash data in locations of lane reductions does not indicate a need for delineators. Installation and maintenance of delineation along all merge areas will create additional maintenance for highway agencies.
3B.25	No	No	Yes	Parts B, C, and G of the guidance statement on page 321, line 19 that chevron markings should be used in channelized

**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**

				lanes, buffer spaces, and islands should be revised to an option statement. Neutral areas, such as these are very common. Chevron markings in these areas will significantly increase maintenance cost and exposure of personnel during installation. CTDOT experience and crash data for these neutral areas does not support the need for chevron markings.
3B.25	No	Yes	N/A	Part D of the guidance statement on page 321, that chevron markings should be used in entrance ramp gores should be revised to an Option statement. Chevron markings in these areas will significantly increase maintenance cost and exposure of personnel during installation. CTDOT experience and crash data does not support the need for chevron markings in entrance ramp gores. CTDOT agrees chevron markings should be installed in off-ramp gore areas as there is a benefit to motorists to emphasize the diverge area.
3C.01	No	No	Yes	Standard statement on page 326, lines 3-4 requiring crosswalk markings at non-intersection locations should be revised to define non-intersection crosswalk locations and to add "after an engineering study per 3C.02 has determined a crosswalk is warranted". Also, the statement should be relocated to 3C.02 Application of Crosswalk Markings. Without these clarifications, non-intersection crosswalk locations could be misinterpreted as any section of a roadway outside of an intersection and lead to indiscriminate use of crosswalks which contradicts the Guidance in MUTCD 3C.02.
3C.02	No	Yes	N/A	Part D of the guidance statement on page 369, lines 34-35 should be separated into 2 conditions...crashes and visibility. Adequate visibility should be listed as Part E and crashes should remain in Part D.
3D.06	No	Yes	N/A	Guidance statement on page 334, lines 23-25 should be revised to remove ovals within the circulatory roadways. This appears unnecessary, potentially confusing to motorists, and is also in conflict with Figures 3d-2 to 3D-8.
4D.05	No	No	Yes	Paragraph 7 is recommended to remain as a Standard. Requiring the warning sign for when continuous view of at least two signal faces isn't achieved for the minimum sight distance makes it less vague. It is important to inform unfamiliar motorists with this sign.
4F.01	Yes	N/A	N/A	CTDOT agrees with the change to allow use of a steady straight-through green arrow to discourage wrong way turns even if opposed by a simultaneous permissive left-turn movement.
4F.16	No	Yes	No	In Paragraph 4, recommend revising Condition A from Standard to Guidance. There are T-intersections where the stem of the "T" has a posted speed of 35 mph or higher and the change doesn't seem necessary "to improve safety by minimizing the potential for road users driving straight through in the wrong direction onto a one-way roadway or exit ramp" that doesn't exist.
4F.17	No	No	Yes	Recommend reconsideration of changing the reference document as there appears to be concerns nationally with the proposed document (extended kinematic equation).
4H.01	No	Yes	N/A	In Paragraph 6, what about other right turns on red at the intersection? If the current wording is already meant to

**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**

				<p>include that, could the end be revised to: "... including any potential conflicts with right (or left) turns on red."</p> <p>Paragraph 6 (Standard) and Paragraph 7 (Option) appear to contradict one another.</p>
4I.05	Yes	N/A	N/A	CTDOT Traffic Engineering agrees with proposed new Figure 4I-2
4I.06	No	Yes	N/A	Proposed Paragraph 25 Standard (2 <sup>nd</sup> to last paragraph): recommend revising "displayed" to "included" so it's clear it isn't referring to physically showing Countdown indications.
5A.04	No	Yes	No	<p>General Comments Regarding Traffic Control Device Design and Use Considerations</p> <p>CTDOT agrees with FHWA that agencies should adopt traffic control device maintenance policies and/or practices with consideration to both the human vehicle operator and driving automation system (DAS) technology needs. CTDOT also agrees with FHWA that engineering judgment used to determine traffic control device selection and placement should consider uniformity in application and location needed to support both the human vehicle operator and DAS technology. It is very important that any FHWA recommended or required maintenance or design changes for agencies as part of this MUTCD update and future updates moving forward should be mutually beneficial not just for automation purposes but also for human vehicle operators.</p> <p>CTDOT is committed to maintaining the state of good repair (SOGR) of its infrastructure and actively participates in efforts to advance infrastructure improvements in preparation for DAS. However, the CTDOT, like other states and local transportation agencies, is resource constrained and firmly advocates that DAS technologies should not become overly dependent on the infrastructure owner operator's (IOO) ability to maintain pristine roads and update their roadside equipment to the latest versions of technology in order for the DAS to work properly.</p> <p>Further, any FHWA recommended or required maintenance or design changes for agencies as part of this MUTCD update and future updates moving forward should also be established on well documented and mature research demonstrating the benefits of such recommendations or requirements. Although some DAS roadway infrastructure research has been published to date and documented in this MUTCD update, additional research is still needed to further reinforce and/or validate the findings and address gaps.</p> <p>To that extent, the CTDOT is currently working with FHWA, Consumer Reports, The Eastern Transportation Coalition and the University of Connecticut to further evaluate some of the proposed new agency actions for DAS outlined in this chapter of the MUTCD update. This research will enable IOOs to play a more active role in assessing the readiness of</p>

**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**

				<p>the DAS technologies and their potential implication for roadway design and maintenance. The CTDOT looks forward to working with FHWA and other states on this research project and sharing the findings as applicable to better inform the implementation of this MUTCD update and any future MUTCD updates thereafter.</p> <p>Lastly, CTDOT strongly encourages that the (should, shall, may, etc.) language describing what FHWA is recommending or requiring as part of this chapter be written consistently with the other chapters of the MUTCD update. Upon review of this draft MUTCD draft update the CTDOT did notice discrepancies between the language in this chapter and other chapters. More details about those discrepancies are described below.</p>
5B.02 A Lines 25-26	Yes	No	No	<p>CTDOT agrees with having 6-inch-wide longitudinal lines on freeways, expressways, and ramps as referenced in Section 3A.04 and Section 5B.02 lines 25-26. CTDOT is supportive of standardizing 6-inch-wide longitudinal lines for freeways, expressways, ramps and roadways with a speed limit of at least 55 mph and more than 6,000 ADT since these are the predominant roadways included in the operational design domain (ODD) for most DAS technologies across the vehicle fleet operating on roadways today and in the near future. Standardizing 6-inch longitudinal lines for freeways, expressways ramps and roadways with a speed limit of at least 55 mph and more than 6,000 ADT would be beneficial for both DAS technologies and human vehicle operators, making them easier to see. Lastly, standardizing 6-inch-wide longitudinal lines for freeways, expressways, ramps and roadways with a speed limit of at least 55 mph and more than 6,000 ADT may be a manageable lift for most infrastructure owner operators as most states already have 6-inch-wide longitudinal lines in at least some capacity on these roadways.</p> <p>This comment is consistent with the approved recommendations provided to FHWA by the National Committee on Uniform Traffic Control Device Council (NCUTCD Council).</p>
5B.02 B Line 33	No	No	Yes	<p>CTDOT is not in agreement with requiring edge lines of 6 inches on conventional roadways with posted speeds of 40 mph or less. See comments from 5B.02 A Line 32 and 5B.02 B Lines 27-28 above.</p>
5B.02 B Lines 27-28	No	No	Yes	<p>CTDOT is not in agreement with requiring edge lines of at least 6 inches in width on all roadways with posted speeds greater than 40 mph as called for in Section 5B.02 B Lines 27-28. However, as stated above, CTDOT is in agreement with having 6-inch-wide longitudinal lines (including edge lines) on freeways, expressways, ramps, and roadways with a speed limit of 55 mph and more than 6,000 ADT. There are plenty of roadways around the country with 40+ mph speed limits that are not freeways, expressways, and ramps. Many of these roadways may not be uniform in their design or</p>



**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**

				<p>maintenance from state to state. Additionally, many of these roadways may not be part of the ODD for several DAS technologies both now and in the near-term. Thus, requiring IOOs to paint wider edge lines on these roadways would also place unnecessary burden on resource constrained IOOs with limited, no, or unknown benefits to both DAS technologies and human vehicle operators.</p> <p>CTDOT requests that this proposed requirement for 6-inch-wide edge lines on all roadways with posted speeds greater than 40 mph be eliminated entirely. Alternatively, the CTDOT would be supportive of removing this proposed requirement and replacing it with the approved edge line recommendations provided to FHWA by the NCUTCD Council. The NCUTCD Council recommends 6-inch edge lines on all roadways with posted or statutory speeds of 55 mph or more and an ADT of 6,000 vehicles per day or greater; otherwise, a normal-width longitudinal line shall be 4 to 6 inches wide. Roadways with these higher speeds and volumes are much more likely to be included in the ODD for DAS technologies and thus would be beneficial to both DAS technologies and human vehicle operators.</p> <p>Note, 5B.02B lines 27-28 also references Section 3B.09, which calls for similar, but not the exact same edge line requirements as 5B.02 B lines 27-28. Section 3B.09 requires 6-inch-wide edge lines on all two-lane roadways. Section 3B.09 does not include any functional class or speed criteria as part of this 6-inch-wide edge line requirement. Section 3B.09 is also a “shall” statement and 5B.02 includes “should” statements for the edge line requirements. Thus, there are multiple discrepancies between these two edge line requirements. CTDOT requests that these discrepancies be addressed by removing both proposed 6-inch edge line requirements in 3B.09 and 5B.02 or removing and replacing them with the NCUTCD Council edge line recommendations outlined above.</p>
5B.02 C Line 35-36	No	No	Yes	CTDOT opposes the use of dotted extension lines for the full extent of acceleration lanes for entrance ramps. Extending dotted lines for the full extent of acceleration lanes may cause confusion to automated driving systems. In addition, terminating the dotted lane line at the halfway point of the full width of the acceleration lane may improve human driver understanding of merge areas. This was described as optional in the previous version of the MUTCD.
5B.02 D Line 37	Yes	No	No	CTDOT is in agreement with recommending chevron markings in neutral areas of exit ramp gores. This has been shown to help both DAS technologies and human vehicle operators to differentiate the exit roadway from the through lanes.
5B.02.A Line 32	No	No	Yes	CTDOT is not in agreement with requiring 6 inch normal-width longitudinal markings on all conventional roadways. However, CTDOT is supportive of standardizing 6-inch-wide longitudinal lines for freeways, expressways, ramps and roadways with a speed limit of at least 55 mph and more than

**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**

				<p>6,000 ADT as mentioned in CTDOT's comments above for 5B.02 A lines 25-26. For all other conventional roadways, wider markings may not be warranted due to street lighting, low volumes, and crash history. Additionally, for these other conventional roadways, there is an increase in installation and maintenance costs and wider markings create a larger low friction surface area that could be a potential hazard for vehicles, bicycles, and pedestrians, especially in wet conditions.</p> <p>IOOs cannot be put in a position of chasing the technology, especially when the technology is still being studied. Thus, extending the requirement for 6-inch-wide longitudinal markings to apply to all conventional roadways beyond just freeways, expressways and ramps that are already part of the DAS technologies ODD is placing undue burden on IOOs with limited, no, or unknown benefits to both DAS technologies and human vehicle operators. In Connecticut, most conventional roadways that are not freeways, expressways or ramps are owned and maintained by local municipalities that have limited resources and are struggling to maintain existing roadway conditions.</p>
5B.03 A Line 3	Yes	No	No	CTDOT is in agreement with having consistent traffic signal design along corridors with respect to having signal faces overhead on span wire and mast arms versus post-mounting signal faces on the side of the roadway.
5B.04 Line 28	No	Yes	No	CTDOT is in agreement with pavement markings matching the alignment of markings in place at both ends of the Temporary Traffic Control (TTC) zone, as long as this is still in reference to long-term stationary TTC zones.
5B.04 Line 33	Yes	No	No	It is agreed that pavement markings in a temporary traveled way within a long-term stationary operation be removed or obliterated as soon as possible.
5B.04 Line 38	No	No	Yes	This contradicts diagrams shown in Section 6K.01 and makes tubular markers and cones obsolete as they are less than 8 inches wide. CTDOT is requesting clarification as to where this 8 inches should be measured on the channelizing device.
5B.05 Line 1	No	Yes	No	V2I communications should be an option and not a requirement at active grade crossings, thus being a "may" requirement instead of the currently phrased "should" requirement. V2I communication is still being evaluated in deployments across the country and should not be required to be installed at all grade crossings when revisions are made. For example, there is not a consensus on the broadcast spectrums for V2I communications to be used in the future.
5B.06 Line 12	No	No	Yes	Requirements of separated bike lanes for all bicycle facilities is prohibitive in a variety of ways, including, but not limited to, additional installation costs, extensive existing in road bike lane facilities, maintenance, and ROW limitations. Physical separation should be considered regardless of AV implementation and not solely to support it. This requirement could also be a deterrent to future expansion of bicycle facilities.

**Comments on Docket No. FHWA-2020-0001 National Standards for Traffic Control Devices;  
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6A.02	No	Yes	No	Recommend revising “will” to “may” in Item 2.D. in paragraph 3 as follows, since steps are taken to mitigate congestion during roadwork. <i>“When the roadway capacity is reduced due to the lane closures, the demand <b>may</b> exceed the available capacity...”</i>
6C.05	No	Yes	No	Recommend revising reference to the <i>American National Standard for High Visibility Safety Apparel and Headwear</i> to remove the year and instead use “latest version/revision” in case the document is updated post-MUTCD release.
6D.02	No	Yes	No	Recommend including language that specifies the height of the Stop/Slow paddle above the roadway, similar to required sign heights. Comment also applies to Figure 6D-1.
6F.02	No	Yes	No	Recommend removing “minimum” and instead stating that signs should be installed 7 feet above the elevation of the near edge of pavement, unless this leads to inadequate visibility for oncoming vehicles. There have been instances during construction where contractors install signs well above 7 feet (up to 16 feet in some cases), but it’s technically allowable since there is only a minimum height requirement.
6H.03 to 6H.08	No	Yes	No	Incorrect figures are referenced for the signs discussed in each section.
6L.07	No	Yes	No	Recommend only referencing the <i>Equipment and Materials Standards of the Institute of Transportation</i> publication and not the specific chapter in case a revision causes the chapter number to change.
6N.01	No	Yes	No	Recommend removing the below new language, since it implies that law enforcement is needed for rolling road blocks when this is not the case. Rolling roadblocks can be and usually are performed without law enforcement present. Additionally, construction projects have experienced problems with obtaining police officers for roadwork and requiring police officers could cause for undue project delays. The following sentence should either be removed entirely or revised as follows: <i>“The rolling roadblock is normally performed during off-peak hours.”</i>
6N.13	No	Yes	No	Recommend revising “will” to “may” in the second paragraph, since volume exceeding capacity is not guaranteed. Recommended revisions are below: <i>“...capacity is reduced due to lane closures, demand <b>may</b> exceed the available capacity...”</i>
7B.03	Yes	Yes	N/A	Line 13. suggest the MUTCD better define the proposed term of “one car length”. A distance of 25 feet is recommended to be defined if this remains. This can be interpreted in various difference lengths.
8A.03 and 8A.05	No	No	Yes	The proposed Standard requirement that the Diagnostic Team shall reach a determination should be revised to a Guidance statement. The Diagnostic Team may not have the authority for the final determination of required railroad crossing improvements. These may be determined by a regulatory agency. In addition, funding sources may require other considerations such as priority which determine the types of projects which may be initiated.
8A.13	No	No	Yes	CTDOT recommends removing all proposed Guidance and Standard statements related to Highway-busway grade crossings in section 8A.13 Busses should not be included in Part 8 due to the following:

**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**

				<p>1. Busses require far shorter stopping distances than trains and their operational characteristics are much closer to vehicles than trains. CTDOT is not aware of any data that supports the proposed change.</p> <p>2. There does not appear to be any crash data supporting use of railroad warning devices at busways.</p> <p>3. Design standards for railroad equipment are set by the American Railway Engineering and Maintenance-of-Way Association (AREMA) and do not cover buses. Inclusion of busways under Part 8 would provide new requirements not covered by any existing design standards.</p> <p>4. Requirement of railroad warning devices would significantly increase design and construction costs of busways, making many proposed projects less feasible. These projects are normally funded by the Federal Transit Administration (FTA).</p> <p>5. Busway warning devices are normally maintained by transportation agencies who do not have funding sources, capabilities, or knowledge to maintain rail equipment regulated by the Federal Railroad Administration (FRA).</p> <p>6. Bus lanes could be included within street right-of-way for short distances (as available). Merging and diverging of busway with vehicular traffic makes it impractical for the use of railroad warning devices.</p> <p>7. Use of train warning devices for busways can violate drivers' expectancy on typical roadways.</p> <p>Buses should be separated into their own MUTCD Part due to the following:</p> <p>1. The American Public Transportation Association (APTA) is in process of development of Bus Rapid Transit (BRT) standards due to lack of guidance from MUTCD.</p> <p>2. Unique design requirements for bus lanes make it necessary to separate bus guidance from other modes of transportation. These include: Transit Signal priority, a unique system which analyzes the need for priority based on bus schedule.</p> <p>3. Queue jumper that allows the bus to get out ahead of traffic to help the bus to stay on schedule.</p>
8B.16	No	No	Yes	<p>On page 628 lines 46-48 the proposed Guidance that a signed detour should be installed to guide potential hang-up vehicles to avoid the condition should be revised to an Option statement.</p> <p>Providing signed detour may not be practical or necessary at many existing crossings.</p> <p>Recommend rewording using language similar to that of proposed Section 2B.66 (weight limits): "Low Ground Clearance Grade Crossing Signs with a supplemental Ahead or Distance Ahead plaque should also be placed at the nearest upstream turnaround point or intersection so that potential hang-up vehicles can detour or turn around prior to reaching the at-grade rail crossing."</p>
8B.16	No	No	Yes	<p>The proposed Guidance that selective exclusion regulatory signs for specific vehicle types should be used with or in place of the Low Ground Clearance Grade Crossing sign should be revised to an Option statement or removed.</p> <p>Installation of vehicle specific exclusion signs would require</p>

**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**

				extensive signing and research to make sure all vehicle types are accounted for on the signs.
8C.02	No	Yes	N/A	The proposed standard language on page 632, lines 25-26 that identical markings shall be placed in each approach lane that crosses the tracks should be clarified. Clarify that this refers to the RXR symbol markings, not other markings such as center or edge lines.
8D.10	No	No	Yes	On page 642 lines 43-47 the Guidance that the highway agency and the railroad company should jointly inspect and verify the pre-emption at least once per year should be revised to an Option statement. Inspection schedule should be risk-based. Proposed requirements for joint inspections would create significant burden on the agencies. In addition, coordination with many railroads is difficult making yearly inspections unrealistic.
8D.10	No	Yes	N/A	On page 644 lines 21-25, the proposed Standard requirement should be revised to Guidance t to allow track clearance intervals to terminate before gates are fully closed. At some intersections with pre-signals and long transfer times it may be beneficial to terminate track clearance phase before the gates are fully closed.
9A.03	No	Yes	N/A	Recommends revising the Standard to require all pavement markings on bicycle facilities to be retroreflective. As written, the language in lines 29 and 30 are ambiguous on both WHEN pavement markings on bicycle facilities are needed to be visible at night, and as to HOW to define adequate visibility if other lighting is provided.
9B.14	No	Yes	N/A	The language in the proposed Amendment (595) doesn't match the proposed revisions to Section 9B.06 (new 9B.14) or corresponding Figure 9B-1 depicting the legend of Bicycles May Use Full Lane Sign currently R4.11 (new Sign R9-20). Please clarify the wording of this sign in the proposed MUTCD.
9B.15	No	No	Yes	Recommend to remove sign R4-19 "3 FT MIN CLEARANCE TO PASS" and section from the proposed MUTCD, as it appears that the purpose of this sign is to programmatically convey the message of the "rules of the road". Signs conveying the rules of the road have historically been discouraged in the MUTCD as indicated in: <a href="https://mutcd.fhwa.dot.gov/knowledge/faqs/faq_part9.htm#signsq1">https://mutcd.fhwa.dot.gov/knowledge/faqs/faq_part9.htm#signsq1</a> , and this sign appears to try to convey a message that would be more appropriately be conveyed by education and public outreach programs. CTDOT's experience in the past installing similar signs have not yielded the desired benefits in improving driver compliance with specific rules being signed for, instead the use of these signs leads to an increase in the overall number of signs and the extra reminder signing has the potential for distracting motorists from the more necessary regulatory, warning and guide signs posted
9D.04	No	Yes	N/A	Recommends that the Standard requiring all numbered bicycle routes to be identified by route signs and auxiliary plaques be revised to Guidance. There may be instances

**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**

				where multiple jurisdictions are responsible for the ownership and maintenance of various sections of a numbered bicycle route; and the coordination and execution of installing these signs may pose issues between various jurisdictions.
9D.08	No	Yes	N/A	Recommend to remove the Standard that requires numbered bicycle route signs to be mounted on a separate and independent assembly as a concurrently numbered highway route sign. The option to install these signs on the same sign assembly would help reduce the overall number of signs and sign posts, while not causing any undue confusion to motorists or bicyclists. This revised approach would be more cost effective and would also increase the potential for motorists and bicyclists to view and comprehend all other signs posted along the road.
9E.02	No	Yes	N/A	Recommends revising either Figure 9E-5 or Figure 9E-9 to show how preferred treatments on the far side of the intersection would include a continuation of the previously established bicycle lane or buffer-separated bicycle lane, or show the transition to a shared lane, and/or show how the bike lane would terminate, as applicable.
9E.08	No	Yes	N/A	Recommends revising the Standard that counter-flow bicycle lanes shall not be used between a general purpose lane and an on-street parallel parking lane for motor vehicles to Guidance, unless there has been research and data that supports this requirement. Additionally, it appears angled parking should also be included in this statement, whether it goes forward as a Standard or Guidance.
9E.09	No	Yes	N/A	Recommend removing the proposed change to the Guidance regarding the speed limit of roads in which shared lane markings should be placed. It appears the current language of above 35 mph is consistent with the language in AASHTO's "Guide for the Development of Bicycle Facilities". It is also unclear if this change is intended to be a matter of phrasing as shown in the proposed revisions to Section 9E.09; or if the change is intended to actually change the guidance on the speed limit as indicated in the summary language for Proposed Amendment 631.
Figures 3B-28 and 3B-29	N/A	N/A	N/A	Figures 3B-28 and 3B-29 have been referenced in Sections 3B.30 and 3B.31, but not been included in the NPA.
Notes for Fig. 6P-04, 6P-10, 6P-13, 6P-17, 6P-35	No	Yes	No	The section refers to Section 6M.02 for positive protection examples that may be applicable; however, none of those mentioned in Section 6M.02 are usually applicable to a short duration or mobile operation, a work zone with flaggers, or the temporary halting of traffic. Section 6M.05 (Crash Cushions) should be referenced in addition to or instead of Section 6M.02.
Notes for Fig. 6P-22	No	Yes	No	Support Item 8 should reference closing the right-hand lane, not the left-hand lane as stated in the new language.
Notes for Fig. 6P-24	No	Yes	No	Recommend keeping the deleted Support language or referencing Notes for Figure 6P-22, since Notes to Figure 6P-22 also applies when implementing a half road closure on the far side of an intersection.
Table 1B-1	No	Yes	No	Target Compliance Dates –

**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**

				<p>1) Disagree with high profile signing for grade crossings Guidance should be changed to Option statement. It would take extensive research of different vehicles types and crossings. Compliance date is unrealistic deadline.</p> <p>2) Disagree with 10 year compliance date for the Installation of appropriate treatment (preemption, movement prohibition, pre-signals, queue cutter signals). The Federal Railroad Administration (FRA) issued a final rule announcement for 49 CFR Part 234 – State Highway-Rail Grade Crossing Action Plans (SAP). The rule became effective on January 13, 2021 with a submission due date of February 14, 2022 for the SAP. The installation of the results of the action plan could take a substantial amount of time due to required coordination with railroad companies.</p>
Table 6P-2	No	Yes	No	Table 6P-2 is missing from the document.

**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