



National Transportation Safety Board

Washington, DC 20594

Office of the Chairman

May 13, 2021

Docket Management Facility
US Department of Transportation
1200 New Jersey Avenue, SE
West Building Ground Floor
Room W12-140
Washington, DC 20590-0001

Attention: Docket No. FHWA-2020-0001

Dear Sir or Madam:

The National Transportation Safety Board (NTSB) has reviewed the Federal Highway Administration (FHWA) notice of proposed amendments (NPA) titled “National Standards for Traffic Control Devices; the Manual on Uniform Traffic Control Devices for Streets and Highways; Revision,” which was published in *Federal Register / Vol. 85, No. 240* on December 14, 2020. The *Manual on Uniform Traffic Control Devices for Streets and Highways* (MUTCD) is incorporated in FHWA regulations and recognized as the national standard for traffic control devices used on all public roads. The purpose of this NPA is to revise standards, guidance, options, and supporting information relating to the traffic control devices in all parts of the MUTCD. The proposed changes are intended to update the technical provisions to reflect advances in technologies and operational practices, incorporate recent trends and innovations, and set the stage for automated driving systems as those continue to take shape. The proposed changes would promote uniformity and incorporate technology advances in the traffic control device application, and ultimately improve and promote the safe and efficient utilization of roads that are open to public travel. These proposed changes are being designated as the 11th edition of the MUTCD. The last edition of the MUTCD was approved in 2009.

The NTSB supports FHWA efforts in their rulemaking step toward an MUTCD revision. This is the first major MUTCD rulemaking in more than 11 years. The NTSB provided feedback on the FHWA’s request for comments on this same subject in February 2016.¹ We are encouraged by this positive development and hope that momentum builds toward a final rule.

Since 2012, the NTSB has completed six crash investigations, one safety study report, and one special investigation report in which a total of 10 recommendations pertaining directly to the MUTCD were issued to the FHWA. All of these recommendations are currently classified “Open—Acceptable Response” or “Open—Acceptable Alternate Response.”² We note that, in two instances, the NTSB issued companion safety recommendations, one to the Federal Railroad

¹ The NTSB’s comments are available at this link: [Regulations.gov](https://www.regulations.gov).

² The NTSB also made a recommendation related to the proposed MUTCD revisions in its 1996 report titled *Collision of Northeast Illinois Regional Commuter Railroad Corporation (METRA) Train and Transportation Joint Agreement School District 47/155 School Bus at Railroad/Highway Grade Crossing in Fox River Grove, Illinois, on October 25, 1995* (NTSB/HAR-96/02); the recommendation, H-96-40 is classified “Closed—Acceptable Action.”

Administration (R-13-38) and one to the American Association of State Highway and Transportation Officials (H-14-19).

Each investigation and the corresponding recommendations issued to the FHWA and their current classification are found in Attachment A, which compares the proposed MUTCD text with the NTSB safety recommendation and provides comments as to whether the proposed change would address the recommended safety improvement. Attachment A is being provided as background material to facilitate understanding the NTSB comments on the proposed changes to the MUTCD and why we want to see those changes.

As mentioned in the NPA, the FHWA requests that commenters download and use the form provided in the docket to simplify the comment submission process and to make the FHWA's docket comment review process more efficient. Attachment B contains the available form on which the NTSB has provided comments on the proposed changes to the NPA.

Overall, the NTSB is pleased that the FHWA has reviewed and incorporated many of the NTSB safety recommendations in this process. For several proposed amendments, including those addressing speed, protection of vulnerable road users, minimum clearance heights, and traffic break operations, we have provided additional clarity so that the MUTCD can fully address the safety challenges that were identified in our investigations and safety studies. The NTSB is also encouraged by the FHWA's proposal to use Part 5 of the MUTCD to give agencies general considerations for vehicle automation as these agencies evaluate infrastructure needs and prepare roadways for automated vehicle technologies. In our report of the 2018 collision between a sport utility vehicle operating with partial driving automation and a crash attenuator in Mountain View, California, the NTSB acknowledged that although the lack of gore striping at the crash location did not contribute to the crash, ongoing research by the FHWA can help identify what highway infrastructure changes may be needed in the future to accommodate automated vehicles.³

The NTSB is encouraged by the FHWA's efforts to update the MUTCD and appreciates the opportunity to comment on the NPA. We look forward to the final rule describing the FHWA's final decision concerning the proposals for changes to the MUTCD.

Sincerely,

Robert L. Sumwalt, III
Chairman

Attached:

- A. NTSB recommendations cited in the NPA
- B. NTSB comments to NPA

³ The NTSB report is available at this link: [MountainView](#).



Attachment A

Status of NTSB Recommendations Included in NPA

Note: Definition of MUTCD headings (Standard, Guidance, Option, and Support) shown at the end of this document.

NPA Text Mark-Up Page Number (Section)	NPA Text Clean Page Number (Section)	Proposed Target Compliance Dates	NTSB Safety Recommendation (Classification) Proposed New MUTCD Text (Blue Italicized Text)	NTSB Investigation (Accident Number)	NTSB Comments
Page 698 (Section 8B.16)	Page 628 (Section 8B.16)	5 years from the effective date of this edition of the MUTCD.	<p><u>H-18-24</u> Develop and establish a guidance practice addressing the circumstances in which vehicle exclusion signs should be installed to restrict access to high-profile grade crossings and the types of vehicles to which the exclusions should apply. Incorporate the guidance practice into the Manual on Uniform Traffic Control Devices for Streets and Highways. (Open—Acceptable Response)</p> <p><i>Guidance:</i> <i>Because other vehicle types and combinations also face the potential risk of hanging up at a grade crossing, word message warning signs and selective exclusion regulatory signs (see Section 2B.52) for specific vehicle types and combinations should be used in addition to, or in place of, the Low Ground Clearance Grade Crossing (W10-5) sign.</i></p> <p><i>Support:</i> <i>While not all inclusive, some potential low ground clearance vehicles and combinations includesingle-unit trucks, buses, motor coaches, low-boy trailers, car carriers, and recreational vehicles.</i></p>	Biloxi, MS (HWY17MH010)	<p>The new target compliance date is associated with NTSB safety recommendations from the Biloxi, MS; Fox River Grove, IL; and Mount Vernon, WA, investigations.</p> <p>Proposed MUTCD text addresses Safety Recommendation H-18-24.</p>
Page 519 (Section 6A.02)	Pages 465–466 (Section 6A.02)	Normal compliance; new or reconstructed devices	<p><u>H-15-16</u> Amend the Manual on Uniform Traffic Control Devices “Guidance” for work zone projects on freeways and expressways to advise traffic engineers on the use of supplemental traffic control strategies and</p>	Cranbury, NJ (HWY14MH012)	<p>Proposed MUTCD text addresses Safety Recommendation H-15-16. Additional resources can be found in the FHWA’s Work Zone Best Practices Guidebook, available at https://ops.fhwa.dot.gov/wz/practices/best/crossr</p>

NPA Text Mark-Up Page Number (Section)	NPA Text Clean Page Number (Section)	Proposed Target Compliance Dates	NTSB Safety Recommendation (Classification) Proposed New MUTCD Text (Blue Italicized Text)	NTSB Investigation (Accident Number)	NTSB Comments
		installed shall comply with the new edition or revision.	<p>devices to mitigate crash events involving heavy commercial vehicles. (Open—Acceptable Response)</p> <p><i>Guidance:</i> <i>D. Attempts should be made to reduce the volume of traffic using the roadway or freeway to match the restricted capacity conditions. Road users should be encouraged to use alternative routes. When the roadway capacity is reduced due to lane closures, the demand will exceed the available capacity and result in either a lengthy stopped or slow-moving queue of vehicles that may extend past the normal signs shown in the typical advance warning area. An assessment of the expected queue length should be part of the temporary traffic control plan design process and adjustments to the sign spacing and number of signs as well as the possibility of using more conspicuous devices may be provided to increase the distance and conspicuity of the advance warning area. For high-volume roadways and freeways, the closure of selected entrance ramps or other access points and the use of signed diversion routes should be evaluated.</i></p>		<p>ef.asp, which provides applications on the use of changeable message signs, transverse rumble strips and other alerting applications to protect the end of the queue.</p>
Pages 715–724 (Sections 8D.10-8D.13)	Pages 642–650 (Sections 8D.10-8D.13)	10 years from the effective date of this edition of the MUTCD.	<p><u>H-96-40</u> Develop guidelines and amend the Manual on Uniform Traffic Control Devices for Streets and Highways to provide methods to delineate the area (zone) that a train, or its cargo, or both, may occupy on the track or tracks of a railroad grade crossing so motorists have visual reference points that enable them to ascertain whether their vehicle is encroaching on the travel path of the train, or its cargo, or both. (Closed—Acceptable Action)</p> <p>The FHWA proposes new sections numbered and titled, “<i>Section 8D.10 Preemption of Highway Traffic Signals at or Near Grade Crossings,</i>” “<i>Section 8D.11 Movements Prohibited During Preemption,</i>” “<i>Section 8D.12 Pre-Signals at or Near Grade Crossings,</i>” and “<i>Section 8D.13 Queue Cutter Signals at or Near Grade Crossings.</i>” The FHWA also proposes new Standard, Guidance, Option, and Support statements regarding traffic signal preemption at grade crossings. The FHWA proposes this new material to provide consistency with the changes in the industry</p>	Fox River Grove, IL (CRH-96-M-H002)	<p>The new target compliance date is associated with NTSB safety recommendations from the Biloxi, MS; Fox River Grove, IL; and Mount Vernon, WA, investigations.</p> <p>Proposed MUTCD text addresses Safety Recommendation H-96-40; however, based on previous actions completed by the FHWA, this safety recommendation is already “Closed—Acceptable Action.”</p>

NPA Text Mark-Up Page Number (Section)	NPA Text Clean Page Number (Section)	Proposed Target Compliance Dates	NTSB Safety Recommendation (Classification) Proposed New MUTCD Text (Blue Italicized Text)	NTSB Investigation (Accident Number)	NTSB Comments
			<p>resulting from the NTSB investigation into the causes of the fatal train/school bus crash in Fox River Grove, IL, that occurred on October 25, 1995.</p> <p>All of the new Standard, Guidance, Option, and Support statements cannot be summarized in this document. Please refer to pages 715 through 724 referenced in the NPA Text Mark-Up for detailed information on each statement.</p>		
Pages 459–460 (Section 4F.19)	Page 408 (Section 4F.19)	Normal compliance; new or reconstructed devices installed shall comply with the new edition or revision.	<p><u>H-13-41</u> Work with the Federal Railroad Administration to (1) include guidance in the Manual on Uniform Traffic Control Devices (MUTCD) for the installation of advance warning devices, such as movement-activated blank-out signs, that specifically use the word “train” to indicate the preemption of highway traffic signals by an approaching train, and (2) amend the MUTCD to indicate that preemption confirmation lights, while not intended to provide guidance to the general public, would be useful in providing advance information on train movements to law enforcement and emergency responders. (Open—Acceptable Response)</p> <p><u>R-13-38 (Issued to FRA)</u> Work with the Federal Highway Administration to (1) include guidance in the Manual on Uniform Traffic Control Devices (MUTCD) for the installation of advance warning devices, such as movement-activated blank-out signs, that specifically use the word “train” to indicate the preemption of highway traffic signals by an approaching train, and (2) amend the MUTCD to indicate that preemption confirmation lights, while not intended to provide guidance to the general public, would be useful in providing advance information on train movements to law enforcement and emergency responders. (Open—Acceptable Response)</p> <p><i>Option:</i> <i>A distinctive indication may be provided at the intersection to inform law enforcement personnel who are escorting traffic (such as a parade or funeral procession) that the traffic control signal has changed to a red indication not because of normal cycling, but because it has been preempted by rail traffic approaching an adjacent grade crossing or by</i></p>	Midland, TX (HWY13MH003)	The proposed MUTCD text does not use the word “train,” as written in Safety Recommendations H-13-41 and R-13-38, and we would encourage the FHWA to incorporate specific language addressing the safety issue surrounding trains.

NPA Text Mark-Up Page Number (Section)	NPA Text Clean Page Number (Section)	Proposed Target Compliance Dates	NTSB Safety Recommendation (Classification) Proposed New MUTCD Text (Blue Italicized Text)	NTSB Investigation (Accident Number)	NTSB Comments
			<i>boat traffic approaching an adjacent moveable bridge.</i>		
Page 133 (Section 2C.25)	Page 117 (Section 2C.25)	5 years from the effective date of this edition of the MUTCD.	<p><u>H-14-9</u> Work with the American Association of State Highway and Transportation Officials to amend the Manual on Uniform Traffic Control Devices for Streets and Highways, in accordance with A Policy on Geometric Design of Highways and Streets and the Load and Resistance Factor Design Bridge Design Specifications, to include a requirement for low-clearance signage for highway structures that cross over a roadway. The requirement should provide a uniform minimum clearance height between the roadway and the bottom of the structure which, if not met, necessitates the installation of low-clearance signage. (Open—Acceptable Response)</p> <p><u>H-14-11</u> Include in the Manual on Uniform Traffic Control Devices for Streets and Highways a requirement for signage indicating the proper lane of travel for overheight vehicles traveling under an arched structure. (Open—Acceptable Alternate Response)</p> <p>Standard: <i>The Low Clearance Advance (W12-2) sign (see Figure 2C-7) shall be used to warn road users of clearances less than 12 inches above the statutory maximum vehicle height.</i></p> <p>Guidance: <i>The actual clearance should be displayed on the Low Clearance (W12-2, W12-2a, and W12-2b) sign to the nearest 1 inch not exceeding the actual clearance. However, in areas that experience changes in temperature causing frost action, a reduction, not exceeding 3 inches, should be used for this condition.</i></p> <p><i>Clearances should be evaluated periodically, particularly when resurfacing operations have occurred.</i></p> <p><i>The W12-2 sign with a supplemental distance plaque should also be placed at the nearest intersecting road or wide point in the road at which a vehicle can detour or turn around.</i></p> <p>Option:</p>	Mount Vernon, WA (HWY13MH012)	<p>The new target compliance date is associated with NTSB recommendations from the Biloxi, MS; Fox River Grove, IL; and Mount Vernon, WA, investigations.</p> <p>The FHWA proposes several revisions to clarify the signage practice for locations where the clearance is less than 12 inches above the statutory maximum vehicle height. The FHWA proposes these changes to provide agencies with additional information for placing signs in advance of and on structures with low clearance. The proposed changes were based on NTSB Safety Recommendation H-14-11 to provide signage indicating the proper lane of travel for overheight vehicles traveling under an arched structure. As part of these changes, the FHWA proposes to designate the existing W12-2 sign as a Low Clearance Ahead sign, and the existing W12-2a and a proposed new W12-2b sign as a Low Clearance Overhead sign, to indicate the portion of the structure with low clearance if the posted clearance does not apply to the entire structure. The FHWA proposes a compliance date of 5 years based on the critical nature of the infrastructure. Proposed MUTCD text could be considered an acceptable alternate means of addressing Safety Recommendation H-14-11.</p> <p>Proposed MUTCD text does not address the language in Safety Recommendation H-14-9 to provide a uniform minimum clearance height between the roadway and the bottom of the structure. FHWA and NTSB technical staff held a teleconference to discuss H-14-9 as summarized in</p>

NPA Text Mark-Up Page Number (Section)	NPA Text Clean Page Number (Section)	Proposed Target Compliance Dates	NTSB Safety Recommendation (Classification) Proposed New MUTCD Text (Blue Italicized Text)	NTSB Investigation (Accident Number)	NTSB Comments
			<p><i>The Low Clearance Overhead (W12-2a or W12-2b) sign may be installed on the structure to supplement the advance warning sign.</i></p> <p><i>Guidance:</i></p> <p><i>In the case of an arch or other structure under which the clearance varies greatly, two or more Low Clearance Overhead (W12-2a or W12-2b) signs should be installed on the structure itself to give information as to the clearances over the low clearance portions of the roadway.</i></p> <p>Standard:</p> <p><i>If used, the Low Clearance Overhead (W12-2b) sign shall indicate the portion of the structure with low clearance if the posted clearance does not apply to the entire structure.</i></p>		<p>an FHWA letter to the NTSB dated July 24, 2015. The letter identified additional proposed changes to the MUTCD. Based on the FHWA and NTSB technical staff teleconference, the proposed MUTCD text should be revised as follows with changes shown in yellow highlight:</p> <p>Standard:</p> <p>The Low Clearance <u>Advance (W12-2)</u> sign (see Figure 2C-7) shall be used to warn road users of clearances less than 14 feet 6 inches, or clearances less than 12 inches above the statutory maximum vehicle height, whichever is greater.</p> <p>We ask for this change in part because drivers who transport over-height loads on interstate trips will benefit from having uniform information concerning minimum clearances while traveling from state to state, and this uniformity will allow for safer routing of these loads.</p>
Page 593 (Section 6N.01)	Page 532 (Section 6N.01)	Normal compliance; new or reconstructed devices installed shall comply with the new edition or revision.	<p><u>H-17-48</u></p> <p>Develop recommended guidance for traffic break operations based on exemplar state and American Traffic Safety Services Association guidance on the safe implementation of traffic breaks, and include your recommended guidance in the next edition of the Manual on Uniform Traffic Control Devices for Streets and Highways. (Open—Acceptable Response)</p> <p><i>Support:</i></p> <p><i>A rolling roadblock is a method of temporary traffic control used to slow or stop traffic as a means of temporarily removing traffic from a roadway. The rolling roadblock closes all lanes of traffic by using pacing vehicles to create a gap so that construction activities can be performed. Rolling roadblocks are used where long-term road closures using temporary traffic control devices (TTCD) are not needed. A rolling roadblock requires one blocking/pacing vehicle per lane of traffic, a clearing vehicle, and an</i></p>	Palm Springs, CA (HWY17MH005)	Proposed MUTCD text describes a “Support” statement, which by definition is an informational statement that does not convey any degree of mandate, recommendation, authorization, prohibition, or enforceable condition. Safety Recommendation H-17-48 recommends developing recommended guidance, which by definition is a “Guidance” statement. Proposed MUTCD text should be elevated to a “Guidance” statement, a statement of recommended practice in typical situations, with deviations allowed if engineering judgment or engineering study indicates that the deviation is appropriate. Therefore, the proposed changes would not address this recommendation.

NPA Text Mark-Up Page Number (Section)	NPA Text Clean Page Number (Section)	Proposed Target Compliance Dates	NTSB Safety Recommendation (Classification) Proposed New MUTCD Text (Blue Italicized Text)	NTSB Investigation (Accident Number)	NTSB Comments
			<i>advance warning vehicle. The rolling roadblock is normally performed by law enforcement officers during off-peak hours.</i>		An error exists on page 593 (Section 6N.01) referenced in the NPA Text Mark-Up. The note in the green box on lines 45 and 46 attributes the support statement to NTSB Safety Recommendation H-17-2. The statement should be attributed to Safety Recommendation H-17-48.
Page 363 (Section 3B.25)	Page 321 (Section 3B.25)	Normal compliance; new or reconstructed devices installed shall comply with the new edition or revision.	<p><u>H-17-3</u> Revise the Manual on Uniform Traffic Control Devices for Streets and Highways to change the delineation of left exit gores, such as by using chevrons or diagonal cross-hatching, from an optional to, at minimum, a recommended guidance practice. (Open—Acceptable Response)</p> <p><i>Guidance:</i> <i>Chevron markings should be used:</i> <i>D. In the neutral area of exit ramp and entrance ramp gores (see Figure 3B-8, Drawing A of Figure 3B-9, and Figure 3B-10)</i></p>	San Jose, CA (HWY16MH005)	Proposed MUTCD text addresses the language in Safety Recommendation H-17-3.
Page 76 (Section 2B.21)	Page 67 (Section 2B.21)	Normal compliance; new or reconstructed devices installed shall comply with the new edition or revision.	<p><u>H-17-27</u> Revise Section 2B.13 of the Manual on Uniform Traffic Control Devices so that the factors currently listed as optional for all engineering studies are required, require that an expert system such as USLIMITS2 be used as a validation tool, and remove the guidance that speed limits in speed zones should be within 5 mph of the 85th percentile speed. (Open—Acceptable Response)</p> <p><u>H-17-28</u> Revise Section 2B.13 of the Manual on Uniform Traffic Control Devices to, at a minimum, incorporate the safe system approach for urban roads to strengthen protection for vulnerable road users. (Open - Acceptable Response)</p> <p><i>Guidance:</i> <i>Among the factors that should be considered when establishing or reevaluating speed limits within speed zones are the following:</i> <i>A. Speed distribution of free-flowing vehicles (such as current 85th</i></p>	Reducing Speeding-Related Crashes Involving Passenger Vehicles Safety Study Report	<p>Proposed MUTCD text does not address Safety Recommendation H-17-27 that intends “<i>factors currently listed as optional for all engineering studies are required,</i>” and therefore should be elevated to a “Standard” statement. In addition, the proposed MUTCD text does not “<i>remove the guidance that speed limits in speed zones should be within 5 mph of the 85th percentile speed.</i>” We ask for this removal because, although using the 85th percentile speed for adjusting speed limits has been a practice since the 1940s, undesirable elements such as driving faster than the posted speed have been observed through its use. In addition, the dated research supporting the 85th percentile for establishing safe speeds may not be valid under scrutiny.</p> <p>Proposed MUTCD text does provide information about additional resources that are available on</p>

NPA Text Mark-Up Page Number (Section)	NPA Text Clean Page Number (Section)	Proposed Target Compliance Dates	NTSB Safety Recommendation (Classification) Proposed New MUTCD Text (Blue Italicized Text)	NTSB Investigation (Accident Number)	NTSB Comments
			<p><i>percentile; the pace; review of past speed studies)</i></p> <p><i>B. Reported crash experience for at least a 12-month period</i></p> <p><i>C. Road characteristics (such as lane widths; shoulder condition; grade; alignment; median type; sight distance)</i></p> <p><i>D. Road context (such as roadside development and environment (number of driveways, land use); functional classification; parking practices; pedestrian activity; bicycle activity).</i></p> <p><i>When a speed limit within a speed zone is posted on freeways or expressways, it should be within 5 mph of the 85th-percentile speed of free-flowing traffic vehicles.</i></p> <p><i>Except in urbanized locations within rural regions, when a speed limit within a speed zone is posted on a rural highway, it should be within 5 mph of the 85th-percentile speed of free-flowing traffic vehicles.</i></p> <p><i>State and local agencies should conduct engineering studies to reevaluate non-statutory speed limits on segments of their roadways that have undergone significant changes since the last review, (such as the addition or elimination of parking or driveways, changes in the number of travel lanes, changes in the configuration of bicycle lanes, changes to road geometrics, changes to road context, changes in traffic control signal coordination, or significant changes in traffic volumes).</i></p> <p><i>Speed studies for signalized intersection approaches should be taken outside the influence area of the traffic control signal, which is generally considered to be approximately 1/2 mile, to avoid obtaining skewed results for the 85th-percentile speed. If the signal spacing is less than 1 mile, the speed study should be at approximately the middle of the segment.</i></p> <p><i>Support:</i></p> <p><i>In addition to the factors in Paragraph 2, there are other available resources for practitioners that can assist when establishing or reevaluating speed limits within speed zones. The FHWA’s Engineering Speed Limits (https://safety.fhwa.dot.gov/speedmgt/eng_spd_lmths/) Web page provides information on resources and tools that can be used to help practitioners set speed limits for specific segments of roads.</i></p>		<p>the FHWA website to assist in establishing and reevaluating speed limits.</p> <p>Proposed MUTCD text does not address Safety Recommendation H-17-28 that intends to “incorporate the safe system approach for urban roads to strengthen protection for vulnerable road users.”</p>
Pages 96–98	Pages 85–87	Normal compliance; new or	<u>H-12-41</u>	Wrong-Way Driving Special	Proposed MUTCD text addresses Safety Recommendation H-12-41.

NPA Text Mark-Up Page Number (Section)	NPA Text Clean Page Number (Section)	Proposed Target Compliance Dates	NTSB Safety Recommendation (Classification) Proposed New MUTCD Text (Blue Italicized Text)	NTSB Investigation (Accident Number)	NTSB Comments
(Sections 2B.48 and 2B.49)	(Sections 2B.48 and 2B.49)	reconstructed devices installed shall comply with the new edition or revision.	<p>Revise the Manual on Uniform Traffic Control Devices as required to address issues of signage and channelization to reduce instances of, and warn drivers of, wrong-way movements. (Open - Acceptable Response)</p> <p>FHWA proposes revisions to Guidance, Option, and Support statements and proposes a new Option statement in section titled, "Section 2B.48 WRONG WAY Sign (R5-1a)." FHWA proposes revisions to Standard, Guidance, Option, and Support statements and proposes a new Option statement in section titled, "Section 2B.49 Wrong-Way Traffic Control at Interchange Ramps."</p> <p>All of the proposed revisions to Standard, Guidance, Option, and Support statements and new Option statements cannot be summarized in this document. Please refer to pages 96 through 98 referenced in the NPA Text Mark-Up for detailed information on each statement.</p>	Investigation Report	

When used in the MUTCD Manual, the text headings of Standard, Guidance, Option, and Support shall be defined *as follows*:

- A. Standard—a statement of required, mandatory, or specifically prohibitive practice regarding a traffic control device. *In limited, location-specific cases, the results of a documented engineering study (see Section 1D.05) might indicate a deviation from one or more requirements of a Standard provision to be appropriate.* All Standard statements are labeled, and the text appears in bold type. The verb “shall” is typically used. The verbs “should” and “may” are not used in Standard statements. Standard statements are sometimes modified by Option *statements*.
- B. Guidance—a statement of recommended practice in typical situations, with deviations allowed if engineering judgment or engineering study (*see Section 1D.05*) indicates that the deviation is appropriate. All Guidance statements are labeled, and the text appears in unbolt type. The verb “should” is typically used. The verbs “shall” and “may” are not used in Guidance statements. Guidance statements are sometimes modified by Option *statements*.
- C. Option—a statement of practice that is a permissive condition and carries no requirement or recommendation. Option statements sometimes contain allowable modifications to a Standard or Guidance statement. All Option statements are labeled, and the text appears in untold type. The verb “may” is typically used. The verbs “shall” and “should” are not used in Option statements.
- D. Support—an informational statement that does not convey any degree of mandate, recommendation, authorization, prohibition, or enforceable condition. Support statements are labeled, and the text appears in unbold type. The verbs “shall,” “should,” and “may” are not used in Support statements.

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>
8B.16	YES	N/A	N/A	Proposed MUTCD text (Page 698, Line numbers 18–25) addresses NTSB Safety Recommendation H-18-24.
6A.02	NO	YES	N/A	Additional resource information should be added to proposed MUTCD text (Page 519, Line numbers 36–42) to address Safety Recommendation H-15-16. Add the following sentence in red text to Line number 42: <i>(Additional resources can be found in FHWA’s Work Zone Best Practices Guidebook, https://ops.fhwa.dot.gov/wz/practices/best/crossref.asp, which provides applications on the use of changeable message signs, transverse rumble strips and other alerting applications to protect the end of the queue.)</i>
8D.10-8D.13	YES	N/A	N/A	Proposed MUTCD text (Pages 715–724) addresses Safety Recommendation H-96-40. The current classification of this recommendation is “Closed—Acceptable Action.”
4F.19	NO	YES	N/A	The proposed MUTCD text (Page 459, Line numbers 47–49 and Page 460, Line numbers 1–2) does not use the word “train,” as written in Safety Recommendations H-13-41 and R-13-38, and we would encourage the FHWA to incorporate specific language addressing the safety issue surrounding trains.
2C.25	NO	YES	N/A	Proposed MUTCD text (Page 133, Line numbers 22–24) does not address Safety Recommendation H-14-9, to provide a uniform minimum clearance height between the roadway and the bottom of the structure. FHWA and NTSB technical staff held a teleconference to discuss H-14-9 as summarized in FHWA incoming letter dated July 24, 2015. That letter also identified additional proposed changes to the MUTCD. Based on the FHWA and NTSB technical staff teleconference, add the following additional proposed changes in red text to Line number 24:

**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>Standard:</p> <p><i>The Low Clearance <u>Advance</u> (W12-2) sign (see Figure 2C-7) shall be used to warn road users of clearances less than 14 feet and 6 inches, or clearances less than 12 inches above the statutory maximum vehicle height, whichever is greater.</i></p> <p>We ask for this change in part because drivers who transport over-height loads on interstate trips will benefit from having uniform information concerning minimum clearances while traveling from state to state, and this uniformity will allow for safer routing of these loads.</p> <p>Proposed MUTCD text (Page 133, Line numbers 38–41) could be considered an acceptable alternate means of addressing Safety Recommendation H-14-11.</p>
6N.01	NO	YES	N/A	<p>Proposed MUTCD text (Page 593, Line numbers 39–46) describes a “Support” statement, which by definition is an informational statement that does not convey any degree of mandate, recommendation, authorization, prohibition, or enforceable condition. Safety Recommendation H-17-48 recommends developing guidance, which by definition is a “Guidance” statement. The currently proposed changes would not address this recommendation.</p> <p>Proposed MUTCD text should be elevated to a “Guidance” statement, a statement of recommended practice in typical situations, with deviations allowed if engineering judgment or an engineering study indicates the deviation to be appropriate. Add and delete the following statements in red text to Line number 39:</p> <p><u>GuidanceSupport:</u> <u><i>A rolling roadblock is a method of temporary traffic control used to slow or stop traffic as a means of temporarily removing traffic from a roadway. The rolling roadblock closes all lanes of traffic by using pacing vehicles to create a gap so that construction activities can be performed. Rolling roadblocks are used where long-term road closures using temporary traffic control devices (TTCD) are not needed. A rolling roadblock requires one blocking/pacing vehicle per lane of traffic, a clearing vehicle, and an advance warning vehicle. The rolling roadblock is normally performed by law enforcement officers during off-peak hours.</i></u></p> <p>An error exists in the proposed MUTCD text (Page 593, Line numbers 45–46). The note in the green box attributes the support statement to Safety Recommendation H-17-2. However, the support statement should be attributed to Safety Recommendation H-17-48.</p>
3B.25	YES	N/A	N/A	<p>Proposed MUTCD text (Page 363, Line numbers 25–37) addresses Safety Recommendation H-17-3.</p>
2B.21	NO	YES	N/A	<p>Proposed MUTCD text (Page 76, Line numbers 8–23) does not address Safety Recommendation H-17-27 that recommends “<i>factors currently listed as optional for all engineering studies are required,</i>” and therefore should be elevated to a “Standard” statement. In addition, the proposed MUTCD text does not “<i>remove the guidance that speed limits in speed zones should be within 5 mph of the 85th percentile speed.</i>” We ask for this removal because, although using the 85th percentile speed for adjusting speed limits has been a practice since the 1940s, undesirable elements such as driving faster than the posted speed have been observed through its use. In addition, the dated research supporting</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 85th percentile for establishing safe speeds may not be valid under scrutiny.</p> <p>Proposed MUTCD text does not address Safety Recommendation H-17-28 to “<i>incorporate the safe system approach for urban roads to strengthen protection for vulnerable road users.</i>”</p> <p>Amend the following sentences in red text to Line numbers 8–23: <u>Standard Guidance:</u> <i>Among the factors that should be considered when establishing or reevaluating speed limits within speed zones are the following:</i> <i>A. Speed distribution of free-flowing vehicles (such as current 85th percentile; the pace; review of past speed studies)</i> <i>B. Reported crash experience for at least a 12-month period</i> <i>C. Road characteristics (such as lane widths; shoulder condition; grade; alignment; median type; sight distance)</i> <i>D. Road context (such as roadside development and environment (number of driveways, land use); functional classification; parking practices; pedestrian activity; bicycle activity).</i></p> <p><i>When a speed limit within a speed zone is posted on freeways or expressways, it should be within 5 mph of the 85th-percentile speed of free-flowing traffic vehicles.</i></p> <p><i>Except in urbanized locations within rural regions, when a speed limit within a speed zone is posted on a rural highway, it should be within 5 mph of the 85th-percentile speed of free-flowing traffic vehicles.</i></p> <p><i>Incorporate the safe system approach for urban roads to strengthen protection for vulnerable road users.</i></p>
2B.48 and 2B.49	YES	N/A	N/A	Proposed MUTCD text (Pages 96–98) addresses Safety Recommendation H-12-41.