



National Committee on Uniform Traffic Control Devices

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Item Number: 25B-CAV-01

NCUTCD PROPOSAL FOR CHANGES TO THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES

COMMITTEE / TASK FORCE: Connected and Automated Vehicles Joint Task Force
ITEM NUMBER: 25B-CAV-01
TOPIC: Dotted Edge Line Consistency Between Parts 3 and 5
ORIGIN OF REQUEST: CAV JTF, Markings TC, Edit Committee
**AFFECTED SECTIONS
OF MUTCD:** 5B.02

DEVELOPMENT HISTORY:

Approved by CAV JTF:06/11/2025
Concurrence from Markings TC:.....06/11/2025
Approved by NCUTCD Council:

This is a proposed change to the MUTCD that has been developed by a technical committee, joint committee, or joint task force of the NCUTCD. The NCUTCD is distributing this to its sponsoring organizations for review and comment. Sponsor comments will be considered in revising the proposal prior to NCUTCD Council consideration. This proposal does not represent a revision of the MUTCD and does not constitute official MUTCD standards, guidance, options, or support. If approved by the NCUTCD Council, the recommended changes will be submitted to FHWA for consideration for inclusion in a future MUTCD revision. The MUTCD can be revised only through the federal rulemaking process.

SUMMARY:

This proposal removes the dotted edge line extension statement provided in Section 5B.02 under guidance as it may appear to reduce the dotted edge line extension Standard requirements contained in Sections 3B.07 and 3B.11. Dotted edge line extension information is moved to the Section 5B.02 support statement.

DISCUSSION:

Part 5 of the 11th Edition of the MUTCD addresses Traffic Control Device Considerations for Automated Vehicles. Within this framework, Section 5B.02 Markings offers Guidance on pavement markings that may enhance support for automated vehicles. Notably, Section 5B.02 Guidance Paragraph 02.C specifically recommends the use of dotted line extensions along all entrance and exit ramps, auxiliary lanes, and tapers where a deceleration or auxiliary lane is added, and references Section 3B.11 Application of Pavement Markings through Intersections.

The basis of this proposal is to address the discrepancy created by the Section 5B.02 mention of dotted edge line extensions in a Guidance statement and the Section 3B.07 White Lane Line

Markings for Non-Continuing Lanes and Section 3B.11 dotted edge line extension Standard statements.

The relevant Standard provisions from Section 3B.07 and 3B.11 are:

Section 3B.07 White Lane Line Markings for Non-Continuing Lanes

Standard:

01 A normal width dotted white line marking shall be used as the lane line to separate a through lane that continues beyond the interchange or intersection from an adjacent deceleration or acceleration lane.

02 For exit ramps with a parallel deceleration lane, a normal width dotted white lane line extension shall be installed from the upstream end of the taper to the theoretical gore or to the upstream end of a solid white lane line, if used, that extends upstream from the theoretical gore as shown in Drawings A and C in Figure 3B-9.

03 For an exit ramp with a tapered deceleration lane, a normal width dotted white line extension shall be installed from the theoretical gore through the taper area such that it meets the edge line at the upstream end of the taper as shown in Drawing B in Figure 3B-9.

04 For entrance ramps with a parallel acceleration lane, a normal width dotted white lane line shall be installed from the theoretical gore or from the downstream end of a solid white lane line, if used that extends downstream from the theoretical gore, to a point at least one-half the distance from the theoretical gore to the downstream end of the acceleration taper, as shown in Drawing A in Figure 3B-10.

Section 3B.11 Application of Pavement Markings through Intersections or Interchanges

Standard:

01 Pavement markings extended into or continued through an intersection or interchange area shall be the same color as the line markings they extend (see Figure 3B13).

Standard:

05 Extensions of center lines through intersections shall be dotted lines.

Standard:

07 Solid lines shall not be used to extend edge lines into or through intersections except through that part of an intersection with no intersecting approach (such as the far side of a T-intersection).

The Standards in Section 3B.07 require the use of dotted white lines for ramp acceleration and deceleration lanes (types of auxiliary lanes) and their associated tapers. The Standards in Section 3B.11 primarily covers the appearance and placement of dotted line pavement markings through intersections or interchanges. The referenced locations for placement of dotted line extensions in Sections 3B.07 and 3B.11 align with the locations mentioned in Section 5B.02 Paragraph 02.C.

The presentation of dotted line extensions as part of a Guidance statement in Section 5B.02 Paragraph 02.C introduces an inconsistency with the presentation of dotted line extensions as part of a Standard statement in Sections 3B.07 and 3B.11. To resolve this inconsistency and maintain clarity, this proposal recommends removing Section 5B.02 Paragraph 02.C, eliminating redundant and conflicting language and supporting the broader objective of ensuring consistent, uniform and unambiguous communication to all road users, including automated vehicles as emphasized throughout Part 5. To continue providing users of the MUTCD with the knowledge

that continuous markings (lines) provided by the use of dotted line extensions are beneficial to the operation of automated vehicles (and other road users) a reference to Section 3B.07 has been added to the Section 5B.02 Support statement.

RECOMMENDED MUTCD CHANGES:

The following present the proposed changes to the current MUTCD within the context of the current MUTCD language. Proposed additions to the MUTCD are shown in blue underline and proposed deletions from the MUTCD are shown in ~~red strikethrough~~. Changes previously approved by NCUTCD Council (but not yet adopted by FHWA) are shown in green double underline for additions and ~~green double strikethrough~~ for deletions. In some cases, background comments may be provided with the MUTCD text. These comments are indicated by [bracketed white text in shaded green]. Deletions made by a technical committee, joint committee, or task force after initial distribution to sponsoring organizations are shown in ~~highlighted red strikethrough and sans-serif text~~. Additions made by a technical committee, joint committee, or task force after initial distribution to sponsoring organizations are shown in underline blue and sans-serif text.

PART 5

TRAFFIC CONTROL DEVICE CONSIDERATIONS FOR AUTOMATED VEHICLES

CHAPTER 5B. PROVISIONS FOR TRAFFIC CONTROL DEVICES

Section 5B.02 Markings

Support:

Driving automation systems use sensors, algorithms, and processing to locate, read, and comprehend pavement markings. Location, condition, uniformity, design characteristics, and consistent application all have some effect on the ability of driving automation systems to perform this function. Certain pavement marking applications and practices such as the dotted edge line extensions discussed in Section 3B.07 [White Lane Line Markings for Non-Continuing Lanes], have been shown through research to better support driving automation system technology, while also benefitting, or at least not detracting from, the performance of the human operator.

Guidance:

Agencies seeking to better accommodate driving automation system to support AVs, while also potentially benefitting human drivers, should consider:

- A. Normal width longitudinal lines of at least 6 inches in width (see Section 3A.04).
 - B. Edge lines of at least 6 inches in width (see Sections 3A.04 and 3B.09).
 - ~~C. Dotted edge line extensions along all entrance and exit ramps, all auxiliary lanes, and all tapers where a deceleration or auxiliary lane is added (see Section 3B.11).~~
 - D. Chevron markings in the neutral areas of exit gores to distinguish them from travel lanes (see Section 3B.25).
 - E. Raised pavement markers only as a supplement to, rather than as a substitute for, pavement markings (see Sections 3B.16 and 3B.17).
 - ~~F. Uniform contrast markings on light colored pavements to create greater contrast. Supplementing broken white lane lines with a lag pavement marking contrast pattern consisting of black material with the same dimensions of the lane line (see Section 3A.04). and immediately following the lane line. Jan 2025, 24B-CAV-01]~~
 - G. Broken lines with uniform marking and gap length (see Section 3A.04).
- [List item renumbering omitted for simplicity]