



U.S. Department  
of Transportation  
**Federal Highway  
Administration**

# Memorandum

Subject: **INFORMATION:** MUTCD –  
Clarifications of Existing Standards and  
Guidance on New and Innovative Traffic  
Control Devices

Date: January 5, 2017

From: Robert E. Arnold  
Acting Associate Administrator for  
Operations

In Reply Refer To:  
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To: Directors of Federal Lands Divisions  
Division Administrators

## Purpose

The purpose of this memorandum is to clarify the status of several types of traffic control devices currently allowed for use by the 2009 *Manual on Uniform Traffic Control Devices for Streets and Highways* (MUTCD) under various types of approval, and to provide an update on the evaluation of several other types of traffic control devices under consideration for Interim Approval.

All numerical or alpha-numeric references to Paragraphs, Figures, Sections, or Parts herein refer to the 2009 edition of the MUTCD.

## Traffic Control Devices Permitted Without Additional Approval

**Bicycle Lane Markings Through Intersections:** Extensions of bicycle lanes are compliant with the MUTCD and can be marked as would be an extension of any other lane. The provisions of Section 3B.08 – Extensions Through Intersections or Interchanges – apply to bicycle lanes. Among other guidance, Section 3B.08 states that “Where highway design or reduced visibility conditions make it desirable to provide control or to guide vehicles through an intersection or interchange ... dotted line extension markings consisting of 2-foot line segments and 2- to 6-foot gaps should be used to extend longitudinal line markings through an intersection or interchange area.” It should be noted that chevron markings are not permitted to be used in bicycle lanes or bicycle lane extensions, nor are shared-lane markings. Bicycle lane extensions through intersections can include standard bicycle lane arrows, bicycle symbols, or pavement word markings. Additionally, green-colored pavement can be used to enhance conspicuity if the installing jurisdiction has received approval under Interim Approval 14.

**High Visibility Crosswalk Markings:** Since the publication of the 2009 MUTCD, a study on crosswalk markings was completed on behalf of the FHWA. This study, *Crosswalk Marking Field Visibility Study* (FHWA Publication FHWA-HRT-10-068), produced several recommendations for revisions to the MUTCD. These recommendations were to add bar pairs as a “usable crosswalk pattern”, to provide typical dimensions for marking patterns, and to consider making bar pairs or continental markings the default marking for all crosswalks across uncontrolled approaches with some exceptions. It is important to note that bar pairs are compliant with the 2009 MUTCD and can be used by any jurisdiction choosing to do so. Many jurisdictions already use the bar pair crosswalk marking. It is likewise also compliant with the MUTCD if a roadway agency should choose to accept the recommendation that bar pairs or continental markings be the default crosswalk marking across uncontrolled approaches. While providing typical dimensions for crosswalk markings is under consideration for the next edition of *Standard Highway Signs*, many State and local roadway agencies include these specifications in their roadway design guides.

**Edge Line Markings at Highway-Rail and Light Rail Transit Grade Crossings:** Edge Line Markings extending through the track area at rail grade crossings are permitted under the 2009 MUTCD. In March 2016, the FHWA issued Official Ruling 8(09)-21 (I), which clarified that the extension of tubular markers was permitted across the track area, but the requester at that time did not inquire about edge lines in similar situations. Edge lines are permitted to be extended through the track area under the 2009 MUTCD without any additional approvals.

### **Traffic Control Devices Permitted Under Experimental Approval**

**Green-Backed Shared-Lane Markings:** Agencies wishing to install green-colored pavement behind shared-lane markings must submit a Request to Experiment under the terms outlined in Section 1A.10. The FHWA has concerns that the use of green-colored pavement behind shared-lane markings will dilute the meaning of green-colored pavement as used only in exclusive bicycle facilities under the terms of Interim Approval 14. Agencies requesting to experiment are required to evaluate the operational impact of the use of green-colored pavement versus the standard shared-lane marking without any pavement coloring. These experiments will help the FHWA to assess how drivers and bicyclists are reacting to the use of green-colored pavement and to decide whether the impact of its use in this context justifies amending IA-14 to include the use of green-colored pavement in non-exclusive facilities.

**Use of Bicycle Symbol on Signs:** The FHWA has been requested to allow the substitution of the bicycle symbol on signs in place of the word “Bicycle”, both with word message signs already in the Manual and word message signs not provided in the Manual. The substitution of symbols for words in word message sign provided in the Manual is not permitted under Section 2A.06 of the MUTCD which states, “Where a standard word message is applicable, the wording shall be as provided in this Manual.” This precludes the addition or substitution of a symbol. Similarly, where a word message is required other than those provided in the MUTCD, jurisdictions are permitted by the Manual to create a

word message-only sign; therefore symbols are not allowed. The FHWA would consider requests for experimentation with new symbol-only signs that may be more easily and quickly understood than an MUTCD-standard sign (for example, a modified R10-15 sign stating that turning vehicles must yield to bicycles and pedestrians). These and similar signs shall not be installed without an approved request to experiment including an evaluation plan to assess whether the sign is performing as intended.

### **Requests for Interim Approvals**

**Revisions to Interim Approval 16 to Allow Conflicting Movements:** Interim Approval 16, allowing for the use of bicycle signal faces, was written to only allow the use of green bicycle indications for phases where there were no conflicting movements. The FHWA has received multiple requests to modify the language of IA-16 to allow conflicting movements across bicycle travel paths while bicyclists are shown a green bicycle indication. These requests are not supported by data or observations showing that this is a safe operation. The FHWA cannot modify an Interim Approval to allow a significant degree of additional conflict without any supporting evidence. While this type of operation has been used in other countries, it cannot be assumed that American road users will react similarly to foreign populations when presented with similar situations as the culture and practices vary considerably. The FHWA has already approved one request to experiment with this operation and would consider approving future requests, assuming that the interactions between bicyclists, drivers, and pedestrians around these conflicts are closely observed.

**Two-Stage Turn Boxes:** The FHWA is currently evaluating the available operational data on two-stage turn boxes to see if these data are sufficient to consider an Interim Approval for this treatment. In order to issue an Interim Approval, the FHWA must be confident that, as commonly implemented, drivers and bicyclists understand the meaning of two-stage turn boxes and use them to perform the expected operation where they are installed. If the data demonstrate that two-stage turn boxes are clearly understood, used in the manner in which they are intended to be, and do not produce any unintended side effects or compromise safety, the FHWA will consider issuing an Interim Approval for the use of two-stage turn boxes. A decision on whether to issue an Interim Approval or whether more data is needed is expected by Spring 2017.

**Use of Red-Colored Pavement in Transit Lanes:** The FHWA is currently evaluating the available operational data on red-colored pavement as used to designate transit lanes and facilities. If the data demonstrate that red-colored pavement has a positive effect on the safety or operations of transit-only lanes and facilities then the FHWA will consider issuing an Interim Approval for its use in such applications. A decision on whether to issue an Interim Approval or whether more data is needed is expected by Spring 2017.

The data collection and experimentation processes are critical to the progress of the MUTCD as it keeps pace with the state of the transportation engineering practice. It is critical that transportation agencies collaborate and share data and research on new and innovative traffic control devices and operations. FHWA welcomes the opportunity to work with transportation agencies and is ready to provide assistance, direction, and guidance to any agency wishing to experiment or to utilize any of the traffic control devices discussed herein.

Any questions concerning this memorandum and the traffic control devices addressed herein should be directed to Mr. David Kirschner at [david.kirschner@dot.gov](mailto:david.kirschner@dot.gov).

cc:

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Chief Financial Officer

Chief of Technical Services Officer

Directors of Field Services