U.S. Department of Transportation
Federal Highway Administration

Memorandum

Subject: **INFORMATION:** MUTCD – Interim Approval for Optional Use of an Intersection Bicycle Box (IA-18)

Date: OCT 12 2016

From: Robert E. Arnold
Acting Associate Administrator for Operations

In Reply Refer To: HOTO-1

To: Federal Lands Highway Division Engineers
Division Administrators

Purpose: The purpose of this memorandum is to issue an Interim Approval for the optional use of intersection bicycle boxes. Interim Approval allows provisional use, pending official rulemaking, of a new traffic control device, a revision to the application or manner of use of an existing traffic control device, or a provision not specifically described in the *Manual on Uniform Traffic Control Devices for Streets and Highways* (MUTCD).

Background: With an increasing number of bicycle lanes marked on the curb side of streets, the Federal Highway Administration (FHWA) has been requested to provide traffic control devices to facilitate bicyclists positioned to the right side of general-use travel lanes to enter the center of the general-use lanes at the approach to a signalized intersection. The intersection bicycle box is a designated area on the approach to a signalized intersection, between an advance stop line and the intersection stop line, intended to provide bicycles a space in which to wait in front of stopped motor vehicles during the red signal phase so that they are more visible to motorists at the start of the green signal phase. Positioning bicyclists in the center of the appropriate lane allows them to turn from a location where they are more visible to surrounding traffic, can increase the visibility of stopped bicycle traffic at an intersection, can reduce conflicts between bicycles and motor vehicles, can help mitigate intersection right-turn ("right-hook") conflicts, and can help group bicycles together to clear intersections more quickly.

The intersection bicycle box described in this Interim Approval memorandum is a new traffic control device and has been used in the United States only on an experimental basis through the MUTCD official experimentation process, which is described in Section 1A.10.

Research on Bicycle Boxes: Agencies around the country have shown significant interest in intersection bicycle boxes, with over 25 experiments approved under the 2009 Edition of the MUTCD for a variety of State, County, and local government agencies including the Minnesota Department of Transportation; the District of Columbia Department of Transportation; and the cities of Austin, TX; Columbus, OH; Madison, WI; Missoula, MT; and Portland, OR.

These experiments have used a relatively consistent design of a bicycle box that includes the following elements:

- An advance stop line placed at least 10 feet in advance of the pedestrian crosswalk or the intersection stop line;
- A bicycle symbol pavement marking within the space beyond the advance stop line to indicate that bicyclists may wait in this area;
- At least a short length of bicycle lane approaching the bicycle box provided as a clear and predictable path for bicyclists to enter the box;
- Prohibition of turns on red if they would normally be allowed from the lane where the bicycle box is installed; and
- Countdown pedestrian signals provided across the approach on which the bicycle box is located if the bicycle box is installed across more than one lane of a signalized approach.

FHWA Evaluation of Results: The Office of Transportation Operations has reviewed the available data and considers the experimental bicycle box to be satisfactorily successful for the applications that were tested. Positive operational effects have been documented in the experiments after the installation of bicycle boxes, including:

- Reductions in the number of conflicts between bicyclists and turning drivers at the study intersections;
- Reductions in the number of avoidance maneuvers by both bicyclists and motorists;
- Reductions in the number of bicycles and motor vehicles encroaching into pedestrian crosswalks when stopped at an intersection;
- Road-user surveys and observations in multiple experiments that showed that motorists and bicyclists understood the purpose and proper usage of the bicycle box.

The design of the intersection bicycle box is not proprietary and can be used by any jurisdiction that requests and obtains Interim Approval from the FHWA to use bicycle boxes in accordance with Paragraphs 14 through 22 of Section 1A.10 of the MUTCD. The FHWA believes that the intersection bicycle box as detailed in this memorandum has a low risk of safety or operational concerns.

This Interim Approval does not create a new mandate compelling the use of intersection bicycle boxes, but will allow agencies to install intersection bicycle boxes, pending official rulemaking revising the MUTCD, to facilitate more efficient operations at intersections. Interim Approval of a provisional device typically results in its inclusion in a future Notice of Proposed Amendments to revise the MUTCD. However, this Interim Approval does not guarantee adoption of the provisional device, either in whole or in part, in any future rulemaking that revises the MUTCD.

Conditions of Interim Approval: The FHWA will grant permission for the optional use of intersection bicycle boxes under this Interim Approval to any jurisdiction that submits a written request to the Office of Transportation Operations. A State may request Interim Approval for all jurisdictions in that State. Jurisdictions seeking permission to use intersection bicycle boxes under this Interim Approval must agree to:

- Comply with the technical conditions detailed below;
- Maintain an inventory list of all locations where bicycle boxes are installed; and
- Comply with Item D of Paragraph 18 of Section 1A.10 of the MUTCD.

1. **General Conditions:** The use of bicycle boxes is optional. However, if an agency opts to use bicycle boxes under this Interim Approval, such use shall be limited to signalized intersections. The design of the bicycle box shall comply with the design conditions provided below.

2. **Design of Intersection Bicycle Boxes:** The design of the bicycle box (see Attachments IA-18-1 and IA-18-2) shall comply with the following provisions:

    a. A bicycle box shall be formed by an advance stop line placed at least 10 feet in advance of the intersection stop line.

    b. At least one bicycle symbol shall be placed within a bicycle box (see Attachments IA-18-1 and IA-18-2 for placement details).

    c. Where a bicycle box is provided across multiple lanes of an approach, countdown pedestrian signals (see Section 4E.07 of the 2009 MUTCD) shall be provided for the crosswalk across the approach on which the bicycle box is located to inform bicyclists whether there is adequate time remaining to cross to an adjacent lane before the onset of the green signal phase for that approach.

    d. Turns on red shall be prohibited from the approach where a bicycle box is placed using a NO TURN ON RED (R10-11 series) sign.

    e. At least 50 feet of bicycle lane should be provided on the approach to a bicycle box so bicyclists will not need to ride between lanes to enter the bicycle box.

    f. A STOP HERE ON RED (R10-6 or R10-6a) sign should be provided at the advance stop line defining the bicycle box with an EXCEPT BICYCLES (R3-7bP) word legend plaque below (see Attachments IA-18-1 and IA-18-2).

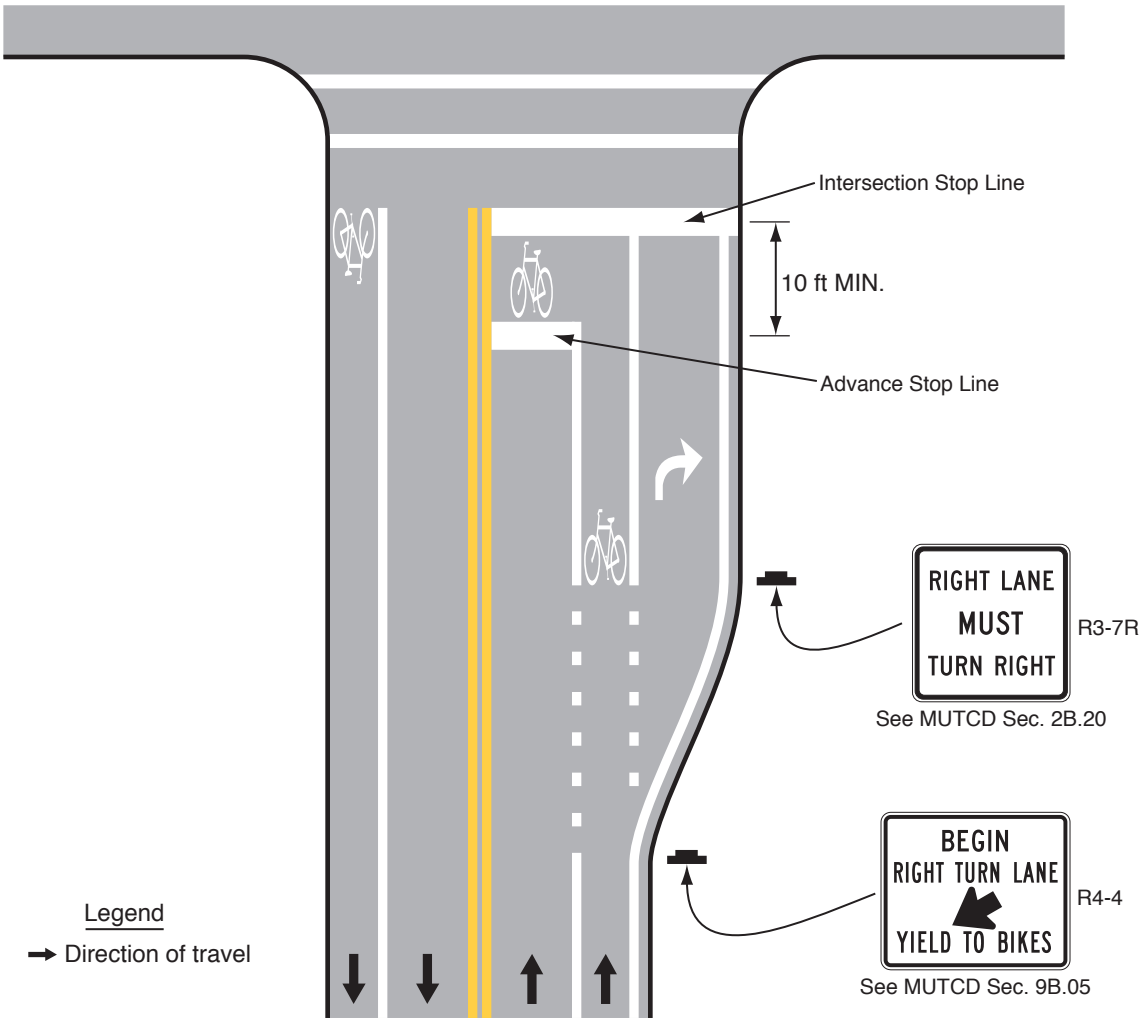
    g. Green-colored pavement (see Interim Approval No. 14) may be used within a bicycle box and the approach bicycle lane, where one is provided. A separate request for Interim Approval for green-colored pavement is required if the agency has not already received such an approval.

Any questions concerning this Interim Approval should be directed to Mr. David Kirschner at david.kirschner@dot.gov.

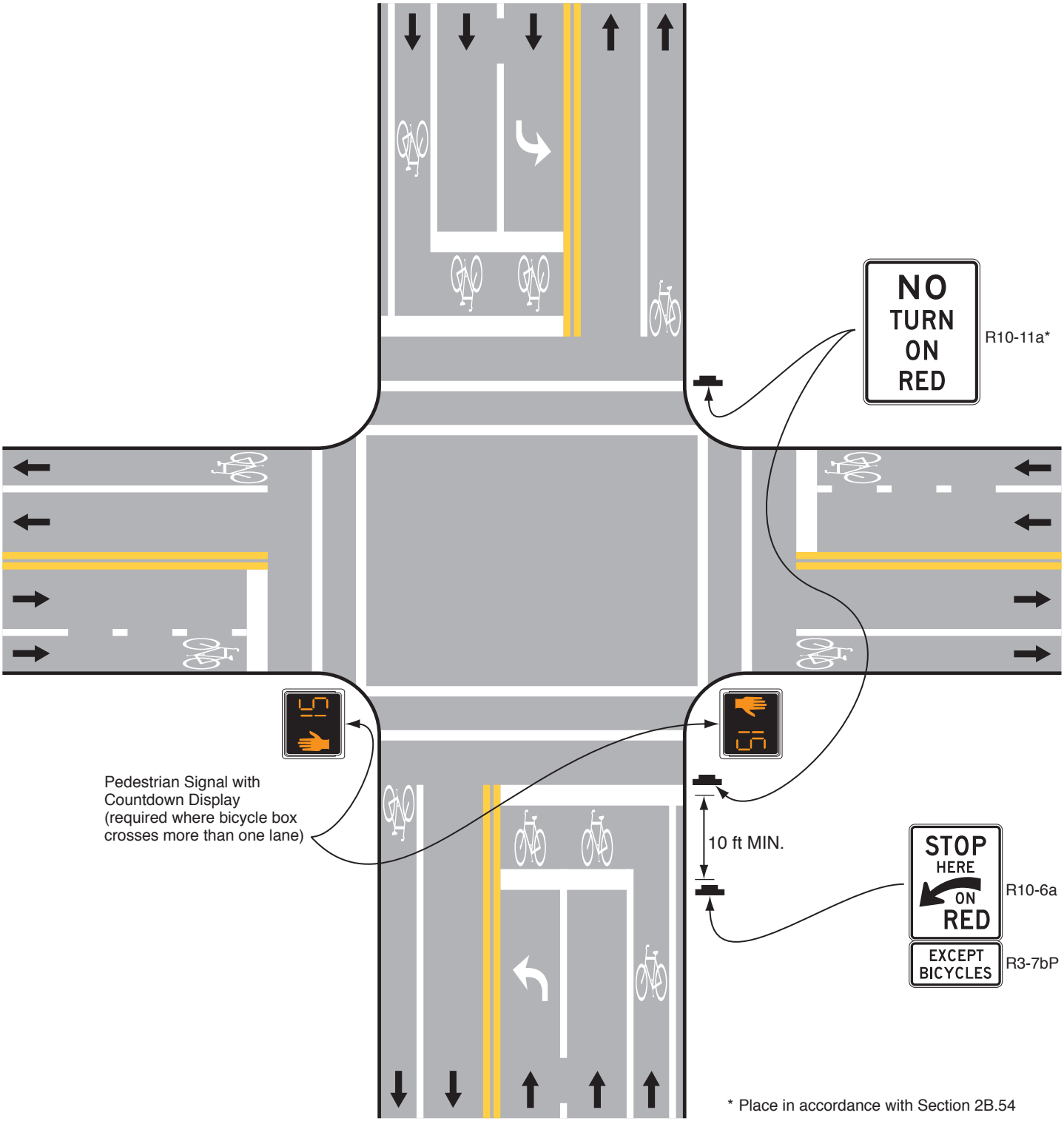
Attachments

cc: Associate Administrators
Chief Counsel
Chief Financial Officer
Directors of Field Services
Director of Technical Services

Attachment IA-18-1



Attachment IA-18-2



* Place in accordance with Section 2B.54