

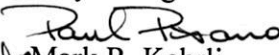


U.S. Department  
of Transportation  
Federal Highway  
Administration

# Memorandum

Subject: **INFORMATION:** MUTCD – Official  
Ruling 9(09)-47(I) - Clarification of the  
Interim Approval for the Optional Use of a  
Bicycle Signal Face (IA-16)

Date: FEB 12 2014

From:   
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To: Federal Lands Highway Division Engineers  
Division Administrators

**Purpose:** The purpose of this memorandum is to clarify two segments of the December 24, 2013 Interim Approval for the optional use of bicycle signal faces (IA-16).

**Background:** Agencies and design practitioners have inquired about the meaning of the language used in Item 1—General Conditions in the Section entitled “Conditions of Interim Approval” and about the illustrative nature of the intersection geometry in Attachment IA-16-2.

**Item 1—General Conditions:** The focus of the inquiries regarding Item 1—General Conditions in the Section entitled “Conditions of Interim Approval” of the IA-16 memorandum have had two separate, but related, issues.

The December 24, 2013 IA-16 memo states the following:

1. General Conditions:

The use of a bicycle signal face is optional. However, if an agency opts to use bicycle signal faces under this Interim Approval, such use shall be limited to situations where bicycles moving on a green or yellow signal indication in a bicycle signal face are not in conflict with any simultaneous motor vehicle movement at the signalized location, including right (or left) turns on red.

First, agencies and design practitioners have inquired about the meaning of what defines or establishes a conflict. These inquiries have either interchanged or misused the terms “protected” and “exclusive” with respect to traffic signal operation. A vehicular signal phase is considered to be protected when the movement that is being shown a green indication can proceed without any conflicts from other vehicular movements (or pedestrian movements on a WALK or flashing DONT WALK indication) that are simultaneously being shown a green or yellow indication.

A vehicular signal phase is considered to be exclusive when the movement that is being shown a green indication is the only movement at the signalized location that is viewing a green indication. Exclusive vehicular signal phases are seldom used, as traffic control signal efficiency is better served when more than one vehicular movement is simultaneously shown a green indication. In Part 4 of the MUTCD, the word “exclusive” is used primarily in the context of exclusive turn lanes and exclusive pedestrian phases.

The intention of the IA-16 memorandum dated December 24, 2013 limits the use of the bicycle signal face to operations where the bicycle movement is protected from any simultaneous motor vehicle movement at the signalized location. A protected operation does not necessitate an exclusive operation of the bicycle signal phase(s), nor does it prevent the operation of the bicycle signal face from providing a leading bicycle phase. There are several existing examples where the bicycle movement or facility can operate parallel to and concurrent with motor vehicle traffic. Nonetheless, preventing any conflicts between parallel motor vehicle and bicycle movements on the same street, which frequently requires using fully-protected left- and right-turn motor vehicle movements from the parallel street across the bicycle facility, is necessary in order to comply with the provisions of Item 1.

Second, agencies and design practitioners have inquired whether the language “including right (or left) turns on red” includes right turns on red from the crossing or intersecting roadway. The right or left turns on red shall be prohibited at the signalized intersection for the intersecting street when in conflict with two-way bicycle facilities. Right (or left) turns on red shall also be prohibited at the signalized intersection for the intersecting street when a one-way bicycle facility approaches the signalized intersection on the primary street from the right (or left) of the operator of the turning motor vehicle on the intersecting street. Prohibiting a right (or left) turn on red at the signalized intersection for the intersecting street when a one-way bicycle facility approaches the signalized intersection on the primary street from the left (or right) of the operator of the turning motor vehicle is optional.

The analysis of the official experiments performed with the permission of the FHWA revealed that nine of the 14 experiments conducted had applicable turns from the crossing roadway across the bicycle facility. Of these nine experiments, six agencies prohibited turns from the crossing roadway. Two of these six agencies implemented a new turn prohibition as a result of introducing the bicycle facility to the intersection; and the remaining four experiments retained existing prohibitions of turns on red due to signal operation to accommodate the site conditions or to prevent turns due to inadequate intersection sight distance. It is unknown whether the existing prohibitions of turns on red influenced agencies in their selection of sites for experimentation with bicycle signal faces.

The analysis of the official experiments also revealed that a common motive for establishing or retaining a prohibition of turns on red on the crossing street was due to the presence of a two-way bicycle facility or a counter-flow one-directional bike lane or facility parallel to the major street. This condition is consistent with the design guidance provided in Sections 5.2.2 and 5.3.4 of the 2012 AASHTO *Guide for the Development of Bicycle Facilities* where it is assumed that agencies obtained appropriate direction to design and build these facilities.

Prohibiting turns to prevent motor vehicle conflicts with bicycle movements do not necessarily need to be full-time restrictions through the installation of static R10-11 series signs. The prohibition can be accomplished using a blank-out No Turn on Red sign that displays the restriction only during green, yellow change, and red clearance intervals of the bicycle signal phase.

**Attachment IA-16-2:** This figure illustrates a marked bicycle lane to the right of a right-turn-only lane, which would not be in compliance with Paragraph 6 of Section 9C.04 of the MUTCD. Agencies and design practitioners have inquired if IA-16 allows designs of bicycle facilities to place a bike lane to the right of a right-turn-only lane and/or if Paragraph 6 of Section 9C.04 has been superseded by IA-16.

Paragraph 6 of Section 9C.04 has not been superseded and applies to locations where bicycle signal faces are not used. As a specific exception to Paragraph 6 of Section 9C.04, a bike lane may be placed to the right of a right-turn lane (or to the left of a left-turn lane) if a bicycle signal face is used and the signal phasing and signing eliminates any potential conflicts between the bicycle movement and the turning movement.

Please share this information with State and local transportation agencies as needed. For recordkeeping purposes, this Official Ruling has been assigned the following number and title: "9(09)-47 (I) – Clarification of the Interim Approval for the Optional Use of a Bicycle Signal Face (IA-16)."