



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

Memorandum

Subject: **INFORMATION:** MUTCD – Interim
Approval for Optional Use of Three-
Section Flashing Yellow Arrow Signal
Faces (IA-17)

Date: AUG 12 2014

From: Jeffrey A. Lindley
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 three-section flashing yellow arrow (FYA) signal faces that use the middle section to show both the FYA and the steady yellow arrow. Interim Approval allows interim 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).

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

Background: At the current time, Item H of Paragraph 3 in Section 4D.20 requires that either a four-section FYA signal face with two sections containing yellow arrow indications (one for the steady display and one for the flashing display) or a three-section FYA signal face with the green arrow and the FYA being displayed in a dual-arrow signal section be used for a separate FYA left-turn signal face for protected/permissive left-turn phase operation. Also, Items I and J of Paragraph 3 in Section 4D.20 prohibit the yellow arrow indication that displays the steady change interval from being used for the FYA indication during steady mode operation, and require the yellow arrow indication that displays the steady change interval to be used for FYA the indication during flashing mode operation.

A three-section FYA signal face that uses the middle section to show both the FYA and the steady yellow arrow was not included in the 2009 MUTCD because no research supporting this type of signal face had been conducted at that time.

Research on FYA Signal Faces: A research project was performed under National Cooperative Highway Research Program (NCHRP) Project 20-07/Task 283 by the Traffic Operations and Safety (TOPS) Laboratory at the University of Wisconsin-Madison in association with the University of Massachusetts, Amherst. The title of the project was

“Evaluation of the Flashing Yellow Arrow (FYA) Permissive Left-Turn and Yellow Arrow Change Indications in Protected/Permissive Left-Turn Control: The Impact of Separate and Shared Yellow Signal Sections and Head Arrangements”. The final report for this project was published in June 2014 and is available at

<http://apps.trb.org/cmsfeed/trbnetprojectdisplay.asp?projectid=2763>. The research results demonstrated that a three-section FYA signal face in which the middle yellow arrow signal indication is used to display both the steady change interval and the flashing yellow permissive interval provides a safe and effective operation for road users.

After reviewing the results of the research project the National Committee on Uniform Traffic Control Devices (NCUTCD) sent a recommendation, which was approved at their June 2014 meeting, to the FHWA that a three-section FYA signal face that uses the middle section to show both the FYA and the steady yellow arrow be included in the next edition of the MUTCD.

FHWA Evaluation of Results: The Office of Transportation Operations has reviewed the research report and the NCUTCD recommendation and agrees with the conclusions of the research and the recommendation from the NCUTCD.

The primary advantage of allowing the optional use of a three-section FYA signal face that uses the middle section to show both the FYA and the steady yellow arrow is that existing three-section protected-only left-turn signal faces could easily be converted to three-section FYA signal faces. This conversion would allow the use of variable mode left-turn phasing on an approach, with the protected-only left-turn phasing mode being used during peak periods when gaps in opposing traffic are infrequent and the protected/permissive left-turn phasing mode being used during off-peak periods when gaps in opposing traffic are more plentiful.

Although Paragraph 3 of Section 4D.24 prohibits the use of a three-section FYA right-turn signal face that uses the middle section to show both the FYA and the steady yellow arrow, and although the research did not evaluate the use of three-section FYA right-turn signal faces, the FHWA is confident that using three-section FYA right-turn signal faces would also have a low risk of safety or operational concerns.

The design of the three-section FYA signal face that uses the middle section to show both the FYA and the steady yellow arrow is not proprietary and can be used by any jurisdiction that requests and obtains approval from the FHWA in accordance with Paragraphs 14 through 22 of Section 1A.10.

Conditions of Interim Approval: This Interim Approval does not create a new mandate compelling the use of three-section FYA signal faces, but will allow agencies to install three-section FYA signal faces, pending official MUTCD rulemaking, to control left-turn and right-turn movements at various locations and under various conditions.

The FHWA will grant permission for the optional use of three-section FYA signal faces that use the middle section to show both the FYA and the steady yellow arrow 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 three-section FYA signal faces that use

the middle section to show both the FYA and the steady yellow arrow under this Interim Approval must agree to:

- Comply with the technical conditions detailed below, and
- Maintain an inventory list of all locations where three-section FYA signal faces are installed, and
- Comply with Item D in Paragraph 18 of Section 1A.10.

Technical Conditions:

1. The use of a three-section FYA signal face is optional. However, if an agency opts to use three-section FYA signal faces under this Interim Approval, such use shall be in accordance with the same provisions that currently exist in the 2009 MUTCD for four-section FYA signal faces, except that the separate yellow arrow signal sections may be combined into one yellow arrow signal section to create a three-section signal face. Items such as the meanings, applications, and sizes of the signal indications; the placement and mounting height of the signal faces; the operation and sequence of displays; and the signing associated with the signal face shall be the same as for four-section FYA signal faces.
2. Agencies that request and obtain approval from the FHWA to use IA-17 to install three-section FYA signal faces may retain their existing four-section FYA signal faces or may convert them to three-section FYA signal faces that use the middle section to show both the FYA and the steady yellow arrow.

Any questions concerning Interim Approval 17 should be directed to Mr. Bruce Friedman at bruce.friedman@dot.gov.

cc:

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