



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

Memorandum

Subject: **INFORMATION:** MUTCD—Official
Ruling No. 4(09)-70 (I) – Lane-Use
Control Signal Indications for Active
Traffic Management on Freeways

Date: MAR 25 2019

From: Mark R. Kehrli 
Director, Office of Transportation
Operations

In Reply Refer To:
HOTO-1

To: Federal Lands Highway Division Directors
Division Administrators

Purpose: The purpose of this Memorandum is to provide clarification on the required lane-use control signal indications when used in freeway applications. Lane-use control signals are the traffic control devices necessary to implement the dynamic lane-use control strategy of Active Traffic Management¹ (ATM) systems. This Memorandum is based on the provisions of the 2009 edition of the *Manual on Uniform Traffic Control Devices for Streets and Highways* (MUTCD).

Background: Many agencies are employing ATM strategies on freeways to address the impacts of recurrent and non-recurrent congestion. ATM strategies for freeways include the deployment of lane-use control signals to dynamically close individual lanes during various types of incidents or to open shoulders for part-time travel to increase capacity during congested periods. In freeway applications, the lane-use control signal indications are most often displayed in individual rectangular signal heads, mounted above and centered over each lane and shoulder, allowing for one or more of the lanes to be closed at any given time. In some instances, lane-use control signal indications might be displayed on changeable message signs (CMS) rather than standard lane-use control signals.

With the institutionalization of the lane-management element of ATM, it has become apparent that there is some confusion about the allowable lane-use control signal indications when used in freeway corridor operations for congestion management, in contrast with uses for other applications or on other types of highways, such as in tunnels or for reversible lanes. The allowable signal indications are the same for all types of applications on all highway types² and in all manners of display, including CMS. In accordance with the MUTCD provisions,³ the allowable lane-use control signal displays for a freeway application are the steady Downward Green Arrow, steady Yellow X, and steady Red X. These signal indications have the following meanings in any application, including freeways:

¹ Information on Active Traffic Management can be accessed at the following Web address:
<https://ops.fhwa.dot.gov/atdm/approaches/atm.htm>.

² MUTCD, 2009 Edition, § 4M.01 ¶ 5.

³ See *id.* at § 4M.02.

A steady DOWNWARD GREEN ARROW signal indication means that the lane it is over and pointing to is open to traffic.

A steady YELLOW X signal indication means that the lane it is over is about to be closed to traffic and road users should prepare to vacate the lane.

A steady RED X signal indication means that the lane it is over is closed and a road user is not permitted to use that lane.

The FHWA has approved experiments in the past to test the effectiveness of alternative lane-use control signal indications, including a steady Diagonal Downward Yellow Arrow indication, intended to improve upon the MUTCD standard steady Yellow X. These experiments have since concluded and, to date, there is no empirical evidence to support that the alternative signal displays tested perform more effectively than those currently specified in the MUTCD. Equally important, there is no evidence that the lane-use control signal indications specified in the MUTCD, including the steady Yellow X, do not result in the desired road user behavior intended by the message conveyed.

Conclusion: The allowable signal indications for lane-use control signals to open and close lanes on freeways are the steady Downward Green Arrow, steady Yellow X, and steady Red X.⁴ These signal indications are detailed in the attachment to this Memorandum. The use of any alternative signal displays to open and close lanes on a freeway is subject to the approval of an official experiment⁵ by the Office of Transportation Operations. Requests for experimentation are generally considered in cases where there is a demonstrated lack of effectiveness of the current standard.

For recordkeeping purposes, this interpretation has been assigned the following Official Ruling number and title: “4(09)-70 (I) – Lane-Use Control Signal Indications for Active Traffic Management on Freeways.” Please direct any inquiries regarding this information to Mr. Marty Calawa, Martin.Calawa@dot.gov, or Mr. Duane Thomas, Duane.Thomas@dot.gov, of the MUTCD Team.

Attachment

cc:

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

⁴ Frequently Asked Questions related to Lane-Use Control Signals can be accessed at the following Web address: https://mutcd.fhwa.dot.gov/knowledge/faqs/faq_part4.htm.

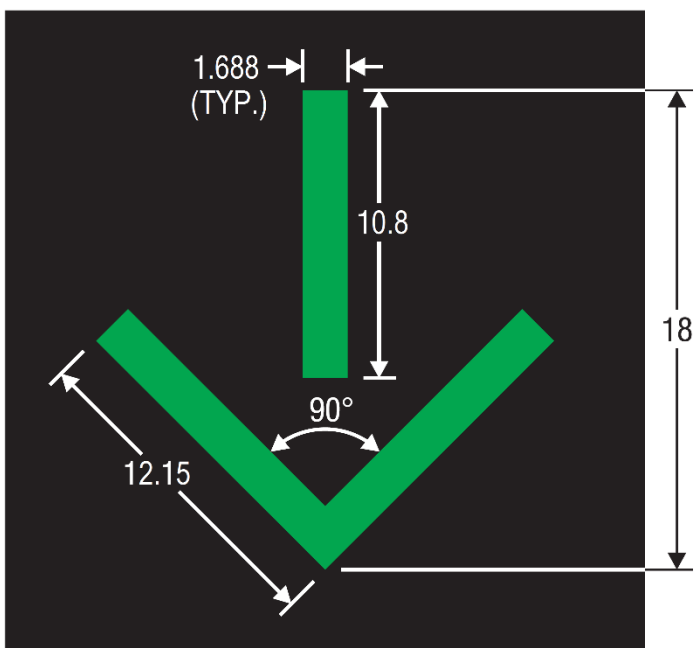
⁵ See MUTCD § 1A.10.

ATTACHMENT

Minimum Sizes* of Overhead Lane-Use Control Signal Indications



COLORS: LEGEND — RED OR YELLOW (ILLUMINATED)
BACKGROUND — BLACK



COLORS: LEGEND — GREEN (ILLUMINATED)
BACKGROUND — BLACK

* Scale proportionally for larger sizes.