



**National Committee on  
Uniform Traffic Control Devices**

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**TECHNICAL COMMITTEE:**

**Railroad / Light Rail Transit Technical  
Committee**

**TOPIC:**

**Busway Grade Crossings**

**STATUS/DATE OF ACTION**

<b>RRLRT TC Draft:</b>	06/23/2011
<b>RRLRT TC Approval:</b>	06/27/2014
<b>Transmitted to Sponsors:</b>	03/25/2014
<b>Council Approval:</b>	06/28/2014

**ORIGIN OF REQUEST:**

NCUTCD / RR/LRT TC

**AFFECTED SECTIONS OF MUTCD:**     **Proposed New Section 8E**

**SUMMARY:**

The purpose of these changes is to provide standardization of traffic control devices for grade crossings of highways with busways. Busways operate similar to light rail transit, and the proposed traffic control devices are similar. Where it is determined to be necessary based on engineering judgment, automatic gates may be used to supplement and enhance the meaning of traffic signal indications. Automatic gates may especially be of benefit where there are potential turning movement conflicts with the busway, where the bus operates at a speed that prevents safe stopping short of an obstruction within the busway.

Where used, automatic gates at a highway-busway grade crossing would exhibit the operating characteristics of automatic gates used at highway-rail and highway-LRT grade crossings.

**DISCUSSION:**

The proposed changes have been reviewed by the RR/LRT TC. It was recommended that the proposed changes be sent for sponsor comment for review at the January 2013 meeting of the NCUTCD.

### **RECOMMENDED CHANGES TO THE MUTCD**

**Note: All text proposed in this Recommended Change NEW to the 2009 Edition of the MUTCD is shown in BLACK. Explanatory comments are shown in GREEN.**

## CHAPTER 8E. BUSWAY GRADE CROSSINGS

### Section 8E.01 Introduction

#### Support:

The design and operation of a busway is similar to light-rail transit in a semi-exclusive alignment.

#### Guidance

*Highway-busway grade crossings should be equipped with an active busway grade crossing warning system unless an engineering study indicates that the use of STOP signs or YIELD signs alone would be adequate.*

#### Standard

**Where a busway and a railroad are adjacent to one another such that the active grade crossing warning system and the active busway grade crossing warning system share common grade crossing traffic control devices, the warning system for the railroad shall control the operation of all grade crossing traffic control devices, and the warning system for the busway shall be interconnected with the active grade crossing warning system to provide notification of an approaching bus to the active grade crossing warning system.**

### Section 8E.02 Bus Only Lane Signs

#### Option:

A Bus Only Lane (R15-4d or R15-4e) sign may be used on a roadway lane limited to only bus use to indicate the restricted use of a lane.

The overhead R15-4e Bus Only Lane sign may be used as an alternative to the post-mounted R15-4d sign.

#### Guidance:

If used, the R15-4d Bus Only Lane sign should be installed on a post adjacent to the roadway containing the bus lane.

#### Support:

See Chapter 2G for additional information regarding preferential lane signing.  
See Chapter 3D for information regarding preferential lane pavement markings.

#### Standard:

**If used, the R15-4e Bus Only Lane sign shall be mounted over the lane to which it applies.**



R15-4e

### Bus Only Lane Signs

## Section 8E.03 Bus-Activated Blank-Out Turn Prohibition Signs

### Support:

Busway operations can include the use of bus-activated blank-out signs for turn prohibition signs. The signs are typically used on roads paralleling a busway where road users might turn across a busway.

### Guidance:

*A bus-activated blank-out turn prohibition sign (R3-1, R3-2, R3-4, R3-18 or R3-27) should be used where an intersection is within 100' of a highway-busway grade crossing and is controlled by STOP sign, or is controlled by traffic control signals with permissive turn movements for road users crossing the busway.*

### Option:

A bus-activated blank-out turn prohibition sign may include a blank-out BUS COMING message or a Bus Approaching blank-out warning sign (see Section 8E.05), or both. If used, the word message and the Bus Approaching sign may be flashed.

As an alternative to bus-activated blank-out turn prohibition signs at intersections with traffic control signals, exclusive traffic control signal phases such that all movements that cross the busway have a steady red indication may be used in combination with No Turn on Red (R10-11, R10-11a, or R10-11b) signs (see Section

2B.54).

**Standard:**

**Turn prohibition signs that are associated with preemption or priority shall be visible only when the highway-busway grade crossing turn prohibition is in effect.**



Bus-Activated Blank-Out Turn Prohibition Sign

**Section 8E.04 Highway-Busway Grade Crossing Advance Warning Signs**

*Guidance:*

*A Highway-Busway Grade Crossing Advance Warning sign should be used on each highway in advance of every busway grade crossing except in business or commercial areas where active highway-busway grade crossing traffic control devices are in use.*

*A BUSWAY supplemental plaque should be installed with every Highway-Busway Grade Crossing Advance Warning sign.*



Highway-Busway Grade Crossing  
Advance Warning Sign

[The side view symbol of a bus is consistent with the side view symbols on vehicular traffic warning signs in Figure 2C-10. FHWA staff has confirmed that they will test alternative bus symbols before final approval of this sign]

#### Section 8E-05 Busway Warning Sign

##### Option:

A Busway Warning sign with a one-direction arrow for one-way busways or a two-direction arrow for two-way busways may be used at the crossing point of highway-busway grade crossings where there are no active traffic control devices.

As an alternative to the Busway Warning sign, the legend “TWO-WAY BUSWAY” may be used at two-way busways.



Busway Warning Sign

[The design of this sign is consistent with the design of crossing signs in Figures 2C-10 and 2C-11 which use the W16-7P diagonal downward pointing arrow when the sign is placed at the location of the crossing point. FHWA staff has confirmed that they will test alternative bus symbols before final approval of this sign]

#### Section 8E.06 Bus Approaching-Activated Blank-Out Warning Sign

##### Support:

The Bus Approaching-Activated Blank-Out warning sign supplements the traffic control devices to warn road users crossing the busway of an approaching bus.

##### Option:

A Bus Approaching-Activated Blank-Out warning sign may be used at signalized intersections near busway grade crossings or at crossings controlled by STOP signs.



Bus-Activated  
Blank-out Sign

[This sign is consistent with the front view symbol of LRT on the existing

W10-7 blank-out warning sign]

## **Section 8E-07 Use of Traffic Control Signals for Control of Buses at Busway Grade Crossings**

Support:

Busway grade crossings can occur at intersections or at midblock locations, including public and private driveways.

*Guidance:*

*Bus movements at busway grade crossings that are equipped with traffic control signals should be controlled by special bus signal indications.*

*Bus signals that are used to control only bus movements should display the light rail transit signal indications illustrated in Figure 8C-3.*

Option:

Standard traffic control signal indications may be used instead of bus signals to control the movement of buses.

**Standard:**

**If a separate set of standard traffic control signal indications (red, yellow, and green circular and arrow indications) is used to control bus movements, the indications shall be positioned so they are not readily visible to motorists, pedestrians, and bicyclists (see Section 4D.12).**

**If the busway crossing control is separate from the intersection control, the two shall be interconnected. The signal indications conflicting with the bus phase shall not be shown until after the bus has cleared the crossing.**

Option:

Bus signals may be used at busway grade crossings and at intersections where buses operate in mixed traffic in conjunction with standard traffic control signals where special bus signal phases are used to accommodate turning bus vehicles or where additional bus clearance time is desirable.

*Guidance:*

*Bus signal faces should be separated vertically or horizontally from the nearest highway traffic signal face for the same approach by at least 3 ft.*

Option:

At busway grade crossings with traffic control signals, preemption control or priority control of the traffic control signal may be given to buses.

Support:

Section 4D.27 contains information about preemption and priority control of traffic control signals.

## **Section 8E-08 Busway Automatic Gates**

### **Option:**

Automatic gates may be used to supplement traffic control signals at highway-busway grade crossings.

### **Standard:**

Busway automatic gates, if used, shall conform to standards set forth in Section 8C.04 for Automatic Gates and shall be standard railroad size, striped with 16-inch alternate vertical, fully retroreflectorized red and white stripes. Flashing red lights in accordance with the Standards for those on railroad gates shall be included on the gate arm and they shall only be operated if the gate is closed or in the process of being opened or closed. In the horizontal position, the top of the gate shall be approximately 4 feet above the pavement.

Busway automatic gates, if used, shall be interconnected with the busway traffic control signals.

Busway automatic entrance gates shall be designed to fail-safe in the down position.

Four quadrant Busway Automatic Gates shall conform to requirements set forth in Section 8C.06.

### **Support:**

Section 8C.04 contains further details regarding automatic gates and Section 8D.06 contains details regarding pedestrian automatic gates.

## **Section 8E-09 Traffic Control Signals Near Highway-Busway Grade Crossings**

### **Support:**

If a traffic control signal is near an active busway grade crossing warning system, refer to Manual Parts 8C.09, 8C.10, 8C.11 and 8C.12.

## **Section 8E-10 Pathway-Busway Grade Crossings**

### **Option:**

A pathway-busway grade crossing may be controlled using bus signals for the busway approaches and pedestrian signals for the pathway approaches if the operation of the busway provides for the bus to be able to stop before entering the pathway.

A Busway Warning sign may be used at pathway-busway grade crossings with no active traffic control devices.

### **Standard:**

If an active busway grade crossing warning system is used at a pathway-

241    **busway grade crossing, a bell or other audible warning device shall be provided**  
242    **for each pathway approach to the crossing.**