

Revision 3 March 2018

DeIDOT Winter Workshop
February 2018

- **Biggest change to the 2011 DE MUTCD since Revision 1, December 2012**
- A minor update, Revision 2, was issued July 2015
- **A major update to the FHWA MUTCD is not expected until 2020 or after**
- FHWA Revisions 1 & 2 were issued in May 2012

- **Theme 1: Incorporate DeIDOT Interim Guidance memorandums into the DE MUTCD where appropriate**




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Delaware Manual on Uniform Traffic Control Devices (MUTCD)

Section Home 

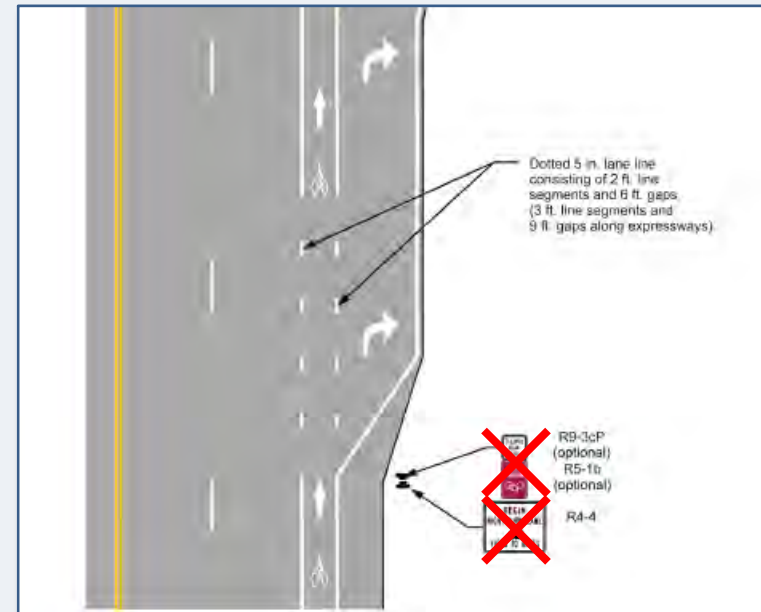
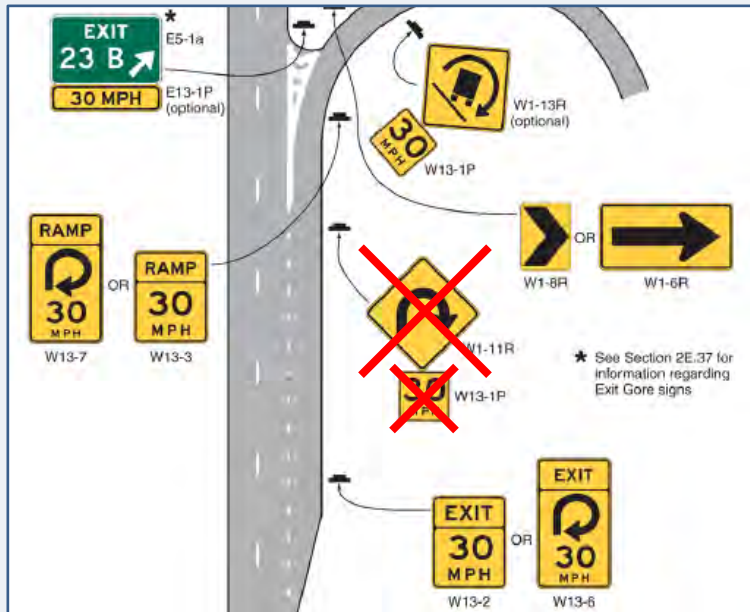
Information 

Contact Us 

Community Relations 
302.760.2080
800.652.5600

- Part 6 - Temporary Traffic Control
 - ~~Interim Guidance - Installing and Removing TTC Devices~~
 - ~~Interim Guidance - Aerial Work~~
 - Guidelines for the Use of Uniformed Law Enforcement Officers in Work Zones
 - Quality Guidelines for Temporary Traffic Control Devices
 - ~~Interim Guidance - Rolling Road Blocks~~
- Part 7 - Traffic Controls for School Areas
 - ~~Interim Guidance - Overhead School Speed Limit XX When Flashing Sign~~
- Part 8 - Traffic Controls for Highway-Rail Grade Crossings
- Part 9 - Traffic Controls for Bicycle Facilities
 - ~~Interim Guidance - Right Turn Lane Markings for Bicycles~~
 - Right Turn Only Lane Bicycle Markings Research Report
 - ~~Shared Lane Use Arrow Policy~~
 - ~~Share the Road Plaque Memorandum~~

- Theme 2: Remove overused optional signs from figures



Part 2 – Signs



Table 2B-1. Regulatory Sign and Plaque Sizes (Sheet 2 of 5)
(Delaware Revision)

Sign or Plaque	Sign Designation	Section	Conventional Road		Expressway	Freeway	Minimum	Oversized
			Single Lane	Multi-Lane				
One Way	R6-1	2B.40	36 x 12*	54 x 18 ***	54 x 18 ***	54 x 18	—	54 x 18
One Way	R6-2	2B.40	24 x 30*	30 x 36	36 x 48	48 x 60	18 x 24	36 x 48

*** The single lane - conventional road size may be used for the One Way (R6-1) sign based on engineering judgement

Option:

07A Lettering on overhead street name signs on traffic signals may be reduced to have an initial upper-case letter height of 8 inches and a lower-case letter height of 6 inches.

- DE Options:
 - Smaller One-Way signs on multi-lane conventional roads or expressways based on engineering judgment
 - Reduced letter height on overhead signs (Interim Guidance)



Guidance:

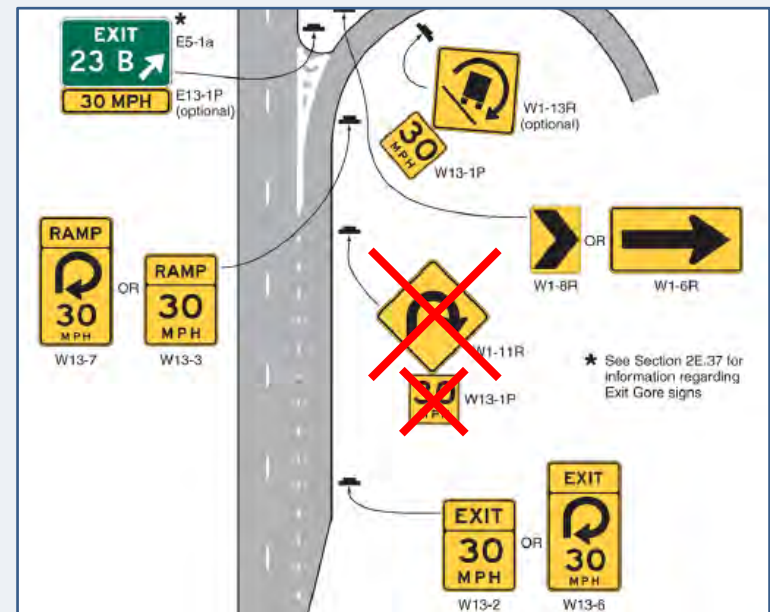
03c (DE Revision) Along divided highways, the minimum spacing between DO NOT ENTER (R5-1) and WRONG WAY (R5-1a) signs should be 300 feet. Where site conditions make it difficult to provide a minimum spacing of 300 feet between DO NOT ENTER (R5-1) and WRONG WAY (R5-1a) signs along divided highways, a minimum spacing of 200 feet should be provided.

- DE Guidance:
 - Minimum spacing between DO NOT ENTER (R5-1) and WRONG WAY (R5-1a) signs should be 300 feet
 - Where site conditions make it difficult, a minimum of 200 feet should be provided



Option
08A (DE Revision) A supplemental IT CAN WAIT ! USE SERVICE AREA (SR1-20P-DE) plaque (see Figure 2B-33) may be used with the SR1-20-DE sign in advance of services areas.

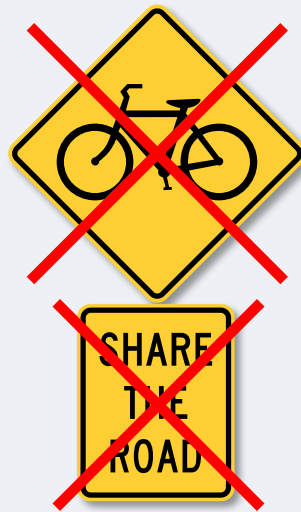
- DE Options:
 - New IT CAN WAIT! USE SERVICE AREA plaque
 - Hairpin Curve and Advisory Speed signs (W1-11 and W13-1P)
 - Still option, but no longer shown on figure



Option:

06A (DE Revision) In situations where there is a need to warn motorists to watch for bicyclists traveling within the travel lane, on roadways with no shoulder or a shoulder with a width of less than 4 feet, or where the shoulder width is decreased or transitions to a width of less than 4 feet due to physical constraints, such as at bridge crossings or bypass lanes, the Bicycle IN LANE (W11-1-DE) sign (see Figure 2C-10) may be used to warn motorists to watch for bicyclists traveling within the travel lane.

- DE Option:
 - Bicycle IN LANE (W11-1-DE) sign replaces the SHARE THE ROAD plaque for bicycle warning





Standard:

01 ~~(DE Revision)~~ The design of ~~negative contrast~~ upper-case, lower-case letters, ~~negative contrast~~ numerals, route shields, and spacing shall be as provided in the “Standard Highway Signs and Markings” book (see Section 1A.11) and/or in the Delaware Standard Signs book. ~~The design of positive contrast letters and numerals shall be as provided in the “Standard Highway Signs and Markings” book (see Section 1A.11) or Clearview font.~~

- DE Standard:
 - Removed use of Clearview font after FHWA terminated Interim Approval



 U.S. Department of Transportation Federal Highway Administration	<h2>Memorandum</h2>	
Subject: INFORMATION AND ACTION: MUTCD – Interim Approval for Use of Clearview Font for Positive Contrast Legends on Guide Signs (IA-5)—TERMINATION		Date: January 28, 2016
From: Mark R. Kehrl  Director, Office of Transportation Operations	In Reply Refer To: HOTO-1	
To: Federal Lands Highway Division Engineers Division Administrators		
<p>Purpose: Through this memorandum, the Federal Highway Administration’s (FHWA) Office of Transportation Operations (HOTO) issues guidance to the Federal-Aid Divisions regarding the January 25, 2016, <u>Federal Register</u> notice officially terminating the subject Interim Approval, issued September 2, 2004. The notice discontinues the provisional use of an alternative lettering style in traffic control device applications. The result of this termination rescinds the allowance of the use of letter styles other than the FHWA Standard Alphabets on traffic control devices except as provided otherwise in the <i>Manual on Uniform Traffic Control Devices for Streets and Highways</i> (MUTCD) and herein. Existing signs that use the provisional letter style and comply with the Interim Approval are unaffected by this action and may remain as long as they are in serviceable condition. This action does not create a mandate for the removal or installation of any sign. The</p>		

02 (DE Revision) To be eligible for agricultural tourism attraction guide signs, agricultural tourism attractions shall meet the criteria established in “Standards for Agricultural Guide Signs.” following minimum requirements:

- ~~A. Must be open to the general public at least 8 months per year, 5 days per week and 6 hours per day. Seasonal agricultural tourism attractions will be considered on a case by case basis.~~
- ~~B. Must be of agricultural interest or an agricultural tourism activity. Agricultural interest means that the attraction or event is defined under Delaware statutes as agriculture. Agricultural tourism activities shall include any activity that allows members of the general public to view or enjoy rural activities, including: farming; ranching; wineries; historical, cultural or harvest your own activities; guided or self-guided tours; bed and breakfast accommodations (provided they are located on an operating farm).~~

- DE Standard:
 - Removed standards for Agricultural Guide signs and added reference to separate guidelines



STANDARDS FOR AGRICULTURAL TOURISM ATTRACTION GUIDE SIGNS

BACKGROUND

The Standards for Agricultural Tourism Guide Signs have been developed by the Delaware Department of Transportation (DelDOT) and the Delaware Department of Agriculture (DDA). These guidelines govern all requests for agricultural tourism guide signs.

GENERAL

- ◆ All questions regarding these standards shall be directed to DDA.
- ◆ Installation of signs on state maintained roads are the responsibility of DelDOT which has the final authority for all sign related decisions.
- ◆ Eligibility for participation in this program shall be determined by DDA.
- ◆ To ensure uniformity, DelDOT will fabricate all signs regardless of the jurisdiction of the placement.
- ◆ Any agricultural tourism attraction that displays signs that are not within the standards of this program will be ineligible for all facets of the program.

ELIGIBILITY REQUIREMENTS

Part 3 – Pavement Markings

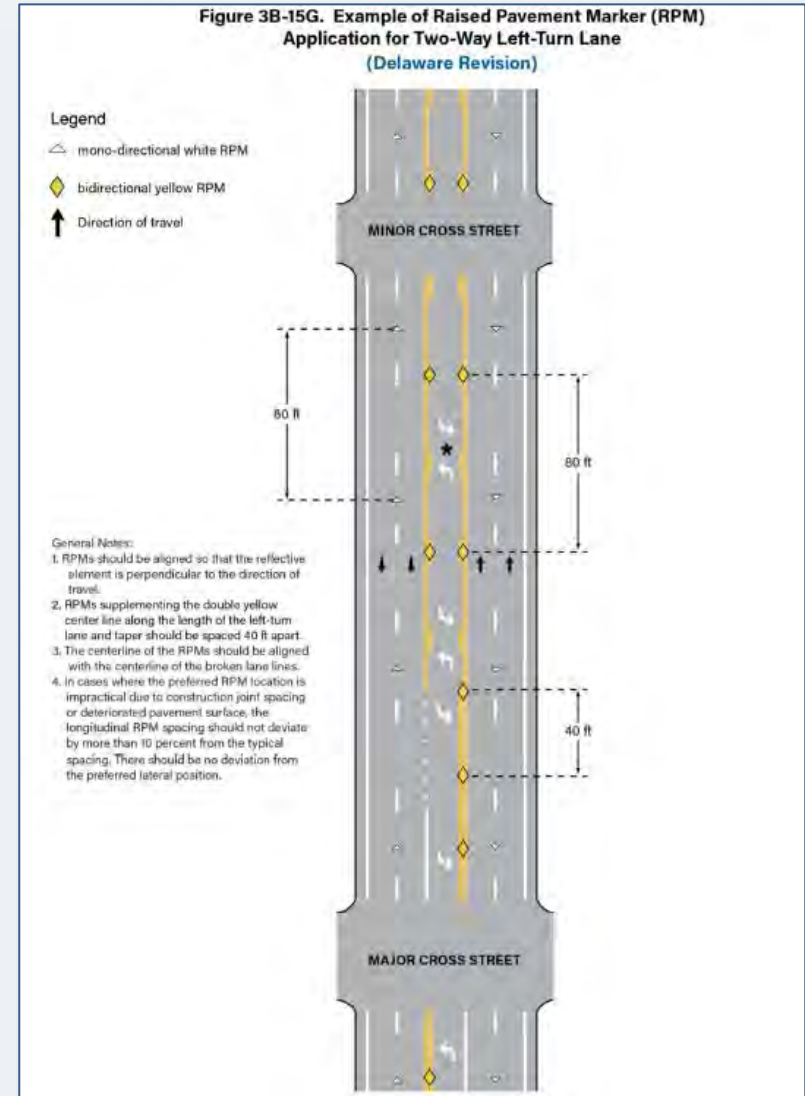
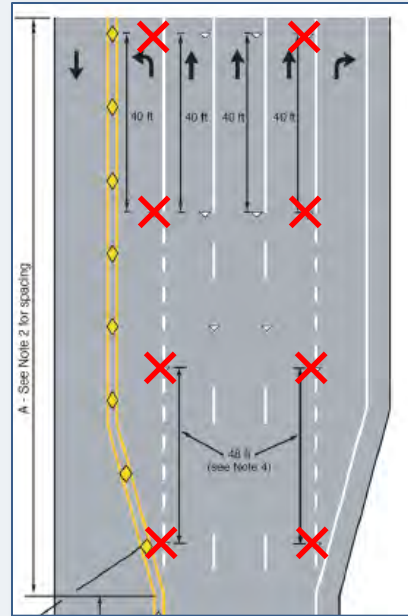


- DE Figures:

- Removed RPMs from turn lanes

- Removed figure for RPM application for Bypass Lane

- Created new figure for RPM application for Two-Way Left-Turn Lane



Part 4 – Signals



Guidance:

07A (DE Revision) Backplates should be used to supplement all vehicular signal heads mounted on mast arms and where an engineering study indicates their need to resolve a problem such as where sun glare, bright sky, and/or complex or confusing backgrounds indicate a need for enhanced signal face conspicuity.

Support:

07B (DE Revision) Signal backplates with a retroreflective border provide additional conspicuity for signal heads and providing backplates on mast-arm-mounted signal heads does not require additional tethering.

Standard:

07C (DE Revision) If backplates are installed, they shall include a two-inch wide yellow retroreflective border.

07D (DE Revision) If backplates are installed on span wire, a tether wire shall also be used.



- DE Guidance & Standard:
 - Backplates should be used to supplement signal heads on mast arms and where an engineering study indicates their need
 - Revised to be consistent with Traffic Design Manual

Proposed Modifications to 2015 Traffic Design Manual

CHAPTER IV

Page 70, Section C, Item 2f

Provision:

Backplates

Backplates should only be used where an engineering study indicates their need to resolve a problem such as where sun glare, bright sky, and/or complex or confusing backgrounds indicate a need for enhanced signal face conspicuity. If used on span wire, a tether wire shall be used.

Suggested Revision:

Backplates

Backplates should be used to supplement all vehicular signal heads mounted on mast arms and where an engineering study indicates their need to resolve a problem such as where sun glare, bright sky, and/or complex or confusing backgrounds indicate a need for enhanced signal face conspicuity. If backplates are installed, they shall include a two-inch wide yellow retro-reflective border. If used on span wire, a tether wire shall also be used.

Support:

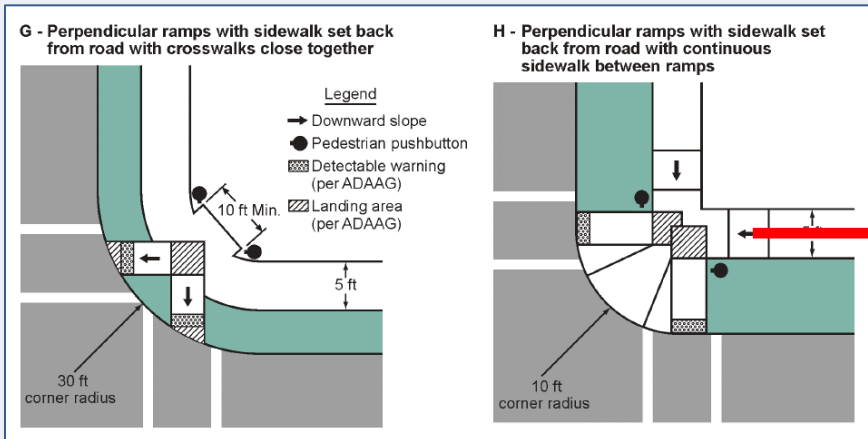
Improving safety at intersections is the highest-priority emphasis area of the 2015 Delaware Strategic Highway Safety Plan (SHSP). Signal backplates with a retro-reflective border provide additional conspicuity for signal heads and providing backplates on mast-arm-mounted signal heads does not require additional tethering. Additionally, the Federal Highway Administration has included backplates with retro-reflective borders as a proven safety countermeasure at intersections. Although these

Guidance:

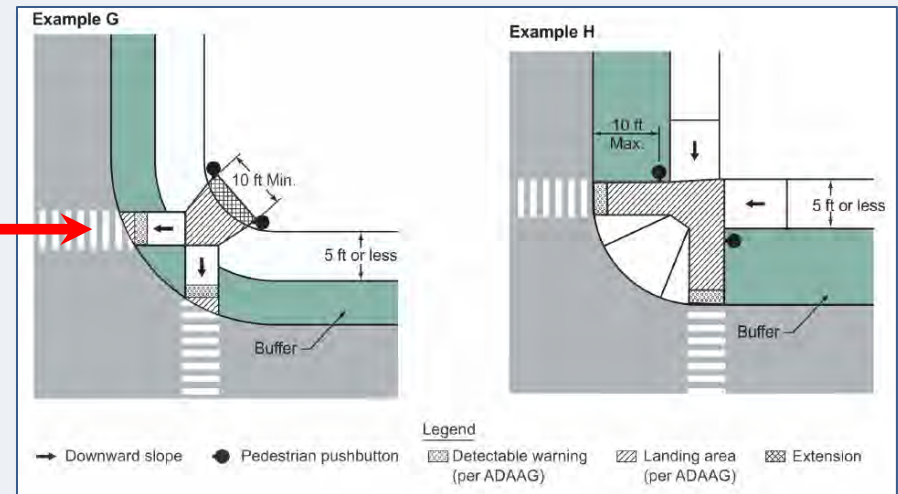
- G. Within 10 inches of the 50:1 landing area; and
- H. With an extended 50:1 landing area measuring a minimum of 18 inches behind the centerline of the face of the pushbutton.

- DE Guidance and Figures:
 - Additional criteria for landing area
 - Revised figures for landing area and extension

OLD



NEW



Part 6 – Temporary Traffic Control



Standard:

01A (DE Revision) **Flagger stations shall not be located on Interstates, Freeways, or Expressways.**

Option:

01B (DE Revision) In support of emergencies or incidents, flaggers may be used to assist with the traffic control at incident scenes (see Chapter 6I).

Guidance:

04A (DE Revision) In moving operations on two-lane, two-way, roadways where flaggers are used to control traffic (for example, crack sealing or embankment operations), the flagger station should be located no more than 1,500 feet downstream of the closest flagger advance warning sign.

- DE Standard, Option, & Guidance:

- Flagger station locations

- Not on Interstates, Freeways, or Expressways
- May be used in support of emergencies or incidents
- Within 1,500 feet of advance warning sign in moving operations on two-lane, two-way roadways



Option:

03 (DE Revision) The Detour Arrow (M4-10), **DETOUR Through Arrow (M4-9-DE)**, or the **DETOUR U-turn Arrow (M4-9-DE1)** sign (see Figure 6F-5) may be used where a detour route has been established.

13 (DE Revision) The Pedestrian Detour (M4-9b or M4-9b-DE) sign or Bicycle Detour (M4-9c) sign (see Figure 6F-5) may be used where a pedestrian or bicycle detour route (not both) has been established because of the closing of the pedestrian or bicycle facility to through traffic.

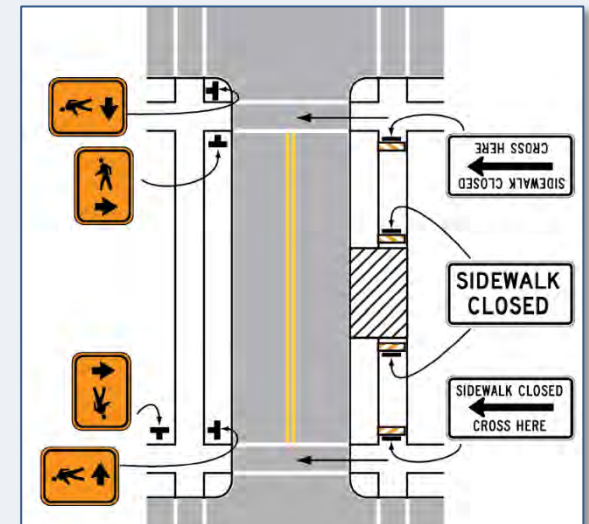
13A (DE Revision) The Pedestrian **END DETOUR (M4-9b-DE1)** sign (see Figure 6F-5) may be used to indicate that the pedestrian detour has ended.

- DE Option:

- U-Turn Detour Sign



- Smaller Pedestrian Detour Signs

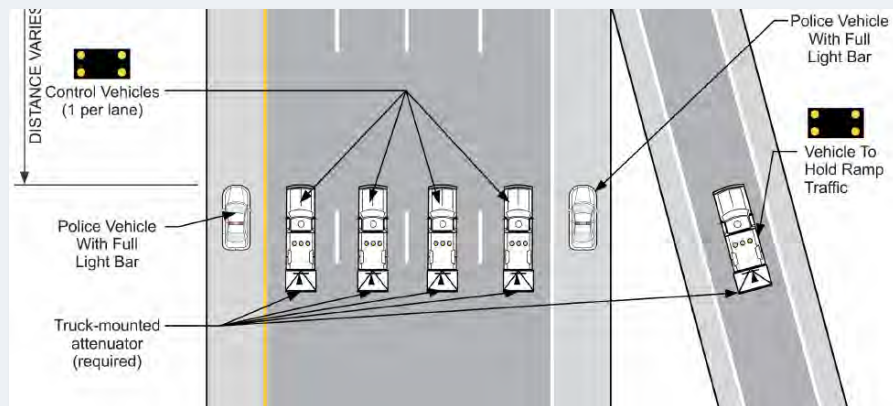



Section 6G.22 Rolling Road Block Operations

Support:

- 01 (DE Revision) Figure 6H-35H is an example of a rolling road block for limited access multilane divided roadways.
- 02 (DE Revision) Activities which may warrant the use of a Rolling Road Block operation include, but are not limited to: setting of bridge beams, pulling wires or cables across the roadway, placing overhead or cantilever signs and sign structures and performing traffic switches from one half of the roadway to the other half.

- New Section on Rolling Road Blocks:
 - Based on Rolling Road Blocks memorandum







STATE OF DELAWARE
DEPARTMENT OF TRANSPORTATION
800 BAY ROAD
P.O. BOX 770
DOVER, DELAWARE 19903

MEMORANDUM

To: All Users of the Delaware Manual on Uniform Traffic Control Devices

From: Donald D. Weber, P.E., Chief Traffic Engineer 

Via: Adam Weiser, P.E., PTOE, Safety Programs Manager 

Date: June 19, 2012

SUBJECT: Interim Guidance; Part 6, Temporary Traffic Control Rolling Road Blocks

This Interim Guidance to the Delaware Manual on Uniform Traffic Control Devices (MUTCD) provides a new section to Part 6G, entitled "6G.22 Rolling Road Blocks" and provides a new Typical Application to Part 6H entitled "Typical Application 35H – Rolling Road Blocks on a Limited Access Multilane Divided Highway"

Should you have questions concerning the information contained in this interim guidance, please contact my office at (302) 659-4060.


New Language

Section 6G.22 Rolling Road Block Operations
Support:

- 01 (DE Revision) Figure 6H-35H is an example of a rolling road block for limited access multilane divided roadways.
- 02 (DE Revision) Activities which may warrant the use of a Rolling Road Block operation include, but are not limited to: setting of bridge beams, pulling wires or cables across the roadway, placing overhead or cantilever signs and sign structures and performing traffic switches from one half of the roadway to the other half.

Standard:

- 03 (DE Revision) Any rolling road block operation used on state maintained roadways shall be approved by DelDOT's Traffic Section prior to use and shall be performed as outlined in this Section and in Typical Application 35H.



Section 6G.23 Installing / Removing Temporary Traffic Control Devices

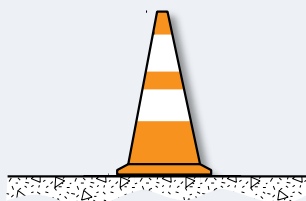
Support:


01 (DE Revision) Care must be exercised when installing and removing temporary traffic control devices. Installing TTC begins and ends as a mobile operation.

Standard:

02 (DE Revision) A shadow vehicle with a truck-mounted attenuator shall be used to protect workers setting and removing channelized devices in accordance with Section 6F.86.

- New Section on Installing/Removing TTC Devices:
 - Based on Installing/Removing Temporary Traffic Control Devices memorandum





STATE OF DELAWARE
DEPARTMENT OF TRANSPORTATION
802 BAY ROAD
P.O. BOX 778
DOVER, DELAWARE 19903

SHAILEN P. BHATT
SECRETARY

MEMORANDUM

To: All Users of the Delaware Manual on Uniform Traffic Control Devices

Via: Mark Luszczyk, P.E., PTOE
Acting Chief Traffic Engineer

From: Adam Weiser, P.E., PTOE
Safety Programs Manager

Date: October 18, 2012

SUBJECT: Interim Guidance: Part 6, Temporary Traffic Control
Installing/Removing Temporary Traffic Control Devices

This Interim Guidance to the Delaware Manual on Uniform Traffic Control Devices (MUTCD) provides a new section to Part 6G, entitled "6G.23 Installing/Removing Temporary Traffic Control".

Should you have questions concerning the information contained in this interim guidance, please contact my office at (302) 659-4060.

New Language

Section 6G.23 Installing/Removing Temporary Traffic Control Devices


Support:

01 Care must be exercised when installing and removing temporary traffic control devices. Installing TTC begins and ends as a mobile operation.

Standard:

02 A shadow vehicle with a TMA shall be used to protect workers installing and removing TTC devices on roadways with a posted speed limit or 85th percentile speed greater than 40 MPH (see Section 6F.86).

03 TTC devices shall not be installed or removed from a shadow vehicle with a TMA. Temporary traffic control devices shall be installed or removed from a work operation vehicle, and a shadow vehicle with a TMA shall be used in accordance with paragraph 02 of this section.



Section 6G.24 Aerial Work

Standard:

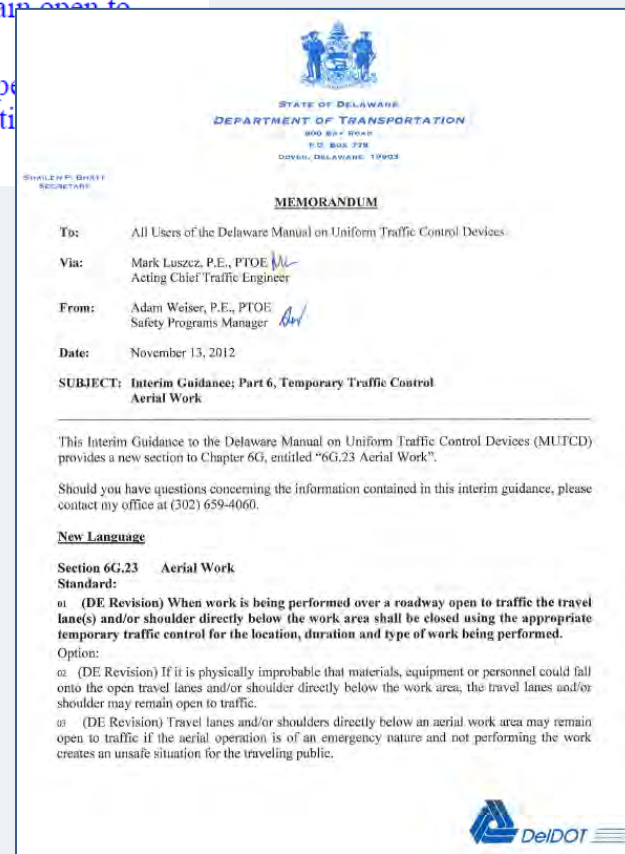
01 (DE Revision) When work is being performed over a roadway open to traffic the travel lane(s) and/or shoulder directly below the work area shall be closed using the appropriate temporary traffic control for the location, duration and type of work being performed.

Option:

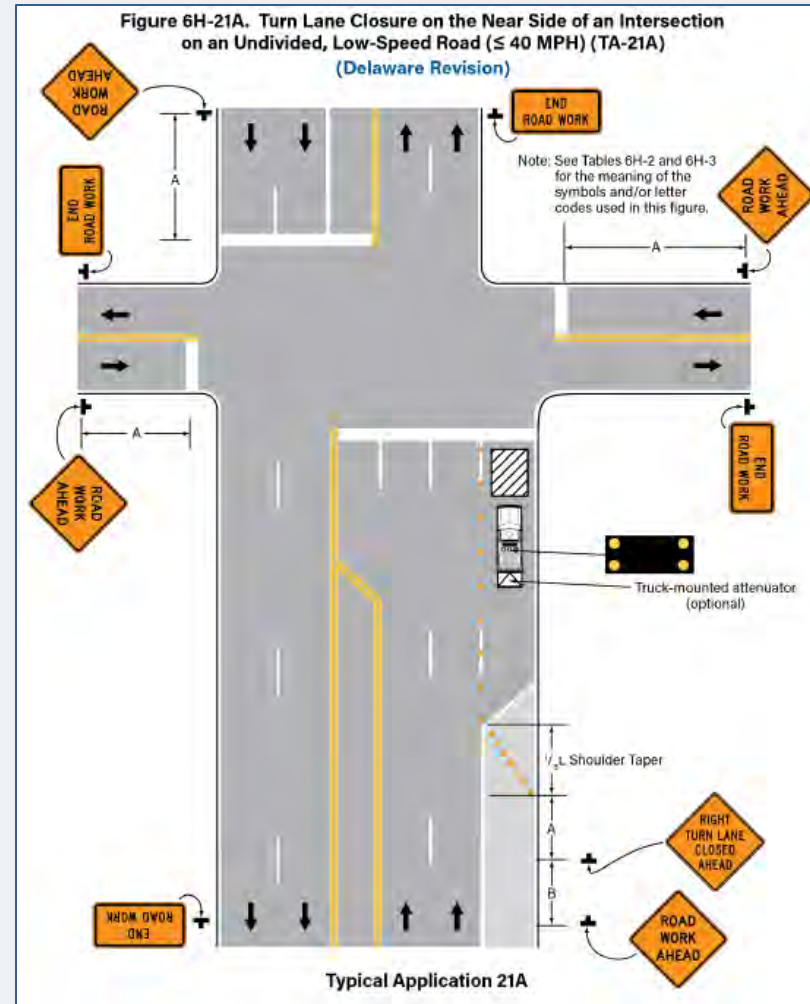
02 (DE Revision) If it is physically improbable that materials, equipment or personnel could fall onto the open travel lanes and/or shoulder directly below the work area, the travel lanes and/or shoulder may remain open to traffic.

03 (DE Revision) Travel lanes and/or shoulders directly below an aerial work area may remain open to traffic if the aerial operation is of an emergency nature and not performing the work creates an unsafe situation for the traveling public.

- New Section on Aerial Work:
 - Based on Aerial Work memorandum



- New Typical Application:
 - Turn Lane Closure



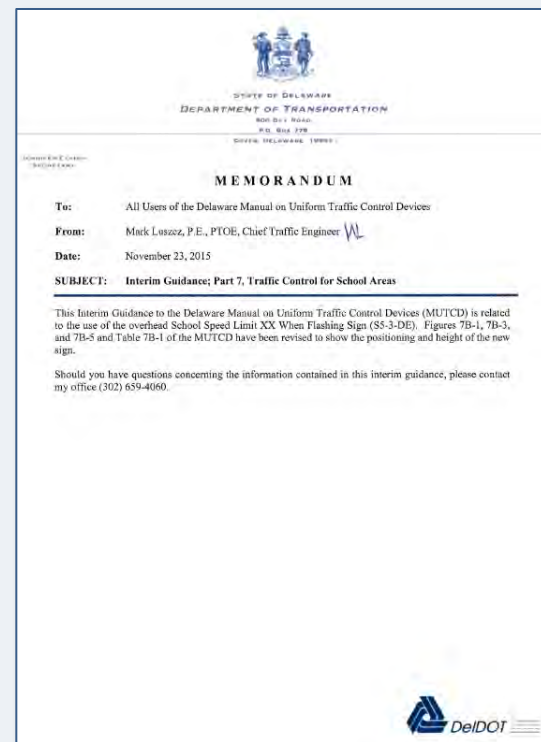
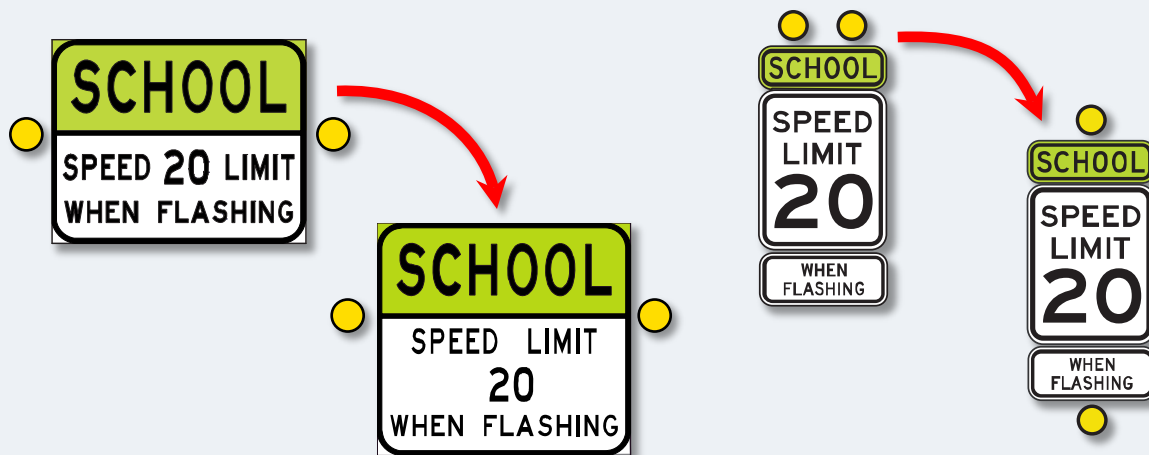
Part 7 – School Areas



**Table 7B-1. School Area Sign and Plaque Sizes
(Delaware Revision)**

Sign	Sign Designation	Section	Conventional Road	Minimum	Oversized
School Speed Limit XX When Flashing (Overhead Use Only)	S5-3-DE	7B.15	60 x 48	—	—

- Updated Table and Figures:
 - Based on Traffic Control for School Areas memo, corrected overhead sign
 - Corrected depiction of flashing beacons on school speed limit signs



Option:

04A (DE Revision) The Yield Here to (Stop Here for) Pedestrians (R1-5 or R1-5b) signs (see Section 2B.11 and Figure 2B-2) may be modified to replace the standard pedestrian symbol with the standard schoolchildren symbol and may be used at unsignalized school crossings.

- New DE Option allowing school children symbol on R1-5 and R1-5b signs:
 - Based on FHWA Official Interpretation for use of schoolchildren symbol on R1-5 or R1-5b sign



Part 9 – Bicycle Facilities



Support:

06 (DE Revision) There are circumstances where it may be appropriate to exempt bicyclists from regulatory restrictions applied to other traffic.

Guidance:

07 (DE Revision) Where an engineering study finds that it is appropriate to exempt bicyclists from the provisions of a regulatory sign, the EXCEPT BICYCLES (R3-7bP) plaque (see Figure 9B-2) should be used.

Standard:

08 (DE Revision) The EXCEPT BICYCLES (R3-7bP) plaque shall not be used to change assignment of right-of-way at STOP or YIELD signs, or to override a traffic signal indication.

09 (DE Revision) The EXCEPT BICYCLES (R3-7bP) plaque shall be placed below the regulatory sign affected by the plaque.

- DE Support, Guidance, & Standard:
 - EXCEPT BICYCLES plaque, placed below a regulatory sign, to exempt bicyclists

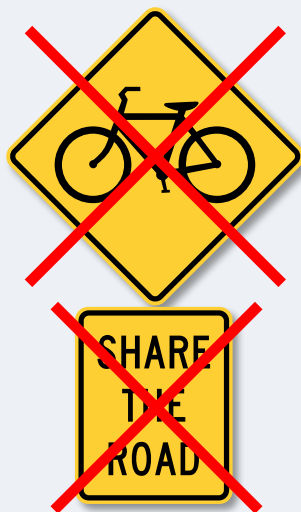


Option:

02 (DE Revision) In situations where there is a need to warn motorists to watch for bicyclists traveling within the travel lane, on roadways with no shoulder or a shoulder with a width of less than 4 feet, or where the shoulder width is decreased or transitions to a width of less than 4 feet due to physical constraints, such as at bridge crossings or bypass lanes, the Bicycle IN LANE (W11-1-DE) sign (see Figure 9B-3) may be used to warn motorists to watch for bicyclists traveling within the travel lane.

- DE Option:

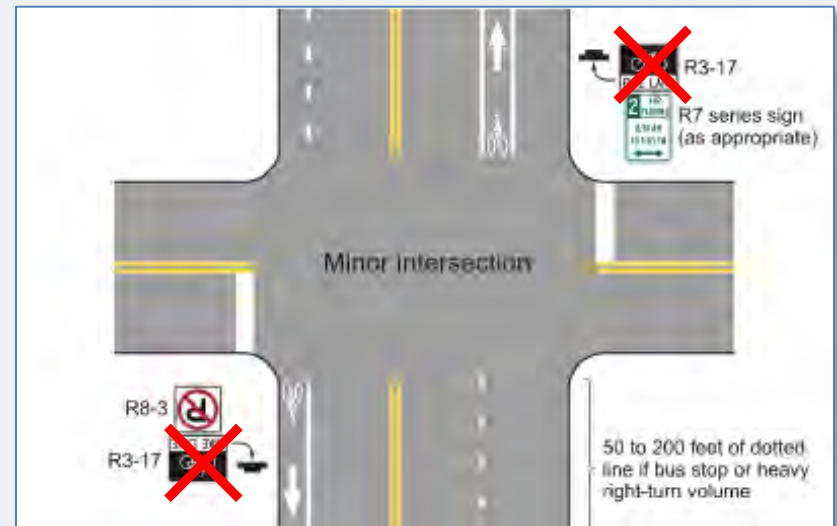
- As mentioned in Part 2, Bicycle IN LANE (W11-1-DE) sign replaces the SHARE THE ROAD plaque for bicycle warning



Guidance:

01A (DE Revision) The Bike Lane (R3-17) sign should generally not be used in Delaware except for special circumstances.

- DE Guidance:
 - Reduce overuse of the Bike Lane sign (R3-17)



Section 9B.05 RIGHT TURNS YIELD TO BIKES Signs (R4-4-DE)

Option:

01 (DE Revision) Where motor vehicles turning right entering an exclusive right-turn lane must weave across bicycle traffic in bicycle lanes, the RIGHT TURNS YIELD TO BIKES (R4-4-DE) sign (see Figure 9B-2) may be used to inform both the motorist and the bicyclist of this weaving maneuver (see Figures 9C-1).

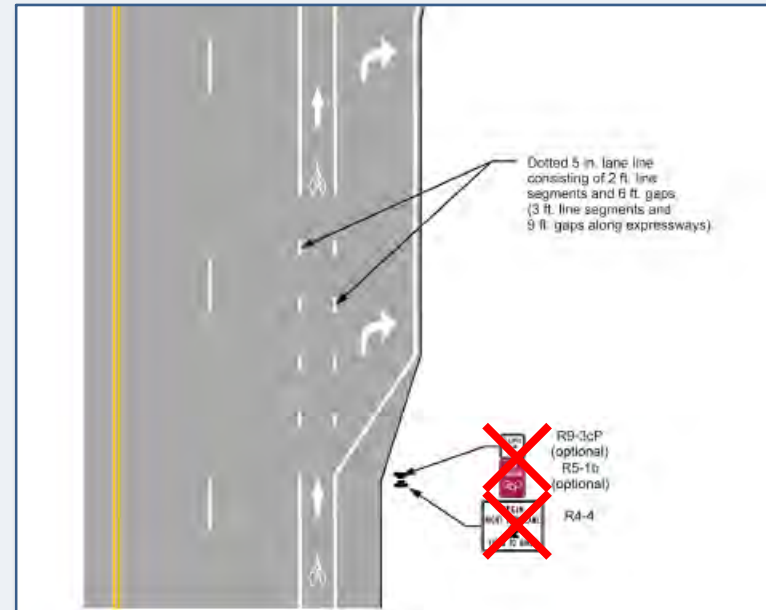
Guidance:

02 (DE Revision) The R4-4-DE sign generally should not be used except for special circumstances.

- DE Option and Guidance:
 - Replace application of both sign messages with one sign, RIGHT TURNS YIELD TO BIKES (R4-4-DE)
 - Reduce overuse of the sign except for special circumstances



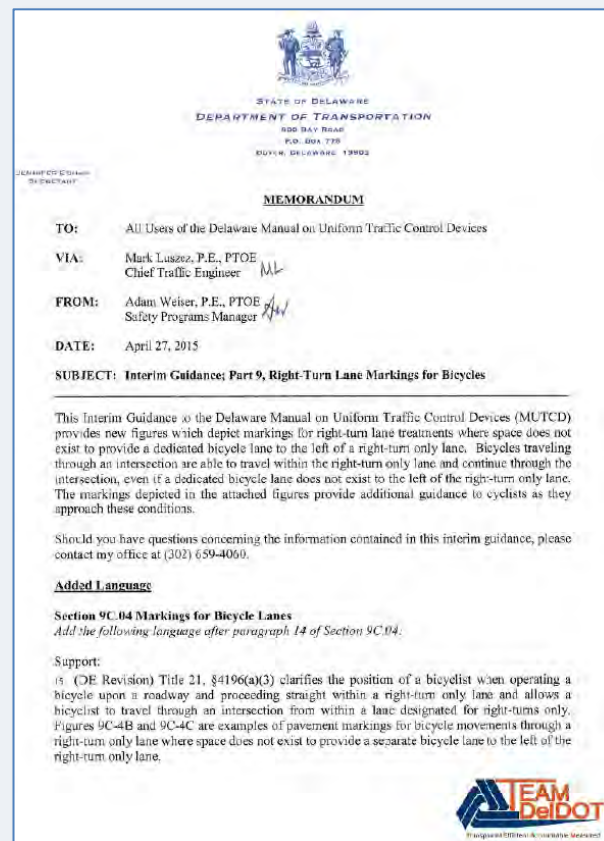
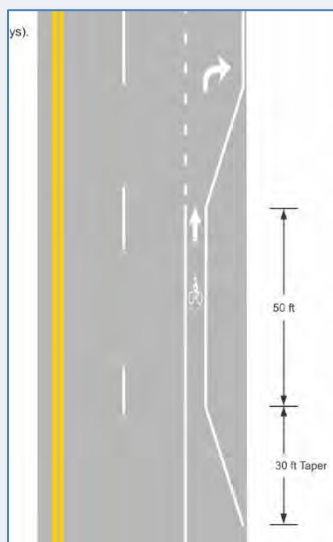
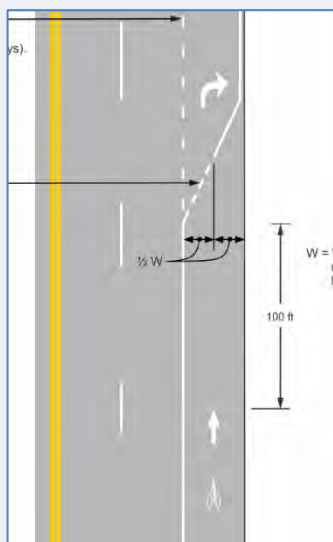
- DE Figures:
 - Remove overused optional signs from figures



Guidance:

17 (DE Revision) If a right-turn only lane exists on a route identified on the State of Delaware Bicycle Map and there is no space available to provide a separate bicycle lane to the left of the right-turn only lane, the markings shown in Figures 9C-4B or 9C-4C should be used to position bicycles approaching and traveling through an intersection.

- DE Guidance:
 - Two new figures for right-turn only lane treatments
 - Based on Right Turn Lane Markings for Bicycles memorandum



Section 9C.08 Bicycle Box

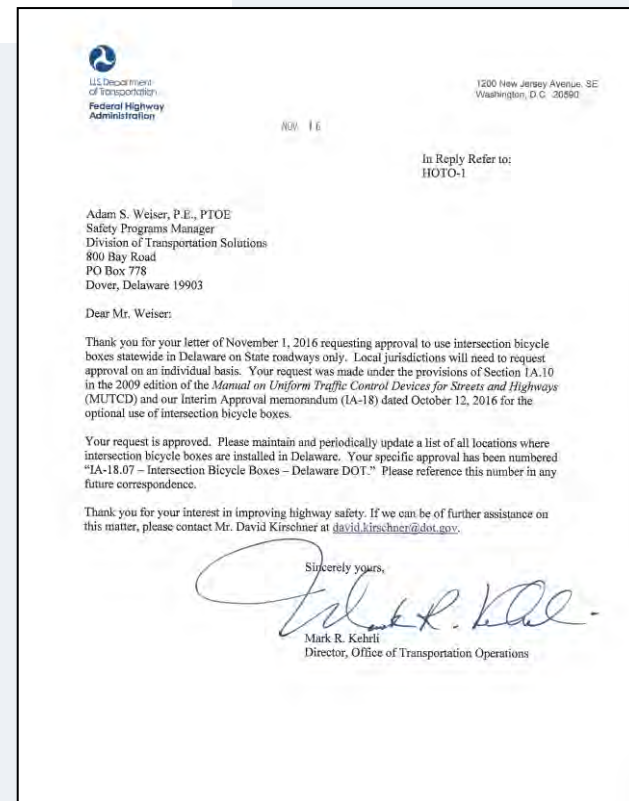
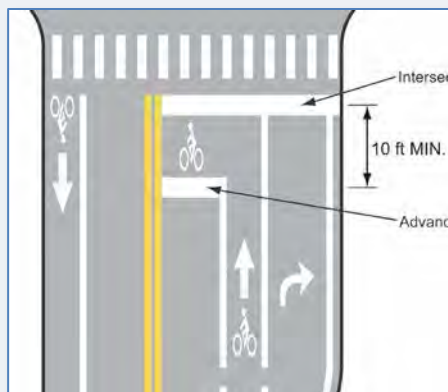
Support:

01 (DE Revision) A bicycle box (see Figure 9C-10) on the approach to a signalized intersection can provide one or more of the following benefits:

- A. Increase the visibility of stopped bicyclists at an intersection during the red signal indication,
- B. Provide a head start for stopped bicyclists at an intersection upon the green signal indication,
- C. Reduce conflicts between bicyclists and turning traffic at an intersection at the onset of the green signal indication,
- D. Group bicyclists together to clear an intersection quickly, minimizing impediments to other traffic at the onset of the green indication.

- New Section and Figures for Bicycle Boxes:

- Based on FHWA Interim Approval and NCUTCD recommendations



Thank You!

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Chief Traffic Engineer

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