



National Committee on Uniform Traffic Control Devices

12615 West Keystone Drive * Sun City West, AZ, 85375
Telephone (623)680-9592 * e-mail: ncutcd@aol.com

Attachment No.: 14
Item No.: 18-BIK-06
BTC version v0.4

1
2
3
4
5
6
7
8

NCUTCD Proposal for Changes to the Manual on Uniform Traffic Control Devices

TECHNICAL COMMITTEE: Bicycle Technical Committee
ITEM NUMBER: 18-BIK-06
TOPIC: Bicycle Detector Symbol Marking
ORIGIN OF REQUEST: NCUTCD Bicycle Technical Committee
AFFECTED SECTIONS OF MUTCD: Sections 9C.05

9

DEVELOPMENT HISTORY:

- Concurrence by Markings Technical Committee: 06/21/2018
- Approved by Bicycle Technical Committee: 06/21/2018
- Approved by NCUTCD Council: MM/DD/YYYY

10
11
12
13
14
15
16
17
18
19
20
21
22
23

This is a proposal for recommended changes to the MUTCD that has been developed by a technical committee of the NCUTCD. The NCUTCD is distributing it to its sponsoring organizations for review and comment. Sponsor comments will be considered in revising the proposal prior to NCUTCD Council consideration. This proposal does not represent a revision of the MUTCD and does not constitute official MUTCD standards, guidance, or options. If approved by the NCUTCD Council, the recommended changes will be submitted to FHWA for consideration for inclusion in a future MUTCD revision. The MUTCD can be revised only through the federal rulemaking process.

SUMMARY:

This proposal adds explanatory text to the existing Section 9C.05/Figure 9C-7 Bicycle Detector Pavement Marking Symbol to modify the existing marking and adds an optional marking developed via a Request To Experiment (RTE) “9(09)-66E Bicycle Detector Pavement Marking Alternatives – Columbia, MO” approved by FHWA On September 19, 2014. Both symbols had a much higher user comprehension than the original symbol even when the original was accompanied by the Section 9B.13 Bicycle Signal Actuation Sign (R10-22) that interprets the existing symbol.

32

DISCUSSION

The Bicycle Detector Pavement Marking is intended to indicate the optimum position for a bicyclist to actuate a traffic signal. The Bicycle Signal Actuation sign R10-22 (Section 2B.13 and Figure 9B-2) is often used to explain the existing pavement marking symbol. A study by

33
34
35
36

37 Portland State University in 2003 found that even with the use of the Bicycle Signal Actuation
38 sign, the purpose of the existing Bicycle Detector Pavement Marking is not apparent to many
39 bicyclists or motorists.

40
41 An RTE “9(09)-66E Bicycle Detector Pavement Marking Alternatives – Columbia, MO”
42 (whttps://www.como.gov/publicworks/street-marking-experiments/) was initiated to evaluate a
43 more effective marking. Working with ALTA Planning + Design and the University of Missouri
44 Columbia (MU), several configurations were created and tested in MU’s Bicycle Simulator. The
45 preferred configuration was then field tested in Columbia with as simultaneous test in Portland
46 OR.

47
48 Testing results:

- 49 • Participants in the MU simulator test preferred the proposed alternate by 96% to 19% for
50 the existing MUTCD 9C-7 symbol.
- 51 • In the Columbia field test, 253 individuals responded to a survey after the proposed
52 markings were installed at four intersections. Only 12% of responders correctly identified
53 the purpose of the MUTCD 9C-7 symbol, while 87% identified the proposed symbol as
54 “Bikes stop here for green light”
- 55 • During this experiment, an additional study was completed in Portland, OR that
56 confirmed the preference for the “Columbia Experiment” marking over the existing 9C-7
57 symbol. Five symbol configurations including the MUTCD 9C-7 symbol were evaluated
58 via field testing and surveys. Participants were asked to rank the symbols in preference
59 as to how well the symbol communicated its purpose. The Columbia experiment symbol
60 was ranked first by a wide margin in communicating the location where a bicyclist should
61 stop in order for a signal to detect the bicyclist. During the test, Portland also tested
62 recognition of the 9C-7 symbol with the added text “WAIT ON LINES FOR GREEN”.
63 This combination had a very high level of comprehension when the text was added.

64 65 **RECOMMENDED MUTCD CHANGES**

66
67 The following present the proposed changes to the current MUTCD within the context of the
68 current MUTCD language. Proposed additions to the MUTCD are shown in blue underline and
69 proposed deletions from the MUTCD are shown in ~~red strikethrough~~. Changes previously
70 approved by NCUTCD Council (but not yet adopted by FHWA) are shown in green double
71 underline for additions and ~~green double strikethrough~~ for deletions. In some cases, background
72 comments may be provided with the MUTCD text. These comments are indicated by
73 **[highlighted light blue in brackets]**.

74 75 **CHAPTER 9C MARKINGS**

76 77 **Section 9C.05 Bicycle Detector Symbol**

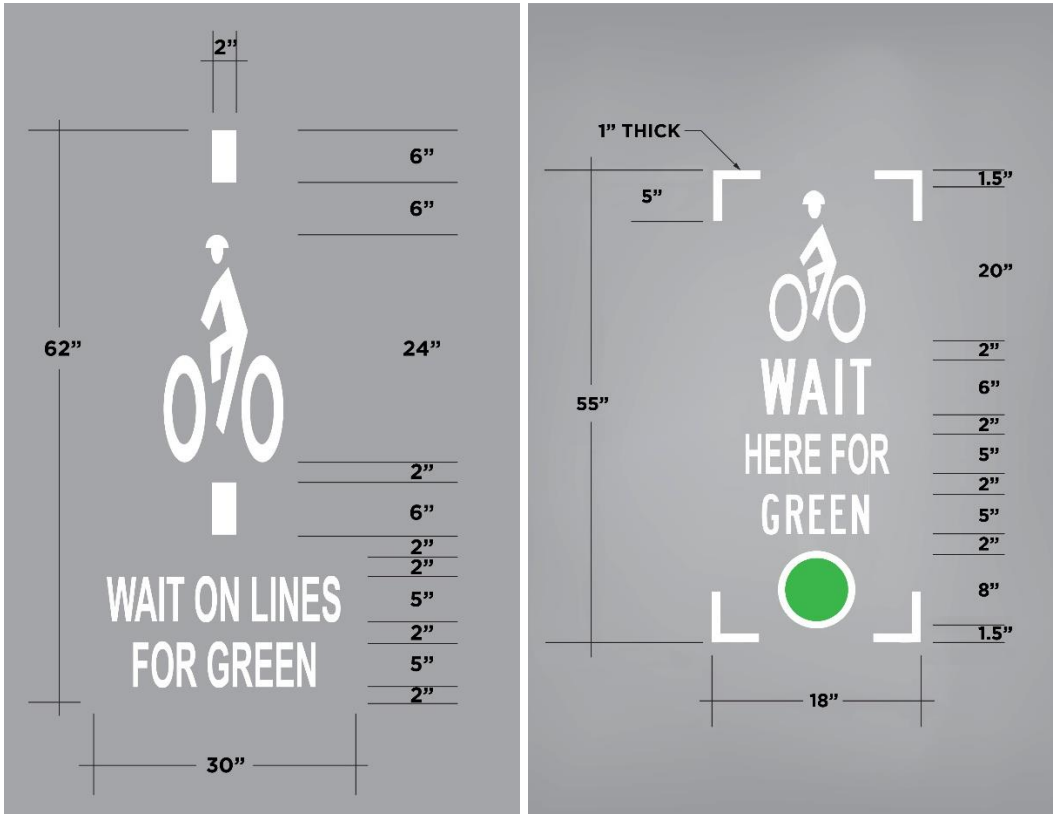
78 Option:

79 01 A symbol (see Figure 9C-7A or 9C-7B) may be placed on the pavement indicating the
80 optimum position for a bicyclist to actuate the signal.

81 02 An R10-22 sign (see Section 9B.13 and figure 9B-2) may be installed to supplement the
82 pavement marking.

83
84
85
86
87

Figure 9C-7. Bicycle Detector Pavement Marking
[Replace the existing symbol with:]



88
89
90

A

B