



National Committee on Uniform Traffic Control Devices

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3 **NOTE: This is a recommendation by NCUTCD to FHWA to add or revise the**
4 **content of the MUTCD. This proposal by itself does not constitute official**
5 **standards or guidance. Regardless of NCUTCD approval status, any proposed**
6 **change or revision has no legal or official status until specifically approved by**
7 **FHWA through either the Interim Approval process or adoption into a new edition**
8 **of the MUTCD.**

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10 **TECHNICAL COMMITTEE:** Bicycle Technical Committee

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12 **TOPIC:** Two-Stage-Turn Queuing Box

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14 **STATUS/DATE OF ACTION:**

15 **BTC Drafts:** 01/03/2013

16 **BTC Approval:** 06/27/2014

17 **Council Approval:** **06/28/2014 (v1.2)**

18 **Transmittal to Sponsors:**

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20 **ORIGIN OF REQUEST:** FHWA

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22 **AFFECTED SECTIONS OF MUTCD:** 1A.13, Chapter 9C

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24 **SUMMARY:**

25 This proposal describes a waiting area for bicyclists to queue to turn left at an
26 intersection by first proceeding to a position to queue at the right side of the intersection,
27 then turning left and crossing as traffic permits, or when the traffic signal changes to
28 green.

29
30 **DISCUSSION:**

31 In locations where conventional left turns are prohibited or where bicyclists' merging to a
32 conventional left-turn would be inconvenient, a two-stage left turn can be utilized. A two-
33 stage turn queuing box can avoid hazards such as crossing light-rail tracks at a low
34 angle. The distance traveled for a two-stage left turn is longer than for a conventional
35 left turn, and delay due to traffic signals is also usually longer, but a two-stage left turn
36 may nonetheless save time if the merge to the conventional left-turn position is blocked
37 by traffic congestion.

38
39 To improve operational characteristics, and to avoid conflict with pedestrians and with
40 right-turning traffic in the street into which the bicyclist is turning, a queuing area is

1 needed. The proposed amendment defines such a queuing area and related
2 improvements.

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4 Documentation may be found here:

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6 FHWA Bicycle and Pedestrian guidance:

7 [http://www.fhwa.dot.gov/environment/bicycle_pedestrian/guidance/design_guidance/mu](http://www.fhwa.dot.gov/environment/bicycle_pedestrian/guidance/design_guidance/mutcd_bike.cfm)
8 [tcd_bike.cfm](http://www.fhwa.dot.gov/environment/bicycle_pedestrian/guidance/design_guidance/mutcd_bike.cfm)

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10 Canton, Ohio request to experiment:

11 http://mutcd.fhwa.dot.gov/documents/html/9_09_28_city_rte_ltr.htm

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13 CommuteOrlando post, Left Turns on Big Roads:

14 <http://commuteorlando.com/wordpress/2009/08/22/smart-moves-left-turns-on-big-roads/>

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16 Video of installation in Salt Lake City: <http://www.youtube.com/watch?v=rVswICVFIEQ>

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18 Examination of operational characteristics (the two-stage turn queuing box is here
19 called the “cross-street bike box”): <http://www.bikexpert.com/bikepol/facil/stopleveline.htm>.

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21 Video showing demonstration of a two-stage turn maneuver:

22 <https://vimeo.com/82813087>

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RECOMMENDED MUTCD PROVISIONS/ REVISIONS:

Note: Deletions from the 2009 MUTCD text are noted in ~~strikethrough-red~~, and insertions in underline blue.

Section 1A.13 of the MUTCD is modified by adding a new definition:

Section 1A.13 Definitions

xx. Two-Stage-Turn Queuing Box - a designated area at an intersection intended to provide bicyclists a place to wait for traffic to clear before proceeding in a different direction of travel.

A new Section 9C.xx is inserted into Part 9 of the MUTCD:

Section 9C.XX Two-Stage Turn Queuing Box

Guidance

01 A two-stage turn queuing box should be located outside of the path of turning traffic. A No Turn on Red (R10-11) sign should be installed where a two-stage turn queuing box is not located outside the path of right turning traffic.

02 A two-stage turn queuing box should be located downstream of the crosswalk and downstream of the stop line.

Standard

03 A bicycle symbol shall be placed in the two-stage turn queuing box oriented in the direction in which the bicyclists enter the box, along with an arrow showing the direction of turn.

04 Passive detection of bicycles in the two-stage turn queuing box shall be provided if detection is required to actuate the signal which allows bicyclists to cross.

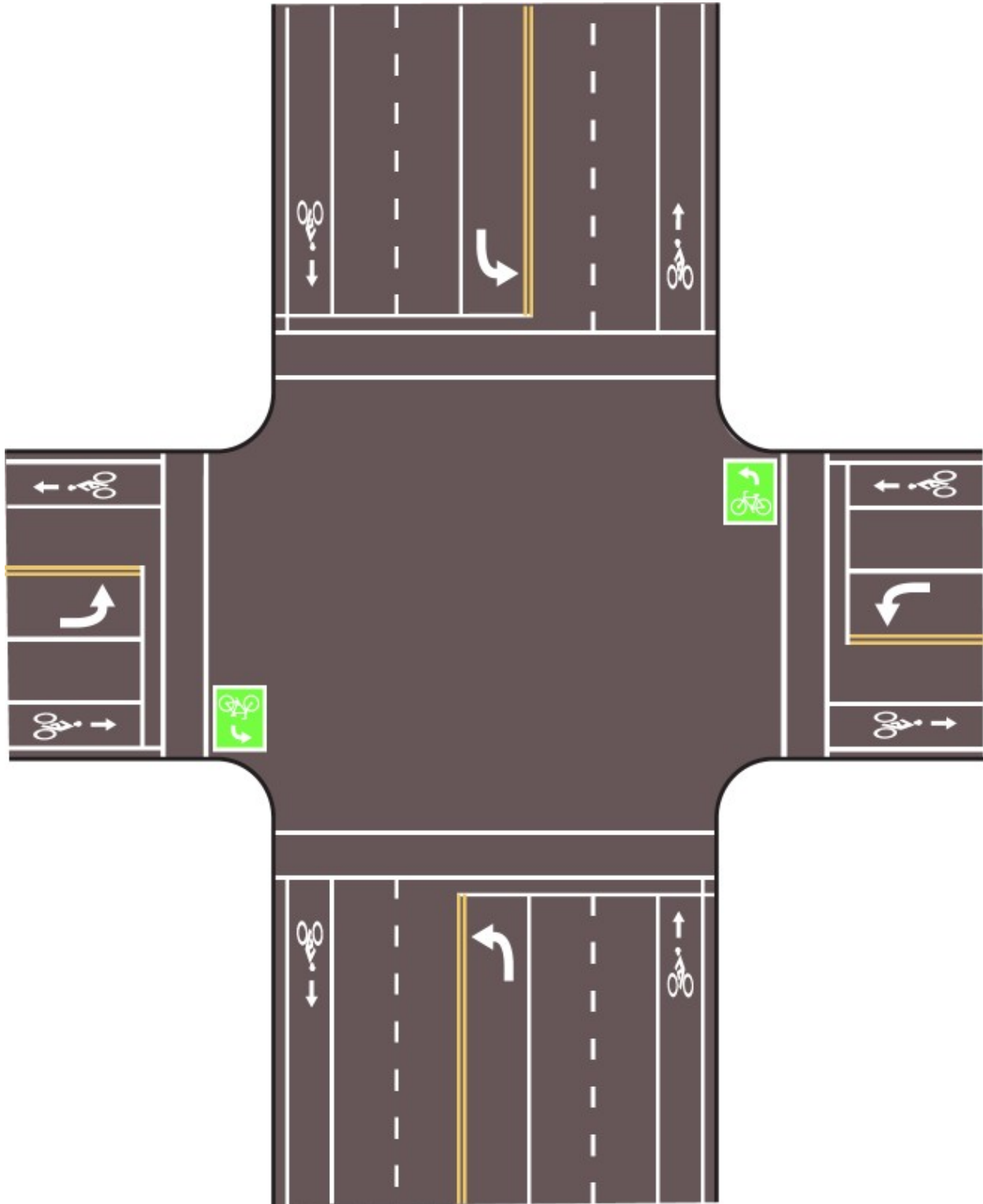
Option:

05 A two-stage turn queuing box is most commonly used for left turns, but it may be used for right turns from the left side of a one-way roadway.

06 Green colored pavement may be used within the two-stage turn queuing box.

1 **Figure 9C-x. Example of a Two-Stage Turn Queueing Box**

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