



**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

NOTE: This is a recommendation by the NCUTCD to FHWA proposing to modify the MUTCD. This recommendation is not a revision to the MUTCD and does not constitute official standards, guidance, or options. No proposed revision to the MUTCD is effective unless and until approved by FHWA through an Interim Approval or through the Federal rulemaking process.

TECHNICAL COMMITTEE: Signals Technical Committee

TOPIC: Signal Indications for Approaches from which there are No Through Movements Permitted

STATUS/DATE OF ACTION: Approved by NC Council 06/22/2012, submit to FHWA

Signals Approval: June 2011- Unanimous FOR with 1 abstention
June 2012 – 23 FOR, 3 OPPOSED

Transmitted to Sponsors: November 2011

Council Approval: June 22, 2012 – Unanimous FOR

ORIGIN OF REQUEST: STC, June 2011 Meeting

AFFECTED SECTIONS OF MUTCD: 4D.25

SUMMARY:

The 2009 MUTCD includes a new section addressing signal approaches where a shared left-turn/right-turn lane exists and no through movement exists. In other words, all traffic on that approach must turn onto the intersecting roadway such as from the stem of a T-intersection or where the roadway on the far side of the intersection is a one-way roadway in the opposing direction. However, there are also situations where all traffic on an approach must turn onto the intersecting roadway but no shared left-turn/right-turn lane exists. Existing Section 4D.25 addresses situations where lane-use regulations are variable and at certain times all lanes on an approach are designated as exclusive turn lanes and no lanes are shared left-turn/right-turn lanes. However, this does not include situations where variable lane-use regulations do not exist and there is

no shared left-turn/right-turn lane. The proposed change revises and expands information concerning situations where all traffic on an approach must turn onto the intersecting roadway.

DISCUSSION

In the Notice of Proposed Amendment, FHWA noted that the proposed new Section 4D.25 was being proposed to provide explicit information regarding shared left-turn/right-turn lanes, which has not previously been included in the MUTCD, and to enhance uniformity of displays for this application. The new section contains SUPPORT, STANDARD and OPTION statements regarding this type of lane that is shared by left-turn and right-turn movements, which is sometimes provided on an approach that has no through movement, such as the stem of a T-intersection or where the opposite approach is a one-way roadway in the opposing direction.

The Signals Technical Committee feels that, in addition to cases where there is a shared left-turn/right-turn lane at these type locations, additional information should be provided when there is no shared left-turn/right-turn lane but all approaching traffic must turn onto the intersecting roadway. Existing Section 4D.25 was reviewed and proposed revisions identified to further clarify signal operations where all traffic on an approach must turn onto the intersecting roadway such as from the stem of a T-intersection or where an opposite approach exists but it is a one-way roadway in the opposing direction.

A significant part of the review of Section 4D.25 included the issue of displaying a CIRCULAR GREEN and related CIRCULAR YELLOW indications to approaches where no through movement exists or is permitted. If a driver mistakenly assumes that a CIRCULAR GREEN signal indication means he or she can continue straight ahead at one of these type intersections, a catastrophic result may occur. This is true whether the roadway ends at a T-intersection or whether a roadway exists on the far side of the intersection but it is a one-way road toward the intersection. The STC recommendation includes a prohibition of the display of CIRCULAR GREEN and CIRCULAR YELLOW indications to drivers on an approach from which all arriving vehicles must turn onto the intersecting roadway if the approach has a posted speed limit of 35 MPH or greater, or if an opposing roadway exists that is an exit ramp from a controlled access roadway, or if an opposing one-way roadway exists with a posted speed limit of 35 MPH or greater.

A speed threshold is included in two of the three listed conditions. While the prohibition could be extended to approaches with all speeds, it was felt that, at speeds below 35 miles per hour, drivers on the approach could better assess the situation and react accordingly than they could at higher speeds. No speed threshold was included for situation where the opposing approach is an exit ramp from a controlled access facility. There are typically no intersecting streets or driveways onto ramps so a driver that has mistakenly entered the ramp travelling the wrong direction must make a u-turn or 3-point turn to correct their direction of travel. Therefore, the STC felt that the prohibition should apply to all cases where an exit ramp is the opposing roadway. The 35 MPH

threshold is included in the case of an opposing one-way roadway because, even through an intersecting street or driveway may exist that the wrong way driver could turn into, the higher speed of any oncoming traffic makes such maneuvers increasingly dangerous.

Drivers familiar with an area are likely knowledgeable about locations where the roadway either ends or the roadway on the far side of the intersection of a one-way roadway toward the intersection. However, drivers that are unfamiliar with an area that do not recognize these conditions may proceed straight ahead only to find out too late that the roadway ends or the roadway on the far side of the intersection is a one-way roadway toward the interaction. The STC feels that prohibiting the display of CIRCULAR GREEN and CIRCULAR YELLOW indications to drivers on such approaches under the listed conditions is consistent with the concept of giving road users a clear and unmistakable indication of their right-of-way assignment as required in paragraph 2 of Section 4D.12.

This item was distributed to sponsors following the Summer 2011 meeting. The STC reviewed the sponsor comments and made revisions based on those comments. The revised recommendation was presented to the NC Council at the summer 2012 meeting and was approved unanimously.

RECOMMENDED CHANGES TO THE MUTCD (Section 4D.25)

Note: The following is proposed to replace the existing Section 4D.25 in the 2009 MUTCD in its entirety. It is all new text.

Section 4D.25 Signal Indications for Approaches from which there are No Through Movements Permitted

Standard:

This Section shall have application only to intersection approaches from which all vehicles departing such approaches must turn onto an intersecting roadway because through movements do not physically exist or are prohibited.

Support:

Some intersection approaches exist that have no through movement such as the stem of a T-intersection or where an opposite approach is a one-way roadway toward the intersection.

Physical barriers as well as signs and markings are often used to denote the end of an approach roadway where no traffic is permitted beyond the intersecting roadway. Where the opposite roadway is one-way toward the intersection, signs and markings are used to notify the approaching driver that the continuing roadway is closed to their use.

On higher speed approaches from which all arriving vehicles must turn onto the intersecting roadway and where a continuing roadway that serves an off-ramp from a controlled access highway exists, the exhibition of a continuous Circular Red with appropriate arrow displays has been used to add emphasis to the unusual condition.

An approach lane that is shared by left-turn and right-turn movements is sometimes provided on an approach from which all arriving vehicles must turn onto the intersecting roadway either as the only approach lane or as one of several approach lanes.

See Sections 4D.17 through 4D.24 for related information.

Figure 4D.20 illustrates examples of the application of this Section.

Standard:

For an approach where a shared left-turn/right-turn lane exists, the left turn movement and right turn movement, if signalized, shall start and terminate simultaneously.

Option:

- A. For an approach where a shared left-turn/right-turn lane does not exist or during periods when there is no lane being operated as a shared left-turn/right-turn lane, the left turn and right turn movements may start and terminate independently.
- B. During the times that no lane is designated as a shared left-turn/right-turn lane, the left-turn and right-turn movements may be operated in one or more of the modes of operation as described in Sections 4D.17 through 4D.24.

Standard:

The left turn vehicular movement shall be designated the primary vehicular movement, in lieu of the through movement, and shall be controlled with at least two signal faces. The right turn movement, if signal controlled, shall be controlled with at least one signal face.

Option:

When no approach lane meets or exceeds the requirements of Table 4D.2 in Section 4D.12, the right turn movement may be designated the primary movement based upon a determination by an engineering study that it is best suited for the purpose.

Standard:

- A. The traffic signal shall exhibit one of the following indications to indicate:**
 - 1. Permission to proceed:**
 - a. **A GREEN ARROW - vehicle-vehicle conflicts and/or vehicle-pedestrian conflicts prohibited.**
 - b. **A Flashing YELLOW ARROW - vehicle-vehicle conflicts and/or vehicle pedestrian conflicts permitted.**
 - c. **A Flashing RED ARROW - a full stop before proceeding required, vehicle-vehicle conflicts and/or vehicle-pedestrian permitted.**
 - d. **A Circular Green - vehicle-vehicle conflicts and/or vehicle-pedestrian conflict permitted.**

2. **The Change Interval -- a Circular Yellow or steady Yellow Arrow**
 3. **The Clearance Interval, if used, -- a Circular Red or steady Red Arrow**
 4. **The Stop Interval -- a Circular Red or steady Red Arrow**
- B. CIRCULAR YELLOW and CIRCULAR GREEN indications shall not be exhibited in any signal face controlling an approach when:**
1. **The approach has a posted speed limit of 35 MPH or greater, or**
 2. **An opposing roadway exists that is an exit ramp from a controlled access roadway, or**
 3. **An opposing one-way roadway exists that has a posted speed limit of 35 MPH or greater.**

Option:

- A. If a protected-permissive mode is used, a shared left-turn/right-turn signal face may be modified to include a dual-arrow signal section capable of exhibiting both a GREEN ARROW signal indication and a flashing YELLOW ARROW signal indication for a turn movement(s) in order to not exceed the maximum of five sections per signal face as provided in Section 4D.08.
- B. The required two primary signal faces and any supplemental primary signal faces required by approach roadway geometry may have a CIRCULAR RED indication that is continuously illuminated when the traffic signal is operated in the Steady Mode (stop & proceed).
- C. Other signal faces controlling lanes limited to either a right turn or left turn movement may have a CIRCULAR RED indication that is continuously illuminated when the traffic signal is operated in the STEADY MODE (stop & proceed) or a RED ARROW indication that is illuminated only when the other arrow indications in that face are dark.
- D. When an engineering study of an intersection approach, where a physical barrier or lack of continuing roadway prohibits travel beyond the intersection, determines that full compliance with Section 4D.12 cannot be achieved without the continuous exhibit of a Circular Red indication, continuous exhibit of the Circular Red indication may be provided.