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. 26

SIGNALS NO. 1

NOTE: This is a recommendation to FHWA regarding an Interim Approval by the National Committee on Uniform Traffic Control Devices (NCUTCD). This recommendation is not an Interim Approval nor a revision to the MUTCD and does not constitute official standards, guidance or options. No Interim Approval is effective unless and until approved by FHWA and no proposed revision to the MUTCD is effective unless and until approved by FHWA through the Federal rulemaking process.

TECHNICAL COMMITTEE:	**Signals Technical Committee**
TOPIC:	**Recommendation—Signal Warrant 7—Crash Experience**
STATUS/DATE OF ACTION:	**Included as part of Signals #1 which was approved by Council on June 28, 2014**
Council Approval:	**June 10, 2016 for an Interim Approval**
ORIGIN OF REQUEST:	**Lee Billingsley, Chairman of NCUTCD**
AFFECTED SECTIONS OF MUTCD:	**Section 4C.08**

SUMMARY:

In an electronic communication to technical committee chairs, NCUTCD Chairman, Lee Billingsley, indicated that the Institute of Transportation Engineers (ITE) wishes to take an active role in promoting tools that allow the profession to continue to move forward during the interim period of waiting for the next edition of the MUTCD. One of the areas where he indicated that ITE intends to focus efforts is the identification of worthy candidate Interim Approvals by the NCUTCD. He requested that each technical committee identify up to three candidate Interim Approvals, from those items previously approved by the Council since January 2009, the first meeting of new items to be considered after the publication of the 2009 MUTCD.

One of the two Interim Approval items identified by the Signals Technical Committee was the revision of Crash Experience Warrant in Section 4C.08. Council approved the

revised warrant as part of a larger set or reorganization and revisions to Part 4 at the June 2014 meeting (Signals #1). The revised crash warrant was based on research documented in the final report for NCHRP Project No. 07-18, "Crash Experience Warrant for Traffic Signals", prepared by Kittleson & Associates, Inc.

The revised Section 4C.08 is proposed to FHWA as an Interim Approval, so as to provide public agencies a new option to justify traffic signal control since it would set a lower threshold for the number of collisions, based on the research. The proposed Interim Approval, revised Section 4C.08, is shown below:

Section 4C.08 Warrant 7, Crash Experience

Support:

The Crash Experience signal warrant conditions are intended for application where the severity and frequency of crashes are the principal reasons to consider installing a traffic control signal.

~~*Standard*~~ *Guidance:*

The need for a traffic control signal ~~shall~~ should be considered if an engineering study finds that all of the following criteria are met:

A. Adequate trial of alternatives with satisfactory observance and enforcement has failed to reduce the crash frequency; and

B. ~~Five or more reported crashes, of types susceptible to correction by a traffic control signal, have occurred within a 12-month period, each crash involving personal injury or property damage apparently exceeding the applicable requirements for a reportable crash; and~~

One of the following conditions apply to the reported crash history (where each reported crash considered is related to the intersection and apparently exceeds the applicable requirements for a reportable crash):

1. The number of reported angle crashes and pedestrian crashes within a one-year period equals or exceeds the threshold number in Table 4C-2 for total angle crashes and pedestrian crashes (all severities); or

2. The number of reported fatal-and-injury angle crashes and pedestrian crashes within a one-year period equals or exceeds the threshold number in Table 4C-2 for total fatal-and-injury angle crashes and pedestrian crashes ; or

3. The number of reported angle crashes and pedestrian crashes within a three-year period equals or exceeds the threshold number in Table 4C-3 for total angle crashes and pedestrian crashes (all severities); or

4. The number of reported fatal-and-injury angle crashes and pedestrian crashes within a three-year period equals or exceeds the threshold number in Table 4C-3 for total fatal-and-injury angle crashes and pedestrian crashes; and(4)

C. For each of any 8 hours of an average day, the vehicles per hour (vph) given in both of the 80 percent columns of Condition A in Table 4C-1 (see Section 4C.02), or the vph in both of the 80 percent columns of Condition B in Table 4C-1 exists on the major-street and the higher-volume minor-street approach, respectively, to the intersection, or the volume of pedestrian traffic is not less than 80 percent of the requirements specified in the Pedestrian Volume warrant. These major-street and minor-street volumes shall be for the same 8 hours. On the minor street, the higher volume shall not be required to be on the same approach during each of the 8 hours.

Option:

If the posted or statutory speed limit or the 85th-percentile speed on the major street exceeds 40 mph, or if

the intersection lies within the built-up area of an isolated community having a population of less than 10,000,

the traffic volumes in the 56 percent columns in Table 4C-1 may be used in place of the 80 percent columns.

Table 4C-2. Reported crash value for use with Criterion B of Warrant 7 based on one-year crash history.

Area Type	Number of Through Lanes on Each Approach		Minimum Number of Reported Crashes in One-Year Period			
			Total of Angle Crashes and Pedestrian Crashes (all severities) [b]		Total of Fatal-and-Injury Angle Crashes and Pedestrian Crashes [b]	
	Major	Minor	Four Legs	Three Legs	Four Legs	Three Legs
Urban	1	1	5	4	3	3
	2+	1	5	4	3	3
	2+	2+	5	4	3	3
	1	2+	5	4	3	3
Rural[a]	1	1	4	3	3	3
	2+	1	10	9	6	6
	2+	2+	10	9	6	6
	1	2+	4	3	3	3

Notes:

a – "Rural" values apply to intersections where the major-road speed exceeds 40 mi/h or intersections located in an isolated community with a population of less than 10,000.

b – Angle crashes include all crashes that occur at an angle and involve one or more vehicles on the major road and one or more vehicles on the minor road.

Table 4C-3. Reported crash value for use with Criterion B of Warrant 7 based on three-year crash history.

Area Type	Number of Through Lanes on Each Approach		Minimum Number of Reported Crashes in Three-Year Period			
			Total of Angle Crashes and Pedestrian Crashes (all severities) [b]		Total of Fatal-and-Injury Angle Crashes and Pedestrian Crashes [b]	
	Major	Minor	Four Legs	Three Legs	Four Legs	Three Legs
Urban	1	1	6	5	4	4
	2+	1	6	5	4	4
	2+	2+	6	5	4	4
	1	2+	6	5	4	4
Rural[a]	1	1	6	5	4	4
	2+	1	16	13	9	9
	2+	2+	16	13	9	9
	1	2+	6	5	4	4

Notes:

a – "Rural" values apply to intersections where the major-road speed exceeds 40 mi/h or intersections located in an isolated community with a population of less than 10,000.

b – Angle crashes include all crashes that occur at an angle and involve one or more vehicles on the major road and one or more vehicles on the minor road.