



# National Committee on Uniform Traffic Control Devices

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Item No.: 20B-SIG-02

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

**TECHNICAL COMMITTEE:** Signals Technical Committee

**ITEM NUMBER:** 20B-SIG-02

**TOPIC:** Requirement For Accessible Pedestrian Signals When Leading Pedestrian Intervals Are Used

**ORIGIN OF REQUEST:** Signals Technical Committee

**AFFECTED SECTIONS OF MUTCD:** 4I.07 Pedestrian Control Features

### DEVELOPMENT HISTORY:

- Approved by Technical Committee: 06/17/2020
- Approved by NCUTCD Council: MM/DD/YYYY

*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 by the FHWA through the federal rulemaking process.*

### SUMMARY:

This proposal requires the use of Accessible Pedestrian Signals (APS) when Leading Pedestrian Intervals (LPI) are used at a traffic signal.

### DISCUSSION

Using LPIs without an APS shortens the usable crossing time for blind pedestrians and leads to confusion. LPIs start the pedestrian interval while red indications continue to be displayed to parallel through and/or turning traffic, giving sighted pedestrians a head-start over motor vehicle traffic. When an LPI is used without an APS, blind pedestrians are unable to tell when the LPI starts. Blind pedestrians are trained to start their crossing when they hear side street traffic start to move. Side street traffic does not move until after the LPI is finished. Most agencies incorporate the LPI into the existing pedestrian interval timing. This practice can reduce the crossing time for blind pedestrians below MUTCD Guidance because blind pedestrians won't start their crossing until the LPI terminates. Due to blind pedestrian's slower perception reaction

34 times, they won't initiate the cross until several seconds after the LPI has terminated. If the LPI  
35 extends through a large part of the pedestrian interval, blind pedestrians may not have enough  
36 time to cross the street.

37  
38 In addition to reducing the amount of time available to cross the street, LPIs confuse blind  
39 pedestrians. When a blind pedestrian is waiting to cross the street the LPI enables sighted  
40 pedestrians to start their cross before the side street traffic starts. This confuses blind pedestrians  
41 because they hear people starting to cross yet, have no way of knowing the pedestrian crossing  
42 interval has begun. This can also confuse drivers because drivers may see the blind pedestrian  
43 waiting, while other pedestrians are crossing, and assume the blind pedestrian is not intending to  
44 cross. That driver will not be prepared to stop for the blind pedestrian when he or she suddenly  
45 steps into the crosswalk. The LPI, without an APS, sets up the well-documented condition for a  
46 crash with a blind pedestrian.

47  
48 Requiring APS when LPIs are used is important because many agencies are installing large  
49 numbers of LPIs to improve the visibility of pedestrians when the green signal is displayed while  
50 unintentionally placing blind pedestrians at greater risk.

51  
52 **RECOMMENDED MUTCD CHANGES**

53  
54 The following present the proposed changes to the current MUTCD within the context of the  
55 current MUTCD language. Proposed additions to the MUTCD are shown in blue underline and  
56 proposed deletions from the MUTCD are shown in ~~red-strikethrough~~. Changes previously  
57 approved by NCUTCD Council (but not yet adopted by FHWA) are shown in green double  
58 underline for additions and ~~green-double-strikethrough~~ for deletions. In some cases, background  
59 comments may be provided with the MUTCD text. These comments are indicated by [black font  
60 in brackets highlighted light blue].

61 PART 4. HIGHWAY TRAFFIC SIGNALS

62  
63 CHAPTER ~~4E~~ 4I. ~~TRAFFIC CONTROL SIGNALS FOR FREEWAY ENTRANCE~~  
64 ~~RAMP~~ PEDESTRIAN CONTROL FEATURES

65  
66 Section ~~4E.06~~ 4I.07 Pedestrian Intervals and Signal Phases

67 Standard:

68 01 At intersections equipped with pedestrian signal heads, the pedestrian signal indications  
69 shall be displayed except when the vehicular traffic control signal is being operated in the  
70 flashing mode. At those times, the pedestrian signal indications shall not be displayed.

71 02 Except as provided in Paragraph 3, when the pedestrian signal heads associated with a  
72 crosswalk are displaying either a steady WALKING PERSON (symbolizing WALK) or a  
73 flashing UPRAISED HAND (symbolizing DONT WALK) signal indication, a steady ~~or a~~  
74 ~~flashing~~ red signal indication shall be shown to any conflicting vehicular movement that is  
75 approaching the intersection or midblock location perpendicular or nearly perpendicular  
76 to the crosswalk.

77 02a When the pedestrian signal heads at a pedestrian hybrid beacon (see Chapter ~~4E~~ 4K)  
78 location are displaying a flashing UPRAISED HAND (symbolizing DONT WALK) signal  
79 indication, a flashing red signal indication shall be shown to any conflicting vehicular  
80 movement that is approaching the intersection or midblock location perpendicular or  
81 nearly perpendicular to the crosswalk.

82 03 When pedestrian signal heads are used, a WALKING PERSON (symbolizing WALK)  
83 signal indication shall be displayed only when pedestrians are permitted to leave the curb  
84 or shoulder.

85 04 A pedestrian change interval consisting of a flashing UPRAISED HAND (symbolizing  
86 DONT WALK) signal indication shall begin immediately following the WALKING  
87 PERSON (symbolizing WALK) signal indication. Following the pedestrian change  
88 interval, a buffer interval consisting of a steady UPRAISED HAND (symbolizing DONT  
89 WALK) signal indication shall be displayed for at least ~~3~~ 2 seconds prior to the release of  
90 any conflicting vehicular movement. The sum of the time of the pedestrian change interval  
91 and the buffer interval shall not be less than the calculated pedestrian clearance time (see  
92 Paragraphs 7 through 16). The buffer interval shall not begin later than the beginning of  
93 the red clearance interval, if used.

94 Option:

95 05 During the yellow change interval, the UPRAISED HAND (symbolizing DON'T WALK)  
96 signal indication may be displayed as either a flashing indication, a steady indication, or a  
97 flashing indication for an initial portion of the yellow change interval and a steady indication for  
98 the remainder of the interval.

99 Support:

100 06 Figure 4E-2 illustrates the pedestrian intervals and their possible relationships with  
101 associated vehicular signal phase intervals.

102

103 *Guidance:*  
104 07 *Except as provided in Paragraph 8, the pedestrian clearance time should be sufficient to*  
105 *allow a pedestrian crossing in the crosswalk who left the curb or ~~shoulder~~ edge of pavement at*  
106 *the end of the WALKING PERSON (symbolizing WALK) signal indication to travel at a walking*  
107 *speed of 3.5 feet per second to at least the far side of the traveled way or to a median of sufficient*  
108 *width for pedestrians to wait.*

109 *Option:*  
110 08 A walking speed of up to 4 feet per second may be used to evaluate the sufficiency of the  
111 pedestrian clearance time at locations where an extended pushbutton press function has been  
112 installed to provide slower pedestrians an opportunity to request and receive a longer pedestrian  
113 clearance time. Passive pedestrian detection may also be used to automatically adjust the  
114 pedestrian clearance time based on the pedestrian's actual walking speed or actual clearance of  
115 the crosswalk.

116 09 The additional time provided by an extended pushbutton press to satisfy pedestrian clearance  
117 time needs may be added to either the walk interval or the pedestrian change interval.

118 *Guidance:*  
119 10 *Where pedestrians who walk slower than 3.5 feet per second, or pedestrians who use*  
120 *wheelchairs, routinely use the crosswalk, a walking speed of less than 3.5 feet per second should*  
121 *be considered in determining the pedestrian clearance time.*

122 11 *Except as provided in Paragraph 12, the walk interval should be at least 7 seconds in length*  
123 *so that pedestrians will have adequate opportunity to leave the curb or shoulder before the*  
124 *pedestrian clearance time begins.*

125 *Option:*  
126 12 If pedestrian volumes and characteristics do not require a 7-second walk interval, walk  
127 intervals as short as 4 seconds may be used.

128 *Support:*  
129 13 The walk interval is intended for pedestrians to start their crossing. The pedestrian clearance  
130 time is intended to allow pedestrians who started crossing during the walk interval to complete  
131 their crossing. Longer walk intervals are often used when the duration of the vehicular green  
132 phase associated with the pedestrian crossing is long enough to allow it.

133 *Guidance:*  
134 14 *The total of the walk interval and pedestrian clearance time should be sufficient to allow a*  
135 *pedestrian crossing in the crosswalk who left the pedestrian detector (or, if no pedestrian*  
136 *detector is present, a location 6 feet from the face of the curb or from the edge of the pavement)*  
137 *at the beginning of the WALKING PERSON (symbolizing WALK) signal indication to travel at a*  
138 *walking speed of 3 feet per second to the far side of the traveled way being crossed or to the*  
139 *median if a two-stage pedestrian crossing sequence is used. Any additional time that is required*  
140 *to satisfy the conditions of this paragraph should be added to the walk interval.*

141 *Option:*  
142 15 On a street with a median of sufficient width for pedestrians to wait, a pedestrian clearance  
143 time that allows the pedestrian to cross only from the curb or shoulder to the median may be  
144 provided.

145 **Standard:**  
146 16 Where the pedestrian clearance time is sufficient only for crossing from the curb or  
147 shoulder to a median of sufficient width for pedestrians to wait, median-mounted  
148 pedestrian signals (with pedestrian detectors if actuated operation is used) shall be  
149 provided (see Sections ~~4E.08 and 4E.09~~ 4I.06) and signing such as the R10-3d sign (see  
150 Section 2B.52) shall be provided to notify pedestrians to cross only to the median to await  
151 the next WALKING PERSON (symbolizing WALK) signal indication.

152 *Guidance:*

153 17 Where median-mounted pedestrian signals and detectors are provided, the use of accessible  
154 pedestrian signals (see Sections ~~4E.09~~ 4J.01 through ~~4E.13~~ 4J.05) should be considered.

155 *Option:*

156 18 During the transition into preemption, the walk interval and the pedestrian change interval  
157 may be shortened or omitted as described in Section ~~4D.27~~ 4E.19.

158 19 At intersections with high pedestrian volumes and high conflicting turning vehicle volumes,  
159 a brief leading pedestrian interval, during which an advance WALKING PERSON (symbolizing  
160 WALK) indication is displayed for the crosswalk while red indications continue to be displayed  
161 to parallel through and/or turning traffic, may be used to reduce conflicts between pedestrians  
162 and turning vehicles.

163 *Guidance:*

164 ~~20 If a leading pedestrian interval is used, the use of accessible pedestrian signals (see Sections~~  
165 ~~4E.09 4J.01 through 4E.13 4J.05) should be considered.~~ [This language is being revised and  
166 moved to Standard language to make the use of accessible pedestrian signals mandatory when a  
167 leading pedestrian interval (LPI) is used. LPIs shorten the crossing time for blind pedestrians,  
168 make crossing more difficult and more dangerous. Blind pedestrians have no way of knowing  
169 when the leading pedestrian interval activates unless accessible pedestrian signals are used.]

170 **Standard:**

171 20 If a leading pedestrian interval is used for any pedestrian movement at a signalized  
172 location, accessible pedestrian signals (see Sections ~~4E.09~~ 4J.01 through ~~4E.13~~ 4J.05) shall  
173 be used for all pedestrian movements at the signalized location. [This language was moved  
174 from Guidance to Standard language to require the use of accessible pedestrian signals when  
175 leading pedestrian intervals are used]

176 *Support:*

177 21 If a leading pedestrian interval is used without accessible features, pedestrians who are  
178 visually impaired can be expected to begin crossing at the onset of the vehicular movement when  
179 drivers are not expecting them to begin crossing.

180 *Guidance:*

181 22 If a leading pedestrian interval is used, it should be at least 3 seconds in duration and should  
182 be timed to allow pedestrians to cross at least one lane of traffic or, in the case of a large corner  
183 radius, to travel far enough for pedestrians to establish their position ahead of the turning traffic  
184 before the turning traffic is released.

185 23 If a leading pedestrian interval is used, consideration should be given to prohibiting turns  
186 across the crosswalk during the leading pedestrian interval.

187 Support:  
188 <sup>24</sup> At intersections with pedestrian volumes that are so high that drivers have difficulty finding  
189 an opportunity to turn across the crosswalk, the duration of the green interval for a parallel  
190 concurrent vehicular movement is sometimes intentionally set to extend beyond the pedestrian  
191 clearance time to provide turning drivers additional green time to make their turns while the  
192 pedestrian signal head is displaying a steady UPRAISED HAND (symbolizing DONT WALK)  
193 signal indication after pedestrians have had time to complete their crossings.