



# 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
- Revised by Technical Committee: 01/11/2021
- Approved by NCUTCD Council: 01/19/2021

*This is a proposal for recommended changes to the MUTCD that has been approved by the NCUTCD Council. This proposal does not represent a revision of the MUTCD and does not constitute official MUTCD standards, guidance, or options. It 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 modifies the Guidance regarding the use of Accessible Pedestrian Signals (APS) when Leading Pedestrian Intervals (LPI) are used at a traffic signal and adds a Standard to establish a minimum duration for the display of a WALKING PERSON (symbolizing WALK) indication where LPIs are used.

### 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

33 start their crossing until the LPI terminates. Due to a blind pedestrian’s slower perception-  
34 reaction times, they won’t initiate the cross until several seconds after the LPI has terminated. If  
35 the LPI extends through a large part of the pedestrian interval, blind pedestrians may not have  
36 enough 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 Providing 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 STC changes from what was sent to Sponsors for Review:
- 53 1) Change the Guidance regarding the use of APS where LPIs are used from “should be  
54 considered” to “should be used” and keep as Guidance rather than change to a Standard as  
55 originally proposed,
  - 56 2) Add a Standard to specify a minimum duration for the display of a WALKING PERSON  
57 indication where an LPI is used to provide a WALKING PERSON indication of sufficient  
58 duration that pedestrians with vision disabilities can identify that the WALKING PERSON  
59 indication is being displayed and begin their crossing,
  - 60 3) Change the word “shoulder” to the phrase “edge of pavement” on lines 119, 137, 138, 157,  
61 and 161 to be consistent with the rest of the Manual,
  - 62 4) Change “Sections” to “Section” on line 163 because it only refers to one section,
  - 63 5) Change “who are visually impaired” to “with vision disabilities” on lines 208 & 209 for  
64 consistency with the NPA, and
  - 65 6) Revised Figure 4E-2 reference to 4I-2 on line 115 for consistency with the NPA.

66  
67 **RECOMMENDED MUTCD CHANGES**

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

76 PART 4. HIGHWAY TRAFFIC SIGNALS

77  
78 CHAPTER ~~4E~~ 4I. ~~TRAFFIC CONTROL SIGNALS FOR FREEWAY ENTRANCE~~  
79 ~~RAMP~~ PEDESTRIAN CONTROL FEATURES

80 [Renumbered and renamed per 14A-STC-01, June 2014]

81  
82 Section ~~4E.06~~ 4I.07 Pedestrian Intervals and Signal Phases [Renumbered per 14A-STC-01,  
83 June 2014]

84 Standard:

85 01 At intersections equipped with pedestrian signal heads, the pedestrian signal indications  
86 shall be displayed except when the vehicular traffic control signal is being operated in the  
87 flashing mode. At those times, the pedestrian signal indications shall not be displayed.

88 02 Except as provided in Paragraph 3, [14A-STC-01, June 2014] when the pedestrian signal  
89 heads associated with a crosswalk are displaying either a steady WALKING PERSON  
90 (symbolizing WALK) or a flashing UPRAISED HAND (symbolizing DONT WALK) signal  
91 indication, a steady ~~or a flashing~~ red signal indication shall be shown to any conflicting  
92 vehicular movement that is approaching the intersection or midblock location  
93 perpendicular or nearly perpendicular to the crosswalk.

94 02a When the pedestrian signal heads at a pedestrian hybrid beacon (see Chapter ~~4E~~ 4K)  
95 location are displaying a flashing UPRAISED HAND (symbolizing DONT WALK) signal  
96 indication, a flashing red signal indication shall be shown to any conflicting vehicular  
97 movement that is approaching the intersection or midblock location perpendicular or  
98 nearly perpendicular to the crosswalk. [14A-STC-01, June 2014]

99 03 When pedestrian signal heads are used, a WALKING PERSON (symbolizing WALK)  
100 signal indication shall be displayed only when pedestrians are permitted to leave the curb  
101 or shoulder.

102 04 A pedestrian change interval consisting of a flashing UPRAISED HAND (symbolizing  
103 DONT WALK) signal indication shall begin immediately following the WALKING  
104 PERSON (symbolizing WALK) signal indication. Following the pedestrian change  
105 interval, a buffer interval consisting of a steady UPRAISED HAND (symbolizing DONT  
106 WALK) signal indication shall be displayed for at least ~~3~~ 2 seconds prior to the release of  
107 any conflicting vehicular movement. The sum of the time of the pedestrian change interval  
108 and the buffer interval shall not be less than the calculated pedestrian clearance time (see  
109 Paragraphs 7 through 16). The buffer interval shall not begin later than the beginning of  
110 the red clearance interval, if used.

111 Option:

112 05 During the yellow change interval, the UPRAISED HAND (symbolizing DON'T WALK)  
113 signal indication may be displayed as either a flashing indication, a steady indication, or a  
114 flashing indication for an initial portion of the yellow change interval and a steady indication for  
115 the remainder of the interval.

116 Support:

117 06 Figure ~~4E~~ 4I-2 illustrates the pedestrian intervals and their possible relationships with  
118 associated vehicular signal phase intervals.

119 *Guidance:*  
120 07 *Except as provided in Paragraph 8, the pedestrian clearance time should be sufficient to*  
121 *allow a pedestrian crossing in the crosswalk who left the curb or ~~shoulder~~ [edge of pavement](#) at*  
122 *the end of the WALKING PERSON (symbolizing WALK) signal indication to travel at a walking*  
123 *speed of 3.5 feet per second to at least the far side of the traveled way or to a median of sufficient*  
124 *width for pedestrians to wait.*

125 *Option:*

126 08 A walking speed of up to 4 feet per second may be used to evaluate the sufficiency of the  
127 pedestrian clearance time at locations where an extended pushbutton press function has been  
128 installed to provide slower pedestrians an opportunity to request and receive a longer pedestrian  
129 clearance time. Passive pedestrian detection may also be used to automatically adjust the  
130 pedestrian clearance time based on the pedestrian's actual walking speed or actual clearance of  
131 the crosswalk.

132 09 The additional time provided by an extended pushbutton press to satisfy pedestrian clearance  
133 time needs may be added to either the walk interval or the pedestrian change interval.

134 *Guidance:*

135 10 *Where pedestrians who walk slower than 3.5 feet per second, or pedestrians who use*  
136 *wheelchairs, routinely use the crosswalk, a walking speed of less than 3.5 feet per second should*  
137 *be considered in determining the pedestrian clearance time.*

138 11 *Except as provided in Paragraph 12, the walk interval should be at least 7 seconds in length*  
139 *so that pedestrians will have adequate opportunity to leave the curb or ~~shoulder~~ [edge of](#)*  
140 *[pavement](#) before the pedestrian clearance time begins.*

141 *Option:*

142 12 If pedestrian volumes and characteristics do not require a 7-second walk interval, walk  
143 intervals as short as 4 seconds may be used.

144 *Support:*

145 13 The walk interval is intended for pedestrians to start their crossing. The pedestrian clearance  
146 time is intended to allow pedestrians who started crossing during the walk interval to complete  
147 their crossing. Longer walk intervals are often used when the duration of the vehicular green  
148 phase associated with the pedestrian crossing is long enough to allow it.

149 *Guidance:*

150 14 *The total of the walk interval and pedestrian clearance time should be sufficient to allow a*  
151 *pedestrian crossing in the crosswalk who left the pedestrian detector (or, if no pedestrian*  
152 *detector is present, a location 6 feet from the face of the curb or from the edge of the pavement)*  
153 *at the beginning of the WALKING PERSON (symbolizing WALK) signal indication to travel at a*  
154 *walking speed of 3 feet per second to the far side of the traveled way being crossed or to the*  
155 *median if a two-stage pedestrian crossing sequence is used. Any additional time that is required*  
156 *to satisfy the conditions of this paragraph should be added to the walk interval.*

157 *Option:*

158 15 On a street with a median of sufficient width for pedestrians to wait, a pedestrian clearance  
159 time that allows the pedestrian to cross only from the curb or ~~shoulder~~ [edge of pavement](#) to the  
160 median may be provided.

161 **Standard:**  
162 16 Where the pedestrian clearance time is sufficient only for crossing from the curb or  
163 ~~shoulder~~ **edge of pavement** to a median of sufficient width for pedestrians to wait, median-  
164 mounted pedestrian signals (with pedestrian detectors if actuated operation is used) shall  
165 be provided (see Sections ~~4E.08 and 4E.09~~ **4I.06**) and signing such as the R10-3d sign (see  
166 Section 2B.52) shall be provided to notify pedestrians to cross only to the median to await  
167 the next WALKING PERSON (symbolizing WALK) signal indication.

168 *Guidance:*  
169 17 Where median-mounted pedestrian signals and detectors are provided, the use of accessible  
170 pedestrian signals (see Sections ~~4E.09~~ **4J.01** through ~~4E.13~~ **4J.05**) should be considered.

171 *Option:*  
172 18 During the transition into preemption, the walk interval and the pedestrian change interval  
173 may be shortened or omitted as described in Section ~~4D.27~~ **4E.19**.  
174 19 At intersections with high pedestrian volumes and high conflicting turning vehicle volumes,  
175 a brief leading pedestrian interval, during which an advance WALKING PERSON (symbolizing  
176 WALK) indication is displayed for the crosswalk while red indications continue to be displayed  
177 to parallel through and/or turning traffic, may be used to reduce conflicts between pedestrians  
178 and turning vehicles.

179 *Guidance:*  
180 20 If a leading pedestrian interval is used, ~~the use of~~ accessible pedestrian signals (see Sections  
181 ~~4E.09 through 4E.13~~ **Chapter 4K**) should be ~~considered~~ **used**.

182 **Standard:**  
183 ~~20a If a leading pedestrian interval is used for any pedestrian movement at a signalized~~  
184 ~~location, accessible pedestrian signals (see Section 4J.01) shall be used for all pedestrian~~  
185 ~~movements at the signalized location~~ **At locations where a leading pedestrian interval is**  
186 **used, the minimum time for the WALKING PERSON (symbolizing WALK) indication**  
187 **shall be the time for the leading pedestrian interval plus 7 seconds.**

188 *Support:*  
189 21 If a leading pedestrian interval is used without accessible features, pedestrians ~~who are~~  
190 ~~visually impaired~~ **with vision disabilities** can be expected to begin crossing at the onset of the  
191 vehicular movement when drivers are not expecting them to begin crossing.

192 *Guidance:*  
193 22 *If a leading pedestrian interval is used, it should be at least 3 seconds in duration and should*  
194 *be timed to allow pedestrians to cross at least one lane of traffic or, in the case of a large corner*  
195 *radius, to travel far enough for pedestrians to establish their position ahead of the turning traffic*  
196 *before the turning traffic is released.*

197 23 If a leading pedestrian interval is used, consideration should be given to prohibiting turns  
198 across the crosswalk during the leading pedestrian interval.

199 *Support:*  
200 24 At intersections with pedestrian volumes that are so high that drivers have difficulty finding  
201 an opportunity to turn across the crosswalk, the duration of the green interval for a parallel  
202 concurrent vehicular movement is sometimes intentionally set to extend beyond the pedestrian  
203 clearance time to provide turning drivers additional green time to make their turns while the  
204 pedestrian signal head is displaying a steady UPRAISED HAND (symbolizing DONT WALK)  
205 signal indication after pedestrians have had time to complete their crossings.