



National Committee on Uniform Traffic Control Devices

13236 North 7th Street, Suite 4-259, Phoenix, Arizona 85022
Phone/Text: 231-4-NCUTCD (231-462-8823)
E-mail: secretary@ncutcd.org Website: <https://ncutcd.org>

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National Committee on Uniform Traffic Control Devices (NCUTCD) Recommended Changes to Proposed Text for 11th Edition of the MUTCD Docket Number: FHWA-2020-0001

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Federal Register Item Number: 432 (see listing below)

NPA MUTCD Section Number: Chapter 4L

Legend: Base text shown in proposal is the NPA “clean” proposed text.

- [NCUTCD recommendation for text to be added in final rule.](#)
- ~~NCUTCD recommendation for text to be deleted in final rule.~~
- [NCUTCD recommendation for text to be moved/relocated in final rule.](#)
- NPA text that was not previously approved by NCUTCD but is now approved.
- Explanatory note: [\[Note that explains purpose of recommended change.\]](#)

The following pages present NCUTCD recommendations for changes to the MUTCD NPA proposed text, tables, and figures for Chapter 4L. Below is a short summary of the NCUTCD position for each section of this chapter. A more detailed summary is provided at the beginning of each section.

- NPA #432, Section 4L.01: NCUTCD agrees with NPA content.
- NPA #432, Section 4L.02: Changes recommended based on Council action in spring 2021.
- NPA #432, Section 4L.03: Changes recommended based on Council action in spring 2021.

Section 4L.01 Comments: NCUTCD agrees with 4L.01 as presented in the NPA.

Section 4L.01 Application of Rectangular Rapid Flashing Beacons

Option:

A pedestrian-activated rectangular rapid flashing beacon (RRFB) may be used to provide supplemental emphasis to pedestrian, school, and trail warning signs at marked crosswalks across uncontrolled approaches.

Standard:

An RRFB shall only be installed to function as a Warning Beacon (see Section 4S.03). Except as otherwise provided in this Chapter, all other provisions of the MUTCD applicable to Warning Beacons shall apply to RRFBs.

An RRFB shall only be used to supplement a post-mounted W11-2 (Pedestrian), S1-1 (School), or W11-15 (Trail) crossing warning sign with a diagonal downward arrow (W16-7P) plaque, or an overhead-mounted W11-2, S1-1, or W11-15 crossing warning sign, located at or immediately adjacent to a marked crosswalk.

Except for crosswalks across the approach to or egress from a roundabout, or crosswalks across free-flow right turn lanes separated by a channelizing island, an RRFB

40 shall not be used for crosswalks across approaches controlled by YIELD signs, STOP signs,
41 traffic control signals, or pedestrian hybrid beacons.

42 Option:

43 In the event sight distance approaching the crosswalk at which an RRFB is used is less than
44 deemed necessary by the engineer, an additional RRFB may be installed on that approach in
45 advance of the crosswalk, as a Warning Beacon to supplement a W11-2 (Pedestrian), S1-1
46 (School), or W11-15 (Trail) crossing warning sign with an AHEAD (W16-9P) or distance
47 (W16-2P or W16-2aP) plaque.

48 **Standard:**

49 **If an additional RRFB is installed on the approach in advance of the crosswalk, it shall**
50 **be supplemental to and not a replacement for the RRFB at the crosswalk itself.**

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53 **Section 4L.02 Comments: NCUTCD agrees with 4L.02 as presented in the NPA with editorial**
54 **revisions.**

55 **Section 4L.02 Design of Rectangular Rapid Flashing Beacons**

56 **Standard:**

57 Each RRFB unit shall consist of two rapidly-flashed rectangular-shaped yellow
58 indications, each with an LED-array based pulsing light source. The size of each RRFB
59 indication shall be at least 5 inches wide by at least 2 inches high.

60 The two RRFB indications for each RRFB unit shall be aligned horizontally, with the
61 longer dimension horizontal and with a minimum space between the two indications of at
62 least 7 inches, measured from nearest edge of one indication to the nearest edge of the other
63 indication. The outside edges of the RRFB indications, including any housings, shall not
64 project beyond the outside edges of the W11-2, S1-1, or W11-15 sign that it supplements.

65 An RRFB unit shall not be installed independent of the crossing warning signs for the
66 approach that the RRFB faces. If the RRFB unit is supplementing a post-mounted sign,
67 the RRFB unit shall be installed on the same support as the associated W11-2, S1-1, or
68 W11-15 crossing warning sign and plaque. If the RRFB unit is supplementing an
69 overhead-mounted sign, the RRFB unit shall be mounted directly below the bottom of the
70 sign.

71 Option:

72 As a specific exception to Paragraph 6 of Section 4S.01, the RRFB unit associated with a
73 post-mounted sign and plaque may be located between and immediately adjacent to the bottom
74 of the crossing warning sign and the top of the supplemental downward diagonal arrow plaque
75 (or, in the case of a supplemental advance sign, the AHEAD or distance plaque) or within 12
76 inches above the crossing warning sign, rather than the recommended minimum of 12 inches
77 above or below the sign assembly.

78 **Standard:**

79 **For any approach on which RRFBs are used to supplement post-mounted signs, at least**
80 **two W11-2, S1-1, or W11-15 crossing warning signs (each with an RRFB unit and a W16-**
81 **7P plaque) shall be installed at the crosswalk, one on the right-hand side of the roadway**
82 **and one on the left-hand side of the roadway.**

83 Guidance:

84 On a divided highway, the left-hand side RRFB assembly should be installed on the median,
85 if practical, rather than on the far-left side of the highway.

86 **Standard:**

87 **For any approach on which RRFBs are used to supplement an overhead-mounted sign,**
88 **at least one W11-2 , S1-1, or W11-15 crossing warning sign (without a W16-7P plaque)**
89 **located approximately over the center of the lanes of the approach (or where optimum**
90 **visibility can be achieved) shall be installed at the crosswalk.**

91 Option:

92 RRFBs may be installed at intersections with more than one crosswalks on the same
93 uncontrolled approach. (editorial)

94 **Standard:**

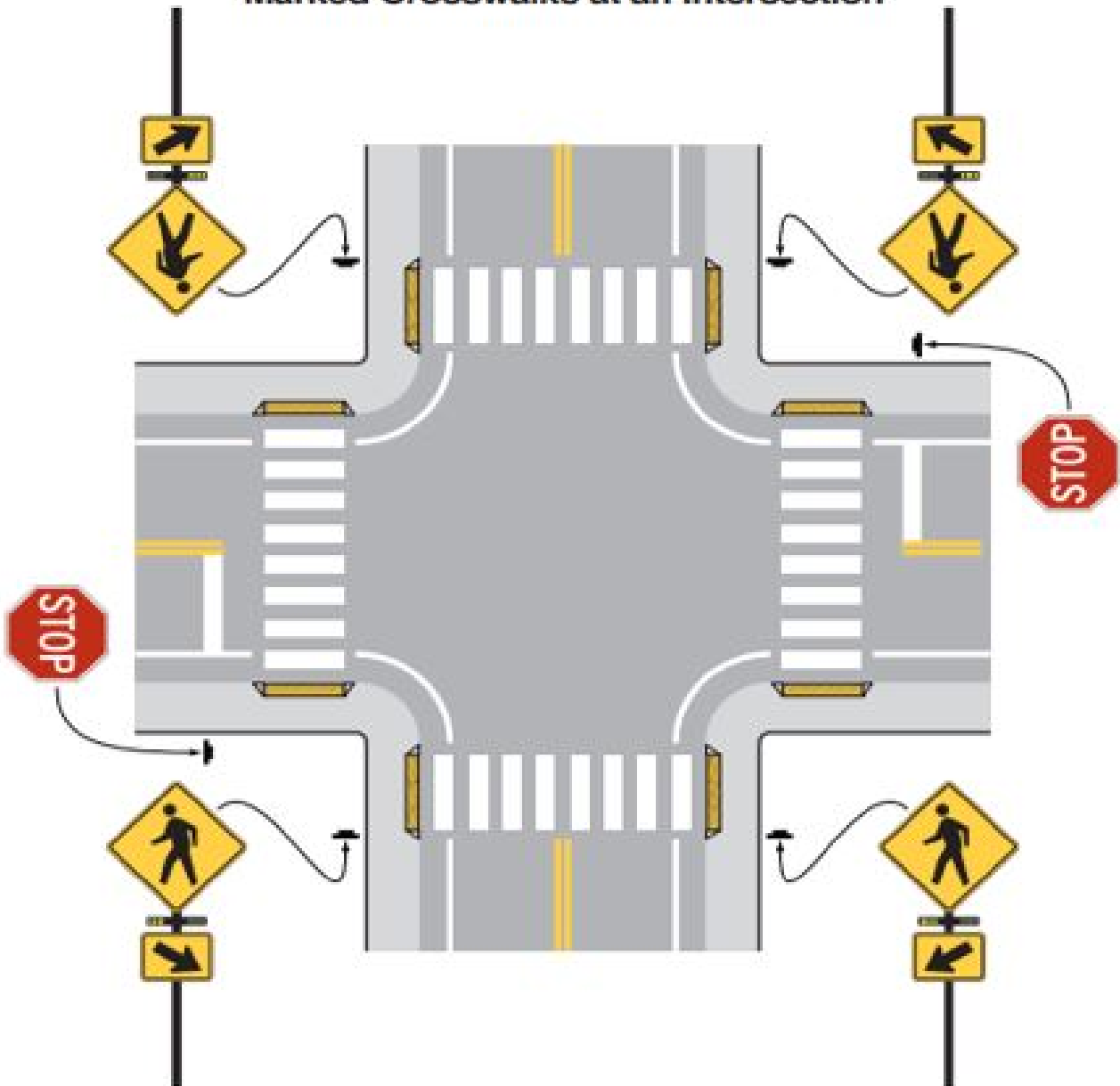
95 **If used at intersections, the design of the RRFBs shall conform to the requirements for**
96 **post-mounted or overhead placement described in paragraph X13. (editorial)**

97 Option:

98 If used at intersections with two crosswalks on an uncontrolled approach, post-mounted
99 RRFBs may be installed to face only one direction of travel at the first crosswalk that traffic
100 encounters (see Figure 4L-1).

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Figure 4L-1. Example of RRFBs at Uncontrolled, Marked Crosswalks at an Intersection



Notes:

1. When activated, the RRFBs on both approaches shall simultaneously commence operation of their rapid flashing indications and shall cease operation simultaneously.
2. If placed overhead, follow the requirements of Section 4L.02 paragraph 07, except that the signs may be placed approximately over the center of the intersection.

106 The light intensity of the yellow indications during daytime conditions shall meet the
107 minimum specifications for Class 1 yellow peak luminous intensity in the Society of Automotive
108 Engineers (SAE) Standard J595 (Directional Flashing Optical Warning Devices for Authorized
109 Emergency, Maintenance, and Service Vehicles) dated January 2005 or the minimum
110 specifications in subsequent versions of SAE J595.

111 If the RRFB indications are so bright that they cause excessive glare during nighttime
112 conditions, an automatic signal dimming device may be used to reduce the brilliance of the
113 RRFB indications during nighttime conditions.

114 **Standard:**

115 **If pedestrian push button detectors (rather than passive detection) are used to actuate**
116 **the RRFB indications, a PUSH BUTTON TO TURN ON WARNING LIGHTS (R10-25)**
117 **sign (see Section 2B.62) shall be installed explaining the purpose and use of the pedestrian**
118 **push button detector.**

119 *Guidance:*

120 *An audible information device should be used with RRFBs to assist pedestrians with ~~visual~~*
121 *vision disabilities.* (editorial)

122 *Option:*

123 A small light directed at and visible to pedestrians in the crosswalk may be installed integral
124 to the RRFB or pedestrian push button detector to give confirmation that the RRFB is in
125 operation.

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128 **Section 4L.03 Comments: NCUTCD agrees with 4L.03 as presented in the NPA.**

129 **Section 4L.03 Operation of Rectangular Rapid Flashing Beacons**

130 **Standard:**

131 **The RRFB shall be normally dark, shall initiate operation only upon pedestrian**
132 **actuation, and shall cease operation at a predetermined time after the pedestrian actuation**
133 **or, with passive detection, after the pedestrian clears the crosswalk.**

134 **All RRFB units associated with a given crosswalk (including those with an advance**
135 **crossing sign, if used) shall, when activated, simultaneously commence operation of their**
136 **rapid flashing indications and shall cease operation simultaneously.**

137 *Guidance:*

138 *The duration of a predetermined period of operation of the RRFBs following each actuation*
139 *should be based on the procedures for the timing of pedestrian clearance times for pedestrian*
140 *signals (see Section 4I.07).*

141 **Standard:**

142 **The predetermined flash period shall be immediately initiated each and every time that**
143 **a pedestrian is detected either through passive detection or as a result of a pedestrian**
144 **pressing a push button detector, including when pedestrians are detected while the RRFBs**
145 **are already flashing and when pedestrians are detected immediately after the RRFBs have**
146 **ceased flashing.**

147 **When activated, the two yellow indications in each RRFB unit shall flash in a rapidly**
148 **flashing sequence. As a specific exception to the requirements for the flash rate of beacons**

149 provided in Paragraph 3 of Section 4S.01, RRFBs shall use a much faster flash rate and
150 shall provide 75 flashing sequences per minute.

151 Except as provided in Paragraph 7, during each 800-millisecond flashing sequence, the
152 left and right RRFB indications shall operate using the following sequence:

- 153 A. The RRFB indication on the left-hand side shall be illuminated for approximately
154 50 milliseconds.
- 155 B. Both RRFB indications shall be dark for approximately 50 milliseconds.
- 156 C. The RRFB indication on the right-hand side shall be illuminated for approximately
157 50 milliseconds.
- 158 D. Both RRFB indications shall be dark for approximately 50 milliseconds.
- 159 E. The RRFB indication on the left-hand side shall be illuminated for approximately
160 50 milliseconds.
- 161 F. Both RRFB indications shall be dark for approximately 50 milliseconds.
- 162 G. The RRFB indication on the right-hand side shall be illuminated for approximately
163 50 milliseconds.
- 164 H. Both RRFB indications shall be dark for approximately 50 milliseconds.
- 165 I. Both RRFB indications shall be illuminated for approximately 50 milliseconds.
- 166 J. Both RRFB indications shall be dark for approximately 50 milliseconds.
- 167 K. Both RRFB indications shall be illuminated for approximately 50 milliseconds.
- 168 L. Both RRFB indications shall be dark for approximately 250 milliseconds.

169 The flash rate of each individual RRFB indication, as applied over the full flashing
170 sequence, shall not be more than 5 flashes per second, to avoid frequencies that might cause
171 seizures.

172 Option:

173 Existing RRFB units that use the flashing sequence that was specified in the Interim
174 Approval 11 memorandum and a subsequent interpretation (the RRFB indication on the left-hand
175 side emits two slow pulses of light after which the RRFB indication on the right-hand side emits
176 four rapid pulses of light followed by one long pulse of light) may be retained for the remainder
177 of their useful service life.

178 **Standard:**

179 **If an audible information device is used in conjunction with an RRFB, the audible**
180 **information device shall not use vibrotactile indications or percussive indications.**

181 *Guidance:*

182 *If an audible information device is used in conjunction with an RRFB, the audible message*
183 *should be a speech message that says, “Yellow lights are flashing”. The audible message*
184 *should be spoken twice.*