



**California Traffic Control Devices Committee (CTCDC)  
Agenda Item Report**



<b>Meeting Date:</b> November 02, 2023	<b>From:</b> Kevin Murai, PE, Caltrans
<b>Item Number:</b> 23-11	
<b>Sponsored By:</b> Yue Wang, PE, Caltrans	<b>Presented By:</b> Kevin Murai, PE, Caltrans
<b>Description:</b> Revision to California Manual on Uniform Traffic Control Devices (CA MUTCD) Section 2A.07, paragraph 06 and Table 2A-1.	

**Recommendation:**

Motion by committee to recommend inclusion of the proposed revision to CA MUTCD Section 2A.07, paragraph 06 and Table 2A-1 to revise the restriction of using Light Emitting Diode (LED) units in the border of signs.

**Agency Making Request/Sponsor:**

Kevin Murai, Caltrans / Yue Wang, CTCDC Member.

**Background:**

The use of LEDs on traffic signs was adopted by FHWA in the national MUTCD 2009 original edition, January 2010. Based on the CA MUTCD 2011 Draft Public Comments and CTCDC Workshop Resolution, deferred to 2012, there were concerns of limited research and experience of LEDs on sign borders. The CTCDC accepted the recommendation of limiting the application of LEDs on borders to regulatory or warning signs in May 2014, agenda item 14-16, Amendments to Various Sections/Figures of Part 2 Signs of the CA MUTCD 2012, January 2012, based on Public Comments. Currently, the experience in using LEDs on sign borders resulting in improved safety has led Caltrans District 11 requesting the use of LEDs on guide sign borders to enhance guide signs prior to the San Ysidro Port of Entry (Southbound 5/805 in San Diego County) and avoid motorist from entering Mexico unintentionally. The technological improvements on the manufacturing of LEDs have increased the use of LED sign borders in California and other States. Requesting removing paragraph 06a of the CA MUTCD and using paragraph 06 and Table 2A-1 of the national MUTCD guidance for the flexibility of using LEDs on guide sign borders.

**Attachments:**

- Attachment A - Proposed Revision to CA MUTCD Section 2A.07.
- Attachment B - Proposed Revision to CA MUTCD Table 2A-1.
- Attachment C - Proposed use of LED guide sign borders by D11.



# ATTACHMENT A



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**Attachment A – Proposed Revision to CA MUTCD Section 2A.07.**

**Proposal:**

Note:

- Black text is consistent with the Federal MUTCD.
- Blue text is current text as amended for use in California.
- ~~Struck-out red~~ text is to be deleted from the CA MUTCD.
- Red text is newly proposed text.

Modify Section 2A.07 as shown:

**Section 2A.07 Retroreflectivity and Illumination**

Support:

01 There are many materials currently available for retroreflection and various methods currently available for the illumination of signs and object markers. New materials and methods continue to emerge. New materials and methods can be used as long as the signs and object markers meet the standard requirements for color, both by day and by night.

**Standard:**

02 **Regulatory, warning, and guide signs and object markers shall be retroreflective (see Section 2A.08) or illuminated to show the same shape and similar color by both day and night, unless otherwise provided in the text discussion in this Manual for a particular sign or group of signs.**

03 **The requirements for sign illumination shall not be considered to be satisfied by street or highway lighting.**

Option:

04 Sign elements may be illuminated by the means shown in Table 2A-1.

05 Retroreflection of sign elements may be accomplished by the means shown in Table 2A-2.

06 ~~Light Emitting Diode (LED) units may be used individually within the legend or symbol of a sign and in the border of a sign, except for changeable message signs, to improve the conspicuity, increase the legibility of sign legends and borders, or provide a changeable message.~~

06a ~~Light Emitting Diode (LED) units may be used in the border of regulatory or warning signs, except for Changeable Message Signs, to improve the conspicuity of signs.~~

**Standard:**

07 **Except as provided in Paragraphs 11 and 12, neither individual LEDs nor groups of LEDs shall be placed within the background area of a sign.**

08 **If used, the LEDs shall have a maximum diameter of 1/4 inch and shall be the following colors based on the type of sign:**

- A. ~~White or Red~~, if used with **STOP, DO NOT ENTER, or WRONG WAY signs.** ~~or YIELD signs.~~
- B. **White**, if used with regulatory signs **including other than STOP or YIELD signs.**
- C. ~~White or Yellow~~, if used with warning signs.
- D. **White, if used with guide signs.**
- E. ~~White, yellow, or Amber~~, if used with temporary traffic control signs **of warning type.**
- F. ~~White or yellow~~, if used with school area signs.

09 **If flashed, all LED units shall flash simultaneously at a rate of more than 50 and less than 60 times per minute.**

10 **The uniformity of the sign design shall be maintained without any decrease in visibility, legibility, or driver comprehension during either daytime or nighttime conditions.**



# ATTACHMENT B

**Attachment B – Proposed Revision to CA MUTCD Table 2A-1.**

**Proposal:**

Note:

- Black text is consistent with the Federal MUTCD.
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- Red text is newly proposed text.

Modify Table 2A-1 as shown:

**Table 2A-1. Illumination of Sign Elements**

Means of Illumination	Sign Element to be Illuminated
Light behind the sign face	<ul style="list-style-type: none"> <li>• Symbol or word message</li> <li>• Background</li> <li>• Symbol, word message, and background (through a translucent material)</li> </ul>
Attached or independently mounted light source designed to direct essentially uniform illumination onto the sign face	<ul style="list-style-type: none"> <li>• Entire sign face</li> </ul>
Light emitting diodes (LEDs)	<ul style="list-style-type: none"> <li><del>• Border of regulatory or warning signs</del></li> <li>• Symbol or word message</li> <li>• Portions of the sign border</li> </ul>
Other devices, or treatments that highlight the sign shape, color, or message: Luminous tubing Fiber optics Incandescent light bulbs Luminescent panels	<ul style="list-style-type: none"> <li>• Symbol or word message</li> <li>• Entire sign face</li> </ul>



# ATTACHMENT C

**Attachment C - Proposed use of LED guide sign borders by D11.**

Southbound 5/805 in San Diego County prior to the San Ysidro Port of Entry into Mexico.

