



# 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

Item No.: 24A-RW-04

## NCUTCD PROPOSAL FOR CHANGES TO THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES

**COMMITTEE / TASK FORCE:** RW Technical Committee  
**ITEM NUMBER:** 24A-RW-04  
**TOPIC:** Emergency Vehicle Weight Limit Signs  
**ORIGIN OF REQUEST:** Marc Lipschultz, previous RWSTC Member; Tim Haagsma (Chair), Mike Kimlinger, Scott Kuznicki  
**AFFECTED SECTIONS OF MUTCD:** Section 2B.64 (2023 MUTCD)

### DEVELOPMENT HISTORY:

Approved by RWSTC: 06/29/2023  
Approved by RWSTC: 01/10/2024 after 2023 MUTCD publication with 2023 text  
Approved by RWSTC following sponsor comments MM/DD/YYYY  
Approved by NCUTCD Council: MM/DD/YYYY

*This is a proposed change to the MUTCD that has been developed by a technical committee or joint task force 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 through the federal rulemaking process.*

### SUMMARY:

The 2015 *Fixing America's Surface Transportation Act* (FAST Act) amended 23 U.S.C. 127, *Vehicle weight limitations—Interstate System*, by revising the weight limit requirements for certain bridges on or near the Interstate System.

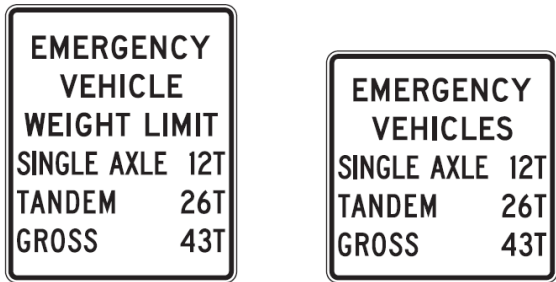
Many road agencies, in coordination with their bridge engineers, are therefore having to install “Emergency Vehicle Weight Limit” (EVWL) signs for certain bridges.

This ballot item was previously approved by RWTC in January 2021, but was never sent to sponsors due to NCUTCD’s decision in January 2021 given FHWA’s then-recent release of the NPA. Much of what was in this ballot item was used to inform NCUTCD’s approved Chapter 2B docket submission to the Federal Register. The 23B-RW-01 ballot item was not sent to sponsors in the fall of 2023 and accordingly, current ballot item 24A-RW-01 has been updated

36 to be based off the 11<sup>th</sup> Edition (2023) MUTCD published on Dec 19, 2023 to incorporate the  
37 other comments NCUTCD submitted to the Federal Register and to have the 2023 MUTCD text.

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39 **DISCUSSION:**

40 In the 2020 NPA, FHWA added several additional sentences and figures to Section 2B.66  
41 (Section 2B.59 in the 2009 MUTCD) regarding EVWL signs. Specifically they proposed to add  
42 the below two signs:



44 R12-7

R12-7aP

45 The 2023 MUTCD in Section 2B.64 (Weight limit signs) and Figure 2B-30 retained these two  
46 signs which were in the NPA.

47  
48 **Figure 1 – FHWA’s Recommended Sign Designs in 2020 NPA**

49  
50 Section 2B.59 of the 2009 MUTCD was previously amended by Item 17A-RW-03 which was  
51 approved by Council in June 2017. The Task Force for that item was aware of the EVWL issue  
52 but chose to defer addressing that issue for a later date, noting that *“NCUTCD is still evaluating*  
53 *[FHWA’s emergency vehicle load rating] memorandum and such signage may be addressed in*  
54 *a future ballot item.”*

55  
56 FHWA’s EVWL guidance defines two design vehicles for load rating purposes, the EV2 and  
57 EV3. These could be considered generally equivalent to 2-axle and 3-axle fire trucks  
58 respectively.

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60 In September 2018, FDOT sent out a survey to AASHTO’s Committee on Traffic Engineering  
61 regarding state DOT practices on such signs. The majority of states indicated that they had no  
62 plans to erect any such signs. In some states the state laws on weight limits are such that they  
63 do not need to post any such signs; at least one state indicated that they intend to rely on online  
64 bridge weight limit mapping alone in lieu of physical EVWL signs.

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66 The task force members agreed that EVWL signs should be avoided wherever possible. These  
67 signs have a very limited audience – principally fire departments – and other methods of  
68 outreach to this community, such as online mapping of bridge weight limits, would more  
69 effectively reach the target audience. If an agency relied solely on EVWL signs, then a fire truck  
70 drivers may have to evaluate whether he can drive over a particular structure while on his way  
71 to an emergency, which would be neither effective nor desirable. However, the FAST Act and  
72 the laws in some states are written such that some road agencies may be legally mandated to  
73 erect such EVWL signs, even if online mapping resources were also provided.

74

75 Regarding the sign design: FHWA’s sign design is inconsistent with Ballot item 17A.RW.03  
76 para 04 which stated that “*Vehicle weight restrictions should be depicted using gross vehicle*  
77 *weight. Vehicle weight restrictions using weight per axle or empty vehicle weight should be*  
78 *avoided unless local laws require the signs to depict weight restrictions in that fashion.*” In the  
79 case of EVWLs, the bridge load rating calculations need to consider axle weight limits, however  
80 there is no reason why the results couldn’t be converted to gross vehicle weights depending on  
81 the number of axles per emergency vehicle.

82  
83 The reason why 17A.RW.03 included that guidance was because per-axle weight limits  
84 essentially require drivers to do mental math to convert their gross weight into weight per axle.  
85 This is particularly tricky for vehicles with both single and tandem axle combinations. This  
86 would be difficult for any driver, but especially an emergency vehicle driver racing to an active  
87 emergency. Moreover many fire departments may lack the portable scales necessary to  
88 measure their weight per axle.

89  
90 Another concern is that the phrase “emergency vehicle weight limit” on FHWA’s recommended  
91 sign design could be misinterpreted by drivers as meaning “an emergency is in effect – ALL  
92 drivers must abide by the following weight limits”, or that some drivers may be unfamiliar with  
93 the word “tandem”.

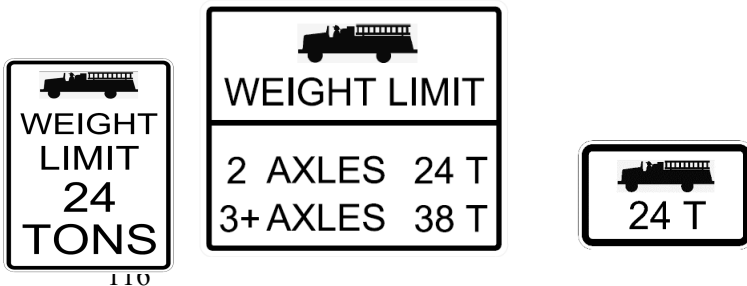
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95 Lastly, it was noted that FHWA’s recommended sign design uses 3” text height, which would be  
96 difficult to read on higher-speed roads.

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98 The Task Force ultimately recommended the sign designs shown in **Figure 2**. The use of the  
99 fire truck silhouette eliminates the lengthy and potentially confusing “emergency vehicle weight  
100 limit” phrase.

101  
102 The Task Force debated whether the fire truck could create issues because it theoretically  
103 excludes emergency vehicles that are not fire trucks, however it appears that it would be quite  
104 rare for non-fire-truck emergency vehicles (e.g. ambulances, or other less common vehicles  
105 used for emergency responses in special situations) to have weights equal to or greater than  
106 fire trucks.

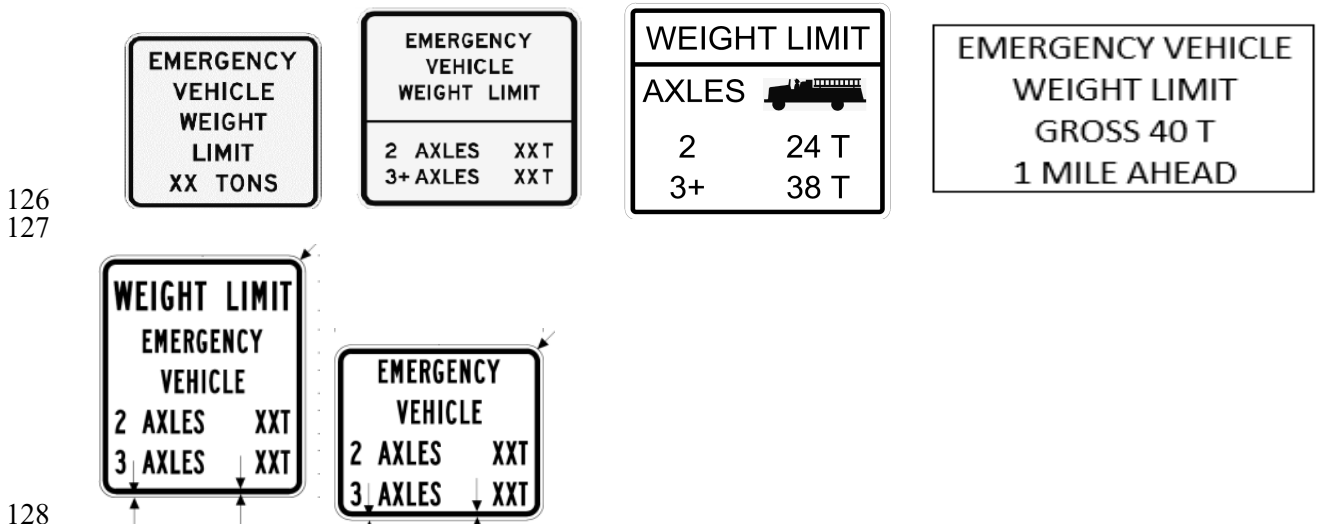
107  
108 The simpler sign (with just a single weight limit for all EVs) is preferable. For example if the  
109 weight limit for 3+ axle fire trucks is low enough that even an empty 3+ axle fire truck would not  
110 be able to legally traverse their bridge, then use of the larger sign would not provide any benefit  
111 to fire department response times.

112  
113 A small plaque option is also proposed for use beneath existing primary weight limit signs.  
114



117 **Figure 2 – Task Force Recommended Sign Designs**

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 120 **Figure 3** presents other sign design options considered but rejected by the Task Force. The  
 121 first two signs show the sign designs adopted by VDOT. The third sign shows the INDOT sign  
 122 (as indicated in their response to FDOT’s 2018 AASHTO survey). The fourth sign is similar to  
 123 the sign design recommended by the task force, but with the word “axles” shown side by side  
 124 with the fire truck silhouette. The fifth and sixth signs show Oregon DOT’s sign designs.



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 130 **Figure 3 – Other Sign Designs Considered by Task Force**

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 133 Based on these findings, the Task Force recommends the followings changes to Sections 2B.59  
 134 64 of the 2023 MUTCD:

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 136  
 137 **RECOMMENDED MUTCD CHANGES:**

138 The following present the proposed changes to the current MUTCD within the context of the  
 139 current MUTCD language. Proposed additions to the MUTCD are shown in blue underline and  
 140 proposed deletions from the MUTCD are shown in ~~red strikethrough~~. Changes previously  
 141 approved by NCUTCD Council (but not yet adopted by FHWA) are shown in green double  
 142 underline for additions and ~~green double strikethrough~~ for deletions. In some cases,  
 143 background comments may be provided with the MUTCD text. These comments are indicated  
 144 by bracketed white text in shaded green. Deletions made by a technical committee or task  
 145 force after initial distribution to sponsoring organizations are shown in ~~highlighted red~~  
 146 ~~strikethrough and Helvetica text~~. Additions made by a technical committee or task force after  
 147 initial distribution to sponsoring organizations are shown in underline blue and Helvetica text.

148  
 149 **Section 2B.64 Weight Limit Signs (R12-1 through R12-7)**

150 **Standard:**  
 151 01 **Weight limit signs (see Figure 2B-29 for some commonly used examples) shall be used to**  
 152 **indicate a section of highway or structure that has a vehicle weight restriction.**

154 *Guidance:*  
155 02 *The units shown on any weight limit sign should be consistent within a state or region with respect to*  
156 *pounds or tons.*

157 *Option:*

158 03 Where the restriction applies to axle weight rather than gross load, the legend AXLE WEIGHT  
159 LIMIT XX TONS or AXLE WEIGHT LIMIT XX LBS (R12-2) may be used.

160 04 In areas where multiple regulations are applicable, such as limiting both axle weight and gross  
161 vehicle weight, a WEIGHT LIMIT XX TONS PER AXLE, XX TONS GROSS (R12-4) sign combining  
162 the necessary messages on a single sign may be used.

163 05 Posting of specific load limits may be accomplished by use of the Weight Limit symbol sign (R12-  
164 5). A sign containing the legend WEIGHT LIMIT on the top two lines, and showing up to three different  
165 truck symbols and their respective weight limits for which restrictions apply may be used, with the weight  
166 limits displayed to the right of each symbol as XX T. A bottom line of legend stating GROSS WT may be  
167 included if needed for enforcement purposes.

168

169 *Support:*

170 06 A specialized hauling Vehicle is a single unit truck with multiple closely-spaced axles. Examples  
171 include dump trucks, construction vehicles, solid waste trucks and other hauling trucks. Specialized  
172 hauling vehicles typically have 4 to 7 axles.

173

174 *Option:*

175 07 The Weight Limit (R12-6) sign may be used to indicate vehicle weight restrictions for specialized  
176 hauling vehicles. [Displaying consecutive lines of legend WEIGHT LIMIT SINGLE 2-3 AXLES XX](#)  
177 [TONS, 4-5 AXLES XX TONS, 6+ AXLES XX TONS, and COMBINATION XX TONS may be used to](#)  
178 [indicate vehicle weight restrictions for Specialized Hauling Vehicles.](#)

179 **Standard:**

180 08 **The symbols shown on the R12-5 and R12-6 Weight Limit sign shall apply to all trucks of that**  
181 **configuration (single-unit, single-trailer or multi-trailer) regardless of the shape of the vehicle.**  
182 **Symbolic representations of other vehicle shapes or modifications of standard symbols shall not be**  
183 **used, [except for the emergency vehicle symbol on the R12-7a, R12-7b, or R12-7aP sign.](#)**

184 *Option:*

185 09 The facility type (such as “BRIDGE”) may be added to the legend of the sign to clarify the specific  
186 applicability of the weight limit, [or omitted if the posting applies to a different facility type.](#)

187 *Guidance:*

188 [09a Only trucks and axle configurations with weight limits should be shown.](#)

189 **Standard:**

190 10 **If the R12-5 sign depicts only one single-unit vehicle symbol, the weight limit associated with**  
191 **that single-unit vehicle symbol shall apply to all single-unit vehicles, regardless of number of axles.**

192 11 **The weight limit associated with the single-trailer vehicle symbol shall apply to all single-trailer**  
193 **vehicles, regardless of number of axles or vehicle shape.**

194 12 **The weight limit associated with the multi-trailer vehicle symbol shall apply to all multi-trailer**  
195 **vehicles with two or more trailers, regardless of number of axles or vehicle shape.**

196 13 **The weight limit sign (See Figure 2B-30) shall be located at the applicable section of highway**  
197 **or structure.**

198 14 **An additional weight limit sign, with an advisory distance or directional legend, shall be**  
199 **located in advance of the applicable section of highway or structure so that prohibited vehicles can**  
200 **detour or turn around prior to the limit zone.**

201 *Guidance:*

202 [14a The R12-5 and R12-6 Weight Limit sign should not show more than 3 symbols so as to not decrease](#)  
203 [comprehension of the sign by drivers.](#)

204 *Option:*

205 <sup>14b</sup> The symbols shown in the R12-5 Weight Limit sign may be modified to show additional axles.  
206 [Approved June 2017, 17A-RW-03]

207 <sup>14c</sup> The BRIDGE LIMITED TO ONE TRUCK AT A TIME sign (R12-8) may be used where conditions  
208 dictate. [Approved June 2017, 17A-RW-03]

209 Support:

210 <sup>15</sup> An emergency vehicle is designed to be used under emergency conditions to transport personnel and  
211 equipment to support the suppression of fires and mitigation of other hazardous situations. Emergency  
212 vehicles are typically operated by fire departments and are primarily equipped for firefighting, but are  
213 also used to respond to and mitigate other hazardous situations in an emergency. They can create higher  
214 load effects compared to non-emergency vehicles of similar weight.

215  
216 **Option:**

217 ~~<sup>16</sup> The Emergency Vehicle Weight Limit (R12-7) sign carrying the legend EMERGENCY VEHICLE~~  
218 ~~WEIGHT LIMIT SINGLE AXLE XX TONS, TANDEM XX TONS, and GROSS XX TONS may be~~  
219 ~~used to indicate vehicle weight restrictions for emergency vehicles.~~

220 **Guidance:**

221 <sup>16a</sup> *If state or federal law requires the posting of emergency vehicle weight limits at a bridge for fire*  
222 *trucks or other emergency vehicles, then the bridge should be posted using an Emergency Vehicle Weight*  
223 *Limit (R12-7 or R12-7a) sign, or by posting the Emergency Vehicle Weight Limit (R12-7aP) plaque*  
224 *beneath the primary weight limit sign.*

225 <sup>16b</sup> *Emergency vehicle weight limits should not be posted except where required by state or federal law.*

226 <sup>16c</sup> *Road agencies should implement other methods of outreach to fire departments and other emergency*  
227 *vehicle agencies in lieu of or in addition to physical signs, such as online bridge posting information, so*  
228 *that emergency vehicle agencies can plan their response routes prior to incidents occurring.*

229 Support:

230 <sup>16d</sup> Federal requirements for emergency vehicle weight limits for bridges on or near the Interstate system  
231 are located in 23 U.S.C. 127(r) of the Federal Code. [Language generally the same as the NCUTCD  
232 response to NPA docket for Chapter 2B, with the exception of the addition of the R12-7aP plaque]

233 **Standard:**

234 <sup>17</sup> **When the emergency vehicle weight limit is displayed in the same assembly as the primary**  
235 **weight limit sign, the Emergency Vehicle Weight Limit plaque (R12-7ap) shall be mounted below.**

236

Figure 2B-29. Road Closed and Weight Limit Signs



R11-1

R11-2

R11-3



R11-3a



R11-3b



R11-4



R12-1



R12-5



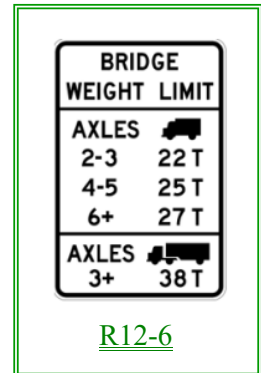
R12-6



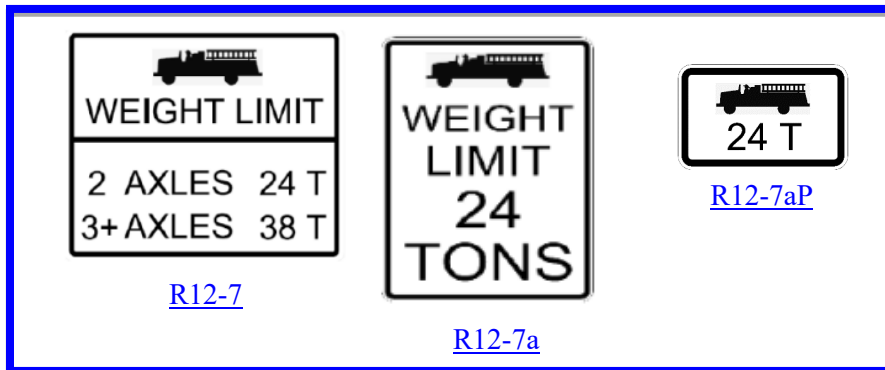
R12-7



R12-7aP



R12-6



R12-7

R12-7a

R12-7aP



R12-8

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[Revision to R12-6 sign and addition of R12-8 sign previously approved by Council (17A-RW-03).] Change the Figure to read 2B-30 per 2023 MUTCD