



# 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.: 24B-GMI-02

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

1  
2  
3  
4  
5

**COMMITTEE / TASK FORCE:** Guide & Motorist Information Sign Technical Committee  
**ITEM NUMBER:** 24B-GMI-02  
**TOPIC:** Clarification of “Diverging Movement”  
**ORIGIN OF REQUEST:** Guide & Motorist Information Sign TC  
**AFFECTED SECTIONS OF MUTCD:** Section 2D.37 Overhead Arrow-per-Lane Destination Guide Signs  
 Section 2E.40 Design of Overhead Arrow-per-Lane Guide Signs for Option Lanes  
 Section 2E.41 Design of Freeway and Expressway Diagrammatic Advance Guide Signs

6  
7  
8  
9

**DEVELOPMENT HISTORY:**  
 Approved by GMI TC: 01/11/2024  
 Approved by NCUTCD Council:

10  
11  
12  
13  
14  
15  
16  
17  
18  
19

*This is a proposal for recommended changes 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.*

20  
21  
22  
23  
24  
25

**SUMMARY:**  
 The term “diverging movement” is used only in Sections 2D.37, 2E.40 and 2E.41 of the MUTCD. Sometimes both movements at a freeway exit are considered “diverging,” but other times only one of two movements is considered “diverging.” It is not always clear which movement is “diverging.” Changes to MUTCD text are proposed to clarify.

26  
27  
28  
29  
30  
31

**DISCUSSION:**  
 The term “diverging movement” is used only in Chapters 2D and 2E of the MUTCD to refer to overhead arrow-per-lane (OAPL) and diagrammatic advance guide signs. The term is not defined in Part 1, and its meaning is not always clear from context. An example OAPL sign is shown below for reference.

Figure 2E-35. Example of an Overhead Arrow-per-Lane Guide Sign for a Multi-Lane Exit with an Option Lane



32  
33  
34  
35  
36  
37  
38  
39  
40  
41  
42  
43  
44  
45  
46  
47  
48

Sec. 2E.40 mandates a vertical white line on OAPL guide signs to separate route shields and destinations “for the two diverging movements from each other.” This text suggests that **both** movements depicted on an OAPL sign are “diverging movements.”

However, guidance later in Sec. 2E.40 recommends that for OAPL signs, “the arrowhead(s) for the diverging movement should be positioned lower on the sign than the arrowhead(s) for the movement that continues straight ahead, independent of which movement carries the through route.” This text suggests that there is only **one** “diverging movement” depicted on an OAPL sign.

MUTCD users may not realize which movement is intended to be the “diverging movement” in the context of this guidance. Many users may read “diverging movement” to be synonymous with “exit ramp.” However, this is not the intended meaning. The intended meaning is clearer when considering the following example:



49  
50  
51  
52  
53  
54  
55  
56  
57  
58  
59  
60

The MUTCD intends the term “diverging movement” to refer to the movement that curves at the theoretical exit gore. In the example above, I-295 South is the “diverging movement” because it is curved. U.S. Route 130 proceeds on a straight alignment, so it is not the “diverging movement,” even though it is signed as an exit.

This meaning of “diverging movement” may be unclear. Changes to MUTCD text are proposed to eliminate the term “diverging movement” when used in the singular, because in these cases MUTCD users must determine which of two movements are “diverging” with no direction on how to do so.

61 This proposal would cause a net reduction of 25 words in the MUTCD.  
62

63 **RECOMMENDED MUTCD CHANGES:**

64 The following present the proposed changes to the current MUTCD within the context of the  
65 current MUTCD language. Proposed additions to the MUTCD are shown in blue underline and  
66 proposed deletions from the MUTCD are shown in ~~red strikethrough~~. Changes previously  
67 approved by NCUTCD Council (but not yet adopted by FHWA) are shown in green double  
68 underline for additions and ~~green double strikethrough~~ for deletions. In some cases,  
69 background comments may be provided with the MUTCD text. These comments are indicated  
70 by bracketed white text in shaded green. Deletions made by a technical committee or task  
71 force after initial distribution to sponsoring organizations are shown in ~~highlighted red~~  
72 ~~strikethrough and Helvetica text~~. Additions made by a technical committee or task force after  
73 initial distribution to sponsoring organizations are shown in underline blue and Helvetica text.  
74

75 **PART 2. SIGNS**

76 **CHAPTER 2D. GUIDE SIGNS—CONVENTIONAL ROADS**

77 **Section 2D.37 Overhead Arrow-per-Lane Destination Guide Signs**  
78

79 Support:

80  
81 01 Overhead Arrow-per-Lane destination guide signs are sometimes used on multi-lane conventional  
82 roadways to provide positive direction to destinations and to indicate lanes to be used for those  
83 destinations. These locations typically include complex or unusual roadway alignments or geometrics.  
84 Overhead Arrow-per-Lane signs on conventional roads do not always have arrows for every lane. Sheet 2  
85 of Figure 2A-4 and Sheet 1 of Figure 2D-10 show examples of the use of an Overhead Arrow-per-Lane  
86 Guide sign on a conventional road. Unlike the Combined Lane-Use/Destination (D15-1) sign (see Section  
87 2D.38), Overhead Arrow-per-Lane signs can be used to provide lane assignments where the designated  
88 lane is not a mandatory movement lane.

89 Option:

90 02 At complex intersection approaches involving multiple lanes and destinations, an Overhead Arrow-  
91 per-Lane destination guide sign may be used to provide destination information for some or all lanes.  
92 Destination information may include cardinal direction, route numbers, street names, and/or place names.

93 **Standard:**

94 03 **Overhead Arrow-per-Lane signs for conventional roads shall only be used for multi-lane**  
95 **approaches to intersections that have an option lane.**

96 04 **Overhead Arrow-per-Lane guide signs used on conventional roads shall include as a minimum**  
97 **one arrow above each mandatory turn lane and a bifurcated arrow for the option lane from which**  
98 **both the through and turning movements are allowed.**

99 *Guidance:*

100 05 *Displaying an arrow over each through movement lane that does not allow turning should be*  
101 *considered for providing additional positive guidance.*

102 **Standard:**

103 06 **Overhead Arrow-per-Lane signs for conventional roads shall be designed in accordance with**  
104 **the following criteria:**

105 **A. The shaft of each arrow shall be located over the approximate center of the lane to which it**  
106 **applies.**

107 **B. Arrows for continuing through lanes shall be vertically upward-pointing (see Figure 2D-10).**

- 108 C. The arrow for a lane that must turn shall be curved in the direction of the turn and shall be  
109 accompanied by a black-on-yellow ONLY (E11-1b) sign panel (see Figure 2E-17) adjacent  
110 to the lower end of the arrow shaft.
- 111 D. The arrow for an optional exit lane that also carries the through route shall have a single  
112 shaft that bifurcates into a vertically upward-pointing arrow and a curving arrow  
113 corresponding to the configuration of the through and turn lanes.
- 114 E. A vertical white line shall be used to separate the route shields and destinations for the two  
115 diverging movements from each other.
- 116 F. The number of lanes displayed on a sign shall correspond to the number of lanes being  
117 signed for at the location of that sign. An advance sign shall not depict lanes that are added  
118 downstream of a sign location.

119 *Guidance:*

120 <sup>07</sup> Overhead Arrow-per-Lane guide signs used on conventional roads should be designed in  
121 accordance with the following additional criteria:

- 122 A. No more than one destination should be displayed for each movement, and no more than three  
123 destinations should be displayed per sign.
- 124 B. The arrowhead(s) of curving arrows for the diverging movement should be positioned lower on  
125 the sign than the arrowhead(s) of vertically upward-pointing arrows for the movement that  
126 continues straight ahead.
- 127 C. Route shields, cardinal directions, and destinations should be positioned on the sign such that  
128 they are clearly related to the arrowhead(s) for the movement to which they apply.
- 129 D. The vertical white line that is used to separate the route shields and destinations for the two  
130 diverging movements from each other should not descend below the top of the arrowheads for the  
131 through lanes, and should be positioned approximately halfway between the diverging  
132 arrowheads for the optional movement lane.

133 <sup>08</sup> Destination information should be kept to a minimum necessary to provide positive guidance without  
134 overloading the road user.

135 **Standard:**

136 <sup>09</sup> **The minimum height of arrows on an Overhead Arrow-per-Lane sign used on a conventional**  
137 **road shall be as shown in Table 2D-5.**

138 *Guidance:*

139 <sup>10</sup> When letter heights and other sign legend elements are enlarged there should be an corresponding  
140 increase in the arrow size used.

141 *Option:*

142 <sup>11</sup> Curved-stem arrows may be substituted on Overhead Arrow-per-Lane signs on multi-lane  
143 approaches to a circular intersection with an option lane (see Section 2D.39).  
144

145 **CHAPTER 2E. GUIDE SIGNS—FREEWAYS AND EXPRESSWAYS**  
146

147 **Section 2E.40 Design of Overhead Arrow-per-Lane Guide Signs for Option Lanes**

148 *Support:*

149 <sup>01</sup> Overhead Arrow-per-Lane guide signs (see Figure 2E-35) are used where an option lane is present at  
150 freeway and expressway multi-lane exit interchanges and splits. They display an upward-pointing arrow  
151 above each lane that conveys the direction(s) of travel that the lane serves at the point of departure. At  
152 locations where an option lane is present at a multi-lane exit or split, Overhead Arrow-per-Lane guide  
153 signs have been shown to be superior to other guide sign designs because they convey positive direction

154 about which destination and direction each approach lane serves, particularly for the option lane, which is  
155 otherwise difficult to clearly sign.

156 **Standard:**

157 02 **Overhead Arrow-per-Lane guide signs as provided in Section 2E.39 shall be used at all new or**  
158 **reconstructed freeway and expressway locations and at freeway and expressway locations where**  
159 **replacement of existing sign support structures is necessitated by reconstruction. The Overhead**  
160 **Arrow-per-Lane guide sign at the exit or split shall be located at or in the immediate vicinity of the**  
161 **point where the exiting lanes begin to diverge from the through lanes or, for a split, at the point**  
162 **where the approach lanes begin to diverge from one another, preserving the relation of the arrows**  
163 **displayed on the sign to their respective lanes. The Overhead Arrow-per-Lane guide sign at the exit**  
164 **shall not be located at or near the theoretical gore.**

165 **Option:**

166 03 At existing or non-reconstructed locations where an overhead Exit Direction sign exists at the  
167 theoretical gore, and the existing sign support structure is retained, the overhead Exit Direction sign may  
168 continue to be used on the existing sign support structure in conjunction with a replacement of the  
169 advance signs using the Overhead Arrow-per-Lane guide sign design.

170 **Standard:**

171 04 **If existing Exit Direction sign is being retained at an interchange as provided in Paragraph 3 of**  
172 **this Section, an Overhead Arrow-per-Lane guide sign shall not be used at the location of the Exit**  
173 **Direction sign at or in the vicinity of the theoretical gore. New installations of Exit Direction and**  
174 **Pull-Through signs shall not be permitted in conjunction with Overhead Arrow-per-Lane guide**  
175 **signs on new or reconstructed facilities.**

176 **Guidance:**

177 05 *Overhead Arrow-per-Lane guide signs should be located at approximately ½ mile and 1 mile in*  
178 *advance of the exit or split, and at approximately 2 miles in advance of the exit or split where space is*  
179 *available and conditions allow.*

180 **Standard:**

181 06 **Overhead Arrow-per-Lane guide signs used on freeways and expressways be designed in**  
182 **accordance with the following criteria:**

- 183 **A. Except as provided in Section 2E.42 for partial width Overhead Arrow-per-Lane signs, the**  
184 **sign shall include an upward-pointing (vertical, curved, or bifurcated) arrow for each lane**  
185 **of the approach to the split or exit.**
- 186 **B. The shaft of each arrow shall be located over the approximate center of the lane to which it**  
187 **applies.**
- 188 **C. Arrows for continuing through lanes shall be vertically upward pointing (see Figure 2E-36)**  
189 **unless the continuing through lanes are on a significantly curved alignment beyond the**  
190 **theoretical gore (see Figure 2E-37).**
- 191 **D. The arrow for a lane that must exit shall be curved in the direction of the exit and shall be**  
192 **accompanied by black-on-yellow EXIT (E11-1a) and ONLY (E11-1b) sign panels adjacent**  
193 **to the lower end of the arrow shaft. The E11-1a and E11-1b sign panels shall not be used for**  
194 **a split of two overlapping routes where neither of the diverging routes is designated as an**  
195 **exit. Where the through lanes curve and the exit continues on a straight alignment, upward-**  
196 **pointing vertical arrows shall be used for the exiting movement and curved arrows for the**  
197 **through movement (see Figure 2E-37).**
- 198 **E. The arrow for an optional exit lane that also carries the through route shall have a single**  
199 **shaft that bifurcates into a vertically upward-pointing arrow and a curving arrow**  
200 **corresponding to the configuration of the through and exit lanes.**

- 201 F. For splits with an option lane, the arrow for the lane from which either direction of the split  
202 can be accessed shall have a single shaft that bifurcates into two upward-pointing curving  
203 arrows (see Figure 2E-38).
- 204 G. A vertical white line shall be used to separate the route shields and destinations for the two  
205 diverging movements from each other.
- 206 H. The distance to the exit or split shall be displayed below the off-movement destination on  
207 the advance signs at the 1-mile and 2-mile locations.
- 208 I. The number of lanes displayed on a sign shall correspond to the number of lanes at the  
209 location of that sign. An advance sign shall not depict lanes that are added downstream of a  
210 sign location.
- 211 J. For numbered exits, the Exit Number (E1-5P) or Left Exit Number (E1-5bP) plaque shall be  
212 used at the top of the sign in accordance with Section 2E.23. For unnumbered exits to the  
213 left, a LEFT (E1-5mP) plaque shall be added at the top left-hand edge of and adjacent to  
214 the sign.

215 *Guidance:*

216 07 *Overhead Arrow-per-Lane guide signs used on freeways and expressways should be designed in*  
217 *accordance with the following additional criteria:*

- 218 A. *No more than one destination should be displayed for each movement, and no more than two*  
219 *destinations should be displayed per sign.*
- 220 B. *The arrowhead(s) of curving arrows for the diverging movement should be positioned lower on*  
221 *the sign than the arrowhead(s) of vertically upward-pointing arrows for the movement that*  
222 *continues straight ahead, independent of which movement carries the through route. Where the*  
223 *movements are freeway or expressway splits rather than exits, the arrowheads should be*  
224 *positioned at approximately the same height on the sign.*
- 225 C. *Route shields, cardinal directions, and destinations should be positioned on the sign such that*  
226 *they are clearly related to the arrowhead(s) for the movement to which they apply.*
- 227 D. *The cardinal direction should be placed adjacent to the route shield for exits or splits leading in a*  
228 *single cardinal direction.*
- 229 E. *The vertical white line that is used to separate the route shields and destinations for the two*  
230 *diverging movements from each other should not descend below the top of the arrowheads for the*  
231 *through lanes, and should be positioned approximately halfway between the diverging*  
232 *arrowheads for the optional movement lane (see Figure 2E-35).*

233 **Standard:**

234 08 **Overhead Arrow-per-Lane guide signs shall not be used to depict a downstream split of an exit**  
235 **ramp on a sign located on the mainline.**

236 **Support:**

237 09 **Specific guidelines for more detailed design of Overhead Arrow-per-Lane guide signs are contained**  
238 **in the “Standard Highway Signs” publication (see Section 1A.05).**

239 **Standard:**

240 10 **The arrow heights for Overhead Arrow-per-Lane guide signs on freeways and expressways**  
241 **shall be as shown in Table 2E-6.**

242 **Option:**

243 11 **Where extra emphasis of an especially low advisory ramp speed is needed, an EXIT XX MPH**  
244 **(E13-2) sign panel (see Figure 2E-14) may be placed below the applicable destination legend to**  
245 **supplement, but not to replace, the exit or ramp advisory speed warning signs.**

246 12 **Warning Beacons in compliance with the provisions of Section 2E.25 may be used with the E13-2**  
247 **sign panel.**

248 **Support:**

249 13 An example of guide signing for a narrow gore at a split with an option lane is shown in Figure 2E-  
250 39, and an example of guide signing for a narrow gore at a two-lane exit with an option lane is shown in  
251 Figure 2E-40.

252 Option:

253 14 Where there is 800 feet or more between the beginning of the lane diverge and the theoretical gore,  
254 signs indicating the destinations allowed by each lane may be added in the vicinity of the theoretical gore  
255 to reinforce positive guidance (see Figures 2E-39 and 2E-40).

## 256 Section 2E.41 Design of Freeway and Expressway Diagrammatic Advance Guide Signs

257 Support:

258 01 The Diagrammatic Advance guide sign (see Figure 2E-41) is a guide sign that shows a simplified  
259 graphic view of the exit departure arrangement in relationship to the main highway at an interchange. Its  
260 purpose is to provide advance notice of complex or unexpected road geometry or ramp departures at an  
261 interchange and/or depict successive decision points where additional context might be helpful to  
262 interpreting the subsequent primary Interchange Advance guide signs. Unlike Diagrammatic signs that  
263 were included in previous editions of this Manual, the Diagrammatic Advance guide sign does not depict  
264 which or the number of specific lanes that serve a particular destination or depict lanes added or reduced.

265 Option:

266 02 A Diagrammatic Advance guide sign may be used in advance of the interchange guide sign  
267 sequence, or in lieu of an Interchange Advance guide sign located 2 miles in advance of the exit, to  
268 supplement conventional or Overhead Arrow-per-Lane guide signs used for a downstream interchange.

269 **Standard:**

270 03 **Diagrammatic Advance guide signs shall be designed in accordance with the following criteria:**

271 **A. The graphic legend shall be of a plan view showing a simplified schematic graphic of the**  
272 **relative through and off-ramp movements.**

273 **B. No symbols or route shields shall be used as a substitute for arrowheads.**

274 **C. They shall not be installed at the Exit Direction sign location (see Section 2E.25).**

275 **D. The EXIT ONLY sign panel shall not be used on Diagrammatic Advance guide signs in**  
276 **advance of the interchange.**

277 **E. For numbered exits, the Exit Number (E1-5P) or Left Exit Number (E1-5bP) plaque shall**  
278 **be used at the top of the sign in accordance with Section 2E.22. For unnumbered left exits,**  
279 **the LEFT (E1-5aP) plaque shall be used at the top left edge of the sign.**

280 **F. The graphic shall not depict deceleration or auxiliary lanes.**

281 **G. Arrow shafts shall not contain lane lines.**

282 **H. Destination legends for off-movements shall be positioned to the side of the arrow from**  
283 **which the ramp departs.**

284 *Guidance:*

285 04 *Diagrammatic Advance guide signs used on freeways and expressways should be designed in*  
286 *accordance with the following additional criteria:*

287 *A. No more than one destination should be displayed for each movement.*

288 *B. The arrowhead(s) of curving arrows for the diverging movement should be positioned lower on*  
289 *the sign than the arrowhead of a vertically upward-pointing arrow for the movement that*  
290 *continues straight ahead, independent of which movement carries the through route (see Figure*  
291 *2E-42). Where the movements are freeway or expressway splits rather than exits, the arrowheads*  
292 *should be positioned at approximately the same height on the sign.*

293 *C. Arrow shaft widths should not vary for different movements.*

294 *D. Route shields, cardinal directions, and destinations should be positioned on the sign such that*  
295 *they are clearly related to the arrowhead(s), and the arrowhead for the off movement should*

296 *point toward the route shield or, for unnumbered routes, the upper line of destination legend for*  
297 *the off movement.*

298 *E. For exits or splits leading in a single direction, the cardinal direction should be placed adjacent*  
299 *to the route shield, and the destination should be placed below the route shield and cardinal*  
300 *direction.*

301 *F. Where two exits are displayed on a Diagrammatic Advance guide sign, the control destination for*  
302 *the through route should be omitted from the sign.*

303 *G. The distance legend should be placed below the exit destination legend. For splits where neither*  
304 *direction carries a through route, the distance legend should be centered below the diagrammatic*  
305 *arrow. Where successive exits from the same side of the roadway are displayed, the distance*  
306 *legend should be placed below the destination legend for the first exit, with the distance to the*  
307 *second exit omitted. Where successive exits from opposite sides of the roadway are displayed, the*  
308 *distance to the first exit should be centered below the diagrammatic arrow, with the distance to*  
309 *the second exit omitted.*

310 <sup>05</sup> *Diagrammatic Advance guide signs shall not be used at cloverleaf interchanges for the purpose of*  
311 *depicting separate downstream departures from a collector-distributor roadway.*

312 <sup>06</sup> *Diagrammatic Advance guide signs located on the main roadway shall not be used to depict a*  
313 *downstream split of an exit ramp.*

314 Support:

315 <sup>07</sup> Specific guidelines for more detailed design of Diagrammatic Advance guide signs are contained in  
316 the “Standard Highway Signs” publication (see Section 1A.05).

317 Option:

318 <sup>08</sup> Where extra emphasis of an especially low advisory ramp speed is needed, an EXIT XX MPH (E13-  
319 2) sign panel (see Figure 2E-14) may be placed below the applicable destination legend to supplement,  
320 but not to replace, the exit or ramp advisory speed warning signs.

321 <sup>09</sup> Warning Beacons in compliance with the provisions of Section 2E.25 may be used with the E13-2  
322 sign panel.

323 <sup>10</sup> Diagrammatic Advance guide signs may be used on any class of roadway and may be modified to  
324 depict relative movements for intersections on conventional roads.