



National Committee on Uniform Traffic Control Devices

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Item No.: 24B-GMI-02

NCUTCD RECOMMENDATION FOR CHANGES TO THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES

COMMITTEE / TASK FORCE: Guide & Motorist Information Sign TC
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

DEVELOPMENT HISTORY:

Approved by GMI TC: 01/11/2024 and 01/08/2025
Approved by NCUTCD Council: 01/09/2025

This is a recommended change 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:

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.

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



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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:



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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.

58 This proposal would cause a net reduction of 25 words in the MUTCD.
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60 **RECOMMENDED MUTCD CHANGES:**

61 The following present the proposed changes to the current MUTCD within the context of the
62 current MUTCD language. Proposed additions to the MUTCD are shown in blue underline and
63 proposed deletions from the MUTCD are shown in ~~red strikethrough~~. Changes previously
64 approved by NCUTCD Council (but not yet adopted by FHWA) are shown in green double
65 underline for additions and ~~green double strikethrough~~ for deletions. In some cases,
66 background comments may be provided with the MUTCD text. These comments are indicated
67 by [bracketed white text in shaded green].

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69 **PART 2. SIGNS**

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

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

74 Support:

75 01 Overhead Arrow-per-Lane destination guide signs are sometimes used on multi-lane conventional
76 roadways to provide positive direction to destinations and to indicate lanes to be used for those
77 destinations. These locations typically include complex or unusual roadway alignments or geometrics.
78 Overhead Arrow-per-Lane signs on conventional roads do not always have arrows for every lane. Sheet 2
79 of Figure 2A-4 and Sheet 1 of Figure 2D-10 show examples of the use of an Overhead Arrow-per-Lane
80 Guide sign on a conventional road. Unlike the Combined Lane-Use/Destination (D15-1) sign (see Section
81 2D.38), Overhead Arrow-per-Lane signs can be used to provide lane assignments where the designated
82 lane is not a mandatory movement lane.

83 Option:

84 02 At complex intersection approaches involving multiple lanes and destinations, an Overhead Arrow-
85 per-Lane destination guide sign may be used to provide destination information for some or all lanes.
86 Destination information may include cardinal direction, route numbers, street names, and/or place names.

87 **Standard:**

88 03 **Overhead Arrow-per-Lane signs for conventional roads shall only be used for multi-lane**
89 **approaches to intersections that have an option lane.**

90 04 **Overhead Arrow-per-Lane guide signs used on conventional roads shall include as a minimum**
91 **one arrow above each mandatory turn lane and a bifurcated arrow for the option lane from which**
92 **both the through and turning movements are allowed.**

93 *Guidance:*

94 05 *Displaying an arrow over each through movement lane that does not allow turning should be*
95 *considered for providing additional positive guidance.*

96 **Standard:**

97 06 **Overhead Arrow-per-Lane signs for conventional roads shall be designed in accordance with**
98 **the following criteria:**

- 99 **A. The shaft of each arrow shall be located over the approximate center of the lane to which it**
100 **applies.**
101 **B. Arrows for continuing through lanes shall be vertically upward-pointing (see Figure 2D-10).**
102 **C. The arrow for a lane that must turn shall be curved in the direction of the turn and shall be**
103 **accompanied by a black-on-yellow ONLY (E11-1b) sign panel (see Figure 2E-17) adjacent**
104 **to the lower end of the arrow shaft.**

- 105 **D. The arrow for an optional exit lane that also carries the through route shall have a single**
106 **shaft that bifurcates into a vertically upward-pointing arrow and a curving arrow**
107 **corresponding to the configuration of the through and turn lanes.**
108 **E. A vertical white line shall be used to separate the route shields and destinations for the two**
109 **diverging movements from each other.**
110 **F. The number of lanes displayed on a sign shall correspond to the number of lanes being**
111 **signed for at the location of that sign. An advance sign shall not depict lanes that are added**
112 **downstream of a sign location.**

113 *Guidance:*

114 07 *Overhead Arrow-per-Lane guide signs used on conventional roads should be designed in*
115 *accordance with the following additional criteria:*

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

127 08 *Destination information should be kept to a minimum necessary to provide positive guidance without*
128 *overloading the road user.*

129 **Standard:**

130 09 **The minimum height of arrows on an Overhead Arrow-per-Lane sign used on a conventional**
131 **road shall be as shown in Table 2D-5.**

132 *Guidance:*

133 10 *When letter heights and other sign legend elements are enlarged there should be an corresponding*
134 *increase in the arrow size used.*

135 *Option:*

136 11 *Curved-stem arrows may be substituted on Overhead Arrow-per-Lane signs on multi-lane*
137 *approaches to a circular intersection with an option lane (see Section 2D.39).*
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139 **CHAPTER 2E. GUIDE SIGNS—FREEWAYS AND EXPRESSWAYS**
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141 **Section 2E.40 Design of Overhead Arrow-per-Lane Guide Signs for Option Lanes**

142 *Support:*

143 01 *Overhead Arrow-per-Lane guide signs (see Figure 2E-35) are used where an option lane is present at*
144 *freeway and expressway multi-lane exit interchanges and splits. They display an upward-pointing arrow*
145 *above each lane that conveys the direction(s) of travel that the lane serves at the point of departure. At*
146 *locations where an option lane is present at a multi-lane exit or split, Overhead Arrow-per-Lane guide*
147 *signs have been shown to be superior to other guide sign designs because they convey positive direction*
148 *about which destination and direction each approach lane serves, particularly for the option lane, which is*
149 *otherwise difficult to clearly sign.*

150 **Standard:**

151 02 **Overhead Arrow-per-Lane guide signs as provided in Section 2E.39 shall be used at all new or**
152 **reconstructed freeway and expressway locations and at freeway and expressway locations where**
153 **replacement of existing sign support structures is necessitated by reconstruction. The Overhead**
154 **Arrow-per-Lane guide sign at the exit or split shall be located at or in the immediate vicinity of the**
155 **point where the exiting lanes begin to diverge from the through lanes or, for a split, at the point**
156 **where the approach lanes begin to diverge from one another, preserving the relation of the arrows**
157 **displayed on the sign to their respective lanes. The Overhead Arrow-per-Lane guide sign at the exit**
158 **shall not be located at or near the theoretical gore.**

159 Option:

160 03 At existing or non-reconstructed locations where an overhead Exit Direction sign exists at the
161 theoretical gore, and the existing sign support structure is retained, the overhead Exit Direction sign may
162 continue to be used on the existing sign support structure in conjunction with a replacement of the
163 advance signs using the Overhead Arrow-per-Lane guide sign design.

164 **Standard:**

165 04 **If existing Exit Direction sign is being retained at an interchange as provided in Paragraph 3 of**
166 **this Section, an Overhead Arrow-per-Lane guide sign shall not be used at the location of the Exit**
167 **Direction sign at or in the vicinity of the theoretical gore. New installations of Exit Direction and**
168 **Pull-Through signs shall not be permitted in conjunction with Overhead Arrow-per-Lane guide**
169 **signs on new or reconstructed facilities.**

170 *Guidance:*

171 05 *Overhead Arrow-per-Lane guide signs should be located at approximately ½ mile and 1 mile in*
172 *advance of the exit or split, and at approximately 2 miles in advance of the exit or split where space is*
173 *available and conditions allow.*

174 **Standard:**

175 06 **Overhead Arrow-per-Lane guide signs used on freeways and expressways be designed in**
176 **accordance with the following criteria:**

- 177 **A. Except as provided in Section 2E.42 for partial width Overhead Arrow-per-Lane signs, the**
178 **sign shall include an upward-pointing (vertical, curved, or bifurcated) arrow for each lane**
179 **of the approach to the split or exit.**
- 180 **B. The shaft of each arrow shall be located over the approximate center of the lane to which it**
181 **applies.**
- 182 **C. Arrows for continuing through lanes shall be vertically upward pointing (see Figure 2E-36)**
183 **unless the continuing through lanes are on a significantly curved alignment beyond the**
184 **theoretical gore (see Figure 2E-37).**
- 185 **D. The arrow for a lane that must exit shall be curved in the direction of the exit and shall be**
186 **accompanied by black-on-yellow EXIT (E11-1a) and ONLY (E11-1b) sign panels adjacent**
187 **to the lower end of the arrow shaft. The E11-1a and E11-1b sign panels shall not be used for**
188 **a split of two overlapping routes where neither of the diverging routes is designated as an**
189 **exit. Where the through lanes curve and the exit continues on a straight alignment, upward-**
190 **pointing vertical arrows shall be used for the exiting movement and curved arrows for the**
191 **through movement (see Figure 2E-37).**
- 192 **E. The arrow for an optional exit lane that also carries the through route shall have a single**
193 **shaft that bifurcates into a vertically upward-pointing arrow and a curving arrow**
194 **corresponding to the configuration of the through and exit lanes.**
- 195 **F. For splits with an option lane, the arrow for the lane from which either direction of the split**
196 **can be accessed shall have a single shaft that bifurcates into two upward-pointing curving**
197 **arrows (see Figure 2E-38).**

- 198 G. A vertical white line shall be used to separate the route shields and destinations for the two
199 diverging movements from each other.
- 200 H. The distance to the exit or split shall be displayed below the off-movement destination on
201 the advance signs at the 1-mile and 2-mile locations.
- 202 I. The number of lanes displayed on a sign shall correspond to the number of lanes at the
203 location of that sign. An advance sign shall not depict lanes that are added downstream of a
204 sign location.
- 205 J. For numbered exits, the Exit Number (E1-5P) or Left Exit Number (E1-5bP) plaque shall be
206 used at the top of the sign in accordance with Section 2E.23. For unnumbered exits to the
207 left, a LEFT (E1-5mP) plaque shall be added at the top left-hand edge of and adjacent to
208 the sign.

209 *Guidance:*

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

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

227 **Standard:**

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

230 *Support:*

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

233 **Standard:**

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

236 *Option:*

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

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

242 *Support:*

243 ¹³ An example of guide signing for a narrow gore at a split with an option lane is shown in Figure 2E-
244 39, and an example of guide signing for a narrow gore at a two-lane exit with an option lane is shown in
245 Figure 2E-40.

246 Option:
247 14 Where there is 800 feet or more between the beginning of the lane diverge and the theoretical gore,
248 signs indicating the destinations allowed by each lane may be added in the vicinity of the theoretical gore
249 to reinforce positive guidance (see Figures 2E-39 and 2E-40).

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

251 Support:

252 01 The Diagrammatic Advance guide sign (see Figure 2E-41) is a guide sign that shows a simplified
253 graphic view of the exit departure arrangement in relationship to the main highway at an interchange. Its
254 purpose is to provide advance notice of complex or unexpected road geometry or ramp departures at an
255 interchange and/or depict successive decision points where additional context might be helpful to
256 interpreting the subsequent primary Interchange Advance guide signs. Unlike Diagrammatic signs that
257 were included in previous editions of this Manual, the Diagrammatic Advance guide sign does not depict
258 which or the number of specific lanes that serve a particular destination or depict lanes added or reduced.

259 Option:

260 02 A Diagrammatic Advance guide sign may be used in advance of the interchange guide sign
261 sequence, or in lieu of an Interchange Advance guide sign located 2 miles in advance of the exit, to
262 supplement conventional or Overhead Arrow-per-Lane guide signs used for a downstream interchange.

263 Standard:

264 03 **Diagrammatic Advance guide signs shall be designed in accordance with the following criteria:**
265 **A. The graphic legend shall be of a plan view showing a simplified schematic graphic of the**
266 **relative through and off-ramp movements.**
267 **B. No symbols or route shields shall be used as a substitute for arrowheads.**
268 **C. They shall not be installed at the Exit Direction sign location (see Section 2E.25).**
269 **D. The EXIT ONLY sign panel shall not be used on Diagrammatic Advance guide signs in**
270 **advance of the interchange.**
271 **E. For numbered exits, the Exit Number (E1-5P) or Left Exit Number (E1-5bP) plaque shall**
272 **be used at the top of the sign in accordance with Section 2E.22. For unnumbered left exits,**
273 **the LEFT (E1-5aP) plaque shall be used at the top left edge of the sign.**
274 **F. The graphic shall not depict deceleration or auxiliary lanes.**
275 **G. Arrow shafts shall not contain lane lines.**
276 **H. Destination legends for off-movements shall be positioned to the side of the arrow from**
277 **which the ramp departs.**

278 Guidance:

279 04 *Diagrammatic Advance guide signs used on freeways and expressways should be designed in*
280 *accordance with the following additional criteria:*
281 *A. No more than one destination should be displayed for each movement.*
282 *B. The arrowhead(s) of curving arrows for the diverging movement should be positioned lower on*
283 *the sign than the arrowhead of a vertically upward-pointing arrow for the movement that*
284 *continues straight ahead, independent of which movement carries the through route (see Figure*
285 *2E-42). Where the movements are freeway or expressway splits rather than exits, the arrowheads*
286 *should be positioned at approximately the same height on the sign.*
287 *C. Arrow shaft widths should not vary for different movements.*
288 *D. Route shields, cardinal directions, and destinations should be positioned on the sign such that*
289 *they are clearly related to the arrowhead(s), and the arrowhead for the off movement should*
290 *point toward the route shield or, for unnumbered routes, the upper line of destination legend for*
291 *the off movement.*

- 292 E. For exits or splits leading in a single direction, the cardinal direction should be placed adjacent
293 to the route shield, and the destination should be placed below the route shield and cardinal
294 direction.
- 295 F. Where two exits are displayed on a Diagrammatic Advance guide sign, the control destination for
296 the through route should be omitted from the sign.
- 297 G. The distance legend should be placed below the exit destination legend. For splits where neither
298 direction carries a through route, the distance legend should be centered below the diagrammatic
299 arrow. Where successive exits from the same side of the roadway are displayed, the distance
300 legend should be placed below the destination legend for the first exit, with the distance to the
301 second exit omitted. Where successive exits from opposite sides of the roadway are displayed, the
302 distance to the first exit should be centered below the diagrammatic arrow, with the distance to
303 the second exit omitted.
- 304 05 Diagrammatic Advance guide signs shall not be used at cloverleaf interchanges for the purpose of
305 depicting separate downstream departures from a collector-distributor roadway.
- 306 06 Diagrammatic Advance guide signs located on the main roadway shall not be used to depict a
307 downstream split of an exit ramp.
- 308 Support:
- 309 07 Specific guidelines for more detailed design of Diagrammatic Advance guide signs are contained in
310 the “Standard Highway Signs” publication (see Section 1A.05).
- 311 Option:
- 312 08 Where extra emphasis of an especially low advisory ramp speed is needed, an EXIT XX MPH (E13-
313 2) sign panel (see Figure 2E-14) may be placed below the applicable destination legend to supplement,
314 but not to replace, the exit or ramp advisory speed warning signs.
- 315 09 Warning Beacons in compliance with the provisions of Section 2E.25 may be used with the E13-2
316 sign panel.
- 317 10 Diagrammatic Advance guide signs may be used on any class of roadway and may be modified to
318 depict relative movements for intersections on conventional roads.