



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-SIG-02

1
2
3
4
5

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

COMMITTEE / TASK FORCE: Signals Technical Committee
ITEM NUMBER: 24B-SIG-02
TOPIC: Application of Dynamic Lane-Use Control
ORIGIN OF REQUEST: Signals TC
AFFECTED SECTIONS OF MUTCD: 4T.01 Application of Lane-Use Control Signals
4T.02 Meaning of Lane-Use Control Signal Indications
4T.03 Design of Lane-Use Control Signals
4T.04 Operation of Lane-Use Control Signals.

6

DEVELOPMENT HISTORY:

Approved by Signals TC: 06/27/2024 and 01/08/2025
Approved by NCUTCD Council: 01/09/2025

7

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.

8

SUMMARY:

The increasing implementation of active traffic management operations on freeways has caused heightened interest in development and testing of new lane-use control signal indications to communicate that 1) a lane should be vacated because it is blocked or closed ahead, and 2) a lane can be used but with extra caution due to a slowdown ahead or activities occurring in an adjacent lane. A research project to study the issues, NCHRP Report 1021, "Application of Dynamic Lane-Use Controls-Best Practices", has been completed. Proposed MUTCD revisions have been prepared based on a review of that report and its recommendations.

9

DISCUSSION:

One of the commonly used active traffic management (ATM) strategies is dynamic lane-use control (DLUC). FHWA defines DLUC as dynamically closing or opening individual traffic lanes as warranted and providing advance warning of the closure(s), typically through dynamic full-matrix lane control signs and signals, to safely merge traffic into adjoining lanes. New traffic control devices and approaches are needed to support these strategies. NCHRP Project 03-123, conducted by Susan Chrysler and Kay Fitzpatrick of Texas Transportation Institute (TTI), carried out a comprehensive human factors study of dynamic

10

34 lane-use control signal applications that have been used in the U.S. (with or without FHWA-
35 approved experimentation) and internationally to provide advance warning of lane closures and
36 end-of-queue warnings in freeway operations. Computer-based testing using still images
37 of lane-use control signs on a four-lane freeway was conducted in four cities with a total of
38 320 participants. Questions focused on comprehension of symbols as indicated by lane
39 selection for various scenarios. The second human factors study used an interactive driving
40 simulator to test 30 participants for their lane change compliance with messages displayed on
41 overhead and ground-mounted DLUC signals.

42
43 NCHRP Report 1021 documents the results of the project's computer-based testing and driving
44 simulator study as well as a state-of-the-practice review of human factors and operations. The
45 research report's findings and recommendations are summarized as follows:

- 46 • The research recommends the addition of the DOWNWARD YELLOW ARROW to the
47 MUTCD set of lane-use control symbols to indicate that a lane is open but traffic is moving
48 slower than the posted speed. Further, the research recommends the use of the legend SLOW
49 in conjunction with the DOWNWARD YELLOW ARROW. Some agencies are using variable
50 speed limit displays per lane for this purpose, but these were not included in the current
51 research.
- 52 • The research results recommend using a DOWNWARD DIAGONAL YELLOW ARROW
53 (left or right, but not both together) to indicate downstream lane closure rather than the
54 YELLOW X currently specified in the MUTCD for this purpose. Results from both the computer-
55 based testing and the driving simulator indicate that drivers interpret a YELLOW X to mean
56 "vacate the lane immediately" rather than downstream.
- 57 • The results also indicate that if an agency wishes to use the currently approved MUTCD
58 YELLOW X symbol to convey impending lane closure, adding a text legend to the display
59 indicating the distance to the lane closure point is recommended.
- 60 • The study found that including the legends OPEN with DOWNWARD GREEN ARROWS
61 and CLOSED with RED Xs is unnecessary and did not improve comprehension or compliance.
- 62 • The results indicated that neither flashing nor scrolling of lane closure symbols changed the
63 driver's comprehension of the symbol. These types of animation did create a sense of urgency
64 with more people thinking that the lane closure was occurring at the sign location rather than
65 downstream.

66
67 The recommendations of the report have been reviewed and we believe they are well supported
68 by the study results. We have prepared revisions to the MUTCD to implement the
69 recommendations, with the exception that we recommend that the SLOW legend with the
70 DOWNWARD YELLOW ARROW and the distance to the lane closure point with the YELLOW X
71 be optional rather than required.

72
73 It should be noted that the report includes other findings that 1) on freeways, DOWNWARD
74 GREEN ARROWS are better understood than blank (dark) indications to indicate a "normal"
75 condition, and 2) the maximum spacing between sets of lane-use control signal indications on
76 freeways could be increased to as much as 1 mile. However, the report recommends additional
77 research to further confirm these findings before considering MUTCD revisions on those topics.
78 The study also evaluated whether ground-mounted dynamic lane-use control signal displays
79 could perform as effectively as overhead-mounted displays but concluded that further study is
80 needed.

81 Although the study focused almost exclusively on freeways, we recommend that the new lane-
82 use control signal indications also be allowed for use on conventional roads, as this will provide
83 consistency and uniformity of the indications drivers encounter, regardless of roadway type.

84
85 **RECOMMENDED MUTCD CHANGES:**
86 The following present the proposed changes to the current MUTCD within the context of the
87 current MUTCD language. Proposed additions to the MUTCD are shown in blue underline and
88 proposed deletions from the MUTCD are shown in ~~red strikethrough~~. Changes previously
89 approved by NCUTCD Council (but not yet adopted by FHWA) are shown in green double
90 underline for additions and ~~green double strikethrough~~ for deletions. In some cases,
91 background comments may be provided with the MUTCD text. These comments are indicated
92 by [bracketed white text in shaded green].

93
94 **CHAPTER 4T. LANE-USE CONTROL SIGNALS**

95
96 **Section 4T.01 Application of Lane-Use Control Signals**

97 Support:
98 01 Lane-use control signals are special overhead signals that permit or prohibit the use of specific lanes
99 of a street or highway or that indicate the impending prohibition of their use. Lane-use control signals are
100 distinguished by placement of special signal faces or comparable signal displays on full-matrix CMS
101 (Changeable Message Signs) over a certain lane or lanes of the roadway, over a shoulder where driving is
102 permitted at certain times, and by their distinctive shapes and symbols. Supplementary signs are
103 sometimes used to explain their meaning and intent.

104 02 Lane-use control signals are most commonly used for reversible-lane control but are also used in
105 certain non-reversible lane applications and for toll plaza lanes (see Section 4R.02). On freeways,
106 bridges, and tunnels, lane-use control signals are most commonly used in active traffic management
107 applications for incident and congestion management, lane closures for maintenance activities, and
108 similar other purposes.

109 02a Lane-use control signal indications are illustrated in Figure 4T-1. The indications are the colored
110 symbols. The square opaque areas outside of the symbols make up the limits of the signal face or the
111 display shown on a full-matrix CMS.

112 *Guidance:*
113 03 *An engineering study should be conducted to determine whether a reversible-lane operation can be*
114 *controlled satisfactorily by static signs (see Section 2B.34) or whether lane-use control signals are*
115 *necessary. Lane-use control signals should be used to control reversible-lane operations if any of the*
116 *following conditions are present:*

- 117 A. *More than one lane is reversed in direction;*
- 118 B. *Two-way or one-way left turns are allowed during peak-period reversible operations, but those*
119 *turns are from a different lane than used during off-peak periods;*
- 120 C. *Other unusual or complex operations are included in the reversible-lane pattern;*
- 121 D. *Demonstrated crash experience occurring with reversible-lane operation controlled by static*
122 *signs that can be corrected by using lane-use control signals at the times of transition between peak*
123 *and off-peak patterns; and/or*
- 124 E. *An engineering study indicates that the safety and efficiency of the traffic operations of a*
125 *reversible-lane system would be improved by lane-use control signals.*

126 **Standard:**
127 04 **Pavement markings (see Section 3B.04) shall be used in conjunction with reversible-lane**
128 **control signals.**

129 Option:

130 05 Lane-use control signals may also be used if there is no intent or need to reverse lanes, but there is a
131 need to indicate the open or closed status of one or more lanes, such as:

132 A. ~~On a freeway, if it is desired~~ To close certain lanes at certain hours to facilitate the merging of
133 traffic from a ramp or other ~~freeway~~ highway;

134 B. ~~On a freeway, near its terminus,~~ To indicate a lane that ends;

135 C. ~~On a freeway, or long bridge,~~ To indicate that a lane is open or closed to through traffic, or
136 to indicate that a lane may be temporarily blocked by a crash, breakdown, construction or maintenance
137 activities, or similar temporary conditions; ~~and~~

138 D. To indicate that a lane is open but extra caution is to be used due to a traffic queue or other
139 slowdown ahead, or activities occurring in an adjacent lane or shoulder;

140 E. To allow part-time travel on a shoulder on a recurring basis for added capacity, tolling, or transit
141 use; and

142 ~~DF. On a conventional road or driveway, at access or egress points~~ To open or close the access to or
143 egress from one or more lanes of a facility, such as a parking garage, at various times ~~where one or~~
144 ~~more lanes of the access or egress are opened or closed at various times.~~

145 06 A USE LANE(S) WITH GREEN ARROW (R10-8) sign (see Section 2B.59) may be used in
146 conjunction with lane-use control signals.

147

148 Section 4T.02 Meaning of Lane-Use Control Signal Indications

149 Standard:

150 01 The meanings of lane-use control signal indications (see Figure 4T-1) shall be as follows:

151 A. A steady DOWNWARD GREEN ARROW signal indication shall mean that the lane
152 which the arrow signal indication is located over is open to vehicle travel in that direction.

153 B. A steady YELLOW X signal indication shall mean that the lane which the Yellow X signal
154 indication is located over is about to be closed to vehicle traffic in that direction and shall be
155 followed by a steady RED X signal indication (either within the same signal face or in a
156 downstream signal face).

157 C. A steady DOWNWARD DIAGONAL YELLOW ARROW signal indication (left or right)
158 shall mean that the lane which the signal indication is located over is about to be closed to
159 vehicle traffic and shall be followed by a steady RED X signal indication, and that road users
160 are to vacate the lane in the direction indicated.

161 D. A steady DOWNWARD YELLOW ARROW signal indication shall mean that conditions
162 in the lane which the arrow signal indication is located over require the road user to reduce
163 speed.

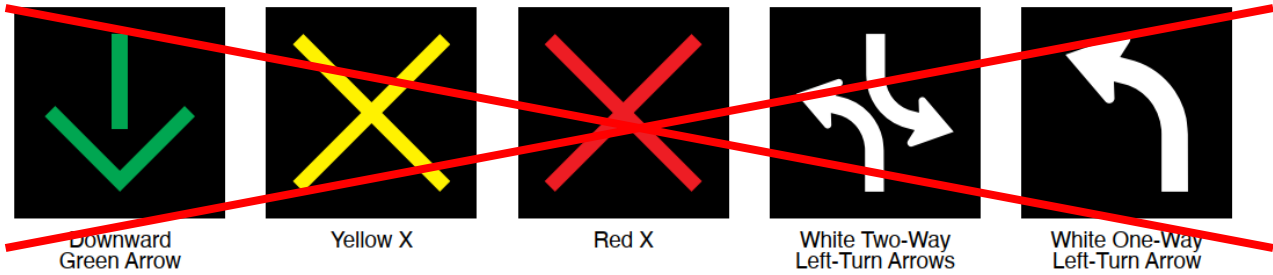
164 ~~EE.~~ A steady RED X signal indication shall mean that the lane which the Red X signal
165 indication is located over is closed to vehicle traffic in the direction viewed by the road user.

166 ~~DF.~~ A steady WHITE TWO-WAY LEFT-TURN ARROW signal indication shall mean that
167 the lane which the turning arrows indication is located over is open to traffic making a left turn
168 from either direction of travel, but not for through travel.

169 ~~EG.~~ A steady WHITE ONE-WAY LEFT-TURN ARROW signal indication shall mean that the
170 lane which the turning arrow indication is located over is open to traffic making a left turn in
171 that direction (without opposing turns in the same lane), but not for through travel.

172

Figure 4T-1. Lane-Use Control Signal Indications



173
174

175

Figure 4T-1 Lane-Use Control Signal Indications



Downward Green Arrow

Red X

White Two-Way Left-Turn Arrows

White One-Way Left-Turn Arrow

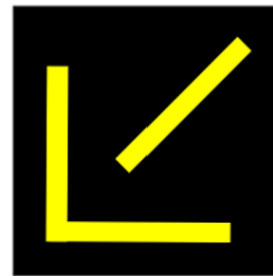
176
177
178



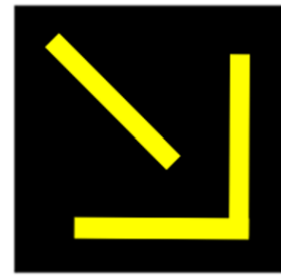
Downward Yellow Arrow



Yellow X



Downward Diagonal Left Yellow Arrow



Downward Diagonal Left Yellow Arrow

179
180
181

[Study evaluated only freeway use of the 2 new indications, but for purposes of consistency and uniformity among roadway types, the new indications should be allowable to use on conventional roads as well. Downward diagonal YELLOW arrow graphic above is conceptual based on existing graphics.]

182
183
184
185
186
187

Section 4T.03 Design of Lane-Use Control Signals

Standard:

188
189
190
191
192
193
194
195

01 All lane-use control signal indications shall be in units with rectangular signal faces or equivalent full-matrix CMS displays and shall have opaque backgrounds. Except as provided in Paragraph 4301b of this Section, the nominal minimum height and width of each red, yellow, or green lane use control signal face shall be:

- A. 18 inches for typical applications on conventional roads and at toll plazas that are low-speed or that require a stop ;-
- B. 48 inches for typical applications on freeways and expressways.

196 **01a** Except as provided in Paragraph ~~1301b~~ of this Section, the WHITE TWO-WAY LEFT-TURN
197 ARROW and WHITE ONE-WAY LEFT-TURN ARROW signal faces or equivalent full-matrix
198 CMS displays shall have a nominal minimum height and width of 30 inches.

199 Option: [Original Option Paragraphs 13 and 14 relocated for clarity.]

200 ~~+301b~~ Except for lane-use control signals at toll plazas (see Section 4R.02), lane-use control signal faces
201 with nominal height and width of 12 inches for the DOWNWARD GREEN ARROW, YELLOW X, and
202 RED X signal faces, and lane-use control signal faces with nominal height and width of 18 inches for the
203 WHITE TWO-WAY LEFT-TURN ARROW and WHITE ONE-WAY LEFT-TURN ARROW signal
204 faces may be used in areas with minimal visual clutter and with speeds of less than 40 mph. In areas with
205 minimal visual clutter and with speeds of 35 mph or less, lane-use control signal faces or full-matrix CMS
206 displays with the following nominal height and width may be used:

207 A. 12 inches for the GREEN, YELLOW, and RED displays;

208 B. 18 inches for the WHITE TWO-WAY LEFT-TURN ARROW and WHITE ONE-WAY LEFT-
209 TURN ARROW displays.

210 [Paragraph 01b rewritten for clarity]

211 ~~+401c~~ Other nominal sizes of lane-use control signal faces or full-matrix CMS displays larger than 18
212 inches with proportional dimensions and with message recognition distances appropriate to signal spacing
213 may be used for the ~~DOWNWARD GREEN ARROW, YELLOW X, and RED X~~ and arrow-shaped
214 signal faces or CMS displays.

215 01d Lane-use control signal indications may be displayed as an integral part of a full-matrix CMS (see
216 Sections 2L.03 and 2L.04) provided that such displays of lane-use control signal indications comply with
217 the provisions of Chapter 4T and utilize LED pixels as the light source with brightness, intensity, and
218 legibility at least equal to that of LED traffic signal displays.

219 01e Full-matrix CMS displays of lane-use control signal indications may be in conjunction with displays
220 of other non-conflicting messages, such as speed limits, advisory speeds, and other regulatory, warning,
221 or guide messages.

222 Support:

223 01f When displayed on a full-matrix CMS, lane-use control signal indications do not have visors or
224 housings in the traditional sense, and thus also are not composed of signal sections or signal faces.
225 However, it is intended that such indications are displayed in a manner that mimics that of signal sections
226 and/or faces, with no apparent loss of resolution or recognition to the road user.

227 01g See also Chapter 2L for additional information on Changeable Message Signs.

228 Standard:

229 02 Each lane to be reversed or closed shall have signal faces or full-matrix CMS displays **with**
230 **including** at least a DOWNWARD GREEN ARROW and a RED X symbol.

231 03 Each reversible lane that also operates as a two-way or one-way left-turn lane during certain
232 periods shall have signal faces or full-matrix CMS displays that also include the applicable WHITE
233 TWO-WAY LEFT-TURN ARROW or WHITE ONE WAY LEFT-TURN ARROW symbol.

234 04 Each non-reversible lane immediately adjacent to a reversible lane shall have signal **indications**
235 **faces or full-matrix CMS displays** that **display show** a DOWNWARD GREEN ARROW to traffic
236 traveling in the permitted direction and a RED X to traffic traveling in the opposite direction.

237 05 If in separate signal sections, the relative positions, from left to right, of the signal indications
238 shall be RED X, YELLOW X, DOWNWARD DIAGONAL LEFT YELLOW ARROW
239 DOWNWARD DIAGONAL RIGHT YELLOW ARROW, DOWNWARD YELLOW ARROW,
240 DOWNWARD GREEN ARROW, WHITE TWO-WAY LEFT-TURN ARROW, WHITE ONE
241 WAY LEFT-TURN ARROW.

242 **Option:**
243 ^{+605a} The signal indications provided for each lane may be in separate signal sections or may be
244 superimposed in the same signal section or full-matrix CMS display.
245 **[Paragraph relocated from Paragraph 16.]**
246 ^{05b} A yellow word legend indicating the distance to the lane closure may be used with the steady
247 YELLOW X signal display, but without reducing the size of the X symbol to less than the minimum
248 required.
249 ^{05c} A yellow word legend SLOW may be used with the DOWNWARD YELLOW ARROW signal
250 display, but without reducing the size of the arrow symbol to less than the minimum required.
251 **[These 2 new Options are recommended by the NCHRP Report 1021 study results.]**

252 **Guidance:**
253 ⁰⁶ *The color of lane-use control signal indications should be clearly visible for 2,300 feet at all times*
254 *under normal atmospheric conditions, unless otherwise physically obstructed.*
255 ⁰⁷ *Lane-use control signal ~~faces~~indications should be located approximately over the center of the*
256 *controlled lane.*
257 ⁰⁸ *If the area to be controlled is more than for 2,300 feet in length, or if the vertical or horizontal*
258 *alignment is curved, intermediate lane-use control signal ~~faces~~indications should be located over each*
259 *controlled lane at frequent intervals. This location should be such that road users will at all times be*
260 *able to see at least one signal indication and preferably two along the roadway, and will have a definite*
261 *indication of the lanes specifically reserved for their use.*
262 ⁰⁹ *All lane-use control signal ~~faces~~indications should be located in a straight line across the roadway*
263 *approximately at right angles to the roadway alignment.*
264 ¹⁰ *On roadways having intersections controlled by traffic control signals, the lane-use control signal*
265 *~~face~~indication should be located sufficiently far in advance of or beyond such traffic control signals to*
266 *prevent them from being misconstrued as traffic control signals.*

267 **Standard:**
268 ¹¹ **Except as provided in Paragraph 12, the bottom of the ~~signal~~ housing of any lane-use control**
269 **signal ~~face~~indication shall be a minimum of 15 feet and a maximum of 19 feet above the pavement**
270 **grade. A lane-use control signal indication displayed on a full-matrix Changeable Message Sign**
271 **shall meet overhead sign clearance provisions in Section 2A.15.**
272

273 **Option:**
274 ¹² The bottom of a lane-use control signal housing may be lower than 15 feet above the pavement if it
275 is mounted on a canopy or other structure over the pavement, but not lower than the vertical clearance of
276 the structure.
277 ~~¹³ Except for lane-use control signals at toll plazas (see Section 4K.02-4R.02), in areas with minimal~~
278 ~~visual clutter and with speeds of less than 40 mph, lane-use control signal faces with nominal height and~~
279 ~~width of 12 inches may be used for the DOWNWARD GREEN ARROW, YELLOW X, and RED X~~
280 ~~signal faces, and lane-use control signal faces with nominal height and width of 18 inches may be used~~
281 ~~for the WHITE TWO-WAY LEFT TURN ARROW and WHITE ONE-WAY LEFT TURN ARROW~~
282 ~~signal faces.~~
283 **[Moved up to become paragraph 01b.]**
284 ~~¹⁴ Other sizes of lane-use control signal faces larger than 18 inches with message recognition distances~~
285 ~~appropriate to signal spacing may be used for the DOWNWARD GREEN ARROW, YELLOW X, and~~
286 ~~RED X signal faces.~~
287 **[Moved up to become paragraph 01c.]**
288 ⁺⁵¹³ Non-reversible lanes not immediately adjacent to a reversible lane on any street so controlled may
289 also be provided with signal indications that display a DOWNWARD GREEN ARROW to traffic
290 traveling in the permitted direction and a RED X to traffic traveling in the opposite direction.

291 ~~16 The signal indications provided for each lane may be in separate signal sections or may be~~
292 ~~superimposed in the same signal section.~~

293 [Relocated and edited to become Paragraph 05a]

294 Section 4T.04 Operation of Lane-Use Control Signals

295 Standard:

296 01 All lane-use control signals shall be coordinated so that all the signal indications along the
297 controlled section of roadway are operated uniformly and consistently. The lane-use control signal
298 system shall be designed to reliably guard against showing any prohibited combination of signal
299 indications to any traffic at any point in the controlled lanes.

300 02 For reversible-lane control signals, the following combination of signal indications shall not be
301 simultaneously displayed over the same lane to both directions of travel:

302 A. DOWNWARD GREEN ARROW in both directions,

303 B. YELLOW X or DIAGONAL DOWNWARD YELLOW ARROW, or DOWNWARD
304 YELLOW ARROW in both directions,

305 C. WHITE ONE WAY LEFT-TURN ARROW in both directions,

306 D. DOWNWARD GREEN ARROW, or DIAGONAL DOWNWARD YELLOW ARROW, or
307 DOWNWARD YELLOW ARROW in one direction and YELLOW X in the other direction,

308 E. WHITE TWO-WAY LEFT-TURN ARROW or WHITE ONE WAY LEFT-TURN
309 ARROW in one direction and DOWNWARD GREEN ARROW in the other direction,

310 F. WHITE TWO-WAY LEFT-TURN ARROW in one direction and WHITE ONE WAY
311 LEFT-TURN ARROW or any red or yellow lane-use signal indication in the other direction,
312 and

313 G. WHITE ONE WAY LEFT-TURN ARROW in one direction and ~~YELLOW X~~ any yellow
314 lane-use signal indication in the other direction.

315 03 A moving condition in one direction shall be terminated either by the immediate display of a
316 RED X signal indication or by a YELLOW X or DIAGONAL DOWNWARD YELLOW ARROW
317 signal indication followed by a RED X signal indication.

318 04 In either case, the duration of the RED X signal indication shall be sufficient to allow clearance
319 of the lane before any moving condition is allowed in the opposing direction.

320 05 Whenever a DOWNWARD GREEN ARROW signal indication is changed to a WHITE TWO-
321 WAY LEFT-TURN ARROW signal indication, the RED X signal indication shall continue to be
322 displayed to the opposite direction of travel for an appropriate duration to allow traffic time to
323 vacate the lane being converted to a two-way left-turn lane.

324 06 If an automatic control system is used, a manual control to override the automatic control shall
325 be provided.

326 Guidance:

327 07 *The type of control provided for reversible-lane operation should be such as to permit either*
328 *automatic or manual operation of the lane-use control signals.*

329 Standard:

330 08 If used, lane-use control signals shall be operated continuously, except as provided in
331 paragraph 08a of this Section ~~that lane-use control signals that are used only for special events or~~
332 ~~other infrequent occurrences and lane-use control signals on non-reversible freeway lanes are~~
333 ~~permitted to be darkened when not in operation.~~ [Relocated to become new paragraph 08a.] ~~The~~
334 ~~change from normal operation to non-operation shall occur only when the lane-use control signals~~
335 ~~display signal indications that are appropriate for the lane use that applies when the signals are not~~
336 ~~operated. The lane-use control signals shall display signal indications that are appropriate for the~~
337 ~~existing lane use when changed from non-operation to normal operations. Also, traffic control~~

338 ~~devices shall clearly indicate the proper lane use when the lane-use control signals are not in~~
339 ~~operation.~~ [Relocated to become new paragraph 08b.]

340 Option:

341 08a Lane-use control signals that are used only for special events or other infrequent occurrences and
342 lane-use control signals on non-reversible freeway lanes ~~are permitted to~~ may be darkened when not in
343 operation. [Relocated from above in paragraph 08.]

344
345 [NOTE: Study found dark lane-use control signals to indicate “normal” conditions on freeways are
346 confusing and not nearly as well understood as downward green arrow, but recommended further research
347 before eliminating the dark option for freeways.]

348 Standard:

349 8b ~~The~~A change from normal operation to non-operation shall occur only when the lane-use
350 control signals display signal indications that are appropriate for the lane use that applies when the
351 signals are not operated. The lane-use control signals shall display signal indications that are
352 appropriate for the existing lane use when changed from non-operation to normal operations. Also,
353 traffic control devices shall clearly indicate the proper lane use when the lane-use control signals
354 are not in operation. [Relocated from above in paragraph 08.]

355 Support:

356 09 Section 2B.34 contains additional information concerning considerations involving left-turn
357 prohibitions in conjunction with reversible lane operations. Section 2G.24 contains additional information
358 concerning lane-use control signals used for part-time travel on a shoulder. Section 2G.25 contains
359 additional information concerning lane-use control signals used for active lane management on freeways
360 and expressways.