



# National Committee on Uniform Traffic Control Devices

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## National Committee on Uniform Traffic Control Devices (NCUTCD) Recommended Changes to Proposed Text for 11<sup>th</sup> Edition of the MUTCD Docket Number: FHWA-2020-0001

6 **Federal Register Item Numbers:** 471, 472, 473

7 **NPA MUTCD Section Number:** Sections 6C.01 TO 6C.05

8 **Legend:** Base text shown in proposal is the NPA “clean” proposed text.

- 9 • [NCUTCD recommendation for text to be added in final rule.](#)
- 10 • ~~NCUTCD recommendation for text to be deleted in final rule.~~
- 11 • [NCUTCD recommendation for text to be moved/relocated in final rule.](#)
- 12 • NPA text that was not previously approved by NCUTCD but is now approved.
- 13 • Explanatory note: [\[Note that explains purpose of recommended change.\]](#)

15 The following pages present NCUTCD recommendations for changes to the MUTCD NPA  
16 proposed text, tables, and figures for Chapter 6C. Below is a short summary of the NCUTCD  
17 position for each section of this chapter. A more detailed summary is provided at the beginning  
18 of each section.

- 19 • NPA # N/A, Section 6C.01: NCUTCD agrees with NPA content (no changes recommended)
- 20 • NPA #471, Section 6C.02: Changes recommended based on Council action in spring 2021
- 21 • NPA #472, Section 6C.03: Changes recommended based on Council action in spring 2021
- 22 • NPA # N/A, Section 6C.04: NCUTCD agrees with NPA content (no changes recommended)
- 23 • NPA #473, Section 6C.05: Changes recommended based on Council action in spring 2021

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## CHAPTER 6C. PEDESTRIAN AND WORKER SAFETY

27  
28 **Section 6C.01 Comments:** NCUTCD agrees with 6C.01 as presented in the NPA

29  
30 **Section 6C.01 Pedestrian and Worker Safety – General**  
31 **Standard:**

32 The various TTC provisions for pedestrian and worker safety set forth in Part 6 shall  
33 be applied by knowledgeable (for example, trained and/or certified) persons after  
34 appropriate evaluation and engineering judgment.  
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36  
37 **Section 6C.02 Comments:** NCUTCD generally agrees with 6C.02, but recommends the  
38 following:

- 39 • Replace ‘pedestrian route’ with ‘pedestrian access route’ in 5 locations to match ADA  
40 language.

- Delete the second sentence regarding in the second Support statement. Note that this sentence appears in the markup version of the NPA, but is omitted from the “clean” NPA.
- If PROWAG is adopted as a Final Rule prior to publication of this edition of the MUTCD, reference it in this section.

## Section 6C.02 Pedestrian Considerations

Support:

A wide range of pedestrians might be affected by TTC zones, including the young, elderly, and people with disabilities such as hearing, visual, or mobility. Pedestrians need a clearly delineated and usable travel path. Considerations for pedestrians with disabilities are addressed in Section 6C.03.

Guidance:

*Prior to closing a sidewalk, the maintaining agency should advise users of the future closure.*

**Standard:**

**If the TTC zone affects the movement of pedestrians, adequate pedestrian access and walkways shall be provided.**

Option:

If establishing or maintaining an alternate ~~pedestrian route~~ pedestrian access route is not feasible during the project, an alternate means of providing for pedestrians may be used, such as adding free bus service around the project or assigning someone the responsibility to assist pedestrians with disabilities through the project limits. [replace "pedestrian route" with "pedestrian access route"]

If an existing ~~pedestrian route~~ pedestrian access route is impacted by a short-duration or short term work zone that is attended with project personnel, establishing an alternate ~~pedestrian route~~ pedestrian access route may not be necessary if the work can be stopped and pedestrians can navigate the work zone. Pedestrians may be delayed for a short period of time for project personnel to move equipment and material to facilitate passage. Work zone personnel may also provide assistance to the pedestrian as necessary. [replace "pedestrian route" with "pedestrian access route" (2 locations)]

Support:

Pedestrians are reluctant to retrace their steps to a prior intersection for a crossing or to add distance or out-of-the-way travel to a destination. ~~This is especially true for site roadways open to public travel where pedestrians will seek the shortest route, e.g., from a site building to their parked vehicle.~~ [delete text]

Guidance:

*The following three items should be considered when planning for pedestrians in TTC zones:*

A. *Pedestrians should not be led into conflicts with vehicles, equipment, and operations.*

B. *Pedestrians should not be led into conflicts with vehicles moving through or around the worksite.*

C. *Pedestrians should be provided with a convenient and accessible path that replicates as nearly as practical the most desirable characteristics of the existing sidewalk(s) or footpath(s).*

A ~~pedestrian route~~ pedestrian access route should not be severed and/or moved for non-construction activities such as parking for vehicles and equipment. [replace "pedestrian route" with "pedestrian access route"]

86 Consideration should be made to separate pedestrian movements from both worksite activity  
87 and vehicular traffic. Unless an acceptable route that does not involve crossing the roadway can  
88 be provided, pedestrians should be appropriately directed with advance signing that encourages  
89 them to cross to the opposite side of the roadway. In urban and suburban areas with high  
90 vehicular traffic volumes, these signs should be placed at intersections (rather than midblock  
91 locations) so that pedestrians are not confronted with midblock worksites that will induce them  
92 to attempt skirting the worksite or making a midblock crossing.

93 Due to the likelihood of high pedestrian presence in site roadways open to public travel, TTC  
94 zones should be designed to minimize conflicts between vehicular and pedestrian movements.

95 Support:

96 Figures 6P-28 and 6P-29 show typical TTC device usage and techniques for pedestrian  
97 movement through work zones.

98 Guidance:

99 To accommodate the needs of pedestrians, including those with disabilities, the following  
100 considerations should be addressed when temporary pedestrian pathways in TTC zones are  
101 designed or modified:

- 102 A. Provisions for continuity of accessible paths for pedestrians should be incorporated into  
103 the TTC plan.
- 104 B. Access to transit stops should be maintained.
- 105 C. A smooth, continuous hard surface should be provided throughout the entire length of the  
106 temporary pedestrian facility. There should be no curbs or abrupt changes in grade or  
107 terrain that could cause tripping or be a barrier to wheelchair use. The geometry and  
108 alignment of the facility should meet the applicable requirements of the "U.S.  
109 Department of Justice 2010 ADA Standards for Accessible Design, September 15, 2010  
110 and Code of Federal Regulations, Title 28, Parts 35 and 36. Americans with Disabilities  
111 Act of 1990" (see Section 1A.05).
- 112 D. The width of the existing pedestrian facility should be provided for the temporary facility  
113 if practical. Traffic control devices and other construction materials and features should  
114 not intrude into the usable width of the sidewalk, temporary pathway, or other pedestrian  
115 facility. When it is not possible to maintain a minimum width of 60 inches throughout the  
116 entire length of the pedestrian pathway, a 60 x 60-inch passing space should be provided  
117 at least every 200 feet to allow individuals in wheelchairs to pass.
- 118 E. Blocked routes, alternate crossings, and sign and signal information should be  
119 communicated to pedestrians with visual disabilities by providing devices such as audible  
120 information devices, accessible pedestrian signals, or barriers and channelizing devices  
121 that are detectable to the pedestrians traveling with the aid of a long cane or who have  
122 vision disabilities. Where pedestrian traffic is detoured to a TTC signal, engineering  
123 judgment should be used to determine if pedestrian signals or accessible pedestrian  
124 signals should be considered for crossings along an alternate route.
- 125 F. When channelization is used to delineate a pedestrian pathway, a continuous detectable  
126 edging should be provided throughout the length of the facility such that pedestrians  
127 using a long cane can follow it. These detectable edgings should comply with the  
128 provisions of Section 6M.04.
- 129 G. Signs and other devices mounted lower than 7 feet above the temporary pedestrian  
130 pathway should not project more than 4 inches into accessible pedestrian facilities.

131 Option:

132 Whenever it is feasible, closing off the worksite from pedestrian intrusion may be preferable  
133 to channelizing pedestrian traffic along the site with TTC devices.

134 *Guidance:*

135 *Fencing should not create sight distance restrictions for road users. Fences should not be*  
136 *constructed of materials that would be hazardous if impacted by vehicles. Wooden railing,*  
137 *fencing, and similar systems placed immediately adjacent to motor vehicle traffic should not be*  
138 *used as substitutes for crashworthy temporary traffic barriers.*

139 *Ballast for TTC devices should be kept to the minimum amount needed and should be*  
140 *mounted low to prevent penetration of the vehicle windshield.*

141 *Movement by work vehicles and equipment across designated pedestrian paths should be*  
142 *minimized and, when necessary, should be controlled by flaggers or other TTC. Staging or*  
143 *stopping of work vehicles or equipment along the side of pedestrian paths should be avoided,*  
144 *since it encourages movement of workers, equipment, and materials across the pedestrian path.*

145 *Access to the work space by workers and equipment across pedestrian walkways should be*  
146 *minimized because the access often creates unacceptable changes in grade, and rough or muddy*  
147 *terrain, and pedestrians will tend to avoid these areas by attempting non-intersection crossings*  
148 *where no curb ramps are available.*

149 *Option:*

150 A canopied walkway may be used to protect pedestrians from falling debris, and to provide a  
151 covered passage for pedestrians.

152 *Guidance:*

153 *Covered walkways should be sturdily constructed and adequately lighted for nighttime use.*

154 *When pedestrian and vehicle paths are rerouted to a closer proximity to each other,*  
155 *consideration should be given to separating them by a temporary traffic barrier.*

156 *If a temporary traffic barrier is used to shield pedestrians, it should be designed to*  
157 *accommodate site conditions.*

158 *Support:*

159 Depending on the possible vehicular speed and angle of impact, temporary traffic barriers  
160 might deflect upon impact by an errant vehicle. Guidance for locating and designing temporary  
161 traffic barriers can be found in Chapter 9 of AASHTO's "Roadside Design Guide" (see Section  
162 1A.05).

163 **Standard:**

164 **Normal vertical curbing shall not be used as a substitute for temporary traffic barriers**  
165 **when temporary traffic barriers are needed.**

166 *Option:*

167 Temporary traffic barriers or longitudinal channelizing devices may be used to discourage  
168 pedestrians from unauthorized movements into the work space. They may also be used to inhibit  
169 conflicts with vehicular traffic by minimizing the possibility of midblock crossings.

170 *Support:*

171 A major concern for pedestrians is building construction encroaching onto the contiguous  
172 sidewalks, which forces pedestrians off the curb into direct conflict with moving vehicles.

173 *Guidance:*

174 *If a significant potential exists for vehicle incursions into the pedestrian path, pedestrians*  
175 *should be rerouted or temporary traffic barriers should be installed.*

176 *Support:*

177 TTC devices, temporary concrete barriers, and wood or chain link fencing with a continuous  
178 detectable edging can satisfactorily delineate a pedestrian path.

179 *Guidance:*

180 *Tape, rope, or plastic chain strung between devices are not detectable and are therefore not*  
181 *accessible to and usable by individuals with disabilities. Such items should not be used as a*  
182 *control for pedestrian movements.*

183 *In general, ~~pedestrian route~~pedestrian access route should be preserved in urban and*  
184 *commercial suburban areas. Alternative routing should be discouraged. [replace "pedestrian*  
185 *route" with "pedestrian access route"]*

186 *The highway agency in charge of the TTC zone should regularly inspect the activity area so*  
187 *that effective pedestrian TTC is maintained.*

188

189

190 **Section 6C.03 Comments:** NCUTCD generally agrees with 6C.03, but recommends replacing  
191 'pedestrian route' with 'pedestrian access route' to match ADA language.

192

### 193 **Section 6C.03 Accessibility Considerations**

194 **Support:**

195 Additional information on the design and construction of accessible temporary facilities is  
196 found in publications listed in Section 1A.05 (see Publications 12, 38, 39, and 42).

197 *Guidance:*

198 *Adequate provisions should be made for pedestrians with disabilities. The extent of needs for*  
199 *such provisions should be determined through engineering judgment or by the individual*  
200 *responsible for each TTC zone situation.*

201 **Standard:**

202 **When existing pedestrian facilities are disrupted, closed, or relocated in a TTC zone,**  
203 **the temporary facilities shall be detectable and include accessibility features consistent with**  
204 **the features present in the existing pedestrian facility. A barrier that is detectable by a**  
205 **person with a visual disability traveling with the aid of a long cane shall be placed across**  
206 **the full width of the closed sidewalk.**

207 **Support:**

208 Maintaining a detectable, channelized ~~pedestrian route~~pedestrian access route is much more  
209 useful to pedestrians who have visual disabilities than closing a walkway and providing audible  
210 directions to an alternate route involving additional crossings and a return to the original route.  
211 Braille is not useful in conveying such information because it is difficult to find. Audible  
212 instructions might be provided, but the extra distance and additional street crossings might add  
213 complexity to a trip. [replace "pedestrian route" with "pedestrian access route"]

214 *Guidance:*

215 *Because printed signs and surface delineation are not usable by pedestrians with visual*  
216 *disabilities, blocked routes, alternate crossings, and sign and signal information should be*  
217 *communicated to pedestrians with visual disabilities by providing audible information devices,*  
218 *accessible pedestrian signals, and barriers and channelizing devices that are detectable to*  
219 *pedestrians traveling with the aid of a long cane or who have vision disabilities.*

220 **Support:**

221 The most desirable way to provide information to pedestrians with visual disabilities that is  
222 equivalent to visual signing for notification of sidewalk closures is a speech message provided by

223 an audible information device. Devices that provide speech messages in response to passive  
224 pedestrian actuation are the most desirable. Other devices that continuously emit a message, or  
225 that emit a message in response to use of a pushbutton, are also acceptable. Signing information  
226 can also be transmitted to personal receivers, but currently such receivers are not likely to be  
227 carried or used by pedestrians with visual disabilities in TTC zones. Audible information  
228 devices might not be needed if detectable channelizing devices make an alternate route of travel  
229 evident to pedestrians with visual disabilities.

230 *Guidance:*

231 *If a pushbutton is used to provide equivalent TTC information to pedestrians with visual*  
232 *disabilities, the pushbutton should be equipped with a locator tone to notify pedestrians with*  
233 *visual disabilities that a special accommodation is available, and to help them locate the*  
234 *pushbutton.*

235

236

237 **Section 6C.04 Comments: NCUTCD agrees with 6C.04 as presented in the NPA.**

238

### 239 **Section 6C.04 Worker Safety Considerations**

240 Support:

241 Equally as important as the safety of road users traveling through the TTC zone is the safety  
242 of workers. TTC zones present temporary and constantly changing conditions that are  
243 unexpected by the road user. This creates an even higher degree of vulnerability for workers on  
244 or near the roadway.

245 Maintaining TTC zones with road user flow inhibited as little as possible, and using TTC  
246 devices that get the road users' attention and provide positive direction are of particular  
247 importance. Likewise, equipment and vehicles moving within the activity area create a risk to  
248 workers on foot. When possible, the separation of moving equipment and construction vehicles  
249 from workers on foot provides the operator of these vehicles with a greater separation clearance  
250 and improved sight lines to minimize exposure to the hazards of moving vehicles and equipment.

251 *Guidance:*

252 *The following are the key elements of worker safety and TTC management that should be*  
253 *considered to improve worker safety:*

254 *A. Training—all workers should be trained on how to work next to motor vehicle traffic in a*  
255 *way that minimizes their vulnerability. Workers having specific TTC responsibilities*  
256 *should be trained in TTC techniques, device usage, and placement.*

257 *B. Temporary Traffic Barriers—temporary traffic barriers should be placed along the work*  
258 *space depending on factors such as lateral clearance of workers from adjacent traffic,*  
259 *speed of traffic, duration and type of operations, time of day, and volume of traffic.*

260 *C. Speed Reduction—reducing the speed of vehicular traffic, mainly through regulatory*  
261 *speed zoning, funneling, lane reduction, or the use of uniformed law enforcement officers*  
262 *or flaggers, should be considered.*

263 *D. Activity Area—operations entering and departing the work space, and within the work*  
264 *space, should be planned to minimize backing maneuvers by construction vehicles and*  
265 *equipment to minimize the risk of runover and backover accidents.*

266 *E. Worker Safety Planning—a trained person designated by the employer should conduct a*  
267 *basic hazard assessment for the worksite and job classifications required in the activity*  
268 *area. This safety professional should determine whether engineering, administrative, or*



269 *personal protection measures should be implemented. This plan should be in accordance*  
270 *with the Occupational Safety and Health Act of 1970, as amended, “General Duty*  
271 *Clause” Section 5(a)(1) - Public Law 91-596, 84 Stat. 1590, December 29, 1970, as*  
272 *amended, and with the requirement to assess worker risk exposures for each job site and*  
273 *job classification, as per 29 CFR 1926.20 (b)(2) of “Occupational Safety and Health*  
274 *Administration Regulations, General Safety and Health Provisions” (see Section 1A.05).*

275 Option:

276 The following are additional elements of TTC management that may be considered to  
277 improve worker safety:

- 278 A. Shadow Vehicle—in the case of mobile and constantly moving operations, such as  
279 pothole patching and striping operations, a shadow vehicle, equipped with appropriate  
280 lights and warning signs, may be used to protect the workers from impacts by errant  
281 vehicles. The shadow vehicle may be equipped with a rear-mounted impact attenuator.  
282 B. Road Closure—if alternate routes are available to handle road users, the road may be  
283 closed temporarily to facilitate project completion and thus further reduce worker  
284 vulnerability.  
285 C. Law Enforcement Use—in highly vulnerable work situations, particularly those of  
286 relatively short duration, law enforcement units may be stationed to heighten the  
287 awareness of passing vehicular traffic and to improve safety through the TTC zone.  
288 D. Lighting—for nighttime work, the TTC zone and approaches may be lighted.  
289 E. Special Devices—these include rumble strips, changeable message signs, hazard  
290 identification beacons, flags, and warning lights. Intrusion warning devices may be used  
291 to alert workers to the approach of errant vehicles.

292 Support:

293 Judicious use of the special devices described in Item E in Paragraph 4 might be helpful for  
294 certain difficult TTC situations, but misuse or overuse of special devices or techniques might  
295 lessen their effectiveness.  
296

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297  
298 **Section 6C.05 Comments:** NCUTCD generally agrees with 6C.05, but recommends the  
299 following:

- 300 • Delete text in the first Standard that only workers and first responders who are exposed to  
301 traffic or work vehicles within the right-of-way wear PPE, since all workers and first  
302 responders within the right-of-way should wear PPE, even if they aren't initially exposed  
303 to traffic or work vehicles. This removes ambiguity on when it applies.
- 304 • Reference ANSI/ISEA 107-2015 version.
- 305 • If the 2021 draft edition of ANSI/ISEA 107 version is adopted prior to publication of this  
306 edition of the MUTCD, reference it in this section.

307  
308 **Section 6C.05 High-Visibility Safety Apparel**

309 **Standard:**

310 For daytime and nighttime activity, all workers, including emergency responders,  
311 within the right-of-way ~~who are exposed either to traffic (vehicles using the highway for~~  
312 ~~purposes of travel) or to work vehicles and construction equipment within the TTC zone~~  
313 shall wear high-visibility safety apparel that meets the Performance Class 2 or 3  
314 requirements of the ANSI/ISEA 107–2015 publication entitled “American National

315 **Standard for High-Visibility Safety Apparel and Headwear” (see Section 1A.05), or**  
316 **equivalent revisions, except as provided in Paragraph 4. A person designated by the**  
317 **employer to be responsible for worker safety shall make the selection of the appropriate**  
318 **class of garment.** [delete text and edit for current ANSI version]

319 **The apparel background (outer) material color shall be fluorescent orange-red,**  
320 **fluorescent yellow-green, or a combination of the two as defined in the ANSI standard.**  
321 **The retroreflective material shall be orange, yellow, white, silver, yellow-green, or a**  
322 **fluorescent version of these colors**

323 **When uniformed law enforcement personnel are used to direct traffic, to investigate**  
324 **crashes, or to handle lane closures, obstructed roadways, and disasters, high-visibility**  
325 **safety apparel as described in this Section shall be worn by the law enforcement personnel.**

326 Option:

327 Emergency and incident responders and law enforcement personnel within the TTC zone  
328 may wear high-visibility safety apparel that meets the performance requirements of the  
329 ANSI/ISEA 207-2006 publication entitled “American National Standard for High-Visibility  
330 Public Safety Vests” (see Section 1A.05), or equivalent revisions, and labeled as ANSI 207-  
331 2006, in lieu of ANSI/ISEA 107-~~2004~~2015 apparel. [edit for current ANSI version]

332 **Standard:**

333 **Except as provided in Paragraph 6, firefighters or other emergency responders working**  
334 **within the right-of-way shall wear high-visibility safety apparel as described in this Section.**

335 Option:

336 Firefighters or other emergency responders working within the right-of-way and engaged in  
337 emergency operations that directly expose them to flame, fire, heat, and/or hazardous materials  
338 may wear retroreflective turn-out gear that is specified and regulated by other organizations, such  
339 as the National Fire Protection Association.

340 *Guidance:*

341 *For flagger wear during nighttime activity, high-visibility safety apparel that meets the*  
342 *Performance Class 3 requirements of the ANSI/ISEA 107-2015 publication entitled “American*  
343 *National Standard for High-Visibility Apparel and Headwear” (see Section 1A.05), or*  
344 *equivalent revision, and labeled as meeting the ANSI 107-2015 standard performance for Class*  
345 *3 risk exposure should be worn.*

346