

Disclaimer: This document shows only the changes in the 2009 MUTCD, Revision 1,2, and 3, made for the 11th Edition of the MUTCD; it not an official representation of the 11th Edition and may contain unintended errors or omissions. It was prepared to assist practitioners with identifying text changes only. Figures and tables are not included. This document does not explicitly identify where text was moved or reorganization for the 11th edition, such text will resemble other deletions and additions. The official version of the MUTCD is located on the FHWA MUTCD website (<https://mutcd.fhwa.dot.gov/index.htm>).

Description: This document shows the changes from 2009 MUTCD text, including Revision 1, 2, and 3, made for the 11th Edition of the MUTCD. Some parts of 11th Edition include reorganization of 2009 MUTCD material. Users of this document should refer to the Federal Register and the supplemental table of changes posted in the Federal Register docket for the MUTCD 11th Edition Final Rule to obtain information on reorganized and relocated text from the 2009 MUTCD for the 11th Edition, as well as other changes.

The Final Rule for the MUTCD 11th Edition provides general information about significant change to the MUTCD. A supplementary table of changes is included in the Final Rule docket to provide information on changes not explicitly detailed in the Final Rule by means of a comparison between the Federal Register description of changes listed in the Notice of Proposed Amendments (NPA) for the 11th Edition issued on December 14, 2020, and the disposition of comments received in response to that Notice. Practitioners will find the supplemental table of changes helpful in determining how proposed text in the NPA was either incorporated or changed to establish the MUTCD 11th Edition.

In this comparison document, new text or newly relocated text for the 11th Edition is shown in [blue underline](#) and 2009 MUTCD text that has been removed or moved to another Section of the MUTCD is shown in ~~red strikethrough~~.

Additionally, Part 5 is omitted from this comparison document as this Part is completely new material in the 11th Edition. Relevant provisions from the previous version of Part 5, Low Volume Roads, have been moved to other Parts of the 11th Edition and shown in [blue underline](#), as appropriate, or removed completely as appropriate. See supplemental tables of changes for more information on text changes.

Finally, this document is only provided by FHWA to help practitioners quickly identify changes incorporated into the 11th Edition of the MUTCD. Though every effort has been made to ensure the accuracy of this document, there may be unintentional differences between the text shown in this document and the text of the official version of the 11th Edition MUTCD. The official version is located at: <https://mutcd.fhwa.dot.gov/>.

1
2 **MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES**
3 **FOR STREETS AND HIGHWAYS (MUTCD)**

4
5 **INTRODUCTION**

6
7 **PART 1**
8 **GENERAL**

9
10
11 **CHAPTER 1A. GENERAL**

12 **Section 1A.01 Purpose of the MUTCD**

13 **Support:**

14 The purpose of the MUTCD is to establish uniform national criteria for the use of traffic control
15 devices that meet the needs and expectancy of road users on all streets, highways, pedestrian and bicycle
16 facilities, and site roadways open to public travel.

17 This purpose is achieved through the following objectives:

18 A. Promote safety, inclusion, and mobility for all users of the road network;

19 B. Promote efficiency through creating national uniformity in the meaning and appearance of traffic
20 control devices;

21 C. Promote national consistency in the use, installation, and operation of traffic control devices; and

22 D. Provide basic principles for traffic engineers to use in making decisions regarding the use,
23 installation, operation, maintenance, and removal of traffic control devices.

24 Uniformity of the meaning of traffic control devices is vital to their effectiveness. Uniformity means
25 treating similar situations in a similar way. Uniformity of devices simplifies the task of the road user
26 because it aids in recognition and understanding, thereby reducing perception/reaction time. Uniformity
27 assists road users, law enforcement officers, and traffic courts by giving everyone the same interpretation.
28 Uniformity assists public highway officials through efficiency in manufacture, installation, maintenance,
29 and administration.

30 The use of uniform traffic control devices also requires uniform and appropriate application.

31 The applicability of the MUTCD to facilities open to public travel is independent of the type of
32 ownership or jurisdiction (public or private) and the source of funding (Federal, State, local, or private).

33 This Manual presumes the user of the MUTCD has sufficient working knowledge, professional
34 training and experience, and education in the principles of traffic engineering. Other resources can be
35 consulted to understand the basis for decisions that are made in which engineering study or judgment will
36 be applied.

37 **Section 1A.01-1A.02 Purpose of Traffic Control Devices – General Description**

38 **Support:**

39 ~~The purpose of traffic control devices, as well as the principles for their use, is to promote highway~~
40 ~~safety and efficiency by providing for the orderly movement of all road users on streets, highways,~~
41 ~~bikeways, and private roads open to public travel throughout the Nation.~~

42 ~~Traffic control devices notify road users of regulations and provide warning and guidance needed for~~
43 ~~the uniform and efficient operation of all elements of the traffic stream in a manner intended to minimize~~
44 ~~the occurrences of crashes.~~

Standard:

As defined in Section 1C.02 of this Manual, ~~T~~traffic control devices ~~shall be defined as~~include all signs, signals, markings, channelizing devices, ~~and or~~ other devices that use colors, shapes, symbols, words, sounds, and/or tactile information for the primary purpose of communicating a used to regulatory, warning, or guidance message to road users ~~one traffic, placed on, over, or adjacent to~~ a street, highway, pedestrian facility, bikeway, pathway or ~~private road~~ site roadway open to public travel ~~(see definition in Section 1A.13) by authority of a public agency or official having jurisdiction, or, in the case of a private road, by authority of the private owner or private official having jurisdiction.~~

Infrastructure elements that restrict the road user's travel paths or vehicle speeds, such as islands, curbs, speed humps, and other raised roadway surfaces, are not traffic control devices. Transverse or longitudinal rumble strips are also not traffic control devices. Operational devices associated with the application of traffic control strategies, such as fencing, roadway lighting, barriers, and attenuators are shown in this Manual for context, but their design, application, and usage are not specified since they are not traffic control devices.

Certain types of signs and other devices that do not have any traffic control purpose are sometimes placed within the highway right-of-way by or with the permission of the public agency or the official having jurisdiction over the street or highway. ~~Most of these signs and other devices are not intended for use by road users in general, and their message is only important to individuals who have been instructed in their meanings.~~ These signs and other devices are not considered to be traffic control devices and provisions regarding their design and use are not included in this Manual. Among these signs and other devices are the following:

- A. Devices whose purpose is to assist highway maintenance personnel, ~~Examples include such as~~ markers to guide snowplow operators, devices that identify culvert and drop inlet locations, and devices that precisely identify highway locations for maintenance or mowing purposes;
- B. Devices whose purpose is to assist fire or law enforcement personnel, ~~Examples include such as~~ markers that identify fire hydrant locations, signs that identify fire or water district boundaries, speed measurement pavement markings, small indicator lights to assist in enforcement of red light violations, and photo enforcement systems;
- C. Devices whose purpose is to assist utility company personnel and highway contractors, such as markers that identify underground utility locations;
- D. Signs posting local non-traffic ordinances; and
- E. Signs giving civic organization meeting information.

Standard:

~~Traffic control devices or their supports shall not bear any advertising message or any other message that is not related to traffic control.~~

Support:

~~Tourist-oriented directional signs and Specific Service signs are not considered advertising; rather, they are classified as motorist service signs.~~

Section 1A.03 Target Road Users**Support:**

Traffic control devices can be targeted at operators of motor vehicles, including driving automation systems, and at vulnerable road users.

Targeted operators of motor vehicles include motorists, public transportation operators, truck drivers, and motorcyclists. Targeted users also include vulnerable road users, who have little to no protection from crash forces. These users are defined in Title 23, U.S.C. 148(a). They include bicyclists and pedestrians, including persons with disabilities. Pedestrians with disabilities might be blind or vision-impaired, have mobility limitations, or other impairments. Protection of vulnerable users is a priority in this Manual as directed in Section 11135 of the Infrastructure Investment and Jobs Act.

1 Operators of motor vehicles and vulnerable road users are both likely to be present on roadways
2 where adjacent land use suggests that trips could be served by varied modes. Application of traffic control
3 devices on these roadways requires careful consideration of measures to set and design for appropriate
4 speeds; separation of various users in time and space; improvement of connectivity and access for
5 pedestrians, bicyclists, and transit riders, including for people with disabilities; and implementation of
6 safety countermeasures.

7 Section 1A.04 Use of the MUTCD

8 Support:

9 Traffic control device principles in the MUTCD are developed for and used by individuals who are
10 duly authorized and qualified to conduct traffic control device activities.

11 Standard:

12 Where the content of this Manual requires a decision for implementation, such decisions shall
13 be made by an engineer, or an individual under the supervision of an engineer, who has the
14 appropriate levels of experience and expertise to make the traffic control device decision. Those
15 decisions shall be made using engineering judgment or engineering study, as required by the
16 MUTCD provision.

17 Support:

18 Section 1C.02 contains definitions of “engineering study” and “engineering judgment.”

19 Guidance:

20 In making traffic control device decisions, individuals should consider the impacts of the decision on
21 the following: safety and operational efficiency (mobility) of all road users at that location, the effective
22 use of agency resources, cost-effectiveness, and enforcement and education aspects of traffic control
23 devices.

24 Support:

25 Throughout this Manual the headings Standard, Guidance, Option, and Support, the meanings of
26 which are defined in Section 1C.01, are used to classify the nature of the text that follows. Figures and
27 tables, including the notes contained therein, supplement the text and might constitute a Standard,
28 Guidance, Option, or Support. The user needs to refer to the appropriate text to classify the nature of the
29 figure, table, or note contained therein.

30 **Standard:**

31 **~~When used in this Manual, the text headings of Standard, Guidance, Option, and Support shall~~**
32 **~~be as defined in Paragraph 1 of Section 1A.13.~~**

33 Support:

34 ~~Throughout this Manual all dimensions and distances are provided in English units. Appendix A2~~
35 ~~contains tables for converting each of the English unit numerical values that are used in this Manual to the~~
36 ~~equivalent Metric (International System of Units) values.~~

37 Guidance:

38 ~~If Metric units are to be used in laying out distances or determining sizes of devices, such units~~
39 ~~should be specified on plan drawings and made known to those responsible for designing, installing, or~~
40 ~~maintaining traffic control devices.~~

41 Guidance:

42 ~~Except when a specific numeral is required or recommended by the text of a Section of this Manual,~~
43 ~~numerals displayed on the images of devices in the figures that specify quantities such as times, distances,~~
44 ~~speed limits, and weights should be regarded as examples only. When installing any of these devices, the~~
45 ~~numerals should be appropriately altered to fit the specific situation.~~

1 Similarly, destination names, route numbers, and State route shields that are displayed on the images
 2 of devices in the figures should be regarded as examples only. When installing any of these devices, the
 3 destination names, route numbers, and State route shields should be appropriately altered to fit the
 4 specific situation.

5 Support:

6 The ~~following~~ information contained in Paragraphs 9 and 10 of this Section will be useful when
 7 reference is being made to a specific portion of text in this Manual.

8 There are nine Parts in this Manual and each Part ~~is comprised of~~ includes one or more Chapters.
 9 Each Chapter ~~is comprised of~~ includes one or more Sections. Parts are ~~given~~ identified by a single-digit
 10 numerical identification, such as “Part 2 – Signs.” Chapters are identified by the Part number and a letter,
 11 such as “Chapter 2B – Regulatory Signs, ~~Barrieades, and Gates.~~” Sections are identified by the Chapter
 12 number and letter followed by a decimal point and a 2-digit number, such as “Section 2B.03 – Size of
 13 Regulatory Signs.” In some Chapters, the Sections are grouped together by subject into unnumbered sub-
 14 chapters with a heading, such as “Signing for Right-of-Way at Intersections” (for Sections 2B.06 through
 15 2B.20).

16 Each Section ~~is comprised of~~ includes one or more paragraphs. The paragraphs are indented and are
 17 identified by a number. Paragraphs are counted from the beginning of each Section without regard to the
 18 intervening text headings (Standard, Guidance, Option, or Support) or any intervening text in embedded
 19 Figures or Tables. Some paragraphs have lettered or numbered items. As an example of how to cite this
 20 Manual, the phrase “N[n]ot less than 40 feet beyond the stop line” that appears in Section 4D.~~4408~~ of
 21 this Manual would be referenced in writing as “Section 4D.~~4408~~, Par.1, A.1,” and would be verbally
 22 referenced as “Item A.1 of Paragraph 1 of Section 4D.~~4408~~.”

23 **Section ~~1A.11~~ 1A.05 Relation to Other Publications**

24 **Standard:**

25 **To the extent that they are incorporated by specific reference, the latest editions of the following**
 26 **publications, ~~or those editions specifically noted,~~ shall be a part of this Manual: “Standard**
 27 **Highway Signs ~~and Markings~~” ~~book~~ publication (FHWA); ~~;~~ and “Color Specifications for**
 28 **Retroreflective Sign and Pavement Marking Materials” (appendix to ~~s~~ Subpart F of Part 655 of**
 29 **Title 23 of the Code of Federal Regulations).**

30 Support:

31 The “Standard Highway Signs ~~and Markings~~” ~~book~~ publication includes standard alphabets and
 32 symbols and arrows for signs and pavement markings.

33 ~~For information about the publications mentioned in Paragraph 1, visit the Federal Highway~~
 34 ~~Administration’s MUTCD website at <http://mutcd.fhwa.dot.gov>, or write to the FHWA, 1200 New Jersey~~
 35 ~~Avenue, SE, HOTO, Washington, DC 20590.~~

36 The MUTCD is not a roadway design manual, and engineers seeking guidance on design should refer
 37 to appropriate roadway design guides recognized by the Federal Highway Administration as needed for
 38 the design application.

39 Other publications ~~that~~ are referenced in this Manual as useful resources, but they are not
 40 regulatory in nature, and are not independently legally enforceable. ~~are useful sources of information with~~
 41 respect to the use of this Manual are listed in this paragraph. See Page i of this Manual for ordering
 42 information for the following publications (later editions might also be available as useful sources of
 43 information):

- 44 1. ~~“AAA School Safety Patrol Operations Manual,” 2006 Edition (American Automobile~~
 45 ~~Association—AAA)~~
- 46 2. ~~“A Policy on Geometric Design of Highways and Streets,” 2004 Edition (American Association~~
 47 ~~of State Highway and Transportation Officials—AASHTO)~~

- 1 ~~3. “Guide for the Development of Bicycle Facilities,” 1999 Edition (AASHTO)~~
- 2 ~~4. “Guide for the Planning, Design, and Operation of Pedestrian Facilities,” 2004 Edition~~
- 3 ~~(AASHTO)~~
- 4 ~~5. “Guide to Metric Conversion,” 1993 Edition (AASHTO)~~
- 5 ~~6. “Guidelines for the Selection of Supplemental Guide Signs for Traffic Generators Adjacent to~~
- 6 ~~Freeways,” 4th Edition/Guide Signs, Part II: Guidelines for Airport Guide Signing/Guide Signs,~~
- 7 ~~Part III: List of Control Cities for Use in Guide Signs on Interstate Highways,” Item Code:~~
- 8 ~~GSGLC-4, 2001 Edition (AASHTO)~~
- 9 ~~7. “Roadside Design Guide,” 2006 Edition (AASHTO)~~
- 10 ~~8. “Standard Specifications for Movable Highway Bridges,” 1988 Edition (AASHTO)~~
- 11 ~~9. “Traffic Engineering Metric Conversion Folders—Addendum to the Guide to Metric~~
- 12 ~~Conversion,” 1993 Edition (AASHTO)~~
- 13 ~~10. “2009 AREMA Communications & Signals Manual,” (American Railway Engineering &~~
- 14 ~~Maintenance of Way Association—AREMA)~~
- 15 ~~11. “Changeable Message Sign Operation and Messaging Handbook (FHWA OP-03-070),” 2004~~
- 16 ~~Edition (Federal Highway Administration—FHWA)~~
- 17 ~~12. “Designing Sidewalks and Trails for Access—Part 2—Best Practices Design Guide (FHWA EP-~~
- 18 ~~01-027),” 2001 Edition (FHWA)~~
- 19 ~~13. “Federal Aid Highway Program Guidance on High Occupancy Vehicle (HOV) Lanes,” 2001~~
- 20 ~~(FHWA)~~
- 21 ~~14. “Maintaining Traffic Sign Retroreflectivity,” 2007 Edition (FHWA)~~
- 22 ~~15. “Railroad Highway Grade Crossing Handbook—Revised Second Edition (FHWA SA-07-010),”~~
- 23 ~~2007 Edition (FHWA)~~
- 24 ~~16. “Ramp Management and Control Handbook (FHWA HOP-06-001),” 2006 Edition (FHWA)~~
- 25 ~~17. “Roundabouts—An Informational Guide (FHWA RD-00-067),” 2000 Edition (FHWA)~~
- 26 ~~18. “Signal Timing Manual (FHWA HOP-08-024),” 2008 Edition (FHWA)~~
- 27 ~~19. “Signalized Intersections: an Informational Guide (FHWA HRT-04-091),” 2004 Edition~~
- 28 ~~(FHWA)~~
- 29 ~~20. “Travel Better, Travel Longer: A Pocket Guide to Improving Traffic Control and Mobility for~~
- 30 ~~Our Older Population (FHWA OP-03-098),” 2003 Edition (FHWA)~~
- 31 ~~21. “Practice for Roadway Lighting,” RP-8, 2001 (Illuminating Engineering Society—IES)~~
- 32 ~~22. “Safety Guide for the Prevention of Radio Frequency Radiation Hazards in the Use of~~
- 33 ~~Commercial Electric Detonators (Blasting Caps),” Safety Library Publication No. 20, July 2001~~
- 34 ~~Edition (Institute of Makers of Explosives)~~
- 35 ~~23. “American National Standard for High-Visibility Public Safety Vests,” (ANSI/ISEA 207-2006),~~
- 36 ~~2006 Edition (International Safety Equipment Association—ISEA)~~
- 37 ~~24. “American National Standard for High-Visibility Safety Apparel and Headwear,” (ANSI/ISEA~~
- 38 ~~107-2004), 2004 Edition (ISEA)~~
- 39 ~~25. “Manual of Traffic Signal Design,” 1998 Edition (Institute of Transportation Engineers—ITE)~~
- 40 ~~26. “Manual of Transportation Engineering Studies,” 1994 Edition (ITE)~~
- 41 ~~27. “Pedestrian Traffic Control Signal Indications,” Part 1—1985 Edition; Part 2 (LED Pedestrian~~
- 42 ~~Traffic Signal Modules)—2004 Edition (ITE)~~
- 43 ~~28. “Preemption of Traffic Signals Near Railroad Crossings,” 2006 Edition (ITE)~~
- 44 ~~29. “Purchase Specification for Flashing and Steady Burn Warning Lights,” 1981 Edition (ITE)~~
- 45 ~~30. “Traffic Control Devices Handbook,” 2001 Edition (ITE)~~
- 46 ~~31. “Traffic Detector Handbook,” 1991 Edition (ITE)~~
- 47 ~~32. “Traffic Engineering Handbook,” 2009 Edition (ITE)~~
- 48 ~~33. “Traffic Signal Lamps,” 1980 Edition (ITE)~~
- 49 ~~34. “Vehicle Traffic Control Signal Heads,” Part 1—1985 Edition; Part 2 (LED Circular Signal~~
- 50 ~~Supplement)—2005 Edition; Part 3 (LED Vehicular Arrow Traffic Signal Supplement)—2004~~
- 51 ~~Edition (ITE)~~

- 1 ~~35. “Uniform Vehicle Code (UVC) and Model Traffic Ordinance,” 2000 Edition (National~~
- 2 ~~Committee on Uniform Traffic Laws and Ordinances—NCUTLO)~~
- 3 ~~36. “NEMA Standards Publication TS 4 2005 Hardware Standards for Dynamic Message Signs~~
- 4 ~~(DMS) With NTCIP Requirements,” 2005 Edition (National Electrical Manufacturers~~
- 5 ~~Association—NEMA)~~
- 6 ~~37. “Occupational Safety and Health Administration Regulations (Standards—29 CFR), General~~
- 7 ~~Safety and Health Provisions—1926.20,” amended June 30, 1993 (Occupational Safety and~~
- 8 ~~Health Administration—OSHA)~~
- 9 ~~38. “Accessible Pedestrian Signals—A Guide to Best Practices (NCHRP Web Only Document~~
- 10 ~~117A),” 2008 Edition (Transportation Research Board—TRB)~~
- 11 ~~39. “Guidelines for Accessible Pedestrian Signals (NCHRP Web Only Document 117B),” 2008~~
- 12 ~~Edition (TRB)~~
- 13 ~~40. “Highway Capacity Manual,” 2000 Edition (TRB)~~
- 14 ~~41. “Recommended Procedures for the Safety Performance Evaluation of Highway Features,”~~
- 15 ~~(NCHRP Report 350), 1993 Edition (TRB)~~
- 16 ~~42. “The Americans with Disabilities Act Accessibility Guidelines for Buildings and Facilities~~
- 17 ~~(ADAAG),” July 1998 Edition (The U.S. Access Board)~~
- 18 ~~43. “Methods for Maintaining Pavement Marking Retroreflectivity,” (FHWA SA 19-001), 2020~~

19 Section 1A.06 Uniform Vehicle Code - Rules of the Road

20 Support:

21 The “Uniform Vehicle Code” (UVC)² is one of the publications referenced in the MUTCD. The
22 UVC contains a model set of motor vehicle codes and traffic laws for use throughout the United States,
23 the intent of which is to promote national uniformity in these laws. The Rules of the Road contained in
24 the UVC are intended to be recommendations for States to adopt in their State statutes and are not
25 independently legally enforceable.

26 *Guidance:*

27 *The actions required of road users to obey regulatory devices should be specified by State statute, or*
28 *in cases not covered by State statute, ~~by~~in local ordinances or resolutions. Such statutes, ordinances, and*
29 *resolutions should be consistent with the “Uniform Vehicle Code” ~~(see Section 1A.11).~~.”*
30

CHAPTER 1B. LEGAL REQUIREMENTS FOR TRAFFIC CONTROL DEVICES

Section 1B.01 National Standard

Standard:

The Manual on Uniform Traffic Control Devices for Streets and Highways (MUTCD) is incorporated by reference in 23 Code of Federal Regulations (CFR), Part 655, Subpart F and shall be recognized as the national standard for all traffic control devices installed on any street, highway, bikeway, or ~~private road~~ site roadway open to public travel (see definition in Section ~~1A.13~~ 1C.02) in accordance with 23 U.S.C. 109(d) and 402(a). ~~In accordance with 23 CFR 655.603(a), for the purposes of applicability of the MUTCD:~~

- ~~A. Toll roads under the jurisdiction of public agencies or authorities or public-private partnerships shall be considered to be public highways; B. Private roads open to public travel shall be as defined in Section 1A.13; and~~
~~C. Parking areas, including the driving aisles within those parking areas, that are either publicly or privately owned shall not be considered to be “open to public travel” for purposes of MUTCD applicability.~~

In accordance with 23 CFR 655.603(a), the MUTCD shall apply to all of the following types of facilities:

- A. Any street, roadway, or bikeway open to public travel, either publicly or privately owned;
B. Streets and roadways on sites that are off the public right-of-way that are open to public travel without full-time access restrictions. Examples include roadways within shopping centers, office parks, airports, sports arenas, other similar business and/or recreation facilities, governmental office complexes, schools, universities, recreational parks, and other similar publicly-owned complexes and/or recreation facilities. The above-described examples of streets and roadways are referred to in this Manual as site roadways open to public travel;
C. Publicly-owned toll roads, including those under the jurisdiction of a public agency, public authority, or public-private partnership;
D. Privately-owned toll roads where the public is allowed to travel without access restriction. This includes gated toll roads or roadways where the general public is able to pay to access the facility; and
E. Grade crossings of publicly-owned roadways with railroads or light rail transit.

The MUTCD shall not apply to the following types of facilities:

- A. Roadways within private gated properties where access to the general public is restricted at all times;
B. Grade crossings of privately-owned roadways with railroads; and
C. Parking areas, including the driving aisles within those parking areas, that are either publicly or privately owned.

Support:

The policies and procedures of the Federal Highway Administration (FHWA) to obtain basic uniformity of traffic control devices ~~shall be~~ are as described in 23 CFR 655, Subpart F.

Section 15-116 of the UVC (see Section 1A.06) states, “No person shall install or maintain in any area of private property used by the public any sign, signal, marking, or other device intended to regulate, warn, or guide traffic unless it conforms with the State manual and specifications adopted under Section 15-104.” Adoption by agencies of such a provision through statute or ordinance can help maintain the integrity of official traffic control devices and provide continuity of uniformity at locations that are not subject to the provisions of this Manual.

Section 1B.02 State Adoption and Conformance

1 Support:

2 All States have officially adopted the National MUTCD either in its entirety, with supplemental
3 provisions, or as a separate published document. The National MUTCD has also been adopted by the
4 National Park Service, the U.S. Forest Service, the U.S. Military Command, the Bureau of Indian Affairs,
5 the Bureau of Land Management, and the U.S. Fish and Wildlife Service.

6 *Guidance:*

7 *These individual State manuals or supplements should be reviewed for specific provisions relating to*
8 *that State.*

9 **Standard:**

10 ~~In accordance with 23 CFR 655.603(b)(3)~~, States or other Federal agencies that have their own
11 MUTCDs or Supplements shall revise these MUTCDs or Supplements to be in substantial
12 conformance with changes to the National MUTCD within 2 years of the effective date of the Final
13 Rule for the changes [23 CFR 655.603(b)(3)]. Substantial conformance of such State or other
14 Federal agency MUTCDs or Supplements shall be as defined in 23 CFR 655.603(b)(1). For the
15 purposes of Paragraph 2 of this Section, policies, directives, specifications, standard drawings, or
16 similar documents that are issued by an agency and that change or modify Standard, Guidance, or
17 Option provisions in this Manual shall be considered as supplements to the MUTCD and shall also
18 be revised to be in substantial conformance with the National MUTCD. Section 1B.03
19 Compliance of Devices

20 The U.S. Secretary of Transportation, under authority granted by the Highway Safety Act of
21 1966, decreed that traffic control devices on all streets and highways open to public travel in
22 accordance with 23 U.S.C. 109(d) and 402(a) in each State shall be in substantial conformance with
23 the Standards issued or endorsed by the FHWA.

24 **Standard**Support:

25 23 CFR 655.603 also ~~states that requires~~ traffic control devices on all streets, highways, bikeways,
26 and site roadways ~~private roads~~ open to public travel in each State ~~shall~~ be in substantial conformance
27 with standards issued or endorsed by the Federal Highway Administrator.

28 **Standard:**

29 After the effective date of a new edition of the MUTCD or a revision thereto, or after the
30 adoption thereof by the State, whichever occurs later, new or reconstructed devices installed shall
31 ~~be in compliance~~ comply with the new edition or revision, as required by 23 CFR 655.603. In cases
32 involving Federal-aid projects for new ~~highway or bikeway~~ construction, ~~or reconstruction,~~
33 resurfacing, restoration, or rehabilitation of a facility to which this Manual applies, the traffic
34 control devices installed (temporary or permanent) shall ~~be in conformance~~ comply with the most
35 recent edition of the National MUTCD before that highway is opened or re-opened to the public for
36 unrestricted travel [23 CFR 655.603(d)(2) and (d)(3)].

37 Unless a particular device is no longer serviceable (see definition in Section 1C.02), non-
38 compliant devices on existing highways and bikeways shall be brought into compliance with the
39 current edition of the National MUTCD as part of the systematic upgrading of substandard traffic
40 control devices (and installation of new required traffic control devices) required pursuant to the
41 Highway Safety Program, 23 U.S.C. §402(a).

42 Support:

43 The FHWA has the authority to establish other target compliance dates for implementation of
44 particular changes to the MUTCD [23 CFR 655.603(d)(1)].

45 **Standard:**

46 **These** target compliance dates established by the FHWA shall be as shown in Table ~~I-2~~ 1B-1.
47 **Design, application, and placement of traffic control devices other than those adopted in this**

1 **Manual shall be prohibited unless the provisions of ~~this~~ Sections 1B.04 through 1B.08 are followed**
 2 **regarding official interpretations, experiments, changes to the MUTCD, and interim approvals**
 3 **granted by the FHWA.**

4 Support:

5 Many of the provisions in this Manual that are explicitly prohibitive have been included to address
 6 practices that have been shown to be ineffective, unsafe, or inconsistent with uniformity. A provision of
 7 mandatory or recommended practice represents the accepted and established practice that promotes
 8 uniformity and consistency. The absence of a provision in this Manual that explicitly prohibits a
 9 particular practice, use, design, application, operation, or other aspect of a traffic control device does not,
 10 in itself, constitute acceptability or permission to use the device in a manner not provided for in this
 11 Manual.

12 Guidance:

13 Agencies should contact the FHWA when considering employing a practice or application that is not
 14 explicitly addressed in this Manual to ensure continued compliance with the provisions in this Manual.

15 Support:

16 The FHWA reviews and interprets the provisions in this Manual for agencies on an as-needed basis,
 17 which can lead to the issuance of official interpretations (see Section 1B.04), or interim approvals (see
 18 Section 1B.07).

19 Standard:

20 **Except as provided in Paragraph 24, when a Δ non-compliant traffic control device that is**
 21 **being replaced or refurbished because it is damaged, missing, or no longer serviceable (see**
 22 **definition in Section 1C.02) for any reason, ~~it~~ shall be replaced with a compliant device, except as**
 23 **provided for in Paragraph 13 of this Section.**

24 Option:

25 A ~~damaged, missing, or otherwise non-serviceable~~ non-compliant traffic control device ~~device that is~~
 26 non-compliant may be replaced in kind ~~if~~ when engineering judgment indicates ~~that~~ it is more
 27 appropriate because:

- 28 A. One compliant device in the midst of a series of adjacent non-compliant devices would be
- 29 confusing to road users; and/or
- 30 B. The schedule for replacement of the whole series of non-compliant devices will result in
- 31 achieving timely compliance with the MUTCD.

32 **Section 1A.10 Interpretations, Experimentation, Changes, and Interim Approvals**

33 **Section 1B.04 Interpretations**

34 Support:

35 ~~In addition,~~ The FHWA issues authoritative interpretations of this Manual when necessary to provide
 36 clarity in response to unique situations ~~often arise~~ for device applications ~~that might require interpretation~~
 37 or general requests for clarification of ~~this Manual~~ a provision.

38 An interpretation includes a consideration of the application and operation of standard traffic control
 39 devices, the official meanings of standard traffic control devices, or the variations from standard device
 40 designs and design requirements.

41 Guidance:

42 *Requests for an interpretation of this Manual should contain the following information:*

- 43 A. A concise statement of the interpretation being sought;
- 44 B. A description of the condition that provoked the need for an interpretation;
- 45 C. Any illustration that would be helpful to understand the request; and
- 46 D. Any supporting research data that is pertinent to the item to be interpreted.

1 Support:

2 [Section 1B.08 contains information on submitting a request for interpretation.](#)

3 **Section 1B.05 Experimentation**

4 Support:

5 Requests ~~to~~for experimentation (see [Section 1B.08](#)) include consideration of field deployment for the
6 purpose of testing or evaluating a new traffic control device, its application or manner of use, or a
7 provision not specifically described in this Manual.

8 **Standard:**

9 **A traffic control device or application that does not comply with the provisions of this Manual**
10 **shall not be used on any street, highway, bikeway, or site roadway open to public travel (see**
11 **definition in Section 1C.02) without first receiving official approval to experiment from the**
12 **FHWA's Office of Transportation Operations.**

13 **Support:**

14 A request for permission to experiment ([see Section 1B.08](#)) will be considered only when submitted
15 by the public agency or toll facility ~~operator~~authority responsible for the operation of the road or street on
16 which the experiment is to take place. For a ~~private road~~site roadway open to public travel, the request
17 will be considered only if it is submitted by the private owner or ~~private~~ official having jurisdiction.

18 [A request for experimentation with a novel device or application across multiple jurisdictions as a](#)
19 [single experiment with a common hypothesis, evaluation plan, and evaluation team will be considered](#)
20 [when submitted jointly by all the authorities responsible for operation of the roads or streets on which the](#)
21 [experiment is to take place. Similarly, a request to add experimental sites to an experimentation approved](#)
22 [for another jurisdiction will be considered when submitted jointly by the all the authorities for operation](#)
23 [of the roads or streets on which the experiment is then to take place.](#)

24 [Manufacturers or inventors of novel devices are encouraged to engage the services of a qualified](#)
25 [traffic engineer or other professional who is versed in traffic control devices. Early engagement during](#)
26 [the concept and development processes will help ensure the efficacy of the device with regard to human](#)
27 [factors, operational, safety, and other considerations prior to an agency requesting experimentation.](#)

28 [In some cases, an off-roadway closed-course or laboratory study might be required before a request](#)
29 [for experimentation can be considered. The purpose of such a study is to determine whether testing the](#)
30 [experimental device or application in an open-road setting could result in an undue safety risk.](#)

31 **Guidance:**

32 [Before requesting permission to experiment with a new device or application, an owner of a site](#)
33 [roadway open to public travel should first check for any laws, regulations, and/or directives covering the](#)
34 [application of the MUTCD that might apply.](#)

35 **Option:**

36 [An agency may request a preliminary assessment of the viability of a potential request for](#)
37 [experimentation by submitting an abstract that briefly describes the experimental concept.](#)

38 Support:

39 A diagram indicating the process for [requesting and conducting](#) ~~experimenting~~experimentations with
40 traffic control devices is shown in Figure ~~A-1~~B-1.

41 **Standard:**

42 **The request for permission to experiment ~~should~~shall contain the following:**

43 **A. A statement indicating the nature of the problem and a hypothesis establishing the premise**
44 **of the experiment.**

45 **B. A description of the proposed change to the traffic control device or application of the**
46 **traffic control device, ~~how it was developed,~~including the manner in which it deviates from**

1 the ~~standard~~provisions of this Manual, and how it is expected to be an improvement over
2 existing ~~standards~~provisions.

3 C. ~~Any illustration~~Illustrations that would ~~be helpful to understand~~explain the traffic control
4 device or use of the traffic control device.

5 D. Any supporting data explaining how the traffic control device was developed, including if it
6 has been ~~tried~~tested, in what ways it was found to be adequate or inadequate, and how this
7 choice of device or application was derived.

8 E. Comparison of the proposed device to other compliant devices or treatments, either
9 individually or in combination, that address the same condition, if applicable.

10 F. A legally binding statement that the experimental device or application is in the public
11 domain, in accordance with Paragraph 16 of this Section.

12 G. The time period and location(s) of the experiment.

13 H. Control sites for comparison purposes or justification for not using control sites.

14 I. A detailed research ~~or~~and evaluation plan that ~~must~~provides for close monitoring of the
15 experimentation, ~~especially in the early~~throughout all stages of its field implementation.
16 The evaluation plan ~~should~~shall include an appropriate evaluation methodology, such as
17 before and after ~~studies~~analysis, or other appropriate methodology as well as quantitative
18 data describing the performance of the experimental device.

19 ~~J. An agreement to restore the site of the experiment to a condition that complies with the~~
20 ~~provisions of this Manual within 3 months following the end of the time period of the~~
21 ~~experiment. This agreement must also provide that the agency sponsoring the~~
22 ~~experimentation will terminate the experimentation at any time that it determines~~
23 ~~significant safety concerns are directly or indirectly attributable to the experimentation.~~
24 ~~The FHWA's Office of Transportation Operations has the right to terminate approval of~~
25 ~~the experimentation at any time if there is an indication of safety concerns. If, as a result of~~
26 ~~the experimentation, a request is made that this Manual be changed to include the device or~~
27 ~~application being experimented with, the device or application will be permitted to remain~~
28 ~~in place until an official rulemaking action has occurred.~~

29 J. An agreement to provide semi-annual progress reports for the duration of the
30 experimentation, in accordance with the schedule provided in Paragraph 12 of this Section,
31 and an agreement to provide a ~~copy~~report of the final results of the experimentation to the
32 FHWA's Office of Transportation Operations within 3 months following completion of the
33 experimentation (see Paragraph 14 of this Section). The FHWA's Office of Transportation
34 Operations ~~has~~shall have the right to terminate approval of an agency's experiment if
35 reports are not ~~provided~~received in accordance with this schedule.

36 K. An agreement to restore the site of the experiment to a condition that complies with the
37 provisions of this Manual within 3 months following the end of the time period of the
38 experiment. This agreement shall also provide that the agency sponsoring the
39 experimentation will terminate the experimentation at any time that it determines that
40 safety concerns are directly or indirectly attributable to the experimentation and the agency
41 shall provide timely notification to the FHWA's Office of Transportation Operations. The
42 FHWA's Office of Transportation Operations shall have the right to terminate approval of
43 the experimentation at any time if there is an indication of safety or operational concerns,
44 or if the terms of the approval are not being adhered to. If, as a result of the
45 experimentation, a request is made that this Manual be changed to include the device or
46 application being experimented with, the FHWA's Office of Transportation Operations will
47 determine whether the device or application can be permitted to remain in place until an
48 official rulemaking action has occurred.

49 Where an item in Paragraph 10 of this Section is determined to not be applicable to the type of
50 experiment, device, or application, the request shall provide sufficient explanation.

1 The required semi-annual progress reports shall be submitted throughout the course of an
2 approved experiment in accordance with the following schedule:

3 A. No later than August 1st for the preceding period of January through June; and

4 B. No later than February 1st for the preceding period of July through December.

5 The experimenting agency shall submit a semi-annual progress report for any approved
6 experiment even if no work was performed during the previous reporting period. Failure to submit
7 two consecutive progress reports shall result in termination of the experiment and shall constitute
8 rescission of the FHWA's approval to the experimenting agency, requiring restoration of the site(s)
9 to a condition that complies with the provisions of this Manual within 3 months.

10 The experimenting agency shall submit a final report within 3 months of the conclusion of an
11 approved experiment. If a final report is not received by the FHWA's Office of Transportation
12 Operations, and the experimenting agency fails to notify the FHWA of any mitigating
13 circumstances within 6 months of the end of the approved experimentation period, then the
14 experiment shall be considered terminated and shall constitute rescission of the FHWA's approval
15 to the experimenting agency, requiring restoration of the site(s) to a condition that complies with
16 the provisions of this Manual within 3 months.

17 Support:

18 Under certain circumstances the FHWA Office of Transportation Operations might allow an
19 experimental device or device application that has been shown to be effective and without safety concerns
20 to remain in use after the experiment has ended. This typically would occur if the device or application is
21 actively being considered for interim approval under the provisions of Section 1B.07.

22 Standard:

23 A request for experimentation that involves a new traffic control device or a new application of
24 an existing traffic control device shall include from the agency conducting the experiment, the
25 manufacturer and/or developer of the device, and the supplier of the device, a legally-binding
26 statement certifying that the traffic control device is not protected by a patent, trademark, or
27 copyright in accordance with Section 1D.06, and that the traffic control device is in the public
28 domain and can be used freely in traffic control device design and application without infringement
29 or claim of trade secret misappropriation. The legally binding statement shall also state that the
30 agency conducting the experiment, the manufacturer and/or developer of the device, and the
31 supplier of the device are aware that if patent, trademark, or copyright protection is established in
32 the future for the device or application, such action will result in its removal from the MUTCD,
33 cancellation of its interim approval, or cancellation of the authorization for experimentation.

34 Support:

35 For the purpose of the Standard in Paragraph 16 of this Section, traffic control device refers to those
36 aspects of a sign, signal, marking or other device which regulates, warns, or guides traffic. The limitation
37 on patent, trademark, or copyright protection does not include the legal protection of individual elements
38 of such devices. For example, manufacturing methods, assembly methods, or individual components of
39 such devices can be protected, whereas the traffic control device cannot be subject to protection so long as
40 it remains in this Manual. As a further example, an internal circuit board for an electronic traffic control
41 device can be legally protected, but the electronic traffic control device itself or its operational function
42 cannot be legally protected by any of the above forms of intellectual property rights.

43 Section 1B.06 Changes to the MUTCD

44 Support:

45 Continuing advances in technology and approaches to traffic safety will produce changes in the
46 highway, vehicle, and road user proficiency; therefore, portions of the system of traffic control devices in

1 this Manual will require updating. ~~In addition, unique situations often arise for device applications that~~
 2 ~~might require interpretation or clarification of this Manual.~~ It is important to have a procedure for
 3 recognizing these developments and for introducing new ideas and modifications into the system.

4 A change includes consideration of a new device to replace a present standard device, an additional
 5 device to be added to the list of standard devices, or a revision to a traffic control device application or
 6 placement criteria.

7 *Guidance:*

8 *Requests for a change to this Manual (see Section 1B.08) should contain the following information:*

9 *A. A statement indicating what change is proposed;*

10 *B. Any illustration that would be helpful to understand the request; and*

11 *C. Any supporting research data that is pertinent to the item to be reviewed.*

12 *Support:*

13 Requests for a change to this Manual will be evaluated to consider the potential safety and operational
 14 benefits of the requested change and be considered for inclusion in a future for consideration in the
 15 rulemaking to issue a new edition or revision of the Manual. A diagram indicating the process for
 16 incorporating new traffic control devices into this Manual is shown in Figure ~~1A-2~~1B-2.

17 Section 1B.07 Interim Approvals

18 *Support:*

19 Interim approval allows ~~interim~~for provisional use, pending official rulemaking, of a new traffic
 20 control device, a revision to the application or manner of use of an existing traffic control device, or a
 21 provision not specifically described in this Manual.

22 The FHWA issues an ~~I~~nterim ~~A~~pproval by official memorandum signed by the Associate
 23 Administrator for Operations and posts this memorandum on the MUTCD ~~w~~Web site.

24 Interim approval allows for the optional use of a traffic control device or application and does not
 25 create a new mandate or recommendation for its use. Interim approval includes conditions that
 26 jurisdictions, toll facility operators, or owners of site roadways open to public travel agree to comply with
 27 in order to use the traffic control device or application until an official rulemaking action has occurred.

28 The issuance by FHWA of an interim approval ~~will typically may~~might result in the traffic control
 29 device or application being proposed for adoption in ~~placed into~~ the next scheduled rulemaking process
 30 ~~for revisions to~~ to issue a new edition or revision of this Manual. If the device or application under
 31 interim approval is not proposed in the next rulemaking for a new edition or revision, then a statement of
 32 the status of the interim approval, whether it is to be rescinded or remain in effect, will be included in the
 33 Federal Register notice for the rulemaking.

34 Interim approval is considered based on the results of ~~successful~~ experimentation, ~~and/or~~ results of
 35 analytical or laboratory studies, ~~and/or review of non-U.S. experience~~ with a traffic control device or
 36 application that analytically demonstrates a device effectively communicates its intended meaning.
 37 Interim approval considerations include an assessment of relative risks, benefits, costs, impacts, and other
 38 factors.

39 Section 1B.08 contains information on submitting a request for interim approval.

40 Interim approval is ordinarily considered only after published authoritative research and
 41 experimentation sufficiently demonstrate that the device or application provides a significant safety or
 42 operational improvement. Individual experiments by various jurisdictions, without a research report on
 43 the overall findings of the experimental device or application, will not ordinarily qualify for issuance of
 44 an interim approval.

45 Interim approval ordinarily is not considered based solely on non-U.S. experience with a new traffic
 46 control device or application. Differences in regulations, enforcement and penalties, and driver licensing
 47 requirements, among other factors, can result in dissimilar road-user behavior. Additionally, due to

1 variations in conventions for traffic control device design, a non-U.S. traffic control device concept might
 2 need to be adapted to U.S. criteria to ensure consistency with the provisions and principles of this Manual.
 3 However, documented non-U.S. experience can be considered in the development of requests for
 4 experimentation (see Section 1B.05) and within the evaluation plan for traffic control device research.

5 **Standard:**

6 A jurisdiction, toll facility operator, or owner of a ~~private road~~ site roadway open to public
 7 travel that desires to use a traffic control device or application for which FHWA has issued an
 8 interim approval shall request and receive permission from FHWA in writing prior to applying the
 9 device or application.

10 The request ~~for permission~~ to place a traffic control device or application under an existing
 11 interim approval shall contain the following:

- 12 A. A description of where the device or application will be used, such as a list of specific
 13 locations or highway segments or types of situations, or a statement of the intent to use the
 14 device or application jurisdiction-wide;
- 15 B. An agreement to abide by the specific conditions for use of the device or application as
 16 contained in the FHWA's interim approval ~~document~~ memorandum;
- 17 C. An agreement to maintain and continually update a list of locations where the device or
 18 application has been installed; and
- 19 D. An agreement to:
- 20 1. Restore the site(s) of the interim approval to a condition that complies with the
 - 21 provisions in this Manual within 3 months following the issuance of a Final Rule on this
 - 22 traffic control device or application; and
 - 23 2. Terminate use of the device or application installed under the interim approval at any
 - 24 time that it determines ~~significant~~ that safety concerns are directly or indirectly
 - 25 attributable to the device or application. The FHWA's Office of Transportation
 - 26 Operations ~~has~~ shall have the right to terminate the interim approval at any time if
 - 27 there is an indication of safety, operational, or other concerns.

28 **Option:**

29 A State may submit a request for ~~the permission to use of~~ a device or application under an existing
 30 interim approval for all jurisdictions in that State, as long as the request contains the information ~~listed~~
 31 required in Paragraph ~~489~~ of this Section.

32 ~~Guidance:~~ **Standard:**

33 ~~If a~~ A jurisdiction, toll facility operator, or owner of a site roadway open to public travel that
 34 elects to use a device or application under a statewide interim approval ~~state requests and receives~~
 35 ~~approval from FHWA of a statewide interim approval, the State maintain a list of jurisdictions, toll~~
 36 ~~facility authorities, and owners of site roadways open to public travel that are using the statewide~~
 37 ~~interim approval. The jurisdictions, toll facility authorities, an owners of site roadways open to~~
 38 ~~public travel shall inform the State of their its use of a~~ the device or application under the statewide
 39 interim approval.

40 Under a statewide interim approval, the respective jurisdictions, toll facility operators, and
 41 owners of site roadways open to public travel shall keep maintain and continually update a record
 42 of all locations on their roads where the device or application is implemented (see Item C of
 43 Paragraph 9 of this Section) under any interim approval, statewide or otherwise and shall furnish
 44 this information to the State.

45 **Option:**

46 ~~A device or application installed under an interim approval may remain in place, under the conditions~~
 47 ~~established in the interim approval, until an official rulemaking action has occurred.~~

1 **Section 1B.08 Requesting Official Interpretations, Experiments, Changes to the MUTCD,**
2 **or Interim Approvals**

3 *Guidance:*

4 *A local jurisdiction, toll facility operator, or owner of a ~~private road~~ site roadway open to public*
5 *travel that is requesting permission to experiment or permission to use a device or application under an*
6 *existing interim approval should first check for any State laws, regulations, and/or directives covering the*
7 *application of the MUTCD provisions that might exist apply. ~~in their State~~.*

8 **Standard:**

9 **Except as provided in Paragraph 43 of this Section, requests for ~~any~~ interpretation, permission**
10 **to experiment, a change to the MUTCD, granting of an interim approval, ~~or change or permission~~**
11 **to use an existing interim approval shall be submitted electronically to the Federal Highway**
12 **Administration (FHWA), Office of Transportation Operations, MUTCD team, at the following e-**
13 **mail address: MUTCDofficialrequest@dot.gov.**

14 **Option:**

15 **If electronic submittal is not possible, requests for an interpretations, permission to experiment, a**
16 **change to the MUTCD, ~~or granting of~~ an interim approval, ~~s, or changes,~~ or permission to use an existing**
17 **interim approval may instead be mailed to the Office of Transportation Operations, HOTO-1, Federal**
18 **Highway Administration, 1200 New Jersey Avenue, SE, Washington, DC 20590.**

19 **Support:**

20 **Communications regarding other MUTCD matters that are not related to official requests will receive**
21 **quicker attention if they are submitted electronically to the MUTCD Team Leader or to the appropriate**
22 **individual MUTCD technical lead team member. Their e-mail addresses are available through the links**
23 **contained on the “~~Who’s Who~~ MUTCD Team” page on the MUTCD ~~w~~ Web site at**
24 **<http://mutcd.fhwa.dot.gov/team.htm>.**

25 **For additional information concerning interpretations, experimentation, changes, or interim approvals,**
26 **visit the MUTCD ~~website~~ Web site at <http://mutcd.fhwa.dot.gov>.**

27

CHAPTER 1C. DEFINITIONS, ACRONYMS, AND ABBREVIATIONS USED IN THIS MANUAL

Section 1A.13-1C.01 Definitions of Headings, Words, and Phrases Used in this Manual

Standard:

When used in this Manual, the text headings of Standard, Guidance, Option, and Support shall be ~~as defined in Paragraph 1 in Section 1A.13~~ as follows:

- A. Standard—a statement of required, mandatory, or specifically prohibitive practice regarding a traffic control device. In limited, location-specific cases, the results of a documented engineering study (see Section 1D.03) might indicate a deviation from one or more requirements of a Standard provision to be appropriate. All Standard statements are labeled, and the text appears in bold type. The verb “shall” is typically used. The verbs “should” and “may” are not used in Standard statements. Standard statements are sometimes modified by Options statements.
- B. Guidance—a statement of recommended, ~~but not mandatory,~~ practice in typical situations, with deviations allowed if engineering judgment or engineering study (see Section 1D.03) indicates the deviation to be appropriate. All Guidance statements are labeled, and the text appears in unbold italic type. The verb “should” is typically used. The verbs “shall” and “may” are not used in Guidance statements. Guidance statements are sometimes modified by Options statements.
- C. Option—a statement of practice that is a permissive condition and carries no requirement or recommendation. Option statements sometimes sometimes contain allowable modifications to a Standard or Guidance statement. All Option statements are labeled, and the text appears in unbold type. The verb “may” is typically used. The verbs “shall” and “should” are not used in Option statements.
- D. Support—an informational statement that does not convey any degree of mandate, recommendation, authorization, prohibition, or enforceable condition. Support statements are labeled, and the text appears in unbold type. The verbs “shall,” “should,” and “may” are not used in Support statements.

Section 1C.02 Definitions of Words and Phrases Used in this Manual

Standard:

Unless otherwise defined in this Section, or in other Parts of this Manual, words or phrases shall have the meaning(s) as defined in ~~the most recent editions of~~ the “Uniform Vehicle Code,” “AASHTO Transportation Glossary (Highway Definitions),” ~~and/or~~ other appropriate publications ~~mentioned in Section 1A.11.~~

Where a term that is defined in this Section or elsewhere in this Manual has a different definition in another resource or in common use, the definition herein shall govern for purposes of the applicability of the provisions of this Manual.

The following words and phrases, when used in this Manual, shall have the following meanings:

1. Accessible Pedestrian Signal—a device that communicates information about pedestrian signal timing in a non-visual format such as audible tones, and/or speech messages, and ~~or~~ vibrating surfaces.
2. Accessible Pedestrian Signal Detector—a device designated to assist the pedestrian who has ~~visual~~vision or physical disabilities in activating the pedestrian phase.
3. Active Grade Crossing ~~Warning System—the flashing light signals, with or without warning gates, together with the necessary control equipment used to inform road users of the approach or presence of rail traffic at grade crossings.~~ —a grade crossing equipped with

- 1 automatic traffic control devices, such as flashing-light signals, gates, and/or traffic control
 2 signals, that are activated upon the detection of approaching rail traffic.
- 3 4. Actuated-~~Operation~~—a type of traffic control signal operation in which some or all signal
 4 phases are operated on the basis of actuation.
- 5 5. Actuation—initiation of, a change in, or an extension of a traffic signal phase or a sign
 6 legend through the operation of any type of detector.
- 7 6. Advance Preemption—the notification of approaching rail traffic that is forwarded to the
 8 highway traffic signal controller unit or assembly by the railroad or light rail transit
 9 equipment in advance of the activation of the railroad or light rail transit warning devices.
- 10 7. Advance Preemption Time—the period of time that is the difference between the required
 11 maximum highway traffic signal preemption time and the activation of the railroad or light
 12 rail transit warning devices.
- 13 8. Advisory Speed—a recommended speed for all vehicles operating on a section of highway
 14 and based on the highway design, operating characteristics, and conditions.
- 15 9. Agency—an organization with the responsibility for providing, maintaining, and/or
 16 operating a public or private road system.
- 17 ~~10.~~ Alley—a street or highway intended to provide access to the rear or side of lots or buildings
 18 in urban areas and not intended for the purpose of through vehicular traffic.
- 19 ~~11. Altered Speed Zone—a speed limit, other than a statutory speed limit, that is based upon an~~
 20 ~~engineering study.~~
- 21 ~~15~~11. Average Annual Average Daily Traffic (AADT)—the total volume of traffic passing a point
 22 or segment of a highway facility in both directions for one year divided by the number of
 23 days in the year. Normally, periodic daily traffic volumes are adjusted for hours of the day
 24 counted, days of the week, and seasons of the year to arrive at ~~average~~ annual average daily
 25 traffic.
- 26 12. Application—in regard to a traffic control device, the act of deciding to use a device,
 27 generally or at a particular location for a particular condition.
- 28 ~~11~~13. Approach—all lanes of traffic moving toward an intersection or a midblock location from
 29 one direction, including any adjacent parking lane(s).
- 30 ~~12~~14. Arterial Highway (Street)—a general term denoting a highway primarily used by through
 31 traffic, usually on a continuous route or a highway designated as part of an arterial system.
- 32 15. Automated Vehicle—see Driving Automation System.
- 33 ~~14~~16. Automatic Lane—see Exact Change Lane within the definition of Toll Collection.
- 34 ~~16~~17. Average Daily Traffic (ADT)—the average 24 hour volume, being the total volume during a
 35 stated period divided by the number of days in that period. Normally, this would be periodic
 36 daily traffic volumes over several days, not adjusted for days of the week or seasons of the
 37 year.
- 38 ~~17~~18. Average Day—a day representing traffic volumes normally and repeatedly found at a
 39 location,
 40 typically a weekday when volumes are influenced by employment or a weekend day when
 41 volumes are influenced by entertainment or recreation.
- 42 ~~18~~19. Backplate—see Signal Backplate.
- 43 ~~19~~20. Barrier-Separated Lane—a preferential lane or other special purpose lane that is separated
 44 from the adjacent general-purpose lane(s) by a physical barrier.
- 45 ~~20~~21. Beacon—a highway traffic signal with one or more signal ~~sections~~indications that operates
 46 in a flashing mode. Types of beacons include:
 47 (a) Emergency-Vehicle Hybrid Beacon—a special type of beacon (see Hybrid Beacon).
 48 ~~95.~~(b) Intersection Control Beacon—a beacon used only at an intersection to control two or
 49 more directions of travel.
 50 (c) Pedestrian Hybrid Beacon—a special type of beacon (see Hybrid Beacon).

1 (d) Rectangular Rapid-Flashing Beacon (RRFB)—a pedestrian-activated and/or bicycle-
 2 activated device comprising two horizontally arranged, rapidly flashed, rectangular-
 3 shaped yellow indications that is used to provide supplemental emphasis for a
 4 pedestrian, school, or trail crossing warning sign at a marked crosswalk across an
 5 uncontrolled approach.

6 ~~216.~~(e) Speed Limit Sign Beacon—a beacon used only to supplement a SPEED LIMIT sign.

7 ~~223.~~(f) Stop Beacon—a beacon used only to supplement a STOP sign, a DO NOT ENTER
 8 sign, or a WRONG WAY sign.

9 ~~250.~~(g) Warning Beacon—a beacon used only to supplement an appropriate warning or
 10 regulatory sign or marker.

11 ~~21~~22. Bicycle—a pedal-powered vehicle upon which the human operator sits.

12 23. Bicycle Box—a designated area on the approach to a signalized intersection, between an
 13 advance motorist stop line and the crosswalk or intersection, intended to provide bicyclists a
 14 visible place to wait in front of stopped motorists during the red signal phase.

15 ~~22~~24. Bicycle Facilities—a general term denoting improvements and provisions that accommodate
 16 or encourage bicycling, including parking and storage facilities, and shared roadways not
 17 specifically defined for bicycle use.

18 ~~23~~25. Bicycle Lane—a portion of a roadway that has been designated for preferential or exclusive
 19 use by bicyclists. ~~by pavement~~ A typical bicycle lane is delineated from the adjacent general-
 20 purpose lane(s) by longitudinal pavement markings and bicycle lane symbol or word
 21 markings and, if used, signs. Other types of bicycle lanes include:

22 (a) Buffer-Separated Bicycle Lane—a bicycle lane that is separated from the adjacent
 23 general-purpose lane(s) by a pattern of standard longitudinal pavement markings that
 24 is wider than a normal or wide lane line marking.

25 (b) Counter-Flow Bicycle Lane—a one-directional bicycle lane that provides a lawful path
 26 of travel for bicycles in the opposite direction from general traffic on a roadway that
 27 allows general traffic to travel in only one direction. Counter-flow bicycle lanes are
 28 designated by the traffic control devices used for other bicycle lanes.

29 (c) Separated Bicycle Lane—an exclusive facility for bicyclists that is located within or
 30 directly adjacent to the roadway and that is physically separated from motor vehicle
 31 traffic with a vertical element. Separated bicycle lanes are differentiated from other
 32 bicycle lanes by a vertical element.

33 26. Bicycle Signal Face—a signal face that displays only bicycle symbol signal indications, that
 34 exclusively controls a bicycle movement from a designated bicycle lane or from a separate
 35 facility such as a shared use path, and that displays signal indications that are applicable
 36 only to the bicycle movement.

37 27. Bicycle Symbol Signal Indication—a red, yellow, or green signal indication that displays a
 38 bicycle symbol rather than a circular or arrow indication.

39 ~~24~~28. Bikeway—a generic term for any road, street, path, or way that in some manner is
 40 specifically designated for bicycle travel, regardless of whether such facilities are designated
 41 for the exclusive use of bicycles or are to be shared with other transportation modes.

42 29. Blank-Out Sign—a sign that displays a single predetermined message only when activated.
 43 When not activated, the sign legend is not visible.

44 ~~25~~30. Buffer-Separated Lane—a preferential lane or other special purpose lane that is separated
 45 from the adjacent general-purpose lane(s) by a pattern of standard longitudinal pavement
 46 markings that is wider than a normal or wide lane line marking. The buffer area might
 47 include rumble strips, textured pavement, or channelizing devices such as tubular markers
 48 or traversable curbs, but does not include a physical barrier.

49 31. Business Identification Sign Panel—a panel containing a word legend or logo used to
 50 identify a business on a Specific Service sign.

- 1 **32. Busway—a traveled way that is used exclusively by buses.**
2 **~~26~~33. Cantilevered Signal Structure—a structure, also referred to as a mast arm, that is rigidly**
3 **attached to a vertical pole and is used to provide overhead support of highway traffic signal**
4 **faces or grade crossing signal units.**
5 **~~27~~34.Center Line Markings—the yellow pavement marking line(s) that delineates the separation**
6 **of traffic lanes that have opposite directions of travel on a roadway. These markings need**
7 **not be at the geometrical center of the pavement.**
8 **~~28~~35.Changeable Message Sign—a sign that is capable of displaying more than one message (one**
9 **of which might be a “blank” display), changeable manually, by remote control, or by**
10 **automatic control. Electronic-display changeable message signs are referred to as Dynamic**
11 **Message Signs in the National Intelligent Transportation Systems (ITS) Architecture and**
12 **are referred to as Variable Message Signs in the National Electrical Manufacturers**
13 **Association (NEMA) standards publication.**
14 **~~29~~36.Channelizing Line ~~Markings~~—a solid wide or double white line marking used to form**
15 **islands where traffic in the same direction of travel is permitted on both sides of the island.**
16 **~~30~~37.Circular Intersection—an intersection that has an island, generally circular in design,**
17 **located in the center of the intersection where traffic passes to the right of the island.**
18 **Circular intersections include roundabouts, rotaries, and traffic circles.**
19 **~~31~~38.Circulatory Roadway—the roadway within a circular intersection on which traffic travels in**
20 **a counterclockwise direction around an island in the center of the circular intersection.**
21 **~~32~~39.Clear Storage Distance—when used in Part 8, the distance available for vehicle storage**
22 **measured between 6 feet from the rail nearest the intersection to the intersection stop line or**
23 **the normal stopping point on the highway. At skewed grade crossings and intersections, the**
24 **6-foot distance shall be measured perpendicular to the nearest rail either along the center**
25 **line or edge line of the highway, as appropriate, to obtain the shorter distance. Where exit**
26 **gates are used, the distance available for vehicle storage is measured from the point where**
27 **the rear of the vehicle would be clear of the exit gate arm. In cases where the exit gate arm**
28 **is parallel to the track(s) and is not perpendicular to the highway, the distance is measured**
29 **either along the center line or edge line of the highway, as appropriate, to obtain the shorter**
30 **distance.**
31 **~~33~~40.Clear Zone—the total roadside border area, starting at the edge of the traveled way, that is**
32 **available for an errant driver to stop or regain control of a vehicle. This area might consist**
33 **of a shoulder, a recoverable slope, and/or a non-recoverable, traversable slope with a clear**
34 **run-out area at its toe.**
35 **~~34~~41.Collector Highway—a term denoting a highway that in rural areas connects small towns**
36 **and local highways to arterial highways, and in urban areas provides land access and traffic**
37 **circulation within residential, commercial, and business areas and connects local highways**
38 **to the arterial highways.**
39 **~~35.—Concurrent Flow Preferential Lane—a preferential lane that is operated in the same~~**
40 **~~direction as the adjacent mixed flow lanes, separated from the adjacent general-purpose~~**
41 **~~freeway lanes by a standard lane stripe, painted buffer, or barrier.~~**
42 **~~36~~42.Conflict Monitor—a device used to detect and respond to improper or conflicting signal**
43 **indications and improper operating voltages in a traffic controller assembly.**
44 **~~37~~43.Constant Warning Time Detection—a means of detecting rail traffic that provides relatively**
45 **uniform warning time for the approach of through trains~~rail traffic~~ or light rail transit**
46 **~~traffic that are~~is not accelerating or decelerating after being detected.**
47 **~~38~~44.Contiguous Lane—a lane, preferential or otherwise, that is separated from the adjacent**
48 **lane(s) only by a normal or wide lane line marking.**
49 **~~39~~45.Controller Assembly—a complete electrical device mounted in a cabinet for controlling the**
50 **operation of a highway traffic signal.**

- 1 ~~40~~46. Controller Unit—that part of a controller assembly that is devoted to the selection and
2 timing of the display of signal indications.
- 3 ~~41~~47. Conventional Road—a street or highway other than an ~~an~~ ~~low-volume road (as defined in~~
4 ~~Section 5A.01)~~, expressway, or freeway.
- 5 ~~42~~48. Counter-Flow Lane—a lane operating in a direction opposite to the normal flow of traffic
6 designated for peak direction of travel during at least a portion of the day. Counter-flow
7 lanes are usually separated from the off-peak direction lanes by tubular markers or other
8 flexible channelizing devices, temporary lane separators, or movable or permanent barrier.
- 9 ~~43~~49. Crashworthy—a ~~characteristic~~ the ability of a roadside safety hardware device or
10 appurtenance ~~that has been successfully crash tested to minimize risks to vehicle occupants~~
11 by allowing a vehicle impacting the appurtenance to be slowed before stopping, redirected,
12 or to continue without significant resistance. ~~in accordance with a national standard such as~~
13 ~~the National Cooperative Highway Research Program Report 350, “Recommended~~
14 ~~Procedures for the Safety Performance Evaluation of Highway Features.”~~ Section 1D.11
15 contains additional information about crashworthiness.
- 16 ~~44~~50. Crosswalk—(a) that part of a roadway at an intersection included within the connections of
17 the lateral lines of the sidewalks on opposite sides of the highway measured from the curbs
18 or in the absence of curbs, from the edges of the traversable roadway, and in the absence of
19 a sidewalk on one side of the roadway, the part of a roadway included within the extension
20 of the lateral lines of the sidewalk at right angles to the center line; (b) any portion of a
21 roadway at an intersection or elsewhere distinctly indicated as a pedestrian crossing by
22 pavement marking lines on the surface, which might be supplemented by contrasting
23 pavement texture, style, or color.
- 24 ~~45~~51. Crosswalk Lines—white pavement marking lines that identify a crosswalk.
- 25 ~~46~~52. Cycle Length—the time required for one complete sequence of signal indications.
- 26 ~~47~~53. Dark Mode—the lack of all signal indications at a signalized location. ~~(The dark mode is~~
27 ~~most commonly associated with power failures, ramp meters, hybrid beacons, beacons, and~~
28 ~~some movable bridge signals.)~~
- 29 54. Dedicated Lane—A lane on a freeway or expressway that provides access to: (a) either an
30 exit lane or the mainline, but not both, at a freeway or expressway exit, or (b) only one
31 roadway at a freeway or expressway split.
- 32 ~~48~~55. Delineator—a retroreflective device mounted ~~on the roadway surface or~~ at the side of the
33 roadway in a series to indicate the alignment of the roadway, especially at night or in
34 adverse weather. ~~49~~56. Design Vehicle—the longest vehicle permitted by statute of the road
35 authority (State or other) on that roadway.
- 36 ~~50~~57. Designated Bicycle Route—a system of bikeways designated by the jurisdiction having
37 authority with appropriate directional and informational route signs, with or without
38 specific bicycle route numbers.
- 39 ~~51~~58. Detectable—having a continuous edge within 6 inches of the surface so that pedestrians ~~who~~
40 ~~have visual~~ with vision disabilities can sense its presence and receive usable guidance
41 information.
- 42 ~~52~~59. Detector—a device used for determining the presence or passage of motor vehicles, bicycles,
43 or pedestrians.
- 44 60. Detection Plate—a smooth continuous plate used on pedestrian channelizing devices to
45 facilitate the use of low-vision canes for pedestrians with vision disabilities. The bottom edge
46 of the detection plate shall be no more than 2 inches above the walkway and the top edge of
47 the detection plate shall be at least 8 inches above the walkway. The detection plate shall
48 share the same vertical plane as the hand trailing edge of the pedestrian channelizing device.
- 49 61. Diagnostic Team—a group of knowledgeable representatives of the parties of interest in a
50 grade crossing or group of grade crossings (see 23 CFR Part 646.204).

- 1 **5362.** Downstream—a term that refers to a location that is encountered by traffic subsequent to
 2 an upstream location as it flows in an “upstream to downstream” direction. For example,
 3 “the downstream end of a lane line separating the turn lane from a through lane on the
 4 approach to an intersection” is the end of the lane line that is closest to the intersection.
- 5 **63.** Driveway—an access from a roadway to a building, site, or abutting property.
- 6 **64.** Driving Aisle—circulation area for motor vehicles within a parking area, typically between
 7 rows of parking spaces. Driving aisles provide one-way or two-way travel. Driving aisles are
 8 exempted from compliance with MUTCD provisions.
- 9 **65.** Driving Automation System—technology that automates some or all aspects of the driving
 10 task to assist or replace the human vehicle operator. Section 5A.03 contains descriptions of
 11 the automation levels.
- 12 **66.** Dropped Lane—see Lane Drop.
- 13 **5567.** Dual-Arrow Signal Section—a type of signal section designed to include both a yellow arrow
 14 and a green arrow.
- 15 **5668.** Dynamic Envelope—the clearance required for light rail transit traffic or a train and its
 16 cargo overhang due to any combination of loading, lateral motion, or suspension failure (see
 17 Figure **8B-88C-3**).
- 18 **5769.** Dynamic Exit Gate Operating Mode—a mode of operation where the exit gate operation is
 19 based on the presence of vehicles within the minimum track clearance distance.
- 20 **70.** Dynamic Message Sign—see Changeable Message Sign.
- 21 **5871.** Edge Line Markings—white or yellow pavement marking lines that delineate the right or
 22 left edge(s) of a traveled way.
- 23 **6072.** Electronic Toll Collection (ETC) Account Only Lane—a non-attended toll lane that is
 24 restricted to use only by vehicles with a registered toll payment account.
- 25 **73.** Emergency-Vehicle Hybrid Beacon—see Hybrid Beacon.
- 26 **74.** Emergency-Vehicle Traffic Control Signal—see Highway Traffic Signal.
- 27 **63.** ~~End-of-Roadway Marker—a device used to warn and alert road users of the end of a~~
 28 ~~roadway in other than temporary traffic control zones.~~ **75.** Engineer—see Professional
 29 Engineer.
- 30 **6476.** Engineering Judgment—the evaluation of available pertinent information including, but not
 31 limited to, the safety and operational efficiency of all road users, and the application of
 32 appropriate principles, provisions, and practices as contained in this Manual and other
 33 sources, for the purpose of deciding upon the design (see Section 1D.03), use, installation,
 34 or applicability, design, operation, or installation of a traffic control device. Engineering
 35 judgment shall be exercised by an professional engineer (see definition in this Section) with
 36 appropriate traffic engineering expertise, or by an individual working under the supervision
 37 of such an engineer, through the application of procedures and criteria established by the
 38 engineer. Documentation of engineering judgment is not required.
- 39 **6577.** Engineering Study—the ~~comprehensive~~ analysis and evaluation of available pertinent
 40 information including, but not limited to, the safety and operational efficiency of all road
 41 users, and the application of appropriate principles, provisions, and practices as contained
 42 in this Manual and other sources, for the purpose of deciding upon the design (see Section
 43 1D.03), use, installation, or applicability, design, operation, or installation of a traffic
 44 control device. An engineering study shall be performed by an professional engineer (see
 45 definition in this Section) with appropriate traffic engineering expertise, or by an individual
 46 working under the supervision of such an engineer, through the application of procedures
 47 and criteria established by the engineer. An engineering study shall be documented in
 48 writing.
- 49 **6678.** Entrance Gate—an automatic gate that can be lowered across the lanes approaching a
 50 grade crossing to block road users from entering the grade crossing.

- 1 **79.** Exclusive Alignment—a light rail transit track(s) or a bus rapid transit busway that is
2 grade-separated or protected by a fence or traffic barrier. No grade crossings exist along
3 the track(s) or busway. Motor vehicles, bicycles, and pedestrians are prohibited within the
4 right-of-way. Subways and elevated structures are included within this definition.
- 5 ~~68~~**80.** Exit Gate—an automatic gate that can be lowered across the lanes departing a grade
6 crossing to block road users from entering the grade crossing by driving in the opposing
7 traffic lanes.
- 8 ~~69~~**81.** Exit Gate Clearance Time—for Four-Quadrant Gate systems at grade crossings, the amount
9 of time provided to delay the descent of the exit gate arm(s) after entrance gate arm(s) begin
10 to descend.
- 11 ~~70~~**82.** Exit Gate Operating Mode—for Four-Quadrant Gate systems at grade crossings, the mode
12 of control used to govern the operation of the exit gate arms.
- 13 ~~71~~**83.** Expressway—a divided highway with partial control of access.
- 14 **84.** Fail-Safe—when used in Part 8, a railroad signal design philosophy applied to a system or
15 device such that the result of a hardware failure or the effect of a software error shall either
16 prohibit the system or device from assuming or maintaining an unsafe state or shall cause
17 the system or device to assume a state that is known to be safe.
- 18 ~~72~~**85.** Flagger—a person who actively controls the flow of vehicular traffic into and/or through a
19 temporary traffic control zone using hand-signaling devices or an Automated Flagger
20 Assistance Device (AFAD).
- 21 ~~73~~**86.** Flasher—a device used to turn highway traffic signal indications on and off at a repetitive
22 rate of approximately once per second.
- 23 ~~74~~**87.** Flashing—an operation in which a light source, such as a traffic signal indication or LEDs
24 in a sign, is turned on and off repetitively.
- 25 ~~75~~**88.** Flashing-Light Signals—a warning device consisting of two red signal indications arranged
26 horizontally that are activated to flash alternately when rail traffic is approaching or present
27 at a grade crossing.
- 28 ~~76~~**89.** Flashing Mode—a mode of operation in which at least one traffic signal indication in each
29 vehicular signal face of a highway traffic signal is turned on and off repetitively.
- 30 **90.** Four-Quadrant Gate System—an exit gate system that includes entrance and exit gates that
31 control and block road users on all lanes entering and exiting the grade crossing.
- 32 ~~77~~**91.** Freeway—a divided highway with full control of access.
- 33 ~~78~~**92.** Full-Actuated **Operation**—a type of traffic control signal operation in which all signal
34 phases function on the basis of actuation.
- 35 ~~79~~**93.** Gate—an automatically-operated or manually-operated traffic control device that is used to
36 physically obstruct road users such that they are discouraged from proceeding past a
37 particular point on a roadway or pathway, or such that they are discouraged from entering
38 a particular grade crossing, ramp, lane, roadway, or facility.
- 39 **94.** General-Purpose Lane— a highway lane or set of lanes, other than a Managed Lane (see
40 definition in this Section) or a Preferential Lane (see definition in this Section), that all or
41 most of the traffic that is allowed on that highway is also allowed to use. Certain classes of
42 vehicles, such as commercial vehicles or vehicles exceeding a certain weight or size, might be
43 prohibited from using one or more of the general-purpose lanes. A general-purpose lane
44 might also be restricted to certain uses, such as passing or turning or as an auxiliary lane.
- 45 **95.** Gore Area—see Physical Gore and Theoretical Gore.
- 46 ~~80~~**96.** Grade Crossing—the general area where a highway and a railroad and/or light rail transit
47 route cross at the same level, within which are included the tracks, highway, and traffic
48 control devices for traffic traversing that area.
- 49 ~~3~~**97.** **Active**-Grade Crossing Warning System—the flashing-light signals, with or without **warning**
50 **automatic** gates, together with the necessary control equipment used to inform road users of
51 the approach or presence of rail traffic at **a** grade crossings.

- 1 **8198.** Guide Sign—a sign that shows route designations, highway names, destinations, directions,
2 distances, services, points of interest, or other geographical, recreational, or cultural
3 information.
- 4 **8299.** High-Occupancy Vehicle (HOV)—a motor vehicle carrying at least two (or more than two if
5 the signs for a specific roadway indicate a higher minimum occupancy requirement)
6 persons, including carpools, vanpools, and buses.
- 7 **83100.** Highway—a general term for denoting a public way for purposes of ~~vehicular~~-travel by
8 vehicles and vulnerable road users, including the entire area within the right-of-way.
- 9 **84101.** Highway-Light Rail Transit Grade Crossing—the general area where a highway and a
10 light rail transit route cross at the same level, within which are included the light rail transit
11 tracks, highway, and traffic control devices for traffic traversing that area.
- 12 **85102.** Highway-Rail Grade Crossing—the general area where a highway and a railroad cross at
13 the same level, within which are included the railroad tracks, highway, and traffic control
14 devices for highway traffic traversing that area.
- 15 **86103.** Highway Traffic Signal—a power-operated traffic control device by which traffic is
16 warned or directed to take some specific action. These devices do not include power-
17 operated signs (except as provided in Chapters 4S and 4T), steadily-illuminated raised
18 pavement markers, gates, flashing light signals (see Section 8D.02), warning lights (see
19 Section ~~6F.836L.07~~), or ~~steady~~-~~steady~~-burning electric lamps. Highway traffic signals
20 include:
- 21 (a) Flashing Beacon—see Beacon.
- 22 ~~90.~~(b) In-Roadway Warning Lights—a special type of highway traffic signal installed in
23 the roadway surface to warn road users that they are approaching a condition on or
24 adjacent to the roadway that might not be readily apparent and might require the road
25 users to ~~slow-down~~-reduce speed and/or come to a stop.
- 26 ~~101.~~(c) Lane-Use Control Signal—a signal face or comparable display on a full-matrix
27 Changeable Message Sign (see Chapters 2L and 4T) displaying indications to permit or
28 prohibit the use of specific lanes of a roadway or a shoulder where driving is sometimes
29 permitted, or to indicate the impending prohibition of such use.
- 30 ~~239.~~(d) Traffic Control Signal (Traffic Signal)—~~any~~ highway traffic signal ~~by which~~
31 ~~traffic is alternately directed to stop and permitted to proceed~~ placed at intersections,
32 movable bridges, fire stations, midblock crosswalks, alternating one-way sections of a
33 single lane road, private driveways, or other locations that require conflicting traffic to be
34 directed to stop and permitted to proceed in an orderly manner. These devices do not
35 include pedestrian hybrid beacons (see Chapter 4J) or emergency-vehicle hybrid beacons
36 (see Chapter 4N). Traffic control signals include vehicular signal indications, pedestrian
37 signal indications, and bicycle symbol signal indications. Special traffic control signals
38 include:
- 39 ~~62.~~(1) Emergency-Vehicle Traffic Control Signal—a ~~special~~ traffic control signal that
40 ~~assigns the right-of-way to an~~ directs all conflicting traffic to stop in order to permit
41 the driver of an authorized emergency vehicle to proceed into the roadway or
42 intersection.
- 43 ~~121.~~(2) Movable Bridge Traffic Control Signal—a ~~highway~~-traffic control signal
44 installed at a movable bridge to notify traffic to stop during periods when the
45 roadway is closed to allow the bridge to open.
- 46 ~~149.~~(3) Portable Traffic Control Signal—a temporary component of a traffic control
47 signal on a mobile support with one or more signal faces that is designed so that it
48 can be easily transported, deployed, or relocated as part of a temporary traffic

control signal, or during construction and ~~reused at different locations~~ maintenance as a temporary part of a permanent traffic control signal installation.

~~154.~~(4) Pre-Signal—traffic control signal faces that are located upstream from a signalized intersection ~~control traffic approaching a grade crossing and are operated~~ in conjunction with the traffic control signal faces ~~that control traffic approaching a highway-highway intersection beyond the tracks~~ at the downstream signalized intersection in a manner that is designed to keep the area between the stop line for the upstream traffic control signal faces and the stop line for the downstream signalized intersection clear of queued vehicles. When used in conjunction with a grade crossing, the pre-signal is operated for the purpose of preventing vehicles from queuing within the minimum track clearance distance. Supplemental near-side traffic control signal faces for the highway-highway intersection are not considered pre-signals. ~~Pre-signals are typically used where the clear storage distance is insufficient to store one or more design vehicles.~~

(5) Queue Cutter Signal—an independently-controlled traffic control signal (not operated in conjunction with the traffic control signal faces at a downstream signalized intersection) located at a grade crossing that controls traffic in one direction only on the roadway for the purpose of keeping the minimum track clearance distance clear of vehicles. The display of red signal indications is activated from a downstream queue detection system, by time of day, by approaching rail traffic, by an approaching bus on a busway, or by a combination of any of these methods.

~~169.~~(6) Ramp Control Signal—a ~~highway~~-traffic control signal installed to control the merging flow of traffic onto a freeway at an entrance ramp or at a freeway-to-freeway ramp connection.

~~228.~~(7) Temporary Traffic Control Signal—a traffic control signal that is installed for a limited time period using fixed or portable traffic control signal units.

~~87~~104. HOV Lane—any preferential lane designated for exclusive use by high-occupancy vehicles for all or part of a day—including a designated lane on a freeway, other highway, street, or independent roadway on a separate right-of-way.

~~88~~105. Hybrid Beacon—a special type of beacon that is intentionally placed in a dark mode (no indications displayed) between periods of operation and, when operated, displays both steady and flashing traffic control signal indications. Hybrid beacons include:

~~61.~~(a) Emergency-Vehicle Hybrid Beacon—~~a special type of hybrid beacon~~ used to warn and control traffic at an unsignalized location to assist authorized emergency vehicles in entering or crossing a street or highway.

~~142.~~(b) Pedestrian Hybrid Beacon—~~a special type of hybrid beacon~~ used to warn and control traffic at an unsignalized location to assist pedestrians in crossing a street or highway at a marked crosswalk.

106. Identification Marker—a shape, color, and/or pictograph that is used as a visual identifier for a destination guide signing system of a community wayfinding system or a shared-use path system for an area.

~~89~~107. Inherently Low Emission Vehicle (ILEV)—any kind of vehicle that, because of inherent properties of the fuel system design, will not have significant evaporative emissions, even if its evaporative emission control system has failed.

108. In-Roadway Warning Lights—see Highway Traffic Signal.

~~91~~109. Interchange—a system of interconnecting roadways providing for traffic movement between two or more highways that do not intersect at grade.

110. Interchange Lane Drop—see Lane Drop.

1 ~~92~~111. Preemption Interconnection—~~when used in Part 8,~~ the electrical connection between the
2 railroad or light rail transit active warning system and the highway traffic signal controller
3 assembly for the purpose of preemption.

4 ~~93~~112. Intermediate Interchange—an interchange with an urban or rural route that is not a
5 major or minor interchange as defined in this Section.

6 ~~94~~113. Intersection—intersection is defined as follows:

- 7 (a) The area embraced within the prolongation or connection of the lateral curb lines, or if
8 none, the lateral boundary lines of the roadways of two highways that join one another
9 at, or approximately at, right angles, or the area within which vehicles traveling on
10 different highways that join at any other angle might come into conflict.
- 11 (b) The junction of an alley, ~~or~~ driveway, or site roadway with a public roadway or
12 highway shall not constitute an intersection, unless the public roadway or highway at
13 said junction is controlled by a traffic control device.
- 14 (c) If a highway includes two roadways separated by a median, then every crossing of each
15 roadway of such divided highway by an intersecting highway shall be a separate
16 intersection if the opposing left-turn paths cross and there is sufficient interior storage
17 for the design vehicle. (see Figure 2A-5).~~If a highway includes two roadways that are 30~~
18 ~~feet or more apart (see definition of Median), then every crossing of each roadway of~~
19 ~~such divided highway by an intersecting highway shall be a separate intersection.~~
- 20 ~~(d) If both intersecting highways include two roadways that are 30 feet or more apart, then~~
21 ~~every crossing of any two roadways of such highways shall be a separate intersection.~~
- 22 ~~(e)~~ (ed) At a location controlled by a traffic control signal, regardless of the distance
23 between the separate intersections as defined in (c) ~~and (d)~~ above:
- 24 (1) If a stop line, yield line, or crosswalk has not been designated on the roadway
25 (within the median) between the separate intersections, the two intersections and the
26 roadway (median) between them shall be considered as one intersection;
- 27 (2) Where a stop line, yield line, or crosswalk is designated on the roadway on the
28 intersection approach, the area within the crosswalk and/or beyond the designated
29 stop line or yield line shall be part of the intersection; and
- 30 (3) Where a crosswalk is designated on a roadway on the departure from the
31 intersection, the intersection shall include the area extending to the far side of such
32 crosswalk.

33 114. Intersection Control Beacon—see Beacon.

34 ~~96~~115. Interval—the part of a signal cycle during which signal indications do not change.

35 ~~98~~116. Island—a defined area between traffic lanes for control of vehicular movements, for toll
36 collection, or for pedestrian or bicyclist refuge. It includes all end protection and approach
37 treatments. Within an intersection area, a median or an outer separation is considered to be
38 an island.

39 117. Jughandle Turn—a left-turn or U-turn that, in conjunction with special geometry, is made
40 by initially making a right-turn or diverging to the right. With other special geometry, a
41 right-turn or U-turn makes a jughandle turn by initially making a left-turn or diverging to
42 the left.

43 ~~54~~118. Lane Drop~~Dropped Lane~~—a through lane that becomes a mandatory turn lane on a
44 conventional roadway, or a through lane that becomes a mandatory exit lane on a freeway
45 or expressway. The end of an acceleration lane and reductions in the number of through
46 lanes that do not involve a mandatory turn or exit are not considered ~~dropped lanes~~lane
47 drops.

48 ~~100~~119. Lane Line Markings—white pavement marking lines that delineate the separation of
49 traffic lanes that have the same direction of travel on a roadway.

- 1 **120. Lane Reduction**—elimination of a through lane by a gradual narrowing of the travel
 2 pavement (taper) through physical construction or pavement markings at which traffic in
 3 the lane being eliminated must merge into the adjacent through lane and continue in the
 4 same direction of travel. A lane reduction can occur outside the influence of an intersection
 5 or interchange, or within an interchange a short distance downstream of the gore of an exit
 6 ramp. Through lanes that become a mandatory turn or exit are considered lane drops rather
 7 than lane reductions.
- 8 **121. Lane-Use Control Signal**—see Highway Traffic Signal.
- 9 ~~102~~ **122. Legend**—see Sign Legend.
- 10 ~~103~~ **123. Lens**—see Signal Lens.
- 11 ~~104~~ **124. Light Rail Transit Traffic (Light Rail Transit Equipment)**—every device in, upon, or by
 12 which any person or property can be transported on light rail transit tracks, including
 13 single-unit light rail transit cars (such as streetcars and trolleys) and assemblies of multiple
 14 light rail transit cars coupled together.
- 15 **125. Loading Zone**—a specially marked, signed or designated area for the loading or unloading
 16 of vehicles (passenger or freight).
- 17 ~~105~~ **126. Locomotive Horn**—an air horn, steam whistle, or similar audible warning device (see 49
 18 CFR Part 229.129) mounted on a locomotive or control cab car. The terms “locomotive
 19 horn,” “train whistle,” “locomotive whistle,” and “train horn” are used interchangeably in
 20 the railroad industry.
- 21 ~~106~~ **127. Logo**—a distinctive emblem or trademark that identifies a commercial ~~and/or non-~~
 22 commercial business, program, or organization, ~~and/or the product or service offered by the~~
 23 business.
- 24 ~~107~~ **128. Longitudinal Markings**—pavement markings that are generally placed parallel and
 25 adjacent to the flow of traffic such as lane lines, center lines, edge lines, channelizing lines,
 26 and others.
- 27 ~~108~~ **129. Louver**—see Signal Louver.
- 28 **130. Low-Volume Rural Road**—A category of paved or unpaved conventional or special-purpose
 29 roadways having an AADT of less than 400 vehicles and lying outside of built-up or
 30 urbanized areas of cities, towns, and communities.
- 31 ~~109~~ **131. Major Interchange**—an interchange with another freeway or expressway, or an
 32 interchange with a high-volume multi-lane highway, principal urban arterial, or major rural
 33 route where the interchanging traffic is heavy or includes many road users unfamiliar with
 34 the area
- 35 ~~110~~ **132. Major Street**—the street normally carrying the higher volume of vehicular traffic.
- 36 ~~111~~ **133. Malfunction Management Unit**—~~same as~~ see Conflict Monitor.
- 37 ~~112~~ **134. Managed Lane**—a highway lane or set of lanes, or a highway facility, for which variable
 38 operational strategies such as direction of travel, tolling, pricing, and/or vehicle type or
 39 occupancy requirements are implemented and managed in real-time in response to changing
 40 conditions. Managed lanes are typically buffer-separated or barrier-separated lanes parallel
 41 to the general-purpose lanes of a highway in which access is restricted to designated
 42 locations. There are also some highways on which all lanes are managed.
- 43 ~~113~~ **135. Manual Lane**—see Attended Lane within the definition of Toll Collection.
- 44 ~~114~~ **136. Maximum Highway Traffic Signal Preemption Time**—the maximum amount of time
 45 needed
 46 following initiation of the preemption sequence for the highway traffic signals to complete
 47 the
 48 timing of the right-of-way transfer time, queue clearance time, and separation time.
- 49 ~~115~~ **137. Median**—the portion of a highway separating opposing directions of the traveled way or
 50 the area between two roadways of a divided highway measured from edge of traveled way to

1 edge of traveled way. The median excludes turn lanes. The median width might be different
2 between intersections, interchanges, and at opposite approaches of the same intersection.

3 ~~116~~138. Minimum Track Clearance Distance— ~~for standard two-quadrant warning devices, the~~
4 ~~minimum track clearance distance is~~ the length along a highway over the track(s) where a
5 vehicle could be struck by rail traffic. ~~at one or more railroad or light rail transit tracks,~~
6 ~~measured from the highway stop line, warning device, or 12 feet perpendicular to the track~~
7 ~~center line, to 6 feet beyond the track(2) measured perpendicular to the far rail, along the~~
8 ~~center line or edge line of the highway, as appropriate, to obtain the longer distance.~~ The
9 minimum track clearance distance is measured from a point upstream from the track(s) on
10 the approach to the grade crossing to a point downstream from the track(s) on the departure
11 from the grade crossing. The length along the highway between the two points is the
12 minimum track clearance distance. ~~For Four-Quadrant Gate systems, the minimum track~~
13 ~~clearance distance is the length along a highway at one or more railroad or light rail transit~~
14 ~~tracks, measured either from the highway stop line or entrance warning device, to the point~~
15 ~~where the rear of the vehicle would be clear of the exit gate arm. In cases where the exit gate~~
16 ~~arm is parallel to the track(s) and is not perpendicular to the highway, the distance is~~
17 ~~measured either along the center line or edge line of the highway, as appropriate, to obtain~~
18 ~~the longer distance.~~

19 ~~117. Minimum Warning Time—when used in Part 8, the least amount of time active warning~~
20 ~~devices shall operate prior to the arrival of rail traffic at a grade crossing.~~

21 ~~118~~139. Minor Interchange—an interchange where traffic is local and very light, such as
22 interchanges with land service access roads. Where the sum of the exit volumes is estimated
23 to be lower than 100 vehicles per day in the design year, the interchange is classified as local.

24 ~~119~~140. Minor Street—the street normally carrying the lower volume of vehicular traffic.

25 141. Mixed-Use Alignment—a light rail transit track(s), a busway, or a bus only lane(s) where the
26 light rail transit (LRT) or bus rapid transit (BRT) vehicles operate in mixed traffic with all
27 types of road users. This includes streets, transit malls, and pedestrian malls where the
28 right-of-way is shared. In a mixed-use alignment, the light rail transit or the bus rapid
29 transit traffic does not have the right-of-way over other road users at grade crossings and
30 intersections. If the LRT traffic or buses are controlled by traffic control signals or LRT
31 signal faces at an intersection with a roadway, the alignment is considered to be mixed-use
32 even if some of the approaches to the intersection are used exclusively by LRT traffic or
33 buses.

34 ~~120~~142. Movable Bridge Resistance Gate—a type of traffic gate, which is located downstream of
35 the movable bridge warning gate, that provides a physical deterrent to vehicle and/or
36 pedestrian traffic when placed in the appropriate position.

37 143. Movable Bridge Signal—see Highway Traffic Signal.

38 ~~122~~144. Movable Bridge Warning Gate—a type of traffic gate designed to warn, but not primarily
39 to block, vehicle and/or pedestrian traffic when placed in the appropriate position.

40 ~~123~~145. Multi-Lane—more than one lane moving in the same direction. A multi-lane street,
41 highway, or roadway has a basic cross-section comprised of two or more through lanes in
42 one or both directions. A multi-lane approach has two or more lanes moving toward the
43 intersection, including turning lanes.

44 ~~124~~146. Neutral Area—the paved area between the channelizing lines separating an entrance or
45 exit ramp or a channelized turn lane or channelized entering lane from the adjacent through
46 lane(s).

47 ~~125~~147. Object Marker—a device used to mark obstructions within or adjacent to the roadway.

48 ~~126~~148. Occupancy Requirement—any restriction that regulates the use of a facility or one or
49 more lanes of a facility for any period of the day based on a specified minimum number of
50 persons in a vehicle.

51 ~~127~~149. Occupant—a person driving or riding in a car, truck, bus, or other vehicle.

- 1 150. On-Street Parking—parking within or along, and accessed directly from, a public roadway
 2 or a site roadway open to public travel.
- 3 ~~128~~ 151. Open-Road ETC Lane—a non-attended lane that is designed to allow toll payments to be
 4 electronically collected from vehicles traveling at normal highway speeds. Open-Road ETC
 5 lanes are typically physically separated from the toll plaza, often following the alignment of
 6 the mainline lanes, with toll plaza lanes for cash toll payments being on a different alignment
 7 after diverging from the mainline lanes or a subset thereof.
- 8 ~~130~~ 152. Open-Road Tolling Point—the location along an Open-Road ETC lane at which roadside
 9 or overhead detection and receiving equipment are placed and vehicles are electronically
 10 assessed a toll.
- 11 ~~131~~ 153. Opposing Traffic—vehicles that are traveling in the opposite direction. At an
 12 intersection, vehicles entering from an approach that is approximately straight ahead would
 13 be considered to be opposing traffic, but vehicles entering from approaches on the left or
 14 right would ~~not~~ be considered to be conflicting traffic rather than opposing traffic.
- 15 154. Option Lane—A lane on a freeway, expressway, or conventional road multi-lane exit or
 16 multi-lane split that widens on the approach to allow access, without changing lanes, to:
 17 (a) Both an exit lane and the mainline at a freeway or expressway exit; or
 18 (b) Both diverging roadways at a freeway, expressway, or conventional road split.
- 19 ~~132~~ 155. Overhead Sign—a sign that is placed such that a portion or the entirety of the sign or its
 20 support is directly above the roadway or shoulder such that vehicles travel below it.
 21 Typical installations include signs placed on cantilever arms that extend over the roadway
 22 or shoulder, signs placed on sign support structures that span the entire width of the
 23 pavement, signs placed on mast arms or span wires either independently or that also
 24 support traffic control signals, and signs placed on highway bridges that cross over the
 25 roadway.
- 26 ~~133~~ 156. Parking Area—a parking lot or parking garage that is separated from a roadway.
 27 Parallel, perpendicular, or angle parking spaces along a roadway are not considered a
 28 parking area.
- 29 157. Parking Space—an area marked or designated for storage of a vehicle while the driver is
 30 not present.
- 31 158. Preemption Clearance Interval—the part of a traffic signal sequence displayed as a result of
 32 a preemption request when vehicles are provided the opportunity to clear the railroad or
 33 light rail transit tracks, or a movable bridge, prior to the arrival of the train or boat for
 34 which the traffic signal is being preempted.
- 35 159. Preemption Time Variability—the result that occurs when the traffic signal controller
 36 enters the Preemption Clearance Interval with less than the maximum design Right-of-Way
 37 Transfer Time or the speed of a train approaching the grade crossing varies.
- 38 ~~134~~ 160. Passive Grade Crossing—a grade crossing where none of the automatic traffic control
 39 devices associated with an Active Grade Crossing Warning System are present and at which
 40 the traffic control devices consist entirely of signs and/or markings.
- 41 ~~135~~ 161. Pathway—a general term denoting a public way for purposes of travel by authorized
 42 users outside the traveled way and physically separated from the roadway by an open space
 43 or barrier and either within the highway right-of-way or within an independent alignment.
 44 Pathways include shared-use paths, but do not include sidewalks.
- 45 ~~136~~ 162. Pathway Grade Crossing—the general area where a pathway and railroad and/or light
 46 rail transit tracks cross at the same level, within which are included the tracks, pathway,
 47 and traffic control devices for pathway traffic traversing that area.
- 48 ~~137~~ 163. Paved—having a roadway surface that has both a structural (weight bearing) and a
 49 sealing purpose for the roadway, such as a bituminous surface treatment, mixed bituminous

1 concrete, or Portland cement concrete ~~roadway surface that has both a structural (weight~~
 2 ~~bearing) and a sealing purpose for the roadway.~~

3 ~~138~~164. Pedestrian—a person on foot, in a wheelchair, on other devices determined by local law
 4 to be equivalent, which might include ~~on~~ skates, or ~~on~~ a skateboard.

5 ~~139~~165. Pedestrian Change Interval—an interval during which the flashing UPRAISED HAND
 6 (symbolizing DONT WALK) signal indication is displayed.

7 ~~140~~166. Pedestrian Clearance Time—the time provided for a pedestrian crossing in a crosswalk,
 8 after leaving the curb or ~~shoulder~~ edge of pavement, to travel to the far side of the traveled
 9 way or to a median.

10 ~~141~~167. Pedestrian ~~Facilities~~ Facility—a general term denoting a location where improvements
 11 and provisions have been made to accommodate or encourage ~~walking pedestrian activity.~~

12 168. Pedestrian Hybrid Beacon—see Hybrid Beacon.

13 ~~143~~169. Pedestrian Signal Head—a signal head, which contains the symbols WALKING
 14 PERSON (symbolizing WALK) and UPRAISED HAND (symbolizing DONT WALK), that
 15 is installed to direct pedestrians ~~traffic~~ at a traffic control signal.

16 ~~144~~170. Permissive Mode—a mode of traffic control signal operation in which left or right turns
 17 are permitted to be made after yielding to pedestrians, if any, and/or opposing traffic, if
 18 any. When a CIRCULAR GREEN signal indication is displayed, both left and right turns
 19 are permitted unless otherwise prohibited by another traffic control device. When a
 20 flashing YELLOW ARROW or flashing RED ARROW signal indication is displayed, the
 21 turn indicated by the arrow is permitted.

22 ~~145~~171. Physical Gore—a longitudinal point where a physical barrier or the lack of a paved
 23 surface inhibits road users from crossing from a ramp or channelized turn lane or
 24 channelized entering lane to the adjacent through lane(s) or vice versa.

25 ~~146~~172. Pictograph—a pictorial representation used to identify a governmental jurisdiction, an
 26 area of jurisdiction, a governmental or other public transportation agency or provider, a
 27 military base or branch of service, a governmental-approved university or college, ~~a toll~~
 28 ~~payment system, or~~ a governmental-approved institution, or a toll payment system.

29 ~~147~~173. Plaque—a traffic control device intended to communicate specific information to road
 30 users through a word, symbol, or arrow legend that is placed immediately adjacent to a sign
 31 to supplement the message on the sign. The difference between a plaque and a sign is that a
 32 plaque cannot be used alone. The designation for a plaque includes a “P” suffix.

33 ~~148~~174. Platoon—a group of vehicles or pedestrians traveling together as a group, either
 34 voluntarily or involuntarily, because of traffic signal controls, geometrics, or other factors.

35 ~~149~~175. Portable Traffic Control Signal—~~a temporary traffic control signal that is designed so~~
 36 ~~that it can be easily transported and reused at different locations~~ see Highway Traffic
 37 Signal.

38 176. Post-Exit Ramp Lane Reduction—see Lane Reduction.

39 ~~150~~177. Post-Mounted Sign—a sign that is placed to the side of the roadway such that no portion
 40 of the sign or its support is directly above the roadway or shoulder.

41 ~~151~~178. Posted Speed Limit—a speed limit determined by law or regulation and displayed on
 42 Speed Limit signs.

43 ~~152~~179. Preemption—the transfer of normal operation of a traffic control signal or a hybrid
 44 beacon to a special control mode of operation.

45 ~~153~~180. Preferential Lane—a highway lane or set of lanes, or a highway facility, reserved for the
 46 exclusive use of one or more specific types of vehicles or of vehicles with ~~at least~~ a specific
 47 minimum number of occupants.

48 181. Pre-Signal—see Highway Traffic Signal.

49 ~~155~~182. Pretimed Operation—a type of traffic control signal operation in which none of the signal
 50 phases function on the basis of actuation.

- 1 **156183.** Primary Signal Face—one of the required or recommended minimum number of signal
2 faces for a given approach or separate turning movement, but not including near-side signal
3 faces required as a result of the far-side signal faces exceeding the maximum distance from
4 the stop line.
- 5 **157184.** Principal Legend—place names, street names, and route numbers ~~placed~~ displayed on
6 guide signs.
- 7 **158185.** Priority Control—a means by which the assignment of right-of-way is obtained or
8 modified.
- 9 **186.** Private Road—see Site Roadways Open to Public Travel. **187. Professional Engineer (P.E.)**
10 —An individual who has fulfilled education and experience requirements and passed
11 examinations that, under State licensure laws, permit the individual to offer engineering
12 services within areas of expertise directly to the public.
- 13 **160188.** Protected Mode—a mode of traffic control signal operation in which left or right turns
14 are permitted to be made only when a left or right GREEN ARROW signal indication is
15 displayed.
- 16 **164189.** Public Road—any road, street, or similar facility under the jurisdiction of and
17 maintained by a public agency and open to public travel.
- 18 **162190.** ~~Push~~ Button—a button to activate a device or signal timing for pedestrians, bicyclists,
19 or other road users.
- 20 **163191.** ~~Push~~ Button Information Message—a recorded message that can be actuated by
21 pressing a push button when the walk interval is not timing and that provides the name of
22 the street that the crosswalk associated with that particular push button crosses and can
23 also provide other information about the intersection signalization or geometry.
- 24 **164192.** ~~Push~~ Button Locator Tone—a repeating sound that informs approaching pedestrians
25 that a push button exists to actuate pedestrian timing or receive additional information and
26 that enables pedestrians ~~who have visual~~ with vision disabilities to locate the push button.
- 27 **165193.** Queue Clearance Time—when used in Part 8, the time required for the design vehicle of
28 maximum length stopped just inside the minimum track clearance distance to start up and
29 move through and clear the entire minimum track clearance distance. ~~If pre-signals are~~
30 ~~present, this time shall be long enough to allow the vehicle to move through the intersection,~~
31 ~~or to clear the tracks if there is sufficient clear storage distance. If a Four-Quadrant Gate~~
32 ~~system is present, this time shall be long enough to permit the exit gate arm to lower after~~
33 ~~the design vehicle is clear of the minimum track clearance distance.~~ **194.** Queue Cutter
34 Signal—see Highway Traffic Signal.
- 35 **166195.** Quiet Zone—a segment of a rail line, within which is situated one or a number of
36 consecutive public highway-rail grade crossings at which locomotive horns are not routinely
37 sounded per 49 CFR Part 222.
- 38 **167196.** Rail Traffic—every device in, upon, or by which any person or property can be
39 transported on rails or tracks and to which all other traffic must yield the right-of-way by
40 law at grade crossings, including trains, one or more locomotives coupled (with or without
41 cars), other railroad equipment, and light rail transit operating in exclusive or semi-
42 exclusive alignments. Light rail transit operating in a mixed-use alignment, to which other
43 traffic is not required to yield the right-of-way by law, is a vehicle and is not considered to
44 be rail traffic.
- 45 **168197.** Raised Pavement Marker—a device mounted on or in a road surface that has a height
46 generally not exceeding approximately 1 inch above the road surface for a permanent
47 marker, or not exceeding approximately 2 inches above the road surface for a temporary
48 flexible marker, and that is intended to be used as a positioning guide and/or to supplement
49 or substitute for pavement markings. Raised pavement markers might also be recessed into
50 or flush with the pavement surface.
- 51 **198.** Ramp Control Signal—see Highway Traffic Signal.

1 ~~170. Ramp Meter—see Ramp Control Signal.~~

2 ~~171~~199. Red Clearance Interval—an interval that follows a yellow change interval and precedes
3 the next conflicting green interval.

4 ~~172~~200. Regulatory Sign—a sign that gives notice to road users of traffic laws or regulations.

5 ~~173~~201. Retroreflectivity—a property of a surface that allows a large portion of the light coming
6 from a point source to be returned directly back to a point near its origin.

7 ~~174. Right of Way [Assignment]—the permitting of vehicles and/or pedestrians to proceed in a
8 lawful manner in preference to other vehicles or pedestrians by the display of a sign or
9 signal indications.~~

10 ~~175. Right of Way Transfer Time—when used in Part 8, the maximum amount of time needed
11 for the worst case condition, prior to display of the track clearance green interval. This
12 includes any railroad or light rail transit or highway traffic signal control equipment time
13 to react to a preemption call, and any traffic control signal green, pedestrian walk and
14 clearance, yellow change, and red clearance intervals for conflicting traffic.~~

15 ~~176~~202. Road—see Roadway.

16 ~~177~~203. Road User—a vehicle operator, bicyclist, or pedestrian, including persons with
17 disabilities, within the highway or on a ~~private road~~site roadway open to public travel.

18 ~~178~~204. Roadway—that portion of a highway improved, designed, or ordinarily used for
19 vehicular travel and parking lanes, but exclusive of the sidewalk, berm, or shoulder even
20 though such sidewalk, berm, or shoulder is used by persons riding bicycles or other human-
21 powered vehicles. In the event a highway includes two or more separate roadways, the term
22 roadway as used in this Manual shall refer to any such roadway separately, but not to all
23 such roadways collectively.

24 ~~179~~205. Roadway Network—a geographical arrangement of intersecting roadways.

25 ~~180~~206. Roundabout—a circular intersection with yield control at entry, which permits a vehicle
26 on the circulatory roadway to proceed, and with deflection of the approaching vehicle
27 counter-clockwise around a central island.

28 ~~181~~207. Rumble Strip—a series of intermittent, narrow, transverse areas of rough-textured,
29 slightly raised, or depressed road surface that extend across the travel lane to alert ~~road~~
30 ~~users~~vehicle operators to unusual traffic conditions or are located along the shoulder, along
31 the roadway center line, or within islands formed by pavement markings to alert road users
32 that they are leaving the travel lanes.

33 ~~182~~208. Rural Highway—a type of roadway normally characterized by lower volumes, higher
34 speeds, fewer turning conflicts, and less conflict with pedestrians.

35 ~~183. Safe Positioned—the positioning of emergency vehicles at an incident in a manner that
36 attempts to protect both the responders performing their duties and road users traveling
37 through the incident scene, while minimizing, to the extent practical, disruption of the
38 adjacent traffic flow.~~

39 209. Scanning Graphic—a graphic designed for scanning by machine, and includes bar codes,
40 quick-response (QR) codes or other matrix bar code formats, or similar graphics.

41 ~~184~~210. School—a public or private educational institution recognized by the State education
42 authority for one or more grades K through 12 or as otherwise defined by the State.

43 ~~185~~211. School Zone—a designated roadway segment approaching, adjacent to, and beyond
44 school buildings or grounds, or along which school related activities occur.

45 ~~186~~212. Semi-Actuated ~~Operation~~—a type of traffic control signal operation in which at least one,
46 but not all, signal phases function on the basis of actuation.

47 213. Semi-Exclusive Alignment—a light rail transit track(s) or a bus rapid transit busway that is
48 in a separate right-of-way or that is along a street or railroad right-of-way where motor
49 vehicles, bicycles, and pedestrians have limited access and cross only at designated
50 locations, such as at grade crossings where road users must yield the right-of-way to the
51 light rail transit or the bus rapid transit traffic.

- 1 **187214.** Separate Turn Signal Face—a signal face that exclusively controls a turn movement and
2 that displays signal indications that are applicable only to the turn movement.
- 3 **188215.** Separation Time—the component of maximum highway traffic signal preemption time
4 during which the minimum track clearance distance is clear of vehicular traffic prior to the
5 arrival of rail traffic.
- 6 **216.** Serviceable—a condition in which a traffic control device appears (day and night) and
7 operates as intended, beyond which it requires replacement due to damage or wear.
8 Whether a device is serviceable will depend on the type of device under consideration. In
9 general, if the device is capable of being serviced with minimal effort or replacement parts
10 so that it continues to appear and operate as intended, and the device is otherwise
11 substantially intact, then it can be considered to be in serviceable condition. If the device is
12 damaged or not operational beyond reasonable repair, then it is likely no longer serviceable.
- 13 **189217.** Shared Roadway—a roadway that is officially designated and marked as a bicycle route,
14 but which is open to motor vehicle travel and upon which no bicycle lane is designated.
- 15 **190218.** Shared Turn Signal Face—a signal face, for controlling both a turn movement and the
16 adjacent through movement, that always displays the same color of circular signal
17 indication that the adjacent through signal face or faces display.
- 18 **191219.** Shared-Use Path—a bikeway outside the traveled way and physically separated from
19 motorized vehicular traffic by an open space or barrier and either within the highway
20 right-of-way or within an independent alignment. Shared-use paths are also used by
21 pedestrians (including skaters, users of manual and motorized wheelchairs, and joggers)
22 and other authorized motorized and non-motorized users.
- 23 **220.** Shoulder—a longitudinal area contiguous with the traveled way that is used for
24 accommodation of stopped vehicles for emergency use and for lateral support of base and
25 surface courses, and that is graded for emergency stopping. A shoulder might be paved or
26 unpaved. A paved shoulder might be opened to part-time travel by some or all vehicles and
27 might also be available for use by pedestrians and/or bicycles in the absence of other
28 pedestrian or bicycle facilities.
- 29 **192221.** Sidewalk—that portion of a street between the curb line, or the lateral line of a roadway,
30 and the adjacent property line or on easements of private property that is paved or
31 improved and intended for use by pedestrians.
- 32 **222.** Sidewalk Extension—a pedestrian facility at an intersection or midblock crosswalk which
33 extends the sidewalk by physically and visually narrowing the roadway.
- 34 **223.** Sidewalk Grade Crossing—the portion of a highway-rail grade crossing or of a highway-
35 light rail transit grade crossing where a sidewalk and railroad tracks or a sidewalk and
36 light rail transit tracks cross at the same level, within which are included the tracks,
37 sidewalk, and traffic control devices for sidewalk users traversing that area.
- 38 **193224.** Sign—with regard to controlling traffic, any traffic control device that is intended to
39 communicate specific information to road users through a word, symbol, and/or arrow
40 legend. Signs do not include highway traffic signals, pavement markings, delineators, or
41 channelization devices. Signs whose purpose is unrelated to traffic control are addressed in
42 Section 1A.02.
- 43 **194225.** Sign Assembly—a group of signs, located on the same support(s), that supplement one
44 another in conveying information to road users.
- 45 **195226.** Sign Illumination—either internal or external lighting that shows similar color by day or
46 night. Street or highway lighting shall not be considered as meeting this definition.
- 47 **196227.** Sign Legend—all word messages, logos, pictographs, and symbol and arrow designs that
48 are intended to convey specific meanings. The border, if any, on a sign is not considered to
49 be a part of the legend.
- 50 **197228.** Sign Panel—a separate panel or piece of material containing a word, logo, pictograph,
51 symbol, and/or arrow legend that is affixed to the face of a sign.

1 229. Signal—See Highway Traffic Signal.

2 ~~198~~230.Signal Backplate—a thin strip of material that extends outward from and parallel to a
3 signal face on all sides of a signal housing to provide a background for improved visibility of
4 the signal indications.

5 ~~199~~231.Signal Coordination—the establishment of timed relationships between adjacent traffic
6 control signals.

7 232. Signal Dimming—a reduction of the light output from a signal indication, hybrid beacon, or
8 rectangular rapid-flashing beacon indication, typically for nighttime conditions, to a value
9 that is below the minimum specified intensity for daytime conditions. If a variety of
10 intensity levels are used during daytime conditions and all of the various levels (including
11 the lowest of the intensities) are above the minimum specified intensity for daytime
12 conditions, this would not be considered to be signal dimming.

13 ~~200~~233.Signal Face—an assembly of one or more signal sections that is provided for controlling
14 one or more traffic movements on a single approach.

15 ~~201~~234.Signal Head—an assembly of one or more signal faces that is provided for controlling
16 traffic movements on one or more approaches.

17 ~~202~~235.Signal Housing—that part of a signal section that protects the light source and other
18 required components.

19 ~~203~~236.Signal Indication—the illumination of a signal lens or equivalent device.

20 ~~204~~237.Signal Lens—that part of the signal section that redirects the light coming directly from
21 the light source and its reflector, if any.

22 ~~205~~238.Signal Louver—a device that can be mounted inside a signal visor to restrict visibility of
23 a signal indication from the side or to limit the visibility of the signal indication to a certain
24 lane or lanes, or to a certain distance from the stop line.

25 ~~206~~239.Signal Phase—the right-of-way, yellow change, and red clearance intervals in a cycle that
26 are assigned to an independent traffic movement or combination of movements.

27 ~~207~~240.Signal Section—the assembly of a signal housing, signal lens, if any, and light source with
28 necessary components to be used for displaying one signal indication.

29 ~~97~~241. Interval-Signal Sequence (Sequence of Indications)—the order of appearance of signal
30 indications during successive intervals of a signal cycle.

31 ~~208~~242.Signal System—two or more traffic control signals operating in signal coordination.

32 ~~209~~243.Signal Timing—the amount of time allocated for the display of a signal indication.

33 ~~210~~244.Signal Visor—that part of a signal section that directs the signal indication specifically to
34 approaching traffic and reduces the effect of direct external light entering the signal lens.

35 ~~211~~245.Signing—individual signs or a group of signs, not necessarily on the same support(s), that
36 supplement one another in conveying information to road users.

37 ~~212~~246. Simultaneous Preemption—notification of approaching rail traffic is forwarded to the
38 highway traffic signal controller unit or assembly and railroad or light rail transit active
39 warning devices at the same time.

40 ~~159~~247. Private-Road-Site Roadways Open to Public Travel—private toll roads and roads
41 ~~(including any adjacent sidewalks that generally run parallel to the road) within shopping~~
42 ~~centers, airports, sports arenas, and other similar business and/or recreation facilities that~~
43 ~~are privately owned, but where the public is allowed to travel without access restrictions.~~
44 ~~Roads within private gated properties (except for gated toll roads) where access is restricted~~
45 ~~at all times, parking areas, driving aisles within parking areas, and private grade crossings~~
46 ~~shall not be included in this definition. Roadways and bikeways on sites of shopping centers,~~
47 ~~office parks, airports, schools, universities, sports arenas, recreational parks, and other~~
48 ~~similar business, governmental, and/or recreation facilities that are publicly or privately~~
49 ~~owned but where the public is allowed to travel without full-time access restrictions. Two~~
50 ~~types of roadways are not included in this definition: (1) roadways where access is restricted~~

1 at all times by gates and/or guards to residents, employees, or other specifically-authorized
 2 persons; and (2) private highway-rail grade crossings. Site roadways open to public travel
 3 do not include parking areas (see definition in this Section), including the driving aisles (see
 4 definition in this Section) within those parking areas.

5 ~~213~~248.Special-Purpose Road—a low-volume, low-speed road that serves recreational areas or
 6 resource development activities.

7 ~~214~~249.Speed—speed is defined based on the following classifications:

- 8 (a) Average Speed—the summation of the instantaneous or spot-measured speeds at a
 9 specific location of vehicles divided by the number of vehicles observed.
- 10 (b) Design Speed—a selected speed used to determine the various geometric design features
 11 of a roadway.
- 12 (c) 85th-Percentile Speed—the speed at or below which 85 percent of the motor vehicles
 13 travel.
- 14 (d) Operating Speed—a speed at which a typical vehicle or the overall traffic operates.
 15 Operating speed might be defined with speed values such as the average, pace, or 85th-
 16 percentile speeds.
- 17 (e) Pace—the 10 mph speed range representing the speeds of the largest percentage of
 18 vehicles in the traffic stream.

19 ~~215~~250.Speed Limit—the maximum (or minimum) speed applicable to a section of highway as
 20 established by law or regulation.

21 ~~216. Speed Limit Sign Beacon—a beacon used to supplement a SPEED LIMIT sign.~~

22 ~~217. Speed Measurement Markings—a white transverse pavement marking placed on the
 23 roadway to assist the enforcement of speed regulations.~~

24 ~~218~~251.Speed Zone—a section of highway with a speed limit that is established by law or
 25 regulation, but which might be different from a legislatively specified statutory speed limit.

26 ~~219~~252.Splitter Island—a median island used to separate opposing directions of traffic entering
 27 and exiting a roundabout.

28 ~~220~~253.Station Crossing—a pathway grade crossing that is associated with a station platform.

29 ~~221~~254.Statutory Speed Limit—a speed limit established by legislative action (such as Federal or
 30 State law) that typically is applicable for a particular class of highways with specified
 31 design, functional, jurisdictional and/or location characteristics and that is not necessarily
 32 displayed on Speed Limit signs.

33 ~~222~~255.Steady (Steady Mode)—the continuous display of a signal indication for the duration of
 34 an interval, signal phase, or consecutive signal phases.

35 ~~223. Stop Beacon—a beacon used to supplement a STOP sign, a DO NOT ENTER sign, or a~~
 36 ~~WRONG WAY sign.~~

37 ~~224~~256.Stop Line—a solid white pavement marking line extending across approach lanes to
 38 indicate the point at which a stop is intended or required to be made.

39 ~~225~~257.Street—see Highway.

40 ~~226~~258.Supplemental Signal Face—a signal face that is not a primary signal face but which is
 41 provided for a given approach or separate turning movement to enhance visibility or
 42 conspicuity.

43 259. Swing Gate—a self-closing fence-type gate designated to swing open away from the track
 44 area and return to the closed position upon release.

45 ~~227~~260.Symbol—the approved design of a pictorial or graphical representation of a specific
 46 traffic control message for signs, pavement markings, traffic control signals, or other traffic
 47 control devices, as shown in the MUTCD.

48 261. Temporary Traffic Control Signal—see Highway Traffic Signal.

49 ~~229~~262.Temporary Traffic Control Zone—an area of a highway, pedestrian, or bicycle facility
 50 where road user conditions are changed because of a work zone or incident by the use of

1 temporary traffic control devices, flaggers, uniformed law enforcement officers, or other
 2 authorized personnel.

3 ~~230~~263. Theoretical Gore—a longitudinal point at the upstream end of a neutral area at an exit
 4 ramp or channelized turn lane where the channelizing lines that separate the ramp or
 5 channelized turn lane from the adjacent through lane(s) begin to diverge, or a longitudinal
 6 point at the downstream end of a neutral area at an entrance ramp or channelized entering
 7 lane where the channelizing lines that separate the ramp or channelized entering lane from
 8 the adjacent through lane(s) intersect each other.

9 264. Through Train—a train movement that continues without stopping or reversing direction
 10 throughout the entire length of the rail traffic detection circuit length approaching a
 11 highway-rail grade crossing.

12 ~~231~~265. Timed Exit Gate Operating Mode—a mode of operation where the exit gate descent at a
 13 grade crossing is based on a predetermined time interval.

14 ~~232~~266. Toll Booth—a shelter where a toll attendant is stationed to collect tolls or issue toll
 15 tickets. A toll booth is located adjacent to a toll lane and is typically set on a toll island.

16 267. Toll Collection—manual or electronic methods and elements used to collect a fee for use of a
 17 toll facility. Toll collection methods include:

18 ~~59.~~(a) Electronic Toll Collection (ETC)—a cashless system for automated collection of tolls
 19 from moving or stopped vehicles through wireless technologies such as radio-frequency
 20 communication or optical scanning. ETC systems are classified as one of the following:

- 21 (1) ~~systems~~ Systems that require users to have registered toll accounts, with the use of
 22 equipment inside or on the exterior of vehicles, such as a transponder or barcode
 23 decal, that communicates with or is detected by roadside or overhead receiving
 24 equipment, or with the use of license plate optical scanning, to automatically deduct
 25 then toll from the registered user account, ~~or~~
- 26 (2) ~~systems~~ Systems that do not require users to have registered toll accounts because
 27 vehicle license plates are optically scanned and invoices for the toll amount are
 28 typically sent through postal mail to the address of the vehicle owner, or
- 29 (3) Systems that allow electronic toll collection for both registered and non-registered
 30 toll accounts.

31 ~~129.~~(b) Open-Road Tolling (ORT)—a system designed to allow electronic toll collection
 32 (ETC) from vehicles traveling at normal-highway-posted speeds. Open-~~R~~road ~~T~~tolling
 33 might be used on toll roads or toll facilities in conjunction with toll plazas. Open-~~R~~road
 34 ~~T~~tolling is also typically used on managed lanes and on toll facilities that only accept
 35 payment by ETC.

36 (c) Manual Toll Collection—a system of toll collection from stopped vehicles through
 37 acceptance of cash, toll tickets, tokens, or credit cards, and may involve issuance of
 38 receipts. Toll collection may be by a machine or toll booth attendant.

39 ~~236.~~(1) Toll-Ticket System—a toll system in which the user of a toll road must stop to
 40 receive a ticket from a machine or toll booth attendant upon entering the toll
 41 facility. The ticket denotes the user’s point of entry and, upon exiting the toll system,
 42 the user surrenders the ticket and is charged a toll based on the distance traveled
 43 between the points of entry and exit.

44 ~~13.~~(2) Attended Lane (Manual Lane)—a toll lane adjacent to a toll booth occupied by a
 45 human toll collector who makes change, issues receipts, and performs other toll-
 46 related functions. Attended lanes at toll plazas typically require vehicles to stop to
 47 pay the toll.

48 ~~67.~~(3) Exact Change Lane (Automatic Lane)—a non-attended toll lane that has a
 49 receptacle into which road users deposit coins totaling the exact amount of the toll.
 50 Exact Change lanes at toll plazas typically require vehicles to stop to pay the toll.

- 1 ~~233~~268. Toll Island—a raised island on which a toll booth or other toll collection and related
2 equipment are located.
- 3 ~~234~~269. Toll Lane—an individual lane located within a toll plaza in which a toll payment is
4 collected or, for toll-ticket systems, a toll ticket is issued.
- 5 ~~235~~270. Toll Plaza—the location at which tolls are collected consisting of a grouping of toll
6 booths, toll islands, toll lanes, and, typically, a canopy. Toll plazas might be located on
7 highway mainlines or on interchange ramps. A mainline toll plaza is sometimes referred to
8 as a barrier toll plaza because it interrupts the traffic flow.
- 9 271. Toll Road (Facility) —a road or facility that is open to traffic only by payment of a user toll
10 or fee.
- 11 ~~237~~272. Traffic—pedestrians, bicyclists, ridden or herded animals, vehicles, streetcars, and other
12 conveyances either singularly or together while using for purposes of travel any highway or
13 ~~private road~~site roadway open to public travel.
- 14 ~~238~~273. Traffic Control Device—all signs, signals, markings, channelization devices, or other
15 devices that use colors, shapes, symbols, words, sounds, and/or tactile information for the
16 primary purpose of communicating ~~used to a~~ regulate~~ory,~~ warning, or guide~~ance~~ message
17 to road users on ~~traffic, placed on, over, or adjacent to~~ a street, highway, ~~private road open~~
18 ~~to public travel,~~ pedestrian facility, bikeway, pathway, or ~~private~~site roadway open to
19 public travel~~shared-use path by authority of a public agency or official having jurisdiction,~~
20 ~~or, in the case of a private road open to public travel, by authority of the private owner or~~
21 ~~private official having jurisdiction.~~ Section 1A.02 contains information regarding items
22 that are not traffic control devices.
- 23 274. Traffic Control Signal (Traffic Signal)—see Highway Traffic Signal.
- 24 ~~240~~275. Train—one or more locomotives coupled, with or without cars, that operates on rails or
25 tracks and to which all other traffic must yield the right-of-way by law at highway-rail
26 grade crossings.
- 27 ~~241~~276. Transverse Markings—pavement markings that are generally placed perpendicular and
28 across the flow of traffic such as shoulder markings; word, symbol, and arrow markings;
29 stop lines; crosswalk lines; ~~speed measurement markings;~~ parking space markings; and
30 others.
- 31 ~~242~~277. Traveled Way—the portion of the roadway for the movement of vehicles, exclusive of the
32 shoulders, berms, sidewalks, and parking lanes.
- 33 ~~243~~278. Turn Bay—a lane for the exclusive use of turning vehicles that is formed on the approach
34 to the location where the turn is to be made. In most cases where turn bays are provided,
35 drivers who desire to turn must move out of a through lane into the newly-formed turn bay
36 in order to turn. A through lane that becomes a turn lane is considered to be a ~~dropped~~
37 lane drop rather than a turn bay.
- 38 279. Two-Stage Bicycle Turn Box—a designated area at an intersection intended to provide
39 bicyclists a place to wait for traffic to clear before proceeding in a different direction of
40 travel.
- 41 280. Uncontrolled Approach—an approach on which vehicles are not controlled by a traffic
42 control signal, hybrid beacon, STOP sign, or YIELD sign.
- 43 ~~244~~281. Upstream—a term that refers to a location that is encountered by traffic prior to a
44 downstream location as it flows in an “upstream to downstream” direction. For example,
45 “the upstream end of a lane line separating the turn lane from a through lane on the
46 approach to an intersection” is the end of the line that is furthest from the intersection.
- 47 ~~245~~282. Urban Street—a type of street normally characterized by relatively low speeds, wide
48 ranges of traffic volumes, narrower lanes, frequent intersections and driveways, significant
49 pedestrian traffic, and more businesses and houses.
- 50 283. Variable Message Sign—see Changeable Message Sign.

1 **246284.** Vehicle—every device in, upon, or by which any person or property can be transported
 2 or drawn upon a highway, except trains and light rail transit operating in exclusive or semi-
 3 exclusive alignments. Light rail transit equipment operating in a mixed-use alignment, to
 4 which other traffic is not required to yield the right-of-way by law, is a vehicle.

5 **247285.** Vibrotactile Pedestrian Device—an accessible pedestrian signal feature that
 6 communicates, by touch, information about pedestrian timing using a vibrating surface.

7 **248286.** Visibility-Limited Signal Face or Visibility-Limited Signal Section—a type of signal face
 8 or signal section designed (or shielded, hooded, or louvered) to restrict the visibility of a
 9 signal indication from the side, to a certain lane or lanes, or to a certain distance from the
 10 stop line.

11 **249287.** Walk Interval—an interval during which the WALKING PERSON (symbolizing
 12 WALK) signal indication is displayed.

13 ~~250. Warning Beacon—a beacon used only to supplement an appropriate warning or regulatory~~
 14 ~~sign or marker.~~

15 **251288.** Warning Light—a portable, powered, yellow, lens-directed, enclosed light that is used in
 16 a temporary traffic control zone in either a steady burn or a flashing mode.

17 **252289.** Warning Sign—a sign that gives notice to road users of a situation that might not be
 18 readily apparent.

19 **253290.** Warrant—a warrant describes a threshold condition based upon average or normal
 20 conditions that, if found to be satisfied as part of an engineering study, shall result in
 21 analysis of other traffic conditions or factors to determine whether a traffic control device
 22 or other improvement is justified. Warrants are not a substitute for engineering judgment.
 23 The fact that a warrant for a particular traffic control device is met is not conclusive
 24 justification for the installation of the device.

25 ~~254. Wayside Equipment—the signals, switches, and/or control devices for railroad or light rail~~
 26 ~~transit operations housed within one or more enclosures located along the railroad or light~~
 27 ~~rail transit right-of-way and/or on railroad or light rail transit property.~~

28 **255291.** Wayside Horn System—a stationary horn (or a series of horns) located at a grade
 29 crossing that is used in conjunction with train-activated or light rail transit-activated
 30 warning systems to provide audible warning of approaching rail traffic to road users on the
 31 highway or pathway approaches to a grade crossing, either as a supplement or alternative
 32 to the sounding of a locomotive horn.

33 **256292.** Worker—a person on foot whose duties place him or her within the right-of-way of a
 34 street, highway, or pathway, such as: ~~street, highway, or pathway~~ construction and
 35 maintenance forces; survey crews; utility crews; responders to incidents within the ~~street,~~
 36 ~~highway, or pathway~~ right-of-way; and law enforcement personnel when directing traffic,
 37 investigating crashes, and handling lane closures, obstructed roadways, and disasters within
 38 the right-of-way ~~of a street, highway, or pathway.~~ **257293.** Wrong-Way Arrow—a slender,
 39 elongated, white pavement marking arrow placed upstream from the ramp terminus to
 40 indicate the correct direction of traffic flow. Wrong-way arrows are intended primarily to
 41 warn wrong-way road users that they are going in the wrong direction.

42 **258294.** Yellow Change Interval—the first interval following the green or flashing arrow interval
 43 during which the steady yellow signal indication is displayed.

44 **259295.** Yield Line—a row of solid white isosceles triangles pointing toward approaching vehicles
 45 extending across approach lanes to indicate the point at which the yield is intended or
 46 required to be made.

47 **Section 1A.141C.03 Meanings of Acronyms and Abbreviations Used in this Manual**

48 **Standard:**

49 The following acronyms and abbreviations, when used in this Manual, shall have the following
 50 meanings:

- 1 1. AADT—annual average daily traffic
2 2. AASHTO—American Association of State Highway and Transportation Officials
3 3. AC—alternating current
4 ~~34.~~ ADA—Americans with Disabilities Act
5 ~~4. ADAAG—Americans with Disabilities Accessibility Guidelines~~
6 5. ADAS—Advanced Driver Assistance Systems
7 6. ADS—Automated Driving System
8 ~~57.~~ ADT—average daily traffic
9 ~~68.~~ AFAD—Automated Flagger Assistance Device
10 ~~79.~~ ANSI—American National Standards Institute
11 10. AREMA—American Railway Engineering and Maintenance-of-Way Association
12 11. AV—automated vehicle
13 12. cd/lx/m²—candelas per lux per square meter
14 ~~813.~~ CFR—Code of Federal Regulations
15 ~~914.~~ CMS—changeable message sign
16 ~~1015.~~ dBA—A-weighted decibels
17 16. DC—direct current
18 17. DDT—Dynamic Driving Task
19 ~~118.~~ EPA—Environmental Protection Agency
20 ~~1219.~~ ETC—electronic toll collection
21 ~~1320.~~ EV—electric vehicle
22 ~~1421.~~ FHWA—Federal Highway Administration
23 ~~1522.~~ FRA—Federal Railroad Administration
24 23. ft—foot or feet
25 ~~1624.~~ FTA—Federal Transit Administration
26 ~~17. HOT—high occupancy tolls~~
27 ~~18. HOTM—FHWA’s Office of Transportation Management~~
28 ~~19. HOTO—FHWA’s Office of~~
29 ~~Transportation Operations~~
30 ~~2025.~~ HOV—high-occupancy vehicle
31 26. IEEE—Institute of Electrical and Electronics Engineers
32 27. IES—Illuminating Engineering Society
33 ~~2128.~~ ILEV—inherently ~~low~~-low-emission vehicle
34 29. in—inch(es)
35 ~~2230.~~ ISEA—International Safety Equipment Association
36 ~~2331.~~ ITE—Institute of Transportation Engineers
37 ~~2432.~~ ITS—intelligent transportation systems
38 33. L—taper length
39 ~~2534.~~ LED—~~light~~-light-emitting diode
40 ~~2635.~~ LP—liquified petroleum
41 36. LRT—light rail transit
42 37. mi—mile(s)
43 ~~2738.~~ MPH or mph—miles per hour
44 ~~2839.~~ MUTCD—Manual on Uniform Traffic Control Devices for Streets and Highways
45 40. N—length of one line segment plus one gap of a broken line
46 41. NCEES—National Council of Examiners for Engineering and Surveying
47 ~~2942.~~ NCHRP—National Cooperative Highway Research Program
48 43. ODD—Operational Design Domain
49 44. OPM—U.S. Office of Personnel Management
50 ~~3045.~~ ORT—open-road tolling
51 ~~3146.~~ PCMS—portable changeable message sign
~~3247.~~ PRT—perception-response time

- 1 ~~33. RPM—raised pavement marker~~
- 2 ~~34. RRPM—raised retroreflective pavement marker~~
- 3 48. RRFB—rectangular rapid-flashing beacon
- 4 ~~3549. RV—recreational vehicle~~
- 5 50. SAE—Society of Automotive Engineers
- 6 51. SHV—Specialized Hauling Vehicle
- 7 52. SPF—safety performance function
- 8 53. TA—Typical Application
- 9 ~~3654. TDD—telecommunication device for the deaf~~
- 10 ~~3755. TRB—Transportation Research Board~~
- 11 ~~3856. TTC—temporary traffic control~~
- 12 ~~3957. U.S.—United States~~
- 13 ~~4058. U.S.C.—United States Code~~
- 14 ~~4159. USDOT—United States Department of Transportation~~
- 15 ~~4260. UVC—Uniform Vehicle Code~~
- 16 ~~4361. VPH or vph—vehicles per hour~~
- 17 62. V2I—vehicle-to-infrastructure
- 18

CHAPTER 1D. PROVISIONS APPLICABLE TO TRAFFIC CONTROL DEVICES IN GENERAL

Section ~~1A.02~~ 1D.01 Purpose and Principles of Traffic Control Devices

Support:

The purpose of traffic control devices, as well as the principles for their use, is to promote highway safety, inclusion and mobility of all road users, and efficiency by providing for the orderly movement of ~~all~~ road users on streets, highways, bikeways, and ~~private roads~~ site roadways open to public travel throughout the Nation. Section 1A.03 contains additional information on target road users.

This Manual contains the basic principles that govern the design and use of traffic control devices for all streets, highways, bikeways, and ~~private roads~~ site roadways open to public travel (see definition in Section ~~1A.13~~ 1C.02) regardless of type or class or the public agency, official, or owner having jurisdiction. The text of this Manual's text specifies the restriction on the use of a device if it is intended for limited application or for a specific system. It is important that these principles be given primary consideration in the selection and application of each device.

Guidance:

To be effective, a traffic control device should ~~meet five basic requirements~~:

- A. *Fulfill a need;*
- B. *Command attention;*
- C. *Convey a clear, simple meaning;*
- D. *Command respect from road users; and*
- E. *Give adequate time for proper response.*

Design, placement, operation, maintenance, and uniformity are aspects that should be carefully considered in order to maximize the ability of a traffic control device to ~~meet the five requirements~~ be consistent with the five principles listed in ~~the previous paragraph~~ Paragraph 3 of this Section. Vehicle speed and road-user types should be carefully considered as an element that governs the design, operation, placement, and location of various traffic control devices.

The proper use of traffic control devices should provide the ~~reasonable and prudent~~ road user with the information necessary to safely, efficiently, and lawfully use the streets, highways, pedestrian facilities, and bikeways.

Standard:

Traffic control devices used on site roadways open to public travel shall have the same shape, color, and meaning as those required by the MUTCD for use on public highways, except as provided otherwise elsewhere in this Manual. Sign size exceptions are noted in each Part as applicable.

Support:

~~The definition of the word "speed" varies depending on its use. The definitions of specific speed terms are contained in Section 1A.13.~~

Guidance:

~~The actions required of road users to obey regulatory devices should be specified by State statute, or in cases not covered by State statute, by local ordinance or resolution. Such statutes, ordinances, and resolutions should be consistent with the "Uniform Vehicle Code" (see Section 1A.11). The proper use of traffic control devices should provide the reasonable and prudent road user with the information necessary to efficiently and lawfully use the streets, highways, pedestrian facilities, and bikeways.~~

Support:

~~Uniformity of the meaning of traffic control devices is vital to their effectiveness. The meanings ascribed to devices in this Manual are in general accord with the publications mentioned in Section 1A.05.~~

1 ~~Section 1A.06~~ Uniformity of Traffic Control Devices

2 Support:

3 Uniformity means treating similar situations in a similar way. The meanings ascribed to devices in
 4 this Manual are in general accord with the publications mentioned in Section 1A.11. Uniformity of
 5 devices simplifies the task of the road user because it aids in recognition and understanding, thereby
 6 reducing perception/reaction time. Uniformity assists road users, law enforcement officers, and traffic
 7 courts by giving everyone the same interpretation. Uniformity assists public highway officials through
 8 efficiency in manufacture, installation, maintenance, and administration. The use of uniform traffic
 9 control devices does not, in itself, constitute uniformity. A standard device used where it is not
 10 appropriate is as objectionable as a non-standard device; in fact, this might be worse, because such misuse
 11 might result in disrespect at those locations where the device is needed and appropriate.

12 ~~Section 1A.07~~ 1D.02 Responsibility and Authority for Traffic Control Devices

13 Standard:

14 The responsibility for the design, placement, operation, maintenance, and uniformity of traffic
 15 control devices in compliance with the provisions of this Manual shall rest with the public agency or
 16 the official having jurisdiction, or, in the case of ~~private roads~~ site roadways open to public travel,
 17 with the private owner or private official having jurisdiction. ~~23 CFR 655.603 adopts the MUTCD as~~
 18 ~~the national standard for all traffic control devices installed on any street, highway, bikeway, or private~~
 19 ~~road open to public travel (see definition in Section 1A.13). When a State or other Federal agency~~
 20 ~~manual or supplement is required, that manual or supplement shall be in substantial conformance with the~~
 21 ~~National MUTCD. 23 CFR 655.603 also states that traffic control devices on all streets, highways,~~
 22 ~~bikeways, and private roads open to public travel in each State shall be in substantial conformance with~~
 23 ~~standards issued or endorsed by the Federal Highway Administrator.~~

24 Support:

25 The Introduction of this Manual contains information regarding the meaning of substantial
 26 conformance and the applicability of the MUTCD to private roads open to public travel.

27 The “Uniform Vehicle Code” (see Section 1A.11) has the following provision in Section 15-104 for
 28 the adoption of a uniform manual:

29 “(a) The [State Highway Agency] shall adopt a manual and specification for a uniform system of
 30 traffic control devices consistent with the provisions of this code for use upon highways within
 31 this State. Such uniform system shall correlate with and so far as possible conform to the system
 32 set forth in the most recent edition of the Manual on Uniform Traffic Control Devices for Streets
 33 and Highways, and other standards issued or endorsed by the Federal Highway Administrator.”

34 “(b) The Manual adopted pursuant to subsection (a) shall have the force and effect of law.”

35 All States have officially adopted the National MUTCD either in its entirety, with supplemental
 36 provisions, or as a separate published document.

37 *Guidance:*

38 *These individual State manuals or supplements should be reviewed for specific provisions relating to*
 39 *that State.*

40 Support:

41 The National MUTCD has also been adopted by the National Park Service, the U.S. Forest Service,
 42 the U.S. Military Command, the Bureau of Indian Affairs, the Bureau of Land Management, and the U.S.
 43 Fish and Wildlife Service.

44 *Guidance:*

45 *States should adopt Section 15-116 of the “Uniform Vehicle Code,” which states that, “No person*
 46 *shall install or maintain in any area of private property used by the public any sign, signal, marking, or*

~~other device intended to regulate, warn, or guide traffic unless it conforms with the State manual and specifications adopted under Section 15-104.”~~

Section 1A.08 Authority for Placement of Traffic Control Devices

Standard:

All regulatory traffic control devices shall be supported by laws, ordinances, or regulations.

Traffic control devices, **advertisements**, **public** announcements **or notices**, and other signs or messages within the highway right-of-way shall be placed only as authorized by a public authority or the official having jurisdiction, or, in the case of ~~private roads~~ **site roadways or private toll roads** open to public travel, by the private owner or private official having jurisdiction, for the purpose of regulating, warning, or guiding traffic.

When the public agency or the official having jurisdiction over a street or highway or, in the case of ~~private roads~~ **site roadways** open to public travel, the private owner or private official having jurisdiction, has granted proper authority, others such as contractors and public utility companies shall be ~~permitted~~ **allowed** to install temporary traffic control devices in temporary traffic control zones. Such traffic control devices shall ~~conform~~ **comply** with the **Standards provisions** of this Manual.

Support:

~~Provisions of this Manual are based upon the concept that effective traffic control depends upon both appropriate application of the devices and reasonable enforcement of the regulations. Although some highway design features, such as curbs, median barriers, guardrails, speed humps or tables, and textured pavement, have a significant impact on traffic operations and safety, they are not considered to be traffic control devices and provisions regarding their design and use are generally not included in this Manual.~~

~~Certain types of signs and other devices that do not have any traffic control purpose are sometimes placed within the highway right-of-way by or with the permission of the public agency or the official having jurisdiction over the street or highway. Most of these signs and other devices are not intended for use by road users in general, and their message is only important to individuals who have been instructed in their meanings. These signs and other devices are not considered to be traffic control devices and provisions regarding their design and use are not included in this Manual. Among these signs and other devices are the following:~~

- ~~A.—Devices whose purpose is to assist highway maintenance personnel. Examples include markers to guide snowplow operators, devices that identify culvert and drop inlet locations, and devices that precisely identify highway locations for maintenance or mowing purposes.~~
- ~~B.—Devices whose purpose is to assist fire or law enforcement personnel. Examples include markers that identify fire hydrant locations, signs that identify fire or water district boundaries, speed measurement pavement markings, small indicator lights to assist in enforcement of red light violations, and photo enforcement systems.~~
- ~~C.—Devices whose purpose is to assist utility company personnel and highway contractors, such as markers that identify underground utility locations.~~
- ~~D.—Signs posting local non-traffic ordinances.~~
- ~~E.—Signs giving civic organization meeting information.~~

Standard:

Signs and other devices that do not have any traffic control purpose that are placed within the highway right-of-way shall not be located where they will interfere with, or detract from, traffic control devices.

Guidance:

~~Any unauthorized traffic control device or other sign or message placed on the highway right-of-way by a private organization or individual constitutes a public nuisance and should be removed. All unofficial or non-essential traffic control devices, signs, or messages should be removed.~~

Support:

States are encouraged to adopt, through policy or legislation, the provisions of 23 CFR 750.108 that restrict outdoor advertising from resembling traffic control devices.

Section ~~1A.09~~1D.03 Engineering Study and Engineering Judgment**Support:**

Definitions of ~~an~~ professional engineer, engineering study, and engineering judgment are ~~contained~~ provided in Section ~~1A.13~~ 1C.02.

The application of engineering study and engineering judgment is a fundamental principle of the use of traffic control devices. It is for this reason that, in most cases, the selection of a particular device is not required by a Standard provision, but is determined by engineering study or engineering judgment. Many Standard provisions in this Manual specifically require, by explicit language in the individual provisions or by implication, the application of engineering study or engineering judgment in applying those Standards. Site-specific conditions might result in the determination that it is impossible or impracticable to comply with a Standard at that location. In such a case, a deviation from the requirement of a particular Standard at that location might be the only possibility. In such limited, specific cases, the deviation is allowed, provided that the agency or official having jurisdiction fully documents, through an engineering study, the engineering basis for the deviation.

Standard:

This Manual describes the application of traffic control devices, but shall not be a legal requirement for their installation.

Support:

The MUTCD does not mandate, and is not intending to imply, that an engineer must make the final decision whether to implement or execute the determination or advice of an engineer by installing or constructing the traffic control device to the engineer's specification in the field. Rather, the engineer, individual under supervision of an engineer, or other individual as duly authorized by State law to engage in the practice of engineering, develops an engineering-based solution that includes the specifications for selection and placement of traffic control devices, but the responsibility for a final decision to implement that solution rests with the agency having jurisdiction over the roadway, after consultation with and based on advice from the engineer.

Guidance:

The decision to use a particular device at a particular location should be made on the basis of either an engineering study or the application of engineering judgment by an engineer, someone under the direct supervision of an engineer, or other individual as duly authorized by State law to engage in the practice of engineering. Thus, while this Manual provides Standards, Guidance, and Options for design and applications of traffic control devices, this Manual should not be considered a substitute for engineering judgment. Engineering judgment should be exercised in the selection and application of traffic control devices, as well as in the location and design of roads and streets that the devices complement.

Early in the processes of location and design of roads and streets, engineers should coordinate such location and design with the design and placement of the traffic control devices to be used with such roads and streets.

Jurisdictions, or owners of ~~private roads~~ site roadways or private toll roads open to public travel, with responsibility for traffic control that do not have an engineers on their staffs ~~who are~~ is trained and/or experienced in traffic control devices should seek engineering assistance from others, such as the State transportation agency, their county, a nearby large city, or a traffic engineering consultant.

Support:

1 The provisions of this Manual are intended to be interpreted and applied by engineers or those under
 2 the supervision of an engineer. The construction of the provisions of this Manual, therefore, are informed
 3 by bases referenced in Paragraphs 9 and 10 of this Section.

4 The National Council of Examiners for Engineering and Surveying (NCEES) has defined the practice
 5 of engineering as “any service or creative work requiring engineering education, training, and experience
 6 in the application of engineering principles and the interpretation of engineering data to engineering
 7 activities that potentially impact the health, safety, and welfare of the public.” The practice of
 8 engineering is, therefore, subject to regulation in the public interest and is regulated by the State licensing
 9 boards in order to safeguard the health, safety, and welfare of the public. The NCEES has defined an
 10 engineer as “an individual who is qualified to practice engineering by reason of engineering education,
 11 training, and experience in the application of engineering principles and the interpretation of engineering
 12 data.”

13 The U. S. Office of Personnel Management (OPM) has defined the professional knowledge of
 14 engineering as “the comprehensive, in-depth knowledge of mathematical, physical, and engineering
 15 sciences applicable to a specialty field of engineering that characterizes a full 4-year engineering program
 16 leading to a bachelor's degree, or the equivalent.” The OPM has defined professional ability to apply
 17 engineering knowledge as “the ability to (a) apply fundamental and diversified professional engineering
 18 concepts, theories, and practices to achieve engineering objectives with versatility, judgment, and
 19 perception; (b) adapt and apply methods and techniques of related scientific disciplines; and (c) organize,
 20 analyze, interpret, and evaluate scientific data in the solution of engineering problems.”

21 ~~As part of the Federal aid Program, each State is required to have a Local Technical Assistance~~
 22 ~~Program (LTAP) and to provide technical assistance to local highway agencies.~~ Requisite technical
 23 training in the application of the principles of the MUTCD ~~is~~might be available from the State’s Local
 24 Technical Assistance Program (LTAP) for needed engineering guidance and assistance. Section ~~1A.03~~
 25 1D.04 Design of Traffic Control Devices

26 *Guidance:*

27 *Devices should be designed so that features such as size, shape, color, composition, lighting or*
 28 *retroreflection, and contrast are combined to draw attention to the devices; so that size, shape, color, and*
 29 *simplicity of message combine to produce a clear meaning; so that legibility and size combine with*
 30 *placement to ~~permit~~provide adequate time for response; and so that uniformity, size, legibility, and*
 31 *reasonableness of the message combine to command respect.*

32 *Option:*

33 ~~With the e~~Exception of ~~for~~ symbols and colors, minor modifications in the specific design elements
 34 of a device may be made based on an engineering study or engineering judgment, in accordance with
 35 Paragraph 3 of this Section, provided the essential appearance characteristics are preserved.

36 *Guidance:*

37 *Aspects of the standard design of a traffic control device ~~s-standard-design~~ should not be modified*
 38 *~~only if~~unless there is a demonstrated need in unusual circumstances, based on an engineering study or*
 39 *engineering judgment.*

40 *Support:*

41 An example of acceptably modifying the design of a device ~~s-design~~ would be to modify the
 42 Combination Horizontal Alignment/Intersection (W1-10) sign to show intersecting side roads on both
 43 sides rather than on just one side of the major road within the curve.

44 **Section ~~1A.12~~ 1D.05 Color Code**

45 *Support:*

46 The following color code establishes general meanings for 11 colors of a total of 13 colors that have been
 47 identified as being appropriate for use in conveying traffic control information.

Standard:

The general meaning of the 13 colors shall be as follows:

- A. Black—regulation
- B. Blue—road-user services guidance, tourist information, and evacuation route
- C. Brown—recreational and cultural interest area guidance
- D. Coral—~~unassigned~~reserved for future designation (see Paragraph 4 of this Section)
- E. Fluorescent Pink—incident management
- F. Fluorescent Yellow-Green—pedestrian warning, bicycle warning, playground warning, school bus warning, and school warning
- G. Green—indicated movements or actions permitted, and direction guidance
- H. Light Blue—~~unassigned~~reserved for future designation (see Paragraph 4 of this Section)
- I. Orange—temporary traffic control
- J. Purple—~~lanes~~restricted to use only by vehicles with registered electronic toll collection (ETC) accounts
- K. Red—stop or prohibition
- L. White—regulation
- M. Yellow—warning

These colors shall be used only as prescribed for the specific devices or applications throughout this Manual.

Support:

The two colors for which general meanings have not yet been assigned are being reserved for future applications that will be determined only by the FHWA after consultation with the States, the engineering community, and the general public. The meanings described in this Section are of a general nature. More specific assignments of colors are given in the individual Parts of this Manual relating to each class of devices. Tolerance limits for each color are contained in 23 CFR Part 655, Appendix to Subpart F and are available at the Federal Highway Administration's MUTCD ~~web~~Web site at <http://mutcd.fhwa.dot.gov>. ~~or by writing to the FHWA, Office of Safety Research and Development (HRD-T-301), 6300 Georgetown Pike, McLean, VA 22101.~~

Section 1D.06 Public Domain, Copyrights, and PatentsStandard:

~~Any traffic~~Traffic control device design or application provisions contained in this Manual shall ~~be considered to~~ be in the public domain. Traffic control devices contained in this Manual shall not be protected by a patent, trademark, or copyright, except for the Interstate Shield, 511 Travel Information pictograph, National Scenic Byway graphic, and any items under the stewardship of or owned by the FHWA.

A traffic control device design or application shall not be eligible for official experimentation (see Section 1B.05) or interim approval (see Section 1B.07) unless it is in the public domain. Express abandonment of any and all forms of proprietary protection, such as patents, trademarks, or copyrights, related to the design and application of the traffic control device shall satisfy the requirement for the traffic control device to be in the public domain.

The requirement for the traffic control device to be in the public domain shall not apply to individual components used in the assembly or manufacture of the traffic control device.

Support:

The limitation on patented, trademarked, or copyrighted traffic control devices applies to the message that the device conveys to the road user. If a patent or other protection covers the device's communication to the road user by virtue of its appearance, audible message, or other aspects of the message conveyed (such as the order in which traffic control signal indications change from green to yellow and red), then the device is considered to be protected and not in the public domain. Such a device

1 is precluded from inclusion in this Manual. The purpose of this limitation is to ensure uniformity of the
2 messaging of individually approved traffic control devices. This limitation does not apply to other
3 aspects of a device (such as internal controls, circuitry, electronics, mechanics, or housing) so long as the
4 appearance, audible message, or other aspects of the message conveyed, including the manner of
5 conveyance, remain freely reproducible by all without infringing on any proprietary rights or interests.
6 This Manual does not prohibit such other aspects of a traffic control device that meet the legal
7 requirements from being protected through patent, trademark, or copyright; and does not restrict
8 components, parts, manufacturing processes, or similar aspects of traffic control devices from being
9 patented or otherwise protected. Examples of acceptable protected traffic control device components or
10 parts might include: sign sheeting or retroreflectivity technology, internal electronic components of traffic
11 signal controllers, and breakaway sign support mechanisms.

12 Pictographs, as defined in Section ~~1A.13~~ 1C.02, are embedded in traffic control devices but the
13 pictographs themselves are not considered traffic control devices for the purposes of Paragraph 4 of this
14 Section.

15 Business identification logos, as defined in Section 1C.02, are embedded in traffic control devices but
16 the logos themselves are not considered traffic control devices for the purposes of Paragraph 4 of this
17 Section.

18 Section 1D.07 Advertising

19 **Standard:**

20 **Traffic control devices or their supports shall not bear any advertising message or any other**
21 **message that is not related to traffic control.**

22 Support:

23 Acknowledgment signs (see Section 2H.13), Specific Service signs (see Chapter 2J), and Tourist-
24 oriented directional signs (see Chapter 2K), and ~~Specific Service signs,~~ are not considered advertising;
25 rather, they are classified as motorist service signs.

26 **Section ~~1A.15~~ 1D.08 Abbreviations Used on Traffic Control Devices**

27 **Standard:**

28 **When the word messages shown in Table ~~1A-1~~ 1D-1 need to be abbreviated in connection with**
29 **traffic control devices, the abbreviations shown in Table ~~1A-1~~ 1D-1 shall be used.**

30 **When the word messages shown in Table ~~1A-2~~ 1D-2 need to be abbreviated on a portable**
31 **changeable message sign, the abbreviations shown in Table ~~1A-2~~ 1D-2 shall be used. Unless**
32 **indicated by an asterisk, these abbreviations shall only be used on portable changeable message**
33 **signs.**

34 *Guidance:*

35 *The abbreviations for the words listed in Table ~~1A-2~~ 1D-2 that also show a prompt word should not*
36 *be used on a portable changeable message sign (or on a static sign if indicated in Table 1D-2 by an*
37 *asterisk) unless the prompt word shown in Table ~~1A-2~~ 1D-2 either precedes or follows the abbreviation,*
38 *as applicable.*

39 **Standard:**

40 **The abbreviations shown in Table ~~1A-3~~ 1D-3 shall not be used in connection with traffic control**
41 **devices because of their potential to be misinterpreted by road users.**

42 *Guidance:*

43 *If ~~multiple abbreviations are permitted in~~ Table ~~1A-1~~ 1D-1 or ~~1A-2~~ 1D-2 indicates that more than one*
44 *abbreviation is allowed for a given word or phrase, the same abbreviation should be used throughout a*
45 *single jurisdiction.*

1 Except as otherwise provided in Table ~~1A-1~~1D-1 or ~~1A-2~~1D-2 or unless necessary to avoid
2 confusion, periods, commas, apostrophes, question marks, ampersands, and other punctuation marks or
3 characters that are not letters or numerals should not be used in any abbreviation.

4 **Section ~~1A.04~~ 1D.09 Placement and Operation of Traffic Control Devices**

5 **Standard:**

6 Before any ~~new~~ highway, ~~private road~~site roadway open to public travel (see definition in
7 Section ~~1A.13~~1C.02), ~~paved~~ detour, or temporary route is opened to public travel, all ~~necessary~~
8 ~~markings~~traffic control devices necessary for safe operation ~~should~~ shall be in place.

9 **Option:**

10 Temporary traffic control devices, as provided for in Part 6 of this Manual, may be used in place of
11 permanent devices that have yet to be installed for safe operation.

12 **Guidance:**

13 *Placement of a traffic control device should be within the road user's view so that adequate visibility*
14 *is provided. To aid in conveying the proper meaning, the traffic control device should be appropriately*
15 *positioned with respect to the location, object, or situation to which it applies. The location and legibility*
16 *of the traffic control device should be such that a road user has adequate time to make the proper*
17 *response in both day and night conditions.*

18 *Traffic control devices should be placed and operated in a uniform and consistent manner as part of*
19 *maintaining uniformity in traffic control.*

20 **Support:**

21 Inconsistent placement or use of a device can result in disrespect for the device at locations where the
22 device is needed and appropriate.

23 **Guidance:**

24 *Unnecessary traffic control devices should be removed. The fact that a device is in good physical*
25 *condition should not be a basis for deferring needed removal or change.*

26 **Support:**

27 Section 2A.02 contains information on excessive use of signs and other considerations that can reduce
28 their effectiveness and the effectiveness of other traffic control devices.

29 **Section ~~1A.05~~ 1D.10 Maintenance of Traffic Control Devices**

30 **Guidance:**

31 *Functional maintenance of traffic control devices should be used to determine if certain devices need*
32 *to be changed to meet current traffic conditions.*

33 *Physical maintenance of traffic control devices should be performed to retain the legibility and*
34 *visibility of the device, and to retain the proper functioning of the device.*

35 **Support:**

36 Clean, legible, properly mounted devices in good working condition command the respect of road
37 users.

38 **Section 1D.11 Crashworthiness of Traffic Control Devices and Other Roadside**

39 **Appurtenances**

40 **Standard:**

41 In accordance with various Sections of this Manual, certain traffic control devices and their
42 supports, and/or related appurtenances shall be crashworthy (see definition in Section 1C.02).
43 Crashworthiness provisions in this Manual shall apply to all streets, highways, and site roadways
44 open to public travel.

1 Support:
2 Roadside appurtenances include permanent and portable sign supports, other permanent or temporary
3 traffic control devices, and other roadside fixtures that are not traffic control devices, such as longitudinal
4 barriers, bridge railings, and crash cushions, within the clear zone. Crashworthiness of a device or
5 appurtenance is determined by nationally established standards such as the “Manual for Assessing Safety
6 Hardware” (MASH), 2016, AASHTO. Information on the FHWA’s policy on crashworthiness of devices
7 on the National Highway System and other roadways is available at the FHWA Office of Safety Web site
8 at
9 [https://safety.fhwa.dot.gov/roadway_dept/countermeasures/reduce_crash_severity/policy_memo_guidanc](https://safety.fhwa.dot.gov/roadway_dept/countermeasures/reduce_crash_severity/policy_memo_guidance.cfm)
10 [e.cfm.](https://safety.fhwa.dot.gov/roadway_dept/countermeasures/reduce_crash_severity/policy_memo_guidance.cfm)