

were proposed in the NPA, and creates a new GUIDANCE that references the letter sizes given in Section 2D.38 Street Name Sign (D3-1).

To clarify the intent and recognize common practices regarding the use of directional arrows on these signs, the FHWA adds a new paragraph to the last OPTION statement that provides information regarding the placement of directional arrows.

The FHWA renumbers the following sections accordingly.

107. In Section 2D.45 General Service Signs (D9 Series) (numbered Section 2D.44 in the 2000 MUTCD), the FHWA adds Electric Vehicle Charging to the list of services, one or more of which General Services signs must carry, in accordance with the second STANDARD statement. The FHWA received one comment from the City of Tucson, Arizona, in support of this change, and adopts this change. The FHWA also adds an illustration of the Electric Vehicle Charging sign (D9-11b) to Figure 2D-11.

The FHWA changes the words "CB Monitoring" in the fourth OPTION statement to "Channel 9 Monitored" and makes a corresponding change in item C of the fourth GUIDANCE statement. These changes reflect current practice and terminology. The FHWA received one comment in support of these changes from the City of Tucson, Arizona, and adopts these changes. The FHWA establishes a phase-in target compliance date of 10 years from the effective date of this final rule for existing signs in good condition to minimize any impact on State or local governments.

Additionally, the FHWA removes references in the fourth OPTION statement to the Road Conditions Dial 511 (D12-5) sign and adds new OPTION, STANDARD, and GUIDANCE statements regarding the use and design of the redesigned TRAVEL INFO CALL 511 (D12-5) sign. These changes reflect the assignment of 511 as the nationwide traveler information telephone number. The FHWA received one comment from ATSSA in support of these changes. The Virginia DOT suggested that the sign legend be "TRAVEL INFO DIAL 511." The FHWA agrees to change "TRAVELER" to "TRAVEL" in this final rule, however does not agree to use the word "DIAL" because it is antiquated terminology. The NCUTCD and Minnesota suggested that allowing the logo of a transportation agency or traveler information service to be two times the letter height used in the legend of the sign, as proposed in the GUIDANCE, was too large. The FHWA disagrees because some large traveler

information agency logos are more recognizable than the sign text and this instant recognition is valuable to the traveler.

108. In Section 2D.46 Reference Location Signs (D10-1 through 10-3) and Intermediate Reference Location Signs (D10-1a through D10-3a) (numbered and titled "Section 2D.45 Reference Posts (D10-1 through D10-3)" in the 2000 MUTCD), the FHWA changes the title and the term "reference posts" to "reference location signs" throughout the section to correspond to terminology used throughout the MUTCD. The FHWA received several comments from the NCUTCD, Caltrans, the Kentucky, Wisconsin, and Kansas DOTs, Pierce County, Washington, and private citizens regarding proposed changes to this section as well as to Section 2E.54 Reference Location Signs and Enhanced Reference Location Signs (D10-4, D10-5) in the NPA. The FHWA revises both of these sections in this final rule. The following paragraphs describe this final rule, specifically differences between this final rule and the 2000 MUTCD. Where applicable, notations are included to detail where the language for this final rule reflects comments received.

The FHWA adds a SUPPORT statement at the beginning of the section to identify two types of reference location signs and their sign designations: Reference Location signs (D10-1, 2, 3) and Intermediate Reference Location signs (D10-1a, 2a, 3a).

The FHWA also adds to the first OPTION statement a description of Intermediate Reference Location signs.

In the first STANDARD statement, the FHWA adds a paragraph indicating that when Intermediate Reference Location signs are used to augment the reference location sign system, the Reference Location sign at the even kilometer (mile) shall display a decimal point and zero numeral. The FHWA also distinguishes between use on conventional roads and freeways. The design of reference location signs used on conventional roads is the same as currently listed in the STANDARD, and the FHWA includes a minimum sign size of 250 mm (10 in) wide vertical panel. If reference location signs are used on freeways or expressways, the FHWA requires that the Reference Location signs contain 250 mm (10 in) white numerals on 300 mm (12 in) wide vertical green panels with a white border. The FHWA received several comments from State DOTs suggesting that blue panels be used, or at least included as an option. Although a blue background has been used by some

States in FHWA-approved experimentations,²⁴ the FHWA believes that the standard green background of the 30-year old "mile marker" system should be used. These signs fit into the category of guidance signs much more than they do into the category of motorist information signs. The FHWA does allow the use of blue backgrounds for the Enhanced Reference Location signs, as described in Section 2E.54. The FHWA also includes panel heights for one, two, and three digit signs.

The FHWA also includes a paragraph in the first STANDARD indicating how to determine reference location sign distance numbering for routes within a State, with and without overlaps with other routes. The FHWA also requires the installation of reference location signs on the right side of the roadway, except as provided in the OPTION statement. One commenter suggested that reference location markers be installed in the median because they are less of a maintenance issue when placed in the median. The FHWA disagrees because road users generally expect signs to be mounted on the right side of the roadway.

The FHWA adds an OPTION statement indicating that Reference Location signs may be installed in the median where conditions limit or restrict installation on the right side of the roadway. The FHWA further expands the OPTION, based on comments, to indicate that on two-lane conventional roadways, Reference Location signs may be installed on one side of the road only and that they may be installed back-to-back. The OPTION also states that Reference Location signs may be placed up to 9 m (30 ft) from the edge of the pavement.

The FHWA also revises the first STANDARD statement to clarify that the minimum mounting height of reference location signs shall be 4 feet to the bottom of the sign, to be consistent with the mounting height for delineators.

To mitigate economic impacts, the FHWA establishes a 10-year phase-in target compliance date from the effective date of this final rule for the location and spacing of Reference Location Signs and design of Intermediate Reference Location Signs, for existing signs in good condition.

²⁴ Information on the various designs and colors used for these experimentations is included in "Location Marker Signs for Incident Management," September 2001, a report by Didier M. Valdes, *et al.*, of the University of Puerto Rico at Mayagüez, for the Federal Highway Administration under contract number DTFH61-00-X-00091-F. This document is available from the Department of Civil Engineering and Surveying, University of Puerto Rico, Mayagüez, Puerto Rico, 00681-9041.