

cost of staff or consultants for development of specific nonconstruction projects.

(c) Bicycle and pedestrian accommodations may also be constructed as incidental features of highway construction projects. These incidental features may be financed with the same type of Federal-aid funds, including funds of the type described in §652.9(d) (except Interstate construction funds) and at the same Federal share payable as a basic highway project. These accommodations are not subject to the funding limitations for independent walkway, independent bicycle and nonconstruction bicycle projects. In the case of the Interstate construction projects, Federal-aid Interstate construction funds may only be used to replace existing facilities that would be interrupted by construction of the project, or to mitigate specific environmental impacts. Interstate 4R funds provided by 23 U.S.C. 104(b)(5)(B) may be used only for incidental features. As incidental features, these accommodations must be part of a highway improvement and must be located within the right-of-way of the highway, including land acquired under 23 U.S.C. 319 (Scenic Enhancement Program).

(d) Funds authorized for Federal lands highways (forest highways, public lands highways, park roads, parkways, and Indian reservation roads which are public roads), forest development roads and trails (i.e., roads or trails under the jurisdiction of the Forest Service), and public lands development roads and trails (i.e., roads or trails which the Secretary of the Interior determines are of primary importance for the development, protection, administration, and utilization of public lands and resources under his/her control), may be used for independent bicycle routes and independent walkway projects. These funds may not be used for nonconstruction bicycle projects.

§652.11 Planning.

Federally aided bicycle and pedestrian projects implemented within urbanized areas must be included in the transportation improvement program/annual (or biennial) element unless ex-

cluded by agreement between the State and the metropolitan planning organization.

§652.13 Design and construction criteria.

(a) The American Association of State Highway and Transportation Officials' "Guide for Development of New Bicycle Facilities, 1981" (AASHTO Guide) or equivalent guides developed in cooperation with State or local officials and acceptable to the division office of the FHWA, shall be used as standards for the construction and design of bicycle routes. Copies of the AASHTO Guide may be obtained from the American Association of State Highway and Transportation Officials, 444 North Capitol Street, NW., Suite 225, Washington, DC 20001.

(b) Curb cuts and other provisions as may be appropriate for the handicapped are required on all Federal and Federal-aid projects involving the provision of curbs or sidewalks at all pedestrian crosswalks.

PART 655—TRAFFIC OPERATIONS

Subparts A-E [Reserved]

Subpart F—Traffic Control Devices on Federal-Aid and Other Streets and Highways

- 655.601 Purpose.
- 655.602 Definitions.
- 655.603 Standards.
- 655.604 Achieving basic uniformity.
- 655.605 Project procedures.
- 655.606 Higher cost materials.
- 655.607 Funding.

APPENDIX TO SUBPART F—ALTERNATE METHOD OF DETERMINING THE COLOR OF RETROREFLECTIVE SIGN MATERIALS

Subpart G [Reserved]

AUTHORITY: 23 U.S.C. 101(a), 104, 109(d), 114(a), 217, 315, and 402(a); 23 CFR 1.32; and 49 CFR 1.48(b).

Subparts A-E [Reserved]

Subpart F—Traffic Control Devices on Federal-Aid and Other Streets and Highways

SOURCE: 48 FR 46776, Oct. 14, 1983, unless otherwise noted.

§ 655.601 Purpose.

To prescribe the policies and procedures of the Federal Highway Administration (FHWA) to obtain basic uniformity of traffic control devices on all streets and highways in accordance with the following references that are approved by the FHWA for application on Federal-aid projects:

(a) Manual on Uniform Traffic Control Devices (MUTCD), 2000 Millennium Edition, FHWA, dated December 2000, including Errata No. 1 to MUTCD 2000 Millennium Edition dated June 14, 2001, and Revision No. 1 dated December 28, 2001. This publication is incorporated by reference in accordance with 5 U.S.C. 552(a) and 1 CFR part 51 and is on file at the Office of the Federal Register, 800 North Capitol Street, NW., Suite 700, Washington, DC. These documents are available for inspection and copying at the Federal Highway Administration, 400 Seventh Street, SW., Room 3408, Washington, DC 20590, as provided in 49 CFR Part 7. The text is also available from the Federal Highway Administration's Office of Transportation Operation's website at: <http://mutcd.fhwa.dot.gov>.

(b) Standard Alphabets for Highway Signs, FHWA, 1966 Edition, Reprinted May 1972. (This publication is incorporated by reference and is on file at the Office of the Federal Register in Washington, DC. This document is available for inspection and copying as provided in 49 CFR part 7, appendix D).

(c) Guide to Metric Conversion, AASHTO, 1993. This publication is incorporated by reference in accordance with 5 U.S.C. 552(a) and 1 CFR part 51 and is on file at the Office of the Federal Register, 800 North Capitol Street, NW., Suite 700, Washington, DC. This document is available for inspection as provided in 49 CFR part 7. It may be purchased from the American Association of State Highway and Transportation Officials, Suite 249, 444 North Capitol Street, NW., Washington, DC 20001.

(d) Traffic Engineering Metric Conversion Factors, 1993—Addendum to the Guide to Metric Conversion, AASHTO, October 1993. This publication is incorporated by reference in accordance with 5 U.S.C. 552(a) and 1 CFR part 51 and is on file at the Office of

the Federal Register, 800 North Capitol Street, NW., Suite 700, Washington, DC. This document is available for inspection as provided in 49 CFR part 7. It may be purchased from the American Association of State Highway and Transportation Officials, Suite 249, 444 North Capitol Street, NW., Washington, DC 20001.

[51 FR 16834, May 7, 1986, as amended at 60 FR 18521, Apr. 11, 1995; 61 FR 29626, June 11, 1996; 62 FR 1373, Jan. 9, 1997; 63 FR 8351, Feb. 19, 1998; 63 FR 33549, June 19, 1998; 64 FR 33753, June 24, 1999; 65 FR 13, Jan. 3, 2000; 65 FR 78958, Dec. 18, 2000; 67 FR 7076, Feb. 15, 2002]

§ 655.602 Definitions.

The terms used herein are defined in accordance with definitions and usages contained in the MUTCD and 23 U.S.C. 101(a).

§ 655.603 Standards.

(a) *National MUTCD*. The MUTCD approved by the Federal Highway Administrator is the national standard for all traffic control devices installed on any street, highway, or bicycle trail open to public travel in accordance with 23 U.S.C. 109(d) and 402(a). The national MUTCD is specifically approved by the FHWA for application on any highway project in which Federal highway funds participate and on projects in federally administered areas where a Federal department or agency controls the highway or supervises the traffic operations.

(b) *State or other Federal MUTCD*. (1) Where State or other Federal agency MUTCDs or supplements are required, they shall be in substantial conformance with the national MUTCD. Changes to the national MUTCD issued by the FHWA shall be adopted by the States or other Federal agencies within 2 years of issuance. The FHWA Regional Administrator has been delegated the authority to approve State MUTCDs and supplements.

(2) The Direct Federal Program Administrator has been delegated the authority to approve other Federal agency MUTCDs with the concurrence of the Office of Traffic Operations. States and other Federal agencies are encouraged to adopt the national MUTCD as

their official Manual on Uniform Traffic Control Devices.

(c) *Color specifications.* Color determinations and specifications of sign and pavement marking materials shall conform to requirements of the FHWA Color Tolerance Charts.² An alternate method of determining the color of retroreflective sign material is provided in the appendix.

(d) *Compliance—(1) Existing highways.* Each State, in cooperation with its political subdivisions, and Federal agencies shall have a program as required by Highway Safety Program Standard Number 13, Traffic Engineering Services (23 CFR 1204.4) which shall include provisions for the systematic upgrading of substandard traffic control devices and for the installation of needed devices to achieve conformity with the MUTCD.

(2) *New or reconstructed highways.* Federal-aid projects for the construction, reconstruction, resurfacing, restoration, or rehabilitation of streets and highways shall not be opened to the public for unrestricted use until all appropriate traffic control devices, either temporary or permanent, are installed and functioning properly. Both temporary and permanent devices shall conform to the MUTCD.

(3) *Construction area activities.* All traffic control devices installed in construction areas using Federal-aid funds shall conform to the MUTCD. Traffic control plans for handling traffic and pedestrians in construction zones and for protection of workers shall conform to the requirements of 23 CFR part 630, subpart J, Traffic Safety in Highway and Street Work Zones.

(4) *MUTCD changes.* The FHWA may establish target dates for achieving compliance with changes to specific devices in the MUTCD.

(e) *Specific information signs.* Standards for specific information signs are contained in the MUTCD.

[48 FR 46776, Oct. 14, 1983, as amended at 51 FR 16834, May 7, 1986]

² Available for inspection from the Office of Traffic Operations, Federal Highway Administration, 400 Seventh Street, SW., Washington, DC 20590.

§ 655.604 Achieving basic uniformity.

(a) *Programs.* Programs for the orderly and systematic upgrading of existing traffic control devices or the installation of needed traffic control devices on or off the Federal-aid system should be based on inventories made in accordance with 23 CFR 1204.4, Highway Safety Program Standards. These inventories provide the information necessary for programming traffic control device upgrading projects.

(b) *Inventory.* An inventory of all traffic control devices is required by Highway Safety Program Standard Number 13, Traffic Engineering Services (23 CFR 1204.4). Highway planning and research funds and highway related safety grant program funds may be used in statewide or systemwide studies or inventories. Also, metropolitan planning (PL) funds may be used in urbanized areas provided the activity is included in an approved unified work program.

§ 655.605 Project procedures.

(a) *Federal-aid highways.* Federal-aid projects involving the installation of traffic control devices shall follow procedures as established in 23 CFR part 630, subpart A, Federal-Aid Programs Approval and Project Authorization. Simplified and timesaving procedures are to be used to the extent permitted by existing policy.

(b) *Off-system highways.* Certain federally funded programs are available for installation of traffic control devices on streets and highways that are not on the Federal-aid system. The procedures used in these programs may vary from project to project but, essentially, the guidelines set forth herein should be used.

§ 655.606 Higher cost materials.

The use of signing, pavement marking, and signal materials (or equipment) having distinctive performance characteristics, but costing more than other materials (or equipment) commonly used may be approved by the FHWA Division Administrator when the specific use proposed is considered to be in the public interest.

§ 655.607 Funding.

(a) *Federal-aid highways.* (1) Funds apportioned or allocated under 23 U.S.C. 104(b) are eligible to participate in projects to install traffic control devices in accordance with the MUTCD on newly constructed, reconstructed, resurfaced, restored, or rehabilitated highways, or on existing highways when this work is classified as construction in accordance with 23 U.S.C. 101(a). Federal-aid highway funds for eligible pavement markings and traffic control signalization may amount to 100 percent of the construction cost. Federal-aid highway funds apportioned or allocated under other sections of 23 U.S.C. are eligible for participation in improvements conforming to the MUTCD in accordance with the provisions of applicable program regulations and directives.

(2) Traffic control devices are eligible, in keeping with paragraph (a)(1) of this section, provided that the work is classified as construction in accordance with 23 U.S.C. 101(a) and the State or local agency has a policy acceptable to the FHWA Division Administrator for selecting traffic control devices material or equipment based on items such as cost, traffic volumes, safety, and expected service life. The State's policy should provide for cost-effective selection of materials which will provide for substantial service life taking into account expected and necessary routine maintenance. For these purposes, effectiveness would normally be measured in terms of durability, service life and/or performance of the material. Specific projects including material or equipment selection shall be developed in accordance with this policy. Proposed work may be approved on a project-by-project basis when the work is (i) clearly warranted, (ii) on a Federal-aid system, (iii) clearly identified by site, (iv) substantial in nature, and (v) of sufficient magnitude at any given location to warrant Federal-aid participation as a construction item.

(3) The method of accomplishing the work will be in accordance with 23 CFR

part 635, subpart A, Contract Procedures.

(b) *Off-system highways.* Certain Federal-aid highway funds are eligible to participate in traffic control device improvement projects on off-system highways. In addition, Federal-aid highway funds apportioned or allocated in 23 U.S.C. are eligible for the installation of traffic control devices on any public road not on the Federal-aid system when the installation is directly related to a traffic improvement project on a Federal-aid system route.

APPENDIX TO SUBPART F OF PART 655—
ALTERNATE METHOD OF DETERMINING THE COLOR OF
RETROREFLECTIVE SIGN MATERIALS

1. The FHWA Color Tolerance Charts provide that conventional color measuring instruments such as spectrophotometers and tristimulus photoelectric colorimeters should not be used for measurement of retroreflective material colors and that such materials should be evaluated visually using the Color Tolerance Charts and paying strict attention to prescribed illumination and viewing conditions.

2. As an alternate to visual testing, the diffuse day color of retroreflective sign material may be determined in accordance with ASTM E 97, "Standard Method of Test for 45-Degree, 0-Degree Directional Reflectance of Opaque Specimens by Filter Photometry." Geometric characteristics must be confined to illumination incident within 10 degrees of, and centered about, a direction of 45 degrees from the perpendicular to the test surface; viewing is within 15 degrees of, and centered about, the perpendicular to the test surface. Conditions of illumination and observation must not be interchanged.

3. Standards to be used for reference are the Munsell Papers designated in Table I or Table II, attached. The papers must be recently calibrated on a spectrophotometer. Acceptable test instruments are:

- a. Gardner Multipurpose Reflectometer or Model XL 20 Color Difference Meter,
 - b. Gardner Model Ac-2a or XL 30 Color Difference Meter,
 - c. Meeco Model V Colormaster,
 - d. Hunter lab D25 Color Difference Meter,
- or
- e. Approved equal.

4. Average performance sheeting is identified as Types I and II sheeting and high performance sheeting is identified as Types III

³This document is available for inspection and copying as prescribed in 49 CFR part 7, appendix D.

Federal Highway Administration, DOT

§ 656.5

and IV sheeting in Standard Specifications Federal Highway Projects³ (FP-79, Section for Construction of Roads and Bridges on 633).

TABLE I—COLOR SPECIFICATION LIMITS AND REFERENCE STANDARDS, TYPES I AND II SHEETING

Color	Chromaticity coordinates ¹ (corner points)								Reflectance limits (percent Y) Y		Reference ³ standard (munsell papers)
	1		2		3		4		Minium	Max-imum	
	x	y	x	y	x	y	x	y			
White ² .....	.305	.290	.350	.342	.321	.361	.276	.308	35	—	6.3Gy 6.77/0.8.
Red .....	.602	.317	.664	.336	.644	.356	.575	.356	8	12	8.2R 3.78/14.0.
Orange .....	.535	.375	.607	.393	.582	.417	.535	.399	18	30	2.5YR 5.5/14.0
Brown .....	.445	.353	.604	.396	.556	.443	.445	.386	4	9	5.0YR 3/6.
Yellow .....	.482	.450	.532	.465	.505	.494	.475	.485	29	45	1.25Y 6/12.
Green .....	.130	.369	.180	.391	.155	.460	.107	.439	3.5	9	0.65BG 2.84/8.45.
Blue .....	.147	.075	.176	.091	.176	.151	.106	.113	1.0	4	5.8PB 1.32/6.8.

¹ The four pairs of chromaticity coordinates determine the acceptable color in terms of the CIE 1931 standard colorimetric system measured with standard illumination source C.

² Silver white is an acceptable color designation.

³ Available from Munsell Color Company, 2441 Calvert Street, Baltimore, Maryland 21218.

TABLE II—COLOR SPECIFICATION LIMITS AND REFERENCE STANDARDS, TYPES III AND IV SHEETING

Color	Chromaticity Coordinates ¹ (corner points)								Reflectance limits (percent Y) Y		Reference ³ standard (munsell papers)
	1		2		3		4		Min.	Max.	
	x	y	x	y	x	y	x	y			
White ² .....	.303	.287	.368	.353	.340	.380	.274	.316	27	.....	5.0PB 7/1.
Red .....	.613	.297	.708	.292	.636	.364	.558	.352	2.5	11	7.5R 3/12.
Orange .....	.550	.360	.630	.370	.581	.418	.516	.394	14	30	2.5YR 5.5/14.
Yellow .....	.498	.412	.557	.442	.479	.520	.438	.472	15	40	1.25Y 6/12.
Green .....	.030	.380	.166	.346	.286	.428	.201	.776	3	8	10G 3/8
Blue .....	.144	.030	.244	.202	.190	.247	.066	.208	1	10	5.8PB 1.32/6.8.

¹ The four pairs of chromaticity coordinates determine the acceptable color in terms of the CIE 1931 standard colorimetric system measured with standard illumination source C.

² Silver white is an acceptable color designation.

³ Available from Munsell Color Company, 2441 Calvert Street, Baltimore, Maryland 21218.

Subpart G [Reserved]

PART 656—CARPOOL AND VANPOOL PROJECTS

Sec.

656.1 Purpose.

656.3 Policy.

656.5 Eligibility.

656.7 Determination of an exception.

AUTHORITY: 23 U.S.C. 146 and 315; sec. 126 of the Surface Transportation Assistance Act of 1978, Pub. L. 95-599, 92 Stat. 2689; 49 CFR 1.48(b).

SOURCE: 47 FR 43024, Sept. 30, 1982, unless otherwise noted.

§ 656.1 Purpose.

The purpose of this regulation is to prescribe policies and general proce-

dures for administering a program of ridesharing projects using Federal-aid primary, secondary, and urban system funds.

§ 656.3 Policy.

Section 126(d) of the Surface Transportation Assistance Act of 1978 declares that special effort should be made to promote commuter modes of transportation which conserve energy, reduce pollution, and reduce traffic congestion.

§ 656.5 Eligibility.

(a) Projects which promote ride-sharing programs need not be located on but must serve a Federal-aid system to be eligible for Federal-aid primary,

³This document is available for inspection and copying as prescribed in 49 CFR part 7, appendix D.