

Center Line Pavement Markings on Local Two-Lane, Two-Way Roadways

Center line markings have an important function — to provide information to road users. Center line pavement markings delineate the separation of traffic lanes that have opposite directions of travel. They can also be used as a safety feature to provide drivers with additional guidance around curves or over hills. Further, center lines can be used to indicate areas where passing is permitted and/or restricted.



A typical center line pavement marking application.

Pavement markings are beneficial to motorists because they are located on the road surface, directly within the view of the road user and their travel path. On local two-lane, two-way roadways, pavement markings are required to be yellow.

Regulations and Guidelines

The authority for municipalities to place center line pavement markings is granted in Title 75 of Pennsylvania's Consolidated Statutes, the Vehicle Code (www.dmv.state.pa.us/vehicle_code/index.shtml). That authority is granted along with a requirement to follow national and PennDOT

regulations (Title 75, Section 6121). The national regulations that outline standards, guidance, and options for center line pavement markings (as well as other traffic control devices) are contained in Part 3 of the 2009 Edition of the Manual on Uniform Traffic Control Devices (MUTCD).

PennDOT has two publications that have additional requirements, guidelines, and information for pavement markings: Publication 46, Traffic Engineering Manual, and Publication 111M, Pavement Markings and Signing Standards.

*The MUTCD can be accessed at
<http://mutcd.fhwa.dot.gov>
PennDOT publications
can be accessed at
[www.dot.state.pa.us/
Internet/Bureaus/pdBOS.nsf/
FormsAndPubsHomePage?
OpenFrameSet](http://www.dot.state.pa.us/Internet/Bureaus/pdBOS.nsf/FormsAndPubsHomePage?OpenFrameSet)*

Application Criteria

The MUTCD has specific criteria for requiring center lines and determining when center lines are recommended and when they are optional. Figure 1 provides a summary of these requirements (MUTCD Section 3B.01). For most local two-lane, two-way roadways, center lines are optional. Center lines can be placed on roads where engineering judgment or study indicates a need.

The MUTCD also states that center line markings may be placed on any paved two-lane, two-way roadway, as long as it is a minimum of 16 feet wide. For roadways that are less than 16 feet wide, engineering judgment should be used to determine if center lines should be employed.

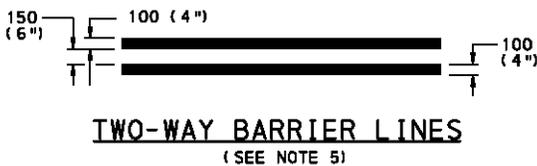
	Area Type	Road Class	Lanes	Daily Traffic (ADT)	Travel Width (ft.)
REQUIRED	Urban	Collectors Arterials	2	6,000+	20+
	Any	All	3+		
RECOMMENDED	Urban	Collectors Arterials	2	4,000+	20+
	Rural	Collectors Arterials	2	3,000+	18+
MAY CONSIDER	Any	All	2	Any	16+

Figure 1: MUTCD criteria for center line markings on paved two-way streets.

Placement Standards

Yellow center lines are typically 4 to 6 inches wide (4 inches is the minimum). The MUTCD requires the lines to be separated by a discernible space. PennDOT Publication 111M (TC 8600, sheet 3 of 11) shows two 4-inch yellow barrier lines (the term barrier lines is the same as center lines) separated by 6 inches. Roadways do not have to have continuous center line markings: short sections can be marked for safety or additional guidance, such as around curves, over hills, at railroad crossings, and at bridges. Center line pavement markings may be placed at a location that is not the exact center of the roadway, depending upon the situation.

The MUTCD specifically states that a single solid yellow line shall not be used as a center line marking on a two-way roadway. The MUTCD requires that noncompliant markings shall be brought into compliance as part of a systematic upgrading of substandard traffic control devices or when they are being replaced (MUTCD Introduction, page I-3). PennDOT may withhold Liquid Fuels monies from municipalities that use noncompliant traffic control devices, such as single yellow center lines.



PennDOT Pub 111M center line requirements.

Materials and Options

Municipalities can use a variety of materials for center line markings. The most commonly used material on paved roadways is waterborne paint, which is typically the most cost-effective



The MUTCD prohibits the use of solid single line center lines.

material to use. For more information on which material is best for certain applications, refer to PennDOT Publication 46, Chapter 3. PennDOT lists approved pavement marking materials for state roads in Bulletin 15 (PennDOT Publication 35).

In special situations, the center lines can be supplemented with snowplowable raised pavement markers (RPMs) or center line rumble strips (refer to Publication 46 and Publication 111M for their use). Both of these treatments are countermeasures for safety problems, and their use should be based on an engineering study. Both measures can be helpful to provide motorists additional guidance around curves and to reduce head-on crashes. (Sources: PennDOT Publication 46 and Low-Cost Treatments for Horizontal Curve Safety, FHWA-SA-07-002, 2006)

The MUTCD is in the process of developing standards for minimum maintained levels of pavement marking retroreflectivity, including yellow center lines. However, these standards are not likely to take effect for several years.

Responsibility

Municipalities are responsible for center lines on locally owned roadways. The decision to paint center lines on local roads is the responsibility of each municipality, following the guidance in the MUTCD. On state highways, PennDOT is responsible for the center lines.

At intersections controlled by traffic signals, PennDOT requires center lines on all roadways approaching the traffic signal (Publication 111M, sheet 3 of 11, note 5). Check the traffic signal permit drawing for the requirements on locally owned roads.