



Revised Federal Standards for Traffic Signs: Frequently Asked Questions

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Since 2007, the Federal Highway Administration (FHWA) of the U.S. Department of Transportation has updated certain national standards for signs on streets and highways. Recent press reports on this subject have prompted congressional interest. This report addresses some of the questions that have been raised about these standards.

What Standards Have Been Changed?

The FHWA's Manual of Uniform Traffic Control Devices (MUTCD) is a compilation of standards for signs, signals, and design elements of traffic control devices intended to ensure a level of uniformity across the nation.¹

In 2007, FHWA updated the MUTCD standard governing the maintenance of retroreflectivity of traffic signs (Section 2A.08). Retroreflectivity refers to the reflection of light back from an object. With respect to traffic signs, this involves reflecting the light from car headlights so that the sign is visible to drivers at night. The 2007 standard set a minimum level of retroreflectivity for signs and required state agencies to adopt methods to ensure that signs met that minimum.

Separately, in the 2009 edition of the MUTCD FHWA updated the standard concerning the sign lettering style for names of places, streets, and highways (Section 2D.05). Formerly, names on signs could either be in all capital letters or have only the first letter capitalized. The new standard eliminated the option of using only uppercase letters because studies indicate that mixed-case lettering is easier to read.

Why Was the Retroreflectivity Maintenance Standard Changed?

Due to exposure to the elements and other factors, the retroreflectivity of sign materials degrades over time, resulting in signs becoming less visible after dark. In 1992, Congress directed DOT to revise the MUTCD to include “a standard for a minimum level of retroreflectivity that must be maintained for traffic signs and pavement markings which apply to all roads open to public travel.”² The purpose was to promote public safety by ensuring that traffic signs and pavement markings are visible to drivers after dark.

For many reasons, including the limited visibility of drivers after sunset, driving at night is much more dangerous than driving during the daytime. Nighttime crash rates are estimated to be three times higher than daytime rates, and the fatality rate for nighttime driving is also higher than for daytime driving.³

¹ States may adopt the national MUTCD as the state MUTCD, adopt the national MUTCD with a state supplement, or adopt a state MUTCD. The supplement or state MUTCD must substantially conform to the national MUTCD; this allows for local exceptions that do not create a safety concern.

² P.L. 102-388, Department of Transportation and Related Agencies Appropriations Act, 1993, section 406. FHWA initiated rulemaking on the pavement marking standard in 2010. DOT is implementing the congressional directive in two parts: the traffic sign standard was finalized in 2007, and the rulemaking to implement the pavement marking standard began in 2010.

³ FHWA, *Maintaining Traffic Sign Retroreflectivity: Impacts on State and Local Agencies*, April 2007, p. 2.

At night, when visual cues available to drivers are much more limited, the assistance provided by street signs becomes more important. For this reason, ensuring that traffic signs are easily seen at night is an important safety consideration. This is of the greatest benefit to older drivers: as people age, the lenses of their eyes typically become less transparent, with the result that more light is needed in order to see objects. The proportion of older drivers is growing as the Baby Boomer cohort ages, making it more important to ensure that signs are easily visible at night.

How Was the Retroreflectivity Standard Set?

The process of developing the new standard included FHWA-sponsored research and the development of a proposed standard based on that research by a task force appointed by the American Association of State Highway and Transportation Officials (AASHTO), which represents state and local transportation agencies. FHWA held workshops for members of state and local transportation agencies to publicize the proposed standard, and then revised the proposal through the formal federal rulemaking process from 2004 through 2007, with repeated opportunities for public comment. The new standard took effect on January 22, 2008.

What Does the Retroreflectivity Standard Require?

The new standard involved two elements of maintaining adequate reflectivity. One element was the establishment of numerical standards measuring the minimum acceptable retroreflectivity of signs. Since it was not considered feasible for communities to regularly measure the retroreflectivity of every sign, the second element of the new standard was a requirement that communities adopt a method to maintain the retroreflectivity of their street signs. The standard lists several methods that communities can use to meet this requirement, including

- visual nighttime inspection from a moving vehicle by a trained sign inspector;
- measurement of sign retroreflectivity using a retroreflectometer;
- replacement of signs based on their expected life above the minimum standard for retroreflectivity;
- replacement of all signs in an area, or of a given type, at specified intervals, based on the expected life above the minimum standard for retroreflectivity of the shortest-life material used on the signs in that area or of that type;
- replacement based on the performance of sample signs that are monitored for loss of retroreflectivity; or
- other methods that are developed based on engineering studies.

An agency using a retroreflectivity assessment or management method would be in compliance with the standard even if at times there are individual signs that do not meet the minimum retroreflectivity levels. Finally, this standard requires that communities comply with the new standard by certain deadlines. There are three deadlines:

- January 22, 2012 (four years after adoption of the new standard)—the deadline for communities to have adopted one of the methods to systematically maintain the retroreflectivity of their street signs.

- January 22, 2015 (seven years after adoption)—the deadline for communities to bring all of their regulatory, warning, and post-mounted guide signs (except street name signs and overhead guide signs) into compliance with the new standard.
- January 22, 2018 (10 years after adoption)—the deadline for communities to bring all street name signs and overhead guide signs into compliance.

Was the Retroreflectivity Standard Controversial?

Generally, highway safety groups supported the standard, while state and local transportation agencies opposed the establishment of numerical minimum levels of retroreflectivity due to concerns about potential tort liability due to failure to maintain a specific minimum level of retroreflectivity. They preferred that the standard be limited to establishing a management process that agencies would follow to maintain adequate nighttime visibility of signs.

FHWA's final retroreflectivity standard tried to satisfy both the congressional directive, by including a table of minimum numerical standards in the MUTCD, and the preferences of the state and local transportation agencies, by saying that not every sign needs to meet the minimum standard so long as agencies have a management process in place to maintain the nighttime visibility of their signs. Regarding tort liability, FHWA noted that having formally implemented a method for maintaining retroreflectivity would appear to put an agency in a better position to defend lawsuits in which inadequate sign retroreflectivity is an issue. Also, the final standard provided that agencies that have adopted an assessment or management method will be in compliance even if every individual sign does not meet the minimum retroreflectivity standard.⁴

There appear to be two reasons for the standard's sudden notoriety beginning in the fall of 2010. One is concern on the part of communities about the cost of compliance. The other, and perhaps more important, reason for the standard's notoriety was that several press reports conflated the retroreflectivity maintenance standard with the entirely unrelated standard concerning lettering, which was modified in the 2009 update of the MUTCD.

What about the Lettering Standard?

There is no compliance deadline for the standard on lettering. The lettering standard applies only to signs with names of places, streets, and highways. State and local transportation agencies must implement the new lettering style only as they install new signs or replace existing signs. Some press reports gave the impression that the federal government was requiring communities to immediately begin replacing all street signs just to comply with the new lettering style standard, but this is incorrect.

⁴ FHWA, Final Rule, *72 Federal Register* no. 245, December 21, 2007, p. 72578.

Why Must State and Local Agencies Comply?

Generally, federal and state laws require that each state adopt a manual of traffic control devices that meets or exceeds the standards in the federal MUTCD. The reason for these requirements is the belief that uniformity in signs and signals promotes public safety.

Most MUTCD standards, such as the lettering standard, do not have compliance deadlines. The case of the retroreflectivity maintenance standard is unusual in this respect. The state and local officials on the AASHTO task force that helped develop the retroreflectivity maintenance standard considered its safety impact to be so significant that they recommended a six-year compliance deadline to ensure that communities implemented the new standard promptly.

Why Must Perfectly Good Signs Be Replaced?

If a traffic sign meets the MUTCD standard for retroreflectivity, it does not have to be replaced. If it does not meet the minimum retroreflectivity standard, then it may create a safety hazard after dark, although it may appear to be perfectly good during daylight hours.

How Much Will Compliance Cost?

A study sponsored by the U.S. Department of Transportation estimated the total additional cost to state and local governments to be \$37.5 million over a 10-year period. Of this, \$27.5 million would be borne by local governments, which are responsible for most traffic signs, and \$11.8 million by state governments.⁵ The total cost was estimated to represent a 0.5% increase in annual sign maintenance costs for states; data to estimate the incremental impact on local government budgets were not available. The maximum cost in any one year was estimated at \$4.5 million. Up to 100% of the cost of replacing traffic signs is eligible for federal funding.

Most larger communities already have sign maintenance and replacement programs; for these communities, the impact of the retroreflectivity maintenance standard is likely to be modest. The impact may be greater in smaller communities that may never have instituted sign maintenance and replacement programs.

Is the Retroreflectivity Standard an Unfunded Mandate?

Several comments submitted during the rulemaking process described the rule as an unfunded mandate, as it would impose additional costs on state and local governments for developing sign inventories, training personnel to examine signs, and replacing signs without providing additional resources for this purpose. Up to 100% of the cost of installing and replacing traffic signs can be

⁵ FHWA, *Maintaining Traffic Sign Retroreflectivity: Impacts on State and Local Agencies*, FHWA-HRT-07-042, April 2007, p. 25.

covered by federal-aid highway funding. The annual level of federal-aid highway funding provided to states and localities through the annual DOT appropriations act rose from \$33.9 billion in FY2004 to \$41.1 billion in FY2010, in addition to \$27.5 billion provided to states and localities for highway infrastructure investment in the American Recovery and Reinvestment Act of 2009 (P.L. 111-5). Thus, while states did not receive additional federal funding solely for the purpose of implementing the retroreflectivity maintenance standard, the amount of federal highway funding provided to states and localities, from which sign replacement costs could be covered, has increased far more than the estimated increase in cost that the standard would impose.

What if States and Local Governments Do Not Comply by the Deadlines?

There are two potential enforcement mechanisms for the standards in the MUTCD. First, states and local governments that are not in compliance with the standards are potentially subject to having a portion of their federal transportation funding withheld. However, there is no formal enforcement mechanism to ensure compliance. In fact, one report noted that “It is not uncommon for MUTCD principles to be violated (knowingly or unknowingly) in actual practice.”⁶

The more significant potential enforcement mechanism for MUTCD standards is the tort liability that communities may face in the event of a lawsuit involving, in this case, a nighttime car crash in which the visibility of a street sign may be a factor.

Can the Deadlines be Changed or Eliminated?

The deadlines were established through the federal regulatory process, and thus are now regulations. To change or eliminate the deadlines would require either a new rulemaking process or congressional action. DOT issued a *Federal Register* notice on November 30, 2010, soliciting public comments regarding the compliance deadlines for the retroreflectivity maintenance standard (and three other MUTCD standards with compliance deadlines).⁷ This could potentially lead to amendment of the compliance deadlines.

⁶ FHWA, *Minimum Retroreflectivity Levels for Overhead Guide Signs and Street-Name Signs*, FHWA-RD-03-082, December 2003, p. 28.

⁷ FHWA, 75 *Federal Register* no. 229, November 30, 2010, pp. 74128-74131.

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