

*Editor's note: This article was adapted from information provided to the LTAP community by Greg Schertz, safety engineer, FHWA.*

## Draft retroreflectivity standards for signs in 2003

THE FHWA is developing guidelines for minimum road sign and pavement marking retroreflectivity levels and methods of evaluating those levels. Draft rulemaking should be available for comment in 2003. During this process, the FHWA is addressing concerns raised by state and local agencies and industry.

### What's the issue?

Nearly half of all traffic fatalities occur between dusk and dawn, when traffic is relatively light. One reason is that, at night, drivers rely almost solely on road signs and pavement markings to maintain their position, because other cues visible during the day (guardrails, textured shoulders, roadside vegetation, etc.) are swallowed up in darkness.

To maximize safety for nighttime drivers, the MUTCD therefore requires that road signs and pavement markings be retroreflective (see sidebar) or illuminated.

Because retroreflective materials gradually deteriorate and signs become dirty, road departments must regularly inspect and evaluate the night-

time visibility of traffic control devices (TCDs). However, there are currently no standards regarding minimum levels of retroreflectivity for TCDs or methods for evaluating/measuring it.

### What's the process?

To develop such standards, the FHWA is collecting information from three sources:

- The Texas Transportation Institute (TTI) is completing research regarding minimum retroreflective values for nighttime visibility of signs. The values will address current vehicle and headlight types, sign sheeting technology, and the needs of aging drivers.
- A research summary report is also being prepared by TTI on minimum retroreflectivity levels for pavement markings.
- The FHWA has conducted four national workshops in which representatives of state and local agencies, industry, and LTAP centers

helped develop options for implementing minimum retroreflectivity levels. Several Iowans attended some of these workshops.

The two reports and the transportation community's recommendations will be distributed to the AASHTO Retroreflectivity Task Force for review, and draft rulemaking for minimum retroreflectivity standards for signs will begin soon. (Minimum standards for markings will be developed later.) Iowa's public agencies should monitor this process and be prepared to review and provide comments on the proposed rule.

The FHWA plans to offer special training to local agencies for implementing the minimum retroreflectivity standards for signs. Your Iowa LTAP will provide information about training as soon as it's available.

### Concerns of the transportation community

Significant issues raised by state and local agencies and industry and being addressed by the FHWA include the following:

- Agencies are concerned that they will be required to measure the retroreflectivity of all signs, increasing their sign maintenance costs. (The FHWA believes an affordable process can be developed that allows alternative methods for evaluating nighttime sign visibility.)
- Some agencies are concerned that including minimum retroreflectivity values in the MUTCD will increase their exposure to tort liability. (The FHWA believes a standard without actual numerical values can be placed in the MUTCD.)
- Industry is concerned about the validity of 1993 research that developed possible minimum values. (The TTI research addresses current vehicle characteristics and older drivers.)

### For more information

Visit the FHWA retroreflectivity website, <http://safety.fhwa.dot.gov/programs/retroref.htm>, or e-mail [greg.schertz@fhwa.dot.gov](mailto:greg.schertz@fhwa.dot.gov) or [peter.hatzi@fhwa.dot.gov](mailto:peter.hatzi@fhwa.dot.gov). Or contact Tom McDonald, Iowa's safety circuit rider, 515-294-6384, [tmcdonal@iastate.edu](mailto:tmcdonal@iastate.edu).

An informative FHWA slide presentation can be found at [www.fhwa.dot.gov/safety/fourthlevel/retrstat42202.htm](http://www.fhwa.dot.gov/safety/fourthlevel/retrstat42202.htm). •

## What's the "retro" in retroreflectivity?

Retroreflectivity is the property of a material that returns or reflects light back toward its source.

At night, light from vehicle headlamps shines on signs and pavement markings. A traffic control device's (TCD's) perceived brightness is directly related to the amount of light that is reflected from it into the driver's eyes. If the TCD is made of retroreflective materials, it reflects light back toward the headlamps, which are close to the driver's eyes.