Retroreflectivity for Transverse Markings

Problem: Retroreflectivity is one of several assessments associated with providing pavement marking visibility. While FHWA is developing a method for attainment of longitudinal pavement marking visibility with respect to recommended minimum levels, there are no such values associated with transverse markings.

Compliance with the above would be achieved by having a method in place and using the method to maintain nighttime visibility of markings. Agencies and jurisdictions are deemed to be in compliance provided an assessment or management method is in use even though some sections of markings are below recommended minimum levels or methods cannot be employed for a time. These times include but are not limited to: weather (such as snow, ice, rainy seasons); resurfacing and replacement schedules, localized or abnormal wear (such as vehicular abrasion or severe erosion), and resource constraints.

Research is needed to determine what values would constitute adequate minimum retroreflectivity for transverse markings and a procedure should be established for measuring those values. Currently, longitudinal pavement marking retroreflectivity is typically measured using a 30-meter retroreflectometer or by visual nighttime inspection. The retroreflectometer is not a viable means of measuring transverse markings. Even a visual nighttime inspection conducted by a trained inspector from a moving vehicle during nighttime conditions will not yield satisfactory results for transverse markings.

The replacement of markings is based on the experience of pavement marking retroreflectivity degradation. Degradation experience is based on such items as materials test results, traffic volumes, geographic area and roadway type.

There are a number of factors that can be used to help establish methods, process evaluations, and schedule replacement or tracing. They include the following:

1. Representative sample size for a roadway segment
2. Presence of dirt, water, snow, etc. on the sections of markings
3. Time or season of year for evaluation and replacement/retracing
4. Width of line; type of material and retroreflective elements
5. AADT including percentage of nighttime travel
6. Typical roadway section and functional classification (including presence or absence of all-weather shoulder, rumble stripe, rumble strips, etc.)

When completed, the research should achieve two measurable results:
1. Determination of values that would constitute adequate minimum retroreflectivity for transverse markings
2. Establishment of a procedure for measuring those values.