

Idea Exchange

Checking signs for retroreflectivity

Signs that look fine in the daytime can be invisible at night if their reflective sheeting is worn out. When drivers can't see a critical sign in time, the consequences can be deadly.

It's important to check all signs for retroreflectivity and especially those on higher speed and higher volume roads. You can get detailed reflectivity measurements with an expensive reflectometer or survey signs at night, but here's a low-cost, daylight method.

Your regular crews can identify signs with little or no reflectivity by shining a portable high-powered spotlight on them. The hand-held lights generate 500,000 to 1 million candlepower and plug into a truck's power outlet. Commonly available in hardware, automotive and sporting goods stores for about \$30-\$40, they are sold under such brand names as Brinkman and LSI.



You can check the sign without ever leaving the truck. With a flick of the wrist, flash the spotlight at the sign. If it doesn't flash back it is no longer reflective. You may find it helpful to "calibrate" your vision by shining the light on some new and older signs from about the same distance as you will use on the road.

Not only is this a good idea, but retroreflectivity standards for signs will soon become part of the *MUTCD*, possibly by 2003. Congress has directed the Federal Highway Administration to develop minimum retroreflectivity standards for both signs and pavement markings. Final comments on the rules are being gathered and FHWA expects to publish them before the end of 2002. Marking standards will follow.

"The FHWA wants to encourage all public agencies to start managing their signs to ensure good retroreflectivity,

regardless of when rulemaking comes out," says Bill Bremer, Safety and Traffic Operations Engineer, Federal Highway Administration, Wisconsin Division Office. "Many agencies already do this, but many others do not." Once the rules are approved the FHWA also plans to offer training programs.

Fly ash stabilizes road base

Mixing fly ash into an unstable base saved the City of Mequon two months' work and over \$200,000, says City Engineer Bill Hoppe. During a sanitary sewer project on 1.25 miles of residential street, clay became mixed with the existing minimal base course aggregate making it impossible to compact and use as base material.

"Our options were to remove the base 16 inches deep and replace it with stone, or mix in fly ash," says Hoppe. It was late October and residents were already unhappy after four months of construction mess. Hoppe chose fly ash. In four days the material was applied and tilled in, and the base was graded and compacted, ready for paving.

Fly ash is particles removed from the exhaust of coal-fired power plants. It can be self-cementing when combined with water and lime, making it a valuable resource for road base stabilization, concrete products and flowable fill. "One advantage of fly ash is it works in a broader range of soils than lime and cement," Hoppe says.

"It can be a little tricky to use," says Hoppe. "You have to be aware of how deep you go down with the pulverizer so you keep the proper mix ratio of ash to in place material. As with concrete, moisture content is critical during mixing and compaction. You have to be careful that there is adequate drainage along the project." Hoppe has used fly ash on other Mequon roads. One done about five years ago on an arterial street is holding up fine, he says. Hoppe considers fly ash a valuable tool for municipal engineers.

For more information, contact Bill Hoppe at 262/242-3100, bhoppe@ci.mequon.wi.us.

News about PASERWARE

PASERWARE 3.0 is scheduled for release in December 2002 to current PASERWARE users, and to new users in early 2003. The computer program is being redesigned to provide better data transfer between local PASERWARE users and the state local roads data base.

Some new data transfer features include downloads to local users of road names and intersecting road names, ON/AT location descriptions, all DOT data organized by local PASERWARE ID numbers. Uploads to DOT include local pavement segment measurements, pavement condition ratings, and pavement maintenance history.

Other new features will allow measurements in feet or miles, simulations by pavement type, simplified reports, and new cost estimates.

There will be two series of training sessions scheduled in early 2003. The first series will cover the changes between PASERWARE 2.5 and 3.0 for current PASERWARE users. The second series will be for new PASERWARE users.

This training schedule is designed to help those who wish to use PASERWARE 3.0 to submit their pavement condition ratings to DOT, due next on December 15, 2003.

Crossroads

This newsletter provides information on roads and bridges to local officials and is published quarterly by the Wisconsin Transportation Information Center, part of the nationwide Local Technical Assistance Program (LTAP). *Crossroads* is produced with assistance from the Federal Highway Administration, the Wisconsin Department of Transportation, and the University of Wisconsin-Extension.

Non-profit organizations are welcome to reproduce articles appearing here. Please contact us first for any updates or corrections.

Wisconsin Transportation Information Center (T.I.C.), UW-Madison Department of Engineering Professional Development, 432 N. Lake St., Madison, WI 53706. Phone: 800/442-4615 Fax: 608/263-3160.

Don Walker, <i>director</i>	donald@engr.wisc.edu
Ben Jordan, <i>staff</i>	jordan@engr.wisc.edu
Steve Pudloski, <i>staff</i>	pudloski@engr.wisc.edu
Jane Sauer, <i>program assistant</i>	tic@epd.engr.wisc.edu
Lynn Entine, <i>writer and editor</i>	Entine & Associates
Susan Kummer, <i>graphic artist</i>	Artifax