

will not bounce into traffic or the work zone, making them safer than traditional barricades.

MwSWZDI research showed that plastic direction indicator barricades provided better visibility, more positive guidance, greater portability, and improved recoverability than conventional barricades.

Flashing stop/slow paddles

Flashing stop/slow paddles grab drivers' attention, making them concentrate on the work zone they are entering and increasing the safety of the flagger. The flashing paddle, developed under SHRP, incorporates a high-intensity flashing light on the stop side of the paddle. The flagger activates this light when a driver does not appear to be paying attention to the sign. The light is strong enough to be seen on even the sunniest days.

New designs of the device are more durable and less cumbersome, resolving previous concerns about this product. In addition, the batteries now require less frequent recharging.

Highly visible worker apparel

The Iowa Department of Transportation now issues new style fluorescent yellow-green safety vests to road workers. The bright color increases workers' visibility in all lighting conditions.

Traditional orange construction clothing can blend in with orange machinery and signs in the construction zone. The new yellow-green clothing differentiates workers from the work site. Motorists are more likely to slow down once they recognize an object as a human being, creating a safer environment for road workers.

Portable traffic signals

Flagging is often required to control traffic in work zones, resulting in an increase in staffing and training needs and a decrease in worker safety. One potential alternative to flagging is user-friendly temporary traffic signals.

These units are mobile, wireless, rapidly deployable, and easily programmable. Since the units are solar and battery operated, no auxiliary power source is needed. Setup time from arrival on the job to operation can be as little as a few minutes.

For more information

Contact Tom McDonald, 515-294-6384, tmcdonal@iastate.edu. Additional information on work zone safety research and products is available from the National Work Zone Safety Clearinghouse website, wzsafety.tamu.edu/. •

Midwest states study work zone safety products

ACCORDING TO the Midwest Smart Work Zone Deployment Initiative (MwSWZDI) website (www.matc.unl.edu/project/), the goal of the study is to "develop better ways of controlling traffic through work zones, which improves the safety and efficiency of traffic operations and highway workers." The research determines the safety and operational effects of particular products and develops recommendations for the products' future use.

The MwSWZDI is a pool-funded study between the Iowa, Kansas, and Missouri departments of transportation, the Nebraska Department of Roads, the states' divisions of the Federal Highway Administration, and the Mid-America Transportation Center at the University of Nebraska-Lincoln.

Iowa, Kansas, and Missouri evaluated removable orange rumble strips and found them to be satisfactory because they reduced speed and the number of vehicles remaining in a closed lane. The researchers, however, recommended that the thickness of the strips could be increased to cause a greater effect on large trucks. All three states also determined that installation and removal of the strips were quick and easy.

Kansas evaluated the Lightguard System, lighted raised pavement markers (RPMs) used to accentuate crossovers in work zones. By more effectively delineating the crossover, the RPMs in this study resulted in improvements in lane-keeping and substantial speed reduction. The Kansas research recommends continued studies into the effectiveness of various flashing modes and effectiveness of the lighted RPMs in long-term situations.

The Kansas evaluation of the Vertical Safetycade direction indicator barricade showed that the positive guidance of the barricades was superior to traditional drums; however, the researchers observed no statistically significant speed reductions. The study recommends that the barricades be used with weighted boots in all characteristically windy or high-speed locations.

More information on MwSWZDI is available on the Mid-America Transportation Center website, www.matc.unl.edu/research/mwswzdi/. For information on the products listed here and the specific products tested, see the online version of the *MwSWZDI Year One Report*, www.matc.unl.edu/project/. •



Flashing stop/slow paddles grab drivers' attention more effectively than conventional paddles. Photos courtesy of Peter Hatzi, Federal Highway Administration.



Sign supports meeting NCHRP-350 crashworthiness guidelines are less dangerous to motorists in crashes. Photo courtesy of S-Square Tube Products.