

## Safety edge eliminates pavement dropoff



*Adding an edge wedge is a relatively low-cost option that can improve safety.*

For more information on the Safety Edge see the FHWA Web page listed in Resources on page 11.

**EDGE DROPOFFS** are a safety hazard for vehicles that leave the roadway and try to return. Nationally, they are implicated in about 11,000 injury crashes a year. In Wisconsin "low shoulders" were listed as a possible contributing cause to about 170 crashes in 2004.

Dropoffs of 2" to 5" occur when shoulder deterioration or a new asphalt overlay exposes the vertical outside edge of the pavement. One solution is to build up shoulders at the same time as overlays are applied during rehabilitation projects. Regular maintenance on existing roads to bring shoulder material back flush to the pavement surface also eliminates the hazard.

Another alternative is building a tapered "safety edge." This is a wedge or fillet of asphalt applied along the pavement edge. It has a 30-35 degree slope which can serve as a ramp for vehicle wheels returning to the roadway. The edge can be created easily by the paver as the surface course is laid. No special equipment or extra labor is needed, so adding a safety edge raises the project cost about 1% to 3%—the price of the extra asphalt.

Several states built experimental safety edges as part of a FHWA project begun in 2004. Following successful performance in tests after a year of service, the Georgia Department of Transportation made the safety edge a routine part of their pavement design. The edge is being evaluated or planned in Indiana, New York, and Pennsylvania.

Paving contractors in Wisconsin have not yet built any safety edges on roadways, according to Scot Schwandt, Director of Engineering at the Wisconsin Asphalt Pavement Association. One contractor, Pitlik and Wick, recently included the edge on an airport runway.

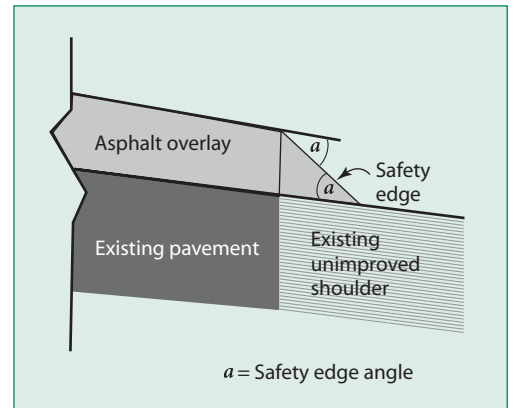


"It's a good idea for added safety where the roadway is wide enough," says Brian Pitlik. "On narrow town roads where people are always running off the edge, it might keep the edge from breaking down so fast. But the shoulder gravel will peel away, sliding off the taper.

You would always be out there adding gravel to the shoulders."

Pitlik suggests that the edge wedge is probably intended for pavements without constructed shoulders. It could also be a temporary safety measure on roadways where time and money prevent immediate rebuilding or resurfacing of shoulders.

Most asphalt paving contractors already make a taper for stronger centerline joints. The same equipment can be used for a safety edge. "It would not be a problem



to do if they wanted it," Pitlik says. "In fact, you could put in a one-inch notch before starting the taper like we do at the centerline. Then you might have an inch of gravel and it might not roll off so fast."

Adding an edge wedge is a relatively low-cost option that can improve safety and strengthen pavement edges, but gravel shoulders will probably need frequent maintenance.