

# Rumble stripes may increase rural roads' safety

Edge line paint can lose its visibility after several months of service. CTRE researchers are evaluating whether edge lines painted over rumble strips, otherwise known as rumble stripes, will improve edge line paint durability and visibility.

Rumble stripes have been installed on six county road sites as part of a research project that seeks to reduce the incidence and severity of run-off-road crashes. Test sites were chosen based on the Iowa DOT's list of the top five percent of road sections for run-off-road crashes from 2001–2006. Most test sections are on horizontal curves.

A research team led by Shauna Hallmark, ISU associate professor of civil, construction, and environmental engineering, and Tom McDonald, CTRE safety circuit rider, will investigate. The project is sponsored by the Iowa DOT, the Iowa Highway Research Board, and FHWA.

## Research objectives

"We're mainly looking for increased visibility of the paint line," says McDonald. "Increased noise or vibration from the rumble strip is a side benefit." During the first year after installation, the team will investigate the following:

- Wet weather visibility of rumble stripes versus traditional edge line painting
- Long-term durability of the painted edge line
- Driver travel distance from the edge line before and after installation of rumble stripes

An additional period of at least five years will be necessary to collect and analyze crash data valid for comparison with data collected before the installation of the rumble stripes.

## Differences between rumble strips and rumble stripes

Standard shoulder rumble strips in Iowa are 16 inches wide and are installed on the paved shoulders of state-owned roads. Rumble stripes add a four-inch-wide painted edge line on the milled surface. The depth of both rumble strips and rumble stripes is similar, about  $\frac{1}{2}$  to  $\frac{5}{8}$  inches.

Since most of Iowa's county roads don't have paved shoulders, for this project four-inch rumble strips were milled into the lane edge and then painted over.

## County roads included in the study

With the welcome cooperation of the county engineers, road sections being evaluated as part of this project include W-13 in

Buchanan County, P-53 in Dallas and Madison Counties, F-70 in Polk County, F-29 in Poweshiek County, and B-30 in Sioux County.

## For more information

For more information about this project, contact Tom McDonald, CTRE Safety Circuit Rider, 515-294-6384, [tmcdonal@iastate.edu](mailto:tmcdonal@iastate.edu). ■

**Table 1. Differences between rumble strips and rumble stripes**

	Rumble strips	Rumble stripes
Type of shoulder	Paved	Unpaved
Location	On the shoulder	On the edge line
Width	16 in.	6 in. (maximum)
Paint	Unpainted	4 in. painted edge line



Milled-in rumble strips are applied to a county road, which will soon be painted over with edge line striping resulting in a "rumble stripe" (photo courtesy of Bob Sperry, Iowa LTAP).