Arkansas State Highway and Transportation Department
Transportation Research Committee

RESEARCH PROBLEM STATEMENT

DATE: 07/26/2010

PROJECT AREA: Design

TITLE: Low Cost Experimental Treatments for Horizontal Curve Safety

PROBLEM STATEMENT:

In 2008 in Arkansas on rural two-lane U.S. and State Highways, there were 5,789 crashes that occurred when a vehicle left the travel lane. Of these 5,789 run-off-the-road type crashes, 2,730 (47%) occurred in horizontal curves. There are currently two low cost experimental treatments that should be studied to determine if one or both of these, either used separately or together, would be suitable to reduce crashes in horizontal curves on Arkansas roadways. One treatment is known as the PennDOT Curve Advance Marking. This consist of a 35.5 foot pavement marking that includes a 2'X8' solid white bar, followed by 8'X5' solid white letters that spell the word SLOW, followed by a 13'6" solid white arrow showing the direction of the curve, followed by a 2'X8' solid white bar. The second treatment, known as Optical Speed Bars, consist of a series of painted speed bars, protruding into the traffic lane from the edge line as well as the center line. These speed bars are said to produce an optical illusion that the lane is narrowing causing the driver to reduce speed. The number of speed bars as well as the spacing between speed bars can be reduced or increased as needed depending on the speed difference between the approach and the curve as well as taking the radius of the curve into consideration.

OBJECTIVES:

The objectives of this research are: 1) To study the use of the two Low Cost Experimental Treatments, both individually as well as in conjunction with each other, to determine if run-off-the-road type crashes can be reduced in curves along Arkansas rural two-lane highways. 2) To determine the best type of locations to use these applications, either by themselves or in conjunction with each other.

Form of Research Implementation:

If found to be a cost effective way of reducing run-off-the-road type crashes in curves, these treatments will be installed at various locations in horizontal curves along Arkansas rural two-lane highways.

Total Estimated Cost and Project Duration: **$** 100,000 **and** 24 **months.**

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ADVISORY COUNCIL RANKING	TRC RANKING	Statement Combined with Statement Number(s)
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