Arkansas State Highway and Transportation Department
Transportation Research Committee

RESEARCH PROBLEM STATEMENT

DATE: 08/27/2010

PROJECT AREA: Design

TITLE: One-Way Frontage Road Intersection Design

PROBLEM STATEMENT:

As the Interstate highway system ages, it has been necessary to reconstruct and expand sections of freeways, especially those in and near growing urban areas. During these expansions, the State has also converted frontage roads, such as the frontage roads along I-30 between Benton and Little Rock, from two-way to one-way operation. At some locations, where a side street intersects a frontage road to form a T-intersection, the intersection design called for a triangular island in the side road at its intersection with the frontage road. The curvature of these triangular islands can change the orientation of a driver in a vehicle turning right from the side road on to the frontage roads so that the driver is looking back over her or his left shoulder to see oncoming traffic. Not only can this make it more difficult for the driver to see oncoming traffic, it also makes it more difficult for the driver to see any vehicle immediately in the front. Where more than one vehicle is in the queue waiting to turn right onto the frontage road, drivers of vehicles behind the leading vehicle may be more prone to have rear-end collisions than they would at locations with a more-squared intersection.

OBJECTIVES:

The objective of this proposed research project is to examine the safety of the urban and suburban frontage road intersection design, which places a relatively large radius to the right of vehicles turning right from a side street onto the frontage road, therefore creating somewhat of a skew-angle orientation for the driver on the side street.

Form of Research Implementation:

The findings from this proposed project would help designers select frontage road intersection design treatments that do not include features that make it more difficult for drivers to safely negotiate the intersection. This information can be applied to upcoming projects.

Total Estimated Cost and Project Duration: **$** 240,000 **and** 30.00 **months.**

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