SPR RESEARCH PROJECT DESCRIPTION

PROJECT NUMBER: 05403

PROJECT TITLE: Lead State for Reducing Signalized Intersection Crashes

PRINCIPAL INVESTIGATOR
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PROJECT OBJECTIVE
This project continues the Alabama Department of Transportation (ALDOT) support for the implementation of the American Association of State Highway and Transportation Officials (AASHTO) highway safety plan. The University Transportation Center for Alabama (UTCA) will provide leadership, management, meeting facilitation, and documentation support to assist ALDOT in conducting an AASHTO-initiated safety project as a “lead state initiative” to reduce signalized intersection crashes.

PROJECT ABSTRACT
NCHRP Report 500, Volume 12, *A Guide for Reducing Collisions at Signalized Intersections* indicates that many fatal crashes occur at intersections. Because intersections constitute only a very small portion of the highway system, they are over-represented in terms of crash statistics. This is understandable because intersections present many conflicts between streams of moving vehicles, and every conflict presents an opportunity for a traffic crash. The NCHRP report indicates that 23% of all fatal crashes nationally occur at intersections. Of these, about 29% were at signalized intersections and 71% were at unsignalized intersections. A preliminary examination of Alabama crash statistics found that over the past five years there was an average of 156 fatalities in intersection crashes. This averaged 15% of the state total for that period, and was considerably below the national average of 23% in the NCHRP report.

A preliminary scan of Alabama crash data found a total 33,019 intersection crashes, 42% of them occurred at signalized intersections and the remainder at un-signalized intersections. Among intersection crashes, 42% of property-damage-only crashes and 43% of injury crashes, but only 21% of the fatal crashes were at signalized intersections. In other words, signalization reduced the severity of crashes by lowering the ratio of fatal crashes. Another interesting point is that the percentage of fatal crashes in Alabama (21%) was lower than the national average (29%). These statistics underscore the severity and magnitude of intersection crashes in this state, and they are the reason that ALDOT selected intersection crashes as its second major initiative under the AASHTO highway safety plan initiative.

PROJECT TASK DESCRIPTIONS
Task 1 – Form Steering Team: ALDOT and UTCA will select a project steering team of representatives of appropriate agencies and organizations, and will conduct a kick-off meeting.

Task 2 – Literature Review: UTCA will conduct a thorough literature review on intersection crashes and countermeasures.

Task 3 – Analyze Data: UTCA will analyze Alabama crash data, which will form the basis for project decisions.

Task 4 – Develop Strategies: Through a series of facilitated meetings, UTCA and the project steering team will develop potential strategies.

Task 5 – Choose Appropriate Strategies: Expert opinion and cost effectiveness procedures will be used to select the most appropriate strategies to reduce intersection crashes in Alabama.

Task 6 – Implementation Program: UTCA will devise an implementation plan tailored to the needs of ALDOT.

Alternative Task 7 – Unsignalized Intersections: ALDOT will have the option of adding unsignalized intersections to the Signalized intersection study.

Task 8 – Develop Final Report.

MILESTONES AND DATES:
Task 1: Jun 05
Task 2: Jun-Sep
Task 3: Jun-Sep
Task 4: Sep-Oct
Task 5: Nov-Dec
Task 6: Jan 06
Task 7: Jul 00-Feb 06
Task 8: May 6-31, 2005

TOTAL BUDGET:
Ten months; ALDOT State Planning & Research (SPR) funds $68,468.

STUDENT INVOLVEMENT:
One or more civil engineering students will be engaged in all project activities.

RELATIONSHIP TO OTHER PROJECTS:
This project is a continuation of safety efforts initiated by UTCA project 04404 – “Off-Road Accidents and Safety Plan Development.”

TECHNOLOGY TRANSFER ACTIVITIES:
A final report will be prepared and distributed, and a series of presentations will be made to safety-related organizations and agencies in Alabama.

BENEFITS OF THE PROJECT:
The results of this project can not be measured directly. From an optimistic point of view, if the entire AASHTO safety initiative (including the Alabama project) is successful, then Alabama could reduce traffic fatalities by as much as 125 per year.

TRB KEYWORDS:
AASHTO safety plan, signalized intersection crashes, intersection crashes