



RESEARCH PROJECT CAPSULE [12-4SA]

September 2012

TECHNOLOGY TRANSFER PROGRAM

Development of a Tool for Documenting, Tracking, Recording, and Analyzing Improvements to Intersection Sites and Roadway Departures in Curve Locations

JUST THE FACTS:

Start Date:
July 1, 2012

Duration:
18 months

End Date:
December 31, 2013

Funding:
SPR: TT-Fed/TT-Reg

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Sponsored jointly by the Louisiana
Department of Transportation and
Development and Louisiana State
University

POINTS OF INTEREST:

Problem Addressed / Objective of
Research / Methodology Used
Implementation Potential

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This project is associated with the Louisiana Transportation Research Center (LTRC) partnership with the National Center for Intermodal Transportation for Economic Competitiveness (NCITEC). The NCITEC is a University Transportation Center housed at Mississippi State University funded by the Research and Innovative Technology Administration (RITA) of the U.S. Department of Transportation (DOT).



PROBLEM

Intermodal transportation system planning, design, improvement, performance evaluation, or economic assessments include safety improvements because they lower the overall cost of transportation. State Departments of Transportation (DOTs) are charged with the development and implementation of Strategic Highway Safety Plans (SHSP) as required by law. SHSPs have broader impacts on passenger and freight transportation to the impact on the overall cost of the transportation system. Many states' SHSPs, as Louisiana's, include an infrastructure focus area that addresses the locations of the majority of serious injury and fatal crashes, specifically intersections and roadway departures in the vicinity of curves. The Federal Highway Administration (FHWA) Highway Safety Improvement Program (HSIP) states, "Intersection safety is a national, state, and local priority. Intersections represent a disproportionate share of the safety problem." As a result, private and public organizations are devoting resources to help reduce the problem. Louisiana has previously been recognized as a "focus" state for intersections by the FHWA, which was the result of a number of factors, including a higher than the national average of crashes at intersections. Subsequently, Louisiana's SHSP implementation strategy calls for the "aggressive deployment of low cost safety treatments in a systematic manner based on both historic data and roadway characteristics." Many states are at a similar stage of their deployment of the SHSPs and have the same problems with respect to intersection crashes and road departure crashes. Thus, evaluating road safety improvements is a common challenge among all state DOTs. To assess the effectiveness of the deployed improvements, a system is required that includes a data-tracking capability and an analysis tool. Therefore, a decision support system that incorporates the principles of the recently published AASHTO Highway Safety Manual (HSM) is needed to allow a timely collection of road improvement data and the evaluation of the safety benefits of these improvements.

Intersection-Related Crash Trends

2006 to 2008

Year	Fatalities	Fatal Crashes	Percent of All Fatal Crashes	Serious Injury Crashes	Percent of All Serious Injury Crashes	Fatal and Serious Injury Crashes	Percent of All Fatal and Serious Injury Crashes
2006	162	149	16.7%	4,735	40.7%	4,884	39.0%
2007	176	162	18.0%	4,761	39.7%	4,923	38.2%
2008	153	139	16.9%	4,552	38.8%	4,691	37.4%

Louisiana Strategic Highway Safety Plan (March 2010)

OBJECTIVE

The main objective of this project is to provide an easy-to-use tool to identify and track the effectiveness of treatments and counter-measures for roadway departures related to curves and intersection improvements for both local and state roads. Louisiana's data will be used as a test to populate the intersection tool with existing data, test the modules with limited data that becomes available, and train personnel in the use and maintenance of the tool. However, the software selected or built will be shown to be applicable to other states' data.

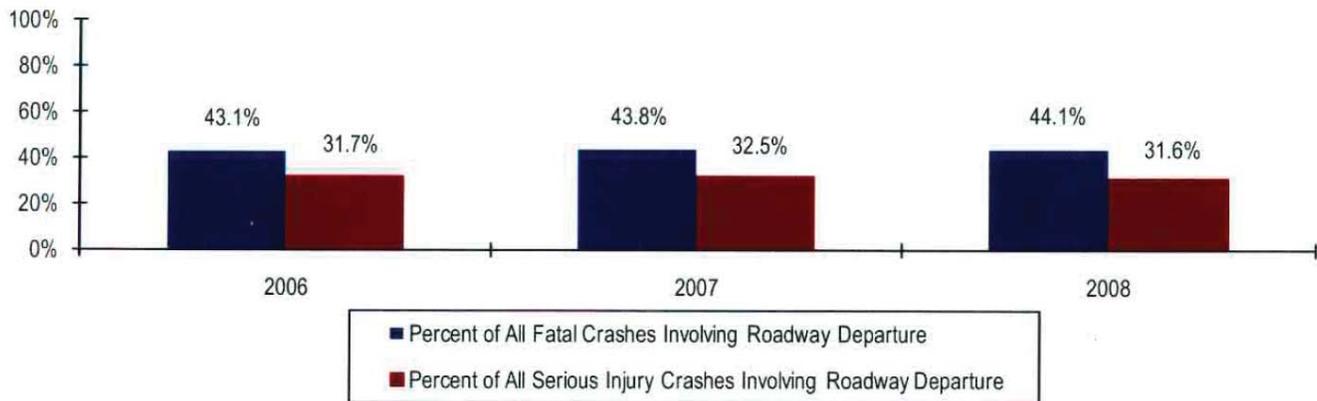
METHODOLOGY

The objectives will be accomplished by a review of the existing software available on the market and the process of adapting that software or building new software to meet specific requirements and needs of DOTs. Specifically, the research will encompass the following tasks: (1) literature search; (2) gathering and analysis of requirements; (3) programming and/or software preparation; (4) data gathering and input; and (5) preparation of a final report.

IMPLEMENTATION POTENTIAL

A system that tracks and analyzes the effectiveness of the safety improvements made at intersection sites and roadway departures in curve locations will allow the DOTs to make better decisions in the future based on crash frequencies at the treated locations.

**Percent of All Fatal Crashes and Serious Injury Crashes Involving Roadway Departure
2006 to 2008**



Louisiana Strategic Highway Safety Plan (March 2010)