



RESEARCH PROJECT CAPSULE [10-5SS]

February 2011

TECHNOLOGY TRANSFER PROGRAM

Developing Inexpensive Crash Countermeasures for Louisiana Local Roads

JUST THE FACTS:

Start Date:

January 17, 2011

Duration:

24 months

End Date:

January 16, 2013

Funding:

State

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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

PROBLEM

Local roads make up 73 percent of all road miles in Louisiana and have 40 percent of all crashes that occur yearly on Louisiana roads. Over the past 5 years, 851 fatal crashes, over 81,000 injury crashes, and over 23,000 property-damage-only crashes occurred on local roads. The total cost for these crashes added up to over \$10 billion. Louisiana also has one of the highest insurance premiums of all 50 states. Being among the 10 worst states with respect to safety performance in the U.S., Louisiana has launched an ambitious Strategic Highway Safety Plan aiming at zero death with the interim goal to reduce traffic fatalities and serious injuries by half by 2030. An accomplishment of such tall objectives calls for effective crash countermeasures in all aspects, including reducing crashes on local roads. Thus, local road crash countermeasures are an important part of the overall efforts to reduce crashes in Louisiana and their impact on lives, health, and the economy.

Currently, there is no local road improvement program that takes into account the risk at the road segment or intersection based on average daily travel (ADT) and geometric design features. Developing a safety improvement program for local roads requires overcoming some of the challenges associated with local roads. Among them are the lack of available information on clearly marked road segments; clearly marked crash locations, i.e., gps coordinates; and a road inventory database that allows easy linkage to the crash database. Local agencies responsible for maintaining these roads also often lack the resources to analyze crash frequencies and identify locations that need safety improvements and the funds to make major improvements of the roads. Thus, a method is needed to allow local agencies to identify high risk crash locations, estimate costs for safety improvements, and recommend low-cost solutions to implement safety measures within the constraints of available information.

To best achieve this goal, a multi-discipline research team has been assembled with the breadth and depth of required expertise in safety analysis, statistics, and crash data analysis. The team consists of researchers from two universities in two departments: the Department of Information Systems and Decision Sciences at Louisiana State University and the Civil Engineering Department at University of Louisiana at Lafayette. With many years of experience in the topics and specialties associated with this research, the team is uniquely qualified for this project.

OBJECTIVE

The specific objectives of this project are:

1. Develop the methodology to identify and classify local roads based on their expected safety performance.
2. Identify and locate the "riskiest" local road classifications using the expected safety performance functions and over-represented crash types.
3. Identify packages of low-cost safety improvements for candidate locations and/or road classifications.
4. Develop procedures to estimate the cost of low-cost countermeasures.
5. Identify candidate locations for inclusion in a systematic safety improvement program that considers the effectiveness and cost of candidate countermeasures.

METHODOLOGY

The following tasks will be completed through this support proposal:

1. Review literature and assess data availability.
2. Develop a safety performance function.
3. Estimate the safety risk level of local road sections in Louisiana.
4. Identify countermeasures.
5. Estimate the cost of candidate countermeasures.
6. Establish a program of road safety improvement.
7. Prepare progress and final reports.

IMPLEMENTATION POTENTIAL

The product of this project will be used as guidelines for local road improvement programs throughout Louisiana.