

Statewide Traffic Safety Study Phase I: Review of Current Traffic Safety Research, Practice, Analytical Procedures, and Databases

Introduction

In the last decade, Louisiana's traffic related fatality rate has consistently put Louisiana within the top eight highest ranking states in the nation with regard to such; in 2001, Louisiana tied with Montana and South Carolina as states with the highest fatality rates. That year, Louisiana's fatality rate was 2.3 fatalities per 100 million miles traveled, while the national average was 1.5.

As would be expected, Louisiana's high crash rate has significant economic and social costs. Property damage, lost productivity, medical expenses, and inflated motor vehicle insurance rates imposed an estimated 5.3 billion dollar burden on the state in 2002. Although these costs are not distributed equally, fatality rates among Louisiana's 16 to 20 year olds are double that of all other ages. While improving road safety is a national objective, the conditions in Louisiana justify an independent study of conditions and opportunities for improvement within the state.

Objective

The objective of this study is to identify and quantify the factors contributing to highway crashes in Louisiana. A secondary objective is to use this information to recommend measures to counter the poor crash record in the state.

Scope

The scope of the research reported in this study includes a comprehensive review of the current state-of-the-art in traffic safety; an inventory of existing crash related databases; a literature review of the current state-of-the-art in research on traffic safety, both within the U.S. and abroad; a review of safety legislation and traffic safety programs implemented in the United States; a review of analytical tools and procedures used in traffic safety studies; and a review of funding sources for improving traffic safety at the federal and state levels.

Research Approach

Research was conducted on factors contributing to crashes and involved an in-depth review of human, roadway, and vehicle factors that have been identified in literature as contributors to crashes. The impact of intelligent transportation systems on traffic safety was also reviewed. Traffic safety laws, both at federal and state levels, were investigated to provide an overview of existing legislation. The project explored a variety of safety related programs that have been implemented throughout the nation. These programs included aggressive driver programs, automated enforcement programs, cell phone enforcement programs, alcohol and drug impaired driving programs, occupant protection programs, helmet law enforcement programs, and older driver laws. Analytical tools and procedures commonly used in traffic safety analysis were also reviewed, including statistical methods widely used in current practice and major ongoing initiatives such as CHSIM, IHSDM, and the Highway Safety Manual, new tools such as SafetyAnalyst, road safety audits,

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American Association of State Highway Transportation Officials Implementation Guides, etc., and software packages such as CARE. Louisiana's safety related funding in recent years was reviewed and the trend examined. Finally, a crash related database inventory was conducted and produced a list of federal and Louisiana databases of potential importance for the next phase of the study.

Conclusions

The review revealed that road safety is indeed a problem in Louisiana. The crash rate in Louisiana is consistently among the ten highest state rates; alcohol related accidents are among the highest in the nation, and car insurance rates have grown more rapidly in Louisiana in the last several years than in any other state in the nation. More than 60 percent of the fatalities in Louisiana are due to alcohol related crashes, compared to 41 percent in the nation as a whole. Seatbelt usage in Louisiana is at approximately 72 percent, which is the national average. However, it is estimated that each percentage point increase in seatbelt usage prevents approximately 0.64 percent of the fatalities on the road, and since Louisiana has approximately 650 fatalities annually, approximately four lives could be saved each year for every percentage point of seatbelt usage increase in the state. If the usage of seatbelts in Louisiana were increased to the levels currently achieved by Canada and Australia, approximately 75 lives would be saved in the state annually.

The review shows that, among the human, roadway, and vehicular aspects of road travel, the human factor is by far the most influential in causing crashes. Human factors are a definite cause in two out of three crashes and are the probable cause in 90 percent or more of all crashes. The most important human errors are driver inattention/distraction, perceptual errors, excessive speed, and decision errors. Louisiana could benefit from studies into driver distractions such as cell phone use, perceptual errors such as lack of driver experience among young drivers, and excessive speed. An NHTSA survey of drivers showed that more than 60 percent of the population have felt that unsafe driving by others imperiled the lives of their families and that three out of four drivers felt that it was "very important" that something be done about such driver behavior. However, more than half of the respondents in the survey admitted to driving recklessly themselves on occasion. Thus, while there is general condemnation of unsafe driving among the public, drivers also recognize that many of them violate the law occasionally themselves and resent being cited. This suggests that the public may be supportive of a system that prosecutes regular offenders rather than those involved in isolated cases.

Recommendations

It is recommended that the following aspects be studied in greater detail in Phase II of the Statewide Traffic Safety Study:

- the impact of alcohol use on road safety in Louisiana
- the impact of driver inattention/distractions on traffic safety
- factors affecting the poor road safety record of young drivers in Louisiana
- how to increase seat belt usage in Louisiana
- an investigation of the use of cameras to record repeated speeding and red light running
- the impact of shoulder width, shoulder surface, and rumble strips on road safety
- work zone safety and how it can be improved.

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