

INVESTIGATION OF FATAL CRASHES IN FLORIDA

PROBLEM STATEMENT

The eight southeastern states comprising the Federal Highway Administration's (FHWA) Atlanta Resource Center (formerly known as Region IV)—that is, Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, and Tennessee--consistently outrank other regions with respect to number of fatal crashes and fatal crash rates. Approximately one-fourth of the nation's fatalities occur in the southeastern region where the fatality rate is about 20 percent above the national mean rate. In 1998, Florida's fatality rate per 100 million vehicle miles traveled was 2.1, while the national rate was 1.6.

Consequently, the FHWA Atlanta Resource Center commissioned a study to investigate crash data, determine causative factors, and make recommendations for reducing fatal crashes as part of the agency's 10-year Strategic Plan to reduce fatalities and injuries in the southeastern region by 20 percent. The eight states voluntarily agreed to participate in a regional pooled-fund study coordinated by Georgia Institute of Technology.

OBJECTIVES

The purpose of this research, as part of a larger pooled-fund effort, was to identify problem areas related to highway safety in which Florida is over-represented relative to other states and the nation as a whole. The research results would provide policy makers and highway safety advocates with a better understanding of the factors that may contribute to less safe highway travel in Florida. The results may be used to help identify specific problem areas where the FDOT can focus safety improvement measures.

FINDINGS AND CONCLUSIONS

Researchers used a multi-step process to help identify problem areas in Florida. The process grouped states according to average fatality rates and then determined those areas in which Florida is over-represented relative to other state groups. Over-representation occurs when the number of fatalities in certain situations is disproportionately higher in Florida than in the defined state groups. The first step, or Level-One analysis, identified potential problem areas without taking into consideration any differences in exposure between Florida and other state groups.

The second step varied, depending on the nature of the problem areas identified from Level-One analysis. In most cases, the second level, exposure analysis, introduced differences in exposure. In the few cases for which exposure could not be measured, multi-factor analysis was employed, introducing additional variables to determine those situations in which these problem areas are most highly over-represented.

Researchers subdivided problem areas into four categories: behavior, environment, vehicle, and

engineering. The data used in the analyses were taken from the The National Highway Traffic Safety Administration's Fatality Analysis Reporting System (FARS). The following is a list of problem areas by category.

Behavioral Aspects:

Crashes with one drunk driver. The degree of over-representation (DOR) is 72% with respect to drivers and 52% with respect to passengers.

Passengers age 75 years or older. Since exposure analysis is not applicable to this area, researchers suggest that this area may not actually be a problem. Nevertheless, further investigation could result in the identification of countermeasures directly targeting the problem.

Drivers with at least one prior crash in three years. DOR for passengers is 59%.

Non-motorists having activities in roadway. Level-One analysis renders over-representation at 83%. Exposure analysis does not apply, but multi-factor analysis suggests that DOR is higher.

Drivers with prior convictions. Drivers with at least one *suspension/revocation or one non-speed moving violation conviction three years prior to the crash in question* appear to be highly involved in non-motorist fatalities in Florida, with a DOR of 38% and 31%, respectively.

Environmental Aspects:

Dark but lighted condition. DOR for drivers and passengers is 18% and 19%, respectively.

Dark condition. DOR for non-motorists is about 28%.

Vehicular Aspects:

Maneuver—turning left. DOR for drivers and passengers is 120% and 155%, respectively.

Head-on collisions. Driver DOR is 44%.

Initial impact: 9-clock point. DOR for drivers is 45%.

Initial impact: 3-clock point. DOR for passengers is 39%.

Engineering Aspects:

Relation to junction—non-junction. DOR for drivers and passengers is 38% and 29%, respectively.

Traffic control devices—regulatory signs. DOR for drivers and passengers is 64% and 45%, respectively.

Traffic control device—traffic signals. DOR for drivers is 29%.

Relation to roadways—shoulders. DOR for drivers and passengers is 333% and 338%, respectively.

Traffic way flow—divided with no barriers. DOR for passengers is 71.5%.

Roadway ownership—state highways. DOR for non-motorists is 71%.

Roadway ownership—U.S. highways. DOR for non-motorists is 69%.

Roadway profile—roads at grade. DOR for drivers and passengers is 32% and 82%, respectively.

Functional Classification—urban non-interstate freeway. DOR for non-motorists is 30%.

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