

RESEARCH PROBLEM STATEMENT

DATE: 09/05/2019	PROJECT AREA: Planning
TITLE: A Statewide Comprehensive Safety Index for Arkansas Highways	
PROBLEM STATEMENT:	
<p>Recognizing the complex character of the road safety causes and effects, today more and more indicators are used to measure factors contributing to accidents. The traditional approach, followed by ARDOT’s Strategic Highway Safety Plan (SHSP), mainly considers safety outcomes in terms of the number of accidents, fatalities, and injuries. These numbers, however, are often not sufficient to illustrate the level of road safety, as they depict the “worst case” of unsafe operational conditions of the road traffic system. Moreover, counts of accidents and casualties sometimes do not reveal the processes that produce them. The purpose of this project is to identify the factors contributing to accidents, to identify conditions which are associated with increased accident/injury risks, and to detail traffic injury patterns by developing a statewide comprehensive safety index for Arkansas Highways. The composite safety index can complement ARDOT’S SHSP by providing information about underlying causes of accidents, which would help them to identify and update critical and primary emphasis areas (e.g., driver behavior, special road users, etc.) as well as high risk rural roads.</p>	
OBJECTIVES:	
<p>The objectives of this project are to: 1) identify the factors contributing to five performance measures (e.g., number of fatalities) identified in SHSP, 2) develop a statewide comprehensive safety index, 3) develop Arkansas safety performance management (Safety PM) target setting support tool (e.g, Transportation injury mapping system) to identify trends and assess progress towards achieving safety performance targets. The proposed tasks include: a) review existing literature and safety indicators used by other States, b) determination of contributing factors to accidents using statistical modeling, and c) development of a mapping tool that will allow new data to be incorporated into the safety index.</p>	
FORM OF RESEARCH IMPLEMENTATION AND RETURN ON INVESTMENT:	
<p>This project will develop a mapping tool that will allow State and local MPOs to set Safety PM targets that are required by the FHWA Safety PM Final Rule and support the Highway Safety Improvement Program (HSIP). The tool will allow for the continuous update as new data becomes available. Moreover, the comprehensive index and statistical model will help ARDOT to update the SHSP by providing information about the underlying causes of accidents. They may concern particular groups of road users e.g., children, new drivers or commercial drivers, or compliance with important safety rules like seat belt use, or cover specific areas such as the rural road network.</p>	
Estimated Project Duration: 24 Months	
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Standing Subcommittee
Ranking

3/7

Advisory Council
Ranking

N/A

Statement Combined with
Statement Number(s)