

Title:	Identify Risk Factors that Lead to Increase in Fatal Pedestrian Crashes and Develop Countermeasures to Reverse Trend
The Problem:	<p>In Texas, traffic fatalities declined from 2005 to 2011 by about 14 percent. National Cooperative Highway Research Program (NCHRP) 17-67 investigated the factors that contributed to the decline in fatalities in the US, and the results are applicable to Texas as well.</p> <p>Unfortunately, there was a steady increase in the pedestrian fatalities in Texas, even when all other fatalities have declined. In 2016, there was a record high of 680 pedestrian fatalities, which is about 5 times larger compared to 2005. With this increasing trend, there is a need to identify factors that explain the increase in pedestrian fatalities and propose countermeasures that could be used to reverse this trend.</p> <p>In addition to the increase of pedestrian fatalities, the proportion of undefined pedestrian crashes increased, where “undefined” means the crash causal and contributing factors in a crash cannot be identified. In 2016, there were 1,886 fatal and severely injured crashes involving a pedestrian in Texas. Of this total, 414 crashes, or 22 percent, were undefined. This undefined crash proportion of 0.22 of the pedestrian involved crashes in 2016 was much higher than that than the undefined crash proportion of all types of fatal and seriously injured crashes at 0.11.</p>
Technical Objectives:	<p>The objectives of this project are to examine the characteristics of pedestrian fatal crashes in Texas between 2005 and 2017, identify factors that led to this increase, and propose treatments or countermeasures to reverse this trend.</p> <p>The researchers shall address the following:</p> <ol style="list-style-type: none"> 1. Conduct a literature review to identify factors that have been linked to crashes involving pedestrians elsewhere, as well as countermeasures that have been shown to reduce pedestrian collisions. 2. Collect crash data between 2005 and 2017. 3. Include an exploratory analysis of the data, the development of statistical tools for identifying risk factors, and the use of GIS mapping technologies for spatially analyzing the data, which will also include various demographic variables, such as unemployment rate, income, land-use data, roadway characteristics, and pedestrian usage, among others. 4. Identify the underlying crash factors and develop a system to classify human, vehicle, roadway/environmental factors, and violations associated with undefined pedestrian crashes. 5. Categorize locations analyzed by urban, suburban, and rural areas. 6. Evaluate established treatments or countermeasures for reducing or reversing the trend in pedestrian fatalities. 7. Evaluate the economic impact of these countermeasures. <p>The expectation of this project is that the end product will obtain a TRL level 8.</p>
Desired Deliverables:	<ol style="list-style-type: none"> 1. Technical memorandum for each task completed. 2. Monthly progress reports. 3. Value of Research (VoR) that includes both qualitative and economic benefits, to be included in the final research report. 4. Product - A guidebook that will assist practitioners in the selection of pedestrian-related safety treatments as a function of site and demographic characteristics for improving pedestrian safety. 5. Research report documenting the findings of the research, including countermeasures to reverse the trend of fatal pedestrian crashes. 6. Project Summary Report.

Proposal Requirements:	<ol style="list-style-type: none">1. Utilize the “Proj/Agre” and “PA_Form” templates located at the TxDOT RTI website.2. Proposals will be considered non-responsive and will not be accepted for technical evaluation if they are not received by the deadline or do not meet the requirements stated in RTI's University Handbook, which is also located at the RTI website.3. Proposals should be submitted in PDF format, 1 PDF file per proposal. File name should include project name and university abbreviation.4. This project will be tracked during the life of the project using a Technology Readiness Level (TRL) scale. For more information about the use of a TRL, click.
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