



FY 2025 Annual Program Research Project Statement 25-095

Title:	Identify and Evaluate Innovative Pedestrian Safety Countermeasures for Rural and Nighttime Environments
The Problem:	<p>In Texas, pedestrian safety is a big concern, especially at night. A staggering 80% of fatal pedestrian crashes happen between dusk and dawn.</p> <p>TxDOT has already considered the effectiveness of PHBs, RRFBs, and LED treatments for nighttime pedestrian crossing, but there are potential countermeasures that could improve nighttime safety and specifically address the nighttime environment at both mid-block and intersection locations. TxDOT has limited data on nighttime-specific countermeasures that would improve pedestrian crossing safety and comfort during dark hours.</p> <p>Pedestrian fatalities in rural areas are disproportionately represent and present unique challenges especially with conventional countermeasures. Approximately 45% of total highway fatalities took place in rural areas, while only 19% of the population resides in those areas. In particular, the state of Texas has been experiencing an average annual rise of 8% in the total number of pedestrian fatalities in rural areas (based on a query using the Fatality and Injury Reporting System Tool (FIRST)).</p> <p>The need for context-specific countermeasures in rural areas, where conventional infrastructure may not be feasible, underscores the urgency of the problem.</p>
Technical Objectives:	<p>The objectives of this project are:</p> <ul style="list-style-type: none">• Conduct a literature review and summarize state-of-the practice and key findings of:<ul style="list-style-type: none">○ Characteristics of nighttime pedestrian crashes of rural, urban, and metro roadways.○ Nighttime specific pedestrian crossing safety countermeasures for rural, urban, & metro roadways.○ Crash data across rural, urban, & metro environments statewide, including the southern border to identify nighttime pedestrian crash heat maps.• Identify and evaluate the cost and safety benefits and feasibility of implementation of each identified nighttime pedestrian countermeasure specific to rural, urban, & metro environments.• Use heat maps to help identify hot spots to develop nighttime pedestrian incidents for targeted plan for installation of these treatments in the rural, urban, and metro environments.• Develop analytics to reveal insights to causation of nighttime pedestrian at hot spots in rural, urban, and metro environments to develop or implement the countermeasures.• Identify appropriate locations to pilot these nighttime pedestrian countermeasures in the context of rural, urban, and metro environments.• Evaluate pilot locations. <p>The expected technology readiness level (TRL) for this project is 8.</p>
Anticipated Deliverables:	<ol style="list-style-type: none">1. Technical memorandum for each task completed.2. Monthly progress reports.3. Project Summary Report4. Research report documenting the findings of this research, including:<ul style="list-style-type: none">• Comprehensively analyze and identify countermeasures for improving pedestrian safety in high-risk contexts, addressing both nighttime and rural environments.• Identified countermeasures that address nighttime specific issues in rural, urban, and metro environments, and each environment benefit/cost.• Recommendations for approach to and key issues to consider during implementation.• Design examples using the developed approach.• Value of Research (VoR) that includes both qualitative and economic benefits.

Proposal Requirements:	<ol style="list-style-type: none">1. RFP#1 Q&A Deadline: 12:00 p.m. Central Time, Tuesday, February 20, 2024.2. Proposal Deadline: 12:00 p.m. Central Time, Thursday, March 21, 2024.3. Use the current “ProjAgre” and “PA Forms” templates located at the RTI Forms webpage.4. 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.5. Proposals should be submitted by the University Liaison in PDF format; (1) PDF file per proposal. File name should include project name and university abbreviation.6. This project will be tracked during the life of the project using the Technology Readiness Level (TRL) scale.7. The 2021 Texas Legislative Session requires that universities be in compliance with Senate Bill 475 by submitting a completed and signed TxDOT Security Questionnaire (TSQ) to RTIMAIN@txdot.gov. Universities that have not submitted a completed and signed TSQ one week after award will be considered non-compliant and unable to participate in the Program.
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