

Title:	Barrier Striping for the reduction of accidents
The Problem:	In response to interest by several TxDOT districts, the Traffic Safety Division (TRF) drafted a special specification (SS) for vertical application of a retroreflective solid stripe on concrete barriers, at a height approximately 6-inches below the top of the barrier, for implementation. This SS describes an application similar to three locations already placed on Texas roadways in previous years during the new product approval phase. Barrier striping increases driver awareness of the travel way edge and the barrier itself, especially under poor visibility conditions; i.e, heavy rain and snow. These existing implementation sites have not been formally evaluated, may not all have been high crash sites prior to barrier striping, and some may demonstrate little or minimal crash reduction under TxDOT's traditional crash reduction analysis approach.
Technical Objectives:	<p>The focus of this case study is twofold: to evaluate barrier striping for potential crash reduction and expanding TxDOT's safety analysis toolbox.</p> <p>To meet the technical objectives of this project, the research team shall:</p> <ul style="list-style-type: none"> • Perform a traditional crash reduction analysis for three years prior to barrier striping installation and three years following barrier striping installation. Identify, analyze, and document the crash reduction for six existing locations where barrier striping has already been installed in Texas, and six high crash locations with existing barriers (three concrete barriers, three metal beam guard fence) for which no other minimal safety improvements are planned and the state has identified a means to implement barrier striping. • Develop and provide a methodology for a safety improvement analysis approach outside of the traditional crash reduction metric. Identify existing tools available with TxDOT's big data sets to examine the same test cases. In the event big data is not available for the existing striped barriers before striping, identify comparable non-striped examples based on determining factors such as similar driving populations, facilities, traffic volumes, mix, speed, and weather conditions. • Implement test sections of barrier striping for the new identified locations. • Apply the safety improvement analysis approach to the above identified locations, examining a period at least one year before implementation, and at least three months after implementation to compare the first three months after implementation to the data from a year prior. • Refine SS guidelines for barrier stripe installation as needed. • Assess barrier striping safety based upon the data and analysis in hand, according to the analysis results. Provide a preliminary assessment on the safety improvement offered by barrier striping. • Assess the applicability of the safety improvement analysis approach to predict crash reductions in the interim period before three years of crash data is available post-implementation. <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. Value of Research (VoR) that includes both qualitative and economic benefits, to be included in the final research report. This is not a stand-alone deliverable. 4. Research report documenting the findings of the research, including an assessment of the viability of after-analyses techniques to supplement safety analysis in addition to traditional crash analysis. 5. Project Summary Report

Proposal Requirements:	<ol style="list-style-type: none">1. Project duration shall not exceed 15 months.2. Proposal Deadline: 12:00 p.m. Central Time, Monday, March 6, 2023.3. RFP#1 Q&A Deadline: 12:00 p.m. Central Time, Wednesday, February 1, 2023.4. Use the current “ProjAgre” and “PA Forms” templates located at the RTI Forms webpage.5. 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.6. Proposals should be submitted in PDF format; (1) PDF file per proposal. File name should include project name and university abbreviation.7. This project will be tracked during the life of the project using the Technology Readiness Level (TRL) scale.8. 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 in advance of a proposal submission. Universities found to not submit a completed and signed TSQ in advance of proposal submitting will be held in non-compliance and unable to participate in the Program.
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