

Title:	Addressing Bicyclist Safety through the Development of Crash Modification Factors for Bikeway Facilities
The Problem:	<p>According to the Fatality Accident Recording System (FARS), in 2016, Texas had the third highest number of bicycle crashes, after California and Florida. This trend could continue increasing in future years, as increasing demographics of millennials and active populations in metropolitan areas and energy sector corridors could be one of the key factors explaining the upward trend in bicycle crashes. Bicycle safety concerns not only cities and metropolitan areas, but the overall state highway network. On-system highways usually are in better condition than local roads; consequently, more bicyclists use these roadways for recreational or commuting purposes. This shift, on the other hand, has daunting safety implications; 33 percent of overall bicycle fatalities occur on state highways.</p> <p>Unlike most of the roadway improvements that target vehicle crashes, improvements for preventing bicycle crashes are cost effective. Bicycle safety can be improved simply by adding pavement markings to existing roadways. One study estimated that adding a bicycle lane can cost as low as \$1-5 per linear foot. Other simple improvements include adding stop signs and wayfinding signs, installing sharrows, through bike lanes, green pavement markings, physical separation, and bicycle signal heads. Bicycle facilities do not only help improve vulnerable user safety, they also encourage road users to use bicycles as an alternative means of transportation to help reduce congestion.</p> <p>This research will address the development of crash reduction factors for target crash types as well as estimation of service life, installation and maintenance costs of such facilities.</p>
Technical Objectives:	<p>The objective of this project is to develop crash reduction factors for bicycle facilities implemented on Texas highways to assess their safety and economic effectiveness. Bicycle facilities include, but are not limited to bike lanes, buffered bike lanes, advisory bike lanes, through bike lanes, sharrows (shared bike lanes), and separated bike lanes.</p> <p>The researchers shall address the following:</p> <ol style="list-style-type: none"> 1. Conduct a literature review of research studies that have addressed crash modification factor for bicycle facilities. 2. Review state of practice to identify the bicycle facilities implemented on Texas roadways. 3. Identify relevant data sources for developing crash reduction factors. 4. Reach out to districts and MPOs to estimate installation and maintenance costs, as well as the service life of bicycle facilities. 5. Develop crash reduction factors for total and target crash types specific to Texas. 6. Develop guidelines. <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. Research report documenting the findings of the research, including guidelines documenting the steps for implementing the research results to evaluate the VoR that includes both safety and economic benefits of the bicycle facilities included in this project. 5. 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.