



Research Project Statement 24-163 FY 2024 Annual Program

Title:	Traffic Control Device Analysis, Testing, and Evaluation Program
The Problem:	<p>With the expected population growth and increasing vehicle-miles traveled, there is a critical need to address highway safety. In addition, there are federal requirements that currently exist, or are pending, that need analysis and cost-effective solutions.</p> <p>Traffic control devices (TCDs) are the primary means of communicating important highway information to motorists, the road users. TCDs convey to roadway users regulatory, warning, and guidance information that provide safer travel and improved operations. The design, application, and maintenance of TCDs is under constant transformation as new technologies, methodologies, and policies are introduced. Vehicle technologies and highway infrastructure industries evolve, spurred by technology advancements, customer demand, changing vehicle fleet, and national and state policy changes. There is a constant need to analyze and test new or enhanced TCDs, applications, and materials so that safety and operations can be optimized.</p> <p>This project will provide TxDOT a mechanism to quickly and effectively evaluate high priority issues related to TCDs. Potential topics to address include Texas Manual on Uniform Traffic Control Devices (TMUTCD) updates, federal MUTCD interpretations and experimentation, other state policies and specifications, human factors testing, visibility assessments, safety effects, cost-effectiveness, maintenance practices, and other topics as directed by TxDOT.</p>
Technical Objectives:	<p>This research project will support the TCD needs of TxDOT. This project will result in new and improved TCD applications, policies, and practices that will reduce fatal and serious injury crashes, minimize TxDOT personnel exposure, meet the needs of road users, and provide smoother traffic flow. Implementation of the new traffic control device policies and practices will result in improved safety for Texas motorists and reduced crash costs for the state of Texas.</p> <p>The research team, in conjunction with TxDOT, will identify and prioritize TCD issues from the Traffic Operations Division (TRF), Maintenance Division (MNT), and TxDOT districts on an annual basis. The list of issues will be developed during the fiscal year close-out meeting, prior to the start of the new fiscal year. The research team shall evaluate selected issues based on input from the Traffic Safety Division (TRF), Maintenance Division (MNT), and TxDOT districts.</p> <p>This project will require a variety of research methods, including engineering analyses, focus groups, surveys, human factors testing, simulator testing, and closed-course and open-road testing. This project will also require expertise related to the MUTCD, experimentation, and rulemaking.</p> <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 testing protocols for each category of device and establishing performance measures for each category of device. 5. Project Summary Report

Proposal Requirements:	<ol style="list-style-type: none">1. Proposal Deadline: 12:00 p.m. Central Time, Monday, March 6, 2023.2. RFP#1 Q&A Deadline: 12:00 p.m. Central Time, Wednesday, February 1, 2023.3. 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 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 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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