TRANSPORTATION POOLED FUND PROGRAM
QUARTERLY PROGRESS REPORT

Lead Agency (FHWA or State DOT): ____Texas Department of Transportation_____

INSTRUCTIONS:

Project Managers and/or research project investigators should complete a quarterly progress report for each calendar quarter during which the projects are active. Please provide a project schedule status of the research activities tied to each task that is defined in the proposal; a percentage completion of each task; a concise discussion (2 or 3 sentences) of the current status, including accomplishments and problems encountered, if any. List all tasks, even if no work was done during this period.

Transportation Pooled Fund Program Project # *TPF-5(482)*	**Transportation Pooled Fund Program - Report Period:** ☒ Quarter 1 (January 1 – March 31) ☐ Quarter 2 (April 1 – June 30) ☐ Quarter 3 (July 1 – September 30) ☐ Quarter 4 (October 1 – December 31)

Project Title:
Development and Evaluation of Roadside Safety System for Motorcyclists

Name of Project Manager(s): Chris Glancy	**Phone Number:** 512-416-4747	**E-Mail** Chris.Glancy@txdot.gov
Lead Agency Project ID:	**Other Project ID (i.e., contract #):**	**Project Start Date:** 2021
Original Project End Date: 2024	**Current Project End Date:** 2024	**Number of Extensions:**

Project schedule status:

☒ On schedule ☐ On revised schedule ☐ Ahead of schedule ☐ Behind schedule

Overall Project Statistics:

Total Project Budget	Total Cost to Date for Project	Percentage of Work Completed to Date
$780,000	$149,300	19.1%

Quarterly Project Statistics:

Total Project Expenses and Percentage This Quarter	Total Amount of Funds Expended This Quarter	Total Percentage of Time Used to Date
$47,063.40; 6%	$47,063.40	53%

Project Description:
The objective of this pooled fund study is to provide a cooperative approach to conducting research to address roadsi safety issues specifically related to improving motorcyclist safety. Furthermore, the study is intended to provide participating states collaborative opportunities to stay abreast of best practices, new regulatory issues, risk managem strategies, and other research pertaining to roadside safety improvements for motorcyclists. Research activities will in identification, development, and evaluation of strategies and devices for mitigating the frequency and severity of road departure motorcyclist crashes.

Progress This Quarter (includes meetings, work plan status, contract status, significant progress, etc.):
The following tasks were completed in this quarter:

- On February 8th, 2023, the research team held a virtual update panel meeting with project members to discuss projects progress.
- Project 1. Investigation of Roadway Design Methods to Decrease Likelihood of Roadway Departures for Motorcyclists (Phase II).
    - The research team conducted meetings on a weekly basis to discuss the project work plan and assess the available data.
    - Assessed the date collected from phase 1 for its suitability to be used in the second project. Identified the types of crashes that need to be considered in the roadside hardware analysis.
    - Assessed the literature review and identified the countermeasure types that will be evaluated.
    - The research team finalized the safety analysis for Texas data and have started working on the Utah data.
- Project 2. Investigation of Available Data towards the Development of Hardware Installation Guidance for Motorcycle Roadside Safety
    - The research team had meetings weekly to discuss the work plan and readily available data.
    - The research team completed the analysis of the Texas crash data.
    - The research team started safety analysis for Louisiana data.
- Project 3. Development and Full-Scale Crash Testing of an Improved Railing for Use on Top of Barriers.
    - Researchers investigated literature review on determining the motorcycle seat and handlebar height. Preliminary simulations were performed to determine rider and motorcycle dynamics for different barrier profiles. Researchers also started making CAD models with attachments on top of the concrete barrier as proof of concept.
    - The researchers made modifications to the existing design as proof of concept and performed preliminary computer analysis. Researchers successfully met with panel members to give updates on the project and clarify some questions.
    - Researchers evaluated potential design codes that would be necessary to take into account for developing pedestrian rail. The researchers also developed some potential preliminary design options that can be used as a base for the new rail design.
- Project 4. Evaluation of a Prioritized Design of a Lower Rail Element for Installation to the MGS System to Address Motorcycle Safety
    - This project leverages on the testing results from another on-going research and testing effort on wood-post MGS system – full-scale testing is planned after the wood-post system is tested for motorcycle sliding impacts.

Anticipated Work Next Quarter:

- Project 1 & Project 2. Investigation of Roadway Design Methods to Decrease Likelihood of Roadway Departures for Motorcyclists (Phase II) & Investigation of Available Data towards the Development of Hardware Installation Guidance for Motorcycle Roadside Safety.
    - The research team will continue with analyzing the data for Louisiana, Utah, and Massachusetts.
- Project 3. Development and Full-Scale Crash Testing of an Improved Railing for Use on Top of Barriers.

- The research team will finalize the design concepts for the pedestrian railing on the concrete barrier. The concepts will be sent to the panel member for review and selection of prioritized design.
- After selection of the prioritized design, the research team will proceed with conducting engineering analyses to further develop the design concept. The impact performance of the system will be evaluated through computer simulations.

- Project 4. Evaluation of a Prioritized Design of a Lower Rail Element for Installation to the MGS System to Address Motorcycle Safety
  - The research team will finalize the drawings of the system based another on-going research effort with testing expected to be completed in April.
  - Drawings will be sent to the panel member for review and approval. Upon approval, TTI Proving Grounds will proceed with material procurement and construction.
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Significant Results:

Potential Implementation: