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	$203,766	26.1%

Quarterly Project Statistics:

Total Project Expenses and Percentage This Quarter	Total Amount of Funds Expended This Quarter	Total Percentage of Time Used to Date
$54,466.38; 7%	$54,466.38	61%

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:

- Project 1. Investigation of Roadway Design Methods to Decrease Likelihood of Roadway Departures for Motorcyclists (Phase II).
  - Finalized analysis of critical factors associated with roadway departure crashes
  - Conducted spatial analysis of roadway departure crashes for the state crash data
  - Began documenting crash data analyses and results for research report
- Project 2. Investigation of Available Data towards the Development of Hardware Installation Guidance for Motorcycle Roadside Safety
  - Finalized analysis of crash data associated with roadside hardware motorcycle crashes
  - Began documenting crash data analyses and results for research report
- Project 3. Development and Full-Scale Crash Testing of an Improved Railing for Use on Top of Barriers.
  - Three design concepts were developed for a combination traffic barrier and railing system.
    - Option 1: Pedestrian railing with horizontal steel plates mounted on concrete barrier
    - Option 2: Pedestrian railing with chain link fence mounted on concrete barrier
    - Option 3: Pedestrian railing with offset chain link fence mounted on concrete barrier
  - Design details, design variables, advantages, disadvantages, and cost information were developed for each of three design options.
  - Design concepts were provided to the panel members to request feedback on design preference. Poll was sent out to members to request design preference and input on shared user designs. Design option 2 was prioritized for further evaluation through finite element analyses.
  - A detailed computer finite element model was developed for the chain link fence barrier system.
  - Initial numerical simulations conducted (e.g., gravity application, vehicle contact application, etc.) to verify accuracy of the model.
- Project 4. Evaluation of a Prioritized Design of a Lower Rail Element for Installation to the MGS System to Address Motorcycle Safety
  - Detailed drawings of the test installation were developed and finalized for the construction of an MGS System with a lower rail element. The drawings were reviewed and approved by the panel member.
  - The material needed to construct the system was ordered. All parts were delivered except the top cap rail components. This part is still in the process of being fabricated.
  - Construction of the main guardrail system was completed. TTI Proving Ground is waiting for delivery of the top cap rail to finish the construction of the system.

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.
  - Finish documenting crash data analyses for research report. Provide recommendations/guidance based on crash data analyses.
- Project 3. Development and Full-Scale Crash Testing of an Improved Railing for Use on Top of Barriers.
  - Perform computer simulations with motorcycle and ATD model impacting chain link fence barrier system.

- Perform computer simulations with pickup truck vehicle model impacting chain link fence barrier system.
- If necessary, make design modifications to improve performance of the system for motorcyclist and vehicle impacts.

- Project 4. Evaluation of a Prioritized Design of a Lower Rail Element for Installation to the MGS System to Address Motorcycle Safety
  - Finish construction of the system by attaching top cap rail.
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Significant Results:

Potential Implementation: