TRANSPORTATION POOLED FUND PROGRAM
QUARTERLY PROGRESS REPORT

Lead Agency (FHWA or State DOT): Iowa DOT

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 # *(i.e, SPR-2(XXX), SPR-3(XXX) or TPF-5(XXX)* SPR-TPF5(505)-8H-00	**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: An Investigation of the Factors Surrounding Crashes of ADAS-Equipped Vehicles		
Name of Project Manager(s): Cheryl Roe	**Phone Number:** 319-335-6803	**E-Mail** cheryl-roe@uiowa.edu
Lead Agency Project ID: University of Iowa Driving Safety Research Ins	**Other Project ID (i.e., contract #):** L230100-CG	**Project Start Date:** January 1, 2023
Original Project End Date: December 31, 2023	**Current Project End Date:** March 31, 2025	**Number of Extensions:** 3

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
$150,000	$150,000	99%

Quarterly Project Statistics:

Total Project Expenses and Percentage This Quarter	Total Amount of Funds Expended This Quarter	Total Percentage of Time Used to Date
0%	$0	100%

Project Description:

This research aims to help fill the gaps in knowledge about the impact of ADAS features in real-world crashes occurring in Iowa and Colorado, including whether the driver had an accurate mental model of the vehicle's ADAS feature(s), crash characteristics such as the environmental and traffic conditions, and whether the feature(s) potentially contributed to or mitigated the crash.

Interview guides to facilitate the gathering of information from motorists operating vehicles likely to be equipped with ADAS features that have been involved in crashes will be developed. Another guide will be developed in order to interview officers who have investigated crashes of ADAS-equipped vehicles.

Qualitative analysis will be conducted and a final report will present findings and recommendations for various stakeholders, including infrastructure owners/operators, law enforcement, crash reporting agencies, departments of transportation, and original equipment manufacturers (OEMs). The summary of the tasks is as follows. Tasks 1 - 3 and tasks 4 - 7 will occur concurrently.

Task 1: IRB approval, TAC formation, Data usage agreements
Task 2: Develop motorist interview guide
Task 3: Develop officer interview guide
Task 4: Identify respondents
Task 5: Interview motorists
Task 6: Interview officers
Task 7: Conduct analysis
Task 8: Prepare deliverables
Task 9: Progress meetings and reports

Progress this Quarter (includes meetings, work plan status, contract status, significant progress, etc.):

UI team is finalizing the project deliverables (tech report and technical brief).

Anticipated work next quarter:

Complete and submit the final report and technical brief.

Significant Results:

(Retained from previous report.)

Motorist findings

Of the 11 incidents described during the interviews we conducted with motorists, there were two incidents where the ADAS responded in a way that seemed to contribute to the incident, two incidents where the ADAS definitely prevented a collision and three incidents where the ADAS might have helped prevent a collision. Two participants were involved in minor sideswipe crashes. Both said they did not see a BSW in their side mirrors and both believed they should have gotten an BSW alert. However, they also told us their BSW systems behaved in ways that were not supported by the information provided in their owner's manuals, so the role of ADAS in these crashes is unclear. The last two other cases involved a lost of control due to weather and the role of ADAS was not applicable.

Motorists demonstrated a wide range of ADAS understanding. We interviewed motorists who had a solid understanding of their ADAS, others who were mistaken about what systems were on their vehicles or what the systems did, and other who were somewhere in between.

Motorists used a multitude of names or terms to describe the systems on their vehicles. A few used the same name for the ADAS as the manufacturer, but half the motorists we interviewed did not name at least one ADAS on their vehicle and instead just described what they thought it did.

Several of the motorists we interviewed seemed to conflate or blend different ADAS features together. At least three people seemed to describe functions performed by their forward collision warning system as an extension or part of their adaptive cruise control system.

Circumstance affecting project or budget. (Please describe any challenges encountered or anticipated that might affect the completion of the project within the time, scope and fiscal constraints set forth in the agreement, along with recommended solutions to those problems).

Though the PI expected to complete the deliverables this quarter, she underestimated both the time needed to complete the work product and her available bandwidth. She sincerely appreciates everyone's patience and understanding.

Potential Implementation:

(Retained from previous report)
Some recommendations for stakeholders are:

Stakeholders can consider taking steps to educate officers and the general driving population about ADAS.

Lane markings that work for humans work for technology
Wider, higher contrast markings
Leave space between lane marker and pavement edge
Continue marking through junctions with ramps and minor roadways
Areas where markings were removed or where pavement has been altered (e.g., crack repairs with tar) might affect lane detection.
DOTs and DMVs might consider integrating ADAS info into vehicle registration system

Manufacturers could implement technology, labeling or standards to make it easier for motorists and officers to know which ADAS are on the vehicle
-VIN scanner; digital Monroney sticker
-Common naming
-Provide online resources