TRANSPORTATION POOLED FUND PROGRAM
QUARTERLY PROGRESS REPORT

Lead Agency (FHWA or State DOT): Colorado 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 # *(i.e, SPR-2(XXX), SPR-3(XXX) or TPF-5(XXX)*	**Transportation Pooled Fund Program - Report Period:**
TPF-5(380) Project 3: ATMA Dev Guide	☐ 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 of ATMA/AIPV Deployment Guidelines Considering Traffic and Safety Impacts (ATMA Dev Guide)		
Name of Project Manager(s):	**Phone Number:**	**E-Mail**
David Reeves	303-757-9518	david.reeves@state.co.us
Lead Agency Project ID:	**Other Project ID (i.e., contract #):**	**Project Start Date:**
TPF5380-19-03	PO: 411021601	8/1/2019
Original Project End Date:	**Current Project End Date:**	**Number of Extensions:**
12/31/2022	12/31/2022	0

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
$92,572	0	0 %

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	N/A	N/A

Project Description:

Mobile and slow moving operations, such as striping, sweeping, bridge flushing and pothole patching, are critical for the efficient and safe operation of highway transportation system. Autonomous Truck Mounted Attenuator/Impact Protection Vehicles (ATMA/AIPV) is a quickly emerging technology and is expected to bring considerable potentials in transportation infrastructure maintenance by removing drivers from the risk. The system includes a lead truck (LT), a follow truck (FT), a truck mounted attenuator (TMA) installed on the FT, and a leader-follower system that enables the FT to drive autonomously and follow the LT.

While exciting technology is being developed and shows promising benefits in roadway maintenance, what's not well studied is the impacts of such autonomous system to traffic operation and roadway safety, and subsequently how should DOT develop deployment strategies with those aspects taken into consideration. To bridge this important gap, this project aims to develop a practical software tool that takes in DOT inputs such as roadway network GIS shapefile, traffic counts and ATMA/AIPV system characteristics, and outputs a set of recommended deployment strategies, including the roadway maintenance sequence, staffing plan and needed resource, potential impacts to the traffic network and any suggested traffic management plan to ensure a smooth and safe traffic flow while effectively maintaining the roadway facilities.

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

Significant progress in 3Q19 includes:

• Finished the paperwork between CDOT and Missouri S&T. Contract is now signed
• Attended the AMT peer exchange annual meeting at Fort Collins, CO
• Presented ATMA research highlights at Missouri S&T, including MoDOT project, MATC project, 2 TRB papers and this pool fund project
• Official kickoff meeting with pool fund management team.

Anticipated work next quarter:

Anticipated work for Q3 2019 includes:
• Task 1: Literature review. Relevant academic publications, national and industry standards, and federal regulations and policies will be reviewed.
• Quarterly report and project status

Significant Results:
• Slides presented at the AMT peer exchange annual meeting
• Kickoff meeting minutes

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).

No challenges have yet been identified.

Potential Implementation: