**TRANSPORTATION POOLED FUND PROGRAM**

**QUARTERLY PROGRESS REPORT**

Lead Agency (FHWA or State DOT): Colorado Department of Transportation (CDOT)

**INSTRUCTIONS:**

*Lead Agency contacts 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.*

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| **Transportation Pooled Fund Program Project #**  *(i.e, SPR-2(XXX), SPR-3(XXX) or TPF-5(XXX)*  TPF-5(380) | | **Transportation Pooled Fund Program - Report Period:**  X Quarter 1 (January 1 – March 31)  □Quarter 2 (April 1 – June 30)  □Quarter 3 (July 1 – September 30)  □Quarter 4 (October 1 – December 31) | |
| **TPF Study Number and Title:**  **TPF 5(380) – Autonomous Maintenance Technology** | | | |
| **Lead Agency Contact:**  **David Reeves** | **Lead Agency Phone Number:**  **303-757-9518** | | **Lead Agency E-Mail:**  David.reeves@state.co.us |
| **Lead Agency Project ID:**  **5(380)** | **Other Project ID (i.e., contract #):** | | **Project Start Date:**  3/20/2018 |
| **Original Project Start Date:**  **3/20/2018** | **Original Project End Date:**  **3/20/2023** | | **If Extension has been requested, updated project End Date:**  3/20/2025 |

Project schedule status:

X On schedule □ On revised schedule □ Ahead of schedule □ Behind schedule

Overall Project Statistics:

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| **Total Project Budget** | **Total Funds Expended**  **This Quarter** | **Percentage of Work**  **Completed to Date** |
| $321,387 (6 active projects) | n/a | 68% |

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| **Project Description**:  CDOT has helped to develop a first of its kind work zone vehicle designed to advance safety for roadway maintenance crews. Customarily positioned behind road construction crews in order to protect workers from the traveling public, the Autonomous Impact Protection Vehicle (AIPV) increases work zone safety by removing the driver from a truck that is actually designed to be hit. The objective of the Autonomous Maintenance Technology (AMT) Pool Fund is to develop, demonstrate and refine the AIPV in preparation for its widespread deployment nationwide in DOT maintenance operations.  Currently there are twelve projects related to this pooled fund:  <https://sites.google.com/state.co.us/amt-pooled-fund/home?authuser=0>  5380-18-01 AMT Coordination  5380-19-02 Evaluating the Human Automated Maintenance Vehicle for Improved Safety & Facilitating Long Term Trust (CSU) – Complete ([Final Report CDOT-2021-05](https://www.codot.gov/programs/research/pdfs/2021/2021-05.pdf))  5380-19-03 Development of ATMA/APV Deployment Guidelines Considering Traffic and Safety Impacts (PennState) - In contract negotiations.  5380-20-04 ATMA Tabletop (All Clear Emergency Management) – [Final Report CDOT-2021-09](https://www.codot.gov/programs/research/pdfs/2021/cdot202109atma-tabletopexercise.pdf)  5380-20-05 ATMA Cybersecurity Complement (CSU) - [Final Report CDOT-2022-04](https://www.codot.gov/programs/research/pdfs/2022/autonomous-truck-mounted-attenuator-atma-incident-response-csu-data-report)  5380-20-06 ATMA Documentation (PennState) – In contract negotiations.  5380-21-07 ATMA Incident Form Workshop (All Clear Emergency Management) – Complete and form is available upon request. |

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| **Progress this Quarter (includes meetings, work plan status, contract status, significant progress, etc.):**  5380-18-01 AMT Coordination (CSU $150,000 Dr. Tom bradley (P) Erika Miller, and Janine Marie Conrad - Colorado State - Colorado State University (CSU) Provides administrative management and support of the pool fund. This includes travel for annual meetings.  5380-19-02 Evaluating the Human Automated Maintenance Vehicle for Improved Safety & Facilitating Long Term Trust (CSU) $75,000-Dr. Enka Miller (P) Completed final report COO1-2021-05  5280-19-03 Development of ATMACAPV Deployment Guidelines Considering Traffic and Safety impacts $92.572 (PennState Di Xianbiao (XB) H (P) this project was originally with Missouri State University The PI moved to PennState This project is in contract negotiations.  5380 19-03 ATMA Dev Guide (MST) $92 572-Dr. Xianbao (XB) H (P), PennState Project Update OSP is reviewing the languages and terms in the contract.  5380-20-04 ATMA Tabletop $22 300-Will Moorhead (P), All Clear Emergency Manit Golden Colorado: Project Update Final deliverables for the tabletop exercise project were provided. Those included the After Action Report (AAR) and a project summary. |
| **Anticipated work next quarter**:  In the 1st quarter of 2023, the team plans to accomplish the following:  Continued refinement of the Toolkit  Continued monthly meetings  Adopt a Steering Committee made up of general members of the Pooled Fund  Quarterly report and project status  Maintaining and updating outwardly facing website  Continued work on all projects and contract projects  Organizing Annual Autonomous Maintenance Technology (AMT) Peer Exchange October 2023 |

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| **Significant Results:** |
| **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).** |

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| **Potential Implementation:** |