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 # *TPF-5(438)*	**Transportation Pooled Fund Program - Report Period:** Quarter 1 (January 1 – March 31, 2022) X Quarter 2 (April 1 – June 30) Quarter 3 (July 1 – September 30) Quarter 4 (October 1 – December 31)
Project Title: Midwest Smart Work Zone Deployment Initiative	

Name of Project Manager(s): Dan Sprengeler	**Phone Number:** 515-239-1823	**E-Mail** Dan.Sprengeler@dot.iowa.gov
Lead Agency Project ID: Keith Knapp	**Other Project ID (i.e., contract #):** Addendum 733	**Project Start Date:** January 1, 2020
Original Project End Date: December 31, 2020	**Current Project End Date:** December 31, 2022	**Number of Extensions:** None

Project schedule status:

X 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
$750,000	$297,119	50%

Quarterly Project Statistics:

Total Project Expenses and Percentage This Quarter	Total Amount of Funds Expended This Quarter	Total Percentage of Time Used to Date
$81,800		

Project Description:
The Smart Work Zone Deployment Initiative (SWZDI) was initiated in 1999 as a Federal Highway Administration (FHWA) Pooled Fund Study intended to coordinate and promote research among the participating states related to safety and mobility in highway work zones.

The program is an ongoing cooperative effort between State Departments of Transportation, universities, and industry. The studies completed have consisted of evaluations of various work zone related products, various innovative topics, and several synthesis studies. Completed reports and descriptions of ongoing projects can be obtained at the Iowa State University's Institute for Transportation (InTrans) website (www.intrans.iastate.edu/smartwz/) link to the Smart Work Zone Deployment Initiative. InTrans currently operates as the program manager of the pooled fund efforts and completes administrative tasks related to request for ideas and proposals, meetings, project files, quarterly reports, and recommending reimbursement.

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

Quarter Ending June 30, 2022 (Overall)
During this quarter, work on two PY 2021 projects continued and two PY 2022 projects began. During this quarter the SWZDI Board also met on June 10, 2022 and discussed the approach to be used toward the request for problem statements for PY 2023. It was decided that four topics should be included and the call went out with a deadline of June 29. A total of 7 problem statement were received with at least one problem statement in response to each of the topics included in the request. A summary of the submittals has been provided to the SWZDI Board and a polled is currently being completed to set the next board meeting for a discussion of what to include in the SWZDI PY 2023 request for proposal.

The following is a summary of accomplishments provided by the project principal investigators for the April to June 2022 time period for their individual research projects underway with fund account TPF-5(438).

2022 Program Projects

- Mobility and Safety Impacts of Work Zone Lane and Shoulder Widths, University of Wisconsin-Madison, David Noyce as PI

  Team had a kickoff meeting with the TAC on May 10, 2022.
  Obtained feedback from the TAC on the scope of the project and criteria for data collection locations.
  Literature review is being completed.
  Team reached out to agencies and obtained plans for work zones.
  Team reviewed the the work zone plans and identified potential data collection locations.
  Team collected sample field data to calibrate/validate the new data collection device.
  Calibration/validation of the algorithm to process the data from the data collection device to obtain speed, vehicle category, and lateral distance is ongoing.

  This project was contracted to start on April 15, 2022 and end on July 31, 2023. The project is 10% complete.

- Analysis of Improvements in the Effectiveness of Speed Feedback Trailers. Michigan State University, Tim Gates as PI

Task 1: Literature Review and Synthesis of Existing Practices - The literature review started in Q2 and is being led by University of Missouri. A state of the practice survey, also led by University of Missouri, will be initiated in Q3.

Task 2: Site Selection and Data Collection - The research team has discussed site selection and data collection with Chris Brookes and the rest of the TAC. A series of potential work zone sites have been tentatively selected for SFT testing, which include 1.) US-127 near Mason, Michigan; 2.) I-94 west of Marshall, Michigan; 3.) I-69 near Lapeer, Michigan; 4.) US-127 near St. Johns, Michigan; and 5.) I-270 in Missouri. The team also discussed the variables related to SFT that were desirable to investigate during this study, which include: 1.) SFT location (advance warning area, taper start, taper end, work area); 2.) Worker presence/absence; 3.) SFT spacing within the work zone; and 4.) SFT used w/ digital speed limit signs (potentially, at the US-127 Mason site only. Preliminary data collection has been performed at the US-127 Mason site to test the data collection procedures. Data collection will begin in earnest in Q3.

Task 3: Data Analysis - No work in Q2

Task 4: Develop and Submit Deliverables - No work in Q2

This project was contracted to start on April 15, 2022 and end on October 31, 2023. The project is 3% complete.

2021 Program Projects

- Evaluation of Messaging Techniques to Increase Vehicle Spacing at Work Zones, Iowa State University, Jing Dong as PI

  Developed candidate anti-tailgating message sets
  Conducted the 3-stage survey at Ames and Ankeny DMVs
  Analyzed the survey results and finalized the messages for FHWA MUTCD team approval
  This project was contracted to start on March 1, 2021 and end on June 30, 2022. This contract has also been extended to December 31, 2022. The project is 25% complete.

- Work Zone Speed Limits and Motorist Compliance, Michigan State University, Peter Savolainen as PI

  Task 0: Formation of the Technical Advisory Committee – Task complete.

  Task 1: Synthesis of Existing Practices – The University of Missouri has completed its review of the research literature, as well as the associated state agency survey. The results have been incorporated into the draft final report.

  Task 2: Site Selection and Data Collection – Data were collected at five freeway work zone locations in Michigan. These work zones were used to assess the impacts of speed feedback signs, as well as the presence of police enforcement. Initial plans were to also examine impacts of rumble strips, but these were installed at all sites given changes in MDOT practices.

  Task 3: Data Analysis – Detailed speed profiles were obtained for more than 1200 vehicles. Regression models were estimated to discern the impacts of the presence of enforcement, as well as with respect to the presence and location of the speed feedback signs. These results were reported to the RAP and are being included in the project report.

Task 4: Develop and Submit Deliverables – The draft project report is nearly complete. Details are provided for tasks 1-3, culminating in guidance and recommendations for work zone speed management.

This project was contracted to start on March 1, 2021 and end on September 30, 2022. It is 85% complete.

Anticipated work next quarter:

During the next quarter the SWZDI Board should meet and the selection of the problem statements to include in the request for proposal will be completed. The request for proposal should also be distributed. Work will continue on the four active projects and one should be completed in September. In addition, more information about a possible on-site meeting for the SWZDI board will be collected

Significant Results:

The projects under this administrative contract continued toward completion. The report of a project finished last quarter was posted early this quarter.

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, with recommended solutions to those problems).

None of the projects under this funding account number appear to be encountering any unusual challenges at this time.

Potential Implementation:

Potential implementation includes project report posting when completed.