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, 2020) 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, 2021	**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
$250,000	$	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
$		

Project Description:
The Midwest Smart Work Zone Deployment Initiative (MwSWZDI) 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, 2020 (Overall)
During this quarter, the three PY 2020 projects that were selected and contracted started. This administrative contract for 2020 also continued by helping the principal investigators of these projects as requested. Below are the contents of their first quarterly reports. A meeting of the SWZDI board was held to discuss PY 2021 approaches to the request for problem statement and request for proposal. A new process was started.

The following is a summary of accomplishments from April to June 2020 for the individual research projects underway with fund account TPF-5(438).

2020 Program Projects

- Work Zone Activity Data Logging – Phase II, Iowa State University, John Shaw as PI

  Formed Technical Advisory Committee and met by webconferencing on April 29, 2020 to discuss project objectives and approach.as

  This project was contracted to start on May 1, 2020 and end on April 30, 2022. It is 1% complete.

- Using Smart Work Zone Trailer Data to Evaluate and Predict Lane Closure Impacts with a Consideration of Work Intensity, The University of Texas-Austin, Natalia Ruiz-Juri as PI

  Tech Memo 1 was sent to the Project Monitor and TAC on 6/2/2020. The document summarized work tasks, work schedule, and expectations of the TAC. A September 1 quarterly update meeting was proposed.

  Over the next three months, CTR is working on data collection and the data model as follows:
  - Select initial set of data sources to be used in this project and collect samples to support model development and testing. Considered data will include:
    1) Real time traffic data (work zone trailers, permanent ITS sensors, probe-based vehicle speeds, and others);
    2) Detailed data about known work-zone related lane closures, including location, actual start and end time of work zone activities, and start and end time of lane closures. This data will be used to test proposed methodologies and compare corresponding outcomes;

3) Additional data that may be used to verify traffic conditions during selected closures (e.g. video data).
- Stage data samples using an adequate data model that facilitates testing and validation of model results.
- Experimental design: identify the methodologies to be tested in order to:
  1) Conduct data cleaning in order to be able to identify "typical" traffic conditions, which are necessary to estimate user costs during closures, and also as part of the methodologies used to predict the impacts of planned work zones.
  2) Generate a reliable set of validation data that reflects the conditions actually observed on the field for selected events.
  3) Predict the impact of planned work zones.

This project was contracted to start on May 15, 2020 and end on May 31, 2021. It is 8% complete.

- Temporary Traffic Control Devices at Driveways within a One-Lane, Two-Way Section, Tim Gates as PI

  Task 1: Review of Literature and Practice - Work is underway and literature is being collected and reviewed

  Task 2: Expert and Public Survey of DADs Displays - The public survey will be implemented online through a Qualtrics panel of 1,000 licensed drivers nationwide. A TAC panel meeting was held via Zoom on Tuesday, June 23 to obtain feedback regarding the aspects of the public survey, including question structure, along with various aspects of the DADS device, including signal configurations, arrow colors, and signing messages. The MSU project team received feedback from the panel and is in the process of designing the survey in Qualtrics and handling other administrative aspects. Once build in Qualtrics, the survey will be further vetted by the TAC panel, and modified as necessary, with implementation to the panel scheduled for July 2020.

  Task 3: Field Evaluation - A series of field evaluations of actual DADS implementation will take place at two one-lane two-way work zones in Michigan during summer and fall 2020. The first work zone location was underway in early June along a section of US-31 in Benzonia, Michigan. The MSU team has visited the location on multiple occurrences during June 2020 for initial site review and data collection. The field data is collected using a series of elevated high definition video cameras positioned for 3-4 hours at at time at each subject driveway/minor road approach where the DADS device is installed. Doing so allows for the following measures to be assessed: 1.) Proportion of drivers on the subject minor approach that perform appropriate/inappropriate maneuver; 2.) Gap selection and dwell time; 3.) Minor approach queue length.

  The project was contracted to start on May 1, 2020 to October 31, 2021. It is 5% complete.

Anticipated work next quarter:

The contracts for the 2020 PY have been finalized and work has just begun. A new approach for the advertisement and selection of problem statements has been selected and progress is occurring. The request will be later than previous years due to additional steps in the new approach.

Significant Results:

This administrative contract has just started so there are not yet any 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, with recommended solutions to those problems).

It is not expected that the COVID 19 shut downs will have an impact on the administration of the SWZDI pooled fund but it may impact the progress of the projects.

Potential Implementation:

This administrative contract has just started but potential implementation includes project reports when completed.