

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(295)	Transportation Pooled Fund Program - Report Period: Quarter 1 (January 1 – March 31, 2020) Quarter 2 (April 1 – June 30) X 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 535	Project Start Date: July 1, 2014
Original Project End Date: June 30, 2020	Current Project End Date: June 30, 2021	Number of Extensions: None

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
\$1,425,000 committed	\$1,227,143	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
\$8,183		100

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 September 30, 2020 (Overall)**

During this quarter we communicated with principal investigators as needed and resolved progress issues if they occurred. Projects from Program Years 2018 and 2019 contracts progressed (see below) and are the focus of this project number. The 2020 projects will be discussed in another quarterly report.

The following is a summary of accomplishments from July to September 2020 for the individual research projects underway with fund account TPF-5(295).

2019 Program Projects

The following projects were selected in September for funding during the 2019 program year.

- An Intelligent Video-Based End of Queue Warning System for Work Zones, Iowa State University, Shauna Hallmark as PI.

This project has been completed and has been posted.

- Field Testing of Non-Motorized Road User Accommodations for Work Zones, Iowa State University, John Shaw as PI.

In response to Covid-19, shifted emphasis to Task 4 Pedestrian Test Track. Prepared Institutional Research Board application for Test Track and responded to two rounds of questions/comments on IRB application. Briefed Intrans director on plans for limiting face-to-face interaction with participants and disinfecting frequently-touched surfaces.

Task 1: TAC, IRB, Qtr Reports: Recruited TAC members. Conducted project kick-off meeting on July 12, 2019. Participated in webconference to coordinate with other national efforts..

Task 2: Literature Review: Reviewed MnDOT documents related to previous pedestrian safety demonstration.

Task 3: Develop Test Plan: Conducted initial coordination with City of Cedar Rapids for an on-site field test, but scuttled this plan due to Covid-19. Developed revised test plan emphasizing Pedestrian Test Track in a controlled environment.

Task 4: Ped Test Track (PTT): Prepared Institutional Research Board application for Pedestrian Test Track

Task 5: Field Evaluations: No activities

Task 6: Final Report: No activities

This work has a contract of 1/1/2019 and an end date of 3/31/2020. It was extended to December 31, 2020. It has been extended again to March 31, 2021. The project is remains at a 5% completion.

- Investigation of Autonomous/Connected Vehicles in Works Zones, University of Missouri-Columbia, Carlos Sun as PI.

The ZouSim simulator laboratory is being prepared for human subject trials. One aspect of the preparation is to meet the requirements under the COVID-19 procedures, such as providing personal protection equipment for human study hosts and establishing cleaning protocols. Another aspect is the substantive preparation in coordinating the hardware (i.e. trucking and driving simulators along with the psycho-physiological equipment) with the 3D virtual scenarios that are being finalized.

This project is contracted to start on 4/15/2019 and end on 7/31/2020. It has been extended to March 31, 2021. It is 70 percent complete.

2018 Program Projects

- Development of Adjustment Factors for HCM Sixth Edition Freeway Work Zone Capacity Methodology, Iowa State University, Jing Dong as PI.

This project is completed

- Guidance on Active Work Zone Data Archival, Iowa State University, Anuj Sharma is PI.

Task 1. Develop and Convene TAC - COMPLETED.

Task 2. Conduct Literature Review - COMPLETED. The research team conducted an analysis of existing technical standards and protocols related to work zone traffic data interchange. These included the Traffic Management Data Dictionary (TMDD), SAE standard J2540 / International Traveler Systems Information (ITIS), the European DATEX2 standard, and the draft work zone data exchange protocols currently being proposed by FHWA. Agency work zone data use cases were also compiled and summarized based on the FHWA draft report and other sources. A TAC meeting was held to review the results of this task.

Task 3. Develop Survey - COMPLETED. The first draft of the survey was completed in March 2019 and major revisions were made in May-June 2019 based on TAC recommendations.

Task 4. Conduct Survey - COMPLETED. Survey distribution began on June 24, 2019 and responses were received from 20+ states. Follow-up interviews have been completed.

Task 5. Analyze Survey Results - COMPLETED. Analysis of survey results has been completed.

Task 6. Meet with TAC - Final TAC meeting was held on April 29, 2020 to review the project findings and prepare for Phase II.

Task 7. Develop Prototype and Report - COMPLETED. A conceptual work zone data collection and management tool has been developed.

Task 8. Finalize Prototype and Report - Final Report to be transmitted to TAC and SWZDI board in October 2020.

This project started on January 1, 2018 and was expected to finish on December 31, 2018. A no-cost extension has been provided to extend the project to December 31, 2019. An extension to June 3, 2020 then occurred. Then, the project was extended to September 30, 2020 and they are now considering an extension to March 2021. A request to the PI to finish the project in 2020 has been sent. The project remains at 95% complete.

Anticipated work next quarter:

Work will continue to work to finalize the 2018 and 2019 projects listed.

Significant Results:

A 2018 and 2019 project were posted.

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

Currently there are no problems to report with the administrative contract. The COVID 19 situation has impacted the progress of at least two projects that may need to be adjusted to be completed on schedule.

Potential Implementation:

The website for the SWZDI pooled fund is updated on a regular and on an as needed basis for finished reports.