

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, 2025) 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 733	Project Start Date: January 1, 2020
Original Project End Date: December 31, 2024	Current Project End Date: February, 28, 2026	Number of Extensions: 6

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
\$1,300,000	\$1,145,506	94%

Quarterly Project Statistics:

Total Project Expenses and Percentage This Quarter	Total Amount of Funds Expended This Quarter	Total Percentage of Time Used to Date
\$117,516		2%

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 September 30, 2025 (Overall)**

During this quarter, work continued on three PY 2024 projects and another additional supplemental project for PY 2024. Other work continued under the new SWZDI funding number is summarized in another quarterly report.

The following is a summary of accomplishments provided by the project principal investigators for the July to September 2025 time period for their individual research projects underway with fund account TPF-5(438).

2024 Program Year Projects

- The Effect of Nighttime Lighting Systems on Workers' Visibility and Safety – University of Nebraska – Lincoln, Chun-Hsing Ho as PI.

The team has completed field testing and data analysis and may collect more data if needed in October. The final TAC meeting was organized on 09/18/2025. During the meeting, the PI went over the results with the TAC members and collected feedback. The team is currently revising the final report based on the TAC's comments and will be sending a revised final report to the Program Manager in early October.

This project has been contracted to start on September 1, 2024 and end on November 30, 2025. The project is 90 percent complete. We have received the draft final report for review by the SWZDI board.

- Development of an Analytical Tools for Work Zone Performance – Iowa State University, Guillermo Basulto-Elias as PI.
 - Improved interface and fixed bugs.
 - Completed HERE and INRIX functionality.
 - Finalized report.

This project was contracted to start on March 1, 2024 and end on May 31, 2025. An extension was requested and granted to July 31, 2025. This project is 100% complete. A webinar has been scheduled in December to present the results of this project.

- Improving Work Zone Management and Safety through AI-Powered Connected Vehicle Data Analysis – Iowa State University, Anuj Sharma as PI (Meenakshi Sumeet Arya was the original PI, but has resigned).

An intelligent workzone planning algorithm was developed that estimates the length of queues that will be generated if a specific section on the highway is closed. The tool uses the telematics data to generate these estimates. The tool is currently being integrated in the ReactIQ platform.

This project was contracted to start on March 1, 2024 and end on June 30, 2025. However, an extension has been granted to the project until December 31, 2025. This project is 80 percent complete.

- Accommodation of Vulnerable Road Users – Wayne State University, Steven Lavrenz as PI.

No quarterly report was submitted for this project by the PI. The PI was contacted multiple times by the SWZDI coordinator for this document. [NOTE: A correction from the summary done last quarter. The quarterly report was submitted after this summary was submitted. In that quarterly report he indicated the following: "Stakeholder surveys and outreach, as well as draft case study development, are underway. Our next TAC meeting is 7/21/25." He reported a level of 40% complete].

This project was contracted to start on May 1, 2024 and end on April 30, 2025. An extension has been requested to October 31, 2025 and another to December 31, 2025. This project was reported as 40% complete last quarter (April to June 2025).

Anticipated work next quarter: Work will continue on the completion of the projects being completed on this SWZDI funding number (other work is starting on the newer SWZDI funding number).

Significant Results: One of these four projects has been completed. Another is in final review by the SWZDI board. The other two are scheduled to be completed by the end of 2025.

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).

Potential Implementation: