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(517)	**Transportation Pooled Fund Program - Report Period:** Quarter 1 (January 1 – March 31) Quarter 2 (April 1 – June 30) **X** Quarter 3 (July 1 – September 30) Quarter 4 (October 4 – December 31)
Project Title: Performance Centered Concrete Construction (P3C)	
Project Manager: **Phone:** **E-mail:**	
Project Investigator: **Phone:** **E-mail:** Peter Taylor 515-294-8103 ptaylor@iastate.edu	

Lead Agency Project ID:	**Other Project ID (i.e., contract #):** Addendum 903	**Project Start Date:** August 1, 2024
Original Project End Date: December 31, 2025	**Project End Date:**	**Number of Extensions:**

X On schedule ☐ On revised schedule ☐ Ahead of schedule ☐ Behind schedule

Overall Project Statistics:

Total Project Budget	Total Cost to Date for Project	Total Percentage of Work Completed
$129,994	$72,445	5

Quarterly Project Statistics:

Total Project Expenses This Quarter	Total Amount of Funds Expended This Quarter	Percentage of Work Completed This Quarter
$13,458		5

Project Description:

The PEM TPF-5(368) project (now completed) addressed the mixture up to the point of delivery. This project takes the next step in implementing tools to monitor the quality of the mixture through the transportation and placement processes. The fundamental philosophy is unchanged; the ability to specify, measure, and deliver concrete paving mixtures that perform as intended for their design lifetime and beyond. Actions between the batch plant and the grade that potentially influence the longevity of a mixture include: Transport; Handling; Water / admixture addition; Paver setup; Vibration; Finishing / texturing; Curing; Sawing; Opening to traffic.
Properties that may be affected by these actions include: Uniformity; Consolidation; Air void system stability; Durability and strength development; Segregation; Smoothness; Cracking
This project will follow the PEM model to:

- Establish a sound understanding of these properties and how they are affected by workmanship.
- Develop / select appropriate test methods for evaluation at or behind the paver.
- Select pass / fail criteria.
- Provide tools for contractors to ensure that compliance is practical.
- Provide documentation and training resources to encourage agencies and contractors to adopt performance-based specifications reflecting PEM and related construction practices.
- Assist agencies and industry in the transition to realistic performance-based specifications.

Progress this Quarter (includes meetings, work plan status, contract status, significant progress, etc.):
For Quarter Ending Sept 30, 2025:
The literature review has been submitted to the DOT

A final work plan has been submitted and is awaiting signature.

Work has started on assessing the Instant Air Meter

A TAC meeting will be planned as soon as the contract is signed

For Quarter Ending June 30, 2025:
The literature review is in final editing. A final work plan has been prepared and will be submitted to the DOT in July. The work will include a subcontract to Zollinger to investigate consolidation test methods, and Kevern for curing / finishing time test methods. Work on water content, workability, and air void measurement will be conducted at ISU.

For Quarter Ending March 31, 2025:
A TAC Meeting was conducted on March 10, 2025.
Technologies to be pursued for each of the priority topics were agreed.

- Water Content – Hand held moisture sensors
- Workability – Vkelly (funded by another project)
- Consolidation – GPR, Thermal profiling (Developing a contract with Dr Zollinger)
- Finishing timing – Surface temperature, resistivity
- Curing – Resistivity sensor (Developing a contract with Dr Kevern)
- Air void system – Instant Air Meter

Work is continuing on the literature review

For Quarter Ending December 30, 2024:
Work continues on searching for appropriate test methods and researchers knowledgeable in the topics of interest. It is planned to wrap up the lit review and etailed work plan soon.

The TAC was not available during the last quarter for a meeting so a new time in the next quarter will be saught.

Progress this Quarter (includes meetings, work plan status, contract status, significant progress, etc.):
For Quarter Ending September 30, 2024:
A student has been appointment and is starting on the literature review, focusing on finding tools to measure the following properties:

* Curing
* Workability
* Consolidation
* Air void system
* Finishing timing

Anticipated work next quarter:

- **Complete work on the lit review**
- **Initiate lab testing and subcontracts for the selected technologies**

Significant Results: