

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(313)	Transportation Pooled Fund Program - Report Period: Quarter 1 (January 1 – March 31, 2020) Quarter 2 (April 1 – June 30, 2020) Quarter 3 (July 1 – September 30, 2020) X Quarter 4 (October 1 – December 31, 2020)	
Project Title: Technology Transfer Concrete Consortium (TTCC) TPF-5(313)		
Project Manager: Khyle Clute	Phone: 239-1471	E-mail: Khyle.Clute@dot.iowa.gov
Project Investigator: Steve Tritsch	Phone: 294-8103	E-mail: stritsch@iastate.edu
Lead Agency Project ID: RT 0273	Other Project ID (i.e., contract #): Addendum 532	Project Start Date: 2/5/15
Original Project End Date:	Contract End Date: 8/31/2021	Number of Extensions: Incremental funding, PFS

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	Total Percentage of Work Completed
\$2,000,000	\$1,648,647	NA

Quarterly Project Statistics:

Total Project Expenses This Quarter	Total Amount of Funds Expended This Quarter	Percentage of Work Completed This Quarter
\$11,296	N/A	N/A

Project Description:

The goal of the TTCC is to:

- Identify needed research projects
- Develop pooled fund initiatives
- Provide a forum for technology exchange between participants
- Develop and fund technology transfer materials
- Provide on-going communication of research needs faced by state agencies to the FHWA, industry, and CP Tech Center
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Progress this Quarter (includes meetings, work plan status, contract status, significant progress, etc.):

- All work on this pooled fund project, except for the 5 syntheses is being done under TPF-5(437)
 - Shrinkage & Crack Free Bridge Decks: Jason Weiss
 - Pavement ME Upgrades: Georgene Geary
 - Maintaining Smoothness: Jerod Gross
 - Fast Setting Patching Materials: Tyler Ley
 - Dowel Testing: Mark Snyder/ ACPA

Dowel Design/Testing - Jerry Voigt/Mark Snyder

Problems: Additional finite element analyses are required to back-calculate effective modulus of dowel-concrete support values for the test conditions and for the additional load protocol (50 percent increase) in the new test. The original analyses were performed more than 5 years ago by a U-Pittsburgh PhD student who has moved on (both physically and career-wise). The original AQAQUS input files were just located and will be used to run analyses of the new conditions that are consistent with the analysis performed previously. The delay in locating the files has slightly delayed finalization of the report and specification, but the problem was resolved and drafts of both the project report and specifications will be completed in January 2021 as intended.

Progress this quarter: Test results were analyzed and preparation of the draft project report was begun and substantially completed. Recommendations for incorporation of the test in a revised AASHTO-style specification were developed and iterations of the new specification were developed, reviewed and revised.

Anticipated work next quarter: The draft report and guide specification will be completed and submitted in January 2021. A presentation to the NCC is planned for April 2021.

Percentage of work completed: 90%

Pavement ME Upgrades – Georgene Geary

Progress this quarter:

- Developed chronology of PMED changes in Table format and provided to ARA for comment.
- Discussed PMED software changes with Ryan Frappagne (AASHTO) and Wouter Brink(ARA).
- Researched major changes related to CTE, NALS, SJPCP, CAT and NARR climate data.
- Identified existing designs for comparison from Indiana and Michigan.
- Requested designs for CRC from Virginia and downloaded Texas CRC excel spreadsheet for comparisons.
- Downloaded DRIP software based on drainage question from Steve. Developed timeline of changes.

Anticipated work next quarter: Plan to submit draft report by February 1st. Scheduled to provide overview of results in a 30 minute PowerPoint presentation at April 13-15 NCC virtual meeting.

Percentage of work completed: 75%

Guidance on Shrinkage & Crack Free Bridge Decks – Jason Weiss

Problems: We are slightly behind but are working hard accelerate the deliverables and to be ready for the presentation in April. As you may imagine we have a lot of data that we are trying to consolidate to a small, easy to use document for industry. We are working on this and trying to make the shrinkage work as clear as possible. Specifically slowed internet traffic has resulted in a bit slower searches however this is now off and running.

Progress this quarter: A large literature review was initiated has been initiated. To date approximately 3,000 papers are currently being evaluated. While an outline was originally developed modifications have been made. Three chapters have been simultaneously started. The greatest progress has been made on restrained shrinkage cracking testing though this will take longer than originally anticipated. Task 1 is complete and Task 2 is well underway. We should be well on target for April delivery of a draft.

Anticipated work next quarter: While I was anticipating that we would have completed chapters, we are still working on getting materials characterized and distributed into the chapters. During the coming quarter it is anticipated that this will come together. Topics will be adapted to sections that may be more related to specific questions of DOT members. Right now we are working on the role of aggregate section. Then we will discuss restraint tests and gradients.

Percentage of work completed: 25%

Maintaining Smoothness – Jerod Gross

Progress this quarter:

We continue to review IRI data and request additional testing information from the states. We written up background information on Smoothness and Areas of Localized Roughness (ALR) for the synthesis. We have reviewed and commented on IRI and ALR information received from states. The report outline has been prepared and we are reviewing the outline and the state specification summary.

Anticipated work next quarter:

We will continue to assemble the draft report and input state IRI data.

Percentage of work completed: 45%

Fast Setting Patching Materials – Tyler Ley

Progress this quarter:

I have been finishing up the literature for the report and talking to people in the industry.

Anticipated work next quarter:

Finish up the report in preparation for the presentation at the spring NCC virtual meeting.

Circumstance affecting project or budget (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, along with recommended solutions to those problems). N/A

There are 34 TTCC TPF 5(313) TAC member states. Representative attendance varies by meeting.

State & # of Reps		State & # of Reps		State & # of Reps		State & # of Reps		State & # of Reps	
Alabama	2	California	1	Colorado	2	Florida	2	Georgia	4
Idaho	2	Illinois	2	Indiana	4	Iowa	2	Kansas	4
Louisiana	2	Massachusetts	2	Michigan	2	Minnesota	2	Missouri	1
Montana	2	Nebraska	1	Nevada	1	New York	1	North Carolina	2
North Dakota	2	Ohio	2	Oklahoma	3	Pennsylvania	1	South Carolina	2
South Dakota	2	Tennessee	2	Texas	2	Texas	2	Utah	1
Washington	1	West Virginia	1	Wisconsin	1	Kentucky	2	Massachusetts	2
Oregon	1								

