

## 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.*

<b>Transportation Pooled Fund Program Project #</b> TPF-5(368)	<b>Transportation Pooled Fund Program - Report Period:</b>  <input checked="" type="checkbox"/> Quarter 1 (January 1 – March 31, 2018) <input type="checkbox"/> Quarter 2 (April 1 – June 30, 2018) <input type="checkbox"/> Quarter 3 (July 1 – September 30, 2018) <input type="checkbox"/> Quarter 4 (October 1 – December 31, 2018)	
<b>Project Title:</b> Performance Engineered Concrete Paving Mixtures		
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<b>Lead Agency Project ID:</b>	<b>Other Project ID (i.e., contract #):</b> Addendum 629	<b>Project Start Date:</b> 10/1/17
<b>Original Project End Date:</b> 12/31/2019	<b>Current Project End Date:</b>	<b>Number of Extensions:</b> 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
\$1,345,000	\$54,057	2%

**Quarterly** Project Statistics:

Total Project Expenses This Quarter	Total Amount of Funds Expended This Quarter	Percentage of Work Completed This Quarter
\$54,057		

## **Project Description:**

Concrete for pavements has historically been specified and field controlled around acceptance criteria that do not relate well to durability (slump, air content, strength). Paving concrete specifications need to be built upon engineering properties that directly relate to good field performance. With the recent advancements in research knowledge on failure mechanisms, and the parallel development of better tests, this is possible.

A review of many current and new specifications has found that they are still largely based on strength, slump, and air, which provide limited correlation with the mechanisms of pavement failure currently observed. The need for change in the way we specify concrete, especially concrete for paving mixtures, is becoming increasingly apparent as mixtures become more complex with a growing range of chemical admixtures and supplementary cementitious materials. Traffic loadings continue to increase, more aggressive winter maintenance practices are implemented, and demand increases to build systems more quickly, cheaply, and with increased longevity.

Tasks include:

- Task 1: Implementing What We Know
- Task 2: Performance Monitoring and Specification Refinement
- Task 3: Measuring and Relating Early Age Concrete Properties to Performance

## **Progress this Quarter (includes meetings, work plan status, contract status, significant progress, etc.):**

For Quarter Ending December 31, 2017:

- FHWA, Industry and the PEM team met in Chicago in November to close out the NCC/PEM Champion State effort, focusing on accomplishments, discussing the new PEM pooled fund study and strategy for implementation and protocol.
- PEM Pooled Fund team held a December conference call to discuss member tasks, progress and preparation for an upcoming TAC web meeting and face-to-face meeting.
- Presented the PEM Pooled Fund objectives, previous PEM accomplishments and strategies to the ACPA Chapter/State Paving Association executives at their annual meeting in San Diego, November 28 2017. Provided opportunity to hear and respond to industry questions and concerns about performance engineered concrete mixtures.
- Web meeting held with TAC December 21 2017

For Quarter ending March 31, 2018

- Team members, FHWA and the TAC representative from MnDOT presented a day long PEM Workshop at the Annual TRB meeting in Washington, D.C. on January 7 2018.
- CP Tech Center staff have provided insight and encouraged involvement with the PEM Pooled Fund objectives at concrete paving workshops or paving association board meetings in SD, Mid Atlantic Region, IA, PA, MN, WI and MO/KS.
- CP Tech Center staff offered a PEM update at National Ready Mixed Concrete Association and Portland Cement Association Annual meetings in Houston, March 3-6 2018.
- Continued outreach to SHAs, welcoming MN and OK to the Pooled Fund TAC in this quarter.
- Continued conversations with Industry have confirmed involvement and investment in the study from the American Concrete Pavement Association, Portland Cement Association, RMC Research and Education Foundation, the Slag Cement Association and ACPA Chapters/Associations in IA, WI, MN, MI, NY, PA, SD, and OK.
- TAC met in Chicago on February 27-28 2018 to introduce the PEM plan of action, discuss SHA interest and to work with industry representatives to enhance implementation activity.

Attendance included ten SHAs, five FHWA representatives, eight from Industry and the entire PEM Pooled Fund Study team.

- The PEM team is developing and responding to schedule for needed training materials
- Planning which states to visit in 2018 – candidates include CO, IA and MN.

**Anticipated work next quarter:**

- Refinement of protocol for presentation and testing
- Scheduling open houses and training opportunities for the 2018 construction season
- Continue developing training materials and presentation thereof
- Establishment of a PEM information website through the CP Tech Center
- Outreach and assistance to SHA and industry
- Continued effort to expand participation in the study

**Significant Results:**

**Circumstances 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).**

**TAC members (conference call held December 21, 2017)**

Ahlstrom, Gina / Federal Highway Administration  
Baer, Patricia / Pennsylvania Department of Transportation  
Dennis, Dan / New York State Department of Transportation  
Hanson, Todd / Iowa Department of Transportation  
Hayes, Chad / Wisconsin Department of Transportation  
Hodges, Darin / South Dakota Department of Transportation  
Hoops, Clint / Idaho Department of Transportation  
Hunter, Brian / North Carolina Department of Transportation  
Krstulovich, James / Illinois Department of Transportation  
Meggers, Dave / Kansas Department of Transportation  
Miller, Dan / Ohio Department of Transportation  
Prieve, Eric / Colorado Department of Transportation  
Staton, John / Michigan Department of Transportation