

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(183)	Transportation Pooled Fund Program - Report Period: Quarter 1 (January 1 – March 31, 2013) Quarter 2 (April 1 – June 30) X Quarter 3 (July 1 – September 30) Quarter 4 (October 4 – December 31)	
Project Title: Improving the Foundation Layers for Concrete Pavement		
Project Manager: Linda Narigon	Phone: 239-1471	E-mail: linda.narigon@dot.iowa.gov
Project Investigator: David White	Phone: 294-1463	E-mail: djwhite@iastate.edu
Lead Agency Project ID: RT 0314	Other Project ID (i.e., contract #): Addendum 352	Project Start Date: 3/16/09
Original Project End Date: 3/15/14	Current Project End Date: 3/15/2014	Number of Extensions:

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
\$700,000	\$465,918.55	92

Quarterly Project Statistics:

Total Project Expenses This Quarter	Total Amount of Funds Expended This Quarter	Percentage of Work Completed This Quarter
\$47,708.20		2

Project Description:

The objective of this research is to improve the construction methods, economic analysis and selection of materials, in-situ testing and evaluation, and development of performance-related specifications for the pavement foundation layers. The outcome of this study will be conclusive findings that make pavement foundations more durable, uniform, constructible, and economical. Although the focus of this research will be PCC concrete pavement foundations, the results will likely have applicability to ACC pavement foundations and, potentially, unpaved roads. All aspects of the foundation layers will be investigated including thickness, material properties, permeability, modulus/stiffness, strength, volumetric stability and durability. Forensic and in-situ testing plans will be conceived to incorporate measurements using existing and emerging technologies (e.g. intelligent compaction) to evaluate performance related parameters as opposed to just index or indirectly related parameter values. Field investigations will be conducted in each participating state. The results of the study will be compatible with each state's pavement design methodology and capable for use with the Mechanistic-Empirical Pavement Design Guide (MEPDG). Evaluating pavement foundation design input parameters at each site will provide a link between what is actually constructed and what is assumed during design. There are many inputs to the pavement design related to foundation layers and this project will provide improved guidelines for each of these. The study will benefit greatly from maximizing the wide range of field conditions possible within the framework of a pooled fund study.

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

The main research activities during this quarter involved the following [related research task number is in the parenthesis].

- Conducting laboratory testing (frost-heave/thaw-weakening) [Sub Task 1.5],
- Conducting in-situ test data analysis on field projects and developing field project reports [Sub Tasks 1.5, 1.7, 3.1, 3.2, 3.4,]
- Obtaining temperature sensor array data on Iowa Hwy 30 project and conducting in-situ testing [Sub Task 3.1].

Laboratory frost-heave and thaw-weakening testing:

This work extends the work that was previously done, focusing on stabilized materials, and a MS student

Instrumentation on US Highway 30, Iowa:

A summary of instrumentation installed on the US30 project is provided in the last QPRs. Temperature data is being continuously collected and periodically downloaded since fall 2011. The data is being analyzed and incorporated into the US30 project report.

A summary of reports and products being developed as part of the project was summarized in the last quarter. New data and analysis results for these reports with regard to laboratory measurements were developed during this quarter.

Anticipated work next quarter:

- Continue updating data analysis for the field projects and update field project reports.
- Continue developing content for the "Manual of Practice" reflecting changes discussed by the project team at the January team meeting at TRB.
- Begin planning for TAC meeting in early 2014 to review final project reports and provide update on manual.

Significant Results:

No significant results to report during this quarter

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).

There is money in the pooled fund that has not been contracted. At the time of the original budgeting, that funding was already considered part of the project scope, however, since some states had not formally committed their money, it was not in the original contract budget. A budget for the remaining funding will be developed during the next quarter in order to complete the original scope.

The researchers are formulating a plan for the completion of the manual, and looking at how the IMCP manual was completed and printed as a guide to the necessary funding for the Foundation’s manual. This next quarter this plan will be finalized and a meeting will be held with the TAC, including Iowa DOT monitors, to discuss this plan.

TAC committee:

Pooled Fund Members		
Mehdi	Parvini*	California DOT
Mark	Dunn	Iowa DOT
Todd	Hanson	Iowa DOT
Linda	Narigon	Iowa DOT
Steve	Megivern*	Iowa DOT
Kevin	Merryman	Iowa DOT
Mark	Grazioli*	Michigan DOT
John	Staton	Michigan DOT
Josh	Freeman	Pennsylvania DOT
Lydia	Peddicord*	Pennsylvania DOT
Jeff	Horsfall*	Wisconsin DOT
Lisa	Rold	FHWA
Gina	Ahlstrom	FHWA
*Primary state contact		
Research Team		
Tom	Cackler	CP Tech Center/ISU
Barry	Christopher	Geotech Engr Consultant
Andrew	Dawson	Univ of Nottingham
Jeff	Roesler	Univ of Illinois U-C
Pavana	Vennapusa	CEER/ISU
David	White	CEER/ISU