

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 (224)		Transportation Pooled Fund Program - Report Period: <input type="checkbox"/> Quarter 1 (January 1 – March 31) <input type="checkbox"/> Quarter 2 (April 1 – June 30) <input type="checkbox"/> Quarter 3 (July 1 – September 30) <input checked="" type="checkbox"/> Quarter 4 (October 4 – December 31), 2011	
Project Title: Investigation of Deterioration of Joints in Concrete Pavements			
Project Manager: Peter Taylor		Phone: 294-9333	E-mail: ptaylor@iastate.edu
Project Investigator: Peter Taylor		Phone: 294-9333	E-mail: ptaylor@iastate.edu
Lead Agency Project ID: RF 0323	Other Project ID (i.e., contract #): Addendum 361	Project Start Date: 11/01/09	
Original Project End Date: 6/30/12	Current Project End Date: 6/30/13	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
380,000	\$100,162.52	50%

Quarterly Project Statistics:

Total Project Expenses This Quarter	Total Amount of Funds Expended This Quarter	Percentage of Work Completed This Quarter
\$48,180		5%

Project Description:

The objective of this project is to identify the failure mechanisms behind early deterioration occurring in the joints of concrete pavements in various northern states, and to develop strategies to prevent the deterioration of new pavements in the future. Tied to this understanding will be the ability to provide effective guidance on what to do about repairing and/or slowing the distress in existing pavements.

Premature deterioration of concrete at the joints in concrete pavements and parking lots has been reported across the northern states. The distress is first observed as shadowing when microcracking near the joints traps water, later exhibiting as significant loss of material. Not all roadways are distressed, but the problem is common enough to cause some local authorities to reconsider the use of concrete in their pavements. Some meetings have been held at which stakeholders have discussed their observations, but to date there is no consensus on what the underlying causes of the distress are, or how to address them. A number of potential causes have been suggested, however it is not clear whether any or all of them is predominant or even applicable.

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

- No technical issues have been encountered.
- We have experienced some difficulties with our grinder however a new grinder has been ordered and has arrived.
- A paper was developed and submitted for presentation at TRB annual meeting. The paper outlines recent findings that highlight the performance associated with using SME-PS blends. A copy of the paper is attached. The previous papers developed have been submitted to ISU. This will be presented during the coming meeting.
- During this fall field trials were performed in conjunction with the INDOT on a section of US 231 in Dayton IN on an existing pavement and in Fishers IN on new construction.
 - Dayton IN - Work included training maintenance personnel on how to remove the existing joint material, to prepare the joint and to place SME-PS as shown in the image to the right. To provide controls for the test section a portion was left untreated and a portion was left with the existing joint material.
 - Fishers IN – Work included working with construction crews to place SME on new joint construction. This represents a longitudinal joint will be treated with SME-PS on a new construction project. This will be located just north of Indianapolis on a section of pavement was placed in October/November. The local town has received approval from INDOT for this test section. Samples will be prepared for lab tests that accompany the field application.

Anticipated work next quarter:

- A curb and gutter test is also being examined for a location near Fort Wayne and an application in MI is being investigated.
- Interactions between the SME-PS and asphalt, paint and joint materials are currently being tested.
- Work continues on identifying other sealers as well as developing fundamental scientific understanding and fundamental testing principles.

Significant Results:

TRB paper is attached as PDF

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).