



# **Progress Report 2005-1 (January-March)**

*Jim Grove, Center for PCC Pavement Technology*

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## **TPF-5(066) Material and Construction Optimization for Prevention of Premature Pavement Distress in PCC Pavements**

Purpose of Project: To develop optimal mix design and test methods for monitoring Key performance parameters and conduct demonstration tests in participating states.  
<http://www.ctre.iastate.edu/pccpoolfund/>

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- Project is on schedule Yes
- Project is within budget Yes
- Significant changes in project description No

### **Products and tangible results this quarter (reports/articles written, oral reports/interviews given):**

- Jim Grove made a presentation to Committee AFH50 at the 84th Annual TRB meeting in Washington DC on the status of the research.
- Bob Steffes made a presentation and the lab was displayed in Lincoln, Nebraska at the NCPA 26<sup>th</sup> Annual Concrete Paving Workshop on January 18.
- Jim Grove made a presentation at the Iowa Department of Transportation RCE Conference in Ames, Iowa on the status of the research on January 18.
- Tom Cackler made a presentation and the lab was displayed at the Iowa Concrete Paving Association Workshop in Des Moines, Iowa on February 3-4.
- Jim Grove made a presentation and the lab was displayed at the Missouri/Kansas Chapter ACPA 25<sup>th</sup> Annual Portland Cement Concrete Paving Conference in Kansas City, Missouri on the status of the research on March 1-2.
- Jim Grove made a presentation and the lab was displayed at the ASCE Student Chapter Midwest Regional Conference held in Ames, Iowa on March 4.
- Jim Grove and Mark Anderson-Wilk authored an article entitled "Concrete Testing: New Test Method One of Many Which Should Help Contractors Monitor Pavement," for the March 2005 issue of *Roads and Bridges*.

### **Interaction with Technical Monitor and/or Project Advisory Committee:**

- A regular monthly teleconference with the executive committee was held on February 9 and March 9.
- Minutes from the monthly teleconferences are available on the web page.

### **Brief summary of this quarter's research:**

- A conference call for the IMCP manual was held on January 5.
- A meeting was held regarding the IMCP manual with CTL on January 24<sup>th</sup> in Chicago.
- The data from the five field demo projects in 2004 is being compiled and summarized.
- Control charts for use during the 2005 demo projects are being developed.
- Summary sheets and data of the 2004 demo projects were prepared for the April TAC meeting.
- Concrete mixes were prepared for the lab portion of the state demos for three states.
- XRF, XRD, and DSC testing continued on samples from the 2004 demo projects.
- Harden air analysis was begun for samples taken from three of the state demo projects.

	Task Description	Expected completion	% of task completed
1	Data Collection <ul style="list-style-type: none"> <li>• Survey of past projects which experienced problems</li> <li>• Compile local state testing practice</li> <li>• Gather research information</li> </ul>	June 05	90%
2	Test Development <ul style="list-style-type: none"> <li>• Develop suite of test to measure concrete properties</li> <li>• Define test procedures</li> </ul>	2006	85%
3	Demonstration Projects <ul style="list-style-type: none"> <li>• Demonstrate test procedures on participating state projects</li> <li>• Development of protocol for sampling and testing</li> <li>• Field verification of laboratory testing and solutions</li> </ul>	2006	35%
4	Technology Transfer <ul style="list-style-type: none"> <li>• Develop initial standards/guidelines (“Best Practices”) for testing</li> <li>• Demonstrate tests and procedures</li> <li>• Conduct technology transfer</li> </ul>	2007	40%