

**Quarterly Progress Report –
For the period April 1, 2010 to June 30, 2010
TPF-5(098)**

Project Dates: December 7, 2006 – December 6, 2010
Project Title: Self-Consolidating Concrete-Applications for Slip-Form Paving, Phase 2
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Progress Report:

Project is on schedule On schedule (with changes in scope)
 Project is within budget Yes
 Significant changes in project description Yes (Please see the March 2009 report)

Problems (current or anticipated):

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

Interaction with Technical Monitor and/or Project Advisory Committee (brief recount of meetings):
 An ISU and NU team meeting was held on March 30, 2010.

Brief summary of this quarter’s research:

1. Continued monitoring performance of the field trial pavements on South 4th street and North Riverside drive. The SF SCC bike path on the South 4th Street keeps performing well, with no additional scaling and other deterioration. The pavement on the North Riverside Drive displayed additional cracks in the sections with high w/b, but the section with the original SFSCC mix (low w/b) remains in good condition.
2. Summarized the SF SCC shrinkage test results, which indicate that SFSCC exhibits a higher potential for shrinkage induced cracking than conventional pavement concrete.
3. Conducted an analysis on the cost and carbon footprint of SFSCC. It was found that the cost of SFSCC is comparable to conventional pavement concrete due to the exclusion of formwork, vibration and reduction in labor cost. Although having a high cementitious content, SF SCC has a similar carbon footprint to that of conventional pavement concrete due to the beneficial use of fly ash and eliminating vibration in construction.
4. Drafted the final project report.

Main emphasis for next quarter:

1. Continue monitoring the performance of the SCC pavements.
2. Finalize the project report.

Task #	Phase II Task Description	Completion date planned	% of task completed
1	Mix Design Refinement and Field Trial Testing		
1.1	<i>Further Study SF SCC Materials and Mix Proportions</i>	December 2007	90
1.2	<i>Conduct Quality Control Tests for Selected SF SCC Mixtures</i>	December 2007	90
1.3	<i>Investigate Engineering Properties and Durability of SF SCC Candidates</i>	December 2007	90
1.4	<i>Conduct Field Paving Trial Tests (combined with field applications)</i>	August 2008	90
1.5	<i>Develop SF SCC Mix Design Methodology and Acceptance Criteria</i>	August 2008	95
1.6	<i>Further Study the “Green” Strength, Shape-holding Ability, and Compactibility of SF SCC</i>	December 2008	95
1.7	<i>Test Data Analyses/Task 1 Report (combined with the final report)</i>	December 2008	-

2	Field Investigation of SF SCC Paving		
2.1	<i>Select/Modify Paving Equipment (stopped due to the scope change)</i>	August 2008	-
2.2	<i>Determine Construction Times and Locations (will determine if an additional field application is necessary, see note 3/31/2010 project meeting)</i>	August 2008	80
2.3	<i>Perform Field Tests to Characterize SF SCC Performance</i>	August 2008	80
2.4	<i>Analyze Field Test Data/Establish Primary Guidelines for SF SCC Pav</i>	December 2008	70
2.5	<i>Prepare Task 2 Report (combined with the final report)</i>	December 2008	-
3	Performance Monitoring and Technology Transfer		
3.1	<i>Field Performance Monitoring of SF SCC Pavement</i>	September 2010	80
3.2	<i>Technology Transfer (not performed due to the scope change)</i>	December 2010	-
3.3	Prepare Final Report for Entire Project	December 2010	50

* Significant changes have been made in project description:

- (1) We are combining the field trial (Task 1) with field applications (Task 2).
- (2) Considering the cost of the concrete materials, we are trying to reduce the cement content in the new SCC, therefore, the activities in task 1 are extended.
- (3) As stated in this quarterly report, we plan to perform more study on shrinkage behavior of SF SCC in 2009, and may conduct another field application in 2010.