

Period Covered: January 1 through March 31, 2003 (Quarterly Report)

KSDOT Progress Report  
for the

## State Planning and Research Program

PROJECT TITLE: Construction of Crack-Free Concrete Bridge Decks		
PROJECT MANAGER: Richard L. McReynolds, P.E.	Project No: TPF-5(051)	Project is: <input type="checkbox"/> PLANNING <input checked="" type="checkbox"/> RESEARCH & DEVELOPMENT
<b>Annual Budget</b>	<b>Multi Year Project Budget</b> \$950,000	
<p>Progress: The preparation of a summary of data from the states on bridge deck specifications, plans, and mix design information continues. Full information has now been received from the following states: KS, MO, NH, MI, ND, WY, SD, MT, TX, MS, and DE. Information regarding typical mix designs has not been received from ID. Typical bridge deck plans and mix design information has not yet been received from OK.</p> <p>The first meeting of the participating states is scheduled for April 21, 2003 in Kansas City, Missouri. The meeting will be held at the Kansas City Airport Hilton from 9:30 a.m. – 3:30 p.m. At this time, the following states have indicated that a representative will attend the meeting: DE, KS, MO, MN, MT, NH, ND, and TX. States can still indicate that they will attend the meeting by email (jpbrown@ku.edu).</p> <p>Meetings with materials specialists, contractors, and designers are being held to help identify practical and effective solutions to reducing cracking in concrete bridge decks. Meetings with KDOT engineers and bridge engineers from Finney and Turnipseed were held on Thursday, March 20. Future meetings with contractors and designers are planned for the month of April.</p> <p>Work has begun on prototype mix designs for concretes with low cracking potential. Trial batches have been made with optimized aggregate gradations using the Shilstone method. Additional batches are being prepared using admixtures and coarse ground cement.</p> <p>A review of documented shrinkage tests has been completed. A ring-type test was selected to evaluate the shrinkage properties of the trial batches. The test apparatus and specimen molds are being constructed.</p> <p>Project Personnel: David Darwin (Principal Investigator), JoAnn Browning (Co-Principal Investigator)</p> <p><b>SUMMARY OF ACTIVITIES EXPECTED TO BE PERFORMED NEXT QUARTER:</b></p> <p>The first meeting of participating states will be hosted in Kansas City, Missouri on April 21. An agenda for the meeting will be sent to all state representatives by April 7.</p> <p>Meetings will continue to be held with contractors and designers to obtain input on the design, construction, and materials aspects of the project. Results of these meetings will be incorporated into a presentation to participating state representatives on April 21.</p> <p>Work will continue with the optimization of mix designs. Optimized mixes with adequate workability and finishability properties will be identified and compared based on the shrinkage, permeability, and freeze-thaw durability.</p> <p>Trial “best-practices” specifications will be outlined following the meeting on April 21. The specifications will be based on a consensus of opinion gathered from meetings with contractors, designers, and the participating state representatives.</p> <p>Work will begin to identify new bridge construction projects (in Kansas and in other states) that are eligible for implementing the identified “best practices” starting the second year of the project. A total of 20 bridges will be constructed over the course of the project using the new recommendations.</p>		

**STATUS AND COMPLETION DATE**

Percentage of work completed to date for total project

Project is: 07

  X   on schedule        behind schedule, explain:

Expected Completion Date:        March 31, 2008