



To: Tommy Nantung, INDOT
From: Jan Olek, Director, North Central Superpave Center
Date: November 16, 2007
Subject: Status Report July 1 – Sept 30, 2006

Background

The North Central Superpave Center began on July 1, 1995, as one of five regional centers established to assist the states/provinces and industry with the implementation of the Superpave Mix Design system for hot mix asphalt. The role of the NCSC has evolved to include all general hot mix asphalt issues, as states in the region have adopted Superpave. The Center is administered through the Joint Transportation Research Program at Purdue University.

Work Performed July – September 2006

Training: This quarter a representative from the NCSC travelled to Missouri to conduct on-site training for sixteen DOT employees. Because of declining enrollments, no routine training is planned for the winter although the Center will continue to offer training for participating states as needed.

The NCSC did participate in a review of the new Asphalt Institute Binder Testing Manual, providing both a detailed review/edit as well as participating in a review pilot program in Lexington.

Communication: The latest issues of the newsletters can be found at <http://bridge.ecn.purdue.edu/~spave/Newsletters/Newletters.htm>.

The new National Newsletter contract was established with the Southeast Superpave Center this quarter. A conference call was held with the SESC in September to begin planning the next issue of the newsletter. The communications specialist resigned this quarter, which may hamper progress in this area.

Migrating the NCSC website to the engineering web cluster, which is a large server housed within the Engineering Computer Network (ECN), is still being considered. This will be pursued when the position is filled as marketing plans progress. A conference call to discuss the draft marketing plan was held in September with the Marketing subcommittee. Revisions to the plan are underway by the FHWA marketing strategist.

Third Party Lab: The NCSC performed DFT/CTM testing in Minnesota for a sealer-binder study (pavement preservation). Permeability testing on cores from the Minnesota test also began.

Research

The JTRP study *Continued Monitoring of Indiana's SPS9A Site* is continuing. Preliminary field survey data has been received and is being analyzed.

The study *Performance Certification of Indiana Superpave Hot Asphalt Mixes* is funded by JTRP and is being conducted in cooperation with the Indiana Department of Transportation, Division of Research. All testing has been completed except for Purwheel testing, which could not be done due to continued trouble with the Purwheel test machine. Repair of the device is underway and it is hoped that testing can be completed next quarter. The SAC approved a request for extension this quarter, which was forwarded to JTRP.

Identification of Laboratory Techniques to Optimize Superpave HMA Surface Friction Characteristics, is funded by INDOT and the Iowa Department of Transportation through JTRP. Partial funding was also provided by the Institute for Safe, Quiet and Durable Highways (SQDH). Aggregate blending and sample preparation has been completed. Needed modifications to the slab polisher were completed by the Central Machine Shop in September. Field friction/texture testing was conducted in Iowa this quarter. A no-cost extension was requested this quarter since the NCSC had to take on work planned for Iowa State University after the professor who was working with us left the university.

Follow-up monitoring of *Long Term Performance of a Porous Friction Course* is on-going. Next quarter additional noise and friction testing will be conducted.

Work continued on the study *Determining the Binder Content of Hot Mix Asphalt Containing Dolomitic Aggregates Using the Ignition Oven*. Testing is nearly complete. Limited validation work on the proposed modified test method using plant-produced material is underway this quarter, but has been somewhat delayed by rainy weather; some contractors who were producing dolomite mixes we could sample and test have been rained out. A six-month extension was approved this quarter. Papers based on this project were written and submitted to AAPT and TRB this quarter.

A comparison of candidate simple performance tests to shear tests, funded by FHWA, continues. Creep testing on same mix samples at effective temperature was initially delayed due to equipment scheduling conflicts, but dynamic modulus testing was completed this quarter. A former graduate student returned to campus this quarter to provide training on the equipment to Ayesha Shah prior to testing.

A new project, *Investigating the Feasibility of Integrating Pavement Friction and Texture Depth Data in Modeling for INDOT PMS*, began in the first quarter of 2005. Periodic friction and surface texture measurements are being conducted on the INDOT Research Test Road to allow comparison of the friction values obtained with the portable Dynamic Friction Tester and Circular Texture Meter to the towed friction trailer. A survey requesting information on friction monitoring in PM systems around the country was distributed to the AASHTO RAC this quarter. Results are being collected and analyzed.

The NCSC will work with Heritage Research Group to perform a quick study of plant-produced mixtures containing various amounts of RAP. Six mixes with various amounts of RAP produced at one HMA plant were sampled and tested. DSR frequency sweep testing of the recovered binders and dynamic modulus and indirect tensile testing of the mixes was conducted. A draft report is being prepared. An article for NAPA was written about the study; it will be published in HMAT magazine. The study is funded by FHWA.

The Technical Director has taken over a project for Dr. Terhi Pellinen, who has left Purdue. This study, *Validation of NCAT Structural Test Track Experiment using INDOT APT Facility*, will require a post doc or graduate student to help analyze the large amount of data collected in the APT and will need a no-cost extension. The extension will be requested next quarter when the possible start date of a post doc is known.

Interaction with other Centers and Organizations: The Superpave Centers cooperate with each other routinely. The North Central Superpave Center serves as the publisher/editor for the regional Superpave Center newsletters. Two centers are currently participating in the centralized Newsletter publication.

The NCSC has always worked closely with the North Central Asphalt User Producer Group (NCAUPG), serving as secretary and coordinator of the annual meeting since 2002. The next meeting of the NCAUPG will be held January 10-11, 2007, in Minneapolis at the Hilton Minneapolis St. Paul Airport Mall of America.

The NCSC also collaborates with other organizations in the field. The Technical Director attended the FHWA Binder and Mixture/Aggregate ETG meetings this quarter. She also participated in a meeting of the International Center for Aggregates Research (ICAR) Technical Advisory Committee as a Midwest representative this quarter.

SAC Meeting: The next annual NCSC Steering Committee meeting will be held on January 9, 2007, prior to the North Central Hot Mix Asphalt Technical Conference in Minneapolis, Minnesota.

Work Next Quarter: The NCSC draft marketing plan will be available and an NCSC Market Subcommittee conference call will take place to determine the next steps to take. Work will begin on redesigning the NCSC web in accordance with the NCSC Marketing Plan. Writing and editing of the next issue of the newsletter will begin. The searchable database will continue to be updated. Research will continue as planned.

Financial Information

North Central Superpave Center Base Funding Expenditures TPF-5 (021)					
July 1, 2006 - June 30, 2007 (Base Five-Year Two)					
States	Quarter One July - Sept 06	Quarter Two Oct - Dec 06	Quarter Three Jan - Mar 07	Quarter Four Apr - June 07	Total per State
Illinois	\$6,250				\$6,250
Indiana	\$6,250				\$6,250
Iowa	\$6,250				\$6,250
Kansas	\$6,250				\$6,250
Michigan	\$6,250				\$6,250
Minnesota	\$6,250				\$6,250
Missouri	\$6,250				\$6,250
Wisconsin	\$6,250				\$6,250
Quarterly Total	\$50,000				
Cumulative Grand Total					\$50,000