



To: Tommy Nantung, INDOT
From: Jan Olek, Director, North Central Superpave Center
Date: November 20, 2007
Subject: Status Report July 1 – September 30, 2007

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 April – June 2007

Training: No training was planned this quarter.

A new graduate student joined the NCSC staff this quarter. Wubeshet Waldemariam will be working on the Quiet Pavements study. He received preliminary lab and field safety training this quarter.

In addition, in September, Mark Baker, the Civil Engineering lab manager, began working for the Superpave Center one day a week. Baker will take the lead in pursuing AMRL certification of the lab and will assist with testing and data analysis for various research projects. He will also assist with supervision of students working in the lab. Baker has experience and has been fully trained at Purdue, but also received specific INDOT training to work in the NCSC labs.

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

The NCSC website redesign continued this quarter. The effort is being conducted by a student with input from the senior staff. The student is also collaborating on the design with JTRP staff. Launching of the new site is planned for next quarter.

The NCSC arranged and led a conference call with the NCAUPG Planning Committee to begin making plans for the January 2008 meeting. A draft outline of the agenda was prepared and assignments were made to confirm speakers. A hotel was chosen in Springfield, IL, and negotiations were initiated. This year, the NCAUPG conference will be combined with an annual Illinois Bituminous Paving Conference, which should boost attendance and give the Illinois folks a chance to participate in the regional group.

Third Party Lab: The NCSC was contacted this quarter to participate in a validation study of the ABCD device for assessing binder low temperature cracking. Funding is being sought from Highways for Life by the device developer Sang-Soo Kim. Binder testing on RAP samples from Vermont for a New York-based contractor was completed.

Samples were compacted, cored, sawn, bulked and tested for a dynamic modulus round robin study being organized by Rutgers University.

Samples of 29 binder received from the Illinois DOT were tested in frequency sweep on original and RTFO-aged binders.

The NCSC assisted with field noise testing of an INDOT project in Evansville.

AMRL proficiency testing of mix samples was completed at Purdue and the NCSC. This is one part of the work to secure accreditation of the lab.

Research

The NCSC was asked to join a team from Mississippi State University to bid on an NCHRP project on high RAP content mixes. The NCSC participated in the proposal development.

The NCSC also worked this quarter on a work plan for FHWA also dealing with high RAP content mixes. NCAT asked the NCSC to participate in this work that will be coordinated with the NCHRP study.

The JTRP study *Continued Monitoring of Indiana's SPS9A Site* is continuing. A paper based on the results to date was submitted to TRB this quarter.

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. Testing is completed, but report is past due; there has not been sufficient time or staffing to analyze the massive amount of data collected.

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). Testing was completed and the final report preparation is underway.

Follow-up monitoring of *Long Term Performance of a Porous Friction Course* was conducted in July and will be repeated next quarter.

Work continued on the study *Determining the Binder Content of Hot Mix Asphalt Containing Dolomitic Aggregates Using the Ignition Oven*. The draft final report was prepared and is being reviewed internally.

Progress on the project *Investigating the Feasibility of Integrating Pavement Friction and Texture Depth Data in Modeling for INDOT PMS* was slow again this quarter. Contact has finally been established with INDOT's consultant and arrangements are being made for the van to test the INDOT Test Road.

Several Indiana contractors produced more RAP mixes with up to 40% RAP this quarter for the *RAP Plant Mix* study. Samples were collected and are arriving at the NCSC so that testing can begin this winter. This study is being conducted in cooperation with Heritage Research Group and is funded by FHWA.

Data analysis continues on the project *Validation of NCAT Structural Test Track Experiment using INDOT APT Facility*. The post-doc will visit the NCAT Track during the next NCAT sponsors meeting. During a SAC meeting on this project, it was discovered that INDOT was planning to instrument a section of US31 that is under reconstruction. A SAC member pointed out that this might be a good opportunity to relate the APT to the field by building a similar instrumented section in the APT. Because we have to meet the field construction schedule, intensive work began immediately to coordinate activities.

The NCSC is the PI on an NCHRP study documenting the history of the Superpave system. Work this quarter involved completing interviews with key researchers and implementors and the review of documentation of various aspects of the program. The research team met in Indianapolis this quarter to collaborate.

Funding was obtained and work began on the FHWA study on *Quiet Asphalt Pavements*. The NCSC will collaborate with the Institute for Safe, Quiet and Durable Highways on this project.

Interaction with other Centers and Organizations: The Superpave Centers cooperate with each other routinely; two remain active on a national level. The NCSC is also very active with numerous other organizations within and beyond the region in the areas of hot mix asphalt, binders, aggregates, noise and more.

This quarter the NCSC Technical Director attended the second meeting of the FHWA HMA Recycling ETG. She also participated in meetings of the International Center for Aggregates Research Technical Advisory Committee and Long Term Pavement Performance Special Activities Expert Task Group.

The professor from Taiwan, Shih-Huang Chen, completed his three-month visit with the NCSC this quarter.

SAC Meeting: The last NCSC Steering Committee meeting was held on January 9, 2007. The next meeting will be held in Springfield, IL, in January 2008.

Work Next Quarter: Work will continue on following up on the marketing plan, third party testing and continuing research as planned.

Financial Information

North Central Superpave Center Base Funding Expenditures TPF-5 (021) July 1, 2007 - June 30, 2008 (Base Five-Year Two)					
States	Quarter One July - Sept 07	Quarter Two Oct - Dec 07	Quarter Three Jan - Mar 08	Quarter Four Apr - June 08	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