



**To:** Tommy Nantung, INDOT, and Lee Gallivan, FHWA  
**From:** Jan Olek, Director, North Central Superpave Center  
**Date:** 3 October 2005  
**Subject:** Status Report April 1 – June 30, 2005

## 1. 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. Progress is reported in terms of major groups of activities of the NCSC, as established by the Steering Committee.

## 2. Work Performed April - June 2005

Training: Two NCSC engineers traveled early this quarter to the Jiangsu Transportation Research Institute in Jiangsu, China, to train approximately 50 engineers on Superpave Mix Design.

Communications: The latest issues of the newsletters can be found at <http://bridge.ecn.purdue.edu/~spave/newstoc.htm>. The Technical Director is planning to attend the Binder and Mixture ETG meeting next quarter to gather information for detailed articles for the next issue of the newsletter.

TRB and AAPT abstracts were added to the website and the Searchable Database this quarter. A student worked on updating old Searchable Database links this quarter and will continue next quarter. A re-design of the web site is currently in progress and should be completed next quarter.

Third Party Testing: None this quarter.

Research continues to be a major activity.

The JTRP study *Development of Indiana's SPS9A Site* has been completed. A detailed proposal for continued monitoring of the site has been requested by INDOT and will be presented next 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, Office 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. The Purwheel machine was moved to INDOT Research from Materials and Tests and installation is underway. Trial runs will take place early next quarter. Discussions are on-going regarding how to complete this project since the PI has left the INDOT Office of Research. A no-cost extension will be requested as soon as a reasonably accurate estimate of the time needed to complete the study can be made. This hinges on the time needed to complete the Purwheel testing.

One more aggregate has been identified and collected from Iowa DOT for the *Identification of Laboratory Techniques to Optimize Superpave HMA Surface Friction Characteristics*, 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 will commence next quarter. Data analysis comparing test results between our friction and texture testing equipment and NCAT's will be completed early next quarter. Testing will accelerate next quarter. A no-cost extension has been approved.

Follow-up monitoring of the porous friction course test site was approved by JTRP. Safety training was completed for those who will work in the right-of-way. The first round of noise and friction testing was completed this quarter. Quarterly testing is planned for the first year to determine if seasonal variations in noise or surface texture are significant factors to evaluate further.

Work continued on the study *Determining the Binder Content of Hot Mix Asphalt Containing Dolomitic Aggregates Using the Ignition Oven*. Testing is underway with dolomitic aggregate and different binder contents and gradations. Calibration tests with HMA samples are being run with the recently installed thermocouples to determine the temperature of the mix during various stages of ignition. A no-cost extension was approved due to delays associated with moving into the new laboratory space.

A comparison of candidate simple performance tests to shear tests, funded by FHWA, continues. Creep testing on same mix samples at effective temperature was delayed due to equipment scheduling conflicts. Testing will commence next quarter.

The final report was reviewed for the Purdue University project, *High Stiffness Hot Mix Asphalt*, and upon request from the SAC, additional binder testing is needed. Dr. Pellinen is the PI on this project. The PI has requested the NCSC perform additional binder testing, which will be completed next quarter.

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 and will run through mid 2007. Periodic friction and surface texture measurements will be 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. This comparison was initially delayed due to construction around the test road, but now that the test road is open, testing began this quarter.

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, the North Central Superpave Center and the Southeast Superpave Center, are currently participating in the centralized Newsletter publication.

The NCSC has always worked closely with the North Central Asphalt User Producer Group (NCAUPG), holding the annual NCSC Steering Committee meeting in conjunction with the NCAUPG Annual Meeting. The NCSC has assumed a larger role in the NCAUPG Management by handling arrangements for the annual meetings, organizing committee conference calls, being responsible for minutes of calls and meetings, and budgetary responsibilities, since 2002. An Executive Committee conference call was held this quarter to select a Planning Committee for the January 2006 Annual Meeting, which will be held in St. Louis, Missouri.

SAC Meeting: A mid-year Program Review will be held September 14-15, 2005, at the Embassy Suites in St. Louis, Missouri.

Problems and Comments: The NCSC offices were temporarily moved to another location within the INDOT building while remodeling of the Superpave Center offices takes place in the former NCSC office/lab space. This has caused some delays in work. The new offices should be available to move back into early next quarter.

Work Next Quarter: A new contract will be prepared for the Regional Newsletters for the North Central Superpave Center and the Southeast Superpave Center. This contract will continue the project from October 2005 through March 2007. The Northeast Superpave Center will be contacted to see if they would like to re-join the National Superpave Newsletter for their region. A conference call will be held next quarter to plan the next issue of the newsletter.

Research will continue as planned. The website re-design will be completed and the searchable database will continue to be updated. Work will continue on a Program Review scheduled for September 2005.

**Issues to be Resolved**

NCSC staff will relocate to their remodeled offices next quarter. An extension will be requested for the *Performance Certification of Indiana's Superpave Hot Asphalt Mixes*.

**Financial Information as of June 30, 2005.**

2005 North Central Superpave Center Base Funding Expenditures TPF-5 (021)					
July 1, 2004 - June 30, 2005 (Base Four-Year Two)					
States	Quarter One July - Sept 04	Quarter Two Oct - Dec 04	Quarter Three Jan - Mar 05	Quarter Four Apr - June 05	Total per State
Illinois	\$6,250	\$6,250	\$6,250	\$6,250	\$25,000
Indiana	\$6,250	\$6,250	\$6,250	\$6,250	\$25,000
Iowa	\$6,250	\$6,250	\$6,250	\$6,250	\$25,000
Kansas	\$6,250	\$6,250	\$6,250	\$6,250	\$25,000
Michigan	\$6,250	\$6,250	\$6,250	\$6,250	\$25,000
Minnesota	\$6,250	\$6,250	\$6,250	\$6,250	\$25,000
Missouri	\$6,250	\$6,250	\$6,250	\$6,250	\$25,000
Nebraska	\$6,250	\$6,250	\$6,250	\$6,250	\$25,000
Wisconsin	\$6,250	\$6,250	\$6,250	\$6,250	\$25,000
<b>Quarterly Total</b>	\$56,250	\$56,250	\$56,250	\$56,250	
<b>Cumulative Grand Total</b>					<b>\$225,000</b>