



To: Tommy Nantung, INDOT, and Lee Gallivan, FHWA
From: Jan Olek, Director, North Central Superpave Center
Date: April 26, 2006
Subject: Progress Report July 1 – Sept. 30, 2005

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 2005

Training: No training was performed July – September 2005.

Communication: The latest issues of the newsletters can be found at <http://bridge.ecn.purdue.edu/~spave/newstoc.htm>. A new National Newsletter contract for the period from November 2005 through April 2007, is being prepared for the North Central Superpave Center and the Southeast Superpave Center. A phase-out to electronic format to reduce costs for the Southeast region is being analyzed. The North Central regions' customers have indicated they would like to have the electronic version in addition to the hard copy. The Northeast Superpave Center has been contacted regarding publication of the National Superpave Newsletter for their region. Discussions will continue next quarter.

Routine updates were made to the NCSC website. Information is added and updated when new information is received. A re-design of the site is underway.

A student was hired this quarter to assist with updating Searchable Database links and information.

Third Party Testing: A coefficient of friction test was requested from a company in Michigan. Testing is underway.

Research continues to be a major activity.

The JTRP study *Continued Monitoring of Indiana's SPS9A Site* was proposed last quarter to INDOT for its research program. A detailed proposal was prepared and submitted to the JTRP board this quarter, at which time it was verbally approved.

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. An 18-month, no-cost extension was requested and approved this quarter because of the Purwheel testing difficulties and since the PI has left the

department. After installing the Purwheel equipment at Research, mechanical problems were identified that are being resolved. Testing is expected to begin next quarter.

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 is ongoing. A student began work this quarter sieving and batching aggregate. Data analysis is underway to compare test results between our friction and texture testing equipment and NCAT's. Next quarter NCSC staff will travel to Iowa to run field trials. A no-cost extension will be requested 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. 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. Limited testing has commenced with pyritic aggregate. Trial ignition tests with the glass cleaning oven are also being conducted.

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 SAC reviewed the final report for the Purdue University project, *High Stiffness Hot Mix Asphalt*, and they determined that additional binder testing was needed. The project PI, Dr. Terhi Pellinen, requested that the NCSC perform the additional testing, which was completed this 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. 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.

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 and a third is considering joining the effort. The Technical Director is working with the Southeastern Superpave Center on a friction and noise research project, as well as work comparing the NCAT Test Track to the Accelerated Pavement Testing Facility.

The NCSC has always worked closely with the North Central Asphalt User Producer Group (NCAUPG), currently serving as secretary and coordinator of the annual meeting. Preparations are currently underway for the next North Central Hot Mix Asphalt Technical Workshop and Conference, to be held January 10-12, 2006, at the Millennium Hotel in St. Louis, Missouri.

SAC Meeting:

A mid-year Program Review was held September 14-15, 2005, at the Embassy Suites in St. Louis, Missouri, to revise the NCSC's Vision and Mission, and to develop a plan for the next few years of the Center's operation. Program Minutes will be available early next quarter at the following website:

<http://bridge.ecn.purdue.edu/~spave/Steering%20Committee/Meeting%20Minutes%20NCSC.htm>

Problems and Comments:

The NCSC moved into their new remodeled offices in early September.

Work Next Quarter:

A new contract for the regional newsletters will be finalized. Research and testing will continue as planned. The website re-design will be ready for testing on-line and the searchable database will continue to be updated. Preparations will be made for the next NCSC Steering Committee Meeting, which will be held in conjunction with the NCAUPG Hot Mix Asphalt Conference in St. Louis, on January 10-12, 2006.

Financial Information as of September 30, 2005.

North Central Superpave Center Base Funding Expenditures TPF-5 (021)					
July 1, 2005 - June 30, 2006 (Base Five-Year One)					
States	Quarter One July - Sept 05	Quarter Two Oct - Dec 05	Quarter Three Jan - Mar 06	Quarter Four Apr - June 06	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	0	0	0	
Cumulative Grand Total					\$50,000