



## Memorandum

**To:** Lee Gallivan, FHWA  
Tommy Nantung, INDOT

**From:** Jan Olek, Director, North Central Superpave Center

**Date:** 03 October, 2005

**Subject:** Status Report Jan 1 - March 31, 2004

### 1. Background

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

### 2. Work Performed Jan - March 2004

The major tasks completed during this period include the following:

Training: The 2004 training season was completed this quarter. A Binder class, February 10-12, had ten registrants. The originally scheduled Mix Design Fundamentals class was cancelled, as there were no registrants. The Mix Design for Experienced Marshall Designers, scheduled for February 26-27, 2004, was also cancelled due to low registration. However, a new class on Mix Design was presented at the Ohio DOT to ten registrants.

Work is nearly complete on the NCSC's contract with the Minnesota DOT to create *Guidelines for Superpave Mix Design for Local Governments*, a training program for Minnesota local agencies. The guidelines and training package will be completed by early April.

Communication: The second issue of the newsletter's current contract period for the two participating Superpave Centers, NCSC and the SESC at Auburn, was to be published this quarter, however, the press of deadlines plus major rewrites of several of the articles pushed the completion date back. It will be published and mailed early in the next quarter. A proposal for the last two issues of this contract period was mailed to a third Superpave Center that is considering re-joining the national newsletter effort. The latest issues of the newsletters can be found at <http://ce.ecn.purdue.edu/~spave/newstoc.htm>.

Routine updates were made to the NCSC website and searchable database of Superpave information. The following training videos are on line and available to the public: *Bending Beam Rheometer (BBR)*, *Rotational Viscometer (RV)*, *Dynamic Shear Rheometer (DSR)* and *Direct Tension Testing (DTT)*. Permission was received this quarter from the National Academy of Sciences (NAS) to put the *Recommended Use of Reclaimed Asphalt Pavement in the Superpave Mix Design Method* video on the NCSC website. The NCSC produced the video for the NAS under subcontract to Fugro-BRE, a consulting firm marketing the results of NCHRP 9-12, which was completed by the NCSC and Asphalt Institute in 2000.

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Third Party Testing: The NCSC performed limited Tensile Strength Ratio testing for the Nebraska Department of Roads this quarter. NDOR is investigating the need for lime as an anti-strip additive. The NCSC also completed comparative E\* testing for the Iowa DOT and FHWA this quarter.

Research continued as planned as follows:

The JTRP study *Development of Indiana's SPS9A Site* has been completed. The final report will be submitted early in the next quarter. Continued monitoring of the SPS9A site has been proposed to INDOT for consideration in developing its research program for FY2005 and 2006. The project is tentatively programmed for FY2006; we will determine if any activities are essential in 2005 to ensure the needed data will be available and discuss the needs with INDOT Research.

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. Purwheel testing of the identified mixtures could not be started as planned due to trouble with the Purwheel test machine. It was expected that testing would be completed this quarter, however, the Purwheel continues to have problems and testing is delayed further. Sample fabrication is underway and will be completed early in the next quarter.

Work accelerated on an investigation of the frictional properties of Superpave HMA surfaces funded by INDOT and the Iowa Department of Transportation through JTRP. Partial funding is also being provided by the Institute for Safe, Quiet and Durable Highways (SQDH). A draft interim report was prepared and accepted by the SAC last quarter. A request for a no cost extension was also approved. The Purdue Central Machine Shop has built the polisher for accelerated polishing in the lab. Two pieces of equipment for the study were received from Japan this quarter. A graduate student has been selected to work on the project and will start work in August. Sampling and testing will begin as soon as the weather allows.

A *Field Evaluation of Porous Asphalt Pavement* is underway for SQDH and INDOT. The draft final report was completed except for the section on noise testing, which was reviewed by SQDH this quarter. Their section on noise testing and other comments will be incorporated in the report early next quarter to complete the project. Follow-up monitoring of the test site has been programmed by INDOT for funding in FY2005.

A comparison of candidate simple performance tests to shear tests, funded by FHWA, continues. Confined testing of SMA mixtures has been completed. More testing is planned for next quarter using the Universal Test Machine (UTM).

The NCSC is also conducting some testing for two Purdue University projects, *High Stiffness Hot Mix Asphalt* and *Evaluation of Surface (Top Down) Longitudinal Wheel Path Cracking in Indiana*. Dr. Pellinen is the PI on these projects. The NCSC has conducted frequency sweep testing, creep compliance and indirect tensile strength testing, binder extraction and recovery, DT testing, aggregate gradation, penetration, etc. All testing has been completed and the draft final report is underway for the Top Down project.

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 participating in the centralized Newsletter publication and a third center may come on board for the final issue

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of this contract period. The Technical Director is working with the Southeastern Superpave Center on a friction and noise research project.

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.

**SAC Meeting:**

The annual Steering Committee meeting was held in Omaha, Nebraska, on Wednesday, January 28, 2004, from 7 - 9:45 a.m. The next annual meeting will be held in conjunction with the North Central Asphalt User Producer Group (NCAUPG) meeting January 25-28, 2005, in West Lafayette, Indiana. It is possible that a mid-year conference call or video conference will take place next quarter.

**3. Work Expected in Next Reporting Period (April - June 2004)**

The next issue of the regional newsletters will be published early next quarter. Research will continue as planned. The searchable website will continue to be revamped and updated. The 2005 Base Funding commitment letter will be mailed to those states that commit funds one year at a time. The first NCAUPG Executive Committee conference call will take place in June.

**4. Issues to be Resolved**

None for this period.

**5. Financial Information**

States	Quarter One July - Sept 03	Quarter Two Oct - Dec 03	Quarter Three Jan - Mar 04	Total per State
Illinois	\$6,250	\$6,250	\$6,250	\$18,750
Indiana	\$6,250	\$6,250	\$6,250	\$18,750
Iowa	\$6,250	\$6,250	\$6,250	\$18,750
Kansas	\$6,250	\$6,250	\$6,250	\$18,750
Michigan	\$6,250	\$6,250	\$6,250	\$18,750
Minnesota	\$6,250	\$6,250	\$6,250	\$18,750
Missouri	\$6,250	\$6,250	\$6,250	\$18,750
Nebraska	\$6,250	\$6,250	\$6,250	\$18,750
Wisconsin	\$6,250	\$6,250	\$6,250	\$18,750
Total per Quarter	\$56,250	\$56,250	\$56,250	
Cumulative Grand Total				\$168,750