



Memorandum

To: Lee Gallivan, FHWA
Tommy Nantung, INDOT

From: Jan Olek, Director, North Central Superpave Center

Date: 03 October, 2005

Subject: Status Report April 1 - June 30, 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 Mix Design 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 in Reporting Period (April - June 2004)

Training: The 2004 training season was completed last quarter. Planning for the 2005 training season will commence next quarter.

Work was completed this quarter 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 were finalized and mailed mid-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 published and mailed early this quarter. The newsletters can be found at <http://ce.ecn.purdue.edu/~spave/newstoc.htm>.

Routine updates were made to the NCSC website. A major update of the searchable database of Superpave information began in June. 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)*. This quarter the informational video *Recommended Use of Reclaimed Asphalt Pavement in the Superpave Mix Design Method* was posted with the permission of the National Cooperative Highway Research Program. This video was produced by the NCSC and Fugro-BRE under contract to NCHRP to promote the findings of the NCHRP study of the same name.

Third Party Testing: The NCSC obtained samples this quarter from Bucko Construction to perform referee testing. The testing will be performed early in the next quarter. The NCSC also performed draindown testing of a mineral wool product in an industrial partnership with an Indiana company.

Research continues to be a major activity.

The JTRP study *Development of Indiana's SPS9A Site* has been completed. The final report was submitted this 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.

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 done due to trouble with the Purwheel test machine. A no-cost extension is being processed for the project. Sample fabrication was completed this quarter. A decision to use the Purwheel test machine at INDOT Materials and Tests was made since the machine at Purdue University continues to have trouble. Purwheel testing should be completed next quarter.

Work continued 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). Identification of aggregate sources for study is underway and sampling and testing will begin early next quarter.

A Field Evaluation of Porous Asphalt Pavement is underway for SQDH and INDOT. The final report was completed this quarter and has been posted on the SQDH website. Follow-up monitoring of the test site has been programmed by INDOT for funding in FY2005; a proposal for this research will be initiated late next quarter.

Work continued on the study *Determining the Binder Content of Hot Mix Asphalt Containing Dolomitic Aggregates Using the Ignition Oven*. A graduate student worked on a review of the literature including review of geotechnical and geological references regarding dolomites. That graduate student left Purdue at the end of the quarter, so work will continue next quarter with NCSC staff. Aggregates to use in the study have been identified and some possible approaches to dealing with dolomite in the ignition oven have been developed. Limited trial testing was completed this quarter as a precursor to the main study.

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). A paper for AAPT based on this work will be prepared and submitted by August 1.

The NCSC is also conducting some testing for a Purdue University project, *High Stiffness Hot Mix Asphalt*. Dr. Pellinen is the PI on this project. The NCSC is continuing to conduct frequency sweep testing on lab compacted samples for the study.

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 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. The first

NCAUPG Executive Committee conference call of the year took place June 2, 2004. A Planning Committee conference call is scheduled for early next quarter to begin discussing the agenda for the 2005 Annual Meeting.

SAC Meeting:

The next annual meeting will be held in conjunction with the North Central Asphalt User Producer Group (NCAUPG) meeting January 25-28, 2005, in Lafayette, Indiana. It is possible that a mid-year conference call or video conference will take place early next quarter.

3. Work Expected in Next Reporting Period (July - September 2004)

Planning for the third issue of the regional newsletters will begin late in the quarter with publication planned for December. Research will continue as planned. The searchable website will continue to be updated. A fourth biennial review has been started and should be finalized next quarter. A Planning Committee conference call is scheduled for early next quarter to begin discussing the agenda for the 2005 Annual Meeting.

4. Issues to be Resolved

The NCSC laboratory equipment was moved into new quarters in April. The new lab space is wonderful, but the disruption of moving did affect progress on some research projects. In conjunction with the move, the SST was recalibrated and needed maintenance was accomplished.

5. Financial Information

Below is an accounting of the funds expended as of the end of June.

2004 North Central Superpave Center Base Funding Expenditures TPF-5 (021)					
July 1, 2003 - June 30, 2004 (Base Four-Year One)					
States	Quarter One July - Sept 03	Quarter Two Oct - Dec 03	Quarter Three Jan - Mar 04	Quarter Four Apr - June 04	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
Total per Quarter	\$56,250	\$56,250	\$56,250	\$56,250	
Cumulative Grand Total					\$225,000