



**To:** Tommy Nantung, INDOT  
**From:** Jan Olek, Director, North Central Superpave Center  
**Date:** October 5, 2009  
**Subject:** Status Report –July - September 2009

### **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 2009**

#### Training:

The NCSC has been approached about the possibility of providing training for the Metropolitan Water Reclamation District of Greater Chicago. Further discussions will take place next quarter.

After getting a request for training from a researcher in Canada, the NCSC contacted the Steering Committee members to determine their training needs. No needs were identified or states indicated they would not be able to travel to take advantage of any training offered.

#### Communication:

The latest issues of the NCSC, the SESC and the National newsletters can be found at <http://bridge.ecn.purdue.edu/~spave/Newsletters/Newletters.htm>. An electronic version of the newsletter is now available to individuals through an ECN subscription service. A user can sign up and will automatically receive an electronic copy of the newsletter.

Routine updates were made to the NCSC website. Information is added and updated when received. Presentations, HMA “hot topics” and news articles, as well as HMA-related calendar events are frequently added to the website. The Searchable Database links were updated with new key words by our student, Yemi Tomori, and are always updated by NCSC staff as new information becomes available.

NCSC staff respond to approximately 25 calls and emails each quarter that include questions and requests for information from HMA professionals across the country.

The 2010 NCAUPG HMA Technical Conference is scheduled for February 2-4, 2010. Conference calls were held with the NCAUPG Steering Committee and with the NCAUPG 2010 Conference Planning committee to firm up the venue, program agenda, topics, speakers and the registration fee schedule. An announcement postcard was produced and sent to our mailing list of approximately 2000 HMA professionals. Registration is now open

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for attendees and exhibitors. Plans are underway for the conference program, speakers, lodging, meeting space, A/V, signage, catering and other details. Registrations are coming in and being processed as they are received.

### Third Party Lab and Testing Services:

AMRL site inspection of the NCSC lab was conducted in July in the areas of binder, HMA and aggregate tests. Deficiencies are currently being addressed and are expected to be resolved next quarter.

NCSC staff continued polishing/friction testing of a thermoplastic pavement marking for the product's manufacturer. The manufacturer has sent additional samples of various formulations for testing.

NCSC staff conducted Indirect Tension Testing on HMA samples containing RAP and shingles for MODOT. Analysis will be submitted next quarter.

NCSC staff provided RAP testing for a Vermont contractor.

### Research:

The NCSC staff is continuing to coordinate with the INDOT Office of Materials Management to obtain aggregates to test for the study on *Maximizing the Use of Local Materials in HMA*. Some of the needed aggregates have been obtained and others are being arranged.

The internal review of the revised draft report is pending on the study *Identification of Laboratory Techniques to Optimize Superpave HMA Surface Friction Characteristics*. The bulk of the revisions have been completed and only small portion remains to be revised. It is planned that this will be completed in early October.

NCSC staff identified field test sites for the study *Investigating the Feasibility of Integrating Pavement Friction and Texture Depth Data in Modeling for INDOT Pavement Management System*. Field friction and texture testing began this quarter and will be completed in early October. Some of the data generated will be used to refine the model and the remainder will be used to validate the model.

On the *History of Superpave* study, interviews, reviewing of documents and report writing are in progress. We are still working on the research chapter. The PI met with a key research author to accelerate progress. The draft report is expected to be ready next quarter.

The final implementation plan and form for the study *Validation of NCAT Structural Test Track Experiment using the INDOT Accelerated Pavement Testing (APT) Facility* was completed this quarter, bringing that phase of the work to an end. The project has expanded to include the analysis of low void mixtures on the NCAT Test Track. We are attempting to arrange to get retained samples from NCAT and are also planning to place low void mixes in the APT early next quarter. We are still awaiting a response from INDOT on our expansion request to cover and complete the US231 work.

The draft final report on the *Long Term Performance of a Porous Friction Course* project was completed and sent to the SAC for review this quarter. A SAC meeting will be held and the report will be revised according to the SAC comments next quarter.

Karol Kowalski conducted data analysis and began report preparation for the *Evaluation of Recycled Asphalt Pavement for Surface Mixtures* study. Additional slabs were prepared and are being polished. As soon as that

final data is available, the draft report will be finalized. The plan is to have the data analysis and report completed next quarter.

Regarding the *Continued Monitoring Indiana's SPS9-A Site* study, cores were obtained from the test sections towards the end of the quarter. Surface layers were separated from the intermediate layer. Binder extraction process has commenced on the surface layer samples. IDT testing of the surface layers will be conducted after the recurrent issues with IDT have been resolved.

DFT and CTM tests were conducted at different sites (PCC and HMA) in the 6 districts within Indiana as a part of the PMS project. Correlations will be drawn between parameters obtained from these tests and those obtained from friction trailer tests.

Work continued on obtaining materials for the Quiet Pavements study this quarter. The literature review was updated and revised. Mix design work began this quarter. Slabs were taken to Herrick labs for glancing incidence noise testing. A meeting has been scheduled with the acoustics team early next quarter. A request for extension will be prepared and submitted to the sponsor early next quarter.

On the *Determining the Binder Content of Hot Mix Asphalt Containing Dolomitic Aggregates Using the Ignition Oven* study, the report revision will be completed and the paper rewritten next quarter.

Our summer student employee summarized longitudinal joint specifications from the region and continued the literature review for the *Longitudinal Joint Specification and Performance* project.

Continuing IDT equipment problems hampered testing progress on the *Investigation of Low and High Temperature Properties of Plant-Produced RAP Mixtures, Phase II*, this quarter. Eventually, all the low temperature testing was completed with the exception of unconventional relaxation testing; this relaxation testing requires changes to the test protocol that we may be unable to complete with the current state of the equipment. Data analysis and preparation of the draft final report is underway.

#### Technology Transfer, Presentations and Interactions 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.

The NCSC has always worked closely with the North Central Asphalt User Producer Group (NCAUPG), serving as secretary and coordinator of the annual meeting since 2002. A conference call was held with the NCAUPG Management Committee to begin planning the next meeting and name a Planning Committee. The first Planning Committee conference call was held on July 29, 2009. At this meeting, the program topics and agenda were established, the venue was decided upon, conference announcement marketing was planned and sponsorship was discussed. Since this conference call, speakers have been identified, a conference announcement postcard has been sent, the NCAUPG website has been updated, and registration for the conference is open. Registrations for exhibitors/sponsors and attendees are coming in and being processed on a daily basis. Conference planning including setup of meeting rooms, A/V equipment needs, exhibitor booths, lodging and catering with the Sheraton Overland Park, Kansas, are ongoing.

The NCSC website, <https://engineering.purdue.edu/NCSC>, has a frequently updated library that includes technical presentations delivered by NCSC staff members at conferences and meetings throughout the country.

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The Technical Director gave a presentation on the Effect of RAP on Binder Grade at a workshop in Chicago sponsored by Roads and Bridges at the end of the quarter. Potentially beneficial contacts were made with various organizations and vendors at the workshop.

This quarter, the Technical Director served as a reviewer for a research program in Canada (at their expense). She also participated in meetings of an NCHRP panel on in-place recycling methods, the International Center for Aggregates Research Technical Advisory Committee, and the Long Term Pavement Performance Expert Task Group. In all these involvements, the Technical Director tries to represent the interests of the region and gather information to bring back to the region.

Presentations are scheduled for next quarter at the Missouri Asphalt Conference, the Kansas Asphalt Paving Conference and National Slag Association.

**SAC Meeting:** The last Steering Committee meeting was held in February 2009 in Madison. The next meeting will be held in February 2010 in Overland Park, KS, in conjunction with the North Central Hot Mix Asphalt Technical Conference.

**Work Next Quarter:** Work will continue on research, communication, training and testing as planned.

**Financial Information**

North Central Superpave Center Base Funding Expenditures TPF-5 (021)					
July 1, 2009 - June 30, 2010 (Base Six-Year One)					
States	Quarter One July - Sept 09	Quarter Two Oct - Dec 09	Quarter Three Jan - Mar 10	Quarter Four Apr - June 10	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					
Missouri	\$6,250				\$6,250
Wisconsin					
Quarterly Total					
Cumulative Grand Total					\$37,500