

Period Covered: April 1, 2011 Through June 30, 2011 (Quarterly Report)

## ALDOT Progress Report for the State Planning and Research Program

<b>PROJECT TITLE:</b> Superpave Regional Center, Southeastern Region		
<b>PROJECT MANAGER(S):</b> Don Watson and Randy West Ph #: (334) 844-7306	<b>SPR Project No:</b> TPF-5(228) ALDOT Research Project No. 930-763P	<b>Project is:</b> <input type="checkbox"/> PLANNING <input checked="" type="checkbox"/> RESEARCH & DEVELOPMENT
<b>Annual Budget</b>	<b>Multi Year Project</b> Total Budget for Project: \$627,129.00 Total Cost to Date for Project: \$77,235.73	
<b>OBJECTIVE:</b> <p>Several short-term and long-term objectives of the Southeastern Superpave Center are listed below. Several objectives deal with evaluating recently-developed performance test equipment and conducting research to address materials and tests issues. Some objectives of the Center are:</p> <ol style="list-style-type: none"><li>1. Conduct training in regard to Superpave binders, mix design, and performance testing, and provide training on special topics as requested by participating agencies.</li><li>2. Perform research, both cooperatively and agency-specific, sponsored by members of the pooled-fund.</li><li>3. Conduct noise studies in an effort to develop quieter pavements.</li></ol>		
<b>WORK PERFORMED THIS QUARTER:</b>		
<b>Training:</b> <p>A special workshop was held for both contractor and agency personnel to discuss Warm Mix Asphalt and Crumb Rubber Modified Asphalt in Puerto Rico. The workshop was conducted April 12-13, 2011. The two-day workshop included guest speakers and local contractors who presented information and case studies from other warm mix and crumb rubber projects throughout the U.S. The Superpave Center helped develop the program and provided support for speakers to attend and make presentations.</p>		

### **Investigation of Mixture Performance:**

Samples from a WMA field trial were compared to an HMA mix produced by the same contractor. Samples of asphalt binder before and after adding the WMA chemical additive were tested and it was found that the WMA additive did not affect the PG grade of the binder. Moisture susceptibility testing was conducted with both Hamburg (AASHTO T 324) and AASHTO T 283. It was found that the Hamburg method was more severe criteria for evaluating potential for moisture damage. The Hamburg data also indicated that both mixes may have susceptibility to rutting. Dynamic Modulus values showed similar stiffness for both WMA and HMA mixtures and the Flow Number test indicated that the WMA mix was more susceptible to rutting than the HMA mixture. This result followed the trend from other studies and is due to the WMA mixture being produced at a lower mixing temperature so the binder is not subjected to as much oxidative aging. Performance at the NCAT Test Track has shown that WMA mixtures are just as rut resistant as HMA mixtures.

In another study this quarter, the effect of applying a geogrid fabric to deter reflective cracking was investigated. It was found that in some cases the geogrid fabric was pulled from the existing surface during paver operation when placing the overlay and the fabric tended to wad up in front of the paver screed and resulted in additional roughness to the project. Bond strength testing at the layer interface indicated there was no increase in bond strength due to the addition of the geogrid.

### **Research Survey:**

A survey of research project ideas to be conducted through the Superpave Center was submitted to participating agencies. Responses indicated the greatest interest in the use of high RAP proportions, use of rejuvenators to restore binder properties in high RAP mixes, friction studies, PFC mix design procedures, and developing a climate database for future MEPDG input.

### **WORK PLANNED NEXT QUARTER:**

An agency binder technician certification course is planned for August. Work will be started on a friction study for one agency and for MEPDG climate data for another agency.

### **SIGNIFICANT RESULTS:**

A special workshop was held to educate contractor and agency personnel alike on the use of WMA and crumb rubber modified asphalt technologies.

**PROBLEMS ENCOUNTERED OR ANTICIPATED:**

No problems have been encountered to date.

**POTENTIAL IMPLEMENTATION:** Use of WMA and CRM technologies.

**COST ESTIMATE:** Total expenses: \$100,949 (16.2% of budget)

**TIME USED:** 58 %

**STATUS AND COMPLETION DATE**

Percentage of work completed to date for total project 12.3 %

Project is:  
X on schedule        behind schedule, explain:

Expected Completion Date: 9/30/12

Please note that this project has continued with renewed requests for services and additional funding obligations and may be extended beyond the current Expected Completion Date listed above.