**TRANSPORTATION POOLED FUND PROGRAM**

**QUARTERLY PROGRESS REPORT**

Lead Agency (FHWA or State DOT): Alabama DOT

**INSTRUCTIONS:**

*Project Managers and/or research project investigators should complete a quarterly progress report for each calendar quarter during which the projects are active. Please provide a project schedule status of the research activities tied to each task that is defined in the proposal; a percentage completion of each task; a concise discussion (2 or 3 sentences) of the current status, including accomplishments and problems encountered, if any. List all tasks, even if no work was done during this period.*

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| **Transportation Pooled Fund Program Project #**  *(i.e, SPR-2(XXX), SPR-3(XXX) or TPF-5(XXX)*  TPF-5(228) | | **Transportation Pooled Fund Program - Report Period:**  Quarter 1 (January 1 – March 31) 2016  **√** Quarter 2 (April 1 – June 30)  Quarter 3 (July 1 – September 30)  Quarter 4 (October 1 – December 31) | |
| **Project Title:**  Superpave Regional Center, Southeastern Region | | | |
| **Name of Project Manager(s):**  Don Watson and Randy West | **Phone Number:**  (334) 844-7306 | | **E-Mail**  watsode@auburn.edu |
| **Lead Agency Project ID:**  ALDOT Research Project No. 930-763P | **Other Project ID (i.e., contract #):**  224574 | | **Project Start Date:**  April 28, 2010 |
| **Original Project End Date:**  September 30, 2012 | **Current Project End Date:**  September 30, 2017 | | **Number of Extensions:**  3 |

Project schedule status:

On schedule √ On revised schedule Ahead of schedule Behind schedule

Overall Project Statistics:

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| **Total Project Budget** | **Total Cost to Date for Project** | **Percentage of Work**  **Completed to Date** |
| $1,550,353 | $1,150,414 | 74 |

*Quarterly* Project Statistics:

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| --- | --- | --- |
| **Total Project Expenses**  **and Percentage as of This Quarter** | **Total Amount of Funds**  **Expended This Quarter** | **Total Percentage of**  **Time Used to Date** |
| $1,150,414 (74% of budget) | $24373 | 75 |

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| **Project Description**:  The Southeastern Superpave Center has been supported by state agencies through a pooled-fund project that has been largely used to provide training, verify ruggedness of equipment, check equipment calibrations, provide materials research, and aid in keeping agency personnel abreast of changes in asphalt technology. In order to continue the efforts in training, technology transfer, and implementable research, it is essential that the pooled-fund effort be continued.  ***NOTE:*** *This pooled-fund project is not limited to states located in the southeast. Agencies throughout the country are invited to participate and take advantage of the research and training opportunities provided by the Southeastern Superpave Center.*  **OBJECTIVES**  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. Objectives of the Center are:   1. Conduct training in regard to Superpave binders, mix design, and performance testing. Provide training on special topics as requested by participating agencies at their on-site locations. 2. Perform research, both cooperatively and agency-specific, sponsored by members of the pooled-fund. 3. Perform precision and bias testing for asphalt-related performance test equipment. 4. Conduct noise studies in an effort to develop quieter pavements. 5. Perform forensic evaluations on materials or projects that have experienced premature distress. 6. Prepare research articles of regional and national interest. |

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| **Progress this Quarter (includes meetings, work plan status, contract status, significant progress, etc.):**  **ASPHALT REJUVENATORS**  ALDOT sponsored research to evaluate the effectiveness of various asphalt rejuvenators/sealers in extending the durability of binders for OGFC applications. Test results from two rejuvenators were compared to laboratory performance of a control mix. The work has been completed and a draft final report has been prepared.  **SMA FLAT AND ELONGATED AGGREGATE STUDY**  Work is well underway for the GDOT F & E study for SMA mixes. Mix designs have been prepared for 8 mixes including sources that do not provide stone within the current specification of a maximum of 20% F & E at a 3:1 ratio. Due to a shortage of fly ash, the research is also looking at the effect on performance when other mineral filler sources are used. It has been found that the 5:1 ratio is not very discriminating and that most materials can easily meet that requirement. A comparison of flat and elongated particles from one source found that only 6.2% failed the 5:1 ratio while 43.6% by mass failed the 3:1 ratio used for SMA stone.  Mix designs have been completed using the 50-blow Marshall method. However, samples have been prepared at optimum asphalt content and compacted with a gyratory compactor in order to identify the locking point of aggregate structure and determine the rate of densification. The aggregate structure for 5 of the 6 mixes began to lock up at an average of 67 gyrations. For the limited tests thus far, it appears the locking point and 96% Gmm occur at about the same level of gyration. The mix with the highest flat and elongated ratio reached a locking point at 54 gyrations, however, the mix never reached 96% of Gmm even up to 100 gyrations. This indicated that the mix may be unstable, so Marshall stability and flow tests were performed on the mix. At 7.5% Ac, the stability was 1358 lbs and the flow was 0.24 inches which also indicates the mix is very unstable and is highly rut susceptible.  **TECHNOLOGY TRANSFER/TECHNICAL MEETINGS**  Several agencies used funds this period to pay travel and registration expenses for employees to attend national meetings of technical interest such as the ASTM D04 Committee meeting and a pavement friction test section project in Tennessee.  **TESTING**  Samples were received for ignition oven testing.  **Anticipated work next quarter**:  The final report for the Alabama research on the effectiveness and performance of asphalt rejuvenators should be  complete.  The final report on the flat and elongated study for SMA should be completed. Comparisons will be made regarding rutting resistance of mixes with varying F & E values to determine whether the high quality aggregate requirements for  SMA are necessary, or whether standard Superpave criteria is sufficient. Two additional sources of mineral filler will be  evaluated to prepare for an industry shortage of fly ash.  A three-year evaluation of WMA test sections in Colorado is planned. |
| **Significant Results:** The 5:1 ratio typically used for classifying flat and elongated aggregate particles is not very  discriminating. This study has found that when aggregates were evaluated at the 3:1 ratio, the amount of F & E could  exceed 40% by mass. |
| **Circumstance affecting project or budget. (Please describe any challenges encountered or anticipated that**  **might affect the completion of the project within the time, scope and fiscal constraints set forth in the**  **agreement, along with recommended solutions to those problems).**  N/A |
| **Potential Implementation:**  Performance testing of asphalt rejuvenators will be used to improve specifications by evaluating  their effectiveness at extending the durability of asphalt binders.  Revising specifications for flat and elongated aggregate in SMA mixes could potentially save GDOT and other agencies a considerable amount of funding as specially crushed aggregate may not be needed for SMA. |