

***'Performance of Recycled Asphalt Shingles (RAS) in Hot Mix Asphalt'***  
**National Pooled Fund Study TPF-5(213)**

R. Christopher Williams

Iowa State University

July 26, 2011

During the seventh quarter, April 1, 2011 through June 30, 2011, the TPF-5(213) team achieved the following components on the project:

1. The research team provided guidance on the SMA mixes and quantities that the Illinois DOT will be providing for the study.
2. The Colorado DOT produced the field trial sections for a mix with and one without RAS. The research team was present during production and was assisted by CDOT in sampling the mixtures.
3. The research team completed the beam fatigue testing of mixtures from Iowa, Indiana, and Minnesota. One of the Missouri mixes containing rubber demonstrated a lot of variability in the beam fatigue testing and several slabs with cut beams have been produced and tested.
4. Analysis of dynamic modulus, flow number, beam fatigue and binder property test results were done for mixes tested as well as recovered binders that were tested.
5. The semi-circular bend testing was completed and a draft report on the results was provided to the TAC.
6. The research team completed the second condition survey's for the Indiana, Iowa and Missouri demonstration projects in April / May.
7. The research team in partnership with the Colorado DOT held the ***Colorado Reclaimed Asphalt Shingle Recycling Workshop*** at CDOT Headquarters on April 26th. The one-day workshop was well attended and addressed shingle recycling partner roles and responsibilities to achieving a quality RAS end product.
8. The CDOT demonstration project mix samples were collected and sent to ISU for testing. In addition, the condition survey sections were identified and marked for the RAS test section and the control RAP section.

Next steps for the study include:

- 1) Schedule and hold a TAC meeting as needed;
- 2) Hold a workshop with CalTrans;
- 3) Finalize 2011 demonstration projects with California and Wisconsin;

- 4) Complete a draft dynamic modulus and flow number report to share with the TAC;
- 5) Complete a draft binder characterization report on the recovered binders with the TAC;
- 6) Complete the second condition survey for the Minnesota project demonstration at MnROAD.
- 7) Continue mix and binder testing of materials received from Colorado as well as materials anticipated from Illinois; and
- 8) Send out TPF website link for state reviews and comments.

The above accomplishments and future plans will be discussed at the next TAC meeting.