

Period Covered: January 1, 2005 through March 31, 2005

KSDOT Progress Report
for the

State Planning and Research Program

PROJECT TITLE: Implementation Of The 2002 AASHTO Design Guide For Pavement Structures

<p>PROJECT MANAGER:</p> <p>Richard L. McReynolds, P.E., Admin. Contact Dr. Stefan Romanoschi, KSU, PI</p>	<p>Project No: TPF-5(079) RE-0361-01</p>	<p>Project is:</p> <p><input type="checkbox"/> PLANNING <input checked="" type="checkbox"/> RESEARCH & DEVELOPMENT</p>
<p>Annual Budget (active projects) FY 2003: \$151,971 FY 2005: \$59,996</p>	<p>Multi Year Project Budget \$ 221,967 (includes \$62,000 state funds)</p>	

Progress: The objective of this research is to develop the calibration procedure for the AASHTO 2002 design guide models for both flexible and rigid pavement structures for this region and to assist the state highway agencies in region in the implementation of the new Guide for pavement design and surface selection practices.

The research efforts to date were concentrated on the development of the library of material characterization data for typical pavement materials and the identification of pavement test sections for which performance data may be available. The survey of literature has been conducted to identify existing material characterization data and pavement performance data collected already by the highway agencies and reported in internal documents. The testing program for measuring the dynamic resilient modulus of typical asphalt concrete mixes and the binder shear modulus and phase angle has commenced. Testing has been performed on more than 15 HMA mixes.

For all mixes tested, the measured dynamic moduli were compared with the moduli predicted by the NCHRP 1-37A equation. The comparison revealed that, for all mixes, the measured moduli were 50 to 100 percents higher than the predicted moduli.

Two databases of needed input data for the 1-37A model were created in Access format for flexible and rigid pavement structures, to ease the assembly of pavement construction and performance data for both rigid and flexible pavements. The data collected will allow runs of the 1-37A software to calibrate the model to local conditions when sufficient performance data will be available.

An extension of one year and increase of \$59,996 was signed on March 29, 2005. This extension was made to perform additional work requested by the NYSDOT.

SUMMARY OF ACTIVITIES EXPECTED TO BE PERFORMED NEXT QUARTER:

Dynamic resilient modulus and binder testing will continue on mixes obtain from projects constructed in 2005. The low-temperature creep testing for six asphalt mixes will also be performed in the next quarter. Resilient modulus tests for subgrade soils will also be performed.

A SAS program will be developed to extract the traffic load spectra information from the current traffic database, for weight and classification stations that recorded data discontinuously. The TrafLoad software will be used for axle load spectra extraction for weight and classification stations that continuously recorded data.

STATUS AND COMPLETION DATE

Percentage of work completed to date for total project is: 60%

X on schedule ___ behind schedule, explain

Expected Completion Date: December 31, 2006