

# The RD & T Newsletter



A Publication of the South Carolina Department of Transportation  
Research and Materials Laboratory

Richard L. Stewart  
Research and Materials Engineer

## Changes in Research Focus Increase Number of Projects

Responding to an increasing demand for better and more substantive information on a variety of transportation issues, the Research Branch has initiated a record number of new research projects since January of this year.

Fifteen new projects in varying stages of implementation are presently underway. The list of projects reflects a broader spectrum of study areas than in past years, which seems to mirror the changing and improving face of transportation research for SCDOT.



*A Research Study Looking at the Causes and Potential Solutions to Highway Accidents Caused by Deer is One of Many New Projects Recently Initiated By the SCDOT*

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“We are finding that our transportation managers are more acutely aware of the value of an effective research program,” said SCDOT Research Engineer Mike Sanders. “And to reach out to more of our personnel, we are encouraging the investment of research funds in areas not heretofore pursued with any degree of regularity. This expansion of our program should allow us to assist more of our

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people in finding solutions to some of the problems they deal with on a daily basis.”

The list of new projects includes a study to investigate causes and potential solutions to the problem of highway accidents caused by collisions with White-tailed deer on the state’s highways. This project is expected to be the first of several forthcoming studies on highway travel safety in South Carolina, as part of SCDOT’s Strategic Plan commitment to reduce traffic accident fatalities. The Research Branch is currently participating with seven other southeastern region states in the “Southeastern Fatal Crash” pooled-fund study. Other similar transportation safety research initiatives are anticipated.



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*An Investigation of the Sociological Impact of the Cooper River Bridge Replacement Project in Charleston is Currently Being Initiated by the SCDOT*

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One of the new areas that will be the subject of a research study involves investigation of the sociological impact of the Cooper River Bridge replacement project in Charleston. The objective of the analysis will be to assess the long-term effects on residents

and business owners displaced by the project in a predominately minority neighborhood. It is anticipated that the research will identify measures that SCDOT can utilize to improve the process for relocation of residents and business owners displaced through right of way acquisition.

Another research project that is included this year will involve development of an acceptable design concept for a proposed pedestrian bridge over S.C. 277 in Columbia. The expressway is a major route that connects the city’s central business district with I-20 and I-77. The bridge will help reunite a minority neighborhood that was divided when the expressway was built approximately 30 years ago.

“Development of a Process to Forecast Construction Staffing Levels,” is a unique research project designed to develop a computer software-related process capable of forecasting county, district or statewide construction staffing needs. The personnel associated study is expected to be a useful tool in helping to ensure that an adequate and competent staff is available during periods when the volume of construction work fluctuates between high and low levels.

Four of the 15 new projects address hydrology issues. Emphasis on these type projects is indicative of the need for SCDOT to develop data and techniques through research that will give hydrology engineers the added resources necessary to meet hydraulic design requirements under varying conditions.

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“The activity level of the SCDOT Research staff is at an all-time high as we endeavor to process all of the 15 projects initiated during the calendar year,” said Research Engineer Sanders. “We made a concerted effort in 1997 to broaden the scope of our research program by trying to involve more non-engineering units and more mid-level managers and supervisors, and I think we’re seeing the results of those initiatives. The membership of the Research and Development Executive Committee was also changed to include representatives from other non-engineering units, which effectively widened the playing field.”

“In 1998 we met with a number of DOT offices not traditionally active in research and explained how they could benefit from participation in the program,” continued Sanders. “In the past much of our research was centered on engineering topics, but now we are finding there is a need to broaden our horizon to include new areas of interest. I believe we have better positioned ourselves to serve a larger and more diverse component of our agency”

Other research projects initiated since January 1, 1999:

- Implementation of SHRP Related Activities – Phase II
- Investigation and Evaluation of Roadway Rideability Equipment and Specifications – Phase I
- Review of Class E Concrete Mix Used in Bridge Decks in South Carolina – Phase I

- Investigation of SCDOT Asphalt Mixtures Using the Pavement Analyzer
- Evaluation of Retroreflectivity of Interstate Markings
- Performance Evaluation of High Density Polyethylene (HDPE) Pipe
- Feasibility of Including Structural Adequacy Index as an Indicator of Overall Pavement Quality in the SCDOT Pavement Management System. ♦

## Recycling Facts



Did you know ...

- ☺ Americans receive almost 4 million tons of junk mail a year.
- ☺ About 44% of junk mail is never opened.
- ☺ Only five recycled soda bottles makes enough fiberfill for one ski jacket.
- ☺ Every year we make enough plastic film to shrink-wrap Texas.
- ☺ Americans throw away enough oil each year to fill 120 supertankers.
- ☺ Americans dump more than 21 million shopping bags full of food waste into landfills every year.



## **RDEC Soliciting Research Topics for FY 2000 Program**

The Department's Research and Development Executive Committee (RDEC) is currently soliciting topics for the SCDOT's Research Program. Requests for research topics have been sent to all SCDOT Division and Subdivision Heads, state universities, and transportation associations.

Research studies may be initiated for a variety of reasons, some of which might be 1) developing or confirming a specific idea or design, 2) evaluating new materials, equipment, techniques, or processes, or 3) surveying the feasibility of new concepts or procedures in highway transportation. Research studies may fall into several categories, including design, construction, maintenance, traffic, materials, safety, personnel, legal or any other areas related to highway transportation.

The deadline for submitting research topics to be considered for the FY2000 program is **Tuesday, August 31, 1999**. If you need a problem statement form, please contact Terry Swygert at (803) 737-6652 or by e-mail at SwygertTL@dot.state.sc.us. All completed problem statement forms should be returned to:

**Richard L. Stewart**  
**Research and Materials Engineer**  
**SCDOT**  
**PO Box 191**  
**Columbia, SC 29202.◆**

## **AASHTO Region II Research Advisory Committee Meeting**



**August 1-4, 1999**  
**Hot Springs, Arkansas**

**Hosted by**  
**Arkansas State Highway**  
**and Transportation Department**

## **China Interested In AASHTO Accreditation Program**

The Peoples' Republic of China is initiating a nationwide construction/reconstruction program aimed at modernizing more areas of the country and expanding their role in the world market. This undertaking includes improvements to all facets of their

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infrastructure including buildings, utilities, communication, and transportation.

In the area of transportation, one of the goals is to upgrade the highway system through an aggressive construction program. Realizing that a process is needed to ensure quality materials are used in their road and bridge projects, the Chinese looked to AASHTO's Accreditation Program, which is a proven success in the United States.



*SCDOT Research and Materials Engineer Richard Stewart (Front Row Center) was Invited to China to Give A Series of Lectures on the ASSHTO Accreditation Process*

To learn more about the program, Mr. Richard Stewart, the Department's Research and Materials Engineer, was invited to China to give a series of lectures on the process. The three day meeting was held in Beijing beginning June 14, 1999. There were fifty to sixty engineers, university representatives, and other officials from across China attending the

seminar. Topics presented by Mr. Stewart included:

- AASHTO Organization and Accreditation Program
- AMRL and CCRL Organizations, Proficiency Sample Programs, and On-Site Assessments
- AASHTO R18 – “Establishing and Implementing a Quality System for Construction Materials Testing Laboratories”
- Six Steps for Accreditation and Reccreditation. ♦



**If you have any suggestions for improving our newsletter or know of any topics that should be included, please contact Mr. Mike Sanders at (803) 737-6691. You may also send it to the RD & T Newsletter, SCDOT, Research and Materials Laboratory, P.O. Box 191, Columbia, SC 29202.**

**Research Projects Completed Between  
January 1, 1999 and June 30, 1999**

SPR No. 587, "Bridge Rehabilitation Using Fiber Reinforced Polymer (FRP) Composites"  
Principal Investigator: Dr. Michael F. Petrou, University of South Carolina

If you would like a copy of the final report for  
this project, please contact:

Mike Sanders, P.E., Research Engineer  
P.O. Box 191  
Columbia, SC 29202  
(803) 737-6691, fax: (803) 737-6649  
e-mail: [sandersmr@dot.state.sc.us](mailto:sandersmr@dot.state.sc.us)



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