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The RD & T Newsletter

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Study Underway to Improve Rideability Specifications for Rigid Pavements and Bridge Decks

In 1999, Dr. Ron Baus, University of South Carolina, conducted a research project to review current SCDOT rideability specifications, to investigate other states' rideability specifications, to determine what equipment was available on the market, and to make recommendations on how to improve the Department's rideability specifications. The recommendations for SPR 590, "Investigation of Roadway Rideability Equipment and Specifications," were to develop new rideability specifications for asphalt and concrete pavements as well as bridge decks and suggested types of equipment for each.

The Steering and Implementation Committee for the study decided to proceed with developing new specifications. However to keep the project manageable and affordable, the Committee decided to do the work in two parts. The first would address asphalt pavements and the second would address concrete pavements and bridge decks. As a result, SPR 618, "Development of Profiler-Based Rideability Specifications for Asphalt Pavements and Asphalt Overlays," began in August 2000. The primary objective is to develop smoothness specifications for asphalt pavements and asphalt overlays based on a

high-speed profiler purchased on the project. These new specifications will eventually replace currently used specifications based on the Mays Ride Meters (MRMs). The study is nearing completion with a final report due this summer.

In the fall of 2003, the Steering and Implementation Committee requested Dr. Baus to prepare a proposal to develop new rideability specifications for concrete pavements and bridge decks. The study, SPR 647, "Development of Improved Rideability Specifications for Rigid Pavements and Bridge Decks," began in February 2004 and is scheduled for completion in February 2006. The project includes the following tasks:

- 1) develop specifications for the purchase of a computerized California-style profilograph;
- 2) conduct a literature review and contact other states to determine their practice for rideability testing of rigid pavements and bridge decks;
- 3) review and analyze SCDOT's archived rigid pavement and bridge deck construction and smoothness data to aid in establishing initial target

smoothness levels for new SCDOT rideability specifications;

- 4) develop and implement a field testing program using the profilers

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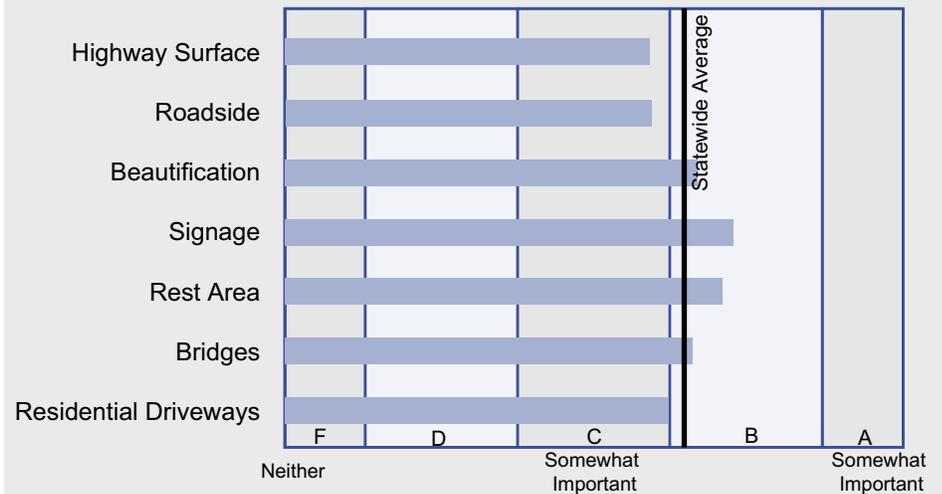
The South Carolina Department of Transportation (SCDOT) wanted to know public opinion concerning highway maintenance activities. Therefore, SCDOT initiated a research project with the University of South Carolina's Division of Research at the Moore School of Business entitled "Customer Input Concerning Highway Maintenance." Public opinion was to address the importance of maintenance activities, an assessment of how well SCDOT has conducted the activities, and given a set amount of funds, how the public would allocate the funds to maintenance activities. The final report presents the results of a survey mailed to South Carolinians in mid-2003. The survey instrument focused on maintenance activities individually as well as by category. Classification (demographic) questions were included.

Based on the survey results, the maintenance activities that are most important to South Carolinians are Bridges, Signage, and Highway Surface Work, in that order. Least important was beautification activities. The importance ratings were combined with the grade assignments to yield a problem score for each maintenance activity included in the survey. A higher problem score signifies a problem of greater value to the public; that is, the higher the problem score, the greater the public's satisfaction when the problem is resolved. Thus, the SCDOT can generate a more positive impact on the public by concentrating its maintenance activities on Highway Surface Work, Roadside Work, Bridges, and Residential Driveways. Some activities within these maintenance activity categories had lower than average problem scores

Illustration 1: Summary of Importance Rating (4.44 Average), Statewide



Illustration 2: Summary of Grade, Statewide, 3.61 "B" Overall Average

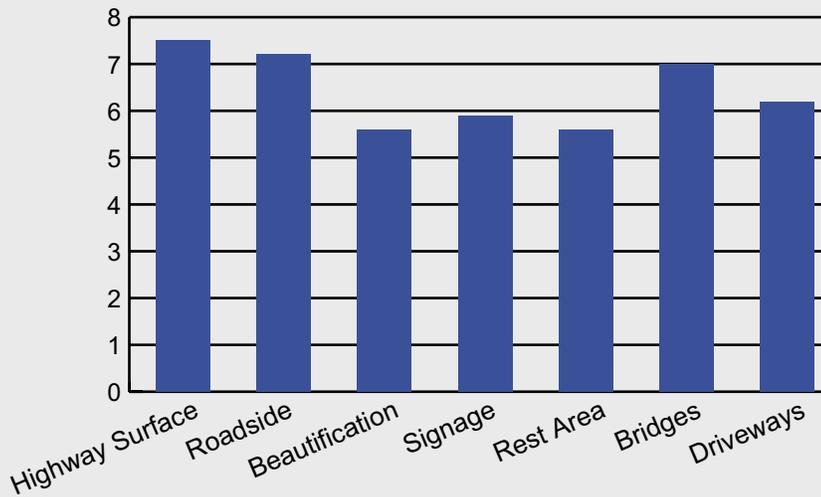


while others had higher than average problem scores.

This conclusion is affirmed by the results to the question of allocating maintenance dollars to maintenance categories. South Carolinians would put about one-fifth of their "maintenance" budget toward pavement resurfacing and pavement patching. Bridges would use 15 percent of the "maintenance" budget.

Overall, SCDOT is maintaining South Carolina's highways at a "B" level. South Carolinians perceive certain maintenance activities to be more important and, thereby, should receive greater attention than other maintenance activities. Focusing greater effort within the four maintenance categories of Highway Surface, Roadside, Bridges, and Driveways will likely result in

Illustration 3: Summary of Importance Problem Score, Statewide

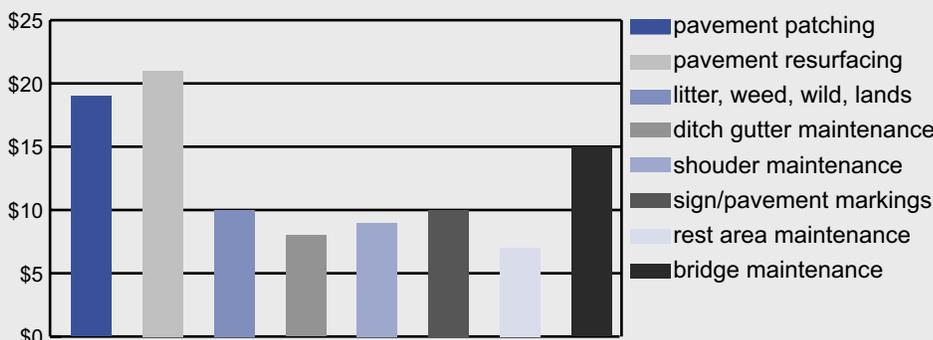


South Carolinians being even more satisfied with maintenance activities throughout the state.

For further information or to obtain a copy of the final report, contact Mr. Terry Swygert by phone at (803) 737-6652 or e-mail swygerttl@scdot.org.

The research was conducted at The University of South Carolina by the Division of Research of The Moore School of Business (Principal Investigator: Sandra J. Teel, 803-777-2510; steel@moore.sc.edu).

Illustration 4: Allocation of \$100 Among Eight Categories, Statewide



(Continued from page 1)

purchased for the ongoing asphalt smoothness project, the MRMs, the Rainhart profilographs currently used by the Department to determine rideability on new concrete pavements and bridge decks, and a new California-style profilograph (Task 1);

5) analyze test data;

6) develop new interim California-style profilograph-based rideability specifications and profilograph

testing procedures (if inertial profilers [IRPS] output for PCC surfaces can be shown to be consistently reliable, make recommendations for the use of IRPS-simulated PI values, develop testing procedures, and develop correlation equations for converting PI to IRI);

7) make recommendations for implementation of new interim rideability specifications and procedures on a trail (special provision) basis in conjunction with existing specifications and procedures.

RDEC Approves Research Topics

The Department's Research and Development Executive Committee (RDEC) met December 10, 2003 to approve funding for research projects for the next two years. As reported in the last edition of the RD&T Newsletter, the South Carolina Department of Transportation (SCDOT) held its first Research Workshop on August 14, 2003 at the Sheraton Hotel and Conference Center in Columbia, South Carolina. The workshop marketed the research program and served as the primary research topic solicitation for RDEC. As a result of the workshop, fifty-four (54) problem statements were submitted to the Research Unit. After all Problem Statements were received, they were reviewed by the Research Staff for completeness and to clarify any questions. A ballot was then prepared and forwarded to RDEC members along with problem statements and a copy of the summary report from the Research Workshop. Each member then rated the topics on a scale of 0-5 (0 no need, 5 great need). The Research Staff then averaged the ratings for each topic

and prepared a spreadsheet that was forwarded to the RDEC members prior to the meeting. The RDEC then met to develop a final prioritized list of topics for inclusion in the SPR Research Program. After much discussion, the Committee selected the following projects for funding:

1. Construction Contract Time/ Construction Contract Time Extension
2. Life Cycle Cost Analysis for Pavement Design
3. Development of Performance Based Specifications for Highway Maintenance Activities
4. An Assessment of South Carolina Road Users: Means and Methods to Measure Safety Benefits Before, During, and After Construction
5. Rapid Set Concrete Patching Materials for PCC
6. Benefit Cost Analysis of Accelerated Incident Clearance
7. Better Management for Speed Control in Work Zones
8. SCDOT Maintenance Activities - In-house or Outsource?
9. Best Practices for Developing the Engineer's Estimate
10. Performance of Four Best Management Practices for Highway-Runoff Quality near Beaufort, South Carolina
11. Investigation of the Performance and Benefits of Class F Self Consolidating Concrete (SCC)
12. Survey the Public to Assess their Perception of the Performance of the South Carolina Department of Transportation
13. Research the Barriers to Statewide Coordination of Transportation Services

At least one topic from all seven (7) breakout groups from the Research Workshop was selected for funding. Projects will be initiated in the order as prioritized by the RDEC.

Transferring address books

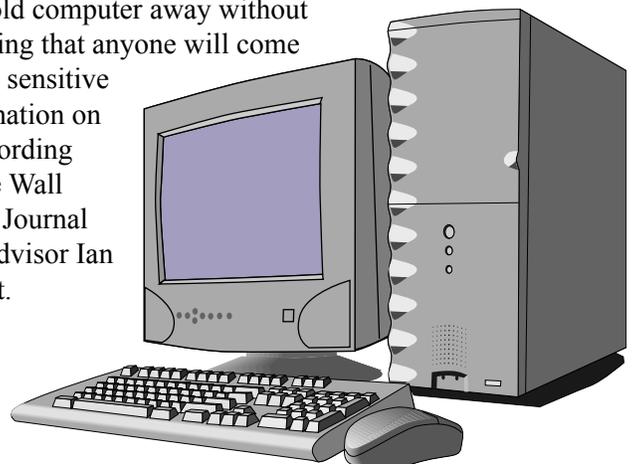
There are a number of free services that can help you transfer an entire electronic address book or long list of Websites to a new computer.

About.com walks you through copying Outlook e-mails as well as lists of contacts. To get directions, type in "copy Outlook" on the home page.

BackRex Software at back-settings.com lets you make backups of Website addresses and passwords. Once you've copied the information, you can save it on Xdrive.com, which acts as an online hard drive. You can download the files to the new PC anytime. It's free for 15 days.

File Shredder at handybits.com or Necro File at necrocosm.com

will scrub a hard drive of any traces of you so you can give your old computer away without worrying that anyone will come across sensitive information on it, according to The Wall Street Journal tech advisor Ian Mount.



Research Projects Started Between January 1, 2004 and June 30, 2004

SPR No. 647: *Development of Improved Rideability Specifications for Rigid Pavements and Bridge Decks* Principal Investigator: Dr. Ronald L. Baus, University of South Carolina

SPR No. 649, *Development of Statistical Analysis Guidelines for Highway Materials and Research Activities* Principal Investigator: Dr. James L. Burati, Jr., Clemson University

Research Projects Completed Between January 1, 2004 and June 30, 2004

SPR No. 643, *Prime Contractor Prequalification and Performance Evaluation* Principal Investigator: Dr. Lansford Bell, Clemson University

SPR No. 644, *Customer Input Concerning Highway Maintenance* Principal Investigator: Dr. Sandra J. Teel, University of South Carolina

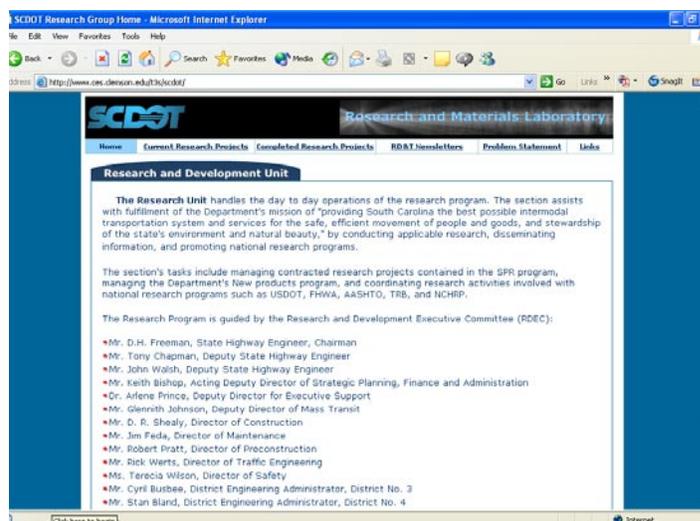
If you would like a copy of the final report for either of these completed projects, please contact:

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Research and Materials Information Now Available Online

The Research and Development unit now has its own web page. The SCDOT Research Program website is hosted by the Clemson University Transportation Technology Transfer Service, T3 Service. The T3 Service has been operated by Clemson University's Civil Engineering Department and sponsored by the SCDOT and the FHWA since 1985. Information that can be found on this website includes the structure of the SCDOT Research program, all active SCDOT sponsored research studies, recently completed SCDOT sponsored research studies, current and past electronic copies of the Research Development and Technology Transfer (RD&T) Newsletter, and an electronic copy of SCDOT research problem statement form and instructions.

There are two ways to access the website, the direct link is www.ces.clemson.edu/t3s/scdot or you can access the site via the SCDOT web page at www.scdot.org, then click on Doing Business with SCDOT (top center), then under Research and Materials click on Research



Program. Click on the SCDOT Research Program Website link.

We hope you will find this site to be a valuable tool for questions concerning current and past research projects.

Comments and Suggestions

The *RD&T Newsletter* is published on behalf of the SCDOT by the SC Transportation Technology Transfer Service at Clemson University (T³S).

If you have suggestions, comments or article submissions for the newsletter, please contact Mike Sanders at 803-737-6691, or mail them to:

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Checking in While on Vacation

According to Gartner Inc., a research and advisory firm, 42 percent of business Internet users check their work e-mails while on vacation; an AT&T survey found that two out of three people make work-related calls while vacationing. "People are torn between their need to be away from it all and their desire to stay in touch," says Elroy Cartwright of AT&T Travel Market.

Career consultants report that different companies have varying policies and preferences about staying in touch while away, noting that more creative fields and industries often prefer their employees to make a clean break and clear their heads, while more competitive organizations appreciate some form of contact.

If you're unsure about the right approach to take, talk to your supervisor and work out a plan that's best for all. Rather than be tied to a pager or cell-phone all day, arrange to call in at a particular time each day or every few days, or to check e-mail or voice-mail at specified intervals.

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