

# Technology

## Today

Vol 18  
No. 2

**LTRC**

2003

A publication of the Louisiana Transportation Research Center

### Implementation of New Smoothness Specifications

#### Underway



The first inertial profiler calibrations were completed by LADOTD during the spring.

LADOTD's new International Roughness Index (IRI) specifications for asphalt pavements have been let. A measure of pavement ride smoothness, IRI will replace the Profile Index (PI) values previously used by the department.

are measured with a light-weight inertial profiler—a fully automated device that uses laser sensors and accelerometers to determine the true profile of a pavement while traveling at a test speed of 8 to 12 miles per hour.

In an effort to create smoother rides for Louisiana drivers, the first three projects to incorporate

Compared to the PI measurements, IRI readings better indicate pavement ride as it is actually perceived by motorists. IRI specifications

This type of system offers many advantages over the previously used profilograph, which required the

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### TRB Conference on the Application of Transportation Planning Methods Successful

LTRC, LADOTD, the Transportation Research Board (TRB), and the Louisiana Planning Council were the hosts of the 9th TRB Conference on the Application of Transportation Planning Methods, which was held in Baton

Rouge's Radisson Hotel and Conference Center in April 2003. The biennial conference last took place in Corpus Christi, Texas, in 2001, and the 2005 conference is scheduled for Portland, Oregon.

Over 270 delegates attended the conference, which had over 100 presentations on topics ranging from environmental justice to travel demand modeling. Nearly 20 exhibitors set up displays as well. The conference provides

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## LTRC Participates in LSU Council on Research Review

For more information about LTRC, please visit our website at [www.ltrc.lsu.edu](http://www.ltrc.lsu.edu)

For any organization to grow, it is vital to appraise accomplishments, examine the vision for the future, and prepare to handle obstacles to progress. The LSU Council on Research (COR) recently selected LTRC, as a LSU research institute, for a review that studied such information. The Louisiana Board of Regents' policy on organized research and public service mandates periodic internal reviews, and the COR is charged with administering the review process for LSU.

To meet the requirements of the review, the Director's Office at LTRC prepared a report defining LTRC's mission, scope, and role. The report also identified the demonstrated need for LTRC, successes in meeting that need, impediments to progress, and the elements needed to advance to the next level of excellence. A financial statement and an agenda for the future were also included in the report.

The vision for LTRC's future includes improving the quality and scope of research,

technology transfer, and educational services to its broad base of government, industry, and academic customers through enhancing its technical resources, expanding and renovating its facilities, and improving delivery mechanisms. The center will continue to provide leadership at the state, national, and regional levels to contribute to advancements in transportation technology; pursue state-of-the-art technology; increase its profile and reputation; and improve its position with respect to competitive funding. LTRC will also support higher education by providing opportunities in research and teaching to faculty and graduate students.

After a meeting with LTRC Director Joe Baker, the COR prepared its response report, which included discussion of the following contemporary issues and impediments to progress:

- Because LTRC is both a research institute within LSU and a division within the Louisiana Department of Transportation and Development (LADOTD), the categorization of the

LTRC identity as part of only one of these organizations creates problems. The COR agreed that the hybrid nature of LTRC, with respect to reporting to two parent institutions, can present additional challenges. Thus, these challenges should be addressed on a case-by-case basis and measures should be taken to facilitate smooth operation.

- LTRC contracts with LSU for both research/training services and employment of some full-time staff. Because LTRC is a LADOTD budget entity, indirect costs are charged to all contracts, as if LSU were dealing with another state agency. According to the COR, the charging of indirect costs on these contracts between LSU and LTRC is an issue in need of examination.

- If the intent of the merger of LADOTD/LSU resources that LTRC represents is to be realized, then LTRC must be the focus for transportation-related research and development on the LSU campus. Any efforts to create separate transportation-related institutes and

centers will lessen the synergy gained through a LTRC focus. The COR found that LSU should discourage the creation of new centers similar to LTRC that would compete for resources within LSU and duplicate efforts. Also, to attain a higher level of excellence in keeping with the LSU National Flagship University agenda, LTRC should select a premier national transportation research institute and examine its practices to use as a benchmark.

● The use of the Assistant Professor, Research, series is critical for LTRC in making non-academic appointments beyond the Research Associate 5 level. The COR concurred that this series is vital for the

continuity of research activities and the attainment of excellence, and that these appointments should adhere to the By Laws and Regulations of the LSU Board of Supervisors and pertinent LSU System Permanent Memoranda.

● The COR agreed that a maintenance budget should be established for LTRC to include the new Transportation Training and Education Center (TTEC) facility, scheduled to break ground this year.

Dr. Kevin Smith, Vice Chancellor for Research and Dean of the Graduate School, oversaw the COR's work. "The Council felt that LTRC is a worthwhile venture especially in light of LSU's role as the flagship

university and the problems associated with transportation in Louisiana. LTRC has fulfilled its current objectives admirably, the plan for the future is clear, and we commend you for your accomplishments," he wrote in his final review.

"The constructive critique afforded by the Council on Research and its inherent process has produced encouraging results and we appreciate the efforts of all concerned," Baker said in response to the review. "LTRC looks forward to improving its performance as an integral part of Louisiana State University, the Louisiana Department of Transportation and Development, and the transportation industry."

## Technology Today Publication Statement

*Technology Today* is a quarterly publication of the Louisiana Transportation Research Center, administered jointly by the Louisiana Department of Transportation and Development and Louisiana State University. For additional information on material included in this newsletter, contact the editor, (225) 767-9145, Louisiana Transportation Research Center, 4101 Gourrier Ave., Baton Rouge, LA 70808-4443.

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This public document is published at a total cost of \$1192. Seventeen hundred copies of the public document were published in this first printing at a cost of \$920. The total cost of all printings of this document including reprints is \$1192. This document was published by Louisiana State University, Graphic Services, 3555 River Road, Baton Rouge, to report on the research and training of the Louisiana Transportation Research Center as required in R.S. 48:105. This material was duplicated in accordance with standards for printing by state agencies established pursuant to R.S. 43:31. Printing of this material was purchased in accordance with the provisions of Title 43 of the Louisiana Revised Statutes.

## Louisiana Hosts Research Advisory Committee Meeting

**Representatives from the 12 - state Research Advisory Committee Region II met to discuss matters of national interest as well as current local research topics.**

Representatives from southeastern states convened in Baton Rouge in June for the biennial Research Advisory Committee Region II (RAC) meeting. The RAC is a sub-committee of AASHTO's Standing Committee on Research (SCOR), whose national chairman is LADOTD secretary Kam Movassaghi. Each of the four AASHTO regions has its own RAC, and the southeastern states (SASHTO) form Region II. National representatives from the Federal Highway Administration (FHWA), Transportation Research Board (TRB), and the National Cooperative Highway Research Program (NCHRP) joined the other delegates.

The purpose of the RAC is to discuss common items of interest in the region and provide SCOR with input for implementing the NCHRP. LTRC's Harold "Skip" Paul (Associate Director, Research) will be the next chairman of RAC II, replacing Dick Long of Florida. This meeting focused on national and regional

research issues and practices as well as organizational business items.

A discussion of national agenda items was led by Wes Lum, the national RAC chairman. One particularly timely topic was the Surface Transportation Reauthorization Act that is currently up for federal approval and will impact transportation funding for the entire nation. Another discussion topic was the recent changes in the process of charging administrative and indirect costs for State Planning and Research (SP&R) funds. Also, an AASHTO Technology Implementation Group (TIG) representative was present. TIG's mission is to "champion the implementation of technology among AASHTO member agencies, local agencies, and their industry partners to improve the nation's transportation system" ([www.aashtotig.org](http://www.aashtotig.org)).

Along with items of national interest, represented states presented their current research topics and heard reports from all the Region II TRB state representatives (Louisiana's representative

is LTRC Director Joe Baker). Attendees also participated in a tutorial on the functions of the new Transportation Pooled Fund Program (TPF) web site that are available to authorized users ([www.pooled-fund.org](http://www.pooled-fund.org)). The TPF allows federal, state, local agencies, and other organizations to combine resources to support transportation research. Finally, a trip to the Pavement Research Facility for an ALF demonstration gave RAC II participants insight into the variety of LTRC's activities.

### **States included in Region II RAC meeting June 15-18, 2003 Radisson Hotel and Conference Center, Baton Rouge:**

Alabama  
Arkansas  
Florida  
Georgia  
Kentucky  
Louisiana  
Mississippi  
North Carolina  
South Carolina  
Tennessee  
Virginia  
West Virginia

Mark your calendars, and be sure to check upcoming issues of *Tech Today* for regular conference updates.

## Planning Underway for 2004 LA Transportation Engineering Conference

While the next Louisiana Transportation Engineering Conference is still several months away, plans are progressing rapidly. The conference will be held February 15-18, 2004, at the Radisson Hotel and Conference Center in Baton Rouge.

With over 1,400 participants, the 2002 conference was the most successful ever. This biennial conference represents a premier tech transfer opportunity for LTRC, which is charged with the accountability for planning, coordinating, and managing the conference. Attendees represent the public, private, and academic sectors from throughout Louisiana and the nation.

The Program Committee is currently soliciting input from the transportation community on topics of interest. If you have any ideas, contact committee chair Harold "Skip" Paul (Associate Director, Research) at (225) 767-9102 or SkipPaul@dotd.state.la.us. Kirt Clement (Associate Director, Tech Transfer) is the chair of the Planning Committee in charge of overall conference administration; you can contact him at (225) 767-9139 or KirtClement@dotd.state.la.us.

As the conference draws closer, information and online registration will be available on the LTRC web site ([www.ltrc.lsu.edu](http://www.ltrc.lsu.edu)). Another new feature planned for the 2004 conference is a CD containing all conference presentations, which will be available to attendees after the conference.

### Attention LSU Civil and Environmental Engineering Alumni:

#### Your Help Is Needed

As an important part of their continual improvement process, the LSU Civil and Environmental Engineering Department is conducting a web-based survey of alumni and employers. The objectives of the surveys are to assess and evaluate the undergraduate programs and the performance of graduates; document the professional development of graduates; and strengthen curricula.

As an alumnus of either civil engineering or environmental engineering, you are asked to participate in this important activity. Completion of the survey will probably take no more than 15 minutes of your time and be of invaluable service to the department. To complete the survey, access the following site, complete the survey form, and click on the submit button. Your information will be kept confidential. ([http://www.cae.lsu.edu/ss/wsb.dll/rseals/cee\\_alumni\\_survey.htm](http://www.cae.lsu.edu/ss/wsb.dll/rseals/cee_alumni_survey.htm))

In addition, if you now employ LSU civil or environmental engineering graduates who graduated within the past six years, your input is needed on the employer survey form. Again, your information will be kept confidential. ([http://www.cae.lsu.edu/ss/wsb.dll/rseals/cee\\_employer\\_survey.htm](http://www.cae.lsu.edu/ss/wsb.dll/rseals/cee_employer_survey.htm))

If you have any questions or difficulty completing the survey, please contact Karyn Klein at [kklein6@lsu.edu](mailto:kklein6@lsu.edu).

You can also assist the civil engineering department by completing the Practitioner Involvement Registry and Alumni Registry forms, which can both be accessed at [www.cae.lsu.edu/~ceeupo](http://www.cae.lsu.edu/~ceeupo). Contact Roger Seals at [ceseal@lsu.edu](mailto:ceseal@lsu.edu) with any questions about either of these forms.

## New LTRC Staff Introductions

This past year has seen several staff changes at LTRC. Retirements, the reorganization of Tech Transfer, and the expansion of web-based services have all contributed to the many new faces at LTRC.

We would like to take this opportunity to recognize the service of our recent retirees and welcome new team members.

### NEW EMPLOYEES

**Sue Blanchard**, Administrative Manager: Sue began her LADOTD career as a Typist Clerk in Financial Services. After a brief period at the Department of Public Safety, she went back to Information Services for 15 years where she worked in Administrative Support. From there, she moved to the Floodplain Management Section before starting at LTRC.

**Sam Cooper**, Asphalt Research Engineer: Sam began working for LADOTD as an EIT in Construction. After getting his P.E. license, he was a Project Engineer in District 08 and then the Bituminous Construction Engineer and Area Engineer at Headquarters. He also worked in private industry in Louisiana and Florida. He returned to the department in 2002 as a Project Engineer in District 02.

**Mike Elliott**, Training and Development Specialist: Mike worked as a training and development specialist in Traffic Services for two years before coming to

LTRC. He had previously been at the Asphalt Lab for 20 years.

**Gavin Gautreau**, Geotechnical Research Engineer Manager: Gavin worked for Geotechnical & Environmental (G&E) Engineering, Inc., for nearly five years. After obtaining his P.E. license, he joined Gautreau & Gonzalez, Inc. Geotechnical Consultants as an Associate Partner. There he managed a soil laboratory and drilling sub-contractors, analyzed data, and wrote reports for various projects across south Louisiana.

**Treba Landry**, Training and Development Specialist: Treba spent 25 years in the Training and Safety division of the Department of Health and Hospitals. Before coming to LTRC, she worked at the Department of Revenue, providing both classroom and web-based training to headquarters and regional staff.

**Jing Pan**, Computer Analyst, GERL: Before coming to LTRC, Jing was a software developer in an E-commerce software com-

pany that created Internet selling and customer service solutions. Her projects included developing a private procurement marketplace and completely automating data exchange with suppliers and customers.

**Jenny Speights**, Web Production: After working as a web development Graduate Assistant at Southeastern Louisiana University, Jenny moved on to a private design firm in Baton Rouge where she worked on several large-scale web sites including the American Heart Association of Baton Rouge, Louisiana State Police, and Mikethetiger.com.

**Kelvin Stone**, Training and Development Specialist: Most recently, Kelvin was a Training and Development Specialist with the East Louisiana Mental Health System. Prior to that position, he worked as a trainer in the Forensic Division for 15 years.

**Sadí Torres**, Concrete Research Engineer: Sadí worked for Kiewit

**RECENT LTRC  
RETIREES**  
**Helene Cumbaa:**  
**Administrative  
Manager**  
**Dee Jones:**  
**Construction and  
Materials  
Program Manager**  
**Ken Johnston:**  
**Senior  
Geotechnical  
Technician**  
**Joe Smith: Local  
Technical  
Assistance  
Program (LTAP)  
Teaching  
Associate**

Construction Company for four years in Puerto Rico, Louisiana, Kansas, and Iowa. During this time he worked as a field engineer in heavy construction projects. His main responsibilities were quality control, planning and scheduling of operations, handle change orders requests from owners, and cost tracking.

**Marilyn White**, Training and Development Specialist: Marilyn has worked for the state as a counselor at a hospital in Jackson, as a case manager in the Office of Family Support, and most recently as a substance abuse prevention coordinator. She also worked briefly in the private sector as a realtor.

**Emily Wolfe**, Communications and Technical Publications: After working as a Graduate Teaching Assistant at Louisiana Tech University, Emily came to LSU as an advertising coordinator for LSU Press. There she was responsible for various advertising/promotional copywriting projects, catalog production, and direct mail campaigns.

## TRB Conference (cont. from page 1)

transportation planners a forum for exchange of contemporary and creative ideas, methodologies, and experiences and emphasizes practical, innovative, and timely technical and policy approaches to transportation planning.

Responses from attendee evaluations revealed an overwhelmingly positive reaction to the conference's content and organization, and the traditional Louisiana hospitality was well received.

This conference afforded LTRC the opportunity to work on several new concepts that will improve

future conferences and training efforts. First, LTRC established a web site solely for the conference. Participants could find general information about the conference and local attractions as well as register online and pay fees with credit cards. Conference proceedings are often distributed in paper format, but for this TRB conference, attendees received a CD with all pertinent information. The push to stay as paperless as possible also benefited the evaluation process. Instead of the typical paper evaluation form, LTRC sent forms to participants via email, leading to a high response rate.

All of these newly implemented administrative components will ultimately help increase LTRC's customer service capabilities in conference administration and training delivery. In the future, automatic confirmations with online credit card payments will assist in streamlining the registration process for seminars and workshops as well as conferences. Electronic evaluations will be effective for training courses, perhaps leading to better ways of measuring the effectiveness of employee training.

## New Smoothness Specifications (cont. from page 1)

**First projects let with IRI specs:**  
 • 450-04-0084/ District 03/ Acadia Parish/ Jeff Davis Parish Line-Egan, I-10/ rubbilize & overlay (Diamond B Construction)

• 410-02-0016/ District 02/ Jefferson Parish/ Orleans Line-LA 23, LA 428/ cold plane & overlay (Barriere Construction)

• 050-07-0067/ District 61/ West Baton Rouge Parish/ Addis-Intracoastal Waterway Bridge, LA 1/ concrete patch & overlay (F.G. Sullivan Contractors)

operator to manually push the device along the desired path and analyze the paper traces to determine the PI value. An inertial profiler is faster, safer, and more efficient than the profilograph. Studies have been conducted to correlate readings between the inertial profilers and profilographs; this correlation was used as the first step for LADOTD's development of the IRI specifications.

Both PI and IRI measure the surface profile in inches per mile. For every mile measured, current PI specifications allow three inches out-of-tolerance with a 0.2-inch blanking band. IRI specifications require an average IRI value for each wheelpath on every 0.05-mile segment of highway. When a project is completed, the contractor, in the presence of a LADOTD representative, will measure a continuous profile from the start station to the end station. This measurement will determine qualification for incentive pay, which will be given for an IRI measurement of 45 or lower.

The new specifications are separated into three groups (see table below). While other states divide their pay scales into 50- or 100-foot sections, Louisiana will average IRI for each lot. A standard lot is 5,000 tons of mix and a standard subplot is 1,000 tons of mix.

IRI implementation began with two pilot projects in 2002, one of which (I-10 at Lacassine) was recognized as one of the smoothest pavements built that year. Since the pavement's average IRI was 45, the job would qualify for incentive pay under the new schedule.



Contractors must purchase their own inertial profilers, and LADOTD will certify each one annually using a series of static and dynamic tests. The first calibrations were completed in May. Approval will be based on each profiler's ability to produce accurate IRI values on test strips predetermined by the department. Contractors must also be able to furnish a report with all data specifically requested by LADOTD.

Pay: Percent of Contract Unit Price (by subplot)	100%	90%	80%	50% or Remove <sup>1</sup>
<b>Category A:</b> Multi-lift new construction and overlays of more than two lifts and any Interstate construction	<65	65-75	NA	>75
<b>Category B:</b> One or two lift overlays over cold planed surfaces and two-lift overlays	<75	75-89	NA	>89
<b>Category C:</b> Single-lift overlays over existing surfaces	<85	85-95	95-110	>110
<b>Shoulders</b>	≤110	NA	NA	>110 Pay 70% or remove
<b>Incentive Pay:</b> Final completion, average of all travel lanes (with no less than 100% pay)	≤ 45			

<sup>1</sup> at the option of the engineer