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Upcoming Events

October 5-7
Southeastern Transportation Consortium

October 12
NHI Course No. 134037A - Managing
Highway Contract Claims: Analysis and
Avoidance

November 9
NHI Course No. 132022 - Driven Pile
Foundations - Construction Monitoring

December 1
NHI Course No. 135056 - Culvert Design

To view more events, please visit
<http://www.ltrc.lsu.edu>.

Dynamic Cone Penetrator Implementation into the Subgrade Soil Survey Process Approaching Completion

With thousands of miles of roadways stretching across the state, Louisiana understands the importance of designing pavements that are long lasting and reliable. In an effort to continue ensuring roads reach their respective service lives, the Louisiana Transportation Research Center (LTRC) has conducted three extensive research projects evaluating a device called the Dynamic Cone Penetrator (DCP). Capable of gathering information on pavement subgrades and base courses more quickly and serving as a tool to measure stiffness index (DCPI), the DCP proves to be a valuable asset in designing pavements built to last. The DCP has also been used in numerous forensic studies investigating failed pavements. LTRC researchers also correlated DCPI with resilient modulus (M_r) used in the design of pavement for cohesive soils in Louisiana.

In light of DCP capabilities, the Louisiana Department of Transportation and Development

(DOTD) recently charged LTRC with the task of initiating an Implementation Committee to utilize the DCP in the subgrade soil survey portion of the DOTD pavement design process. "By utilizing the DCP in this segment, researchers and engineers will be able to gather subgrade strength information, which is not available with the current method of soil borings," says Kevin Gaspard, senior pavement research engineer and head of the DCP implementation committee. With more information at their fingertips and a new method of obtaining information, engineers will soon have an updated system when it comes to building pavements specific to every project throughout the state.

In order to complete the implementation of the DCP in Louisiana, the LTRC implementation team first had to revise an existing DOTD Engineering Directives and Standard Memorandum, more

commonly known as EDSM. LTRC received approval for their revision from DOTD’s chief engineer in June 2009, enacting a new policy for all districts across the state to use the DCP in their subgrade soil surveys.

During the next phase of implementation, the team developed and gained approval of a new TR procedure in the DOTD testing manual for the DCP, explaining the proper way to use the device as well as how to accurately record DCP readings. In fact, LTRC created a downloadable form available for engineers to record all the necessary information when operating the device in the field. After the field data is entered into the form, users can then transfer all the gathered information into an Excel template. From there, users will be able to access a new piece of LTRC software that interfaces with the Excel template capable of producing both a DCPI and M_r profile as shown in Figure 1.

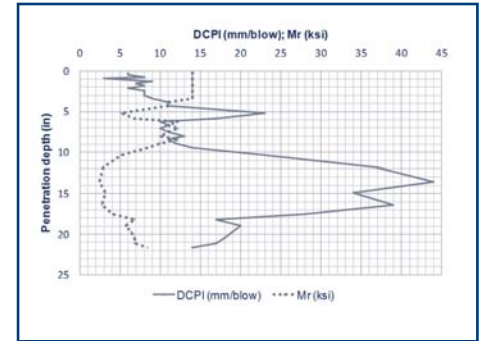


Figure 1

This software step signifies the third phase of implementation that LTRC is currently undergoing—the computer software phase. Here, engineers and programmers have developed new software designed for analyzing DCP data and producing a subgrade soil DCPI sheet. “The software is designed to minimize the amount of work required to analyze DCP data, which can be quite tedious,” explains Gaspard.

As the software approaches completion in the next few months, Gaspard explains that it is user friendly and includes a self-contained tutorial. Additionally, it produces the subgrade soil DCPI chart once the layers are identified by the user as shown in Figures 2 and 3.

The fourth and final phase of implementation into the subgrade soil survey process will include two types of training: training for the analysis of data for pavement engineers as well as data collection training for district lab engineers. More information on this step will be available in the near future as plans progress.

For more information on the status of the DCP implementation, contact Kevin Gaspard at kevin.gaspard@la.gov.

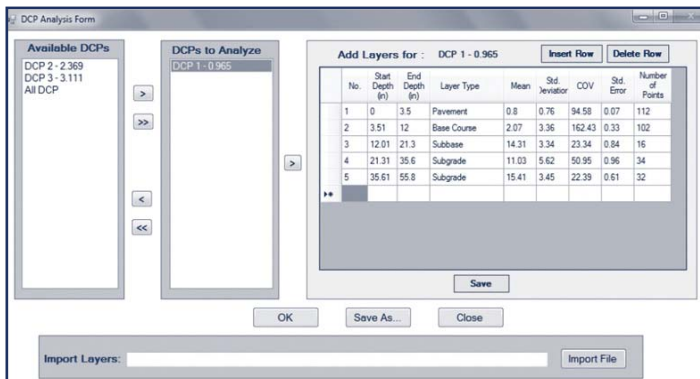


Figure 2

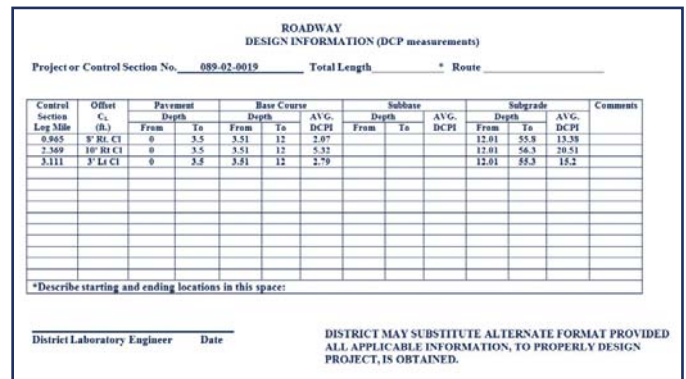


Figure 3

Annual Forum on Traffic Records and Highway Safety Information Systems Meets in New Orleans

The 36th Annual Forum on Traffic Records and Highway Safety Information Systems was held July 25-28 at the Riverside Hilton in New Orleans, LA. Hosted by the Association of Traffic Safety Information Professionals (ATSIP) and DOTD, the forum theme was *Leaving the Silos Behind*.

The 2010 program emphasized research and programs that cut across and exist outside the usual separate “programmatically silos” that have narrowed and restricted the progress across the wide front of traffic safety issues. In keeping with the goal to widen the world view of traffic safety information professionals, the planning committee sought to build a program that encompassed the widest range of traffic safety topics.

The program also addressed issues and research within or across one or more of the six federal Core Highway Safety Data Systems (crash, roadway, driver, vehicle, citation/adjudication, and injury surveillance) as well as in related fields of human behavior, information management, and information technology.

The forum hosted an awards luncheon for the 2010 Best Practices in Traffic Records Competition. Traffic record experts from across the country competed with projects that improved data capture, manipulation, and evaluation. Many of these projects are experiencing great success throughout the country and the world. Best Practices seeks to bring as many of these projects to the forefront as possible, so we may all benefit now and in the years to come.

Louisiana State University competed with two traffic projects: Louisiana HSRG Data Portal: Making Information Accessible and Utilizing the Effectiveness of a Digital Pen to Collect Crash Data in Louisiana. The Best Practices award went to Rutgers’ Center for Advanced Infrastructure and Transportation with their project Plan4Safety: Comprehensive Online Crash Analysis Software.

DOTD Highway Safety Engineer Hadi Shirazi was also elected President of the 2011 Association of Traffic Safety Information Professionals. Shirazi was presented with the 2011 executive gavel from Robert Rasmussen of the Virginia Department of Transportation. Rasmussen served the board as president for two terms.

Vendors from across the country also participated in the forum. Twenty vendors lined the Versailles ballroom for the duration of the forum. A welcome reception was held Sunday evening from 5:30-7:30, which allowed vendors to demonstrate their traffic records products to attendees. Several vendors participated in forum sponsorship, including Platinum Sponsor—Open Portal Solutions, Gold Sponsor—PD Magic, and Silver Sponsors—ESRI,



Ledge Light Technologies, Carfax, Federal Motor Carrier Safety Administration, Federal Highway Administration, and the National Highway Traffic Safety Administration.

To learn more, see a complete list of award winners or view presentations from the 36th Annual Forum on Traffic Records and Highway Safety Information Systems by visiting the Web site at www.trafficrecordsforum.org. A photo gallery of forum highlights can be found at www.ltrc.lsu.edu/atsip/photos.html. The 37th Annual Forum on Traffic Records and Highway Safety Information Systems will be held July 31-August 3, 2011 at the Westin in Charlotte, North Carolina.



Presentations featured advances in:

- Traffic safety issues research
- Data collection
- Integration
- Notable uses of data
- Research to reduce crashes, injuries, and fatalities
- “Best practice” examples of using data to make sound program and policy decisions
- Human factors in crash causation
- Use of data to formulate public policy
- Law enforcement data automation
- State-level coordination of data initiatives
- Operational aspects—using data to identify problems and measure program performance
- The work of Traffic Records Coordinating Committees
- Building Strategic Highway Safety Plans
- Traffic safety workforce development and training

2011 Louisiana Transportation Conference Open for Registration

The Louisiana Transportation Research Center is pleased to announce that plans are in full swing for the 2011 Louisiana Transportation Conference (LTC). The theme for the conference is *Transportation: A Key to a Sustainable Future* and will be held January 9-12, 2011 at the Baton Rouge River Center in downtown Baton Rouge.



Private industry, government/university, DOTD retiree, and student registration are all active and can be accessed from LTC's Web site at www.ltrc.lsu.edu/ltc_11/reg.html. All DOTD employees and students are required to use online registration. Attendees will receive an email confirmation after registering online. All those in other categories are encouraged to register online; however, LTRC has forms available for download to mail in with payment. Conference attendees are also responsible for making their own room reservations for overnight stays. For hotel information, please visit www.ltrc.lsu.edu/ltc_11/acc.html.

In addition to registration, LTRC has posted the preliminary program for the conference to obtain feedback from attendees for conference planning purposes. The technical session topics include:

Accelerated Bridge Construction (ABC)

Access Management
Agile Assets
Air Quality & Transportation
Asphalt Construction I
Asphalt Construction II
Asset and Project Management
Asset Management Systems
Bridge Construction
Bridge Design
Bridge Instrumentations and Evaluation
Bridge Maintenance
Changing the Way We Lead
Civil Rights
Climate Change and Transportation
Concrete I: Thinking for a Sustainable World
Concrete II: Thinking for a Sustainable World
Consultant Contract Admin
Contract Administration DOTD, Consultant, and FHWA Involvement
Design-Build
Designing for Safety
DOTD Customer Service – Key to a Sustainable Agency

Environment: What's New

Financing DOTD, Performance Mgt, Strategic, and Ops Plan
Geotech
Geotech and Pavement Research
GIS
Highway Pipe
Highway Safety - Human Factors, Education, and Enforcement Strategies
Highway Safety Data
Highway Safety Programs and Initiatives
I-1 Twin Span Bridge Instrumentations
Intermodal Transportation
ITS/Operations Regional
ITS/Operations Statewide
LA Gov and Beyond
Land Use and Access: How They Effect Transportation
Land Use and Transportation Planning
Materials
Minimum Standards for Surveyors (Workshop)
Movable Bridges
Multi-Hazard Design/Extreme Event Design
MUTCD

New Safety Tools & Guidance

Photo Enforcement
Pile Driving and Drill Shaft Inspection/Techniques
Point Source Water Conservation
Privatizing and Outsourcing
Project Systems
Public Works
Regional Transportation Planning
Research/General
Roadside Projects
Roundabout
Strategic Highway Safety Plan Status and Implementation Tools
Student Presentations
Sustainability and Transportation
Sustainable Materials
Sustainable Transportation System
System Preservation
Teach Me GIS (Workshop)
Tort Liability (Workshop)
Understanding FHWA and the Federal Aid Program
Work Zone Management
Workzone Safety

If you would like to contribute your preferences, please vote for up to eight topics you are more likely to attend at www.ltrc.lsu.edu/ltrc_11/prelim_survey.html.

LTC sponsorship opportunities are also still available. With the growth of LTC each year—the 2009 conference had over 1,500 attendees from Louisiana and the entire nation—sponsors will have a unique and prominent presence throughout the entire four-day event. Please visit the Web site at www.ltrc.lsu.edu/ltrc_11/sponsors.html for more information on sponsorship packages.

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Plans for the Vendor Exhibition are also underway. The exhibition displays and demonstrates new materials and equipment from industry consultants and vendors and provides a tremendous networking opportunity. To learn more about the exhibition, visit www.ltrc.lsu.edu/ltrc_11/exhibitor.html.

Be sure to visit the conference Web site at www.ltrc.lsu.edu/ltrc_11 to get more information about the conference. The Web site will be updated frequently as the conference approaches.

Contact Cindy Twiner at cindy.twiner@la.gov or Jenny Speights at jenny.speights@la.gov for questions regarding registration.



DOTD retirees, private industry, government/university, and students can all register for the upcoming conference online at http://www.ltrc.lsu.edu/ltrc_11/reg.html.

Staff Updates and Accomplishments

Associate Director of Technology Transfer and Training **Sam Cooper**, P.E., MSCE, recently represented LTRC as the closing speaker at “Transportation & Energy Institute,” a conference held by Southern University on July 2, 2010.

LTRC Director **Skip Paul**, P.E., has been appointed to two National Cooperative Highway Research Program (NCHRP) panels: NCHRP 20-89, Intellectual Property Stewardship Guide for Transportation Departments as chair, and NCHRP 20-91, NCHRP Participation in European Road Association (ERA) ERA-NET ROAD Research Program.

LTRC would like to congratulate **Douglas Hinton** and **Paden Shilling** who have been promoted to Engineering Technician 3 effective June 2010. Recognition also goes to **Khalil Hanifa, EI** who recently advanced to Engineer Intern 2.

Associate Director of External Programs **Vijaya (V.J.) Gopu**, Ph.D., P.E., presented two technical papers and chaired a technical session at the “2010 World Conference on Timber Engineering” held in Riva del Garda, Italy in June 2010. He also presented an invited paper and chaired a technical session at the “International Symposium on Life-Cycle Performance of Bridge and Structures” held in Changsha, China, also in June 2010. Dr. Gopu also presented a lecture titled “ASD and LRFD Code for Wood Construction” to the ASCE-SEI New Orleans Chapter on August 26, 2010 and participated in the Experts Meeting on Combined Uplift and Shear Load Path held by the National Association of Home Builders in Washington, D.C. on July 26, 2010.

Mary Leah Coco, training events program manager, presented an “e-poster” session titled “Evaluation of Knowledge Transfer in an Immersive Virtual Learning Environment” at the 26th Annual Distance Teaching and Learning Conference, August 4-6, 2010.

Materials Research Administrator **Chris Abadie**, P.E., recently represented Louisiana and other state governments at the FHWA Pavement Preservation Emulsion Task Force meeting in Boston, MA July 25-27, 2010.

Engineering Materials Characterization Research Facility (EMCRF) Manager and LSU Civil Engineering Professor **Louay Mohammad**, Ph.D, presented an invited speech titled “Rubber Spotlight: Louisiana’s Experience with the Use of Waste Tires in Asphalt Mixtures” at the 2010 Institute of Scrap Recycling Industries that was held in San Diego, California, May 4-8, 2010.

Dr. Mohammad also participated as a panelist in the National Science Foundation sponsored US-China Workshop on Energy and Environment in the Development of Sustainable Asphalt Pavements that was held on June 7-9, 2010 at Chang’an University in Xi’an, China. While there, he also moderated a technical session on “Asphalt and Energy” and made a presentation on “Fundamental Characterization of Sustainable Materials for Pavement Infrastructure” at the workshop.

Recently Published

Final Report 440 and Technical Summary 440

*Field Verification for the Effectiveness
of Continuity Diaphragms for Skewed
Continuous P/C P/S Concrete*

Girder Bridges

Aziz Saber Ph.D., P.E.



Final Report 456 and Technical Summary 456

Establishing an Intelligent Transportation Systems (ITS) Lab at LTRC
Sherif Ishak, Ph.D.; Brian Wolshon, Ph.D., P.E.; Chris Schwehm;
Pradeep Rayaprolu; and Bharath Sridhar

Final Report 450 and Technical Summary 450

*Evaluation of the Base/Subgrade Soil under Repeated Loading: Phase I—
Laboratory Testing and Numerical Modeling of Geogrid Reinforced Bases
in Flexible Pavement*

Murad Abu-Farsakh, Ph.D., P.E., and Munir Nazzal, Ph.D., P.E.

To view a complete list of LTRC publications, visit the Web site at
www.ltrc.lsu.edu/publications.html.



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