

Technology Today

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Upcoming Events

April 29-May 10
Northwestern Traffic Engineering Workshop
TTEC

May 14-15
Naztec Controller Engineer Class
TTEC

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

2013 Louisiana Transportation Conference a Success

Over 1,780 people representing 32 states and two countries attended the 2013 Louisiana Transportation Engineering Conference, which was themed "Partnerships for Progress in Transportation" and held Feb. 17-20 at the Baton Rouge River Center. The biennial conference provides a forum for education, sharing new ideas and methods, and discussing changes in the industry and included 72 sessions, six workshops, and a two-day vendor exhibition.

Sherri H. LeBas, Secretary of the Louisiana Department of Transportation and Development (DOTD), delivered the welcoming remarks at the opening session. "In order to maintain progress and ensure that the infrastructure needs of Louisiana are met, I believe that we as professionals in transportation must work to strive for creative and innovative solutions to fund, design and construct projects," said LeBas. "Innovation through partnership is essential in order to tackle these challenges."

The conference's highly attended general session included key speeches by Sec. LeBas; American Association of State Highway and Transportation Officials Executive Director Bud Wright; Federal Highway Administration Administrator Victor Mendez; and LSU Baseball Coach Paul Manieri.

After three days of concurrent technical sessions and exhibits, an awards luncheon concluded the conference on Wednesday, Feb. 20. The luncheon recognized special achievements in engineering and construction projects performed by transportation partners of the LTC. This competition recognized the "best of the best" projects, demonstrating dedication to providing the highest quality in transportation infrastructure to customers, the citizens of Louisiana and the users of the state's highways, transit systems, airports, ports and other public works.



Transportation Awards and Recipients

FHWA PAVEMENT SMOOTHNESS AWARDS Rural National Highway System (non-Interstate)

District 04 – Darrell Goza, District Administrator

Urban National Highway System (non-Interstate)

District 07 – Steve Jiles, District Administrator

Rural Interstate

District 07 – Steve Jiles, District Administrator

Urban Interstate

District 62 – Allison Shilling, District Administrator

Most Improved Pavement Condition

District 07 – Steve Jiles, District Administrator

FHWA WORK ZONE EXCELLENCE AWARDS Project Level Excellence in Work Zone Traffic Control

Jeff Faust & Gang 203 – District 03

Mike Duplantis & Gang 242 – District 03

Jody Fontenot & Gang 253 – District 03

Jim Hollier & Gang 224 – District 04

District-wide Excellence in Work Zone Traffic Control

District 05 – Marshall Hill, District Administrator

District 08 – Murphy LeDoux, Jr., District Administrator

District 04 – Darrel Goza, District Administrator

“Perfect” District-wide Inspection Fall 2012 – Work Zone Traffic Control

District 04 – Darrel Goza, District Administrator

2013 LTC DOTD TRANSPORTATION EXCELLENCE AWARDS

Roadway/Bridge Construction less than \$10 Million

LA 160 Integral Abutment Bridges (SPN H.001164)

Modjeski & Masters

Roadway/Bridge Construction greater than \$10 Million

John James Audubon Mississippi River Bridge and Approaches (SPN 052-02-0024)

DOTD Bridge Design Section, Louisiana TIMED Managers, and Audubon Bridge Constructors

Other Infrastructure Construction less than \$10 Million

Statewide Signing Upgrade & Enhanced Mile Marker Projects

DOTD Traffic Engineering Development Section, Sign Design Unit

Other Infrastructure Construction greater than \$10 Million

Rebuilding General DeGaulle Crossings

Barriere Construction Company

Bridge Design Project Development

I-210 Pier Protection Replacement

F. Miller Construction Company

Road Design Development

River Road Relocation Associated with L'Auberge Casino Development

Stantec, Inc.

Intermodal/Public Works Project Development

Lafayette Regional Airport EMAS

DOTD Aviation Section, Lafayette Airport

Commission, and Lafayette Regional Airport

Context Sensitive Solutions/Public Involvement

US 171 Roundabout at LA 8/LA 28 in Leesville

DOTD Customer Service

Use of Innovative Product or Technology

Surface Resistivity Meter

Louisiana Transportation Research Center

Special Achievement in Customer Satisfaction

DOTD/Local Public Agency Partnerships to Enhance the Local Transportation System

DOTD Local Public Agency Liaison and the Local Technical Assistance Program

2013 LTC SENIOR DESIGN PROJECT PRESENTATION AWARDS

1st Place: LSU—Hydrocarbon Fouling of Reverse Osmosis Membranes

2nd Place: LA Tech—Tarbutton Road Interchange and I-20 Frontage Roads

3rd Place: ULL—AISC/ASCE Steel Bridge Design and Competition

2013 LTC DOTD/SASHTO SCHOLARSHIP AWARD WINNERS

Corey Mayeux – LSU
Katelyn Johnson – LSU
Philip Goppelt – LSU
Charles LeBoeuf – ULL
Clarke Chauvin – LSU
Rebecca Jensen – UNO
Fabiola Campoblanco – LSU
Andrew Jensen – UNO

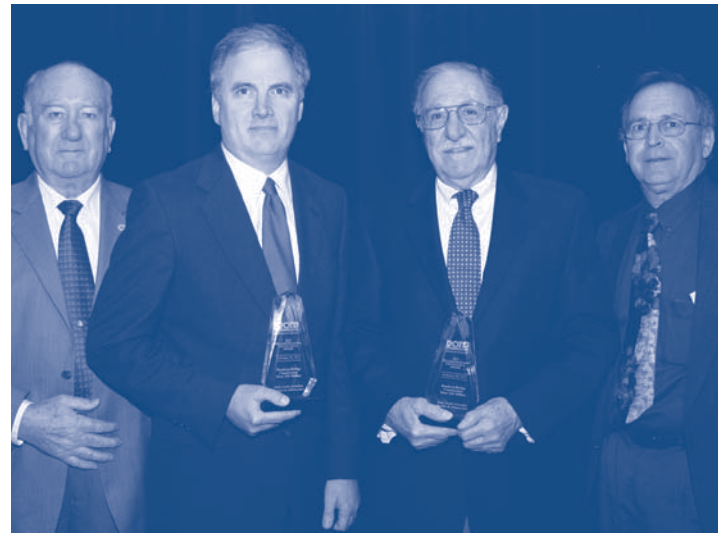
Neil Schneider – UNO
Allyson Mendoza – LSU
Kimberley Latino – LA Tech
Ty Todd – McNeese
Sarah Caudle – LA Tech
Kaitlin Tue – McNeese
Kenneth Lirette – LSU
Konrad Schultz – McNeese

If you would like a copy of any of the presentations from this year's conference, you can visit http://www.ltrc.lsu.edu/ltrc_13/survey13.html. The next LTC is already underway and tentatively scheduled for February 28-March 2, 2016, at the Baton Rouge River Center.

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Road Design Development: River Road Relocation Associated with L'Auberge Casino Development (Gary Heitman, Stantec)



Buck Frederick (LTM), Paul Fossier (DOTD), Verdi Adam (LTM), Wayne Marchand (LTM) - Roadway/Bridge Construction greater than \$10 Million - John James Audubon Mississippi River Bridge and Approaches



Buck Ouyang, Dr. Zolan Prucz (Modjeski & Masters Engineers, Roadway/Bridge Construction less than \$10 Million - LA 160 Integrated Abutment Bridges)



2013 LTC Senior Design Project Presentation Awards: 1st Place: LSU—Hydrocarbon Fouling of Reverse Osmosis Membranes

To view more pictures from this year's conference, please visit http://www.ltrc.lsu.edu/ltrc_13/2013_ltrc_photos/index.html

AASHTO RAC Meeting to Convene in Baton Rouge

The American Association of State Highway and Transportation Officials (AASHTO) Research Advisory Committee (RAC) and the Transportation Research Board (TRB) will host their annual meeting July 14-18, 2013, at the Hilton Baton Rouge Capital Center. Research directors from state DOTs will meet with national leaders from AASHTO, TRB, FHWA, and CUTC (Council of University Transportation Centers) to promote quality and excellence in research and share ideas in the application of research findings to improve state transportation systems.

AASHTO RAC provides overall transportation advice to the Standing Committee on Research (SCOR) and the AASHTO Executive and Policy Committees. RAC helps SCOR accomplish its goals by providing assistance in identifying research needs, defining research emphasis areas, utilizing research findings, maintaining an overview of state related research activities and funding, and employing the National Cooperative Highway Research Program (NCHRP) effectively.

The Transportation Research Board (TRB) State Representatives provide the link between the state DOTs and the TRB. It is through this link that each state is kept informed of TRB activities and/or research in progress elsewhere, and through which TRB is kept informed of issues and problems facing the state DOT and of the state's research activities.

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Leaders will discuss a range of topics in concurrent breakout sessions as well as receive updates from the second Strategic Highway Research Program (SHRP 2), learn about successful research programs, and attend task force and regional meetings.

To learn more about this year's meeting, please visit the web page at: http://www.ltrc.lsu.edu/rac_13/ or contact Mark Morvant [mark.morvant@la.gov | (225) 767-9124] or Harold "Skip" Paul [harold.paul@la.gov | (225) 767-9131] with any questions.

Local Researchers Awarded Honors at TRB

LTRC Concrete Research Manager Tyson Rupnow, Ph.D., P.E., and Concrete Research Engineer Patrick Icenogle, P.E., were recently honored at the Transportation Research Board's annual meeting January 13-17, 2013, in Washington, D.C. They were presented with two prominent awards for their work with the surface resistivity meter: the Fred Burggraf Award and the Design and the Construction Group Practice-Ready Paper Award

Their paper entitled, "Surface Resistivity Measurements Evaluated as Alternative to Rapid Chloride Permeability Test for Quality Assurance and Acceptance" gained national attention as it dealt with implementing the new quality assurance testing device (surface resistivity meter). Implementation of the device began with the I-10 Twin Spans and Caminada Bay bridges. The cost benefit analysis showed that DOTD will save about \$101,000 in personnel costs and an estimated \$1.5 million in quality control costs.

The Fred Burggraf Award provides recognition of excellence in transportation research by researchers 35 years of age or younger whose papers have been published under the sponsorship of any Division A Standing

Group. One such award may be bestowed on eligible authors by any Group Executive Board when warranted. The award is accompanied by a cash prize and was named in honor of the late Fred Burggraf, who served as the Board's director from 1951 until his retirement in 1964.

The Design and Construction Group Practice Ready Paper Award is given each year to an outstanding published paper that is judged to have the best potential for immediate implementation in the design and construction of transportation facilities.



Transportation Research Board



Transportation Research Board



To learn more about this research, visit LTRC's publications page at http://www.ltrc.lsu.edu/pdf/2011/fr_479.pdf

2013 Southeastern Transportation Consortium

The Southeastern Transportation Consortium (STC) met in Baton Rouge, LA on March 4-7, 2013, at the Louisiana Transportation Research Center (LTRC), with Louisiana as the host state. The goal of STC aims to pool financial, professional, and academic resources to coordinate research and develop improved methods of addressing common problems in the planning, design, construction, maintenance, management, and operation of transportation systems in participating states.

Mark Morvant was the chair of the consortium and represented Louisiana. Other STC officials in attendance included: Michelle Owens (Alabama), Elisha Wight-Kehner (Arkansas), David Jared (Georgia), Joe Crabtree (Kentucky), Cindy Smith (Mississippi), Moy Biswas (North Carolina), and Jimmy Smith (Virginia). Louisiana officials and professionals also attended:

from LTRC, Skip Paul, Doc Zhang, Bill King, VJ Gopu, Kirk Zeringue, Michael Boudreaux, Allison Landry, and Bridget LeBlanc; from LADOTD, Joubert Harris; and from FHWA, Mary Stringfellow.

A major focus of the meeting was presentations on synthesis project reports sponsored by the STC. Baabak Ashuri from Georgia Tech University presented "Best Practices for Determining Value of Research Results," which discussed how to determine the significance of research results by demonstrating the affect on transportation system safety, quality, and cost effectiveness. Hesham Ali from Florida International University presented "Asphalt Surface Treatments for Pavement Preservation" and discussed preserving roads by focusing on preventative maintenance. Richard Sheffield, Thad Hooper, Trae Welch, and Alex Aguilar from Thompson Engineering

presented “Water Quality Management at Construction Sites,” where they discussed erosion control practices of the southeastern states. Finally, Clark Graves presented “Regional Implementation of Warm Mix Asphalt.”

Another important order of business this year was to vote on future projects. The following projects were selected: “Transportation Funding Alternatives Now and in the Future” will report the funding sources that each state in the Southeast uses to fund its transportation system and identify alternatives in the future; “Reflective Cracking Mitigation Strategies for Cracked Pavements” will discuss how to better prevent reflective cracking in asphalt concrete (AC)

overlays on cracked pavements; “Best Practices for Achieving and Measuring Pavement Smoothness,” will focus on achieving the desired IRI during asphalt and concrete paving as well as the best construction techniques for achieving required smoothness; and “Real Time Driver Information for Congestion Management” will discuss the potential of emerging technologies to mitigate congestion by changing driver decisions.

For more information on the consortium, please visit <http://www.ltrc.lsu.edu/stc/> or contact Mark Morvant at mark.morvant@la.gov.

Staff Updates and Accomplishments

LTAP and staff, **Marie Walsh**, Ph.D., and **Nicholas Verret**, were awarded the Customer Satisfaction Award from DOTD for their work with Ann Wills, DOTD’s local programs manager, in improving the DOTD/LPA partnerships. The award was presented at the Louisiana Transportation Conference in Baton Rouge in February. Dr. Walsh has been selected to participate on the NCHRP 20-68A Domestic Scan 12-03 Noteworthy Practices of Zero Fatalities States to be conducted in the fall of 2013. Dr. Walsh was also appointed to another three-year term on the TRB ANB 10 Transportation Safety Management Committee.

LTRC would like to welcome new hire **Ted Ball**. As of March 2013, Ball is the new Training & Development Program Manager. His duties will include teaching Management and Development classes, developing leadership courses, and managing the Management and Development Structured Training program. For 21 years at LSU, Ball designed and delivered CPTP supervisory/management training courses statewide, and he taught a number of LTRC and DOTD employees across the state during his time at the university. This experience will aid him as he continues teaching and designing supervisory and leadership training courses at LTRC.

LTRC Director **Harold “Skip” Paul**, P.E., was recently appointed chairman of the AASHTO Research Advisory Committee (RAC).

LTRC Associate Director, External Programs, **Vijaya (VJ) Gopu**, Ph.D., P.E., served on the NSF Site Visit Teams to review the NEES Equipment Sites at the University of Buffalo, New York. Dr. Gopu also chaired the Advisory Board Meeting of the NSF sponsored Center for Integration of Composites into Infrastructure (CICI) in Orlando, Florida.

Engineering Materials Characterization Research Facility (EMCRF) Manager and LSU Civil Engineering Professor **Louay Mohammad**, Ph.D., was awarded the 2012 Asphalt Rubber Ambassador Award by the Rubber Pavement Association.

Recently Published

Final Report and Technical Summary 442

Development of Advanced Grid Stiffened (AGS) Fiber Reinforced Polymer (FRP) Tube-Encased Concrete Columns
Guoqiang Li, Ph.D.

Final Report and Technical Summary 448

Transport, Speciation, Toxicity, and Treatability of Highway Stormwater Discharged to Receiving Waters in Louisiana
John Sansalone, Ph.D., and Frank Cartledge, Ph.D.

Final Report and Technical Summary 484

Design of Lane Merges at Rural Freeway Construction Work Zones
Brian Wolshon, Ph.D., P.E., P.T.O.E.; Sherif Ishak, Ph.D.; and Wakeel Idewu, Ph.D.

Final Report and Technical Summary 491

Evaluation of Design Methods to Determine Scour Depths for Bridge Structures
Guoping (Gregg) Zhang, Ph.D., P.E.; S.A. Hsu, Ph.D., C.C.M.; Tingzong Guo, Ph.D., P.E.; Xiaoyan Zhao; Andrew D. Augustine; and Ling Zhang

Final Report and Technical Summary 494

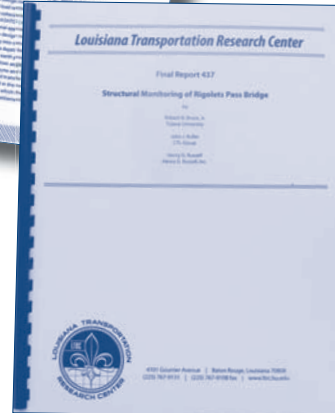
Development of a Time-Dependent Hurricane Evacuation Model for the New Orleans Area
Chester G. Wilmot, Ph.D., and Ravindra Gudishala

Final Report and Technical Summary 495

Calibration of Resistance Factors for Drilled Shafts for the New FHWA Design Method
Murad Y. Abu-Farsakh, Ph.D., P.E.; Qiming Chen, Ph.D., P.E.; and Md Nafiul Haque

Final Report and Technical Summary 497

Quantifying the Key Factors that Create Road Flooding
Joshua D. Kent, Ph.D.



FIND OUT MORE
To view a complete list of LTRC publications, visit the website at www.ltrc.lsu.edu.



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