

Technology

Today

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Morvant to Assume

Associate Director, Tech Transfer, Detail



In December 2004, Kirt Clement, Associate Director, Tech Transfer, was detailed to the position of Deputy Undersecretary-Change Management Director. Kirt is now overseeing the implementation of DOTD's Process Improvement Initiative facilitated by the Dye Management Group. LTRC congratulates Kirt on being chosen for this important and challenging assignment.

Effective February 28, 2005, Mark Morvant was detailed to the Associate Director, Technology Transfer position. Mark had been LTRC's Pavement and Geotechnical Research Administrator since 2001, and his past experience includes 14 years in the pavement and geotechnical design section, 5 years in geotechnical research, and 1 year in construction.

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Spreadsheet program developed under LTRC research

aids New Orleans airport runway rehabilitation

In February 2005, the Louis Armstrong New Orleans International Airport broke ground on the rehabilitation of Runway 10-28, the airport's East-West runway. This rehabilitation also includes the construction of a concrete bridge along the portion of the runway that crosses the existing Kenner DOTD vehicular tunnel.

This tunnel, which is located near the west end extension of the runway, was built in the late 1980s and early 1990s. Supported on class "B" timber piles, this tunnel has experienced minimal settlement. However, the runway is soil-supported and its pavement is underlain

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Spreadsheet Program (cont. from page 1)



by 2 to 20 feet of sand fill placed over highly compressible organic and soft cohesive soils. Consequently, it experienced continual settlement requiring frequent maintenance to ensure a smooth ride.

The proposed bridge will be partially supported by the existing tunnel and will have two additional bents supported on 24-inch and 100-foot-long precast, prestressed square concrete piles. To accommodate future differential settlement, the bridge will have two 120-foot-long pile-supported approach slabs that will be supported on variable length 14-inch square precast, prestressed concrete piles.

Volkert & Associates, Inc., performed the structural design of the bridge and approach slabs. Geotechnical engineering services were provided by Citywide Testing & Inspections, Inc., and Gore Engineering, Inc. Gore Engineering used “Tudrag,” an Excel spreadsheet program developed under LTRC research, to select the pile lengths along the approach slabs. The

design is based on selecting the variable pile lengths along the approach slabs that should yield an “ideal” smooth transition over the existing tunnel (lazy-S curve shape deflection).

“Tudrag” was developed for LTRC project 97-4GT, “Assessment of Mitigating Embankment Settlement with Pile-Supported Approach Slabs” (Das, Bakeer, Zhong, and Schutt). It is a Microsoft Excel spreadsheet program with Visual Basic Application (VBA) macros intended for the parametric study of pile-supported approach slabs. The software estimates permanent settlement of the pile-supported approach slab caused by downdrag forces imposed by embankment loads.

Input for “Tudrag” consists of pile characteristics, site characteristics, and slab length. It will accept input from other computer programs directly involving pile load capacity with depth and soil and embankment settlement profile with depth. It will also accept data from appropriate hand calculations.

For more information about “Tudrag,” please contact Dr. Reda Bakeer, P.E., Professor, Department of Civil and Environmental Engineering, Tulane University, (504) 862-3253, bakeer@tulane.edu.

LTRC Represented at 84th Annual TRB Meeting

The 84th Annual Transportation Research Board Meeting was held in January 2005, in Washington, D.C. With over 2,500 presentations available in 500 sessions, this major meeting attracted attendees from all areas of the transportation spectrum—government, academia, and private industry. This year’s spotlight theme was “Transportation from the Customer’s Perspective: Providing a Safe, Secure, and Integrated System.” For more information on the meeting, visit www.trb.org/meeting.

Following is a list of presentations made by LTRC staff members and contract researchers:

- Bogdan George Barbu and Kenneth McManis, “Study of Problematic Silt Stabilization”
- Murad Y. Abu-Farsakh, M. Nazzal, Khalid Alshibli, and E. Seyman, “Application of DCP in Pavement Construction Control”
- Murad Y. Abu-Farsakh, and M. Nazzal, “Reliability of PCPT Methods for Estimating the Coefficient of Consolidation of Cohesive Soils”
- Izzaldin M. Almohd, Zhongjie “Doc” Zhang, and Yusuf Abu-Farsakh, “Pressure Distributions within Different Embankment Materials under Traffic Loading”
- Steve Cai, Xiaomin Shi, George Voyiadjis, and Zhongjie “Doc” Zhang, “Design of Ribbed Concrete Approach Slab Based on Its Interaction with Embankment”
- Sherif Ishak and C. Alecsandru, “Analysis of Freeway Pre-Incident, Post-Incident, and Non-Incident Conditions Using Second-Order Spatio-Temporal Traffic Performance Measures”
- Sherif Ishak, Y. Zhang, and C. Alecsandru, “Development of Optimal Downsampling Procedures for Microsimulation Modeling of Transportation Networks: A Freeway Case Study”
- Louay Mohammad, “Laboratory Characterization and Empirical Prediction of Dynamic Modulus of Superpave Mixtures”
- John J. Sansalone, C. Cristina, and H. Lin, “A Physically Based Constitutive Model Relating Heavy Metals to Particles”
- Mingjiang Tao and Zhongjie “Doc” Zhang, “Enhanced Performance of Stabilized By-Product Gypsum”
- Chester Wilmot and N. Meduri, “A Methodology to Establish Hurricane Evacuation Zones”
- Brian Wolshon, “Modeling and Performance Assessment of Contraflow Evacuation”

Asphalt Technology Conference

Attracts DOTD, Private Industry



LTRC continued its series of focused technical conferences with the Louisiana Asphalt Technology Conference, which was held February 23-24 in Shreveport. This conference was part of LTRC's ongoing initiative to provide technical leadership through a forum that demonstrates new technologies, implements and publicizes LTRC research, discusses and resolves problems, imports the best practices of others, and partners with the transportation community.

LTRC plans to sponsor approximately two conferences a year focused on different technical areas. The Louisiana Pavement Conference was held in October 2004. By involving industry partners in the planning phase, LTRC seeks to attract contractors, consultants, suppliers, and local governments in addition to DOTD personnel.

Approximately 200 engineers, technicians, contractors, equipment manufacturers, and other transportation industry

representatives attended the free two-day event that included the following sessions: Durability of HMA Mixtures, Compaction and Joint Construction Issues, Pavement Preservation, Use of Contractor Data for Quality Acceptance, Asphalt Specification and Mixture Design Issues, and Work Zones.

You can download all conference presentations at www.ltrc.lsu.edu/asphalt/asphalt_powerpoint_list.html.

A Bridge Technology Conference is planned for September 8-9, 2005, in New Orleans. Contact Mike Boudreaux at (225) 767-9123, or visit www.ltrc.lsu.edu/conferences.html for further details.

(above, right): Luanna Cambas presents new asphalt specifications

Morvant Assumes Tech Transfer Position

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“Mark brings a wealth of experience as both a manager and an engineer to this important job, and I have the greatest confidence in his ability to administer the incumbent programs,” said Joe Baker, LTRC Director.

“One of my goals for our training, education, and outreach programs is to provide quality and meaningful offerings that meet the needs of the Department and our external customers,” Morvant said. “I look forward to the challenges of making available courses, seminars, and conferences that effectively instill efficiency, quality, pride, and safety in our employees.”

Staff Accomplishments

Geotechnical Research Engineer Manager **Gavin Gautreau, P.E.**, was named the 2005 President-Elect of the Baton Rouge chapter of the Louisiana Engineering Society.

LTAP Director **Dr. Marie B. Walsh** participated in an invitational Peer Exchange with the Idaho LTAP Center in Moscow, Idaho, in January. The group shared ideas on best management and program practices for LTAP Centers across the country.

Technology Today Publication Statement

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Mark Your Calendars:

2006 Transportation Engineering Conference

The next Louisiana Transportation Engineering Conference is less than a year away, and plans are progressing rapidly. The conference will be held February 12-15, 2006, at the River Center in downtown Baton Rouge.

With over 1,600 participants, the 2004 conference was the largest 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.

As the conference draws closer, information and online registration will be available on the LTRC web site (www.ltrc.lsu.edu). Mark your calendars, and be sure to check upcoming issues of *Tech Today* for regular conference updates.

If you have any comments or questions, please contact:

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LTRC Web Site Launches New Look, Improved Features

LTRC recently unveiled its redesigned Web site. Aside from a new look, the site includes several user-friendly features:

- ♦The calendar of events is updated weekly to display current events and PC classes.
- ♦The weekly calendar is displayed on the left hand side of several pages throughout the site.
- ♦Monthly calendar entries link to a class description, contact person, and online registration form, if available.
- ♦The Local Technical Assistance Program (LTAP) section now includes more information about their course offerings and a complete catalog of publications and videos available through their lending library.
- ♦Online registration for workshops, LTAP classes, and conferences are becoming more readily available on the LTRC site.



Behind the Scenes at LTRC:

External Educational Resources

left to right: Wilma Chustz, Sandy Romero, and Treba Patin



LTRC's External Educational Resources program supplies the professional development and technical skills training necessary for the career growth of all DOTD employees. This program manages the budget and administers all training contracts to provide education and training resources to DOTD employees statewide.

The mission of this unit is to help divisions and sections define and prioritize department training needs, to develop specialized curricula, and to deliver continuing education, professional development, and technical skills workshops, seminars and training programs that serve DOTD's statewide training needs. In addition, the program provides self-study courses and certification materials and registers employees for off-site training courses for job-specific

technical and professional development topics.

Wilma Chustz, Educational Resources Development Manager, has worked in training at DOTD for 35 years. After graduating from LSU, she began working for the department by writing training courses, one of which, Maintenance Math, is still in use today. Her responsibilities include performing needs studies, finding resources, and negotiating contracts for training from external resources, which include FHWA's National Highway Institute (NHI), universities, consultants, and professional organizations and associations.

LTRC Training Events Program Manager **Sandy Romero** has worked for DOTD for 30 years and has been at LTRC since its creation in 1986. She has been

coordinating LTRC's training events for 10 years. Sandy handles all of DOTD's individual registrations for professional training and conferences. She is also responsible for all arrangements for NHI courses, Safety Council courses, LTRC technical conferences, and the biennial Louisiana Transportation Engineering Conference.

Treba Patin is the Automation Training and Development Program Manager. She has worked for the State for 29 years, including 24 years administering the safety program for the Department of Health and Hospitals. Treba administers the contracts for the PC software classes provided by the University of New Orleans, CADD classes given through Louisiana State University, ARC GIS classes, and literacy training. She also administers contracts for the Confined Spaces program and courses offered through the American Traffic Safety Services Association (ATSSA).

TTEC Construction Progresses



In August 2004, construction crews broke ground on the Transportation Training and Education Center (TTEC), a progressive partnering effort between the public and private sectors of the transportation industry. Weather permitting, TTEC will be operational by the fall of 2005.

For more information about TTEC, call (225) 767-9131 or visit www.ltrc.lsu.edu/ttec.html.



Above: Side view of TTEC as of April 2005