



RESEARCH

Access Management Treatment Research Reveals Minimal Economic Impact on Roadside Businesses

Access management treatments are essential in maintaining the safety and efficiency of Louisiana's roads. Treatments such as J-turns, right-in-right-out (RIRO) entrances, raised medians, and center turn lanes safely mitigate traffic flow and prevent potential crashes among vehicles, cyclists, and pedestrians. However, the owners of roadside businesses located near treatment installation sites are often hesitant about these projects, worrying that the altered traffic flow during and after construction will inconvenience their patrons. Researchers Stephen Barnes, Ph.D., Helmut Schneider, Ph.D.,

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COMMUNITY

Bentley Grant Unlocks Classroom Innovations for Louisiana Educators

In 2024, LTRC was awarded a generous \$25,000 grant from Bentley Systems, Inc., one of our valued partners in the transportation industry (see *Technology Today Volume 37, Issue 4*). More than half of these funds—a total of \$15,000—were designated to support K-12 teachers in public, private, and charter schools across Louisiana with classroom resources for hands-on STEM education.

Last November, LTRC leaders had the privilege of traveling to several schools throughout the Baton Rouge area and beyond to distribute 15 awards of \$500 each to educators who successfully completed a grant application. Many of these teachers previously participated in LTRC's acclaimed AASHTO STEM Outreach Solutions program (see *Technology Today Volume 37, Issue 3*).

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UPCOMING EVENTS

OpenRoads Designer Drainage & Utilities
April 21-24, TTEC 179

Professional Writing Skills
May 8, TTEC 175

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

and Eric Mills took interest in the validity of these anticipated impacts, concluding that these projects do not economically harm businesses and can sometimes even yield positive results.

In their study, “Economic Impact of Access Management Treatments,” Drs. Barnes and Schneider, along with Mills, analyzed the monthly business data from before, during, and after the construction of several access management treatments across Louisiana to determine their potential economic impact on surrounding businesses. They collected business sales data from two years prior to construction, the years during construction, and two years after the treatment was complete. Principal investigator Stephen Barnes explains: “Business data were categorized based on site location and proximity to treatment, and economic indicators such as unemployment rates and population estimates were integrated from government sources using R Programming software.” Information was also collected from sources such as the Louisiana Department of Revenue, regional unemployment rates, and population estimates.

The second part of this study concerned customers’ perception of the treatments. To obtain this information, researchers conducted a series of over-the-phone and in-person surveys from both business owners and patrons. Patron surveys concluded that traffic projects such as access management treatments have no effect on pricing, customer service, and product quality; therefore, the inaccessibility of business entrances served merely as a minor inconvenience. Dr. Barnes emphasizes these findings: “Perception survey results further support the notion that access management projects support regional economic development, and that businesses and patrons exhibit resilience and adaptability to the changes brought about by the access management projects.”

The conclusions of this project have the potential to shift the attitudes business owners hold toward traffic construction projects like access management treatments, revealing they can indeed create a safer environment for all road users while also maintaining



Access management treatments evaluated for economic impact in this project included J-turns (pictured at top) and raised curb channelization (pictured at bottom), among several others.

the economic wellbeing of nearby businesses. Additionally, the process of data collection from the surrounding businesses develops and enhances trust between DOTD and business owners and provides feedback that can further improve access management strategies. As Dr. Barnes concludes, “The findings can be used by planners to engage the business community and general public to create a more collaborative environment for advancing projects that can improve safety and efficiency in the movement of traffic (across Louisiana).”



Read Final Report or Tech Summary 697
online: www.ltrc.lsu.edu/publications.html

LTRC's ITS Lab Upgrades Equipment to Enhance Research Efforts

LTRC's research section operates five laboratories focused on various aspects of transportation engineering. While four labs work primarily with physical resources, the center's Intelligent Transportation Systems (ITS) lab collects and analyzes traffic safety and operations data across Louisiana in an effort to enhance the efficiency of the state's roadway system.

LTRC's Publications Team recently hosted a conversation with Milhan Moomen, Ph.D. (pictured top right), and M. Ashifur Rahman, Ph.D. (pictured bottom right), to learn about several enhancements to this unique lab.



When was the LTRC ITS Lab established?

Construction of the LTRC ITS Lab began in 2012. Its initial goal was to serve as a central repository for traffic data collected in Louisiana. This began as a research project spearheaded by Dr. Sherif Ishak, with Dr. Julius Codjoe serving as a Research Assistant. It was not until 2015 that the lab became operational under the management of Dr. Codjoe.



How would you summarize the purpose of the ITS Lab?

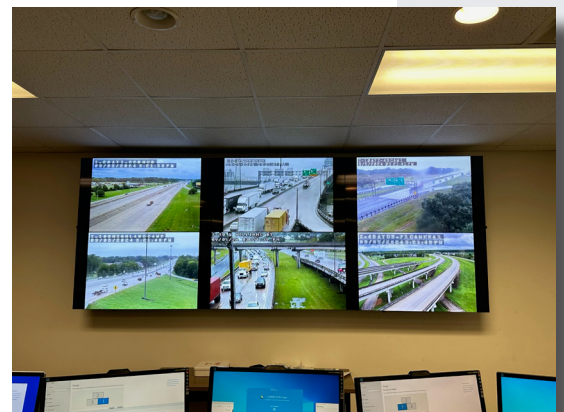
LTRC's ITS research section is guided by the principle of developing and demonstrating procedures that successfully transform existing traffic and ITS data into useful information for Louisiana's DOTD and other agencies. Our mission is to conduct research that supports DOTD in identifying and evaluating new systems and processes that can enhance the operations of the state's ITS and other departments. This involves demonstrating the need and usefulness of the newest technologies that can be integrated into the state's transportation systems, ultimately contributing broadly to a safer and more efficient environment for all of Louisiana's road users.

A key focus of our work is the study of technology-driven emergency response coordination to improve incident management. Through these efforts, we aim to enhance mobility, reduce congestion, and improve public safety. The lab aims to provide transportation authorities with valuable insights to improve their services while also serving as a hub for researchers and practitioners to access and analyze traffic flow and other relevant roadway data.

Our lab staff, which includes one full-time employee and several student workers in addition to the two of us, works daily to collect, process, and analyze data across the state. The specific information we interact with varies widely based on the particular research we are conducting at any given time. Examples include crash, speed, traffic movement and volume, and incident response data, among others.

The lab recently received some significant equipment upgrades. Tell us about the tools you have and how they help fulfill your purpose.

In 2024, the lab acquired a new six-screen video display system (pictured at right), enhancing its capability to conduct a wide range of research activities. This system enables comprehensive monitoring of traffic corridors, providing detailed insights into roadway conditions.



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TECH TRANSFER

LTRC Publications Team Unveils New Logo and Brand Refresh

2024 marked the dawn of a new era for LTRC as the center unveiled a brand new logo and branding package. This refresh is designed to represent LTRC's modern, innovative efforts to serve the transportation community while maintaining strong ties to its mission, vision, and longtime heritage as the standard-bearer for transportation research, technology transfer, and training in Louisiana.

Developing the new look—LTRC's first update since 2009 and third overall in its 39-year history (*see opposite page*)—was a collaborative effort featuring multiple design stages over a period of six months. The center's talented Publications Team, composed of Emily Wolfe, Jenny Gilbert, Todd Blount, and Chris Melton, planned, guided, and executed this extensive process in partnership with LTRC leadership. Major development steps included:

- Conducting a review of the current logos of similar institutions across the nation to gather potential ideas
- Soliciting and compiling input from key LTRC stakeholders regarding desired elements and features
- Utilizing feedback to develop a creative brief for designer Chris Melton to build multiple draft options
- Reviewing draft options to determine the team's preferred choice, then refining that choice to finalize and diversify the new look

- Developing and communicating brand guidelines to utilize the new look consistently and effectively
- Updating the logo and branding on all currently used physical and digital platforms

Public Information Director Emily Wolfe notes that patience and precision are keys to an effective design process: "It is definitely not a process that can be rushed. I liked to look at each draft that was created, note my initial reactions, then set it aside for a few days before revisiting. We went through at least three major revision and refinement stages before arriving at the final product."

Multimedia Specialist Jenny Gilbert adds: "As many in the design world will tell you, a brand identity is more than just a logo. In today's multi-platform landscape, we carefully considered color palettes, font styles, and both primary and secondary logo variations. Our goal was to create a versatile brand that maintains a cohesive identity while allowing flexibility across different applications, all of which reinforce LTRC's presence."

LTRC strives for innovative excellence in all aspects of its operations, including its broad and varied communication initiatives in print and online. Thanks to the creativity and hard work of its Publications Team, the center is well-positioned to reflect this commitment as it engages with transportation stakeholders across Louisiana and beyond!

Currently, the lab is preparing to test Unmanned Autonomous Vehicles (UAVs) to monitor various traffic incidents and measure response times with the help of the display system. Other recent upgrades include transitioning from CountCAM2 to CountCAM4 traffic cameras, which offer improved vehicle counts and speed estimation. The lab also utilizes the latest VISSIM simulation software for traffic modeling and has recently integrated DeepMetrics Vehicle Recognition for validating traffic movement and counts. Additionally, the lab leverages the Regional Integrated Transportation Information System (RITIS) to support statewide research, facilitating data-driven improvements in mobility and infrastructure planning.

How does the lab interact with the larger ITS section at DOTD headquarters?

We work closely with DOTD's ITS section to identify the most pressing and relevant research needs across the state. Regular collaborative meetings with team members allow us to exchange ideas and receive feedback on how we can best support the state's Traffic Management Centers (TMCs).

Our lab is dedicated to conducting research that enhances traffic management strategies while leveraging our capacity to evaluate and analyze innovative approaches. This work aligns with DOTD-ITS's continuous monitoring and rapid response to traffic incidents. To support these efforts, we pilot various research projects and provide data-driven recommendations to TMC leaders, ensuring that roadway safety and efficiency improvements can be achieved without diverting critical resources from real-time operations.

For example, our ongoing project on Unmanned Aerial Vehicles (UAVs) for traffic incident management is designed to support DOTD's Motorist Assistance Patrol (MAP) program. This initiative explores the potential for improving incident response by facilitating real-time information transfer from traffic incident locations to TMCs. This partnership is invaluable, and we look forward to further strengthening our collaboration as Louisiana's transportation needs continue to evolve.

How do you hope to continue growing the lab as you look to the future?

The field of ITS is evolving rapidly, making it essential for Louisiana to advance data-driven research to keep pace with the growing demands of the transportation system. Moving forward, we aim to undertake innovative projects that will provide DOTD with the insights to navigate the challenges of implementing emerging intelligent transportation technologies in a cost-effective manner.

We are excited about several potential research projects conducted through our lab. In addition to our ongoing project on UAVs, we are exploring other potential research avenues, including the application of autonomous vehicles in Louisiana. We are also considering the possibility of expanding the Road Weather Information System (RWIS) to improve identification of foggy conditions and provide timely traveler warnings, which could mitigate risks associated with multi-vehicle crashes, such as those seen in the recent I-55 superfog incident. Additionally, we plan to assess the feasibility of expanding coordinated demand-adaptive traffic signals to enhance traffic flow.

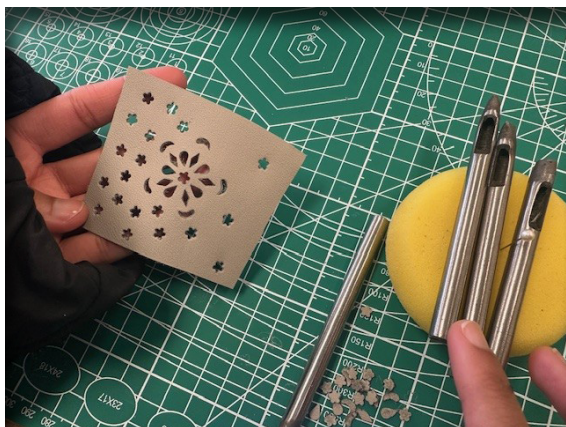
1986



2009



Early drawings and digital mockups of the 2009 logo design.



Teachers and schools receiving awards included: Charae McMorris, Oak Grove Primary School; Belinda Sargent, E.K. Key Elementary School; Sarah Armand, Phoenix Magnet School (Bolton Academy PK-5); Nichole Airhart, St. Martin STEAM Academy; Tiffany Virdure, Our Lady of Mercy School; Robin Price, SLU Lab School; Carolyn Murphy, St. Aloysius School; Nathalie Roy-Mitchell, Glasgow Middle School; Dustin W. McCrory, St. Amant Middle School; Jennifer Woodard, Central Intermediate School; Alysha Guidry, Westside Junior High School; Ida Smith, Benton Middle School; Nikita LaCour, Scotlandville Pre-Engineering Magnet Academy; Rebecka Rocquin, Ponchatoula High School; and Robyn Delaune, Walker High School.

Nathalie Roy-Mitchell of Glasgow Middle School in Baton Rouge invested her award monies into her students' innovative Roman Technology program. The funds enabled students to build a model Roman road throughout the Glasgow campus and use real leather-working tools to make their own sandals in an experimental archeology project (*pictured top left*).

Alysha Guidry, a science teacher at Westside Junior High School in Walker, shared with LTRC that she used the grant funds to purchase supplies to enhance and expand her classroom botany program. Her students used this new germination equipment to plant and manage an Aquaponics garden (*pictured bottom left*), ultimately harvesting lettuce to share with the local community. Guidry says she looks forward to a continued partnership with LTRC to grow her students' knowledge of engineering topics in the future.

Stacey Wilton, LTRC's Education Outreach Program Manager, is excited about the opportunity the Bentley Grant affords to advance these initiatives around the state: "STEM education promotes so much more than science, technology, engineering, and mathematics. It fosters a wide range of important skills, including problem solving, critical thinking, communication, curiosity, and persistence. These qualities are crucial to the success of Louisiana's students as they live and work together in the future."

LTRC remains committed to enhancing STEM education for Louisiana students through its outreach initiatives and the generous contributions of our industry partners. For more information on opportunities for educators, including future grant applications, please contact Stacey Wilton at (225) 767-9141 or stacey.wilton@la.gov.

Updates and Accomplishments

LTAP Program Manager **Courtney Dupre** is now the facilitator of the National LTAP Association's Peer-to-Peer Mentorship Program.

LTAP Director **Rudynah "Dynah" Capone** is now a member of the Safety RPIC committee. She was also selected to participate on the panel for TRB's Transit Cooperative Research Program (TRCRP) Project B-57: Innovative Marketing and Customer Communication Strategies for Rural Transit. Additionally, Capone recently presented at the LSU Laboratory School's Career Day about LTAP's workforce development efforts in transportation and engineering.

ITS/Traffic Research Associate **Ashifur Rahman, Ph.D.** has been appointed as a member of the Louisiana Complete Streets Advisory Council. He will collaborate with DOTD and others in ongoing efforts to maintain an up-to-date Complete Streets Policy that balances the access, mobility, health, and safety needs of all transportation system users.

PUBLICATIONS

Recently Published

Project Capsule 25-1SS

Complete Streets Means Trucks, Too: Integrating Freight Traffic Needs with Active Transportation Planning and Policy

Tara Tolford, MURP, AICP, GIP

Project Capsule 25-2SS

Truck Parking Shortage: Improving Efficiency and Identifying Opportunities

Bethany Stich

Final Report & Technical Summary 704 (Project 22-3SS)

Testing the Hurricane Evacuation Modeling Package (HEMP)

Ruijie "Rebecca" Bian, Ph.D., P.E.

Final Report & Technical Summary 705 (Project 23-5SS)

Improved Incident Response through Coordinated, Interoperable Communications

Milhan Moomen, Ph.D.; M. Ashifur Rahman, Ph.D.; Waseem A. Khan

Final Report & Technical Summary 706 (Project 23-8SS)

Best Practices for Maintenance of Control-of-Access Fencing

Milhan Moomen, Ph.D.; M. Ashifur Rahman, Ph.D.; David Appiah



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