





How Can Cities and Parishes Help in Reducing Rural Roadway Departures? See Page 7

IN THIS ISSUE

- 2 Director's Corner
- 2 LTAP Website
- *3* Drainage: The Key to Roads that Last
- 4 Leadership Spotlight
- 5 Unmanned Aerial Systems
- 6 Training and Events Updates
- 7 Reducing Rural Roadway Departures

Visit www.louisianaltap.org

for our current classes, training requests, free resources, and much more...

LTAP Gamifies Training to Engage Learners

by Olivia Phelps

In the last issue of *Technology Exchange*, we discussed how LTAP had gone virtual, conducting multiple web-based offerings of some of our training courses. What we neglected to share with you was how much fun we had during these offerings. Luckily, we've continued the fun trend so much so that we have "gamified" our upcoming training.

The idea to "gamify" our training was born out of necessity. When I began with LTAP in May 2019, I was asked to "spice up" a lengthy section of a class that was loaded with complex information. This section was scheduled to take place

after lunch and it was full of contract legalese, which we all know is a recipe for a nap. Nonetheless, it was all important information for the participants to learn. The question then became "what's the best way to convey the necessary information but keep everyone engaged and awake?"

After pondering it for quite some time, it dawned on me. I needed to turn the mindnumbing content into a game. This led me down a black hole of information about a subject I didn't even realize was an entire realm of new information: Gamification.

The gamification concept is simple—turning otherwise uninteresting content into something fun. It was exactly what LTAP needed to increase learner engagement, especially in a virtual setting. In true fashion, I couldn't just have a simple Jeopardy-style game. I needed something memorable, out-of-the box, and far more exciting than contract terminologies. What could be more memorable than an escape room?

I began by extrapolating the critical content that needed to be conveyed, making each topic the basis for a single game. This transfer of knowledge was the primary goal of the game, so each game needed to be factually correct. These games also needed to work together to tell a story from which the participants could "escape." By creating these games in a manner that one leads to the other through simple connection, the participants would be led through a carefully crafted story and eventual "escape." The answer from one game directs you to another. In building an escape room and "gamifying" our content, it was important the games be simple, fun, and not cause



"Working Our Way Back to You"

By Steven Strength, P.E., PTOE



I've had that great 1966 Four Seasons song in my head recently – and speaking of the seasons, fall in Louisiana is always a time of renewal – the return of cooler weather, football, outdoor sports, and this year, the return of hope for a more normal existence. While the past six months have brought some monumental changes, including

dealing with COVID and some of the worst tropical systems we've seen since Katrina and Rita, the unconquerable spirit of the people of Louisiana is on display once again. LTAP sees evidence of that spirit in you, our local public agency employees, whether it's Ken Ward being interviewed by the Weather Channel as Laura approached (coincidentally, Ken is in our Leadership Spotlight this quarter), following news of flood-fighting efforts deep in Cajun country in the wake of Sally, or getting requests from our locals in the Southwest for STOP signs or from all over for resource materials related to damage documentation and reimbursement. The work goes on while everyone tries to get back to a better place for your families and communities, and our prayers and thoughts are with you, especially for those who have lost property or loved ones in these months of trouble and hardship.

Most heartening for us here at LTAP have been the expressions by so many of you looking forward to getting back to our regular training, partner association meetings, safety meetings, and technical assistance visits. While we won't be serving those famous LTAP lunches anytime soon, I can report that our LTAP staff is all together again here in the office, working to get back on the road. Some things will be different going forward, including virtual training components for several of our Roads Scholar classes. Understanding that we can't reach all of you effectively online, we will follow up with in-person training in the not too distant future. Our Work Zone Safety mini workshops are getting a facelift, including a new work zone video that LTRC is producing for us to help you polish those flagging skills. We are also retooling our Roads Scholar #3 Drainage class for online presentation beginning in late October.

LTAP Website Gets a Facelift



LTAP recently updated the website with a new look and new resources for local agencies. In addition to the new design, some informational updates and additional resources have been posted to our website. Under the Resources tab, topics are now categorized by interest and initiative. Online registration to any of our training and events is prominently placed on the main page. Program highlights are also featured, including our calendar of events and course offerings through the American Association of State Highway and Transportation Officials (AASHTO) Transportation Curriculum Coordinating Council (TC3).

Also added are more "Tailgate Talk" safety briefing sheets that public works supervisors and transportation managers can provide to their crew in 3-5 minutes. Another addition is the form under "Contact Us" that will allow local public agencies to request technical assistance. In this way, we can better serve any agency needs—be it training or a simple walkthrough the Local Road Safety Program project application process. To learn more, visit *www.louisianaltap.org*.

We want to hear from you regarding your needs and availability for both virtual and live training. If your agency hasn't already done so, please take a minute to fill out our training survey at the following link: *http://lsu.qualtrics.com/jfe/form/ SV_38ZsKwbOJKotDKt*. In addition, you may "Request Training" or "Request Technical Assistance" using the buttons on our LTAP website.

As the song says, the "road is kinda long, but we've just gotta get back home" and we all will, together! Thank you for supporting LTAP and for inspiring us to keep working to get back to you. Be safe out there! SCS.

Drainage: The Key to Roads that Last

By Chris Melson

Louisiana is no stranger to rain—receiving 60 inches of annual precipitation on average. If water from this rainfall continually enters the roadway structure, it can cause significant damage, reduce its service life, and even lead to failure. Depending on site conditions, poor roadway drainage may lead to asphalt stripping, edge cracking, distresses/loss of structural support caused by pavement pumping, and settlement at approaches. Poor drainage may also contribute to asphalt corrugation and shoving, fatigue cracking, and potholes. **It is estimated that 80% of all structural roadway problems stem from drainage-related issues.** Likewise, poor drainage may lead to safety issues due to standing water, water ponding, and unsafe edge drop-offs.

Water is able to enter the roadway through cracks in the pavement, infiltration through the shoulders, infiltration from side ditches, and water entering base material from the groundwater table. Drainage systems are designed to prevent water entering the structure: to properly collect, convey, and discharge stormwater away from the roadway and abutting property. Drainage design is based on area hydrology, historic water levels, roadway characteristics, and other site considerations. However, drainage maintenance is just as critical as design. **Proper water removal off the roadway, out of the roadway, and away from the roadway should be the #1 priority of a road maintenance program.**

Ideally, effective maintenance programs involve a five-phase approach: routine inspection and monitoring, routine preventive maintenance, spot detection of problems (occurrences), repair, and continued monitoring and feedback. Nonetheless, it is important to understand that drainage maintenance is the "key to roads that last."

Please consider joining our instructor, Jim Ferguson, P.E., CFM, of AJ Ferguson Jr. Consulting Services, for our latest edition of "Roads Scholar #3: Drainage: The Key to Roads that Last." The course will provide best practices in culvert and ditch inspection—and include the following objectives:

- Describe the problems associated with poor drainage;
- Identify the factors contributing to good drainage;
- List the steps in the basic hydrologic cycle;
- Discuss the characteristics and principles of roadway drainage;
- Describe the importance of roadway protective measures;
- Name the common types of drainage systems;
- Develop inspection procedures for drainage systems; and
- Incorporate good practices in maintenance of drainage systems. Please see **page 6** for the class schedule.

Examples of poor drainage leading to asphalt edge cracking:







Leadership Spotlight: Dr. Ken Ward, Assistant Director of Public Works and Engineering (Caddo Parish)

By Rudynah Entera Capone, MPA

In this edition of *Technology Exchange,* we are pleased to put a spotlight on **Dr. Ken Ward**, who is currently the Assistant Director of Public Works and Engineering in Caddo Parish. He is a dedicated leader not only in his chosen profession but also in the community. He serves as President of the non-profit water system in Benton, President of Louisiana Tech's Construction Engineering Technology Program Advisory Board, Vice Chairman of Bossier Parish 911, and District 4 Board member of the Louisiana Parish Engineers and Supervisors Association (LPESA).

Dr. Ward holds three LA Tech degrees: BS in Construction Engineering Technology, M.S. in Engineering Management and Doctorate in Leadership (EdD). His doctoral research focused on decision-making styles while choosing to outsource, with the hope of guiding local governments to choose wisely. As a family man, he's been married for 20 years raising three boys amid six acres of nature in North Bossier Parish.

LTAP's Innovation and Technology Transfer Manager Rudynah Capone connected with Dr. Ward to gather his thoughts on leadership and management in the engineering field. *What does leadership mean to you?*

Leadership is providing vision.

How do others view your leadership style?

With inspiration, guidance and encouragement.

What virtues should a leader possess to lead effectively?

Integrity and honesty are a tandem as being the best baseline for leadership. Being honest and being able to instill trust that you will lead with integrity will generally provide others comfort and belief that everything will work out.

In any of your current and previous leadership roles, what has been the most challenging task you've had to overcome? What strategies did you use to handle the situation?

With life-altering events such as hurricanes and the pandemic, we are faced with changes that affect our employees and their families. I believe in allowing our employees a voice in decisions regarding their future as well as for the parish as a whole. When provided a voice, I believe employees work diligently to assist citizens, who in turn, assist their families. We are stronger together. During Hurricane Laura and the beginning of COVID-19, we asked our employees to focus first on their families, then parish needs later. The majority of our staff was at work on time, taking care of our citizens because they had already met the needs of their families. This is a proof that we are stronger together. *How's your leadership experience during the COVID-19 pandemic or when Hurricane Laura hit us? Briefly share how you managed to overcome any challenges and led your team effectively?*

COVID-19 provided many unusual working situations for our staff. We needed to continue the work of the parish while ensuring the safety of our employees and their families. To help facilitate this, we moved permit operations to an online platform. This major undertaking was prompted by the need to quickly react to COVID-19. The successful implementation of it was secured through leading with trust in each other and providing compassion when things did not always go well. Now, all permits, including commercial vehicle, driveway, right-ofway, and 911 addresses are online for ease of our citizens and help of our employees.

Who is your model leader? Why?

My dad is and will always be my role model. Lynn Ward was a dump truck driver for a local civil contractor. As a teenager, he would bring me to a job site and show me different aspects of construction. His vision from the cab of a truck was remarkable. He could tell by the grade stakes (how much more), or by the tempo of the pile driver (how much longer). He shared, in his own way, leadership is about looking and listening to what is going on around you. "Look, listen, and make your own thought" was his way of leading when others could not hear or see past the noise.

Is there any advice you can give to emerging leaders in the engineering field?

The new engineering field, I like to call, is the relationship field. I have found that while I am in the engineering field, I am actually in the relationship business. Creating strong lasting relationships is actually what works best. So, young individuals will succeed if they actually take the time to bond with co-workers, clients, supervisors, commissioners, jurors, and citizens. Their careers will be more fruitful, meaningful, and stronger in our communities.



Unmanned Aerial Systems: "Eye in the Sky" Takes Flight in Louisiana

As one of the innovations under the Federal Highway Administration's (FHWA) Every Day Counts Round 5 (EDC-5) initiative, unmanned aerial systems (UAS) technology allows for a bird's eye look of a project's progress, for instance, bridge inspection. This "eye in the sky," or plainly known as drone technology, benefited Louisiana during its most-talked-about incident in 2018—when the Sunshine Bridge in St. James Parish was indefinitely closed after a barge crashed into it. Drones were used by DOTD inspectors to assess the bridge for damage and if/what repairs were needed. In this case, bridge inspection was taken to greater heights, and UAS improved the safety of the inspection crew as well as motorists.

UAS Benefits

The benefits of UAS are countless. Not only does it assist in incident management during floods, vehicle crashes, and emergency response, it also keeps workers out of harm's way.

Other benefits, as mentioned by UAS experts across the nation, include: (1) accelerated collection of data when surveying; (2) consistent mapping and isolation of problem areas before an emergency occurs; and (3) increased efficiency in emergency response and recovery operations.

DOTD's Aviation Section Takes the Lead

For the Aviation Section of the Louisiana Department of Transportation and Development (DOTD), UAS solutions provide a fresh viewpoint in ensuring that all UAS activities in the state's airspace are undertaken safely and responsibly.

"We have formed a committee that coordinates efforts deploying the UAS technology and the work we do with EDC," DOTD Aviation Director Bradley Brandt shared.

On the other hand, the use of UAS has helped many local agencies and emergency response teams to capture pre-andpost-event aerial imagery to answer critical disaster questions



DOTD inspectors used drones and other UAS technology to inspect the Sunshine Bridge. (Source: DOTD)



With the help of LiDAR and drone technology, DOTD consultants surveyed a 41-mile section of I-10, between I-49 and the Acadia/ Jefferson Davis parish line, for an upcoming cable barrier project. (Source: DOTD)



Pre-and-Post Aerial Imagery using aerial photography technology (Source: EagleView)

regarding properties and assets. For example, it allowed first responders to speed up recovery efforts following the recent Hurricane Laura by using image comparisons, which ultimately provided justifications of the amount of damage incurred.

UAS Across the Nation

The use of UAS technology is continuing to expand across the country. A survey conducted by AASHTO found that there were 36 states already using high-definition cameras, LiDAR, and other sensors in order to improve construction inspection, *cont. on pg. 6*



Check the App B4UFLY

With B4UFLY, simply open the app and select where you want to fly to see the status of the airspace selected, as well as details regarding surrounding advisories. B4UFLY is provided through a partnership between the Federal Aviation Administration (FAA) and Kittyhawk IO. Learn more on *www.faa.gov/uas/recreational_fliers/where_can_i_fly/b4ufly/*

5

LTAP Virtual Training on FoRRRwD October 13-15, 2020

Almost 60% of Louisiana's vehicle-related fatalities on locally owned roads resulted from roadway departures. Join us for "LTAP Virtual Training" on

"Focus on Reducing Rural Roadway Departures" (FoRRRwD) on October 13-15, 2020, 9:00 a.m. to 11:30 a.m. each day. This tri-part course will provide tools and resources for local governments, planning organizations and transportation engineers to reduce crashes and deaths that resulted from roadway departures. (View article on **page** 7 to learn more about Louisiana's FoRRRwD efforts.)

Other Upcoming Training

We invite you to attend our other virtual courses as follows:

- Local Public Agency (LPA) Construction, Engineering and Inspection (Virtual), November 17-19, 2020
- Roads Scholar #3 (Virtual), Drainage: They Key to Roads That Last, October 26-28, 2020: This 3-part virtual course is recommended for parish and local agency engineers, managers, supervisors and employees who direct or conduct maintenance or repair of roadways and drainage systems in Louisiana. Register for all 3 days to receive the full credit of 6 PDHs. Register through *https://registration.ltrc.lsu.edu/login*
- Roads Scholar #13 (Virtual), Inspection of Local Bridges (Dates TBA)

LPESA Associate Member Virtual Showcase



LTAP Gamifies Training

cont. from page 1

participants to become frustrated or not want to engage. For this reason, keeping the individual games as basic activities such as word searches, puzzles, or hidden messages was essential to the fun and simplicity.

We showcased the "escape room" game during the National LTAP Association conference this past July, and it was a success. The feedback we received was that participants loved the new games and were able to learn the content and stay engaged following our famous LTAP lunches. These activities were not only fun to create, but they served the purpose of transforming some "dry" content into a fun way to learn. Be on the lookout for the next LTAP classes where you might have the chance to enjoy gamification and learn to "escape" a session!

- Featuring Onyx surface treatments by Ergon and Ingevity (Date TBA)
- For training news, visit www.louisianaltap.org/training.html
- LPESA Associate Member Showcases will be scheduled approximately once per month until we can meet together again. If you have an idea for a showcase topic, please contact LTAP.

Unmanned Aerial Systems *cont. from page 5*

bridge inspection, and incident response operations. Moreover, 24 states have been actively researching UAS use with an academic institution to expand operations. To read more about specific examples from other states, visit *www.fhwa.dot.gov/innovation/everydaycounts/edc_5/uas.cfm*

Additional Resources

- LPESA Conference Presentations: Presentations relevant to UAS, drones and aerial technology may be found on the LTAP website: www.ltrc.lsu.edu/ltap/lpesa-conferences. html
- LADOTD Drones and UAS Information: *www.dotd.la.gov/aviation.*
- Registering Your Drone Online: registermyuas.faa.gov/
- Louisiana Drone Laws: www.911security.com



How Cities and Parishes Can Focus on Reducing Rural Roadway Departures

By Rudynah Entera Capone, MPA

Louisiana is taking a collaborative and data-driven approach in road safety particularly in its Focus on Reducing Rural Roadway

Departures ("FoRRRwD"). A virtual training opportunity will be hosted by LTAP on October 13-15, 2020. See page 6 for details.

Reducing rural roadway departures is not only part of the FHWA's EDC initiative, it is also a road safety priority for the Louisiana DOTD and partnering agencies involved in the implementation of the State's Strategic Highway Safety Plan (SHSP). The plan's overall goal is to reach Destination Zero Deaths (DZD), and it is instrumental for inter-agency work to take place in order to reach this goal. This means active collaboration between engineers, planners, educators, health practitioners, law enforcement officers, elected officials, and safety advocates—all happening at the state, parish, and city levels.

So, how can parishes and cities help Louisiana focus on reducing rural roadway departures? Here's what you can do:

- Work with partners in your designated regional safety coalition. There are nine SHSP coalitions across the state established • through an agreement between DOTD and the designated Regional Planning Commission (RPC) or the Metropolitan Planning Organization (MPO). Louisiana DOTD has District Offices that work closely with the MPOs, RPCs, State Police troops, and local public entities. Visit www.destinationzerodeaths.com to view the coalitions' contact information.
- Develop and implement Local Road Safety Plans. Approximately 24% of the statewide deaths in Louisiana occurred on local roads. To help bring these numbers down, parishes and cities are encouraged to develop a local safety plan. The plan should mirror the statewide Roadway Departure Action Plan and the infrastructure component of the SHSP but strategically outline local road safety issues, low-cost safety solutions and sources of funding.
- Apply for Local Road Safety Program (LRSP) funding. Local public agencies may submit their project applications yearround. Eligible projects include proven safety countermeasures such as signage, markings, rumble strips, friction treatments, safety edge, and curve delineators. These solutions are low-cost and have been proven to avoid roadway departures.

LTAP works closely with the regional safety coalitions, the DOTD District offices, and MPO partners to ensure local stakeholder involvement among municipalities and parishes. Local road agencies are encouraged to consider developing a Local Road Safety Plan to be used as a tool for reducing roadway fatalities, injuries and crashes.

For more information on FoRRRwd, visit www.fhwa.dot.gov/innovation/everydaycounts/edc 5/roadway departures.cfm For questions about the LRSP project application and Local Road Safety Plan development, email LRSP Manager Leo Marretta at leo.marretta@la.gov or visit www.louisianaltap.org/local-road-safety.html

To learn more about other funding opportunities besides LRSP, visit www.ltrc.lsu.edu/ltap/funding-opportunities-for-locals. html

Chainsaw Safety Resources for Local Agencies

Due to COVID-19 restrictions, LTAP is postponing our ever-popular chainsaw safety classes to Spring 2021. In the meantime, we encourage local public agencies to check out the resources and video references that we have posted on our LTAP website:

www.louisianaltap.org/chainsaw safety.html



7

LOUISIANA LOCAL TECHNICAL ASSISTANCE PROGRAM



4099 Gourrier Avenue Baton Rouge, LA 70808

ADDRESS SERVICE REQUESTED

Pre-Sort Standard U.S. Postage PAID Permit No. 55 Baton Rouge, LA

www.louisianaltap.org

Need Technical Help? Contact LTAP

(225) 767-9717 (225) 767-9156 (fax) www.louisianaltap.org

Steven C. Strength, P.E., P.T.O.E. Director

> **Chris Melson** LTAP Program Manager

Courtney Dupre LTAP Business Manager

Leonard P. Marretta LRSP and LPA Program Manager

Rudynah "Dynah" Capone LTAP Innovation and Technology Transfer Manager

Olivia Phelps LTAP Training Program Coordinator

Publication Statement

Technology Exchange is published quarterly by the Louisiana Transportation Research Center. It is the newsletter of the Louisiana Local Technical Assistance Program. Any findings, conclusions, or recommendations presented in this newsletter are those of the authors and do not necessarily reflect those of LSU, DOTD, or FHWA.

LTRC Publications Staff

Jenny Speights, Public Information Director Jenny Gilbert, Editor Emily Wolfe, Multi-Media Specialist Chris Melton, Photographer

The purpose of the Local Technical Assistance Program is to provide technical materials, information, and training to help local government agencies in Louisiana maintain and improve their roads and bridges in a cost-effective manner. To accomplish this purpose, we publish a quarterly newsletter; conduct seminars, workshops, and mini-workshops covering various aspects of road and transportation issues; provide a lending library service of audio/visual programs; provide technical assistance through phone and mail-in requests relating to transportation technology; and undertake special projects of interest to municipalities in Louisiana.