Louisiana APWA Sustainability Conference
Evaluating Methods and Looking Toward the Future

The Louisiana Chapter of the American Public Works Association (APWA) sponsored the first conference of its type in the state to explore the concept of sustainability and what it means to Louisiana’s local communities and public works related activities. The workshop, *Sustainability in Public Works: Building a Foundation*, brought together a diverse group of public works directors and managers, engineers, architects, planners, scientists, and state and federal transportation personnel. LTRC’s Local Technical Assistance Program (LTAP) hosted the all-day event Friday, October 30 at TTEC.

Special guest, George Crombie, incoming national president of APWA, opened the conference with remarks on Louisiana’s rebuilding efforts and the notion of sustainability. He noted that the APWA Board of Directors have made sustainability a national priority and created the new Center for Sustainability. Crombie stressed that sustainability requires systems thinking and enhanced skill sets. He said that current and future public works directors will need technical competencies as well as strong skills in the broader areas of leadership, team building, and communication to be able to forge the relationships needed to start down the path of sustainable development and management.

Keynote speaker Michael Mucha, public works director for Olympia, Washington and director of APWA’s new national Center for Sustainability, continued the conference with a discussion on the idea of “finding balance in everything.” Mucha also noted that public works involves getting things done today while planning for the future. This usually involves thinking and acting in different ways. Mucha echoed George Crombie’s call for strong relationships built on trust.

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Responses by attendees to Mucha’s question of “what’s so hard about sustainability?” yielded a number of discussion points including:

- There is a need for a paradigm shift in how things have always been done.
- The paradigm of sustainability does not allow for unilateral decision making.
- It is hard to define what sustainability means.
- It is a long term commitment and is often thought to require higher initial investment.

Mucha suggested that it’s not having the right answer but rather asking the right questions. It’s about using new technology and new ideas to do things better. The concept of sustainability should not mean being proud of increasing the amount of recycling materials, but it should mean reducing the amount of materials consumed.

Mr. Mucha stressed that public works professionals must work with others in the community to build understanding of the notion of sustainability. Opportunities and options for a more balanced and forward thinking approach to public works management must be described in ways that communities can understand and embrace (and support politically). This includes developing “sustainable” and integrated approaches to traditional areas of public works management such as transportation, infrastructure management, water and wastewater, waste, etc.

Following Mucha’s presentation, conference attendees split into two sessions. The session entitled “Stormwater” presented challenges and opportunities in Louisiana concerning stormwater management, sustainable streets, and landscape solutions. The concurrent session “Solid Waste” presented topics on the hierarchy of solid waste management, sustainable solid waste practices, and disaster debris management. The next set of sessions included discussions on water and wastewater as well as facilities and grounds.

Mucha concluded the conference with an interactive presentation on how to develop a framework to apply sustainability methods in participants’ local areas. He explained that strategy must come first and gave attendees applicable ideas and methods to improve sustainability efforts in their region.

LTAP Director Marie Walsh, Ph.D., explained, “The combination of presentations with a national expert as well as other experts and practitioners from Louisiana gave conference participants ideas of what is happening in other places around the country and the world as well as what is being applied here at home.”

Evaluations given to the participants following the conference showed a high level of enthusiasm for the speakers and content as well as the desire to hear more about the subject and how more can be done in Louisiana.
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Resources

Alternative Fuels and Advanced Vehicles Data Center
www.afdc.energy.gov/afdc

Louisiana Department of Environmental Quality
www.deq.louisiana.gov

The Recycling Foundation
www.recyclingfoundation.com

LSU Department of Environmental Sciences
info.envs.lsu.edu

LSU Department of Landscape Architecture
www.design.lsu.edu/la.htm

City of Olympia, WA Public Works
www.ci.olympia.wa.us/city-government/departments/public-works.aspx

The Shaw Group Inc.
www.shawgrp.com

2010 APWA Sustainability Conference
sites.apwa.net/sustainability
Engineers and Reducing Roadway Departures

By Dean Tekell, P.E., P.T.O.E.
Local Road Safety Program Engineer

The Problem

Roadway departure crashes are a serious traffic safety concern on the national level. It is estimated that every 21 minutes a highway death occurs from a roadway departure crash. Statistically, Louisiana is once again among the nation’s leaders in a negative index. In 2008, 912 people died on Louisiana roadways. Lane departure crashes accounted for 538 fatalities or 59% of all deaths on Louisiana’s roadways! Civil engineers can make Louisiana a safer and better place to live by remaining mindful of roadway departure crashes in designing, maintaining, and operating roadways.

A roadway departure crash is defined by the Federal Highway Administration (FHWA) as a nonintersection crash that occurs after a vehicle crosses an edge line or center line, or otherwise leaves the traveled way. If engineers are going to design, maintain, and operate better roadways, certain biases or mindsets, such as being less aggressive or less determined to drive down roadway departure crashes, must be overcome. In my experience meeting with engineers to review accident statistics and develop countermeasures to improve the safety of a section of roadway, it is often stated that:

- The driver left the curve because they were drunk.
- The driver left the curve because they were driving too fast.
- If the occupants had only been wearing seatbelts they would have survived.
- The crash involved some teenagers driving an old clunker with bald tires.
- The driver was on their cell phone texting a friend.

While all of those statements are probably true, they are not necessarily helpful to the cause of driving down roadway departure crashes. There are other agencies and professions tasked to address seatbelt use, drunk driving, vehicle safety, aggressive driving, and distracted driving. Civil engineers must stay focused on the task of designing safer roadways.

If engineers focus on their part of the safety equation, the roadway, they can feel proud of the profession that introduces a feature that:

- helped a tired or drowsy driver navigate the roadway safely
- helped a teenager or inexperienced driver survive a youthful error
- helped a person survive an incident where they were run off of the road by a drunk driver

The Countermeasures

The Louisiana LTAP, operating out of the Louisiana Transportation Research Center (LTRC) in Baton Rouge, has recently toured the state offering a roadway departure workshop. The workshop described low cost methods that local agencies can use to reduce lane departure crashes on local roads. These treatments included:

A typical horizontal curve in Louisiana illustrates the use of a horizontal alignment sign with an advisory speed plaque as well as several chevron alignment signs.
• **Centerline** – The entire roadway does not need to be striped if departures are occurring on the curves or in spot locations, only the curve or spot can be striped.

• **Edgeline** – Under certain conditions, the centerline marking may be omitted and edgelines can be placed on high crash risk segments or points.

• **Horizontal Alignment Signs** – These signs include turn, curve, reverse turn, and reverse curve. The Manual on Uniform Traffic Control Devices (MUTCD) has specific requirements on the type and placement of these signs when used.

• **Advisory Speed Plaques** – These signs, placed on horizontal alignment signs, give the motorist important information about the operating characteristics of the curve.

• **Chevron Alignment Signs** – When posted at regular intervals around a curve or in combination with the large arrow sign, they provide excellent cues to the motorist regarding the location and severity of a curve.

• **Large Arrow Signs** – When used alone or in combination with chevron alignment signs, they provide cues to the motorist on the existence of a curve that may not be readily apparent.

• **Combination Horizontal Alignment/Advisory Speed Plaques** – These signs supplement the standard horizontal alignment sign with an advisory speed plaque. This sign is placed at the beginning of the curve and supplement signs placed in advance of the curve.

• **Delineators** – Inexpensive, post-mounted reflectors that help motorists around curves at night or in other low visibility conditions such as fog.

Civil engineers need to remain aware of the severity and pervasiveness of fatal roadway departure crashes in Louisiana. By paying attention to details in roadway design and becoming familiar with the application of basic traffic control devices designed to help motorists keep their vehicles on the road, the number of roadway departure crashes and fatalities can be reduced. All civil engineers can live up to the American Society of Civil Engineers’ (ASCE) fundamental canon of ethics that reads:

> Engineers shall hold paramount the safety, health, and welfare of the public and shall strive to comply with the principles of sustainable development in the performance of their professional duties.

> Engineers shall recognize that the lives, safety, health, and welfare of the general public are dependent upon engineering judgments, decisions, and practices incorporated into structures, machines, products, processes, and devices.

Dean Tekell, principal of Dean Tekell Consulting, LLC, has over 20 years of experience in the areas of local traffic engineering and traffic safety engineering. This past summer, Tekell was one of the instructors for LTAP’s Roadway Departure Workshop.

**NTSB Employees Banned from Talking on Phones and Texting while Driving**

National Transportation Safety Board employees will no longer be able to talk or text on agency-issued electronic communication devices while driving, according to a new policy.

NTSB Chairwoman Deborah Hersman announced the policy during her September 8 swearing-in ceremony in Washington. According to a transcript of Hersman’s speech, the new policy was established in light of recent statistics that show distracted driving is a factor in some fatal motor vehicle crashes.

President Barack Obama nominated Hersman on June 18 as NTSB chairperson; the Senate confirmed the appointment in July. Her term runs through Dec. 31, 2013.
Associations to Support Seatbelt Programs

In October, the Louisiana Municipal Association (LMA) and the Police Jury Association of Louisiana (PJAL) adopted resolutions affirming their organization’s support of statewide efforts to increase the use of seatbelts. The resolutions were presented to the Executive Board of Directors of each organization by John LeBlanc, director of the Louisiana Highway Commission. Marie Walsh of LTAP also participated in these meetings and described how LTAP and its Local Road Safety Program are working with the Highway Safety Commission and DOTD to improve safety on the local road system. Sandy Treme, Calcasieu Parish, president of the PJAL, and Roland Dartez, executive director of the PJAL, signed the resolution after the board meeting in Calcasieu Parish. Mayor Susan Menard of Cankton, president of LMA, and LMA’s executive director, signed the LMA resolution at their meeting in Baton Rouge.

The purpose of the partnerships is to provide grass- root support for local communities by encouraging local members of the community to rally around the “Click It or Ticket” Enforcement Mobilization and to make a commitment to support strong safety belt enforcement for the campaign waves throughout the year.

LMA and the PJAL began their activities in late 2009 by requesting their members to send an e-mail message to municipal and parish employees and other community representatives. The Christmas and Holiday safety greeting included a reminder that using a seatbelt is one of the quickest and easiest steps each individual can take to ensure their safety and those of others. Also, it is now the law that all occupants of vehicles be using the seatbelt or other age appropriate restraint. This is the result of legislation passed in 2009. Previous Louisiana law required that front-seat occupants wear seatbelts and children under the age of 13 wear a seatbelt and/or be restrained by an appropriate child safety seat regardless of seating position. About four dozen communities responded with messages to their employees and community members. Posters were printed and posted at numerous governmental offices and press releases were made in numerous areas. Major newspapers in the Calcasieu and Shreveport areas picked up the story. Several municipalities also requested assistance in starting a local initiative.

More activities will be coordinated through LMA and the PJAL in 2010. These will revolve around the “Click It or Ticket” national campaign conducted in May that includes increased enforcement and education activities. The LHSC enforcement waves include March 1-7 for teens ages 15-20 years, May 16-31 for the Memorial Day “Click It or Ticket” and September 18-25.

Louisiana has a seatbelt usage rate that hovers around 74%, which is considerably lower than the national average of 82%. Louisiana also has a fatality rate that is considerably higher than the national average. Not wearing a seatbelt (or using child restraints properly) is involved in increasing the rate of seatbelt use is one thing that we can do right now to reduce the number of serious injuries and deaths that occur from traffic crashes. According to the National Highway Traffic Safety Administration, seatbelts reduce the risk of fatal injury to passenger car occupants by 45% and the risk of moderate to critical injuries by 50%. About 65% of the people killed in crashes in Louisiana in 2008 were not buckled up. Increasing seat belt use is a key focus area in the Louisiana Strategic Highway Safety Plan as is engaging local leaders and their communities in these efforts. With the LMA and PJAL actively involved as strategic partners, Louisiana is on the way to reducing the toll of traffic related deaths and injuries.
In October, LTAP hosted a culvert repair and rehabilitation course at four locations. This two-day course exposed over 150 participants to a general overview of culvert systems. The course was designed with very little math presented for a wide variety of people from politicians to actual maintenance personnel.

The class was taught by Dwight Reagan, P.E., from Reagan Engineering Associates consulting firm. He has extensive experience in culvert maintenance and construction in addition to many other civil engineering topics.

Evaluations returned from the participants included comments such as “lots of good information,” “very good and understandable course,” and “all young engineers, inspectors, and maintenance personnel working with culverts should attend.” The course was broken into a two-day course, with a 6-hour session on each day for a total of 12 professional development hours.

Several types of pipe corrosion were also presented. Concrete culverts may develop cracks due to their low tensile strength. Abrasion by flowing water with soil particles can cause wear to concrete and decrease structural integrity. In steel pipes, rust will form due to the oxidation in exposed surfaces. Soil acts as a corrosion inhibitor due to its lower resistivity.

A culvert management system was presented later on the first day. Many agencies are developing an inventory of all of their culvert systems in a database similar to sign inventory systems.

Culvert maintenance includes both routine and special maintenance. Systematic maintenance is a more effective way of maintaining culvert systems. This process is aided by the use of a culvert management system.

During the second day’s presentation, culvert repair was presented. Several techniques such as grouting, invert paving, invert plating, and lining technologies were discussed. Surface treatments for concrete culverts included patching and crack sealing. The durability of all of these techniques is very high but some require higher initial and operational costs.

Finally, a discussion was presented on complete culvert replacement if none of the rehabilitation techniques are sufficient. Examples of these situations include complete structural failure or changes in the environment. Complete replacement of culverts is a very expensive process and should be weighed carefully with existing repair techniques.

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, LADOTD, or FHWA.

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The purpose of the Local Technical Assistance Center 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. LTAP also coordinates the Louisiana Local Road Safety Program.