LOUISIANA CIVIL ENGINEER

Journal of the Louisiana Section **http://www.lasce.org**

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MAY 2011
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The Louisiana Section of the American Society of Civil Engineers was founded in 1914 and has since been in continuous operation. The Section consists of the entire state of Louisiana and is divided into four branches that directly serve over 2000 members. They are the Acadiana Branch centered in Lafayette, the Baton Rouge Branch, the New Orleans Branch, and the Shreveport Branch.

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The Louisiana Section is located in ASCE Region 5 that consists of the Louisiana, Mississippi, Alabama, Georgia and Florida Sections.

President's Message

By Patrick J. Landry, PE

Patrick J. Landry, PE

The annual Louisiana Section Spring Conference was held on April 14-15, 2011 in Lafayette at the Cajundome Convention Center. Approximately 200 professionals and students attended the day and a half conference, which afforded attendees the opportunity to earn up to 11 professional development hours. I've received many favorable comments regarding the conference, and Acadiana Branch President, Shaun Simon, and his organizing committee are to be commended for hosting one of the best Spring Conferences in recent memory. The Section was honored to have ASCE National President, Ms. Kathy Caldwell, attend the conference and deliver an inspiring message during the Thursday luncheon. The highlight of the lunch program was the presentation of the ASCE National Francis C. Turner Award to Dr. Kam Movassaghi. The Section was also honored to have ASCE's National Deputy Executive Director and General Counsel, Mr. Tom Smith present two interesting technical topics on "Ethics and Professionalism" and "ASCE's Role in Enhancing the Quality of Life through Sustainable Development". Friday's luncheon included the presentation of the Life Member Awards and the Outstanding Senior Student Awards.

Many thanks are extended to the technical presenters who helped make the conference informative for all who attended. Also, thank you to all of our exhibitors and sponsors who helped underwrite a portion of the expenses to help keep the cost of the conference affordable for all attendees.

During the General Membership Meeting, held at the conclusion of the Spring Conference, the officers and board of directors were elected for the 2011-2012 administrative year. Congratulations are extended to next year's officers: President, Ronald Schumann; President Elect, Kurt Nixon; Vice President, Robert Jacobsen; and Secretary-Treasurer, Pam Gonzales, along with all of the incoming board of directors.

Significant progress is being made on the development of the Louisiana Section Report Card. Each of the nine committees (roads, bridges, dams, ports, levees, aviation, drinking water, wastewater and solid waste) has assembled the necessary data and will be assigning grades and producing draft reports by the end of June. The Section has enlisted the services of Lambert Media to help with the promotion of our efforts and have begun meeting with state and federal administrators to brief them on our progress. During the months of July and August; peer reviews, ASCE National reviews, completion of the final reports and printing of all material will take place with the goal to unveil the Report Card at the beginning of September. Currently, there are approximately 60 volunteers working to ensure that we will produce a successful Report Card. Thank you to all of the volunteers, and in particular, our Executive Director, Dr. Kam Movassaghi; Deputy Director, Mr. Joey Coco and Communications Director, Ms. Nedra Davis.

In the February issue of the journal, I reported that the Louisiana Section was recognized as the winners of the 2010 Outstanding Newsletter Award for large Sections and Branches. Recently, the Section received another award when we were notified that we won the 2011 Membership Renewal competition for large Sections. The competition is based on the greatest percentage of members renewing early and also by having the highest renewal rates of all large Sections in the nation. Thanks to all of our Section members for realizing and understanding the importance of being a member of ASCE.

The Louisiana Section Chapter of the Transportation and Development Institute (T&DI) was formed almost three years ago to provide an avenue for those individuals interested in continuing education in the transportation field. Our chapter is one of only eight in the nation and provides several seminars every year, either in the New Orleans or Baton Rouge area. Please refer to the T&DI article on page 27 for more information regarding upcoming seminars.

With huge federal budget battles ongoing in Washington DC, our nation's infrastructure remains in the forefront of discussions as it pertains to funding priorities. Our ASCE National leadership has been meeting regularly with members of the 112th Congress stressing the importance of the approval of a multi-year surface transportation authorization, as well as, other important pieces of infrastructure legislation. Seven members of the Louisiana Section participated in the annual Legislative Fly-In in late March and had the opportunity to discuss the status of legislative bills with members of the Louisiana Congressional delegation. Look for a detailed report on the success of their trip to Washington DC on page 10.

For those of you who participate in the use of social media, ASCE National has made a concerted effort to build online communities utilizing some of the more popular social networks. Currently, there are more than 17,000 members in ASCE's LinkedIn group. ASCE's official Facebook page currently has 2,500 fans and there are more than 2,000 followers on Twitter.

Finally, April 20th marked the first year anniversary of the Deepwater Horizon oil spill which resulted in the death of 11 oil field workers and dumped 4.9 million barrels of crude oil into the Gulf of Mexico. Civil engineers have been called upon to help with the clean up and restoration efforts of our beaches, shoreline and marshes. Currently, civil engineers are leading the effort to control flood waters, not seen in 40 years, along the Mississippi River and in the Atchafalaya Basin. As with other recent disasters like Hurricanes Katrina, Rita, Gustav and Ike and the earthquakes in Haiti and Japan, the general public looks to us and our professional expertise to help return their lives to some sort of normalcy. We should all be proud of the work that we do and never take for granted our roles in society.

On behalf of the entire Louisiana Section Board, I hope you and your family have a happy and safe summer.

Reorganization and Modifications to the Wind Load Provisions of ASCE 7-10

By Joffrey Easley, PE, Engensus, LLC

Joffrey Easley, PE

INTRODUCTION

The American Society of Civil Engineers (ASCE) publication *Minimum Design Loads for Buildings and Other Structures*, also known as ASCE 7, is a consensus standard that "provides minimum load requirements for the design of buildings and other structures that are subject to building code requirements." Since the 1992 edition of the Standard Building Code (SBC), ASCE 7 has been the code-referenced standard for the determination of wind loads. The 2009 edition of the International Building Code (IBC) states "Wind Loads on every building or structure shall be determined in accordance with…ASCE 7."

The wind load provisions of the 2010 edition of ASCE 7 (ASCE 7-10) have been substantially revised from the 2005 edition. The most notable changes are:

1. Changes in building classification
2. Reorganization of the wind load provisions
3. Reintroduction of Exposure D
4. Changes to the basic wind speed map
5. Changes to the windborne debris region
6. Introduction of new simplified methods for determining Main Wind Force Resisting System (MWFRS) and Component and Cladding (C&C) loads

As an Associate Member of the ASCE 7 Subcommittee on Wind Loads for the 2010 revision cycle, I have had the opportunity to attend and participate in all of the subcommittee meetings and I would like to take this opportunity to present the changes so that users of the standard get the most benefit out of the reorganization by understanding the reasons behind them and learning how to implement the changes in their analysis and design.

Changes in Building Classification (Chapter 1)

In previous editions of ASCE 7, structures were assigned an Occupancy Category (I, II, III, or IV) based on very specific occupancy descriptions. Structures that were classified as either Occupancy Category III or IV facilities were assigned an Importance Factor (I) of 1.15 for the determination of wind loads.

In ASCE 7-10, structures are assigned a Risk Category (I, II, III, or IV) based on more generalized occupancy descriptions. This reduces the potential for conflict between the standard and locally adopted codes and reflects the fact that acceptable risk is an issue of public policy that depends on more than just the building occupancy. Realizing that users may be unsure of the appropriate risk category, additional information has been provided in the Commentary of ASCE 7-10 to assist in the determination of the appropriate Risk Category.

Additionally, the Importance Factor is no longer used in ASCE 7-10. The applicable design wind speed map is selected based on the Risk Category. This will be discussed more later.

Reorganization of the Wind Load Provisions

Users of ASCE 7 have long complained of a lack of user-friendliness of the wind load provisions of the standard. There were a number of legitimate criticisms of previous editions.

1. Poor Organization – General criteria (design wind speed, exposure, enclosure, wind load factors, etc,) are presented after the design procedures
2. Mistake-Prone Presentation – The grouping of the various design procedures for determining MWFRS and C&C loads in one chapter, followed by the grouping of all figures/tables together increases the likelihood of mixing and matching design procedures and the associated figures/tables
3. Poor presentation of the applicability and limitations of the various design procedures
4. Lack of user notes

In response to user complaints, the wind load provisions of ASCE 7-10 have been rearranged and broken into six chapters, as shown below. A brief description of each chapter follows.

- Chapter 26 – Wind Loads: General Requirements
- Chapter 27 – Wind Loads on Buildings – MWFRS (Directional Procedure)
- Chapter 28 – Wind Loads on Buildings – MWFRS (Envelope Procedure)
- Chapter 29 – Wind Loads on Other Structures and Building Appurtenances – MWFRS
- Chapter 30 – Wind Loads – C&C
- Chapter 31 – Wind Tunnel Procedure

Chapter 26 – Wind Loads: General Requirements

Chapter 26 is the first step in the calculation of wind loads. This chapter contains an overview to guide the user through the remaining wind load chapters of ASCE 7 depending on the type of wind loads being determined. Figure 1 is a reproduction of the process flow chart in Chapter 26.

Chapter 26 also contains the following general information regarding the calculation of wind forces:

- Definitions, Symbols, and Notation
- Outline of Process for Determining Wind Loads
- Basic Wind Speed Maps
- Exposure (B, C, or D)
- Enclosure (Enclosed, Partially Enclosed, or Open)
- Wind Directionality Factor, Kd
- Gust-Effect Factor, G
- Topographic Factor, Kz

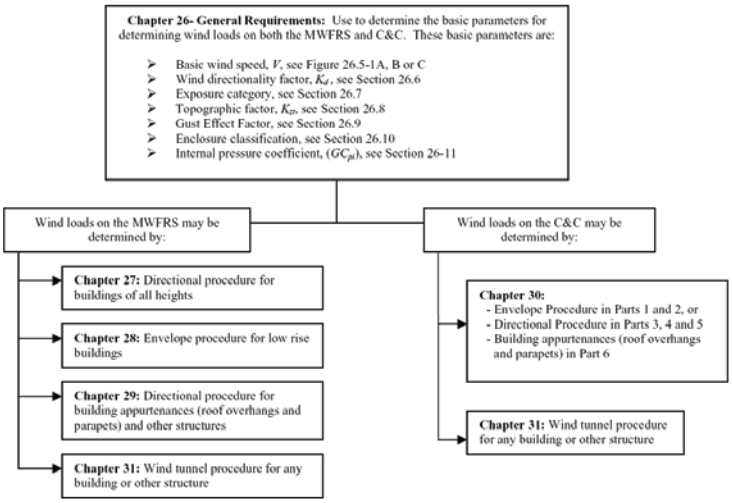


Figure 1. Outline of Process for Determining Wind Loads (Reproduced from ASCE 7-10)

Chapter 27 – Wind Loads on Buildings – MWFRS (Directional Procedure)

Chapter 27 contains provisions for the determination of MWFRS loads on buildings based on the Directional Procedure, which was referred to by many users as the "all heights" method in previous editions of the standard. Chapter 27 contains two parts, as described below:

Part 1 "applies to **buildings of all heights**…to separate wind loads onto the windward, leeward, and side walls to properly assess the internal forces in the MWFRS." The procedure in Part 1 is applicable for enclosed, partially enclosed, and open buildings with gable, hip, monoslope, and mansard roofs of any slope. The External Pressure Coefficients (Cp) used in this procedure are the same as those found in Figure 6-6 in ASCE 7-05.

Part 2 is a new tabular method that "applies to…enclosed simple diaphragm buildings with h ≤ 160 ft." This procedure is a simplification of Part 1. Based on the wind speed and exposure for the building site, as well as the building roof type and mean roof height, MWFRS pressures for wall and roof surfaces are selected from a series of tables.

Chapter 28 – Wind Loads on Buildings – MWFRS (Envelope Procedure)

Chapter 28 contains provisions to determine the MWFRS loads on low-rise buildings ONLY (h ≤ 60 ft) using the Envelope Procedure. Chapter 28 contains two parts, as described below:

Part 1 "applies to **low-rise buildings**…to separate wind loads onto the windward, leeward, and side walls to properly assess the internal forces in the MWFRS." The procedure in Part 1 is applicable to enclosed, partially enclosed, or open low-rise buildings with a gable, hip, or flat roof. The External Pressure Coefficients (GCp) used in this procedure correspond to those in Figure 6-10 in ASCE 7-05. An important item to note is that the presentation of Figure 6-10 from ASCE 7-05 has been modified in ASCE 7-10 due to user confusion regarding the proper application of the wind pressures.

Part 2 "applies to…enclosed simple diaphragm buildings". This procedure provides design wind pressures in tabular form and was previously known as the "Low-Rise Simplified Method". The design wind pressures are unchanged from Figure 6-2 in ASCE 7-05.

Chapter 29 – Wind Loads on Other Structures and Building Appurtenances – MWFRS

Chapter 29 is applicable for the determination of MWFRS loads for building appurtenances and other structures. Separate figures are provided for walls and signs; chimneys, tanks, and rooftop structures; open signs and lattice frameworks; and trussed towers. These figures have not changed from ASCE 7-05.

Chapter 30 – Wind Loads – C&C

Chapter 30 contains provisions for the determination of C&C loads and includes six procedures. The beginning of the chapter provides a summary of the applicability of each procedure in regards to enclosure, height, roof type, etc. The name of each procedure and the corresponding ASCE 7-05 figure numbers are provided below:

- **Part 1** – Envelope Method for Low-Rise Buildings – corresponds to ASCE 7-05 Figures 6- 11 through 6-16
- **Part 2** – Simplified Method for Low-Rise Buildings – corresponds to ASCE 7-05 Figure 6-3
- **Part 3** – Directional Method for Buildings with h > 60 ft – corresponds to ASCE 7-05 Figure 6-17
- **Part 4** – Simplified Method for Buildings with h ≤ 160 ft – new tabular method
- **Part 5** – Open Buildings – corresponds to ASCE 7-05 Figure 6-19
- **Part 6** – Building Appurtenances and Rooftop Structures and Equipment – provides additional information and figures for calculating parapet and overhang loads

Chapter 31 – Wind Tunnel Procedure

Where desired or required by the standard, wind loads (MWFRS and C&C) are to be determined by wind tunnel studies. This method is considered to produce the most accurate wind pressures of any method contained in the standard. Requirements related to test conditions, dynamic response, and load effects are presented in Chapter 31.

Reintroduction of Exposure D

The exposure categories in ASCE 7 are related to the surface roughness of the surrounding land. Exposure D is associated with a surface roughness defined as "flat, unobstructed areas and water surfaces." For many years, it was believed that as the wind speed of a hurricane increased, the roughness of the water surface was such that Exposure D was not applicable along the hurricane coast. More recent research suggests that the water surface turns into something resembling a "froth", which is thought to be consistent with Exposure D, and must be used along the hurricane coastline.

Changes to the Basic Wind Speed Map

For the large majority of the interior of the US, the wind speeds in Figure 6-1 in ASCE 7-05 correspond to a wind event with a nominal 50 year mean recurrence interval (MRI). When multiplied by the 1.6 wind load factor, the resulting wind pressures correspond to an event with approximately a 700 year MRI, which represents the ultimate limit state. For critical facilities, multiplying wind pressures by the Importance Factor of 1.15 and the wind load factor of 1.6 results pressures corresponding to an event with an MRI of approximately 1700 years. For regions where the design wind speed is controlled by hurricane events, however, the wind speeds in Figure 6-1 correspond to an MRI that varies between 50 and 100 years. This discrepancy and variation resulted in designs with inconsistent levels of reliability across the U.S.

To provide for a similar level of reliability across the U.S., the wind speed map in ASCE 7-05 was replaced with a series of maps showing ultimate wind speeds for various structure Risk Categories. Three separate Basic Wind Speed maps are provided:

1. Figure 26.5-1A – 700 year MRI – Risk Category II structures
2. Figure 26.5-1B – 1700 year MRI – Risk Category III and IV structures
3. Figure 26.5-1C – 300 year MRI – Risk Category I structures

The wind load factor and importance factor are now incorporated into the basic wind speed maps. For strength design load combinations maximizing wind effects, the wind load factor is now 1.0. For the corresponding ASD combinations, the wind load factor is 0.6.

In addition to the change to ultimate wind speeds, the maps incorporate data from a new hurricane simulation model developed by Applied Research Associates (ARA). The new model includes additional hurricane data from more recent events, finer resolution along the coast, 100,000 years of simulation, and a new model for how storms weaken after landfall. The new wind speed map for Risk Category II structures is shown in Figure 2.

To compare ASCE 7-05 and ASCE 7-10 design wind speeds, the load factor that is "built in" to the ASCE 7-10 wind speeds must be removed. Since wind pressures are proportional to the wind speed squared, this requires dividing the ASCE 7-10 wind speeds by the square root of the wind load factor of 1.6. The transformed ASCE

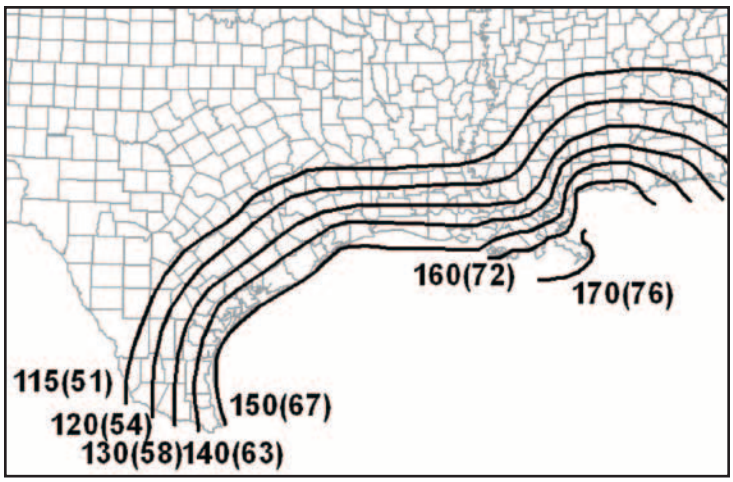


Figure 2. – Basic Wind Speed Map for Risk Category II Structures (Reproduced from ASCE 7-10)

7-10 wind speeds are typically slightly lower than the ASCE 7-05 wind speeds. Even for locations along the hurricane coast, which must now be designed for Exposure D, the wind speeds are typically the same or slightly less. A comparison of ASCE 7-05 and ASCE 7-10 wind speeds for several locations in Louisiana is shown in Table 1.

Location	ASCE 7-05	ASCE 7-10 $V_{700}/\sqrt{1.6}$	
	Exposure C	Exposure C	Exposure D
Alexandria, LA	91	91	N.A.
Baton Rouge, LA	106	98	N.A.
New Orleans, LA	125	121	N.A.
Lafayette, LA	107	103	N.A.
Cameron, LA	125	114	124
Grand Isle, LA	147	130	142

Table 1. – Wind Speed Comparison Between ASCE 7-05 and ASCE 7-10

Changes to the Wind-Borne Debris Region

ASCE 7 requires the protection of glazed openings in wind-borne debris regions. In ASCE 7-05, the wind-borne debris region is defined as locations with a Basic Wind Speed ≥ 120 mph, or, if within 1 mile of the coastal mean high water line, with a Basic Wind Speed of ≥ 110 mph. There is no differentiation between critical structures (Occupancy Category III and IV) and Occupancy Category II structures.

Since the wind-borne debris region is associated with the Basic Wind Speed, a new definition based on the ultimate level maps in ASCE 7-10 is required. The wind-borne debris region in ASCE 7-10 is defined as locations with a Basic Wind Speed ≥ 140 mph, or, if

User Note: Part 2 of Chapter 27 is a simplified method for determining the wind pressures for the MWFRS of enclosed, simple diaphragm buildings whose height h is ≤ 160 ft (48.8 m). The wind pressures are obtained *directly from a table*. The building may be of any general plan shape and roof geometry that matches the specified figures. This method is a simplification of the traditional "all heights" method (Directional Procedure) contained in Part 1 of Chapter 27.

Figure 3. – Sample User Notes Provided in ASCE 7-10

within 1 mile of the coastal mean high water line, with a Basic Wind Speed ≥ 130 mph. For Risk Category II and III structures (except healthcare facilities), the 700 yr MRI wind speed map is used. To account for the increased level of protection required for more critical structures, for Risk Category IV structures and healthcare facilities, the 1700 year MRI wind speed map is used. For most structure types, the geographic extent of the windborne debris region has been reduced in ASCE 7-10.

Additional Changes

A number of additional changes aimed at making the standard more user-friendly have been made to the 2010 edition of ASCE 7. User notes, as shown in Figure 3, have been provided throughout the document. Also, a step-by-step process for each design procedure is provided, as shown in Figure 4.

Table 27.5-1 Steps to Determine MWFRS Wind Loads Enclosed Simple Diaphragm Buildings ($h \leq 160$ ft. (48.8 m))

Step 1: Determine risk category of building or other structure, see Table 1.5-1

Step 2: Determine the basic wind speed, V, for applicable risk category, see Figure 26.5-1A, B or C

Step 3: Determine wind load parameters:
- Wind directionality factor, K_d, see Section 26.6 and Table 26.6-1
- Exposure category B, C or D, see Section 26.7
- Topographic factor, K_{zt}, see Section 26.8 and Figure 26.8-1
- Enclosure classification, see Section 26.10

Step 4: Enter table to determine net pressures on walls at top and base of building respectively, p_h, p_0, Table 27.6-1

Step 5: Enter table to determine net roof pressures, p_z, Table 27.6-2

Step 6: Determine topographic factor, K_{zt}, and apply factor to wall and roof pressures (if applicable), see Section 26.8

Step 7: Apply loads to walls and roofs simultaneously.

Figure 4. – Step-by-Step Design Procedure

Some other changes that have been made are:

- Improved definitions for surface roughness
- Reduction in the minimum load to be applied to the projected roof area
- Cross reference of figures in ASCE 7-05 and ASCE 7-10 is provided
- Commentary has been reorganized to follow new chapter layout
- Many other minor changes intended to make interpretation and use of the standard easier have been made

Additional Considerations

The changes in methodology and layout in ASCE 7-10 will have far-reaching effects on building codes, reference manuals, and design aids. The limits of applicability for prescriptive designs in IBC and IRC will have to be modified. Also, all material design guides (e.g. Wood Frame Construction Manual) will have to be modified. Local ordinances regarding debris impact requirements and any other requirements related to wind speed triggers will also have to be investigated and modified as required. There are certainly many more issues than have been presented here that will have to be considered to maintain compliance with ASCE 7-10.

When Will These Changes Take Effect?

It is anticipated that ASCE 7-10 will be referenced by the next edition of IBC, which will be published in 2012. Once IBC 2012 is published, it will have to be ratified by the state before it is adopted. That process has typically taken about a year to complete, so it can be expected that it will be 2013 before ASCE 7-10 is the referenced standard for the calculation of wind (and other) loads for the state of Louisiana.

Conclusions

Although there will certainly be some heartburn associated with the change to multiple ultimate wind speed maps, the other changes will hopefully make the use of ASCE 7-10 easier than previous editions of the standard. In fact, since many of the changes involve changes in format rather than substance, it may be convenient (and it is acceptable) to use the design provisions and procedures in the 2010 edition with the wind speeds and load combinations in the 2005 edition.

Joffrey Easley is a professional engineer licensed in Louisiana with several years of structural engineering design experience, serving both the private and public sectors. He graduated from LSU, with BS and MS degrees in civil engineering, focusing on structural engineering and hurricane engineering. His master's thesis was entitled "Development of a Performance-Based Design Approach and Related Loads for Facilities Designated as Essential During a Hurricane Event." Joffrey recently served on the ASCE 7 Subcommittee on Wind Loads for the 2010 revision cycle of the standard and is currently serving a two-year term on the IBC Technical Advisory Subcommittee for Louisiana. His experience includes the design of a wide range of infrastructure and transportation structures; including bridges, light commercial facilities, and industrial facilities. Additionally, he has consulted with several clients regarding hurricane risk and mitigation options. He is also a member of the American Society of Civil Engineers.

2011 Legislative Fly-In Attended by ASCE Leaders

By Kirk Lowery, PE

Louisiana delegation visits Representative Steve Scalise: Left to right: Bo Bolourchi, Dr. Kam Movassaghi, Ronald Schumann, Rep. Scalise, Kirk Lowery, Nedra Davis, and Dr. Norma Jean Mattei

A record 220 participants from across 47 states took part in ASCE's annual Washington Legislative Fly-In for 2011. During the four days of this yearly effort to help our membership engage with their federal lawmakers, they visited the offices of 340 members of Congress to talk about ASCE legislative priorities including surface transportation authorization, establishment of a national infrastructure bank, dam safety and rehabilitation, and the 3 percent withholding tax. ASCE also honored Representative Steven LaTourette (R-Ohio) as an Honorary Fellow of the Society for his leadership efforts to support investment in our nation's infrastructure.

Seven ASCE members represented Louisiana at the Fly-In including: Dr. Norma Jean Mattei, PE, Dr. Kam Movassaghi, PE, Mr. Bo Bolourchi, PE, Mr. Kurt Nixon, PE, Mr. Ronald Schumann, PE, Ms. Nedra Davis, and Mr. Kirk Lowery, PE. had the opportunity to visit as a group with Senator David Vitter and staff, Representative Steve Scalise and staff, and the senatorial staff of Senator Mary Landrieu. Individual members were also able to meet with Representatives Dr. Bill Cassidy, Dr. John Fleming, Charles Boustany and their staff.

Left to right: Dr. Kam Movassaghi, Nedra Davis, Representative Charles Boustany, and Dr. Norma Jean Mattei

All of the delegates at the conference spent parts of Tuesday, March 29, and Wednesday, March 30, in training with ASCE's Washington, D.C. staff learning about and discussing the following five items of interest for the 112th Congress:

1. National Infrastructure Bank (S.652 and H.R.402)

Senator John Kerry of Massachusetts introduced a bill that has bipartisan support in the Senate to create a bank to help kick-start infrastructure projects. His bill would require $10 billion a year and would be used with other funding sources (private and public) to fund a minimum of $100 million worth of projects in urban areas and $25 million in rural areas. The maximum loan for the individual projects is 50% which means other funding sources are required to finance the projects. This bank would operate similar to private enterprise banks where a loan would be financed with a small interest repayment process. The types of projects that would be financed include transportation infrastructure, water infrastructure and electrical infrastructure. The house bill was introduced by Representative DeLauro of Connecticut and it has some different provisions including grants, $5 billion a year, and funding for broadband development.

2. Surface Transportation Authorization

ASCE strongly supports the timely enactment of a multi-year surface transportation bill. The six-year surface transportation bill expired September 30, 2009 and stop-gap appropriations have been enacted ever since. The latest appropriation, the seventh such measure, will expire on September 30, 2011. The House Transportation and Infrastructure Committee chair, Representative Mica of Florida, has developed a $250 billion authorization over six years to be paid with the current gasoline tax. The Obama Administration included in the U.S. Department of Transportation's fiscal year 2012 budget proposal an outline for a new $556 billion, multi-year surface transportation authorization. Despite the proposed surge for transportation spend-

ing, there are no specific recommendations for increasing revenues to pay for infrastructure.

3. National Dam Safety Act

ASCE supports a full reauthorization of the National Dam Safety Act, at $13.1 million annually. The National Dam Safety Program provides federal leadership and assistance to the state-level programs that shoulder the majority of the dam safety burden. The National Dam Safety Program is a vital safety program administered by FEMA to improve the safety of the nation's dams through assistance to state programs. The program was last reauthorized in 2006 and has been fully-funded the last few Congresses with the most recent allocation reaching $11 million. With the program set to expire on September 30, 2011 a reauthorization is needed to ensure this small, but vital safety program continues.

4. Dam Rehabilitation and Repair

There are a significant number of dams in the country that need rehab and repair. To address dam deficiencies, the Dam Rehabilitation and Repair Act was introduced in both the House and the Senate in the 111th Congress to provide $200 million over five years for the repair, rehabilitation, and removal of publicly owned dams. The proposed legislation would distribute funds to state dam safety agencies based on the number of high-hazard (loss of life if the dam fails), publicly-owned non-federal dams in the state, with the federal government's share of any grant not exceeding 65 percent of the total cost of repairs. In Louisiana, there are 557 dams, with 31 considered high hazard dams.

5. Three Percent Withholding

Section 511 of the Tax Increase Prevention and Reconciliation Act of 2005 mandates a three percent withholding on payments to companies for any contract with a federal, state, or local government agency. Specifically, the Act requires withholding of three percent of the contract on all government payments for products and services made by the federal government, as well as state and local governments, with contracting expenditures of $100 million or more. This was an attempt to get companies to pay their taxes before releasing 3% withholding. At the time the CBO estimated $7 billion in savings over a five year period. However, this would not increase any money to the government, it would just accelerate payments and it would cost mote than it would save creating more spending in Treasury and the Department of Defense to have people verify compliance. On the private sector side, cash flow would be reduced because of the 3% withholding and people would have to be hired to comply with this law.

Kurt Nixon and Representative Dr. John Fleming

Thursday's March 31st breakfast honored Representative Steven LaTourette (R-OH) as an Honorary Fellow of the Society, recognizing his leadership efforts to support investment in our nation's infrastructure. Representative LaTourette shared his perspective on the struggle in the 112th Congress to advance badly needed legislation to improve our roads, bridges, dams, water systems and other vital infrastructure. Besides being engaging, the congressman insisted that the engineers across the country need to get "tough" with our representatives and make them aware of the state of our infrastructure and what will be needed just to maintain.

During the Louisiana delegation's visits, the members echoed that message and Dr. Kam Movassaghi exhibited the type of leaders requested by Representative LaTourette. Overall, the Louisiana delegation we visited with supports eliminating three percent withholding, and getting a transportation bill agreed upon. The Fly-In is an excellent opportunity for ASCE and Section leaders to develop relationships with our elected members of Congress and the Louisiana Section will continue to support this worthwhile program.

Left to right: Nedra Davis, Dr. Norma Jean Mattei, Kurt Nixon, Senator David Vitter, Dr. Kam Movassaghi, Ronald Schumann, Kirk Lowery, and Bo Bolourchi

2011 Louisiana Section Spring Conference

The Annual Louisiana Section Spring conference was held at the Cajundome Convention Center in Lafayette, Louisiana over three days from Wednesday, April 13th through Friday, April 15th. The conference was a great success drawing over 200 attendees, members and student members. The conference included two full days of seminars and provided an opportunity for members to earn Professional Development Hours (PDHs).

This year's conference was hosted by the Acadiana Branch. The conference kicked off with a crawfish boil on Wednesday night at the Hilton Garden Inn across the street from the Cajundome. This was a time for members to get together, relax and enjoy each other's company while downing a large number of crawfish and other libations. A good time was had by all.

The technical sessions began Thursday morning continuing through Friday and included 20 sessions covering topics from Coastal Engineering, Hydraulics, Flood Control, Structural Engineering, Transportation Engineering, Geotechnical Engineering to Project Management and Ethics.

The Louisiana Section was also honored to have in attendance Kathy Caldwell, the National President of ASCE along with Tom Smith, the National Deputy Executive Director and General Counsel of ASCE. Kathy Caldwell was the keynote speaker for the Thursday luncheon giving an update on ASCE activities at the National level. She spoke about ASCE's involvement in support of legislation working through Congress including the authorization of a new transportation bill, the dam safety bill and the establishment of an infrastructure bank for the funding of infrastructure projects. She spoke about the importance of becoming a Key Contact for ASCE and getting involved in supporting the legislation before Congress. She also spoke about the ASCE Strategic Initiatives - Infrastructure, Sustainability and Competency. On the topic of Sustainability Ms. Caldwell discussed ASCE's involvement in establishing a certification program for sustainable design for infrastructure projects. Tom Smith spoke on ASCE's integrated role in enhancing the quality of life through sustainable design. He also presented a session on engineering ethics and professionalism.

The annual general membership meeting and awards presentation was held in conjunction with the luncheon on Friday. Presentations were made to those in attendance that were receiving ASCE Life Member Awards (article and photos on page 15) and Outstanding Senior Student Awards (photos below).

In addition, Dr. Kam Movassaghi was presented the 2011 National Turner Award (article and photos on page 16), which recognizes contributions to the advancement of the knowledge and practice of transportation engineering. The award was presented by Jonathan C. Esslinger, National Director of the Transportation and Development Institute (T&DI) of ASCE.

Overall the conference was a great success, receiving many compliments from those in attendance. Credit goes to Acadiana Branch President Shaun Simon and his organizing committee's hard work and a job well done in hosting the conference.

Julesa C. Holland, Southern
Distinguished Civil Engineer Senior

Donald Jerolleman, UNO
Distinguished Civil Engineer Senior

Alison Lognion, ULL
Distinguished Civil Engineer Senior

Jada O'Blanc, McNeese
Distinguished Civil Engineer Senior

Eric Veuleman, LA Tech
Distinguished Civil Engineer Senior

Melissa R. Young, LSU
Distinguished Civil Engineer Senior

Left: Larry Cramer, Right back: Steven Tate, wife, wife of Beau Tate, Beau Tate, Darrel Pontiff, Todd Vincent, and wife

Left to right: Nedra Davis, Patrick Landry, Ronald Schumann, and Christopher Knotts

Left front: Tom Smith, ASCE National and ARK-LA-TEX Helical Distributors

Left to right: Jon Esslinger, Dr. Kam Movassaghi, and wife

Left to right: Jon Esslinger, Dr. Norma Jean Mattei, E.Ray DesOrmeaux, and Nedra Davis

Left to right: Patrick Landry, Ronald Schumann, Nedra Davis, and Christopher Knotts

Technical sessions well attended

Luncheon well attended

National ASCE President Kathy Caldwell gives luncheon presentation

Speaker Secretary Sherri LeBas, DOTD

Speaker Stephen Chustz, DNR Atchafalaya Basin Program

Ronald Schumann and Jon Esslinger

Louisiana
CIVIL ENGINEERING
Conference & Show

SAVE THE DATE!

We are proud to announce the dates for the 21st Annual Louisiana Civil Engineering Conference and Show. This event, a joint effort from the New Orleans Branches of ASCE and ACI, is the premiere gathering for the Civil Engineering community in the Greater New Orleans Area. We are in the process of soliciting sponsors and exhibitors and establishing the technical program for the fall conference which will be held on September 21-22, 2011, at the Pontchartrain Center in Kenner, Louisiana.

For additional information on the conference,
please visit our web site at www.LCECS.org.

Life Members Honored at Spring Conference

Seventeen Louisiana Section members were honored with Life Membership at the recent Spring Conference held at the Cajundome in Lafayette. Achieving Life Membership in ASCE requires a career of service to both the Society and the civil engineering profession. To be eligible for Life Membership, individuals in the membership of Fellow, Member, Associate Member or Affiliate a) shall have reached the age of 65 and b) shall have paid dues for at least 30 years and c) shall have had 10 years of continuous membership immediately preceding the attainment of Life Membership.

The seventeen Life Members and the branch where they reside in are as follows: Mr. Robert McDonald, PE (Acadiana), Mr. Albert Heikamp, PE (Acadiana), Mr. Jerry Grooms, PE (Acadiana), Mr. Lester LeBlanc, PE (Acadiana), Mr. George Voyiadjis, D.Eng (Baton Rouge), Mr. Michael Cullen, PE (Baton Rouge), Mr. Ronald Hebert, PE (Baton Rouge), Mr. Oliver "Gene" Wager, Affiliate (Baton Rouge), Mr. Dan Aucutt, PE (Baton Rouge), Mr. Richard Murley, PE (New Orleans), Mr. Subhash Kulkarni, PE (New Orleans), Mr. David Peters, PE (New Orleans), Mr. Ashvini Pandit, PE (New Orleans), Mr. Rodney Gannuch, PE (New Orleans), Mr. Billie Brown, PE (Shreveport), Mr. Ben Atchley, PE (Shreveport), and Mr. Ron Norwood, PE (Shreveport).

Seven of the honorees were present at the Friday awards luncheon at the Spring Conference and received their plaques from ASCE National President, Ms. Kathy Caldwell, PE and their pictures are shown below.

Daniel James Aucutt, PE

Rodney J. Gannuch, PE

Jerry Grooms, PE

Ronald E. Hebert, PE

Subhash V. Kulkarni, PE

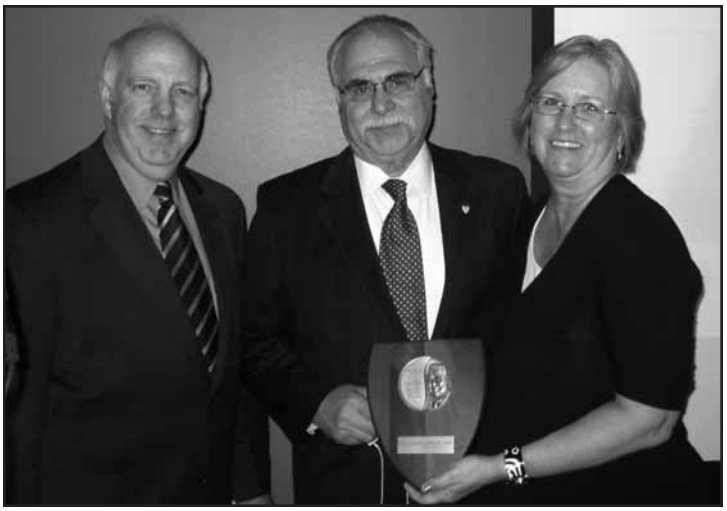
Lester J. LeBlanc, PE

Richard A. Murley, PE

Francis C. Turner Award

The Francis C. Turner Award recognizes contributions to the advancement of the knowledge and practice of transportation engineering.

The lectureship was established by the Transportation and Development Institute (formerly the Highway and Urban Transportation Divisions) of the Society by the solicitation of gifts from the many friends and admirers of Francis C. Turner, Hon. M. ASCE, former Chief Engineer of the Bureau of Public Roads, and retired Federal Highway Administrator.



Dr. Kam Movassaghi accepting the Transportation Award from Kathy Caldwell, ASCE National President and Jonathan C. (Jon) Esslinger, PE, F.ASCE, CAE, Director, National ASCE Transportation & Development Institute

Francis C. Turner was born on December 28, 1908, in Dallas, Texas and spent his childhood in Texas. He graduated twice from Texas A&M, once with an undergraduate degree in Civil Engineering in 1928, the second time with a graduate degree in Civil Engineering in 1940. Turner was appointed by President Eisenhower to be the Executive Secretary of the Clay Commission President's Advisory Committee on the National Highway Program in 1954. He then worked as the deputy commissioner, chief engineer, and Federal Highway Administrator. Turner's resume can be read in the landscape of the country. He began his career as a young area engineer in the Bureau of Public Roads Arkansas Division. At that time most American roads were dirt and gravel. As of 1999, America offered 42,000 miles of Interstate; these miles had been developed at a cost of $130 billion, much of that capital personally overseen by Turner. Turner is credited with being the "Father of the United States Interstate Highway System". The magazine American Heritage noted that these paved roads "changed the country subtly as much as the transcontinental railroad did overtly". The Federal Highway Research Center, in McLean, Virginia, was named in Mr. Turner's honor. He died on October 6, 1999, at the age 90, at a hospice in Goldsboro, North Carolina.

The Francis C. Turner Award was instituted by the Board of Direction of ASCE in October 1988. Income from the award fund is used to pay for honoraria, plaques, and administrative expenses incidental to the award.

I. Society members of any grade or members of T&DI are eligible.

II. The award is based on the nominee's contributions to the advancement of the knowledge and practice of transportation engineering.

The Awards Committee of T&DI reviews nominations presented by the Honors and Awards program and recommends to the Board of Governors of T&DI the recipient, if any, for final action by the Executive Committee of the ASCE Board of Direction.

III. The award consists of a plaque and cash prize determined annually by and subject to the approval of the ASCE Executive Committee based on the income from the award endowment.

IV. The winner may be invited to deliver a "Francis C. Turner Lecture" at an appropriate meeting of the Society.

In Memoriam

Dr. Louis J. Capozzoli, a civil engineer in Baton Rouge, died Monday, May 16, 2011. He was 82, a native of New York. He earned a bachelor's degree from New York University, master's degree from Harvard University and doctorate from MIT. He served in the Army during the Korean War, returning to New York where he obtained his pilot's license. In 1956, his profession brought him to Baton Rouge, where he met and married his wife of 52 years, Laura. In 1965, they founded Louis J. Capozzoli and Associates Inc., a leading geotechnical engineering firm. The company specialized in consulting work on soils and foundation jobs in the United States and in many foreign countries. During his career he earned the professional engineering license in several states and belonged to the Louisiana Engineering Society, American Society of Civil Engineers and American Society for Professional Engineers.

Dr. Louis J. Capozzoli, PE

Editorial

By Deborah Ducote Keller, PE

Deborah Ducote Keller, PE

It is often said that if you don't know where you are going, any path will do. When President Kennedy announced in 1961 the goal of sending an American safely to the Moon within the decade, it sounded quite lofty. It was achieved because it set in motion a grand vision of where the United States wanted to be and a deadline to reach it. But when it comes to the critical resource of energy, it seems that our nation still doesn't know what our long-term strategic national goals should be.

Not the assassination of a president or the Vietnam War could deter the nation's quest to reach outer space. Even after the tragedy of the very first Apollo mission, the focus remained on the strategic goal. Can we say the same about our energy goals?

Perhaps a mission to the Moon was easier to define and attain than a goal for energy. After all, when our sights were set on the Moon, there was no precedent. But most importantly, Americans didn't have to change their personal habits or make personal sacrifices to achieve the goal. Going to the moon was new, adventurous, and gave us bragging rights if we did it before the Soviet Union. Such is not the case with energy.

Whenever gas prices have skyrocketed, as they are doing now, energy catches our attention. Despite numerous legislative acts about energy, we haven't really strayed from a society based on oil and petroleum. America consumes 25 percent of the world's oil and has only 2 percent of the world's oil reserves.

But even our thirst for oil can wane when bad things happen, such as last year's British Petroleum (BP) Mocando oil spill. The federal reaction was a quick halt to issuing drilling permits in the Gulf of Mexico, which is only now being restarted.

Likewise, this year's images of the Fukushima nuclear power plant on the verge of meltdown triggered federal concerns about issuing permits for new nuclear power reactors. This is akin to the knee-jerk reaction of the drilling moratorium in the Gulf of Mexico following the BP spill. This seems short-sighted given that we already depend upon nuclear power to provide 9 percent of our energy needs as shown in Figure 1.

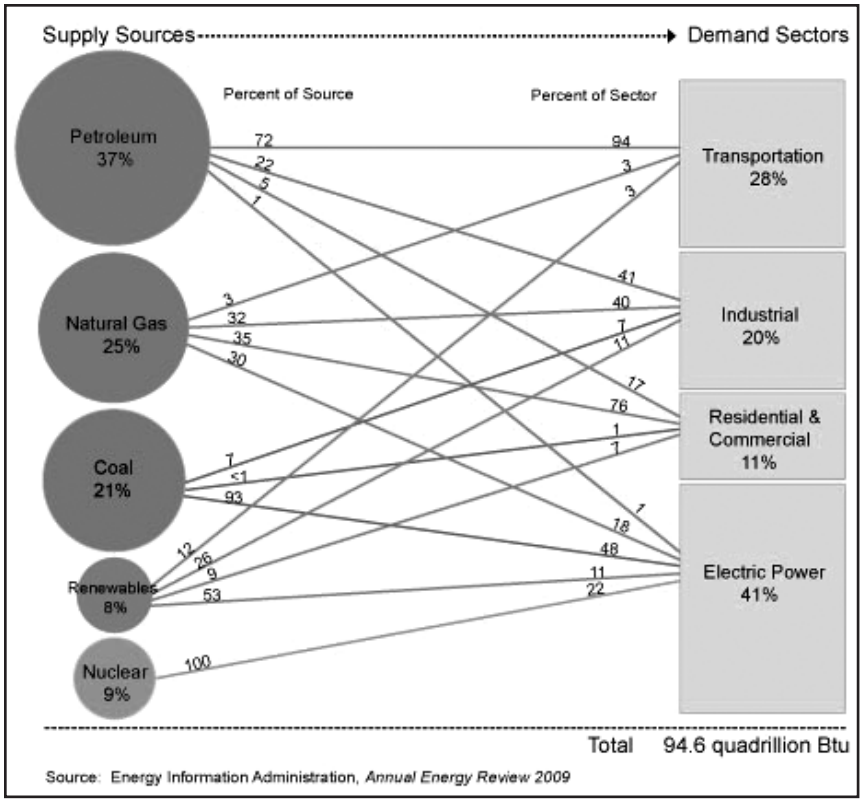


Figure 1. – U.S. Energy Supply and Demand

As civil engineers, we need to lend our expertise not only to America's aging infrastructure, but also to the lack of long-term strategic energy goals that set us on a sustainable path. Energy is a complex, global issue. It's as technical, as it is political. It has huge economic and social implications. So here are some points to consider.

Our nation first relied on timber, then coal, and by the 1950s, petroleum and natural gas for fuel. After depleting much of our forests, we started riding the roller coaster of supply and demand with fossil fuels. Estimates are that 83 percent of the U.S. domestic energy comes from fossil fuels, with petroleum alone providing about 37 percent, natural gas about 25 percent, and coal about 21 percent. These three fossil fuels plus nuclear energy are the non-renewable energy sources.

But what about all that oil the government stores as a back-up supply? President Carter's Energy Policy and Conservation Act of 1975 was a response to the 1973 oil embargo. The Department of Energy, created in 1977, operates the Strategic Petroleum Reserve (SPR), which is headquartered in Jefferson Parish. The SPR has a capacity to store 727 million barrels of oil in 62 underground caverns carved out of salt domes at facilities in Louisiana and Texas. Upon presidential order, the oil

can be sent to refineries within two weeks. The purpose is to continue to supply oil to strategic users, including the American military. The maximum drawn down rate is 4.4 million barrels per day for 90 days, however it can extend for another 90 days at a lesser rate of withdrawal.

Consider that the U. S. consumes about 21 million barrels of oil daily. About half is imported from various places including Canada, the North Sea, and countries in the Middle East and South and Central America. As overall demand has risen, imports represent a larger portion of our supply. Conversely, as our consumption rises, the SPR's supply becomes a smaller percentage of the nation's total daily demand. Some estimate that during peak usage, the U.S. daily supply is only 2 million barrels more than its demand.

The SPR was designed to plug a sudden interruption in the supply chain for a limited time to continue the nation's most critical operations. Since its inception, the SPR has made a few draw downs and minor exchanges, such as during Desert Storm and after Hurricane Katrina.

Whenever there is talk of rising gas prices, Americans want the reserve released in order to lower the price at the local gas pump. If we use this strategic reserve supply so that we don't have to alter our driving habits, what happens when it's gone and our national security or a disaster response is compromised and we need that reserve?

Natural gas is returning to the forefront as new horizontal drilling and fracking methods are producing natural gas at record levels within the U.S. Our liquid natural gas imports are decreasing, as is the price of natural gas. But concerns about a correlation between fracking and earthquakes, the discharge of radioactive particles from the natural gas wells, and contamination of well water near drilling sites are increasing concerns. Because of its new found abundance and efficiency, the use of natural gas is forecasted to extend beyond the back yard barbecue pit and residential appliances.

Approximately 8 percent of domestic primary power comes from renewable energy resources: hydropower, biomass, ethanol, biodiesel, wind, geothermal, and solar. But technology has not yet developed to the point of creating a widespread demand because these aren't practicable and affordable alternatives for most Americans. Using bio-fuels, such as ethanol, is controversial. Is burning a food supply a wise choice when the result is higher food prices and even food shortages in lesser developed parts of the world?

Even some of the relatively easy changes, such as the phased conversion of incandescent lighting to the more energy efficient compact fluorescent lights (CFL) have a downside. Have you read the label about leaving the room if you break a CFL bulb because of the release of mercury? Do you know how to properly dispose of a CFL? Will Americans support the more expensive CFL and the even more expensive LED bulbs, even if the life cycle cost is less than incandescent bulbs? Or, will public resistance similar to the metric system and the dollar coin be their demise?

An energy policy should address production, distribution, and consumption and can include legislation, international treaties, government subsidies, and taxation as incentives. In 2008 the Department of Energy announced four goals: short-term relief to American families, elimination of imports from the Middle East and Venezuela within 10 years, creation of jobs, and 80 percent reduction in greenhouse gas emissions by 2050. But are these really long-term strategies that set a path to a goal that we can focus upon in order to sustain our energy resources?

Energy goals should be comprehensive, proactive, effective, and diverse. A long-term energy policy needs to be more than President Nixon's "gasoline will never exceed a dollar per gallon" and Carter's "the U.S. will never again import as much oil as it did in 1977." What we have witnessed in the past 30 years are a plethora of federal energy policies that are too short in vision. What we need are achievable, focused energy goals that Americans can understand and support through good times and bad, as we did with the space program. It has to be a sustainable path to increase our domestic production of oil until we have viable alternatives in renewable energy sources while continuing to improve energy efficiency through technological advancements.

I wrote this editorial before President Obama addressed students at Georgetown University on March 30, 2011 regarding "America's Energy Security." The President stated, "There are no quick fixes. And we will keep on being a victim to shifts in the oil market until we finally get serious about a long-term policy for a secure, affordable energy future. So today, my administration is releasing a Blueprint for a Secure Energy Future that outlines a comprehensive national energy policy."

I encourage you to read his full remarks posted at: http://www.whitehouse.gov/the-press-office/2011/03/30/remarks-president-americas-energy-security

Drinking Water Safety

By Mitchell J. LeBas, PE

Mitchell J. LeBas, PE

As engineers, we are generally concerned with design and construction issues on our engineered projects, with little feedback on their operations - unless there are problems! In essence, our project may become a "one and done" event never to be seen or thought about again. In the spirit of protecting the public health, let us consider the safety of the potable water supply. Regulations are in place to ensure the delivery of clean drinking water to all customers of public water systems. It is the responsibility of the water purveyor (supplier) to abide by these regulations. Operational procedures are in place for water system operators to monitor the water quality. However, once the potable water exits the water purveyor's distribution system, water quality monitoring is essentially non-existent. Typically, the water purveyor's distribution system terminates at the customer's water meter where the purveyor losses control of the water quality. Protection of the water supply becomes the responsibility of the customer once the potable water has passed through the water meter and, is therefore, no longer the responsibility of the water purveyor. Well … that may not necessarily be the case!

Consider for a moment that a cross connection[1] exists on the customer's property and there is a loss of pressure on the supply side (purveyor's supply). An example of a cross connection is shown in Figure 1. As an example, water may be supplied to customers at 70 psi; however, actual pressure on the customer's property may be at 55 psi (due to losses). Basic hydraulic principles state that water will always flow from high pressure to low pressure. With supply side pressure failure, the customer's plumbing essentially becomes the supply side forcing the potable water to backflow[2] into the purveyor's water system. If an active cross connection is in place at the time of the purveyor system failure, then the likelihood of contaminants entering the public drinking water system is very real and could be hazardous – or even deadly. Numerous case histories exist that document backflow incidents. (A Google search of "backflow incidents" yields approximately 120,000 results).

Figure 1

Backflow is classified into two types: backsiphonage and backpressure. Backsiphonage occurs when there is a loss of supply side pressure.

Examples of backsiphonage are a broken water line or a draw on a fire hydrant when fire fighting activities are in place. When water is removed from a hydrant with a pump, a vacuum may be created on the system and backsiphonage backflow may occur – much like sucking on a straw! Backpressure backflow may occur when the customer side pressure exceeds the supply side pressure. Typically this occurs with a pump on the customer's premises.

As engineers, we may be familiar with the regulation of The Safe Drinking Water Act of 1974. The regulations establish the maximum contaminant levels (MCL's) in the potable water supply. These regulations which stipulate the amount of various biological and radiological chemicals and byproducts that can be present in potable water are under seemingly constant revision and expansion. Water system owners and operators are well trained in the operation of their systems and the vast majority provides outstanding water to their customers. Sampling at various locations throughout the water system ensures that a quality product is being produced and delivered to the customer, all in accordance with Federal and State regulations. In Louisiana, the State regulatory agency is the Louisiana Department of Health and Hospitals (DHH). DHH regulations on cross connection control and backflow prevention have been in place for many decades; however, enforcement efforts have recently intensified to require water systems to implement a backflow prevention program.

DHH monitors a system's backflow prevention program through sanitary surveys – periodic evaluation of a systems conformance to

1 a *cross connection* is defined as "any physical connection or arrangement between two separate piping systems, one of which contains potable water and the other, water of unknown or questionable safety, whereby water may flow from one system to the other, the direction of flow depending on the pressure differential between the two systems."

2 *Backflow* is defined as "the flow of water or other liquids, mixtures, or substances into the distribution pipes of a potable supply of water from any source or sources other than its intended source."

the rules and regulations. A system found in non-compliance will likely be sited with a "deficiency" that must be addressed by the purveyor of the water system within a specified time frame. DHH now considers these deficiencies "significant deficiencies" and failure to correct these will first result in a "treatment technique" violation that requires public notice! Should the system still not comply, then ultimately an Administrative Order will be issued and the system subject to a fine of $3,000 per day per violation. The goal of DHH is not to be over regulatory but to insure the safety of water system customers. It is likely that very few individuals working outside of the water industry ever consider the quality of the water they drink. Customers expect clean, safe water from the purveyor and that responsibility falls on the municipal engineers, regulatory officials, and operators of the system.

So the question becomes, "Why is it so difficult for water systems to comply with this regulation?" Perhaps it is because the answer is complex. Regulations regarding cross connection control and backflow prevention can be found in the Louisiana Administrative Code, Title 51, Part 12 and the Louisiana State Plumbing Code in Chapter 6 and Appendix D. Additional issues that prevent compliance are an incomplete understanding of the scope of a program, political ramifications (this is not a popular program), a general lack of knowledge due to the relative newness of the industry, and financial constraints. While the backflow industry is not technically complicated, it is complex due to the "issues" previously mentioned. Many communities in the United States have separate departments that oversee their backflow prevention program - much like there are separate water, sewer, gas, human resources, purchasing, etc. departments. Most of these departments are not managed by engineers but by personnel trained in cross connection control and backflow prevention.

Looking at these issues separately, it is of course vital to understand the regulations. Many municipal engineers in Louisiana will likely be charged with bringing their client's system into compliance. The Administrative Code regulations essentially require water systems to protect the potable water supply by providing containment protection (in the event of an incident, contain the incident to the premise where the incident occurred so as not to affect all customers connected to the water system). It is important to understand that the regulations not only call for cross connections to be protected, but that potential cross connections be protected as well. This is accomplished by determining the degree of hazard[3] associated with each cross connection or potential cross connection. Once the degree of hazard is determined, regulations within the Louisiana State Plumbing Code can be used as a guide to determining what type (if any) backflow preventer is required at a particular service connection. Specifically, Table D104 of the State Plumbing Code provides a guide to the selection of backflow preventers; however, the code specifically states that Table D104 is not all inclusive. Other reference sources for the guide to selection of backflow preventers, relative to the degree of hazard, are available in the Plumbing Code.

3 the *degree of hazard* is a term derived from an evaluation of the potential risk to public health and the adverse effect of the hazard upon the potable water.

Experience shows that purveyors generally have an incomplete understanding of the work effort involved in setting up a complete and comprehensive backflow prevention program. The industry average is that 5 percent to 10 percent, typically around 7 percent, of all water system customers will require some sort of backflow prevention, regardless of whether the system is rural or urban. The general procedures for implementing a backflow prevention program are as follows: a written program is established – complete with an ordinance, a review of water system records is performed, a cross connection control survey is performed on certain customers to determine degree of hazard, a determination of who is required to have backflow preventers is made, a permitting system is prepared and implemented (for quality control), plumber monitoring is performed (not all plumbers are allowed to work with backflow preventers), letters are prepared and sent to customers requiring the installation of backflow preventers, and follow-up inspections are performed. In order to implement a comprehensive program, each water service must be evaluated in order to determine if hazards exist. Most service connections will not require backflow prevention assemblies due to the fact that state regulations target high hazard locations. In many cases, the evaluation may simply be a review of water system customer records. In other cases, a cross connection control survey must be performed by a qualified individual. For the operator or engineer charged with this responsibility, the work effort can be extensive, if only for a brief period of time. The difficulty in getting the program implemented can be further complicated by the general lack of understanding of the backflow industry.

Perhaps the biggest issue in implementing a backflow prevention program is the political ramifications. As stated previously, this can be a very unpopular program, primarily due to the lack of education and the cost to the customers. Backflow prevention is generally a new concept that is not easily grasped, particularly in more rural areas.

However, the most recent documented cases of backflow incidents in Louisiana have primarily occurred in rural areas! Nevertheless, the result of implementing a program may have consequences to the local electorate.

Financial commitments by water systems toward getting a program implemented are difficult to obtain due to a general lack of knowledge about the backflow industry. Elected officials and board presidents have a difficult time appropriating funding for a program that they cannot comprehend and is often viewed as unnecessary. In addition, the financial component of implementing the program is very real to those customers requiring backflow preventers. It is difficult for a customer that may have operated a business for decades to understand why it is now necessary to install a backflow preventer. The truth is the regulation may have been in place longer than the business has been in existence; however, enforcement actions by DHH are necessitating that the installation and testing occur to bring the water system into compliance. Furthermore, state regulations require backflow preventers be tested annually and that the cost of all backflow preventer work be borne by the owner of the premise where the hazard exists.

Protection of the potable water supply is the main goal of the regulations and the burden of maintaining that protection is placed on the water purveyor. One of the primary means of protecting the system is through education. An explanation to customers, along with examples, about what cross connections are can educate the general public of the dangers of cross connections and can aide in preventing contamination of the public water system. The installation of backflow preventers is another very useful tool in helping protect the water system.

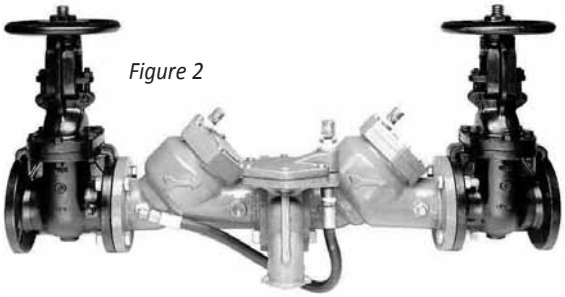


Figure 2

Various makes and models of backflow preventers exist for the purpose of protecting the water supply and each serves its own purpose; however, only three "types" of testable (acceptable) backflow preventers are recognized as providing the required protection based on the degree of hazard. The three types of approved backflow preventers are the reduced pressure (zone) commonly referred to as an RP or RPZ (Figure 2), the double check (DC) (Figure 3), and the pressure vacuum breaker (PVB) (Figure 4). The RP and DC backflow preventers are also available in detector type assemblies. The detector assembly is used when continuous water supply is required to a facility (hospital, dialysis center, etc) and the water can not be turned off for testing purposes. The detector assembly consists of the host backflow preventer with a smaller (5/8" or ¾") assembly and low flow meter installed in parallel to the host. Detector assemblies must be purchased as a complete unit and can not be fabricated by the plumber.

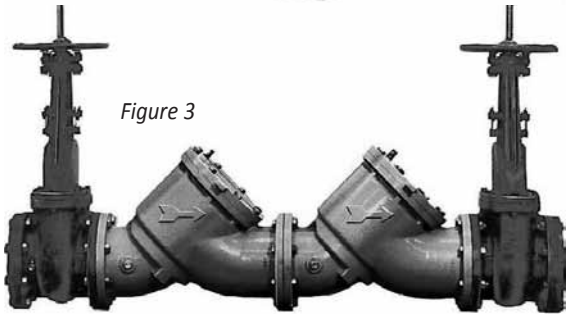


Figure 3

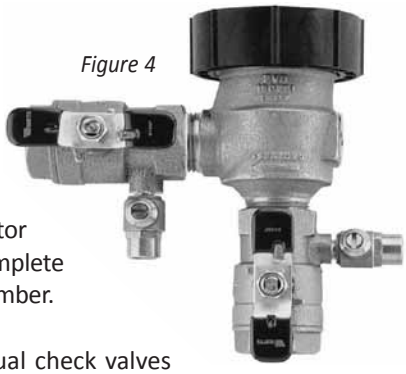


Figure 4

Many water systems currently install dual check valves on all customer water meters to aide in the protection of the water system. While this approach is well intentioned, dual checks (a device with two spring loaded check valves) are not considered adequate protection primarily because the dual check is not recognized as an approved backflow preventer. In order for an assembly to be approved, it must have two shut off valves, test cocks, and internally loaded spring check valves. The dual check has no shut off valves or test cocks and is not testable.

State regulations specify that the installation of backflow preventers can only be accomplished by Water Supply Protection Specialist (WSPS) endorsed plumbers. In order to obtain the endorsement, a master or journeyman plumber must successfully complete an approved 40-hour course of instruction. Managers of backflow prevention programs would be wise to ensure that those plumbers working within their system possess the endorsement to insure that the work is being performed properly. Experience reveals that improperly managed programs that have non-endorsed plumbers performing backflow work within their system contain installations that do not meet industry standards and state regulations. In some cases, non-endorsed plumber installations are so poor that they may actually be contributing to the contamination of the water system!

DHH is actively enforcing the regulations regarding cross connection control and backflow prevention. Several water systems currently have Administrative Orders requiring that backflow prevention programs be implemented in order to protect the safety of the drinking water. A thorough, complete, and comprehensive backflow prevention program will provide increased protection of a water system from accidental contamination. Regulations are available in the Louisiana Administrative Code and the Plumbing Code; however, the scope of work involved in getting a program implemented extends beyond the regulations. Additionally, several issues must be overcome to successfully implement a backflow program, namely – an incomplete understanding of the scope of a program, potential political consequences, education, and financial constraints. While many of these issues are not entirely foreign to the engineering community, the backflow industry presents new territory for many engineers in the community. It is our responsibility as engineers to do our part in helping to protect the public water supply and, in turn, the public health of the citizens of Louisiana.

Mitchell LeBas is a Registered Professional Civil Engineering and is the President of Capitol Engineering, LLC and Backflow Prevention Services, LLC. He has been actively involved in the backflow prevention industry since 2002 and is certified as a Backflow Preventer Assembly Tester with further certifications in Maintenance and Repair, Survey and Inspection, Ordinance and Organization, and Program Manager. He established Backflow Prevention Services, LLC as a backflow prevention consulting and training company.

Mr. LeBas' office is located in Baton Rouge, LA where he teaches a 40-hour tester certification course and training in the backflow prevention industry. Mr. LeBas also offers continuing education course instruction to plumbers and water and sewer system operators statewide. He has assisted many water systems with the development, implementation, and management of cross connection control and backflow prevention programs. Mr. LeBas regularly speaks at various statewide conferences within the water industry on the topic of backflow prevention and has spoken at national conferences as well.

Mr. LeBas is a 1984 graduate of Louisiana State University and is a member of American Society of Civil Engineers, American Society of Sanitary Engineers, American Water Works Association, American Backflow Prevention Association, Foundation for Cross Connection Control and Hydraulic Research, Louisiana Conference on Water, Sewer, and Industrial Waste, and Louisiana Rural Water Association.

NEW ORLEANS BRANCH

By Meg Adams, PE, Branch President

The New Orleans Chapter has had a busy year so far! We followed our well-attended eWeek work day/field trip (photos of the City Park work day and the field trip to the USACE Surge Barrier in St. Bernard Parish below), we had another big group at our March luncheon at Ralph's on the Park. Our speaker was Col Robert Sinkler, Commander who presented, "Greater New Orleans Area Hurricane & Storm Damage Risk Reduction System." This was sponsored by the Geotechnical Committee of the New Orleans Branch, chaired by Gwen Sanders of Eustis Engineering.

The April meeting was held at Five Happiness Restaurant, featuring speaker, Don Blanchard. This event was sponsored by the Environmental/Water Committee of the New Orleans Branch, chaired by Tonja Koob.

Our members have been busy with several outreach programs in the city as well. Ben Cody of Eustis participated in the Mathcounts competition, monitoring and coaching. He and Nathan Junius of Linfield Hunter and Junius judged the Greater New Orleans Science and Engineering Fair, and the New Orleans Branch awarded cash prizes to the top three civil projects in both middle and upper school levels, as well as to the teachers of the winning students. The Branch also provided funds for the UNO Concrete Canoe and Steel Bridge teams to travel to the competition.

The New Orleans Branch is starting to gear up on a new endeavor – a Historical Engineering Landmarks project which we hope will document our many interesting and historically significant engineering projects in the New Orleans region. Plans include documentation and mapping of these sites, with the ultimate goal of an audio tour available on CD so the sites can be visited by car.

City Park work day

Field trip to the USACE Surge Barrier in St. Bernard Parish

SHREVEPORT BRANCH

By Matthew Redmon, EI, Branch President

We are almost at the half way mark of 2011, and it has been a busy and successful year so far. We have enjoyed presentations about new products impacting the engineering world as well as information pertaining to construction law.

In March, Erin Rourke spoke to our group about "Treatment Mechanisms, Detention and LID Options for Evolving Stormwater Management Methods offered by CONTECH." It was an interesting and informative presentation.

On April 13, 2011, the Branch hosted its annual Spring Classic Golf Tournament at Olde Oaks Golf Club. Everyone had an enjoyable time socializing and playing golf. Special thanks go to Dave Rambaran for planning and organizing a successful tournament. On behalf of the Branch, I would like to thank all those who sponsored and participated in this year's tournament. Thanks to this support, the Branch is able to continue awarding annual scholarships to Louisiana Tech students. Thank you for your continued support in our endeavors.

Currently, we are taking a break for the summer, and our technical sessions will resume in September. I would like to thank everyone for their participation in the Branch this year and have a safe, fun filled summer.

ACADIANA BRANCH

By Shaun R. Simon, PE, Branch President

On April 14 and 15th, the Acadiana Branch hosted the Louisiana Section's Spring Conference. The Spring Conference serves as a venue for networking with peers throughout the state as well as an opportunity for continuing education. The Acadiana Branch would like to thank all of the registrants, exhibitors, sponsors, and speakers for making this one of the most successful Spring Conferences that the Acadiana Branch has ever hosted. We worked really hard to find good speakers to present on interesting topics. We are most thankful to our ASCE National President, Kathy Caldwell, for her lunch presentation and conference attendance. We appreciate her taking the time from her busy schedule to attend our conference. Special thanks to Mr. Tom Smith, ASCE National Deputy Executive Director and General Counsel, for his two presentations and conference attendance. We were certainly pleased and want to thank all the speakers for a job well done. We would also like to congratulate all the state student award and Life Member recipients. These are special honors and those individuals were most deserving. The Acadiana Branch would like to send a special thanks to our state section President, Pat Landry, our ASCE Region 5 Governor, E. Ray DesOrmeaux, and to one of our past presidents, Joe Kolwe, for all of your help in procuring speakers for the conference and for your time and effort in assisting the branch. We would like to also acknowledge the students from McNeese State University and the University of Louisiana at Lafayette for their attendance.

We would like to congratulate the following recipients for being recognized and awarded our Spring 2011 ASCE Academic Scholastic Award:

McNeese State University: Senior Award: Jada R. O'Blanc; Junior Award: Hali Habetz

University of Louisiana at Lafayette: Senior Award: Alison Lognion; Junior Award: Neil Schneider

All of these recipients submitted applications after being recommended and verified by their peers. The each demonstrated scholastic achievement as well as leadership and involvement with their respective communities and ASCE Student Chapters.

Our yearly joint Crawfish Boil was held Friday, May 13, 2011 at the Girard Park Pavilion in Lafayette, LA. This free event is shared with IEEE and LES and the respective student chapters and their faculty. We were glad to see everyone there.

BATON ROUGE BRANCH

By Adam M. Smith, PE, Branch President

The Board members of the Baton Rouge Branch are working diligently to achieve the goals set at the beginnings of our terms. We have provided several PDH opportunities to our members and we are continuing our outreach programs in the local community.

The Baton Rouge Branch celebrated the 60th anniversary of Engineers Week with several activities. The first was a presentation to a Chemistry class at Istrouma High School. I along with Director of Education Sam Amoroso and LSU Civil Engineering students Josh Bradley and Brittany Alexander discussed the various disciplines of Civil Engineering. The Istrouma students then asked questions about projects in their community. We received inspiring feedback from the Principal and teachers at Istrouma High School. Since this visit was so successful we are planning future visits to local schools throughout the year. The Baton Rouge Branch continued the celebration of Engineers Week by joining the Baton Rouge Chapter of LES at their annual banquet where we awarded two $500 scholarships.

The March luncheon featured an ethics PDH provided by LAPELS Staff and Board members. Donna Sentell and Victoria Hatton presented "The Lifecycle of a Complaint". The presentation was followed by a question and answer session with the Branch members in attendance.

The April luncheon offered another PDH opportunity with a presentation titled "The Use of Lime to Improve Soil Problems". This presentation was given by Eric Berger, PE of Lhoist North America. He discussed the application, design and construction of soil stabilization projects using lime.

As we move into the summer months we look forward to the joint luncheon with LES and APWA in May and our annual Past Presidents and Awards luncheon in June. We hope to see you there.

Sam Amoroso, Josh Bradley, and Brittany Alexander speak at Istrouma High School during Engineers Week

UNIVERSITY OF LOUISIANA AT LAFAYETTE

By Alison Lognion, Student Chapter President

Multiple meetings, activities, and competitions filled the Spring 2011 semester for the UL Lafayette Student Chapter. Over thirty students attended each meeting and presentation from Darrell Elliot with the Concrete and Aggregates Association of Louisiana on performance concrete, from Pamela Miller with HDR, Inc. on her experience in coastal and environmental engineering, from Dax Douet with C.H. Fenstermaker and Associates, Inc. on transportation engineering, and from Bill King and Don Weathers with the Louisiana Asphalt Pavement Association on "Asphalt Sustainability in Louisiana." Other than just hosting meetings, the chapter cleaned up the campus of Scott Middle School one Friday afternoon. Twenty-eight freshmen to senior students, along with our faculty advisor, Dr. Chris Carroll, participated in the Deep South Conference March 24-27th at Mississippi State University. UL Lafayette competed in the survey, the technical paper, the concrete bowling ball, the mystery design, and the steel bridge competitions. The concrete bowling ball team, namely Jacob Benton, Reed Boudreaux, and Rachel Fradella, placed third overall. Right upon the chapter's return, Engineering and Technology Week activities started up. The chapter decorated our department Tuesday night in preparation for Engineering and Technology Day on March 30th and then gave presentations in the various labs and tours around the college for the 800 middle school and high school students from both the surrounding and outlying areas. April 2nd to April 6th, Alison Lognion, Andrew Juneau, and Michelle Campbell competed in the Fiber Reinforced Polymer (FRP) Composite Competition at the American Concrete Institute Convention in Tampa, FL. The structure contained two FRP rebar composed of 60% glass and of 40% fibers; the team's structure held the third highest load out of all of the 36 structures from the international teams. For the April 14th and 15th ASCE State Conference, the chapter volunteered to help register participants and introduce speakers. Aside from competitions, the chapter enjoyed playing basketball and soccer this semester against the other departments in the college. The chapter, in conjunction with the Chi-Epsilon Honor Society, hosted the end-of-the year banquet on April 29th to celebrate the many accomplishments and to wrap up the successful year.

Jacob Benton, Reed Boudreaux, and Rachel Fradella placed third overall

Alison Lognion, Andrew Juneau, and Michelle Campbell compete in the Fiber Reinforced Polymer Composite Competition

Deep South Conference Steel Bridge competition

LOUISIANA STATE UNIVERSITY

By Josh Bradley, Student Chapter President

The Louisiana State University student chapter began the Spring semester by sending officers Josh Bradley and Melissa Young to attend the 2011 ASCE Workshop for Student Chapter Leaders in Portland, Maine in January. Despite braving the freezing cold weather, both officers came away with many ideas on improving the chapter for the future. Josh and Melissa were able to meet a lot of student leaders from different schools across the Eastern region. The workshop allowed student leaders from each school to share ideas and receive input on chapter leadership.

During the annual Engineering week in February the chapter was able to participate by going to local schools to promote the field of civil engineering. Officers Josh Bradley and Brittney Alexander along with Dr. Samuel Amoroso, Adam Smith visited Ms. Green's chemistry class at Istrouma High School.

In late March, the student chapter participated in the 2011 Deep South Regional Competition, which was hosted this year by Mississippi State University. LSU ASCE Steel Bridge and Concrete Canoe teams participated in this year's events, with preparations beginning in early January.

At the competition, the team competed against nine schools including Louisiana Tech University, Mississippi State University, Ole Miss, University of Memphis, UT Martin, Christian Brothers University, Jacksonville State University, University of New Orleans, and Arkansas State University. Teams were judged on the final product (aesthetics, ability to float, etc.), coed races (5 total), presentations, and a design paper. The LSU Concrete Canoe team placed 2nd overall, 1st place in the men's endurance race, 2nd place is the women's endurance race, 3rd place in the men's sprint, 1st place in the women's sprint, and 4th place in the coed sprint. They also received 2nd place in the final product display. Participating members included Aleksandra Simicevic (captain), James Parker (co-captain), Donovan Duffy, Joe Ory, Lesley Cates, Kristina Galindo, and Sarah Cochrane. The steel bridge team placed 3rd overall and 1st place for the lightest bridge. Participating members included David Ziegler (captain), Adam Milling, Mark Genre, Morgan Hidalgo, Christopher Sciortino, Jacob Trowbridge, and Joshua Brown.

The ASCE Student Chapter was also privileged with several guest speakers at their annual chapter meetings. Speakers thus far for this semester have included: Sam Amoroso- Engensus- Feb 7th, Brant Richard - Stanley Consultants Feb 21st, Lee Forbes- KBR - March 21st, Brandon Hays- Concrete and Aggregate Association of Louisiana (CAAL) - April. Meetings were well attended.

LOUISIANA TECH

By Eric Veuleman, Student Chapter President

The Spring Quarter has been a very busy time for the ASCE Student Chapter at Louisiana Tech University. At the Deep South Regional Conference, Louisiana Tech placed first in both the Steel Bridge and Concrete Canoe competitions. With this performance, both teams qualified to compete in their respective national competitions. This is the third year in school history and the second consecutive year for Louisiana Tech's Concrete Canoe and Steel Bridge teams to both qualify for their national competitions in the same year.

The Louisiana Tech Steel Bridge team will travel to Texas A&M University in late May to compete at the National Student Steel Bridge Competition. In preparation for this competition, the team has spent most of the spring making improvements to their bridge and practicing assembling the bridge in order to improve their scores for the national competition.

Louisiana Tech's Concrete Canoe team has spent the spring preparing for the National Concrete Canoe Competition, which will be held in mid June in Evansville, Indiana. In order to prepare for the competition, the team has spent their time perfecting their paddling techniques and making improvements to their oral presentation and design paper. In addition to these preparations, the team also had to repair minor damage to the canoe from a collision with another team at the regional competition.

The Louisiana Tech ASCE Student Chapter is very proud of their accomplishments at the Deep South Regional Conference, and the students are looking forward to the opportunity to compete at the national lever with their Concrete Canoe and Steel Bridge projects.

Deep South Conference Steel Bridge competition

Deep South Conference Concrete Canoe competition

ASCE-SEI New Orleans Chapter News

By Om Dixit, PE, FASCE, Newsletter Editor

Since our report in November 2010 issue of this magazine, ASCE SEI New Orleans Chapter hosted two seminars and has planned the following future seminars in New Orleans:

January 20, 2011 ***AASHTO LRFD BRIDGE DESIGN – OBSERVATIONS ON THE CODE DEVELOPMENT, IMPLEMENTATION AND FUTURE*** **-** Dr. John Kulicki, (Modjeski and Masters, Mechanicsburg, PA) gave a very knowledgeable presentation about the "how" and "why" of the AASHTO LRFD Bridge Design Specifications, lessons learned from the experience of designers in applying the specifications, and what a designer should expect as typically controlling provisions. Probable new directions that will affect future designs were discussed including the evolving emphasis on the service limit states.. The seminar was attended by about 60 members.

John Kulicki, Modjeski and Masters presenting the SEI Seminar on January 20

March 4, 2010 ***MSJC Masonry Code Changes for 2011 Edition*** - Dennis Graber, PE(National Concrete Masonry Association) and David Pitre, PE (Hardscaps USA, Theodore, AL) presented many technical advances in the TMS 420/ACI 530/ASCE 5-11 *Building Code Requirements for Masonry Structures* (MSJC) It was attended by about 40 members.

April 20, 2011 ***The Case for Improvements in Concrete Repair, Protection, and Rehabilitation Projects*** *(Annual David Hunter Lecture) Peter Emmons, PE,* (Structural Group, Baltimore, MD) will present a lecture on first repair and rehabilitation code which is nearing completion.

Future Seminars:

The following dates are the projected seminar dates for 2011. The exact dates may change due to the availability of the speakers and UNO Lecture room.

June 9, 2011 ***Performance of Continuous Prestressed Girder Bridges: A Structural Health Monitoring Approach*** - *Ayman Okeil,Ph.D., PE,* LSU, Baton Rouge, LA

August 4, 2011 ***Tips for Designing Constructible Structures*** - *Cliff Schwinger, PE,* The Hartman Group, Pennsylvania

More details about these seminars will be posted on the ASCE New Orleans Branch website as soon as they are finalized. The committee is looking for good topics and speakers for future presentations. Members with expertise in the field of structural engineering would be welcome to join the Executive Committee. For any suggestion and information on joining the Executive Committee, contact Chairman Pawan Gupta, PE, at Pawan_Gupta@URSCorp.com.

One of our long time Executive Committee member, John J. Housey, Jr., PE, has decided to step down from the committee as he is busy making preparations for his retired life. John has provided his valuable guidance and energy to ASCE SEI New Orleans Chapter and served as the Committee Chairman for 2 separate one year terms. ASCE SEI New Orleans Chapter will thank and will honor John Housey for his services during the April 20 seminar. Dr. Ayman Okeil, PE from LSU Baton Rouge has joined the Executive Committee recently. Dr. Okeil will be good addition to the committee with his research and teaching background.

ASCE SEI New Orleans Chapter sponsored the food at the Coaches Lounge at the Regional Mathcounts competition held at University of New Orleans.

Mathcount Coaches at the Coaches' Lounge sponsored by ASCE SEI New Orleans Chapter on February 12, 2011 for Greater New Orleans Mathcount Competition

The ASCE SEI New Orleans Chapter sponsored awards at ***Greater New Orleans Regional Science Fair*** held in February 2010. The award winners were:

Junior Division

The First Place ($150) award was given to ***Simran*** **Gandhi** of Haynes Academy for Advanced Studies for her project *"How Can a More Efficient Structure Be Built with A Finite Amount of Material?"* The Second Place ($100) award went to ***Colin Gillen***

of Christian Brothers School for his project *"Concrete, Juice, and Milk – A Recipe For Disaster?."*

Senior Division

The First Place ($150) award was given to ***Josh Hanberry*** of John Curtis Christian School for his project *"Which Truss Should You Trust???"* The Second Place ($100) award was given to ***Dalton Duvio*** of *John Curtis Christian School* for his project *"To Coat or Not to Coat the Levee Pilings?"*

This year the awards of $50 were also given to the Teachers of the first place project's school for encouraging their students to do a Structural Engineering project. These teachers were ***Ms. Susan Stephens*** of *Haynes Academy for Advanced Studies* and ***Ms. Cathy Boucvalt*** of *John Curtis Christian School*. Last year's science teacher award to Ms. Boucvalt may have encouraged her student enough to win 1st and 2nd place awards in Senior Division. Way to Ms. Boucvalt.

All seminars are held at the University of New Orleans. Seminar dates, pertinent information, and registration can be found on the New Orleans Branch website at www.asceneworleans.org. To add your name to our mailing list, e-mail Om P. Dixit at om@fenstermaker.com.

ASCE-T&DI Louisiana Chapter News

By Karen Holden, PE

Those of us that have lived up north typically experience a post-Holiday respite because things are fairly quiet between New Years and Easter. Not so in Louisiana! Activities abound: Mardi Gras, St. Patrick's Day, Crawfish Boils, the LES Awards Banquet, the ASCE Spring Conference combine to quickly crowd your calendar like azaleas in full bloom. The ASCE T&DI Louisiana Chapter squeezed in an interesting seminar on February 23rd at the LSU-TTEC Auditorium presented by Jeffrey Shelden, PE, Senior Coastal Engineer with Moffatt & Nichol (Raleigh, NC). The topic was a case study of the *I-10 Twin Span Elevation Determination*. The hurricane damage to the twin span has focused attention on improving methods to predict wave forces experienced by the bridge structures. Wave compression of the air space between the girders caused massive uplift forces that overwhelmed the girder to foundation gravity connections. The discussion continued with a review of the *Guide Specifications for Bridges Vulnerable to Coastal Storms* published by the American Association of State Highway and Transportation Officials (AASHTO) in 2008. These specifications are comprehensive and embody new concepts which have typically not been included in previous design provisions.

Speaker Jeff Shelden, PE (left) with T&DI seminar organizer Dennis Lambert, PE

During the ASCE Spring Conference in Lafayette, T&DI Newsletter Editor Dan Aucutt was recognized along with 16 other civil engineers who have attained Life Member status. Achieving Life Membership in ASCE requires a career of service to both the Society and the civil engineering profession. To be eligible for Life Membership, individuals in the grade of Fellow, Member or Affiliate shall have reached the age of 65, shall have paid dues for at least 30 years, and shall have had 10 years continuous membership preceding the attainment of Life Membership.

The May 11th T&DI Seminar was also held at the LSU-TTEC facility and was hosted by Dr. Louay Mohammad and Chris Abadie, PE (Materials Research Administrator for DOTD and LTRC) as a part of pavement engineering seminar series. This seminar focused on asphalt mixture design and analysis. It drew upon the 2006 Edition of the *Louisiana Standard Specifications for Roads and Bridges* and focused on criteria for aggregates, asphalt cement binders, and asphalt mixture design, including analysis and characterization of Superpave asphalt mixture designs. Our thanks to Dr. Mohammad and Mr. Abadie for a most informative lecture. Future pavement engineering seminars are planed for concrete mixture design and analysis, and earthwork and unbound aggregate materials.

The Louisiana Chapter will continue to crowd your calendar with its seminar series throughout 2011. Training seminars are two hours in length and are typically presented from 5:30-7:30 pm in either the New Orleans or Baton Rouge area. We are open to hosting seminars in additional cities in the State, if requested. In keeping with the intent of the Institute to provide training and networking opportunities for all professionals involved in transportation projects, the Chapter is planning the following future seminars:

- Toll Road Feasibility for the LA1/I-10 Connector in West Baton Rouge Parish
- Hurricane Evacuation
- Program Management
- History of the New Orleans Street Car system.

If you would like a seminar on any special topic, please contact Karen Holden at karenholden@providenceeng.com or Gay Knipper at Knipper@pbworld.com.

— CALENDAR OF EVENTS —

JUNE 2011

June 1, 2011	**OCEA/OPAL Award Nominations due to ASCE National**
June 10, 2011	**Louisiana Section Board Meeting; 10:30am; Location: Superior's Steakhouse in Shreveport**

SEPTEMBER 2011

September 21-22, 2011	**21st Annual Louisiana Civil Engineering Conference and Show at the Pontchartrain Center in Kenner, LA**

http://www.lasce.org/calendar.aspx

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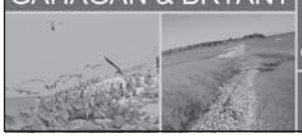

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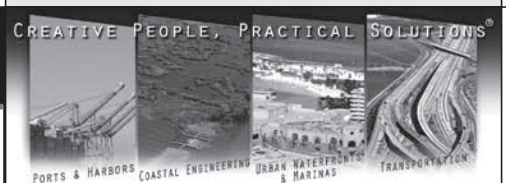

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