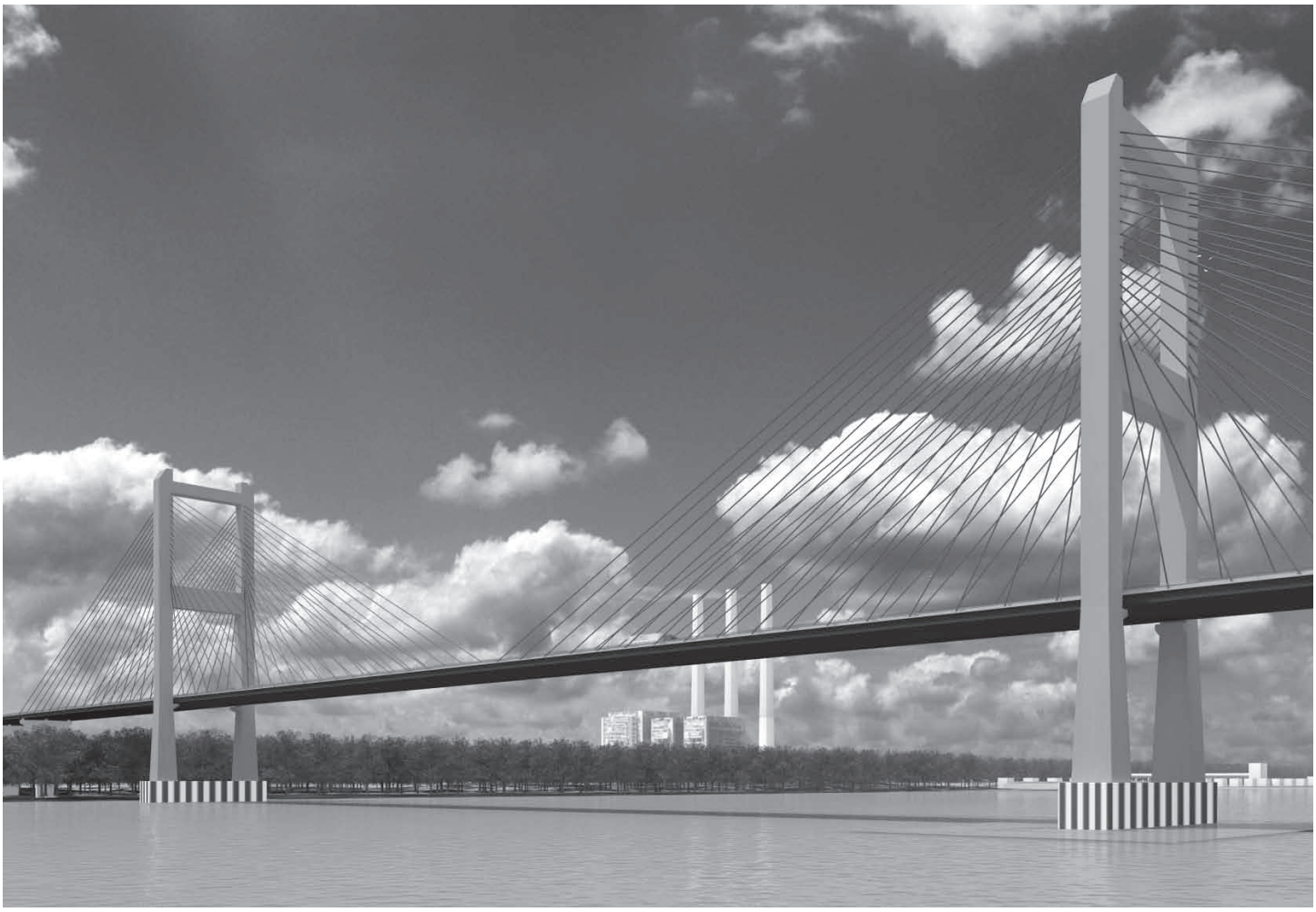
# LOUISIANA CIVIL ENGINEER

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

**ACADIANA • BATON ROUGE • NEW ORLEANS • SHREVEPORT**



## JOHN JAMES AUDUBON BRIDGE PROJECT

Completed Structure Rendering Courtesy of
Louisiana TIMED Managers and Parsons Brinkerhoff

**FEATURE:**

**John James Audubon Bridge Project**
**Cofferdam Construction for the Main Span Pier Foundations**

**NEWS:**

**Total Water Management –**
**An Approach for Water Utility Planning in Louisiana**

**Louisiana Section Spring Conference –**
**April 15-16, 2010; Shreveport**

**FEBRUARY 2010**
**VOLUME 18 • NO 2**

PROJECT PROFILE:

# Cheniere Energy LNG Regasification Platforms

JOHNSON'S BAYOU, LOUISIANA

WASKEY


## PROJECT TEAM MEMBERS

**OWNER:** Cheniere Sabine Pipeline, LLC, Houston, TX
**PROJECT ENGINEERS:** Wilbros Engineering, Inc., Tulsa, OK
**STRUCTURAL ENGINEERS:** Larry LeBlanc & Associates, Baton Rouge, LA
**CONTRACTOR:** Wilbros USA, Inc., Houton, TX

## PROJECT DESCRIPTION

Winner of the 2008 American Concrete Institute's Best Concrete Project Award of Merit, the two WASKEY platforms at Johnson's Bayou are part of Cheniere Energy's Creole Trail Pipeline. The platforms work in tandem to support massive equipment that reheats liquefied natural gas, returning it to a gaseous state for transportation via pipelines that supply the southeastern U.S.

Located near the Gulf of Mexico, both platforms employ two of WASKEY's advanced hurricane survivability options, "Pile Nail" cap-to-pile connectors and "Surge Ready" panel-to-cap connectors, to resist wave uplift forces and high winds. The platforms survived Hurricane Ike and its record storm surge, in 2008, without damage to the structure.

## TECHNICAL DETAILS

**DECK SIZES:** 150'× 150' AND 100'× 100'
**EMBEDDED WELD PLATES AND BOLT CLUSTERS:** 187
**CONCRETE EQUIPMENT PEDESTALS AND PIPE SUPPORTS:** 37
**EMBEDDED ANCHOR BOLTS AND FITTINGS FOR HANDRAIL MOUNTING:** Hundreds
**EMBEDDED DRAINS AND INSERTS FOR DRAIN LINE HANGERS AND CABLE TRAYS:** Thousands

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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 its almost 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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# President's Message

***By Christopher P. Knotts, PE***

***Christopher P. Knotts, PE***

I hope that everyone had a very enjoyable holiday season and that 2010 proves to be a safe and prosperous year for all. As Civil Engineers, we should all be proud of the contributions we make to society…in many ways making life safer, efficient and more reliable for everyone. Even though most of the public takes what we do for granted until a system fails to operate correctly, e.g., traffic lights, water, sewer, etc., we all take professional pride in our contributions to society. As we start off each year with good faith resolutions about improving ourselves, let us not forget our profession and making life better for all those around us. One of the main themes of the ASCE 2009 Annual Civil Engineering Conference in Kansas City was Sustainable Design. In addition to protecting the health, safety and welfare of the public, through our designs Civil Engineers are stewards of our natural resources. The more effective and innovative our designs, the more efficient they are to operate and maintain, the more sustainable they become. Long term, these types of design considerations benefit everyone.

A more sobering tone to the Annual Conference was the much discussed economic downturn the nation is currently experiencing and its impact on civil engineering employment. While most of the discussions centered on the employment challenges for new graduates and those very early in their careers, it must be noted that all of us are subject to potential circumstances that cause us to venture into the job market. It does not matter the reason; only that maintaining an excellent professional reputation and networking are extremely important in today's economic landscape, and just might be the difference in landing a challenging new position. Membership, but more importantly participation in ASCE provides an opportunity to network with others civil engineers, firm owners and leaders in the profession. Involvement and service to ASCE naturally leads to networking and professional development, it does not have to be a predetermined effort. It is professionally and personally fulfilling to better your chosen profession and I urge everyone to find a way to make Civil Engineering better for the next generation.

We were notified at our October Section Board meeting that the IRS tax laws had changed recently and those changes would affect ASCE and other non-profit organizations. The Section is currently discussing and seeking guidance from ASCE National on several issues, most notably our Journal's advertising. Questions such as what constitutes an ad (actual ads are easy but for example; does a professional listing also constitute an ad?) and how will advertising revenues be taxed? Some very important issues as they could have long term financial impacts on the Section.

Speaking of the Journal, I am pleased to announce that on December 22, 2009, ASCE informed the Section that the Louisiana Civil Engineer won the 2009 National Outstanding Newsletter Award for Large Sections and Branches! This is the second year in a row that the Louisiana Section's journal has won this award. Mr. Patrick Landry, PE, our President-Elect and current Publications Committee Chairman will be receiving the award on Friday, February 12th at the Multi-Region Leadership Conference in Atlanta, GA from ASCE President Leonard.

In early December, 2009, the Section sent Luke Le Bas, PE to the ASCE Public Relations (PR) University in Reston, VA. As a result of that training, Mr. Le Bas will serve as the Section's PR representative this year. I know Luke has more info on that training in an article later in this issue, but in speaking with him upon his return, he found the training very useful and enlightening.

The Section's Board of Directors is also very aggressively pursuing revisions and "clean up" of our By-Laws and Operating Guide. Items such as the PR Representative, which is not detailed in either document, illustrate issues that need to be addressed. Through the efforts of E. Ray DesOrmeaux, PE and Ali Mustapha, PE, we hope to have these documents updated by this summer.

The Louisiana Section's Spring Conference rotates between Baton Rouge, Shreveport and Acadiana. This year's conference will be hosted by Shreveport in mid April. The Spring Conference is the Section's Annual Business Meeting and where the Section elects next year's officers. The last time Shreveport hosted the Spring Conference it was a very well planned event. The day and a half to two day event is usually a very convenient and inexpensive venue to gain Professional Development Hours. I encourage everyone to consider attending the 2010 Spring Conference.

# Public Relations are Part of the Job

*By Luke E. Le Bas, PE*

*Luke E. Le Bas, PE*

As the Louisiana Section's representative at the recent American Society of Civil Engineer's (ASCE) Public Relations University Workshop in Reston, Virginia, I was educated to the many valuable resources available to Civil Engineers for interacting with the news media. Currently, each Louisiana member of ASCE receives the Journal of the Louisiana Section, the ASCE national monthly news, and the Civil Engineer magazine. As such, each member has the opportunity to stay current in relevant events and technical advances in the civil engineering field. However, translating technical information to the general public is where media training can prove beneficial for all.

The ASCE national headquarters has established media policy and guidelines that enable appropriate responses to public issues. The ASCE National President is the official spokesperson of ASCE. By promptly responding to issues relative to personal safety, the public is informed and allowed to determine his or her appropriate response whether it be transit safety, structural stability, or other safety issues.

As stated on the first page of the ASCE Public Relations toolkit, public relations are used to either inform or persuade an audience. People are interested in topics that will impact them personally. By preparing accordingly, we as Civil Engineers should be able to beneficially and clearly convey technical information to the media and the public. The first step in that preparation is obtaining the appropriate training needed for the type of media interaction that you will be encountering. Once trained, there are many industry guidelines and protocols established to assist with interviews.

In today's diversified media environment, accurate and timely public responses could be considered part of the job and an invaluable tool in building public awareness, confidence, and trust in Civil Engineers.

For more information on this topic and a menu of available resources, please visit the following link: **http://content.asce.org/prtoolkit/**

# John James Audubon Bridge Project
## Cofferdam Construction for the Main Span Pier Foundations
***By Sereno Brown, PE, A M ASCE***

***Sereno Brown, PE, A M ASCE***

*East Cofferdam Upon Completion of Lowering 47 feet*

**Background:**

The John James Audubon Bridge Project, in Pointe Coupee and West Feliciana parishes, is entering the third year of construction. Once completed, this historic project will serve as many firsts for the state of Louisiana. Some of the most notable include the delivery method, it is the first design-build project for the Louisiana DOTD; the record-breaking 1,583 foot main span length, which will be the longest cable stay span in the United States; and some of the construction methods selected to complete this landmark structure are unique to not only this state, but the heavy civil construction industry.

**Project Overview:**

The John James Audubon Bridge Project is a $407 million design-build project that will soon link the cities of New Roads on the West and St. Francisville on the East across the Mississippi River. The project is just one part of the larger TIMED Program funded by the $0.04 gasoline tax approved by voters in 1989. The Audubon Project is one of the 16 projects targeted by the $5.2 billion infrastructure funding program. The program is managed on behalf of the LaDOTD by Louisiana TIMED Managers, a Joint Venture of Parsons Brinkerhoff, the LPA Group, Inc and G.E.C., Inc. The design-build contractor for the project is Audubon Bridge Constructors a Joint Venture team of Flatiron Constructors, Inc. of Longmont, Co., Granite Construction Company of Watsonville, Ca., and Parsons Transportation Group, Inc of Washington, D.C. The project is scheduled to complete in the late fall of 2011.

This report will discuss in detail the method of construction utilized to complete the main foundation pier footings.

**Foundation Facts:**

Each of the two main span pylons were designed to be supported on twenty-one, eight foot (8') diameter drilled shafts. These shafts extended from elevation +5' down to -175' on the west bank pier and to -180' on the east bank pier. The shafts were constructed by means of an oscillator and airlift instead of the Kelly-bar, top down drill method. The shafts each feature a 1" wall steel casing as a scour protection measure along approximately the upper eighty feet (80') of the shaft.

The design called for a fifteen foot (15') thick distribution footing atop each of the twenty-one shafts. The foot print for this footing measures 160' x 64'. Above this, in the splash zone portion of the structure, a pedestal comprised of three foot thick outer walls, with six interior cells each with two foot thick interior walls is designed to support the base of the tower legs and protect against possible barge impact. The exterior of the pedestal and footing is designed

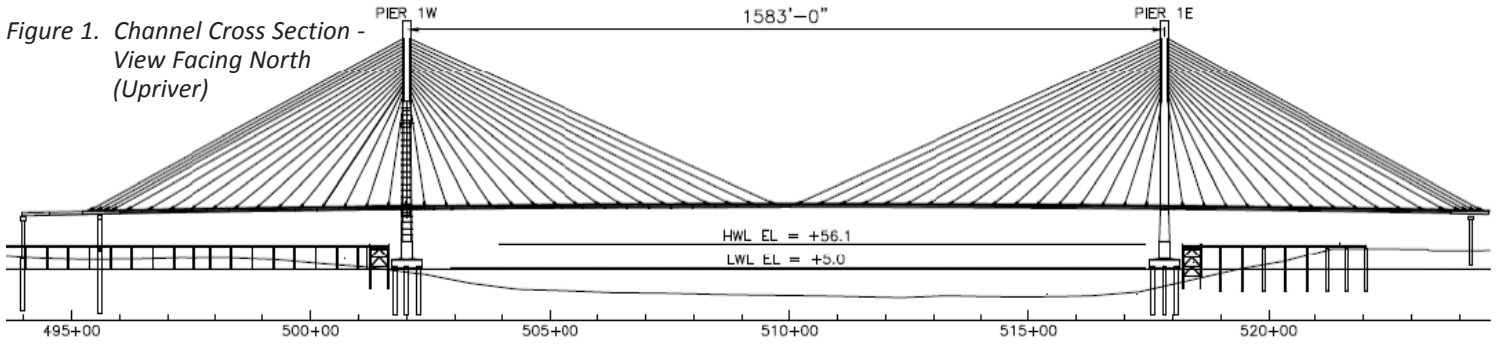


*Figure 1. Channel Cross Section - View Facing North (Upriver)*

to be clad with a polymer rub strip, the black and yellow feature atop the water in the rendering and as shown in Figures 4 & 5.

**Special Challenges to the Design Build Team**

The width of the river from top of the levee in Pointe Coupee to top of the bank on the West Feliciana side constituted a distance of nearly 3,300 feet. Acknowledging that the foundations for a conventional cable stayed bridge would not be able to sit outside the influence of the river; the main challenge was to place them as close to the bank and outside the navigational channel as possible. Given the extraordinary fluctuation of the river level in the course of the year and the duration it would take to construct the foundation the design-build team knew their plan would have to work around the high water season. Investigation into the soil properties at West bank revealed a loose silty material for a depth of forty feet (40'). The east bank profile, shown in FIGURE 1, meant a depth of water on the navigation side of the footing greater than eighty feet (80') in high water seasons.

With this information in hand the team concluded that a conventional sheet pile cofferdam would not be a cost effective solution to this problem, nor would it allow the Joint Venture the ability to meet the construction schedule. Instead the team looked toward the idea of a precast concrete cofferdam. Precast concrete cofferdams were successfully used by Flatiron on prior bridge projects which include the Sagadahoc Bridge in Maine and the Alfred Zampa suspension bridge in California.

A significant challenge posed by a precast concrete cofferdam is to design it such that it may be quickly erected with conventional cranes. A modular precast concrete cofferdam solution was developed to meet this challenge. The modular cofferdam allowed precast units to be cast on-site in small, manageable sizes that could be more easily transported and erected. The team developed this approach with the intent that all the pieces could be brought out to the piers and erected from a land based trestle. Once the shell is lowered into place, in order to provide a bond to the shafts and to seal the cofferdam, the team designed an eight foot (8') thick non-reinforced concrete seal slab below the bottom of the structural footing. The lower portions of the cofferdams were designed to act as the finished perimeter wall and soffit forms for the pier footing concrete. The precast concrete walls of the cofferdam were designed to be a permanent part of the footing, while the soffit and concrete seal were not. The plan called for the cofferdam shell (precast soffit and wall panels and structural steel bracing and sheet piling), to be assembled well above the top of the final footing elevation fully out of the water and above the influence of regular river stage fluctuation. Once assembled the cofferdam shell could then be lowered forty-seven feet (47') into the Mississippi River. Once lowered to the final elevation, the combination of an eight foot (8') thick seal slab and the structural steel wale/sheet pile follower act to create a solid, watertight box enabling the team to safely work at forty feet (40') below the top of the river for the construction of the footing and pedestal. The portion of the cofferdam above the finished footing elevation was constructed of temporary steel sheet piling. Upon completion of the footing construction and pedestal and once the level of the river permits, the steel sheet pile walls may be removed.

Design of the precast panels and cofferdam was undertaken by Flatiron Constructors, Inc, the lead partner on the design build project. The design-build team worked closely with the main span foundation structural design team, headed by Parsons Transportation Group, Inc, to integrate the cofferdam plan into the final structure.

The structural design of the cofferdams included many load cases, with the limits being high water at elevation +50, to prevent over-

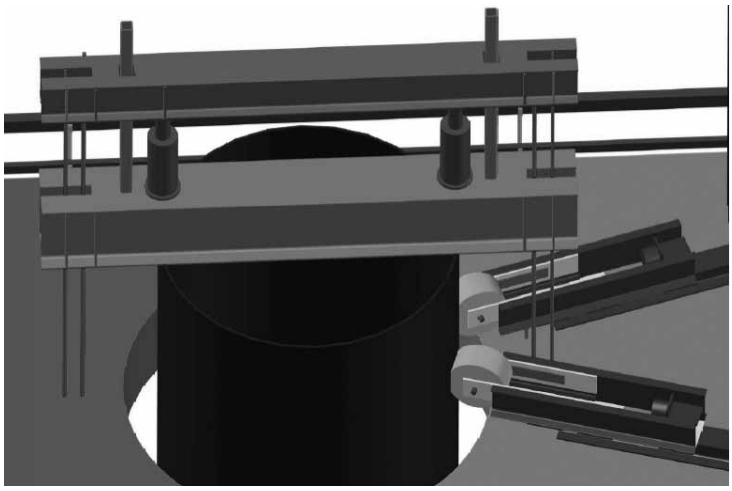

*Figure 2. Typical Guide Roller Arrangement*

*Figure 3. East Pier, Soffit Panels Erected*

topping during high water, and low water at elevation +10. These water level extremes were controlling parameters for a design which considered the stage of construction, stage of dewatering, and river current velocity. Another design challenge was to design a lateral bracing system to resist river current forces during the lowering stage and seal concrete placement. This was accomplished using expendable guide rollers mounted atop the soffit precast panels. These guide rollers could then bear against the face of the vertical drilled shaft caisson extensions as the structure was lowered. A total of six of the shafts were chosen to guide the lowering of the cofferdam by means of the expendable rollers. The rollers were further outfitted with hydraulic jacks to allow remote extension or retraction of the rollers to accommodate any misalignment of the drilled shafts. See FIGURE 2 for a rendering of the guide rollers against a typical shaft.

**Sequence of Cofferdam Construction:**

The precast elements (soffits and walls) were cast on-site during the drilled shaft construction, off the critical path. Once the drilled shafts were completed, temporary steel casing extensions were spliced to each of the twenty-one shafts in each footing. The shaft extensions brought the top of the casings up to elevation +50'. The precast soffits were then outfitted with temporary support hangers and transported out to the land based access trestles out to the main pier foundations. FIGURE 3 shows placement of the first panel on the temporary hangers. Subsequent panels were placed alongside and adjusted to create a level work surface at elevation +44', and then cross panel bracing was attached via weldment cast into the tops of the slabs.

*Figure 4. East Pier, Structural Bracing and Precast Walls Installed*

*Figure 5. East Pier, Upper Structural Bracing and Sheet Pile Follower Installed*

Following the soffit installation the jacking system and the lower level of structural steel bracing was installed. This was immediately followed by the installation of the precast wall panels, as shown in FIGURE 4. Once the precast was erected and secured the upper structural steel framing and sheet pile follower were installed. FIGURE 5 shows the dam just prior to completion of sheet pile follower.

**Lowering Design Overview**

Support of the cofferdam during initial assembly and final lowering was achieved by means of forty-eight (48) separate 1-3/4" diameter, 150ksi threaded rods, accompanied by 48 redundant auxiliary rods positioned directly adjacent each primary load carrying rod. The team developed a jacking arrangement (see FIGURE 6) whereby these rods, connected to the precast soffit panels and extending up to beams supported on extensions of the drilled shaft steel casings, could be raised or lowered by means of hydraulic jacks atop the steel casing extensions. The jacking system was designed such that the jacks necessary to raise or lower the system were sandwiched between a set of beams. These beams, termed (lower) hanger beam and the (upper) jacking beam are illustrated in FIGURE 7.

To operate the system a portioned amount of hydraulic fluid was sent to the field necessary to raise all the different size jacks an equal displacement. Nuts positioned atop the upper jacking beam were set such that the load would be freely supported by these upper beams when the nuts on the lower hanger beam "lifted off". Once the lower nuts were free they were adjusted up by a set safe clearance and the jacking system would slowly retract the field jacks. The field jacks were all standard double-acting Power Team hydraulic jacks, each with a maximum stroke of 13". For our design, only 11" of stroke was utilized, thus in order to achieve the full

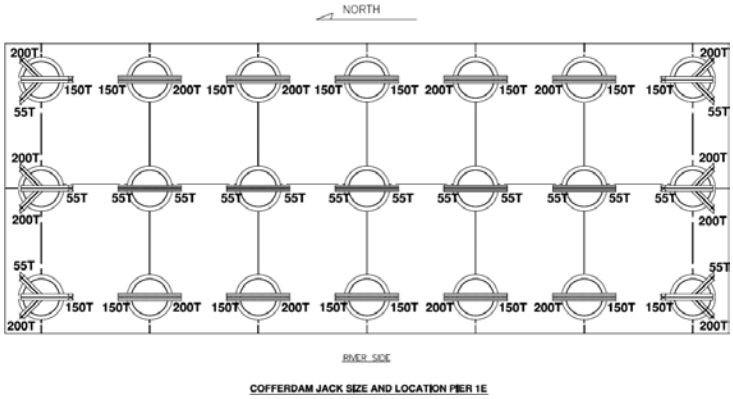


*Figure 6. Plan View, Typical Pier Jack Layout*

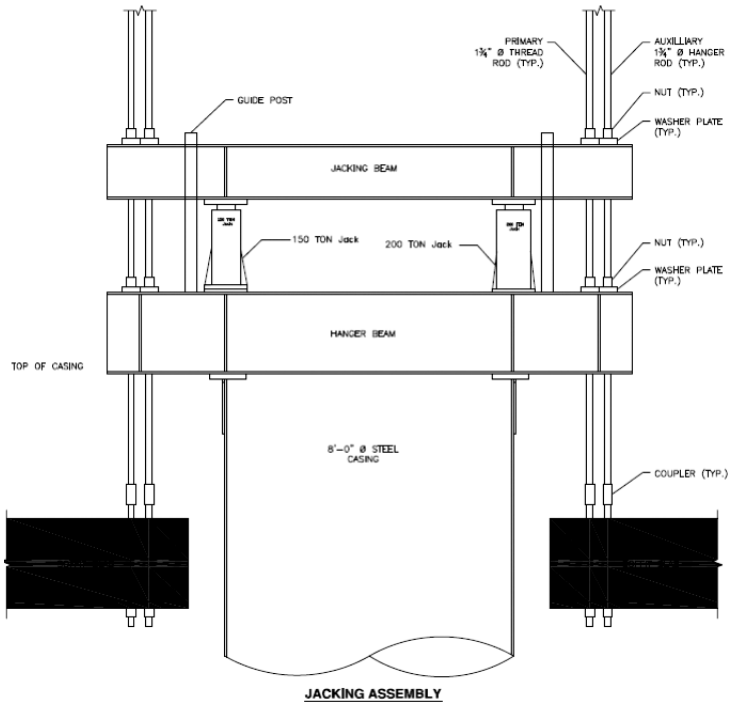


*Figure 7. Typical Cofferdam Support Detail*

forty-seven feet (47') of lowering required it would take no less than 52 cycles. In order to re-stroke the field jacks the load would be set down on the hanger beams, the nuts atop the jacking beam would be raised up and the field jacks re-extended to pick-up the load and repeat the lowering process. [Reference FIGURE 8]

Safety was a paramount concern throughout the planning of this operation. Specific concerns over how to best mitigate exposure due to a sudden field jack failure or failure of a rod above the hanger beam were chief among these concerns. It was agreed by all parties within the design-build team to make sure that in the event of a sudden change in the support condition that the cofferdam would not be permitted to fall or experience a significant sudden load shift. It was decided that to best guard against this exposure that the lower

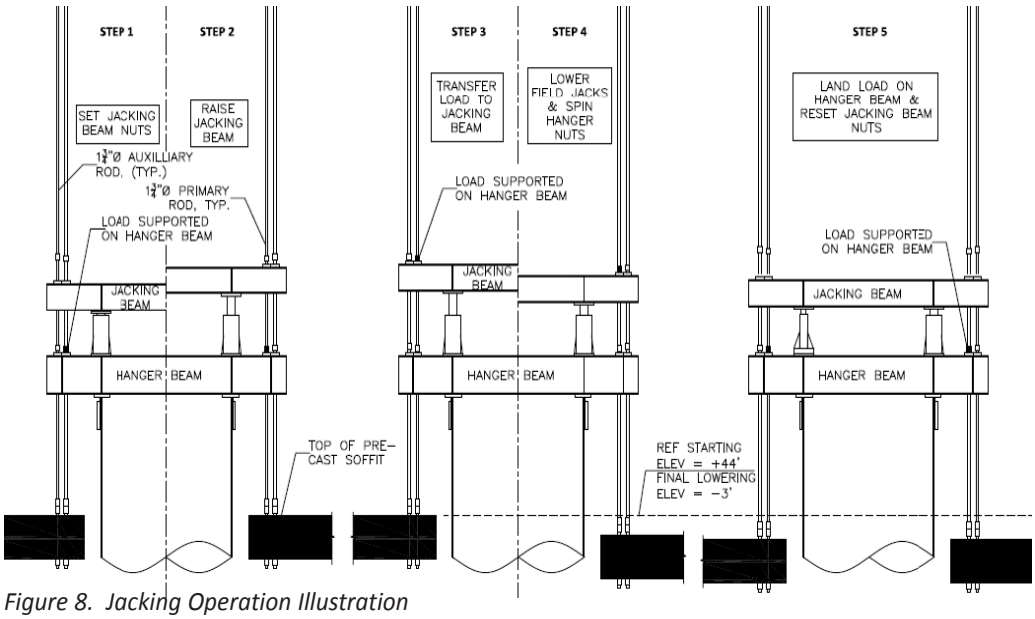


*Figure 8. Jacking Operation Illustration*

*Figure 9. "Nut Spinner" at Work*

"hanger" nuts should be kept minimally above their respective washer plates. This required the nuts had to be continuously adjusted up as the load was lowered. Manipulation of the nuts for the 1-3/4" diameter rods would have to be done from inside the cofferdam since the steel frame that braced the steel follower sheeting had to be in place before lowering. Due to access concerns and the importance of not letting a nut accidentally "bottom out" by contacting the lower hanger beam plate washer, it was further agreed that the best option was to staff a dedicated worker at each of the twenty-one shafts. Not surprisingly, these employees came to be known as "Nut Spinners". [FIGURE 9] In order to improve communication and provided continuity of coverage through the process of lowering across the near quarter acre cofferdam, the twenty-one shafts were broken down into seven, three shaft "zones". Each of these seven zones was manned by supervisors who could double check the progress of the nut spinners, and relieve a nut spinner for periodic breaks as needed.

In order to track the progress of the distance lowered, each shaft was outfitted with a logger tape fastened to the soffit panel and to the hanger beam. The nut spinner at each shaft would record readings periodically through the course of the lowering to double check the lowering and assure there were no global rotations, i.e. one side of the dam progressing down faster than any other area. See FIGURE 10 for a typical tape layout configuration. The tapes were affixed to the beam and from the tape spool passed through a pair of sandwiched plexi-glass plates marked with two indexes. The

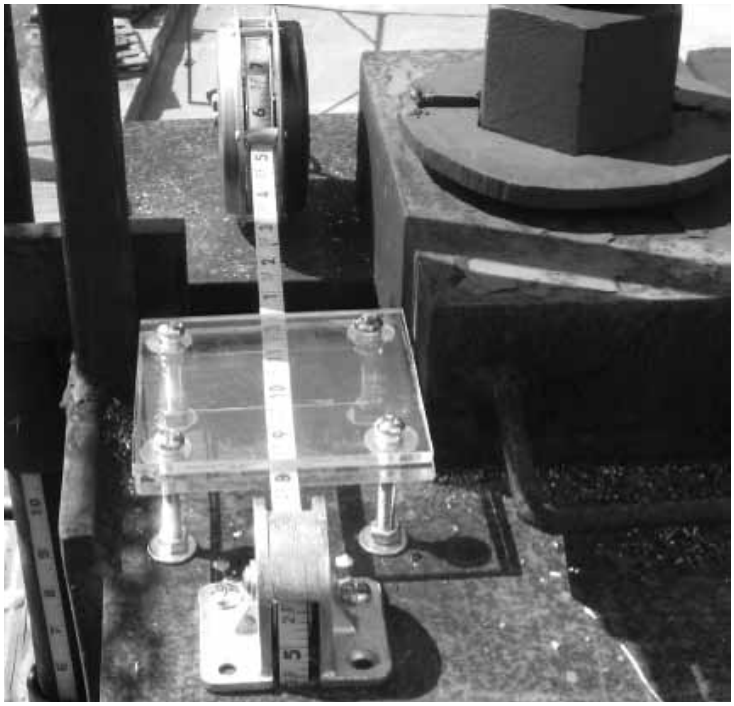

*Figure 10. Lowering Measurement Verification System*

distance between the indexes was held constant and this created a check on the individual measurements to help guard against any misreading of the tape. As an additional check, digital inclinometers were placed on the soffit panels. These inclinometers gave continuous readings of the attitude of the panel throughout the lowering process. These measurements and the inclinometer data were evaluated along with the loads to confirm the cofferdam lowering was proceeding within the design specified 1/8" tolerance for synchronous movement.

Although the lowering of the cofferdam was mundane and slow, it was anticipated a reliable and steady operation of precise setting of these nuts would prove to be a challenge. To overcome this, a mock up was prepared to train staff on the protocol and diligent setting and manipulation of the nuts, see FIGURE 11. The mock-up was

*Figure 11. Lowering Training Mock-Up*

constructed as a four shaft arrangement complete with the actual jacks, hanger beams and pre-cast soffit panels to be used in the actual lowering. The mock-up provided not only a valuable training station, but also served to trouble shoot the system and to refine the process in advance of executing the work.

Due to the size and complexity of the hydraulic operation station we determined it best to locate it outside the cofferdam. This posed an additional challenge in how to best communicate readiness between the team inside the cofferdam to the hydraulic operator outside. In answer to this the team developed a regimen of commands and responses specific for each member of the lowering team. These commands and controls were practiced on the mock-up first to ensure that all team members had a thorough understanding of the protocol and were again reviewed with the crew each day at the start of shift.

**Selection of the lowering system and its operation**

Through the design process it was determined that the use of hydraulic jacks would be the simplest means of lowering the cofferdam. The specifications developed by the design-build team for this lowering system were, in order of precedence:

1 capacity to lower 5,000 tons with synchronous movement 47' into the river;
2 provide internal safeguards to limit exposure of work force within dam to sudden loss of load;
3 synchronous movement within 1/8" tolerance at any jack;
4 allow real-time individual readouts of jack pressures (loads) at each of the 48 supports*;
5 allow immediate individual jack adjustments to correct for loading/geometry changes;

**Though we were concerned with the actual loads it was only in order that we could compare them against model assumptions. Foremost, the lowering was to be governed by uniform displacement. If the loads varied somewhat from the loads assumed in the structural model, so long as they were within a specified range and the structure was lowered in a level and uniform manner then the loads were secondary to the condition of the lowering.*

The Design-Build team selected Richard Dudgeon, Inc. of Bridgeport, CT to provide the final hydraulic jacking design and furnish the equipment for the lowering. The design provided by Dudgeon worked as a closed hydraulic system. This system consisted of 48 jacks in the field, each directly linked to one of 48 subsidiary jacks located back at the jacking station. The field jacks ranged in capacity based on the load distribution provided by the Design-Build team's model. The jack sizes used in the dam were standard 200Ton, 150Ton and 55Ton jacks. Each jack was independently plumbed to a corresponding smaller, Dudgeon custom fabricated subsidiary jack. For example, the inlet line from a 200Ton

field jack was connected directly to the inlet line of a custom 24Ton subsidiary jack. The ratio of the field jack ram area to the subsidiary jack ram area was 0.117. This ratio was maintained throughout the system. Thus, the system was able to produce synchronous movement whereby a set displacement by the subsidiary jack resulted in a unit hydraulic fluid displacement that in turn produced a global, uniform movement of the many different sized field jacks. The design team specified that uniform displacement should serve as the governing criteria, and that loads should be monitored only to determine that no radical load swings were apparent. The system provided by Dudgeon incorporated a digital pressure transducer into each of the field jack lines to allow for real time load verification and monitoring. Load measurement software was provided by Optimation Technologies, Inc. of Rush, N.Y. to record data throughout the lowering in 5 second increments. The data collection station was set-up on-site next to the operator of the jacking system so that any issues arising in the field, detected by the data collection system could be quickly conveyed to the operator and adjustments made accordingly.

The subsidiary jacks were locked into a reaction frame. This frame consisted of a number of "Subsidiary" jacks on one side of a reaction plate and a large 400Ton jack, referred to as the "Primary" jack, on the opposite side. The four load frames are shown in front of the hydraulic operation station in FIGURE 12. This arrangement of one set of jacks directly acting against a single opposing jack allowed that when hydraulic fluid was bled from the main jack back to tank, the main cylinder retracted thus allowing extension of the subsidiary jacks. These, in turn, allowed the field jack cylinders to retract in a synchronous fashion to lower the cofferdam.

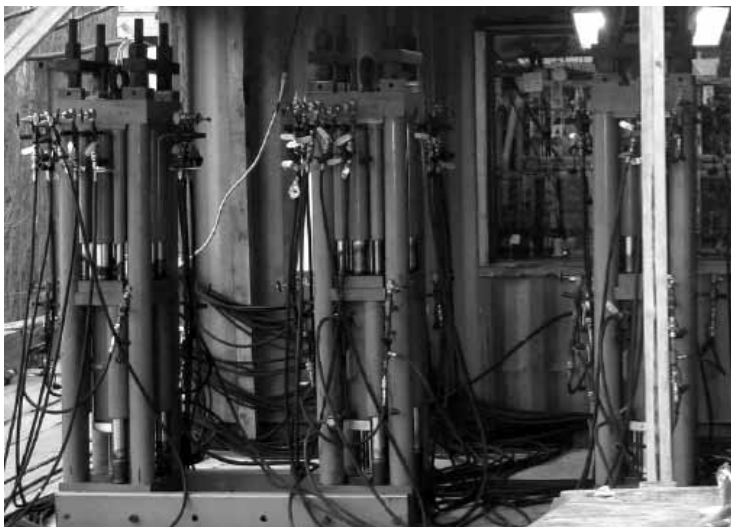

*Figure 12. Synchronous Jacking Reaction Frames*

**Timeline of the work**

The design-build team is proud to report that the cofferdam construction was a great success. Construction of the cofferdams commenced with the erection of precast panels in November of 2008 and concluded with the dewatering upon placement of the final 3,000 cubic yard concrete seal slab placement in May of 2009.

**Project status**

The project is currently well into the construction of the superstructure towers. The towers are nearing the half-way point in construction and once complete each tower will extend up to elevation +520'. Deck construction activities are scheduled to commence in April of this year and extend through to the end of the year. The approach structures leading up to the main span project are near 80% complete, and the roadway and paving are also 40% complete. Progress at the project can be seen at our website www.flatironcorp.oxblue.com/jjab where you can view archive images from the lowering and see real time updates from the project web camera.

***Sereno Brown, PE, A M ASCE*** is the construction team's Project Engineer for the Audubon Bridge Project. An employee of Flatiron Constructors, Inc. for the past 12 years he has been involved with the construction of several notable projects, including the San-Francisco Oakland Bay Bridge "Skyway" Project, Oakland, CA; the Carolina Bays Parkway Design-Build Project, SC; and the Sagadahoc Bridge Design-Build Project, ME. Mr. Brown earned a BSCE from the University of Maine, Orono and is a licensed Professional Engineer in Louisiana.

***Norman Kirk, PE, M ASCE*** – retired Flatiron Constructors, Inc employee, was engineer of record for the design of the cofferdam. Mr. Kirk was has been involved with the design and construction of marine structures which include the precast cofferdams at the Sagadahoc Bridge over the Kennebec River in Maine and the Alfred Zampa bridge over the Carquinez Straits in California. Mr. Kirk earned a BSCE at Newark College of Engineering, Newark, NJ and is a licensed Professional Engineer in Colorado, and a licensed Structural Engineer in Massachusetts.

***Renato Ravazzolo, PE, M ASCE*** is a Senior Engineer for Flatiron Constructors, Inc in Lafayette, CO. Mr. Ravazzolo was responsible for the design and modeling of much of the suspended cofferdam structure. As a leading member of Flatiron's in-house design department for the past 12 years, Mr. Ravazzolo has been involved in numerous projects from estimating phases with conceptual design through execution. Mr. Ravazzolo earned a BSCE at the ITR College of Engineering, Rapperswil, Switzerland and is a licensed Professional Engineer in Colorado, Virginia, Maryland and Florida.

*The author wishes to thank the contributions of Mark Curtiss, Superintendent and hydraulics expert with Flatiron Constructors, Inc for his review and consultation on the specifics of the hydraulic system described in this report.*

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# Louisiana's Budget Cuts Threaten the Health of Engineering Education

*By Norma Jean Mattei, PhD, PE, ASCE Region 5 Director, Chair & Professor, UNO Civil & Environmental Engineering*

*Norma Jean Mattei, PhD, PE*

The impact of the state's budget cuts to higher education has reached a critical level. This academic midyear cut totaled $84 million in funds for Louisiana's public university system. Most universities handled this cut through layoffs and position eliminations. With the post-Katrina elimination of the civil engineering department at Tulane, five universities (UNO, ULL, Southern BR, LSU, and LaTech) still have undergraduate civil engineering programs in the state. McNeese has a BS in Engineering with a concentration in Civil. All six are public institutions. None have the option of raising tuition to cover these budget cuts, although tuition is far below the Southern Regional average in every case, because Louisiana is the only state that requires a 2/3's vote of the legislature in order to increase tuition

In a January 8th media advisory, LSU's Chancellor Martin said that for LSU to address the long-term financial impact to the university, they will "have to look closely at eliminating centers, institutes and academic programs…the College of Engineering's ability to continue educating a majority of the engineering…graduates in Louisiana will be affected…" (for a complete copy, see http://appl003.lsu.edu/unv002.nsf/PressReleases/PR6217). UNO's Chancellor Ryan is expecting budget cuts of $11 million to UNO's budget next year, on top of the cuts the university has suffered in the last eighteen months. Louisiana's budget shortfall is expecting to last two more years. Such cuts will necessitate changes in faculty and number of courses offered, and ultimately changes in engineering programs.

What impact will changes in engineering education in the state have on industry, engineering consultants, and government agencies? Find out how the university in your area plans to weather the rough years ahead. In addition, contact your state legislators. Urge them to change state law to allow universities to increase tuition. Please feel free to contact me at nmattei@uno.edu for more information.

## — Calendar of Events —

| | |
|---|---|
| **FEBRUARY 2010** | |
| **February 25, 2010** | **Acadiana Branch Meeting; A La Carte; 12:00pm; Speaker: David Grouchy, Ethics** |
| **MARCH 2010** | |
| **March 4, 2010** | **ASCE-SEI New Orleans Chapter Sponsored Seminar; Topic: Seminar on Timber Design; Speaker: Dr. V. Gopu w/ LTRC/ LSU; For more info, visit www.asceneworleans.org** |
| **March 18, 2010** | **Baton Rouge Branch Meeting; 11:30am; Drusilla Seafood; Speaker: Mr. Joe Church w/Roctest; Topic: Fiber Optic Levee Monitoring** |
| **March 23-25, 2010** | **Legislative Fly-In; Washington D.C.** |
| **March 24, 2010** | **Acadiana Branch Meeting; Don's Seafood Downtown; 12:00pm; Chris Abadie w/LTRC** |
| **March 26-27, 2010** | **Deep South Conference - UNO campus** |
| **APRIL 2010** | |
| **April 15-16, 2010** | **Louisiana Section Spring Conference; Shreveport; Clarion Hotel; More details to be provided later** |
| **April 16-17, 2010** | **Professional and Fundamentals of Engineering exams (Contact LAPELS at www.lapels.com for more info)** |
| **April 20, 2010** | **Acadiana Branch Crawfish Boil; Location TBD; Time TBD** |
| **April 22, 2010** | **ASCE-SEI New Orleans Chapter Sponsored Seminar; Topic: Concrete Sustainability; Speaker: Richard Stehly, President ACI, Minneapolis,MN; For more info, visit www.asceneworleans.org** |
| **MAY 2010** | |
| **May 20, 2010** | **Acadiana Branch Meeting; Case Ole; 12:00pm; Speaker; Dr. Ehab Meselhe w/ULL, Coastal Restoration- Myrtle Grove** |

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

# How to Work Effectively with Government Engineers

***Editorial By Deborah Ducote Keller, PE***

***Deborah Ducote Keller, PE***

Recently, ASCE solicited participation from private sector principals and project managers for a survey that will provide data for updating ASCE Manual 45, *How to Work Effectively With Consulting Engineers.* Unfortunately, neither the manual nor the survey addresses the perspective of clients, who are often engineers working in government. So here's my editorial called, *How to Work Effectively with Government Engineers*. Several points are applicable to any client, public or private sector. Having worked ten years as a private consultant and over twenty years for government, I have an appreciation for the business of engineering as both a consultant and a client.

**Ten Tips for Working Effectively With Government Engineers**

1. Know your client before you meet. In developing your business contacts for future opportunities, it's your responsibility to educate yourself about the client's profile. The Internet makes this so easy. Just visiting the client's website offers a wealth of information. It's better to not meet with a client if the extent of your opening remarks are, "So, tell me about your business. What does your agency do? What facilities do you own? Who is your director? What's in your master plan?" To do so gives the impression that you either don't care enough to do the basic homework to prepare for the meeting, or you are not a player in this market segment. In any case, it's not a favorable first impression. This is your opportunity to acquaint or update the client on your firm's experience, personnel, and current projects to determine how your firm might fill a need. Approach the client as you would a job interview because it really is a sales call. Recognize that it is risky for a client to be your "experiment" in an area that's new to your firm. It's the client that has to invest the time, money, and reputation with every consultant contract awarded.

2. Respect a Quality Based Selection processes. Do ask how your client selects consultants. If it is based on a quality based selection process, then respect the process, play by rules, and demonstrate your engineering ethics. To do otherwise indicates to the client that you don't have confidence that your firm is qualified enough to compete for the project.

3. Know the client before you compete. The time to meet a government client and inquire about the selection process is well before Requests for Qualifications are issued. Once a selection process is underway, it is not good practice for the government staff to meet with potential firms unless it is regarding work already under contract. To do so would create an opportunity for information about an ongoing solicitation to be discussed with some, but not all potential applicants.

4. The project manager is key. The client considers a consultant's overall qualifications, experience, and abilities, but when the final choice is made, don't underestimate the influence of the project manager. This key person is the point of contact that will lead, direct, make the recommendations, address the problems, and ultimately define whether the client is well-satisfied and if your firm makes a profit. When competing for work, the best project manager has to exude enthusiasm, confidence, competence, good communication skills, and a full understanding of the project. Clients want a project manager who can also interface with government boards and commissions, elected officials, and the general public for addressing technical issues that may arise as the project unfolds. This requires the added skills of tact, diplomacy, and political correctness. Be careful about listing a well-known engineer as the project manager if that engineer is not going to function as the real manager of the project. Advertising big stars with minor roles only works in the movie business.

5. Read the contract. Whether a prime consultant or a sub-consultant, be sure the firm's key staff reads the contract's scope, compares scope to fees, understands the insurance requirements, and confirms that the firm can fulfill its obligations before signing a contract. If there is a task that has not been included in the scope, address it early on. If acting as the sub-consultant, read both the overall contract requirements of the client and the proposal submitted by the prime. Look for what the prime consultant might be obligating the sub-consultant to perform without its full appreciation.

6. Know when to walk away. It's safe to assume that as a private business, the consultant plans to make a profit and satisfy the client. Either turn down the project or negotiate better terms with the client before executing the contract. Warning signs that the consultant may lose money and/or lose a client include:

- Not having the right skills on the consultant team
- Not able to provide the required insurance or comply with the standard contract terms

- Not able to commit the project manager to the degree needed, when needed, and where needed
- Not able to meet the contract schedule
- Not able to meet the construction budget
- Not able to provide the scope of work for the fee limit
- Assuming professional liability for a fee that doesn't commensurate with the risk undertaken

6. Address fees and scope timely. Do not let an increased scope remain unaddressed, whether the prime or sub-consultant. Process invoices exactly as the client needs it (including back-up documentation), use the correct billing rates, and submit invoices timely. Too often consultants don't follow-up on an invoice misplaced by a government bureaucratic accounting system, or respond to a request for missing receipts, or address an increase in scope until the amount of outstanding invoices is significant. An excellent practice is to simply include with each invoice a summary of the authorized contract value, the amount invoiced, the amount paid, and the new invoice amount due.

7. Keep in contact with your clients. Effective ways to communicate are company newsletters, attending conferences, networking, and volunteering at functions where your clients will likely be participating. ASCE activities are great ways to become acquainted with clients. In addition, it gives the client an opportunity to see your soft skills, as well as technical expertise. Personally, I receive so many emails a day, that I don't have time to read lengthy newsletters on the computer. But I always find a few minutes to do a quick read of short newsletters that feature people and projects with interesting pictures. Several consultants and construction companies just send clients their employee newsletter.

8. Measure your performance. Is the firm measuring and evaluating its performance? Did you ask why your firm fell short in a Quality Based Selection process? When the project is finished, was the client asked to submit a customer satisfaction survey? This can be a survey or an interview. It can be done by the principal in the firm or another employee, but it shouldn't be the project manager if the client is to feel comfortable giving constructive criticism.

9. Time is time and money. Non-billable hours are overhead costs to consultants. Reduced budgets have made government staffs very lean. Since there are many more consultants than there are government engineers to meet with them, it's not practical to hold lengthy meetings just for business introductions. In addition to Tip No. 7, consider offering government engineers an opportunity for your firm to present a technical topic. It provides "free" professional development hours to the government engineers and a networking opportunity for the consultant. Just remember to keep it technical enough to qualify for the credit and be sure it's a subject matter the firm excels in. Offer several topics and let the client choose one. It's also a way to determine an area of expertise that a client may need consultant services for assistance.

10. Can you say mea culpa? When there is an error, omission, personnel issue, or any incident that falls upon the consultant, it's far better to admit to the mistake early and take corrective action. Anyone who works in government encounters as many, if not more, human errors than the private sector. Being accountable, taking responsibility, and making improvements to lessen the chance of re-occurrence indicates credibility. Considering that government entities are audited both internally and externally, and many have attorneys on staff, sooner or later the problem will be discovered. Far better to come forward to your valued client when you know of a problem. And likewise, when a client's staff has caused a problem, bring it to the attention of the client's engineer who is in responsible charge.

Whether working as a consultant or client, I feel fortunate to be in a profession that has a code of conduct and ethics. Working effectively is an area that is more difficult to navigate and often comes from lessons learned rather than a manual. So take advantage of ASCE Manual 45's new update when it's published, and if you have a Tip No. 11 to share, please email it to me at kellerd@portno.com with the understanding that I may use it when I give such presentations.

# Total Water Management – An Approach for Water Utility Planning in Louisiana

*By Susan N. Douglas*

*Susan N. Douglas*

As concerns continue to emerge about drinking water quality, resource availability, and costs, interest in strategies such as Greywater recycling and reuse of treated wastewaters is broadening. Local governments and associated utilities continue to initiate pilot programs that explore the use of these wastewaters, developing a track record and data for consideration by the water management community. Related water resources management efforts such as extensive conservation programs, alternative water sources, and non-potable use of stormwater are just a few examples of management approaches being explored to sustain water resources in a more integrated manner.

For these pilot programs to be expanded to significant components of a utilities water resources program, their value needs to be evaluated within the context of a Total Water Management (TWM) approach. TWM offers an effective method for the development of sustainable and integrated water resource management plans (Patwardhan et al., 2007) that can be used to scale up pilot reuse, conservation or other water management programs to a system-wide scale. TWM integrates the functions of the built and natural water cycle such that the entire water system (from source water to wastewater treatment and ecosystem flows) can be planned and operated to provide more sustainable water supply solutions. A TWM approach facilitates long-term planning, promotes consistency and efficiency, optimizes uses of all water sources, provides flexible solutions, and enhances community involvement in and support for long-term water planning (Freas et al., 2008). Exhibit 1 shows a range of water resources interactions that may be included in a TWM approach but it should be recognized that the components included will vary depending on geography, regulatory constraints, limits of authority of the utility, etc.

A typical TWM, approach will generally comprise the following six elements:

- Define goals and objectives of the TWM plan
- Collect and analyze data to support plan development
- Evaluate and select alternatives to be analyzed by the plan process
- Select models to perform TWM analyses
- Conduct Impact Assessment of the plan including stakeholder involvement
- Develop Implementation Plan, Monitor Results, and Establish Institutional Framework (Patwardhan et al., 2007; Freas et al., 2008)

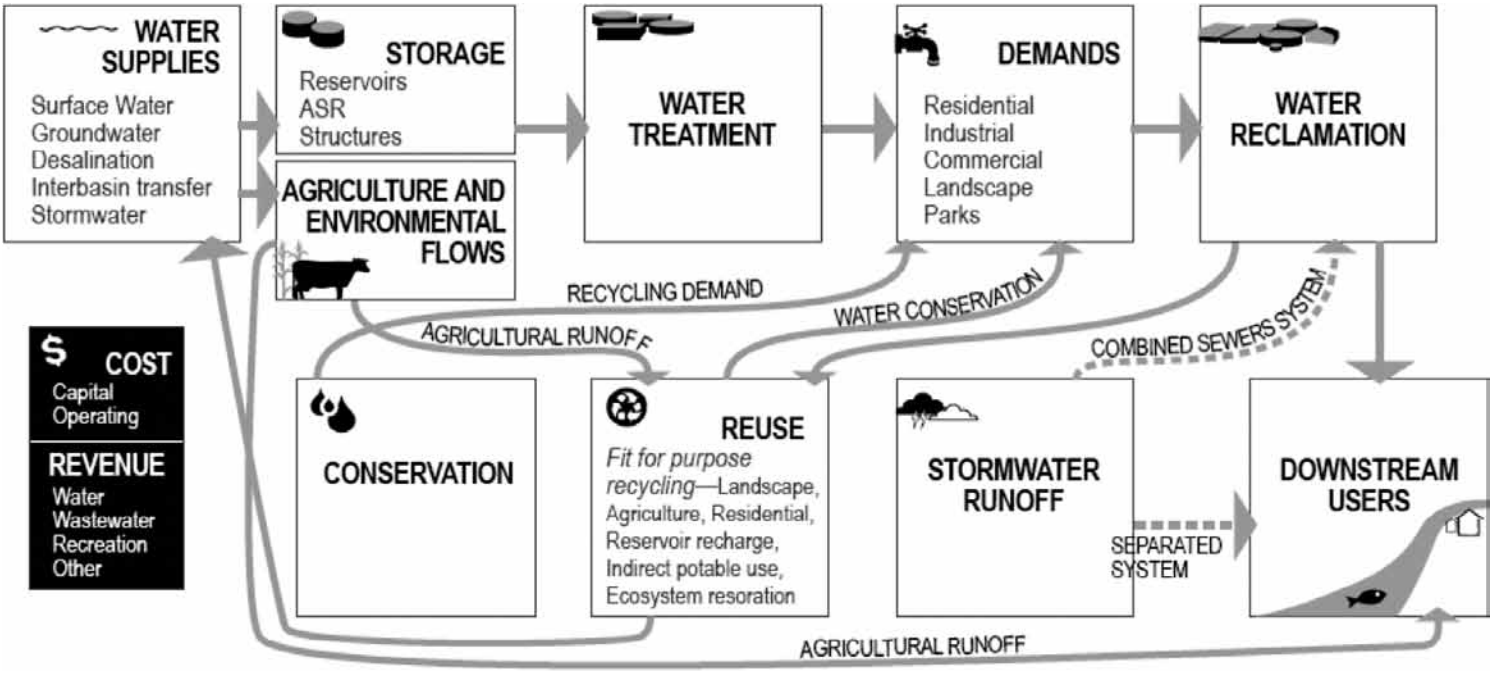


*Exhibit 1. Components of Total Water Management planning for water utilities*

Several utilities across the Country have implemented a TWM approach through their planning and implementation of water resources management programs. Two southeastern utilities which utilize this strategy are the Clayton County Water Authority (CCWA) in Georgia and the Town of Cary, North Carolina.

The CCWA, located on the south side of the metropolitan Atlanta area, provides water and sewer services to Clayton County and portions of adjacent counties. CCWA area water supply and wastewater needs continue to increase with the population growth despite the limitations on water supply and assimilative capacity. Continued conflicts for water resources with neighboring states and total maximum daily loads (TMDLs) requirements in the area have made in ever more difficult to obtain new or expand water supply withdrawal and wastewater discharge permits (Thomas, 2005; Baughman, et. al, 2005).

Typical of most water utilities, CCWA develops and regularly updates master plans associated with its long-term Capital Improvements Plans (CIPs) to evaluate changes in growth patterns, regulatory requirements and other conditions. CCWA initiated a TWM approach to its water resource planning in its 2000 master plan and subsequently reinforced TWM in the preparation of the 2005 master plan update. Concurrently with the master planning process, CCWA was developing and implementing a watershed management approach to ensure the maintenance of water quality in their water supply watersheds as well as the streams throughout the county. CCWA's use of TWM approach allowed them to maximize their limited water supply and maintain compliance with increasingly stringent federal and state water quality regulations, while achieving customer service expectations at a reasonable cost to CCWA consumers.

A key issue facing CCWA when this TWM approach was implemented was expanding wastewater treatment capacity in watersheds where there were major water quality impairments and developing TMDLs. Another key issue was increasing the yield and reliability of their water supply and water treatment infrastructure. At the initiation of master planning in 2000, CCWA's existing wastewater disposal system included lagoon treatment and land application within their water supply watersheds. The TWM planning process resulted in a recommendation that wastewater treatment systems be upgraded to advanced secondary levels and the existing land application sites be converted to wetlands treatment systems (shown in Exhibit 2) for the following reasons:

- Amount and cost of land required to expand the land application sties as compared to wetlands
- Ability to treat more wastewater per acre of land with wetlands as opposed to land application
- Significantly lower operations and maintenance cost of wetlands

*Exhibit 2. CCWA treatment wetlands constructed on previous land application sites*

- Desire for continued reliance on natural treatment systems
- More direct recharge of water supply sources and the resulting improvements in water supply reliability

As this alternative was evaluated, it was noted that this conversion to wetlands treatment for wastewater effluent disposal directly aligned with several of the strategic criteria developed in the planning process. To further maximize the recharge of the surface water supply reservoirs with treated wastewater effluent, it was recommended that CCWA construct a pump station and force main at the two connection points to other utilities in its wastewater collection system so that the wastewater could be conveyed back into the CCWA system, which would allow for treatment at one of CCWA's water reclamation facilities and ultimate disposal into the constructed treatment wetlands.

Associated with the indirect discharge of treated wastewater effluent into the potable water sources is an increase in the potential for the occurrence of pathogens as well as micro-contaminants. Surface water modeling of the overall CCWA system indicated that the percent of reclaimed water to native waters varies from 5 percent in one reservoir to approximately 70 percent in another reservoir. The estimated total reuse water in all reservoirs is approximately 23 percent. To alleviate any potential risks associated with a pathogen outbreak from this indirect reuse of treated wastewater, it was recommended that additional treatment be provided at each of the three water production plants in the CCWA system provide an additional barrier of disinfection (Jeffcoat et. al, 2006). Ultimately, it was recommended that ultraviolet (UV) disinfection be implemented rather than ozone due to its lower capital and operation costs and its effectiveness in meeting the primary objective of providing additional pathogen protection (Swaim et al., 2004).

*Exhibit 3. CCWA's Lake Blaylock during the drought in 2007 with land application sites and treatment wetlands in the background*

CCWA has been operating this expanded wastewater treatment, wetland polishing and advanced water treatment system for several years and are planning for future expansions. Their water system was extremely resilient during the severe drought of2007 and their unique approach was featured on National Public Radio and several other national media outlets (Armistead, 2007) (See Exhibit 3).

The Town of Cary in North Carolina is a rapidly growing community near Raleigh that has a major river basin ridge line dividing its service area. The Town gets it's water supply from Jordan Lake in the Cape Fear River Basin and currently has WWTP discharges in the Neuse River Basin. These transfers of water are termed interbasin transfers (IBTs) under state law and are highly regulated. The Town and adjacent communities served by the water system have an IBT certificate (permit) from the state that restricts their maximum day transfer to about 50 percent of their water treatment capacity and also requires them to build infrastructure to return water to the Cape Fear River Basin (Baughman et. al., 2007).

Cary used a TWM process to evaluate a wide range of conservation, reclaimed water, and other infrastructure alternatives for managing their water resources, while still complying with their IBT certificate. In order to perform this evaluation, Cary did extremely detailed parcel based water demand and wastewater flow projections and included a climatological evaluation to factor weather variability into their demand/flow projections. Approximately 15 different alternatives were developed with varying conservation, reclaimed water and differing infrastructure configurations. A systems dynamics model was then used to evaluate these alternatives and identify key components for further analysis (See Exhibit 4).

The outcome of Cary's TWM Process was a water resource conservation program that included a 5 mgd reclaimed water

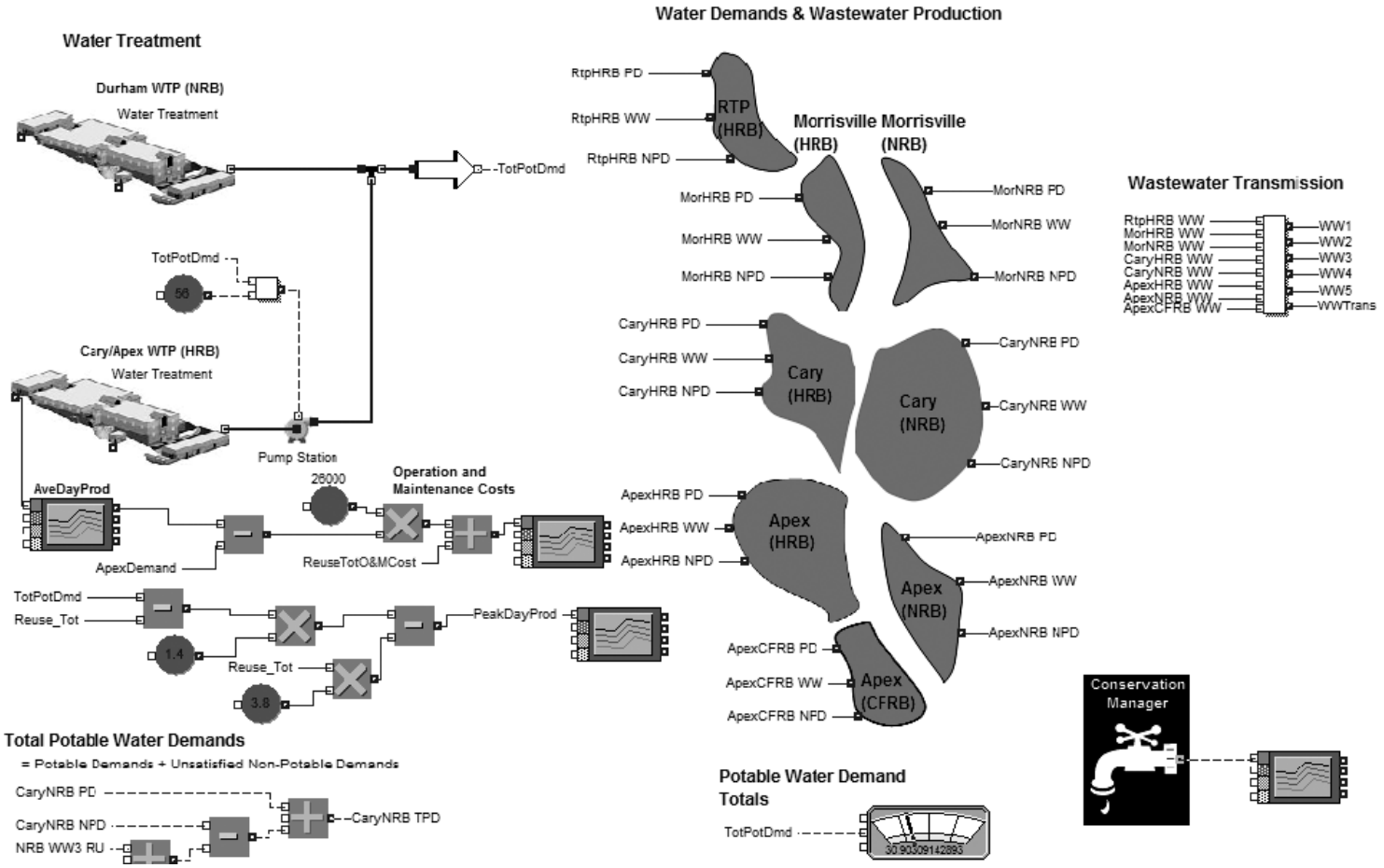


*Exhibit 4. Graphical depiction of systems dynamics model for the Town of Cary TWM plan*

system, an extensive education and outreach program for indoor water use, and a regulatory program for outdoor water use including a baseline (non-drought) irrigation restriction that allows customers to irrigate only 3 days per week. The resulting capital improvement program (CIP) reflected a delay or changes to several projects based on the predicted 20 percent reduction in per capita water usage by 2015.

Louisiana is generally a water-rich part of the United States with much of the state receiving 60 to 70 inches of precipitation annually and the largest river in the Country flowing along it's eastern border. Despite this abundance of water resources, local utilities have a substantial investment in infrastructure to provide potable water which is used for non-potable uses. Greywater and reclaimed water (wastewater effluent treated to reuse standards) are two water sources that could easily be evaluated through a TWM planning approach to determine, over time, how this water use could reduce a utilities' source water needs.

Greywater is wastewater generated from washing machines, showers, bath, and basins. A resource that can be used without treatment, Greywater can replace potable water for watering lawns and gardens when homeowners remain aware of the potential for change in their landscaping, and alternate Greywater and municipal supply water to maintain healthy soil conditions. At the homeowner level, Greywater is normally reused through manual bucketing-collecting water from the washing machine or the shower for outside reuse, use of Greywater diversion devices-to redirect the Greywater to the garden or lawn via a subsurface irrigation system, or through a simple Greywater treatment system with the treated Greywater then primarily directed through a subsurface irrigation system. Approximately 12,000 gallons of Greywater are generated per person per year making this a worthwhile consideration as part a TWM strategy for water resource management.

Greywater use is but one potential part of a comprehensive TWM strategy. Reuse of treated wastewaters—water recycling—could also be consider by utilities, as discussed above in the TWM examples for CCWA and the Town of Cary. In contrast to Greywater use, development of a reclaimed water system requires additional investment in infrastructure for treatment, distribution, and at the end user – be that residential, commercial or industrial use. However, these costs can be evaluated through a TWM planning process to determine at what point they may ultimately result in a cost savings or be important for conserving a specific resource, such as a source of high quality water for potable supply.

In summary, water resources management is becoming more complex and utilities are considering new approaches to managing water demands and wastewater disposal needs. A TWM planning approach is a way to comprehensively evaluate options recognizing the inter-connectedness of the various components of the water management cycle (Exhibit 1).

**References**


*Armistead, T.F. 2007. Southeast Drought Sparks Brawls But Reuse Meets One Utility's Needs. Engineering News Record.*

*Baughman, D. S., Dyke, H., Massie, E., Patwardham, A.S. 2005. Watershed Management Planning for the Metropolitan North Georgia Water Planning District. Proceedings of the 2005 Georgia Water Resources Conference held April 25-27, 2005 at the Univ. of Georgia. Kathryn J. Hatcher, editor, Institute of Ecology, the University of Georgia, Athens, GA.*

*Baughman, Douglas S., Avinash Patwardhan, Leila Goodwin and Mike Thomas. 2007. Sustainable Management of the Water Cycle: It is All Connected. In Proceedings of the WEFTEC Annual Conference, San Diego, CA, held October 13-16, 2007, pgs. 6173-6186.*

*Freas, K., Bailey, B., Munevar, A., and Butler, S. 2008. Incorporating Climate Change in Water Planning. Journal AWWA, 100:6, pp. 92-99.*

*Jeffcoat, S.B., Swaim, P.D, Buffington, M., Pihera, G. 2006. Implementation of Ultraviolet Disinfection in Potable Water for Multiple Barrier Pathogen Protection. In Proceedings of the International Symposium on Waterborne Pathogens, Atlanta, GA, held March 2006.*

*Patwardhan, A.S., D. Baughman, A. Tyagi, J. Thorpe. 2007. Developing and Implementing a TWM Strategy – Approaches and Examples. Journal AWWA, 99:2, pp. 64-75.*

*Swaim, P.D., Jeffcoat, S.B., Roberson, J.A., Via, S. Pihera, G., Bellamy, W.D. Application of the Proposed UVDGM Requirements to an Existing UV Disinfection Installation. Journal AWWA. 96:10, pp. 83-96.*

*Thomas, Mike. 2005. Sustainable Water Resources Management by Georgia Utilities: Clayton County Water Authority. Proceedings of the 2005 Georgia Water Resources Conference, held April 25-27, 2005 at the Univ. of Georgia, Kathryn J. Hatcher, editor, Institute of Ecology, The Univ. of Georgia, Athens, GA.*



**Susan N. Douglas**
**Program Planner, Baton Rouge SSO Program**


Susan Douglas brings more than 25 years of experience in environmental permitting, sustainability planning, and compliance for water, wastewater, solid and hazardous waste, chemical, and general industrial facilities. She is currently leading the identification of energy efficiency and sustainability opportunities in the Water Business Group. Ms. Douglas holds a bachelor's degree in chemical engineering from Louisiana State University.

## LOUISIANA SECTION 'WALL OF FAME' FINDS A HOME

In 2001, the American Society of Civil Engineers (ASCE) Louisiana Section Board of Directors instituted the 'Wall of Fame' award. This award was created to honor the most distinguished civil engineers in the State for their many achievements and contributions to the profession. Being selected is the highest honor bestowed on a Louisiana civil engineer by the Louisiana Section. With the selection and presentation of the 2009 class in September, the 'Wall of Fame' now includes 10 deserving members.


Until recently, the 'Wall of Fame' was not displayed anywhere for public viewing. The honor consisted of a plaque presentation to the award recipient and mention of the honor on the Louisiana Section website, www.lasce.org. The Section recently purchased a beautiful plaque listing the names of all ten 'Wall of Fame' honorees with additional space to add many more future deserving engineers. Currently, the plaque can be viewed at the Louisiana Engineering Center at 9643 Brookline Avenue in Baton Rouge. The ten current members of the Wall of Fame, their home branch and year of induction are listed below:

| | | |
|---|---|---|
| Walter E. Blessey, PE | New Orleans | 2005 |
| James C. Porter, PE | Baton Rouge | 2007 |
| Bobby E. Price, PE | Shreveport | 2007 |
| C. Carter Brown, PE | Baton Rouge | 2008 |
| Thomas L. Jackson, PE | New Orleans | 2008 |
| Jerry G. Lazenby, PE | Shreveport | 2008 |
| Gerald A. Dubroc, PE | Acadiana | 2009 |
| Gordon Boutwell, PE | Baton Rouge | 2009 |
| E.J. French, Sr., PE | Shreveport | 2009 |
| Robert Boh, PE | New Orleans | 2009 |

## LOUISIANA SECTION WINS 2009 NATIONAL OUTSTANDING NEWSLETTER AWARD


*Journal Editor, Nedra Davis*

The Louisiana Section was notified in December 2009 that the Louisiana Section Journal (known as the Louisiana Civil Engineer) was selected for the 2009 National Outstanding Newsletter Award for large Sections and Branches. There are thirty one (31) large Sections and Branches in ASCE nationwide. Of that number, nine (9) submitted their newsletters for consideration of this prestigious award. Since ASCE National instituted the National Outstanding Newsletter Award for large Sections and Branches in 1996, the Louisiana Section has been fortunate to win six (6) times in those fourteen (14) years. The only other multiple year award winners were the Texas and San Diego Sections, who both won the award twice. In addition to 2009, the Louisiana Section has also won the award in 2001, 2002, 2005, 2006, and 2008 when Mr. Jim Porter, PE was our editor. Many thanks are extended to Mr. Porter for his many years serving as the editor of the Louisiana Civil Engineer.

Much of the credit for this 2009 award belongs to our new editor, Ms. Nedra Davis and 2009 Journal Chairman and current Section President, Christopher Knotts. Ms. Davis was hired by the Board in August 2009 upon the retirement of Mr. Porter and she and Mr. Knotts had the unenviable task of continuing the tradition of excellence the Section Journal has provided for the last sixteen (16) years. Formatting changes were made to the 2009 edition of the Journal for clarity. Continuation of interesting and informative technical articles, editorials and Section, Branch and Student Chapter news were provided for our readership. In addition, over thirty (30) new professional and supplier listings were secured and included in the Section Journal. Congratulations Nedra and Chris on a job well done!

## HIGHLIGHTS OF THE OCTOBER 23, 2009 BOARD MEETING

The Board met at Prejean's Restaurant in Lafayette. President Christopher Knotts called the meeting to order at 10:20 am. Twelve (12) out of fifteen (15) board members, as well as, three guests were in attendance.

After approval of the agenda and minutes from the September Board Meeting, Ronnie Schumann distributed the end of the 2009 financial report. Mr. Schumann reported that ASCE National took responsibility for not collecting Section Dues for an entire New Orleans zip code which explained the large decrease in Section Allotment during the 2008-2009 year. ASCE National agreed to reimburse the Section for dues not collected for over 300 New Orleans members.

Kurt Nixon reported that ASCE National will no longer require an annual report from the Sections but will require a basic spreadsheet from each Section and we will need to submit our own federal tax form 990. All branches, student chapters, and institutes will be required to utilize our federal tax ID number. Mr. Nixon also reported that all ad revenue will be taxable income. Ali Mustapha suggested creating a business sustaining membership level. Discussion ensued but no action was taken.

There was discussion about standardizing the sizes of the Section Award plaques in the future. No action was taken but plaque sizes will be decided upon at the next board meeting. Mr. Mustapha has purchased a Wall of Fame plaque that will hang in the Louisiana Engineering Center in Baton Rouge.

The Section bound copies of the four issues of the 2008-2009 Louisiana Civil Engineer Journal and presented one copy to immediate Past President, Ali Mustapha. The other copies were presented to Publications Chairman, Christopher Knotts, Editor, Nedra Davis and the fourth copy will be placed at the LEF building in Baton Rouge.

Ali Mustapha will email the revised Constitution and By-Laws for all to review. Once the documents are revised, they will be posted on the website for comments from our general membership prior to the membership meeting in April in Shreveport at the Spring Convention.

E. Ray DesOrmeaux updated the Board on the changes to the Operating Guide. He will present an interim report at the board meeting in December with final modifications to be complete by the annual meeting in April.

The meeting was adjourned by President Knotts at 1:30 pm.

## HIGHLIGHTS OF THE DECEMBER 4, 2009 BOARD MEETING

The Board met at TJ Ribs in Baton Rouge. President Christopher Knotts called the meeting to order and welcomed everyone. Eleven (11) of fifteen (15) board members, as well as, two guests were in attendance.

After approval of the agenda and the minutes of the October Board Meeting, Ronnie Schumann presented the financial report. As of December 4th, the current balance in the operating account was $23,692.65 and the total value of the four certificates of deposit was $46,997.12. The Section has received our allotment check and Mr. Schumann also reported that he had received a check from ASCE National for $7,260 for the 363 New Orleans Branch members that National had failed to collect Section dues from last year.

Ali Mustapha reported that an updated Constitution and By-Laws has been emailed to board members and is requesting comments by the February Board Meeting.

E. Ray DesOrmeaux gave an update and his recommendations of changes to the Operating Guide. The intent of the Operating Guide is to supplement the By-Laws. Currently, there is much duplication between the two documents and Mr. DesOrmeaux will be removing many of the redundant parts of the Guide.

President Knotts reported on his attendance at the ASCE National Convention in Kansas City. He said the conference was well attended, very organized and very informative. Luke LeBas will attend an ASCE Public Relations Conference in December. President Elect Patrick Landry will attend the Multi-Region Leadership Conference in Atlanta in February and he and Ronnie Schumann will attend the Legislative Fly-In in Washington D.C. in March.

All SPAG applications were received by National on time and notification of possible grants should be received by the Section in mid-December.

The sizes and shapes of future Section Award plaques were discussed and changes to some of the awards were made.

UNO will host the Deep South Conference in March. The Section will provide a $1,500 stipend to the university's civil engineering student chapter to help defer costs.

There was considerable discussion about creating a sustaining member category for business card ads for the journal if allowed by ASCE National and IRS tax rules. Mr. DesOrmeaux, as the Region 5 Louisiana Governor, will discuss this issue further with National.

President Knotts adjourned the meeting at 1:45 pm.

# Branch News

## *ACADIANA BRANCH*

***By Joshua P. Stutes, MS, PE, Branch President***

Our branch has been very active these last couple months with meetings and seminars alike. We conducted and completed our planned Fall Technical Seminar worth 8 PDH's on October 22nd, 2009 at the Hilton Garden Inn in Lafayette, LA. It was well attended and ended up with over 70 registrants. McNeese State University even attended as well with three professors and ten students! Preliminary numbers show that our overhead on the function was about $4,850 and that our revenue was approximately $6,750 yielding a profit of just under $2,000. This will enable us to provide assistance as originally planned to the Student Chapters for their upcoming Deep South Competitions. As a reminder, our working budget for the 2009-2010 Branch term is currently on our website and can be found here for your further review: http://www.asceacadiana.net/PDFS/Budget_2009_2010.pdf .

We had our last branch meeting on November 17th, 2009 at 6:00 P.M. at the Blue Dog Cafe in Lafayette, LA with Mr. Bill Gwyn of Eustis Engineering giving a Geotechnical Presentation on New Orleans area hurricane protection, Inner Harbor Navigation Canal & Surge Barrier Protection worth 1 PDH. Our branch has not had an evening meeting in many years, and we had very good attendance.

Recently, we also had a very successful Joint ASCE-LES social luncheon on December 11th at Pete's in Lafayette at 12:00 P.M. In order to help promote attendance, we offered this completely free to the membership along with a guest and even handed out door prizes. Although free, we allowed monetary donations of which we gave all proceeds to a local charity. It was also well attended (almost standing room only), and I hope we can pursue this again in the future with LES.

LES hosted the JESC on January 28th – 29th, 2010 at the Holidome in Lafayette. PDH's were given at this local event while attending sessions on current and diverse topics. Furthermore, five (5) professors from UL-Lafayette gave presentations on topics such as Transportation, Coastal issues, and Structural topics. For those who on attended these professors' presentations, please be sure to acknowledge that you are a member of "ASCE" to help ensure that we receive a small portion of the proceeds. It will go directly to our Branch's funds for future use. Please feel free to contact me at Joshua.Stutes@la.gov for further information into topics and abstracts presented and please visit http://www.les-state.org/JESC.htm for presentation information.

From our Student Chapters, at this time, I wanted to recognize the following recipients for being recognized and awarded our Fall 2009 ASCE Academic Scholastic Award & Scholarship:

**McNeese State University**

- Senior Award: *Jennifer Claire Hobbs*
- Junior Award: *Jada Renee' O'Blanc*

**University of Louisiana – Lafayette**

- Junior Award: *Alison Lognion*

All of these recipients submitted applications after being recommended and verified by their peers. They each demonstrated scholastic achievement as well as leadership and involvement with their respective communities and ASCE Student Chapters. Congratulations to all for a job well done and keep up the hard work!! We will be continuing this program this upcoming Spring semester as well.

## *NEW ORLEANS BRANCH*

***By Benjamin M. Cody, PE, Branch President***

The New Orleans Branch has been busy over the past few months, beginning with our first Branch luncheon meeting since our annual Fall Confrence at Five Happiness, where we were educated on the logistics and planning involved in the T-Wall completing the Lake Pontchartrain Hurricane Protection System at the Causeway Bridge. The presentation was given by Mrs. Rebecca Huffman Constance, project manager for the of the U. S. Army Corps of Engineers and was very informative. Our first Branch luncheon meeting of the calendar year was a presentation on Engineering Ethics given by Dr. Norma Jean Mattei at Zea Rotisserie and Grill on the 13th of January.

Our Younger Member's Committee, chaired by Ms. Jenna Addis, EI, has been very busy as well. The New Orleans Branch Younger Members closed out 2009 with a bowling event at the famous Rock-N-Bowl in November and a White Elephant gift exchange at Bruno's Bar and Grill in December. The YM's kicked off the New Year by celebrating Twelfth Night on January 6th at the Column's Hotel. This day kicks off the Mardi Gras season for New Orleans!

In addition to these local events, I had the privilege and honor of representing the branch at the ASCE National Conference held in Kansas City, Missouri. This year's theme was "From builders to Integrators – Civil Engineers Leading the Way". There were many speakers whose topics ranged from engineering education to engineering leadership.

Please visit www.asceneworleans.org for upcoming events and news.

As always the board is interested in hearing from our members and encourages your input. You can always contact me at bcody@eustiseng.com with any questions, comments or ideas how we can better serve our members.

## *BATON ROUGE BRANCH*

***By Jeffrey L. Duplantis, MS, PE, Branch President***

The Baton Rouge Branch wrapped up 2009 with several great activities and are geared up for another fantastic year in 2010.

Our new Programs Director, Joey Coco, set up a great field trip for the membership to the John J. Audubon Bridge in New Roads, LA. This project, when completed, will be the longest cable stayed bridge in North America. We are planning our October 2010 meeting to be a follow up in order to check on the progress of the bridge construction. It is anticipated to be close to completion, so it should be a very interesting trip.

The Student Chapter Practioner Advisors, Sam Amoroso (LSU) and Alison Ford (SU), will be continuing the Branch's efforts to extend our support to the local university chapters. The Baton Rouge Branch is fully committed to assisting the students as they complete their course work and enter into the local work force. It is our duty as practicing engineers to ensure that the future generation is prepared and ready to support our clients, and that they are not only technically savvy but are also market ready.

Once again the Baton Rouge SPAG program will be receiving funds from ASCE National. Clint Willson, SPAG Chairman, prepared several applications for the 2010 campaign. We were successfully awarded funding to support the Scotlandville Middle Pre-Engineering Program Engineering Design Challenge. This year the school will participate in the First Lego League (FLL) Smart Move Challenge.

The FLL competition is comprised of two parts requiring students to conduct research to complete a project, as well as use science, technology, engineering, and math to master the complex missions of the robot game. In the project component of the challenge students must identify a real world problem related to transportation, create an innovative solution, and share their solution with their community. We hope to have the students present their project at one of our monthly luncheons.

The Baton Rouge Branch also had two very successful socials at the end of 2009, including a luncheon in November and our Christmas Party in December. The November luncheon was sponsored by GSA Consulting Engineers and Mr. Jeff Burst presented on the status of the I-10 / I-12 design build projects. The annual Christmas Party was highlighted by the south's first snow fall of the season. I think all those who braved the treacherous roads to get to Bocage enjoyed themselves. The food and company were both fantastic.

In conclusion, I want to assure the Baton Rouge membership that we have another great year planned for 2010. The Board would like to encourage everyone to get involved and participate in the activities we have planned and to become active in the engineering community.

## *SHREVEPORT BRANCH*

***By Daniel Thompson, EI, Branch President***

Our branch recently conducted our annual can food drive for the Providence House of Shreveport. Through the generosity of our local firms we were able to collect a significant amount of food and cash that went to needed families in our area. I appreciate the support that we get from our members and I am proud to be a part of this tradition.

In December we hosted a Christmas luncheon for our members. In addition to lunch we also passed out five door prizes at the end of the meeting. This meeting serves as a nice break for our members to what is always a hectic holiday season.

In January we continued with our monthly meetings. The speaker for this meeting was David Pattridge with PPT, Inc. in Shreveport. He spoke on the design of post-tension slabs for buildings. In February, our branch will be hosting a joint LES/ASCE luncheon in which Mike Dupree from the Louisiana Board of Ethics will be presenting on the subject of engineering ethics.

In January, several members from our branch were in attendance for the Louisiana Tech University Winter Banquet. At this banquet our branch presented $1,000 scholarships to an outstanding junior and senior civil engineering student. Two students are selected by the faculty each year as individuals who exhibit academic excellence and exemplary character. This year's students were Kyle Jones, *Outstanding Senior Engineering Student,* and Eric Veuleman, *Outstanding Junior Engineering Student.* Congratulations to these two students on their hard work!

In our last meeting, Section Past President Ali Mustapha proposed that our branch look into donating to the Louisiana Engineering Foundation. After some discussion we decided that we would donate $1,500 to this fund to aid in the debt on the Louisiana Engineering Center. These monies will help this organization provide scholarships to the engineering students in our state while they continue to aggressively pay for their new facility.

As most of you are aware, the Spring Conference will be held this year in Shreveport. The date of this event will be April 15$^{th}$ & 16$^{th}$ 2010 at the Clarion Hotel in Shreveport. We are currently searching for speakers, vendors, and exhibitors for this event. If you are interested in speaking or having an exhibit, please contact me at (318)-425-7452 or by e-mail at dthompson@afjmc.com. Please see the attached sponsorship/exhibitor form that is attached in this journal. Look for further information in the upcoming months to be posted on our website. We hope you make plans to attend this event in support of our Branch and to visit the Shreveport-Bossier area.

*Winter Banquet left to right: Norma Jean Mattei, Daniel Thompson, Eric Veuleman (Outstanding Junior Civil Engineering Student), Matt Redmon, Ali Mustapha*

# ASCE-T&DI Louisiana Chapter News

***By Karen Holden, Newsletter Editor***

The ASCE-T&DI Louisiana Chapter completed its first fiscal year of operations and started the second year.

Bill Cromartie (Port of New Orleans) and Donald Barbe (University of New Orleans) requested to step down from our Executive Committee due to their other commitments. The Executive Committee is looking to add a few more members. If you interested in joining the Executive Committee, please contact Om Dixit at om@fenstermaker.com.

The ASCE-T&DI Louisiana Chapter organized its first seminar in the New Orleans area at the new home of RPC (Regional Planning Commission) in New Orleans. The seminar, held in January 2010, was entitled, "New Orleans Transportation Center and ITS". The speaker for this event was Mr. Steve Strength, P.E., DOTD District 02 Traffic engineer. This technical presentation highlighted the role of the New Orleans Regional Transportation Management Center (RTMC) in the implementation of Intelligent Transportation Systems (ITS) in the New Orleans region.

ASCE T&DI Louisiana Chapter is planning the following future seminars:

**March** Innovative Financing
**TBD** Hurricane Evacuation
High Speed Rail
Roundabout Design for Busy Intersections

If you would like a seminar on any special topic, please contact anyone on the Executive Committee and they will try to get it arranged.

More information can be found on the ASCE Louisiana Section Web site at www.lasce.org and ASCE New Orleans Branch Web site www.asceneworleans.org. To add your name to our mailing list and/or to join the Executive committee, e-mail Om P. Dixit at om@fenstermaker.com.

# ASCE-SEI New Orleans Chapter News

***By Om Dixit, PE, FASCE, Newsletter Editor***

Since our report in November 2009 issue of this magazine, ASCE SEI New Orleans Chapter hosted three seminars and has planned the following future seminars in New Orleans:

**October 15, 2009** *Innovations in Offshore Lift Rigging and Salvaging Techniques* (3rd Herb Roussel, Jr. Marine Seminar) - Jon Kachaturian, (VERSABAR, Belle Chasse, LA) explained his innovation of designing a frame for lifting heavy platforms in the field during fabrication and installations. The seminar was attended by about 52 members.

**December 3, 2009** *Rebuilding/Recovery of Pentagon*
Allyn Kilsheimer, (KCE, Washington, DC) had first hand experience in handling the Pentagon airplane disaster from shortly after the impact to completed renovation. He showed photos of the building after the damage, existing conditions, lack of as built drawings and the plans for new renovation. Some of the renovation methods were determined in field after observing the existing conditions, which made the project challenging and interesting. The seminar was attended by about 55 members.

**January 21, 2010** *Hollow Structural Sections - Connections*
Dr. Jeff Packer, University of Toronto, Toronto, Canada

**Future Seminars:**

The following dates are the projected seminar dates for 2010. The exact dates may change due to the availability of the speakers and UNO Lecture room.

**March 4, 2010** *Seminar on Timber Design (Topic and Date Tentative)*
Dr. V. Gopu, LTRC/LSU, Baton Rouge, LA

**April 22, 2010** *Concrete Sustainability, (Annual David Hunter Lecture) (Topic and Date Tentative)*
Richard Stehly, Président ACI, Minneapolis, Minnesota.

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 above areas would be welcome to join the Executive Committee. For any suggestion and information on joining the Executive Committee, contact Chairman William Rushing, Jr., PE, at Bill.Rushing@wsnelson.com.

ASCE SEI New Orleans Chapter is in process of sponsoring Coaches Lounge at the Regional Mathcounts competition held at University of New Orleans. It was done before Katrina Damage to New Orleans, but it has not sponsored the Mathcounts competitions since then. It will also sponsor awards at the Regional Science Fair and provided volunteer support to the ASCE Sponsored Kid Tent at New Orleans Jazz Fest in summer.

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.

# Student Chapter News

## *ULL STUDENT CHAPTER*

***by Alison Lognion, Student Chapter Vice President***

The University of Louisiana at Lafayette's ASCE chapter closed out the Fall 2009 semester proud of its graduating seniors for their successful, thorough, and well presented capstone design project. The students were given a survey of land and were asked to design all aspects needed for a strip mall in the Sunset area. After working all semester, the senior engineering students presented their project to numerous students, professors, and professionals from around the area. Congratulations seniors on a job well done! The ULL ASCE chapter has been diligently planning for the annual spring Deep South conference. A team of students have been working hard for ULL's entry into the Steel Bridge competition. The ASCE chapter also plans to have participants in the surveying event, the environmental competition, the mystery design event, and the mead paper presentation. Additionally, the chapter is looking forward to participate in recruiting and other events during Engineering Week from March 8th to March 12th with the Engineering and Technology Expo Day on March 10th. Aside from all of the preparations for Deep South and Engineering Week, the chapter is currently planning a spring social for its members.

## *LOUISIANA TECH UNIVERSITY*

Our chapter of ASCE has a general meeting each month. In September, we hosted an Eat & Greet. This was a great way for the freshmen and upper classmen to meet. In October, Dr. Wasiuddin spoke about a research project on which he has been working. In November, Nathan Lindhart (LA Tech ASCE President 2006-2007) from NCI Building Systems in Houston, TX, spoke about experiences from his first few years after graduation and answered questions about the profession.

For the first winter quarter meeting, Crest Industries spoke in December. On January 14, we hosted our annual Winter Banquet. Dr. Norma Jean Mattei, ASCE Board of Governors Region 5 Chair from University of New Orleans, spoke about how everything changes and that sustainability is the hot topic for our nation. She also encouraged everyone to take the FE and then to get licensed. Louisiana Tech's Associated General Contractors (AGC), Chi Epsilon (XE), and North American Society for Trenchless Technology (NASTT) student chapters joined ASCE at this exciting event. The Louisiana Society of Professional Engineers in Civil Service Award went to senior, Jody Smith. The Jeneanne Krause Memorial Scholarship was awarded to senior, Jacqueline Ferrell. The Shreveport Branch of ASCE awarded the Outstanding Junior and Senior of the Year in Civil Engineering to Eric Veuleman and Kyle Jones, respectively. The students voted on two faculty awards. The Professor of the Year Award is given to the professor the students feel has provided them with insight and guidance in their schooling and other aspects of life; it went to Dr. Aziz Saber. The Crying Towel Award is given to the professor that causes the most agony among students and tends to have the most students whining in his office; it went to Dr. Dixie Griffin. In February, Alliance out of Shreveport spoke at our general body meeting.

*The Officers posed for a picture with guest speaker, Dr. Norma Jean Mattei, at Winter Banquet*

University of New Orleans is hosting the ASCE Deep South Conference March 26 – 27. Louisiana Tech will be competing in the Daniel Mead Paper, Concrete Canoe, Steel Bridge, Surveying, and Mystery Event. At the 2009 Conference, hosted by Arkansas State University, Louisiana Tech's Concrete Canoe Team placed second overall and placed third in the Daniel Mead Paper written and presented by senior Amy Bounds.

The next general body meetings are March 16 and April 13 at 7 PM on the third floor of Bogard Hall at Louisiana Tech.

This year we are building an alumni database of civil alumni so that they can keep in touch with this chapter, provide networking for current and past students, and provide a place for alumni to find past classmates.

If you would like to find out more information about LA Tech ASCE or its events or send in information for the alumni database, please contact the LA Tech ASCE Student Chapter at LATechASCE@gmail.com.

*Everyone posed for a picture with VooDoo Dawg at the 2009 Deep South Conference*

*The Steel Bridge Team posed for a picture with their bridge at the 2009 Deep South Conference*

# ASCE Membership News

According to ASCE National's 2009 Final Section/Branch Membership Drive records, the Louisiana Section finished in the top 25 percent of Sections in all Regions with respect to recruitment of new members and retainment of existing members. The Louisiana Section finished 20th out of 81 Sections. On the Branch level, the Baton Rouge Branch finished 29th out of 163 branches. The Acadiana Branch finished 80th, New Orleans was 114th and the Shreveport Branch finished 126th.

In Region 5, which comprises Louisiana, Mississippi, Alabama, Georgia and Florida, the Louisiana Section finished 3rd out of the five Sections. On the Branch Level, Baton Rouge finished 3rd out of 28 branches followed by the Acadiana Branch in 18th, New Orleans in 24th and Shreveport in 25th.

For the 2010 Membership Drive, as of December 7, 2009, the Louisiana Section was ranked fourth in the nation in the Large Section category trailing only the St. Louis, Kansas City, and Maryland Sections.

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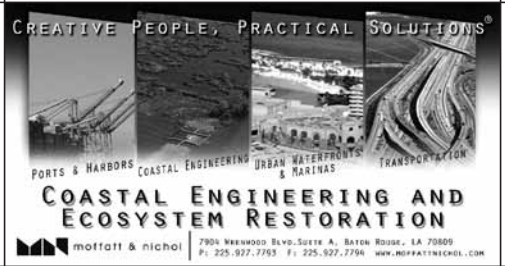


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