

THE LOUISIANA CIVIL ENGINEER

ACADIANA BRANCH • BATON ROUGE BRANCH
NEW ORLEANS BRANCH • SHREVEPORT BRANCH
Journal of The Louisiana Section

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FEATURE: Clear skies in Louisiana

FUTURE:

**Midsouth Conference in Ruston
March 23-24, 2007**


















ANNOUNCEMENTS:

**Louisiana Civil Engineering Conference
and Show in Kenner
September 14-15, 2006
Section Annual Meeting
in New Orleans
September 15, 2006**

NEWS:

**Fiscal comparison of sections
Scholarships announced
Shared on a community website
Picture Perfect Louisiana
Increasing life expectancies may require
additional retirement and estate planning**

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President's Message

Kim M. Garlington, PE

This is IT — my final message. I believe that this is usually where the president is supposed to impart final great words of wisdom to the membership and tell the story of the great things that were accomplished during the concluding administrative year. The only way that I can accomplish this feat is to express my undying gratitude to all of those I have associated with the past 11 months since taking this office as Section President and those who have made it happen and made my efforts truly much easier than they would have been otherwise.

It has definitely been a roller coaster ride. The first issue for the Section to deal with when your Section Board of Directors was able to take the oath of office was the fallout from Hurricanes Katrina and Rita. Those are two names that I and all the citizens in the Gulf states region will not soon forget. Those storm events have reshaped and will continue to shape all our professional and personal lives. I believe that they will also continue to influence how we think and react to adversity.

I have witnessed firsthand the personal suffering of my fellow professionals as they dealt with the loss of family homes, possessions and businesses. I have also seen their resilient nature to pick up and go forward with everyday living. I must thank Tim Ruppert in this regard for aiding in providing and maintaining a stable influence on the Board and providing me with the much-needed information on ASCE matters while he was personally dealing with the total destruction of his home. I believe that his calm demeanor and common sense approach to adversity will continue to serve the Section well during the next administrative year for which he was elected to serve as your President.

Norma Jean Mattei will also remain an example for me as a true leader, for her upbeat view on the world and for her service to her fellow citizens during the damage assessment phase from Katrina. She is a true professional and her picture should be placed next to the word *ethics* in the dictionary. She not only teaches the Ps and Qs of engineering ethics but communicates to her audiences the essence of what is required to understand and act every day to further our profession. I have indeed learned a lot from this lady and it had nothing to do with her specialty — structures.

Another person that has given great character to the Section Board this year is Ray DesOrmeaux. This gentleman stood steadfast when the hurricanes hit Louisiana and he worked day and night to locate Section members and get assistance to those engineers and students that were most in need. Yes, Ray. I noted the time when you sent many of your email messages. I greatly appreciated Ray's enthusiasm for every task with which he was charged. I have learned from him that it can be perfectly reasonable for a true leader as he is to just take action and apologize later if it is necessary. It gets the job done. Ray's efforts with the Hurricane Relief Fund have provided much-

needed immediate assistance — shelter, food, and business supplies — to many of our Section members in the days following the hurricanes. He will also leave another lasting legacy with the funds that remain. He is initiating the funding of 4 graduate scholarships at the state universities affected by the hurricanes. They are to assist Louisiana's civil engineering students who were also affected by the hurricanes to continue their education. (See announcement in this journal.)

I also wish to thank those members of the Board who were there regularly for the meetings and offered their opinions and guidance on the many issues that we needed to address. I have learned a great deal from them in ways that now allow me to get past the mind set of my day-to-day functions in my professional specialty and that of the government agency. I sometimes tend to forget there is more to my professional life than dirt, lab tests, piles and slopes. The interactions I have witnessed between our dedicated leaders have renewed my faith and hope that we civil engineers will continue to be the source that both the politicians and the public come to for the answers when rebuilding our state.

Finally, my thanks to Jim Porter for making me sound so eloquent with each message. I try to think, "How would Jim say this?" but invariably what I type never sounds as good as the edited version. You provide a great service to this Section as the editor of its journal and we will try to hold onto you as long as it is possible.

In closing this — the first part of my message — I am reminded of a presentation I attended last October during the ASCE National Convention in Los Angeles. A California state legislator spoke about his experience as an elected official dealing with engineers. I was really expecting the back slapping and mutual praise that goes on during this type of meeting but instead I was astonished. This person noted that we as a profession need to do more to make sure people in his position are educated on the broad technical aspects of the issues that affect public health, safety and welfare. He almost pleaded for the engineering profession to take a stand on the issues, get involved in the political arena and express the cold hard technical facts and the consequences of the related decisions to those making laws and setting policies.

I feel that with the fallout experienced from the events of this past year, we as civil engineers need to begin or to continue putting ourselves in the spotlight as the professionals who will provide the solutions for our state and nation to move forward in the infrastructure rebuilding that is required. Reports are coming out assessing damages and defining failures. We need to interpret data and results to inform our political leaders and participate in the forums and entities that are being held in an attempt to make sure the best choices possible are made to repair our state's infrastructure. I truly believe that we are the one profession that is innately equipped to provide this service to our citizens.

There are several planned activities sched-



uled in the near future that will provide the opportunity for our section's members to come together and establish or reestablish their many professional contacts. They are:

Rebuilding the New Orleans Region: Infrastructure Systems and Technology Innovation Forum.

Several members of the Board are scheduled to be participating in this forum to be held September 2006. The Section has been asked to participate in this forum that is sponsored by the ASCE National in conjunction with Georgia Tech and several Louisiana universities. We have agreed to assist in the organizational phase of the forum serving as moderators for sessions and other similar activities. The Forum will focus on the technological aspects of rebuilding the New Orleans area and their relationship to socioeconomic-political issues. Infrastructure resilience and survival, current status of the infrastructure and damage assessment, recovery and a look toward the future are the main topics for discussion. We look forward to participating in this forum and informing you about the recommendations made that will affect our civil engineering community.

Qualification-based selection.

I encourage you to follow the developments that are taking place in the Baton Rouge Branch regarding the qualification-based selection process for professional engineering and architect services for local government. This process

(Continued on Page 14)

About the cover: This photograph is featured with the following background information about the electric generation units discussed in the feature article: This coal-fired power plant located in New Mexico is shown prior to the installation of its emissions control equipment to remove sulfur dioxide and particulate matter with the implementation of the requirements of the Clean Air Act of 1963. Flue gases are the products of combustion of fossil fuels used as the heat source for a steam-generating boiler for a steam turbine to drive the generator in a steam-electric power plant. The tall flue gas stacks are used strategically to disburse the flue gases by dilution into the air over the region. (Courtesy of the US National Parks Service)

Clear Skies in Louisiana

By Yvette P. Weatherton, PE

Introduction

Since 2003, there have been several legislative proposals to address the emissions of sulfur dioxide (SO₂), oxides of nitrogen (NO_x) and mercury (Hg) in the eastern and southeastern portions of the United States. The most controversial of these proposals has been President Bush's Clear Skies Initiative referred to herein as *Clear Skies*. The proposed Clear Skies Act would amend the Clean Air Act. Supporters tout the Clear Skies as one that will dramatically reduce power plant emissions of the three targeted pollutants in an unprecedented multi-pollutant control strategy resulting in tremendous benefits to human health and the environment. Opponents believe that Clear Skies will weaken the Clean Air Act (CAA), and that it is far more costly and less stringent on the power industry than other legislative proposals.¹

Amid the debates about Clear Skies, the Environmental Protection Agency (EPA) took the regulatory approach, as opposed to the preferred legislative approach, and adopted 2 separate rules that address SO₂, NO_x and Hg emissions from electric generation units (EGUs) — the Clean Air Interstate Rule (CAIR) and the Clean Air Mercury Rule (CAMR). Both rules were adopted in March 2005. These rules have been criticized by both environmentalists and stakeholders. The background information on the resulting programs for both rules, including stakeholder perspectives, and summaries of expected health, environmental and economic impacts on Louisiana will be presented.

CAIR and CAMR

The CAIR applies to fossil fuel-fired EGUs because the EPA found these sources to be the most cost-effective ones to address. An elementary schematic of a coal-fired electric generation unit is presented in Figure 1. The CAMR applies to the coal-fired subset of the fossil fuel-fired EGUs. EGUs are defined as

...stationary, fossil fuel-fired boilers or turbines serving, at any time, a generator with a nameplate capacity of more than 25 MWe producing electricity for sale, and cogeneration units that serve a generator with a nameplate capacity of greater than 25 MWe and that supply more than one-third potential electric output capacity and more than 219,000 MW-hr annually to any utility power distribution system for sale.²

As shown in Figure 2 the CAIR and the CAMR require power plants in 28 states and Washington, DC to drastically reduce emissions of SO₂ and NO_x by 2015 and Hg by 2018. These states were targeted based on their non-attainment of ozone and particulate matter standards and their contribution to elevated concentrations of these pollutants in downwind states. Louisiana has five parishes — East Baton Rouge Parish and the surrounding parishes — that are in ozone non-attainment, meaning that the ambient concentrations of ozone exceed the limits set in the National Ambient Air Quality Standards (NAAQS). It is also believed that emissions in Louisiana contribute significantly to particulate and ozone pollution in the states of Alabama and Texas.³



The affected states have a choice of implementing the CAIR and the CAMR or meeting "an individual state emissions budget through measures of the state's choosing."⁵ The rules were designed to build on the success of the cap-and-trade program that was implemented as a component of the 1990 Clean Air Act Amendments to reduce acid rain. In the cap-and-trade program, each state is given an allowance, or a cap, that provides the ceiling for the emissions of SO₂, NO_x and Hg. The cap is set at a level to ensure that air quality goals are achieved. The state distributes the allowances to the affected sources. The sources then decide how they will meet the requirements. They can reduce emissions by changing fuels or installing air pollution control devices or they can purchase allowances from other sources that have reduced emissions and have extra allowances. To ensure compliance, the states require "stringent emissions monitoring and reporting... with significant automatic penalties for noncompliance."⁶

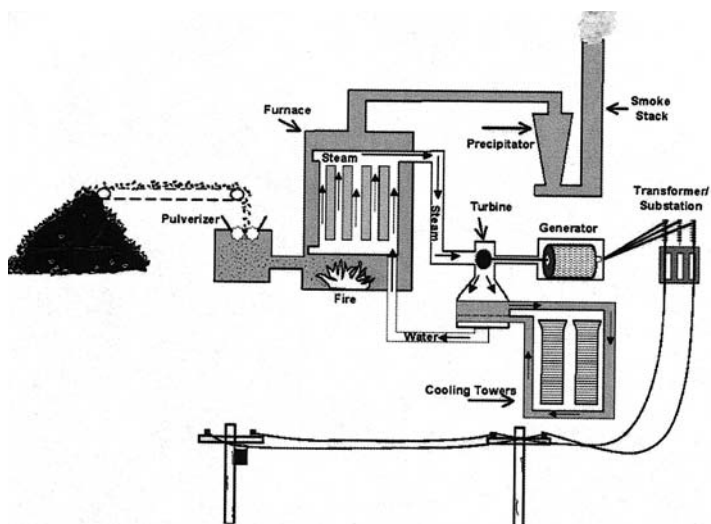


Figure 1. Schematic of a coal-fired electric generation unit. (Courtesy of the University of Kentucky)



Figure 2. States shaded are covered by CAIR and CAMR.

Yvette Pearson Weatherton, PE, is employed as an Associate Professor of Civil and Environmental Engineering at Southern University in Baton Rouge. She earned her BS in Civil Engineering and MS in Environmental Chemistry from Southern University and her PhD in Engineering and Applied Science from the University of New Orleans. Weatherton is a licensed Environmental Engineer in Louisiana. Weatherton serves in the ASCE as chair of the Younger Members Committee and a member of the Publications Committee of the Louisiana Section, and the Faculty Advisor of the Southern University Student Chapter.

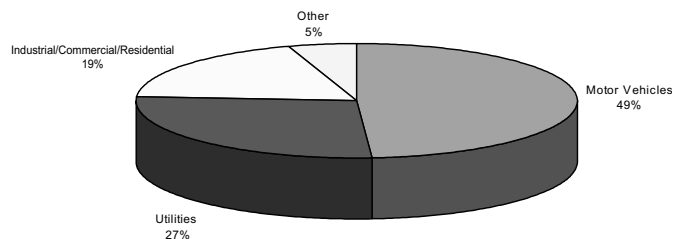


Figure 3. Sources of NO_x emissions.⁷

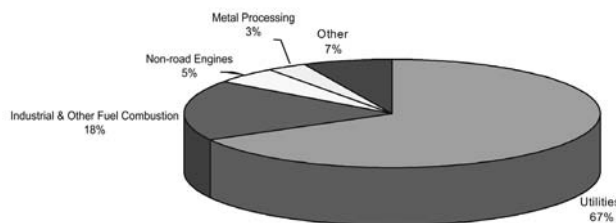


Figure 4. Sources of SO₂ emissions.⁹

Concerns about NO_x, SO₂ and Hg

Fine particles, because of their aerodynamic properties, can remain entrained in air for extended periods of time and can be transported long distances. Sulfur dioxide and oxides of nitrogen are precursors to fine particulate matter (PM_{2.5}). The designation PM_{2.5} is the classification of microscopic particles that have an aerodynamic diameter of 2.5 microns (micrometers) or less. Microscopic particles of this size can be inhaled deeply into the lungs and aggravate existing respiratory disorders that can result in missed days from work and school, emergency room visits, and premature death.

NO_x compounds

Oxides of nitrogen are gaseous compounds comprised of nitrogen and oxygen and they are primarily emitted in the forms of nitric oxide (NO) and nitrogen dioxide (NO₂). NO_x are produced as a result of fuel combustion when either the nitrogen in the fuel is oxidized — fuel NO_x — or when the temperature is high enough to oxidize the nitrogen in the combustion air — thermal NO_x. The portion of NO_x emissions from the primary sources shown in Figure 3 indicates that power plants are a significant source of NO_x emissions.

Airborne NO_x react with other chemicals to produce more harmful substances. For example, through a series of photochemical reactions, they lead to the formation of ozone (O₃) — a serious respiratory irritant. It aggravates existing illnesses such as asthma, causes people to be more susceptible to illnesses such as bronchitis, and repeated exposure can cause permanent lung

damage. Ozone has also been found to damage crops and materials such as rubber. Airborne NO_x also react with other substances to form nitric acid resulting in acidic precipitation such as acid rain that can acidify lakes harming aquatic life and contribute to fine particulate matter.

SO₂

Sulfur dioxide is produced as a result of combustion of sulfurous fuels, with power plants contributing approximately 67 percent of the SO₂ emissions nationwide as shown in Figure 4. It reacts in the environment to form sulfuric acid. This acid can be deposited in the form of precipitation such as acid rain, or as dry particles that can damage vegetation, aquatic life and building materials. Also a respiratory irritant, SO₂ can aggravate existing ailments of the lungs and the heart.

Mercury

On average, coal contains between 0.07 ppm and 0.24 ppm of mercury.⁸ When coal is burned, Hg is released into the air, and may then be deposited into waterways through atmospheric deposition. Through the process demonstrated in Figure 5, the chemical can then contaminate fish and undergo bioaccumulation. This results in significant human exposure to mercury, which is a toxin known to cause nervous system damage. Pregnant and nursing women are especially cautioned about consuming fish that may be contaminated with mercury because unborn children and infants are highly susceptible to this toxin.

CAIR impact in Louisiana

Emissions impact

It is anticipated that implementation of CAIR will reduce Louisiana's emissions of SO₂ by 41 percent and NO_x by 57 percent in a two-phase program that will have final emission caps in place by 2015. Figures 6 and 7 show the statewide emissions of these two pollutants from 2000 to 2004 according to the Louisiana Department of Environmental Quality (DEQ) reports to the EPA. They also show the projected emissions as a result of the CAIR implementation for Phase I NO_x in 2009; Phase I SO₂ in 2010; and Phase II NO_x and SO₂ in 2015. Using 2000 as the baseline year, the program is expected to result in a reduction of approximately 45,000 tons per year of SO₂ and 56,000 tons per year of NO_x.

Health, environmental and economic impact

Though Louisiana has no fine particle non-attainment areas, it does have a five-parish area that is in ozone non-attainment that includes the parishes of East Baton Rouge, Ascension, West Baton Rouge, Iberville and Livingston. With or without the CAIR implementation, these parishes are expected to be in attainment by 2010.¹⁴

By 2015, national implementation of the CAIR is expected to annually prevent

- 17,000 premature deaths
- 1.7 million lost work days
- 500,000 lost school days
- 22,000 nonfatal heart attacks and
- 12,300 hospital admissions.¹⁵

The Louisiana component for these statistics could not be found.

The CAIR is not expected to adversely impact the economy of Louisiana. According to data published by the EPA and provided in Table 1, retail electricity prices in Louisiana are expected to decrease slightly from the 2000 levels. Note that the decrease is projected to be slightly greater without the CAIR implementation. Critics of the rule are concerned that the EPA is also cutting costs to power plants by not requiring them to install air pollution control devices.

CAMR impact in Louisiana

The estimated emissions, health, environmental and economic impacts of the CAMR on Louisiana could not be found. However, Figure 8 is provided to show the comparable statewide emissions for mercury from 2000 to 2004.

The controversy

In a 2005 article in *EM*, a publication of the Air & Waste Management Association, William

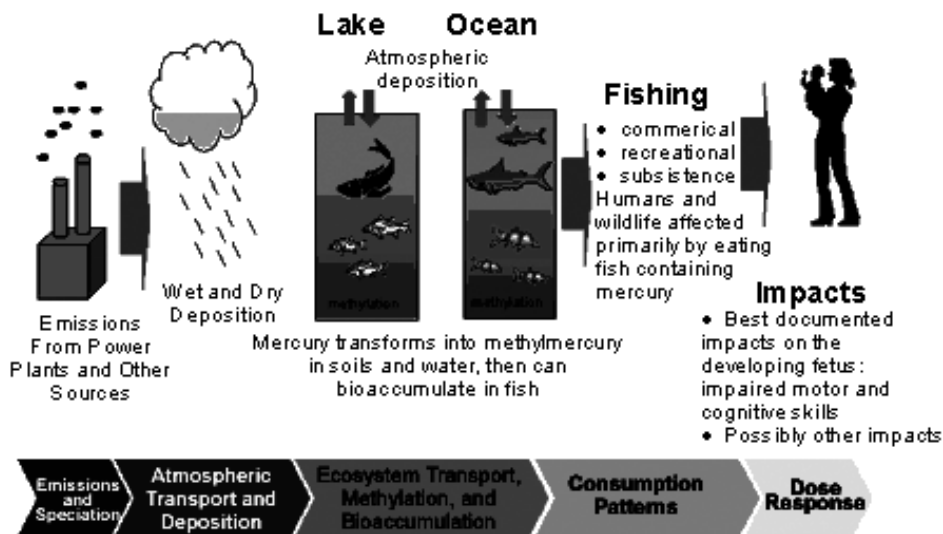


Figure 5. How mercury enters the environment.¹⁰

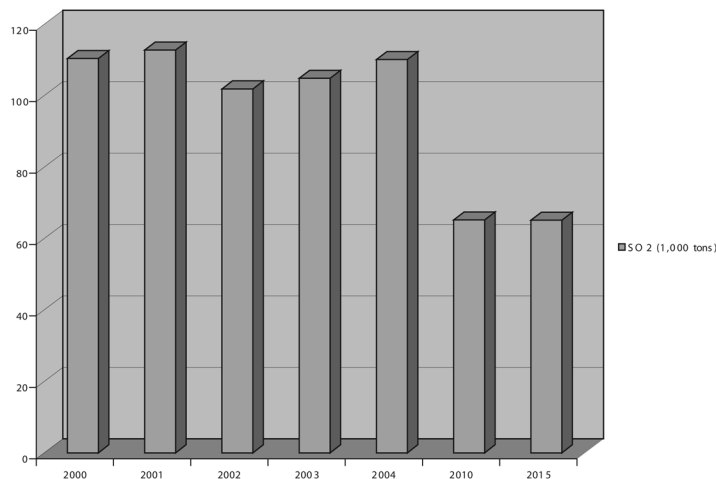


Figure 6. SO₂ emissions in Louisiana from 2002 to 2004 included predicted emissions as a result of CAIR implementation Phase I in 2010 and Phase II in 2015.¹¹

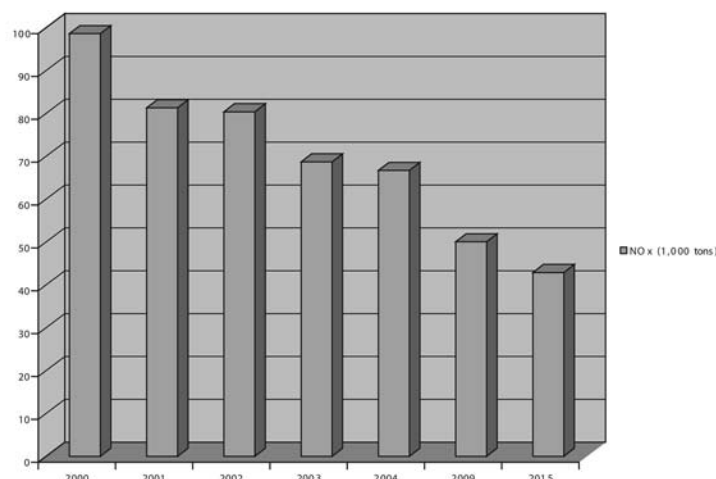


Figure 7. NO_x emissions in Louisiana from 2002 to 2004 included predicted emissions as a result of CAIR implementation Phase I in 2009 and Phase II in 2015.¹²

Becker summarizes the State and Territorial Air Pollution Program Administrators and the Association of Local Air Pollution Control Officials (STAPPA/ALAPCO) perspectives on the CAIR and the CAMR. This group of regulatory stakeholders worked with the EPA and industry representatives to research the issues related to air toxic emissions from power plants and to develop standards to address them.

The STAPPA/ALAPCO are concerned that their findings and recommendations have been ignored. One of their primary concerns is that the emissions limits set by the CAMR are not stringent enough. Becker argues that the 15-ton-per-year limit does not go far enough to protect human health and the environment and that the cap-and-trade program will not reduce emissions to this level. According to Becker, "...while EPA specifies a 15-ton final cap to be achieved by 2018, the agency's own modeling acknowledges that Hg emissions could be 24 tons in 2020, when emissions banking and trading are utilized."¹⁷ He further notes that there is technology currently available that would reduce emissions far beyond the caps set in the CAMR if the EPA would have adhered to a traditional command-and-control approach, which would require sources to meet MACT (maximum achievable control technology) standards. Other trouble-

some components of the rule are its prolonged compliance dates, the possibility of developing Hg "hot spots" in parts of the country, the lack of measures to address other toxic air emissions and the overall process that the EPA used to develop the rule. Becker asserts that the EPA ignored the findings of its own Inspector General and the U.S. Government Accounting Office, that highlighted significant flaws in the EPA's process for developing the rule and identified shortcomings in the EPA's analysis of the benefits of the rule, respectively.¹⁸

Having the same concerns about the CAIR, the STAPPA/ALAPCO believe that the emissions caps are not stringent enough and the compliance dates are too far into the future. Another concern is that other sources of emissions should be included in the rule to adequately address the SO₂ and NO_x problems. The EPA estimated that in 2010 industrial boilers would emit 11 percent of all SO₂ emissions and 13 percent of NO_x emissions annually, and that stationary internal combustion engines would emit 12 percent of the NO_x emissions in the eastern United States.¹⁹

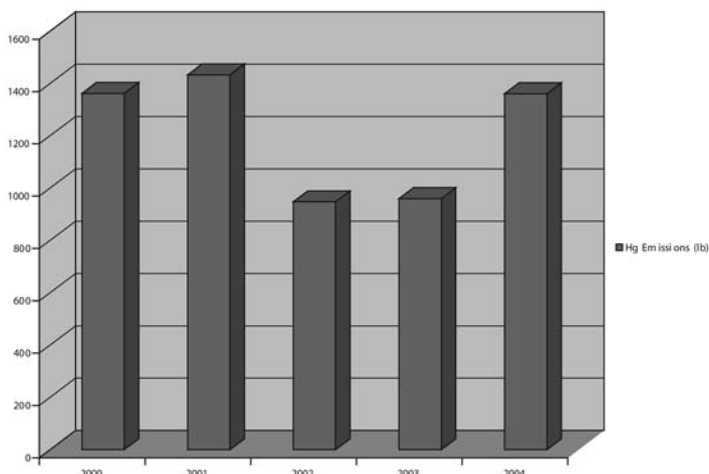
As it stands, by addressing only EGUs, it is believed that air quality goals will not be met, and as a result, relatively few of the affected areas will reach NAAQS attainment as planned.

Environmentalists consider the rules "more

rational than Clear Skies but weaker than the Clean Air Act."²⁰ They see the CAMR as "a way of weakening the Clean Air Act without going through Congress,"²¹ which is consistent with the views of the STAPPA/ALAPCO that in following the CAA requirements and imposing MACT standards, higher degrees of control can be realized in shorter time periods. Environmentalists believe the same holds true for the CAIR. If CAA programs are properly implemented they would lead to a greater reduction in SO₂ and NO_x emissions by 2012, a full 3 years prior to final implementation of the CAIR caps. This would result in more public health benefits realized in a shorter time frame. They further assert that the rules prioritize corporate interests over environmental health.²²

More information available

Both the Clean Air Interstate Rule and Clean Air Mercury Rule are given detailed coverage on the EPA website (www.epa.gov) and Louisiana DEQ website (www.deq.la.gov). The EPA also provides links to the technical data used to develop the rules, including modeling data that was instrumental in setting the limitations. A good source of information on the topic is *EM*, a publication of the Air & Waste Management Association. It includes the views of the stake-



Average Retail Electricity Prices (mils/kWh – 1999 dollars)	2000	2010	2015
Without CAIR	59.3	56.2	55.1
With CAIR	N/A	57.0	56.2

Note: 1 mil = 1/10 of a cent

(Left) Figure 8. Mercury air emissions in Louisiana from 2002 to 2004.¹³

(Above) Table 1. Louisiana electricity retail prices.¹⁶

holders such as state and local regulatory authorities.

References

- Natural Resources Defense Council (2005). "Dirty Skies: The Clear Skies Act of 2005"

(Continued on Page 22)

News from the Branches

SHREVEPORT

By Elba U. Hamilton, EI, President

The Branch hosted *The Spring Classic* — its traditional golf tournament — at Southern Trace Country Club May 8th. Throughout the afternoon, Branch members and guests enjoyed a great time playing golf, visiting and enjoying the food on the country buffet. The winners of the tournament this year are:

- Fenner Consulting — 1st place
- Raley and Associates — 2nd place and
- Balar — 3rd place.

On behalf of the Branch, I would like to thank all of those who sponsored and participated in this year's golf tournament. A special thanks goes to Rusty Cooper for planning and organizing this outstanding event.

During the luncheon, Ali M. Mustapha, PE, Secretary-Treasurer of the Section, installed the Branch officers who will begin their term of office for the 2006-2007 administrative year in

September. Branch President Ashley Sears missed the tournament this year because its date closely coincided with the birth of her beautiful baby girl, Stahley Madeline Sears. Congratulations, Ashley! I would also like to welcome J. Cody Goodwin, EI, our new officer, in the rotation on the Branch Board. He will serve as the Secretary of the Branch.

Outreach

In May, the Branch took advantage of an outreach opportunity by responding to an invitation made by Miss Caroline Fischer of Waskom Elementary School in Waskom, Texas. I was able to represent the Branch by speaking to the school's 3rd grade class about civil engineering. There were 30 children who participated. They listened to a brief presentation on what civil engineers do, looked at pictures of different engi-

neering marvels around the world, and participated in a civil engineering-related activity.

Materials provided by the ASCE national and the Zoom into Engineering program were used in their activity. The children tried to build the tallest tower they could out of newspaper. Each child was limited to only two sheets of newspaper and a ruler, and given 15 minutes to come up with their design and construction. The object was to build a tower that had to stand for at least 30 seconds without falling over.

The children then each wrote essays about what they had learned from the lecture and the activity. The essays also included some very sweet thank you notes to me. It was a highly rewarding experience to introduce these children to our great profession. Though we cannot know if any of these children will make civil engineer-

(Continued on Page 10)



The 2006-2007 Shreveport Branch Officers are, from the left, Cody Goodwin, Secretary; Jarred Corbell, Treasurer; Elba Hamilton, President; Rusty Cooper, President-Elect, and Sai Eddanapudi, Younger Member Committee representative.



Jarred Corbell, Rusty Cooper and Sai Eddanapudi working the registration table during the golf tournament.



Ed Elbersen, Principal of Somdal Associates in Shreveport, receives from Elba Hamilton the team awards for the Fenner Consulting team first-place finish. Ed played as a member of the Fenner Consulting team.



Lee Underwood and Bobby Washington, members of the BALAR team that placed third in the tournament.



Jeff Raley receives the team awards from Elba Hamilton for the Raley and Associates team's second-place finish.

NEW ORLEANS

By Christopher L. Sanchez, PE, President-Elect

As the 2005-2006 administrative year of the Branch draws to a close and the 1st year anniversary of Hurricane Katrina approaches, this year could be recorded as one of devastation for the Branch marked most notably by the cancellation of the 2005 Louisiana Civil Engineering Conference and Show, the planned phase-out of the Tulane University School of Engineering and the limited abilities to provide technical seminars to the branch membership. However, when this is compared to the great loss of life and property suffered by our fellow citizens in the New Orleans metropolitan region, these losses appear trivial. Instead of dwelling on the losses of the immediate past, the year will be remembered by the Branch as one of great promise, progress and accomplishment.

ASCE student chapter members and civil engineering students from UNO and Tulane attended the 2006 Deep South Conference. They were given the opportunity to participate by competing in the steel bridge competition and the concrete canoe races using their competition steel bridge and concrete canoe from the previous year. Despite not being qualified to advance to the national level competitions on this basis, the opportunity provided great motivation for the students to move forward and for the Branch's plans to assist.

The children of the New Orleans metropolitan area and those of the tourists attending the Annual Jazz and Heritage Festival got to *Rebuild New Orleans* at the Festival, where the Branch has been a regular sponsor of a kids booth to learn about civil engineering by building a box city.

The Board has approved the recipients of the Branch awards recognizing the exceptional

achievements of these civil engineers in the Branch community. They are

- **Heather Emery Myers**, EI, Outstanding Young Civil Engineer
- **Angela Desoto Duncan**, PE, Outstanding Government Civil Engineer
- **Dale C. Biggers**, PE, Outstanding Civil Engineer
- **John L. Niklaus**, PE, Lifetime Achievement and
- **Waldemar S. Nelson**, PE, Wall of Fame

The Branch awards will be presented and the recipients honored during the branch membership meeting and luncheon scheduled August 23 at the Audubon Tea Room in New Orleans. The election of Branch officers for the 2006-2007 administrative year is also on the agenda for this meeting.

The planning for the 2006 Louisiana Civil Engineering Conference and Show is underway for the scheduled dates of September 14-15. It will continue to be hosted in the Pontchartrain Center in Kenner. The Pontchartrain Center sustained damages from the storm but it will be serviceable for the Conference. The new Louisiana Civil Engineering Conference and Show planning and host committee is progressing with its plans to accommodate the local ASCE and ACI membership. Following the Conference, it is planned that there will be the traditional installation of Branch and Section officers during the Section Annual Meeting and Banquet hosted by the Branch.

In conclusion, this year has provided an unexpected opportunity for the Branch to rebuild and move forward. The Branch seized the opportunity and the moment with the usual dedication from its rank-and-file membership, and its elect-

ed and appointed leadership. Please watch for the future announcements and updates concerning the Branch awards luncheon, the Louisiana Civil Engineering Conference and Show and the Section Annual Meeting hosted by the Branch. To obtain this information, visit the Branch website at www.asceno.org.

Structures Committee

The Structures Committee of the New Orleans Branch cosponsored with the Civil and Environmental Engineering Department of the University of New Orleans the presentation titled "Failure in the New Orleans Area Flood Protection System" by Gordon P. Boutwell, PE, President of Soil Testing Engineers in Baton Rouge. Boutwell was a member of the ASCE Levee Assessment Team and coauthor of the ASCE/NSF report of the "Failure of the New Orleans Levee System" and has continued working as a Reviewer for the continuing NSF team investigation.

In the introductory notes he composed for the flyers advertising his presentation, Boutwell wrote

On the morning of August 29, 2005, Hurricane Katrina induced the most catastrophic civil engineering failure in U.S. history — the failure of the New Orleans Flood Protection System. This presentation will describe the important technical features of that system and walk us through the sequence of failure. Then, we will cover the primary types of failures plus where they occurred. We will see the relative amounts of flooding attributable to simple overtopping flow and flow through the failures

(Continued on Page 11)



Gordon P. Boutwell, PE (shown left) makes presentation cosponsored by the Structures Committee and the UNO Department of Civil and Environmental Engineering to a near-record audience of 123 engineers and other interested parties. The title of his presentation was "Failure in the New Orleans area flood protection system."



BATON ROUGE

Thomas T. (Tommy) Roberts, PE, President

- No Entry -

ACADIANA

Dax A. Douet, PE, President

- No Entry -

- Observation -

Ethics:

It is estimated that 10 percent of the \$3.4 trillion annual worldwide construction market — \$340 billion — is expended on various forms of corruption. With a steady diet of bible-thumping and pontificating about ethics and morality perennially floating around in engineering societies like the ASCE, it should give one pause to wonder about who are these people who so willingly contribute to the support of this global

enterprise. In an even more cynical vein, can it be worth a continuing discussion if in practice *big money trumps little business ethics*. Many apparently consider their willingness to play ball a competitive edge, and bribery is considered a legitimate part of the business culture in many parts of the world including the U.S. It will be interesting to see how the ASCE and other organizations whose members together represent a small portion of the engineering profession in the

U.S. and a much smaller portion of the profession worldwide can promote or enforce a “zero tolerance” policy for corruption/bribery relying on some form of whistle-blowing and transparency in an opaque business world. It seems to be a continuation of the less specific yet quixotic uphill battle concerning ethics in general.

- Editor

(Continued from Page 8)

ing their profession, we can hope that they now have some idea about the possibilities and of what may be expected if they consider the engineering field.

Branch business

Unlike other recent administrative years when Branch activities normally start winding down during the summer months, the Shreveport Branch Board is still running at full steam. The Board met in June for a strategic planning session concerning the upcoming administrative

year. The Branch Board has even started discussing plans for the Section Annual Spring Meeting and Conference that the Branch is scheduled to host the following year. Younger Member Committee representative, Sai Eddanapudi, is already planning the Branch's traditional fall canned food drive.

The Branch officers will be trying to keep the membership in touch during the summer break through presentations of ASCE web-seminars. We had a great response from our membership for the first of the series of web-seminars

in July. The subject of that seminar was *On-Site Circulation and Access Design for Commercial Developments*. I would like to thank Jarred Corbell for organizing this event and Alliance, Inc. for offering their conference room for the presentation.

I hope you have a great summer and that I will see everyone at the next Branch membership meeting that is scheduled for September 21st. Please anticipate and refer to your newsletter for more information about the next meeting and an update on the Branch news.



Elba Hamilton pictured with 3rd grade students from Waskom Elementary School.



Elba Hamilton pictured with 3rd grade class from Waskom Elementary School.



A little help from my friend.



Towering success!



More than one solution.

STUDENT CHAPTER NEWS

2007 ASCE Deep South Conference meeting

By Mary Lou Schwaller

Tech hosts meeting

Louisiana Tech University Student Chapter is honored to host the 2007 Deep South Conference meeting. It is scheduled for March 23-24, 2007, in Ruston. In this annual event, civil engineering students and members of the ASCE student chapters and clubs from the civil engineering departments throughout the Deep South Conference region compete in teams against each other. The Conference includes ASCE student chapters and clubs in Arkansas, Louisiana, Mississippi, and Western Tennessee. There are a variety of events planned that are intended to be both fun and educational. They allow students to apply portions of their undergraduate curriculum and gain mutual hands-on experience in team work, organization and management. The competition events are the

- concrete canoe competition
- steel bridge competition
- concrete frisbee tournament
- Daniel Mead paper competition and
- surveying competition.

The annual Deep South Conference meeting is a major event for a student chapter to host. It involves hosting the more than 300 student and

faculty participants and guests from among the 13 colleges and universities who are expected to attend the Conference meeting. The 13 student chapters and clubs in the Conference are

- Arkansas State University
- Christian Brothers University
- University of Louisiana at Lafayette
- Louisiana State University
- Louisiana Tech University
- McNeese State University
- University of Memphis
- University of Mississippi
- Mississippi State University
- University of New Orleans
- Southern University
- University of Tennessee at Martin and
- Tulane University

In addition to the several educational benefits previously mentioned and the excitement of meeting and visiting with the many fellow civil engineering students from the participating student chapters and clubs in the region, the Conference meeting is an opportunity for the more than 300 students and prospective employees to gain an awareness of the employment opportunities among the local companies that

sponsor the Conference. It is an opportunity for the Tech Chapter to attract new members and particularly the graduate students.

Sponsorship program

It is estimated that the 2007 Conference meeting will cost \$20,000 to host as it is planned. Some of the expense will be covered by the registration fees. However, the remainder of the funds to cover the costs have to be raised by the host. To raise these funds, the Chapter has established a sponsorship program that will provide local companies the opportunity to donate to the Conference. In doing so, they will receive recognition and visibility during the Conference meeting.

Please consider sponsoring a Conference event or donating some of the much-needed materials and supplies to help us host the best possible Deep South Conference meeting. To provide a sponsorship or a donation, or for additional information, please contact the Chapter's Faculty Advisor, Luke Lee, at (318) 257-3124 or at lukelee@latech.edu or the 2007 Deep South Conference Chair, Mary Lou Schwaller, at mls033@latech.edu.



The Tech Student Chapter 2005-2006 ASCE Conference team during the 2006 Deep South Conference in Memphis in attendance at the awards banquet. Front Row Left: William Watson, Rachel Hicks, Nathan Linhardt, Mary Lou Schwaller, Jenni Schindler and Brittany Rojas. Back Row: Lance Tyson, Dr. Baumert (Faculty Advisor), Jules Saunee, Brant Jones, Jared Allen and Michael Rister.



The Tech Student Chapter 2005-2006 ASCE Conference team during the 2006 Deep South Conference in Memphis. From the left; front row: William Watson, Daniel Courtney, Mary Lou Schwaller, Brittany Rojas, Rachel Hicks and Jenni Schindler; back row: Brant Jones, Quincy Alexander, Lance Carpenter, Lance Tyson, Jared Allen and Nathan Linhardt.

(Continued from Page 9)

(breaches) of the system. The presentation will conclude with ideas for better design of the levee system, both as originally proposed by the ASCE/NSF Levee Team and as adopted by the Corps of Engineers.

One of the Committee's annually planned series of seminars this June 6th presentation was held in UNO's Kirschman Hall auditorium. It was attended by a near-record audience of 123 engineers and other interested parties. *Editor's Note: The feature article for the November 2006 issue of this journal is scheduled to be authored by Boutwell on this and related subjects.*

Did you know . . .

...the *Quebec Bridge*, crossing the St. Lawrence River at Quebec City between Canada and the United States and designated a historic monument in 1987, is being restored? The restoration project that began in 1998 is scheduled to be completed in 2007. The bridge was constructed between 1900 and 1917 and it is famous not only for being still one of the longest cantilever bridge spans in the world but also for its superstructure collapse — Twice! — while under construction claiming the lives of 82 peo-

ple. This experience became the origin of the *Ritual of the Calling of an Engineer* instituted in Canada in 1926 for which an iron ring, the symbol of the ritual, is worn on the little finger of the working hand of the participating engineers. It is to remind them of their responsibility for public safety throughout their careers. The comparable ceremony in the United States is *The Order of The Engineer* that was instituted in 1970. - *Better Roads*, 5/05

**2006 Louisiana Section Annual Meeting
Announcement and Registration Information
September 15, 2006
Arnaud's Restaurant • New Orleans, Louisiana**

The New Orleans Branch is pleased to once again host this gala event that will feature the installation of the officers of the Louisiana Section and the New Orleans Branch. It is held in conjunction with a banquet to celebrate the end of the Section's administrative year and the beginning of the next and to which all Section members and their guests are invited to celebrate.

This year's event will be held in Arnaud's Restaurant, one of the City's finest and oldest restaurants located in the French Quarter, at 813 Bienville Street between Bourbon and Dauphine. For directions visit www.arnauds.com. Nearby parking is available in Central Garage at Iberville and Dauphine.

In keeping with tradition, this Annual Meeting is scheduled the Friday evening following the conclusion of the ASCE/ACI sponsored Louisiana Civil Engineering Conference and Show. A social and cash bar is planned to begin at 6:00 pm with the banquet to follow at 6:45 pm.

Reservations are required and must be made by email to kellerd@portno.com (preferred) or by telephone 504-473-3470. The payment of \$55 per person is due and the choice of entree will be taken on your arrival at the restaurant. Understand that *A reservation made is a reservation paid* — no-shows will be billed. Make checks payable to ASCENO. Please be sure to include in your contact information with your reservations a telephone number to contact you in the event there may be an interim change in plans. Seating was reserved based on previous attendance at this event so make your reservations early because the reserved seating capacity cannot be overbooked.

Social Hour:

Cash bar before the banquet

Dinner:

Belgian Endive Salad

Choice of Entrees:

Shrimp Creole

or

Chicken Pontalba
Brabant Potatoes

Dessert:

Bananas Foster

Iced tea and coffee will be served.

Louisiana Civil Engineering Conference and Show September 14 - 15, 2006

**Pontchartrain Center
Kenner, Louisiana**

**Complete Information On-Line at:
www.asceno.org**

- **Speaker Program**
- **Registration**
- **Exhibitor Opportunities**
- **Sign up for email updates**

Sponsored by:



American Society of Civil Engineers
New Orleans Branch



**american concrete institute
Louisiana Chapter**

Section News and Information

Highlights of the June Board of Directors meeting

The funds of the Section's Hurricane Relief Fund will be disbursed in part through graduate fellowships (possibly teaching assistantships) in civil engineering. This use of these funds was worked out in consultation with the ASCE national general counsel Tom Smith. The participating schools will be University of New Orleans, Louisiana State University, Southern University and the University of Louisiana at Lafayette. The requirements generally limit recipients to those students who are residents of Louisiana and from the hurricane-affected area, following civil engineering graduate studies, and have and maintain the academic requirements. It is appreciated that the strict interpretation and enforcement of these conditions is probably not practical, however, they will be clearly expressed and it is believed that they will be adhered to relying on the integrity of the people involved without the application of a substantial verification and enforcement effort.

There was an agreement reached between the U.S. Army Corps of Engineers, Federal Emergency Management Agency and the National Geodetic Survey to fund the Continuous Operating Reference Survey network. There will be CORS network sites equipped with permanent GPS equipment to actively provide continuous elevation values and maintain accurate daily variations. Other sites will be conventionally surveyed on a regular schedule. There are continuing concerns that the regional coverage of the proposed CORS network will not be sufficient to support the land surveying needs of the Louisiana coastal region.

The District 14 Council has essentially become dormant in anticipation of the formation and operation of the new Region 5 Council of which the Louisiana Section will be a component. Norma Jean Mattei, PE, was appointed by Section President Garlington as the Section's first Governor to serve on the Region 5 Board of Governors. However, there is some question about the status of the national ASCE approval of the Region 5 governing documents and its appointed governors from the various member sections to signal its legitimacy and startup.

The Louisiana Tech University Student Chapter will host the next Deep South Conference of Student Chapters that has been scheduled for March 22-25, 2007. There was an ensuing request from the Chapter's faculty adviser, Luke Lee, for a copy of the membership database for the Louisiana Section. It was for the purpose of identifying and soliciting Section members that would be agreeable to serve as judges for the various student chapter competitions planned and those who would be willing to help sponsor the event. It was reasoned that this would not be in keeping with the Section's obligations to restrict the distribution of the information in the membership database provided to it for internal use by the national ASCE. There were alternative means identified and discussed to provide the information requested by the Chapter without providing the Section membership database.

The Southern University ASCE Student chapter received national recognition in 2006. It received a 2006 Student Chapter Commendation

for Significant Improvement and its Faculty Advisor — Yvette P. Weatherton, PE — also received a national ASCE commendation for service to the Chapter.

It was announced by Yvette P. Weatherton, the Chair of the Section's Younger Member Committee, that the Committee plans to continue the *Picture Perfect* student photography contest it is sponsoring. It was inaugurated with the publication of the winning photograph for the quarter in the February 2006 issue of the Section journal. The plan is to continue the contest publishing the quarterly contest winners beginning in the August 2006 issue.

The Section received a letter of gratitude from Kenneth P. Herceg, PE, a civil engineer and an ASCE member of the Indiana Section. It was for his recognition by the Louisiana Section for the selfless service that he provided in Louisiana following Hurricane Katrina. Both Ken and his wife Kathy, who is a nurse, traveled to New Orleans to render their services in the days following the hurricane. Ken was presented with a commemorative plaque from the Louisiana Section recognizing his service during the 2006 Annual Meeting of the Indiana Section. The presentation was made by Louisiana Section Vice President E.R. DesOrmeaux.

The branch presidents/directors were counseled to plan early to identify, select and nominate their most deserving branch members for the Section's various honors and awards and submit their names in a timely manner to be consid-

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has long been established so the most/best qualified professional individual or firm will be impartially selected and contracted to do the needed professional work outlined and avoid resorting to a low bid or the political patronage processes of the past. The intent is to eliminate as much as possible the potential for political favoritism in selecting and awarding professional services for public works projects. As engineers we should always be willing to improve the qualification-based selection process if and when a deficiency is identified and we also need to take a stand when the process is threatened.

Deep South Conference — Louisiana Tech Spring 2007.

The Louisiana Tech University ASCE Student Chapter will host the Deep South Conference of ASCE student chapters in Ruston in the spring. They are seeking alumni and ASCE members to serve as sponsors for the Conference and judges for the technical events. I encourage all our members to consider volunteering a hand or donating to the Chapter to help it make this event a successful one. All the ASCE student chapters in Louisiana and in some

of the surrounding states will participate in the scheduled events. You may remember the value of your own concrete canoe, steel bridge or Mead paper competition experiences and from this be willing to offer to assist in any way that you can. The Conference chair at Tech is Mary Lou Schwaller. She can be reached at mls033@latech.edu. The students participating in the Conference are the future of our profession so it is important for us to be involved with their development.

Fall Conference — New Orleans September 2006.

Please see the announcement regarding the 2006 Louisiana Civil Engineering Conference and Show sponsored by the New Orleans Branch elsewhere in this issue. All civil engineers in the state need to make a bold statement and attend the technical sessions offered during this conference. We need to get the Conference and the New Orleans Branch operations back on the map so to speak. Please encourage fellow engineers in your firm or organization to actively participate. Following the Conference, we also look forward to the Friday evening Section Annual

Meeting and banquet featuring the installation of the Section and Branch officers. This means at approximately 8:30 pm that evening I will become your Past President.

In closing this — the second and last part of my message — I wish to say it has been a distinct honor to serve as your President. I have had the opportunity during my term to meet many civil engineers — if not under somewhat unusual circumstances — who serve on the local, state and national levels of the ASCE. The experience has instilled in me a great sense of confidence and pride in this great profession that is well supported technically and professionally by the ASCE through these many individuals.

I will endeavor to take the valuable management and administrative skills I unexpectedly learned the breach of necessity and effectively apply them to my everyday activities. Serving on the Section Board has taught me a great deal about the honesty, integrity, courage and the self-sacrificing nature of my fellow civil engineers. I will always be proud to announce as another of our ASCE leaders has that... "It is great to be a civil engineer!"

Fiscal comparison of sections

Tabulations of the financial data reported by the sections in their most recent annual report submitted to the ASCE was compiled and provided to the officers in the sections. Each section was encouraged to use this data, to compare their fiscal standing with other sections of comparable size. A review of this data, particularly the smaller expense items broken out, indicate significant variation in the costs reported. This may reflect significant differences in the section programs and/or in the interpretation of how the expenses are accounted. This would make the comparison of some expense items questionable in value. For this reason, only selected financial items are shown in the tables provided.

Rather than compare the Louisiana Section with other sections purely by size, it was decided to compare it with sections somewhat by size but also with sections from its region that may better reflect similar culture and values. Because there is a range in size based on the total number of members in each of the 6 sections selected, their financial data was *normalized* to better compare it with that of the Louisiana Section. The financial data of the sections selected was adjusted by the portion or ratio of the total membership of the Louisiana Section to the total membership of the particular section being compared. This normalizes each section's financial data by the product

of its per capita costs and the total membership of the Louisiana Section.

The expense, income and asset items selected and tabulated here to compare the Louisiana Section with the selected sections are displayed with their normalized value — comparable portion for the corresponding Louisiana Section items — provided to the right and averaged under the heading *Portion*. The large, aggregated items such as *Total Expenses*, *Total Income* and the sum of the *Cash Assets* and *Securities* demonstrate reasonable agreement that suggests the fiscal character of the Louisiana Section is comparable to that of the sections being compared using the averaged normalized data and considering the shortcomings of the data previously discussed.

For the discerning Section member, this may serve only to confirm that the general expenses, income and assets of the Louisiana Section are comparable — very average when compared — to the sections selected. It does not presume to address the effectiveness of the Section and its branches in using these resources — getting the bang for the buck expected. This is — as should be expected — directly predicated on the performance of the elected leadership in the Section and its branches. How well the elected and appointed leadership set priorities and execute

the resulting section/branch programs that reflect the interests of the general membership who elects them is not only a measure of their effectiveness; but the attentiveness of the general membership including the demands it makes on its leaders and its willing support.

The other selected expenses demonstrate what may be unique characteristics of the Louisiana Section. The portion of the expenses each section devoted to its *Branches* varied greatly because it depends on accounting methods such as whether branches collect separate membership dues and what may be considered a section's contribution to its branches. *Committee* expenses may give a sense of the level of committee activities in a section and particularly for the Louisiana Section. *Services* — secretarial and administrative — directly paid for by the Louisiana Section may be somewhat unique. They appear as very modest expenses in only 2 other sections being compared. Certain continuing administrative functions in the Louisiana Section transcend each annual change in administrations. Experience suggests that these services are relatively inexpensive and more efficient, consistent and reliable when provided by a permanent bookkeeper and when compared to those provided by the new volunteer committee members each administrative year.

Section	Total Members	Louisiana Portion	***** Expenses *****							
			Branches	Portion	Committee	Portion	Total	Portion	Services	Portion
Alabama	1739	1.0725	3600.00	3860.84	0.00	0.00	29028.12	31131.37	0.00	0.00
Georgia	2594	0.7190	540.00	388.24	0.00	0.00	53365.38	38367.94	1272.00	914.53
Louisiana	1865	1.0000	4256.00	4256.00	0.00	0.00	36519.15	36519.15	2580.00	2580.00
Mississippi	820	2.2744	1576.00	3584.44	0.00	0.00	24252.62	55159.92	720.00	1637.56
South Carolina	1689	1.1042	0.00	0.00	698.14	770.89	20736.95	22897.82	0.00	0.00
Tennessee	2304	0.8095	21000.00	16998.70	43.75	35.41	63684.15	51549.89	0.00	0.00
Virginia	2740	0.6807	7375.00	5019.84	6778.22	4613.64	81400.27	55405.66	0.00	0.00
AVERAGE				4872.58		774.28		41575.96		733.16

Section	Total Members	Louisiana Portion	***** Income *****				***** Assets *****			
			Dues	Portion	Total	Portion	Cash	Portion	Securities	Portion
Alabama	1739	1.0725	14,335.00	15,373.65	11,856.00	12,715.03	17,261.00	18,511.65	17,476.00	18,742.23
Georgia	2594	0.7190	17,864.00	12,843.62	61,110.00	43,936.06	22,109.00	15,895.64	30,762.00	22,116.86
Louisiana	1865	1.0000	21,275.00	21,275.00	25,758.00	25,758.00	19,624.00	19,624.00	36,802.00	36,802.00
Mississippi	820	2.2744	6,375.00	14,499.24	61,222.00	139,242.72	7,246.00	16,480.23	22,821.00	51,903.86
South Carolina	1689	1.1042	16,304.00	18,002.94	9,031.00	9,972.06	25,524.00	28,183.69	0.00	0.00
Tennessee	2304	0.8095	19,342.00	15,656.61	10,018.00	8,109.19	72,582.00	58,752.36	0.00	0.00
Virginia	2740	0.6807	14,764.00	10,049.22	46,947.00	31,954.80	132,381.00	90,106.05	0.00	0.00
AVERAGE				15,385.75		38,812.55		35,364.80		18,509.28

❖ Quote ❖

Professional recognition: *Engineers must... expand their... horizons so that they can serve as engineer managers. Only when we have an adequate number of the technically trained people who are at the top of the organization charts in a wide variety of fields can we expect to earn the recognition we feel to be our due as true professionals.*

- Alfred A. Pagan, PE
CE News 1/05

(Continued from Page 14)

ered for the Section honors and awards. It was also requested that the March 22-25, 2007, dates scheduled for Deep South Conference of Student Chapters be avoided by the host Shreveport Branch when setting the dates for the Section Annual Spring Meeting and Conference. This is intended to facilitate student and student chapter participation in the Conference particularly as it relates to the presentation of the Section's student awards. Further, it was proposed that the

Section's Outstanding Civil Engineering Senior Student award be discontinued. It is awarded to the student judged and selected from among the Section's Distinguished Civil Engineering Senior Students who are nominated from each of the student chapters by the Faculty Advisor and the Civil Engineering Department Head. This proposal is scheduled for future discussion and action.

Picture Perfect Louisiana

By Elba Hamilton, EI

The previous quarter's and this quarter's recipients of *Picture Perfect Louisiana* awards sponsored by the Young Engineers Committee are Joseph Marino and Morgan Speers respectively. Both Joseph and Morgan will receive \$100 for their respective photographs being selected. The following is a brief description of the photographs that were selected.

The Younger Member Committee would like to again thank professional photographers Sean Griffin of Baton Rouge and Dick Goodall of Goodall & Brian Lewis Photographic Gallery in Shreveport for judging the *Picture Perfect Louisiana* contest. We would also like to thank the Section for their support for the duration of the contest.

The photograph of the Accelerated Loading Facility (ALF) located on a property south of Port Allen was taken by amateur photographer Joseph Marino who is a senior in Civil Engineering at Louisiana State University. He is a member of LSU ASCE Student Chapter and a member of its steel bridge competition team that won first place in the 2006 Deep South Conference regional competition. When asked why he chose ALF as his subject, Joseph responded, "I chose this as a positive example in civil engineering because it works as a way to improve the roads across the state."

According to information provided by the Louisiana Transportation Research Center that operates the facility, the ALF is a 100-foot-long, 55-ton accelerated loading device used to simulate truck loading on a test pavement. It is one of only 3 of its kind in the nation and it has the capability of compressing many years of road wear into a few months of testing. For example, it is possible to compress 20 years of loading into a period of one month by increasing the magnitude of load and running the device 24 hours a day. The weight and movement of traffic is simulated repetitively in one direction with the help of a computer-controlled load trolley. The load is adjustable from 10,000 to 21,000 pounds per application.

The photograph of the Old Law Building on the LSU campus in Baton Rouge was taken by amateur photographer Morgan Speer. She is 16



Joseph Marino



Morgan Speer

years old and a student at University Laboratory School in Baton Rouge. The Old Law Building was built in 1936 and is modeled after the United States Supreme Court Building in Washington, D.C. It was designed by Weiss, Dreyfous and Seiferth, a famous New Orleans architectural firm at the time that also designed the Louisiana State Capitol and the governor's mansion, among other landmarks. The general contractor for the project were Caldwell Bros and Hart.

The principal materials used to construct the Old Law Building included Indiana Limestone; back-up and fill brick masonry; structural clay tile and patented clay tile floor and ceiling systems with steel rod/cable reinforcement; ceramic roofing tiles; structural steel and steel roof trusses; cast concrete roof deck panels; glazed ceramic tile block walls; Portland cement and lime plaster on metal lathe; ornamental struck in place gauging plaster molding; wood windows and frames; metal casement and awning windows; terrazzo floors and stairs; copper gutters and concealed-in-wall cast downspouts; ornamental iron grilles and handrails; fire protection systems among others.¹

Recent renovations to the Old Law Building have created several new student spaces, new meeting rooms and conference rooms and updates and repairs to classrooms and exterior windows. The building's auditorium was also renovated.

¹ Savoy, Richmond G., *Masonry Conservation Case Studies: LSU Law School 1936, St. Alban's Chapel LSU 1929 and the Theta Xi Fraternity House LSU 1939*, Master's Thesis, December 2003, pages 15-44.

❖ Quotes ❖

...Young people are being rushed into the profession, and they don't receive proper training. We're more concerned that they obtain their P.E. degree, their stamp, and that's it. Then we throw them out there in the cold, hard world without the background or the experience.

- John Metcalfe
Certified Senior Detailer

While I recognize the economic impact of the chemical industry, we cannot sacrifice the environmental security of our children's future and our quality of life.

- Ricky Ward, District Attorney
Pointe Coupee, West Baton Rouge
and Iberville Parishes



Accelerated Loading Facility



Old Law Building

Shared on a community website

By Deborah Ducote Keller, PE

As a civil engineer whose community of St. Bernard Parish was devastated by Hurricane Katrina, I have participated as a concerned citizen, community activist, professional engineer, and an ASCE member in an attempt to help my community recover from this disaster of unprecedented proportion. What follows is an open letter to the next community that will suffer a similar disaster sharing my experiences and observations.

Before the letter, here are some lessons learned from Hurricane Katrina. Lessons that are too often taught and/or learned *again* the hard way. It does not go without saying that the role of the civil engineer is crucial to recovery since so much revolves around restoring the engineered infrastructure — the civil engineer's business.

Leadership is the key to recovery. Like art, leadership is hard to define, but you know it when you see it. Recovery requires effective leadership that produces measurable results. Too often we, and our leaders, measure leadership by the admirable traits of individual successful leaders, such as

- how many hours are worked
- how much personal sacrifice is made
- how popular one becomes and
- how much passion, care and commitment are invested.

Ask any coach and you will find that their effectiveness as a coach is measured in wins and losses only. The nicest coach with an impressive resume who works long hours is not an effective leader if the team does not win games — the intended results. A coach does not have the luxury to indulge in self-centered defensiveness on failing to meet expectations and being judged an ineffective leader.

Leaders like coaches understand or quickly learn the realities of successful leadership and do not take it personally when they are criticized for lack of measured and expected results. There is no difference when measuring the leadership effectiveness of any other leader, whether it is the one who is elected to office or the one who is hired into the position. To be an effective leader requires wins — measurable results that achieve established goals and more. The *more* may be leadership in discerning and establishing community priorities and the goals that need to be achieved. Everything else is just the admirable traits a successful leader may possess but not a measure of effective leadership — results achieved. While we can appreciate the admirable traits of dedication, sacrifice, and hard work, in the end they are not a measure of what you need and want in the community and therefore they are not a measure of effective leadership.

Here are some short-term goals that I consider a measure of effective leadership during the recovery from a disaster. They are in no particular order:

- Volume of debris remaining on the streets
- Number of homes and businesses remaining to be repaired or demolished.
- Number of residents able to live in the com-

munity.

- Number of businesses able to operate in the community.
- Vehicles and boats remaining to be removed and disposed of legally.
- Water, sewerage, drainage, telephone, internet, cable, natural gas services restored.
- Parish services restored including a properly staffed local government. For example, free and legal public disposal areas, and traffic and street signs and signals restored.
- Education system restored.
- Fire, police and medical services restored.
- Flood protection system restored if applicable.

Without successful leaders focusing on these essentials, the community cannot effectively return and cannot effectively recover. So with this essential understanding from the lessons learned, here is my letter to the next community that will face a disaster:

To Whom It May Concern:

My deepest sympathy to your community upon this devastation. You now will share the pain of those of us who bore the brunt of Hurricane Katrina and who immediately precede you in a disaster. Do not repeat the mistakes and do not make waste of precious time, money and volunteer help when it is available to help you recover. You are the victims of the new disaster and the center of attention for FEMA, Red Cross, Congress, et al. The victims of the last disaster if not already marginalized will become so as the focus turns to your needs. The victims of the last disaster will now be left on their own to recover the best they can mostly with the resources they have. Hint: You are the next victims of the last disaster.

Many have already grown tired of our problems in Louisiana, laughed at our missteps and believe we have received ample resources to recover. Here are mistakes your community need not make. Learn from our wealth of experience in these matters.

- Not all federal rules will make sense or be fair or be cost-effective, but engage and play by the rules. It is far better to get the results you can than get into an unproductive spitting match with the federal government over who to hire, what to pay them, etc. The federal government holds the authority and the money, and your community does not have enough of either.
- Property owners need timely and firm deadlines. Those communities that quickly set reasonable deadlines for property owners to clean property, declare intentions, and take responsibility for their property will recover sooner than those communities that delay setting deadlines and languish. Somehow the banks, churches, franchise businesses, etc. in the communities that quickly set deadlines will restore/demolish what they own to meet those deadlines. The communities that postpone setting deadlines will find that property owners put off hard decisions

and the community will be severely blighted long after the disaster.

- When a local government passes new ordinances, they need to be very specific and have *teeth*. Vague ordinances are subject to wide interpretation and cannot be enforced. They just give the appearance of being a tool for recovery. There must be local staffing to continually enforce existing and new ordinances or illegal signs, illegal dumping, and construction that does not meet the community's standards for instance will result. Continually publicize community regulations that are in force and the new ones that are created from the federal, state, and local level. The average citizen is overwhelmed and needs constant reminders.
- Collect your sales taxes, collect your property taxes; collect your permit fees even if at a reduced rate. Otherwise, you have no source of income and you will not be able to provide the basic services the community needs at a time when they are most needed. Without income, you will have to cut your

(Continued on Page 18)

— net surfing —

ASCE national organization:
<http://www.asce.org>

Note: Most ASCE-related pages can also be addressed through links at this website. All section and branch officers are listed at:
<http://www.asce.org/gsd/localofficers>

ASCE Acadiana Branch:
<http://www.asceacadiana.net>

ASCE Baton Rouge Branch:
<http://branches.asce.org/batonrouge/index.htm>

ASCE New Orleans Branch:
<http://www.asceno.org>

Louisiana Tech ASCE Student Chapter:
<http://www.latech.edu/tech/orgs/asce/>

UNO ASCE Student Chapter:
<http://www.uno/~engr/asce/asce.html>

ULL ASCE Student Chapter:
<http://www.engr.usl.edu/cive>

Tulane ASCE Student Chapter:
<http://www.tulane.edu/~asce>

LSU ASCE Student Chapter:
<http://www.ce.lsu.edu/~asce>

ASCE Louisiana Section:
<http://www.lasce.org>

Louisiana Engineering Society:
<http://www.les-state.org>

Louisiana Professional Engineering and Land Surveying Board:
<http://www.lapels.com>

Scholarships announced

By E. Raymond DesOrmeaux, PE

The Section through its Hurricane Relief Fund Committee is pleased to announce the funding of 4 graduate scholarships to be offered beginning with the fall semester of 2006. The Section Hurricane Relief Fund Committee worked together with the national ASCE staff in Reston, Virginia, to establish the graduate school scholarships for civil engineering students in Louisiana consistent with the purposes of the Fund.

Funding for these scholarships comes from the Hurricane Relief Fund that was established in October of 2005. The Fund consists of a combination of donations that were made by individual ASCE members and organizational components of the ASCE throughout the United States, and a grant provided by the national ASCE.

Consistent with the purpose of the Hurricane Relief Fund that was established by the agreement expressed in a memorandum of understanding between the national ASCE and the Section, the Section Committee acted to designate

each participating university in the hurricane-affected zone and provide them each with 2 payments from the Hurricane Relief Fund in an amount not to exceed \$6,000 per year. Each payment will be 50 percent of the scholarship that will include a matching contribution by the participating university. The scholarship is a 2-year civil engineering graduate school scholarship or fellowship to be offered by each participating university.

The matching funds for the 2-year graduate school scholarship will be awarded to the following participating universities:

- University of New Orleans
- Southern University
- Louisiana State University and
- University of Louisiana at Lafayette.

Each participating university will award the scholarship to a civil engineering graduate student beginning with the 2006 fall semester according to the memorandum of understanding that is in place between the Section and each par-

ticipating university.

The eligibility requirements for a student to participate in the civil engineering graduate school scholarship or fellowship are that the student must

- be a graduate of a Louisiana high school
- have an undergraduate degree in civil engineering from a Louisiana university
- meet all criteria for the graduate school of the university and
- have been a continuous resident of Louisiana since 2005.

The Section's Hurricane Relief Fund Committee that administers the Fund consists of Section Board members. They are

- Norma J. Mattei, PE, Section Past President (New Orleans Branch)
- Timothy M. Ruppert, PE, Section President Elect (New Orleans Branch) and
- E. Raymond DesOrmeaux, Section Vice President (Acadiana Branch).

(Continued from Page 17)

government staff and reduce or eliminate essential services such as those provided by the department of public works and planning. Since FEMA will not pay for these routine services that local government normally provides to the community and you cannot accumulate debt indefinitely.

Collecting revenue is essential.

- Communicate effectively with the public via all means available — radio, television, newspaper; Internet. Communicate quickly keeping it accurate and current. When any agency is involved that can and does change its rules, you have to stress that to the public.

For instance, today FEMA may pay for some service and tomorrow it may not. Make public the proceedings from all public meetings. Designate one community official who is the spokesperson who can speak with authority and knowledge so the public knows that there is a reliable leader who everyone can follow. Make sure this leader has answers and solutions, and in public statements does not dwell on frustrations and how federal or state government agencies are not cooperating. What the community needs to hear is what is being done and what the leader is doing to set and achieve recovery goals.

- People love the word *free*. Stress that free, volunteer help comes and goes — it is not stable. As time passes, as the work gets more drawn out and physically difficult, as attention wanes, and as support services to house and feed volunteers disappear so to will the volunteers. Always stress to the public that the free help is not an obligation, but the option of the volunteer that may be available for a short period of time and to a relatively few people because of the high demand.
- Regularly recite the serenity prayer from the moment the disaster begins, "...the serenity to accept the things I cannot change, courage to change the things I can, and wisdom to know the difference." Local leadership has a limited span of control, beyond which the decisions will not be in their hands so they cannot effect these changes on their own terms. Exercise restraint when responding to a disaster. Recognize that the decisions to fund the buyout of property owners and FEMA funds to mitigate future damages by acquiring whole neighborhoods is not solely in the hands of local government. While in some instances these funds are pos-

— Calendar of Events —

September 15, 2006	Section Annual Meeting and installation banquet hosted by New Orleans Branch. Further details are published herein.
September 15, 2006	ASCE Seminar * Seismic Design of Liquid Storage Tanks, Houston Texas.
September 14-15, 2006	Louisiana Civil Engineering Conference and Show in Kenner. Further details are published herein.
September 20-22, 2006	ASCE Seminar * HEC-RAS Computer Workshop for unsteady flow, New Orleans.
September 21-22, 2006	ASCE Seminar * Wind Loads for Buildings and other Structures, Tampa, Florida.
October 15-19, 2006	ASCE Conference * Electrical Transmission Conference - Transmission Line and Substation Structures, Birmingham, Alabama.
November 9-10, 2006	ASCE Seminar * Highway Bridge Design, Evaluation and Strengthening Using LRFD, Orlando, Florida.
November 16-17, 2006	ASCE Seminar * Structural Condition Assessment of Existing Structures, New Orleans.
December 14-15, 2006	ASCE Seminar * Wind Loads for Buildings and other Structures, Dallas, Texas.

*For more information, call ASCE toll free at (800)548-2723 or visit the ASCE website: www.asce.org.

For the schedule and registration for the ASCE webinar continuing education regularly offered: Visit the ASCE website / continuing education / distance learning / live interactive web seminars.

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- Career Benchmarks -

Section member **Linda Daly**, PE, recently earned her professional engineering license in Louisiana. If you are in contact with her, please offer your congratulations on her accomplishment.

Louisiana residents, **Jonathan K. Causey**, PE, **William Joseph Clark, III**, PE, **Fred J. Cunningham**, PE, **Jonathan P. Hird**, PE, **James J. Ricks**, PE, **Daniel T. Thornhill**, PE, and **Kristopher E. Wascom**, PE recently earned their professional engineering license in Louisiana and they are not members of the ASCE. A copy of this issue of the journal is sent to them as an informal introduction to the Section. If any of them wish to join and/or find out more about the ASCE, they are hereby invited to visit the ASCE national website, <http://www.asce.org>. If you are in contact with any of these engineers, please consider formally introducing them to the Section by inviting them to attend a branch meeting as your guest.

Brant B. Richard, PE, Section member and President-Elect of the Baton Rouge Branch now



Brant B. Richard

manages the new Louisiana office for Stanley Consultants located in Baton Rouge. A Louisiana native, Richard has 17 years of business development and project management experience. The Louisiana office will offer to federal, state and municipal clients engineering, environmental and construction management services in the transportation, water resources and water/wastewater sectors having access to the full spectrum of services offered by the 15 domestic and several international offices of Stanley Consultants.

Editor's note: There are three disciplines that are licensed by the Louisiana Professional Engineering and Land Surveying Board and that may be considered closely related to civil engineering. They are the environmental, structural and architectural engineering disciplines. As of June 2006, the active engineering licenses conferred by the Board were approximately 5937 in civil, 741 in environmental, 58 in structural and 8 in architectural.

- Observation -

Civilization:

Columnist Andy Rooney questions what constitutes the advancement of civilization in his article that appeared in *The Advocate* - 12/03/04 as follows:

...I know that the rise of Greek civilization was unique. There had been civilization in Egypt but nothing like what developed in ancient Greece in art, literature and mathematics...

...(W)hat happened? Future generations did not build on the great start those early Greeks gave them. There were centuries when civilization deteriorated... Are we better people than people were 100, 1000, 10,000 years ago? ...Does accomplishing more and making more of the good things in life contribute to the better-

ment of the human race? Are we better or just happier because we have cars, airplanes, television, computers? I can't decide. We have more mechanical aids to help us do things — wheels, gas engines, electricity — so we get more done and go more places than generations past but are we better people because of them?

The tangible advantages we as engineers provide and with which we are provided to live life are not the keys to happiness or necessarily a measure of a *better* people compared to those of previous generations. The best in any generation may be measured by how they rise to the challenges and opportunities with which they are presented. How to comparatively measure the best

— By what standard?.. potential?.. accomplishment?.. — is altogether another issue, as Rooney's observations would suggest. Accepting the adage attributed to Alphonse Karr, "The more things change, the more they remain the same," may imply there are just *good* generations and no *better* or *best* ones. It may be more important to define the best that any of us in any generation can do with another adage... "Learn from the past. Plan for the future. But live in today." The trappings of our technologically advancing civilization Rooney questions are, in my belief as an engineer, only one measure of the advancement of its quality of life and thereby one measure of its greatness — but not necessarily a very small one. - *Editor*

(Continued from Page 18)

sibly available under various federal and state programs, the amount of money, the criteria to receive it, and the length of time it takes to get it is very uncertain. More often than not, your community will not receive the funds to do everything on its wish list; your community will not always meet the criteria to receive them; and it can take more than a year for funds to become available. Implying that there will be an abundance of money such that everyone who wants to walk away and receive pre-disaster value for their property so that it becomes a green space or a right-of-way for some public purpose is not reality. It only serves to paralyze a community expecting abundant funds for buyouts to be available quickly and apply to everyone who wants them.

- Local leadership should attempt to get all agreements and decisions in writing from the proper level of authority. FEMA representatives come and go weekly during the aftermath of a disaster. Many are not FEMA staff, but consultants and contract employees hired by FEMA for the disaster. Many will be dedicated to helping your community

recover and will view requests in your community's favor. However, with every replacement person and with every level of authority within FEMA, interpretation of guidelines and the rules themselves change. Many of these changes will negatively impact your recovery. At least if you have written documentation from a high enough level, there is a better chance of negotiating a compromise later in the recovery.

- Just as your community must plan for disaster at an individual level, so too must your community's leadership. Disaster planning goes beyond preparation for the event. The real work is not just responding to the disaster event, but dealing with the recovery in the disaster *aftermath* long after the event. Ensure your community (fire, police, medical, schools, churches, utilities, public works, planning, etc.) has both a short-term (event) response and a long-term (aftermath) recovery plan. This includes having systems in place for communications, accounting, human resources, engineering, legal, information technology, public relations, etc. that are led by people who know what their role

is in supporting the local leadership in the recovery. Our nation is geared toward practicing for — and responding to — disaster events, but not toward the recovery in the aftermath as Hurricane Katrina has vividly demonstrated.

- The day of the disaster the clock starts ticking toward the deadlines for the end of the benefits and services provided by FEMA, Red Cross, insurance companies, SBA, IRS, etc. Sometimes these deadlines are extended. However, you and your community cannot assume an extension will be granted until it actually is. For some entities, like insurance companies, it is not in their best interest to grant extensions for such things as filing claims, and for their right to drop your policy, lower its coverage limits, increase its deductible, or change its terms of coverage. Therefore, act in your own interest with a strong sense of urgency. While the progress experienced in your community may give you a sense that time is standing still, it is not. The rest of the world is moving on.

Best wishes for a speedy recovery —

Increasing life expectancies may require additional retirement and estate planning

By Thomas R. Thurmond

According to the U.S. Census Bureau, people today can expect to live longer in retirement than ever before. Increased life expectancies mean we will all probably have to do a better job of planning for our retirement and protecting our estate assets than previous generations. Working out a sound retirement plan now — before you need it — may help achieve retirement and other important financial goals.

Retirement Planning

Creating a retirement plan can help with a comfortable retirement. In drawing up your retirement plan you should take into consideration your

- anticipated costs of living during retirement
- current retirement assets
- current retirement savings and investments
- expected rates of investment and
- present and potential inflation rates

Once this information is determined, you can calculate any shortfall between projected retirement income and anticipated costs of living during your retirement. It is important to plan so that you have enough assets to get you *through*, not merely to, retirement. You might include in your comprehensive retirement plan such elements as

- 401(k) plans
- Roth or traditional IRAs

- education savings plans
- life insurance or annuities
- tax-advantaged investments

Estate Planning

Most of us already know that our estate includes every asset and debt we have. However, few of us probably also realize that:

- Federal tax rates begin at 45% and rise to 47% for estates valued at \$1,500,000 or more for 2005.
- Estate taxes are due within nine months of death.

To help meet estimated future needs, investors can employ the following strategies:

- Updating current estate plans
- Titling assets to maximize credit available against federal estate taxes
- Purchasing life insurance to cover estate tax and settlement costs
- Establishing certain irrevocable trusts, which may help remove assets from your taxable estate
- Making gifts of \$11,000 or less to reduce the value of your estate

In short, talking with a financial and tax advisor regarding the adequacy of current estate and retirement plans is an essential first step for anyone interested in leaving behind a lasting personal and financial legacy.

Thomas R. Thurmond, Senior Vice President, Wealth Advisor with Morgan Stanley in New Orleans, Louisiana. He may be contacted by e-mail at thomas.thurmond@morganstanley.com or by telephone at (504)587-9669 or (800)659-0009. Any particular investment should be analyzed based on the terms and risks as they may relate to your circumstances and objectives. Information and data in this article were obtained from sources considered reliable and published for general information and educational purposes. Their accuracy or completeness is not guaranteed and the giving of the same is not an offer or solicitation to sell or buy any securities or commodities or participate in any trading strategy. Investments and services are offered through Morgan Stanley DW Inc., member SIPC. Morgan Stanley does not render advice on tax or tax-accounting matters to clients. This material was not intended or written to be used, and it cannot be used by any taxpayer, for the purpose of avoiding penalties that may be imposed on the taxpayer under U. S. federal tax laws. Consult your tax or legal advisers before making any tax- or law-related investment decisions.

EDITOR'S JOURNAL

By James C. Porter, PE

Reality check

A letter to the editor that appeared 10/27/05 on the op-ed page of the New Orleans *Times-Picayune* titled "Let's put our faith in engineers" by displaced New Orleans resident Konrad C. King raises the legitimate concern of who is and who should be in charge related to engineering issues. It was in response to the article "Levee team runs into wall" appearing 10/26/05 in the *Times-Picayune*. Konrad advocates

Professional engineers, not politicians, are needed to protect New Orleans... A Corps of Engineers spokesperson, caught the problem... "The Corps can only do what Congress and the administration direct it to do..."

Instead of being subject to the irrational dictates of political compromise and backscratching, we need a community of highly professional engineers whose sense of integrity would compel them to resign rather than be party to flawed (and life-threatening) engineering... I could sleep securely in the cradle of sound engineering but not in the muck of contemporary politics.

Engineering

While as an engineer I appreciate Konrad's vote of confidence in my chosen profession, he must understand — as we engineers must — that the engineering profession has historically and appropriately never been an autonomous profession but a *serving* profession. In the beginning, it served civilian and military needs — hence the

origin of the civil and military engineer.

The measure of success of the civil engineer's service to the public is in the ability of the civil engineer to be an effective servant to the client in the engineer/client relationship. If and when a flawed engineering result occurs through this relationship, it is usually a *mutual* failure of the engineer and the client. In this case, the client is the United States Congress — the elected representatives of the public — and the engineer is the United States Army Corps of Engineers.

The significance of an effective engineer/client relationship is that the client relies on the services of the engineer to make an informed decision/choice about the engineered works to be provided. The resulting engineered works technologically meet the goals set and understood by the client. In this sense, it was a mutually acceptable, *conscious* decision to design, construct, operate and maintain the levees protecting New Orleans to sustain the storm surge expected from a category 3 hurricane. The engineer's role in this choice is to provide expert information about the choices and their related consequences or risks in terms of public health, safety and welfare. In this case it would appear the client consciously rolled the dice based on the engineering advice it received and the public lost when Hurricane Katrina passed.

Engineering technology is not stagnant. It advances with new discoveries and resources that

become available to better estimate behavior. Weeks before Hurricane Katrina hit New Orleans, a newly developed computer model of the New Orleans region simulating a category 3 hurricane following the most destructive path estimated. It demonstrated that the levee system was deficient based on the storm surge estimated by the computer model. This information from a computer model was not available years ago when the best engineering technology at that time was used to make the original choice.

Engineers

My experience indicates that the leadership in the engineering profession itself is not free of its own ineffectual politicians of weak character, and/or flawed expertise and ethical bearing. In response to ineffective, maybe poorly developed or failed relationships between the engineer servant and the government client, the relationship can actually become further alienated.

An example is in the ongoing trend of appointing political hacks in municipal governments to be in charge of their departments of public works. This essentially severs or eliminates the important engineer/client relationship. These political hacks supervise and deal with the perverse engineers so that the elected officials — the clients — don't have to.

In private practice, engineers ineffective in engineer/client relations fall back to a technolo-

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Scared Straight

An interesting ethical principle — *scared straight* — is also the title of a film made some 30 years ago that featured tough-talking prison inmates who related their life's harrowing experiences. As the principle would suggest, the movie was intended to frighten juveniles out of their propensity for crime as columnist William Raspberry observes in his essay, "Can corporations be scared straight?" — 11/12/05 *Advocate*

Raspberry notes that corporate America is using a similar approach in some instances to teach ethics by using seminars conducted by former corporate executives who were caught and have served time in prison for accounting fraud, stock manipulation, and other crimes. They lecture to the business executives and students alike on the dangers of unethical — if not illegal — behavior. Their message is: You are probably going to get caught and humiliated and if you do not, you will have trouble sleeping at night.

We in engineering may have experienced similar seminars in the past presented by the engineers who were held responsible for the engineering failures that resulted in the high profile failures of the 1986 Challenger space shuttle disaster and the 1981 collapse of the suspended atrium walkway bridge in the lobby of the Hyatt Regency Hotel in Kansas City. We also get to read in the *Louisiana Engineer and Surveyor Journal*, the journal of the Louisiana Professional Engineering and Land Surveying Board, about the penalties it metes out to discipline our fellow licensees for their ethical lapses and other rule breaking.

Such lectures and readings about the consequences of negligence or overt rule breaking by engineers and getting caught should surely contribute to a fear-based incentive to behave ethically. I agree that scaring people into ethical submission may be an effective, short-run ploy. However, I would hope and expect that there is a higher and more sustained motivation for ethical behavior that is present in my psyche and in that of my fellow professional engineers. It is an

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gy supply function — a commodity and not a professional service. They leave the messy client relationships to the developers and/or architects. In sacrificing the direct client relationship as a peer member of the building team, their leadership is also sacrificed. With this sacrifice, sometimes the ability of the engineer to reasonably assure that the obligation to protect public health, safety and welfare is not compromised.

Seeking effectiveness

Assessing the blame for any failed relationship is not the point here. The observation that it happens all too frequently is. In all relationships including engineer/client relationships, effectiveness is the responsibility of *both* parties to be developed and maintained. Nothing less is acceptable. When a relationship fails, both parties have failed — not one or the other — and the public as Konrad would suggest cannot "...sleep securely in the cradle of sound engineering."

As the thesis of most of the concerns expressed in the engineering profession goes, it is important that engineers seek and accept a place at the table in a peer relationship with the

internally and mutually inspired motivation that will continuously invigorate our professional practice and personal behavior without any reliance on a fear-based incentive.

The motive for scared straight or fear-based ethics is predicated in part on the experience of the Enron *et al* scandals and on the concern and assumption that the ethical lapses witnessed are due to inadequate ethical training among the members of the executive ranks. This precipitated the Sarbanes-Oxley Act of 2002 that makes corporate executives liable for the unethical behavior of their employees if they cannot show that they provided them ethical training. It is observed that whatever good this approach does, it may have little to do with the effective implementation of ethical behavior, yet corporate America is expending an estimated \$6.1 billion this year attempting to conform to the Act's requirements and extinguish the liability.

It does make good sense to have regular training sessions to discuss practical ethical dilemmas such as conflict of interest and the delineation of the important distinction that not everything that is legal is ethically permissible. Citing specific examples of typical ethical dilemmas and their boundaries in a company's everyday business practices will effectively demonstrate acceptable and unacceptable behavior and explain the consequences to the company and its employee. This should reinforce a long-term ethical incentive from a deeper understanding of the company's ethics applied and how they may align with the individual's inherent personal values rather than reinforce a short-term fear-based incentive.

Ethics is also being taught less effectively in the general — abstract — sense assuming that by doing so it will reduce the scandalous behavior experienced. This would appear to be much the same philosophy being used for the general ethics seminars I have attended to meet the professional development hours required by the LAPELS Board. Noah Pickus, Associate

client. Once at the table, engineers must be prepared to develop effective client relationships including effective communications — explaining and understanding — thereby avoiding issues that may compromise their obligation to protect the health, safety and welfare of the public whose best interest they and their clients are obligated to serve.

It is easy for me to pontificate here in the theory about how it should work. However, for those who have experience dealing with clients — public/elected officials — particularly here in Louisiana know it is not that simple but often problematic. Part of the problem may be the nature of the engineering curriculum and the nature of the individual/student who is attracted to it and academically successful in it. The typical nature of this individual may not be what is required to effectively develop and maintain an engineer/client relationship.

The problem of a political hack, developer or architect being inserted as the intermediary in the engineer/client relationship is that they are thereby essentially placed *in charge* of the engineers and the engineering. This may be the deeper

Director of the Kenan Institute for Ethics at Duke University, observes that this does not appear to be effective remedial training consistent with the ethical lapses witnessed at Enron *et al*. The behavior of their executives was clearly not a result of ignorance of the rules and the laws but of conscious, calculated attempts to circumvent them.

Pickus further observes that the corporate culture is inevitably supported on an ethical foundation and how effectively a company's ethics are conveyed to — and adopted by — its employees is measured by how its ethics actively permeate the organization, guide corporate policy and behavior, and breathe life into appropriate, independent employee behavior. Individuals respond to — and are shaped by — the corporate culture based on how it squares with their personal values. Though a formal statement of ethical rules is always important, it is more important that once stated they are actually aligned with corporate behavior, individual values and business practices.

Sustained long-term ethical behavior also has little to do with corporate structure. Ethics should, for example, show up as a component in the performance review. Otherwise, what does it suggest about a company if any of its people are jailed for fraud or penalized by the LAPELS Board for a lapse in ethical behavior yet they are systematically praised and promoted before being caught?

The effectiveness of the *relationship* a company has with its people is important. This is because it would appear that the problem is more about bad people *allowed* to run amok in the company rather than good people being misguided in a poorly structured company. When effective relationships are expected and cultivated, it is reasonable to presume that the success of a bad person in a good company would be discouraged by their difficulty in forming effective and lasting relationships with it and its ethically well aligned people.

issue. In any event, I believe that the problem is prevalent enough that it must be considered a serious defect in the civil engineering profession's ability to effectively deliver services. As such, it warrants the effort to discover and better understand what part the engineer may typically play in ineffective engineer/client relationships and what may be done to improve it.

Should students be in some way attracted to the civil engineering curriculum who possess the personal traits that are needed to form effective engineer/client relationships? Should the personal traits needed be cultivated post-graduation through continuing education or other means focusing on those engineers actually involved with engineer/client relations? It is a problem that must be effectively addressed either in the basic curriculum or at some point in the career of the engineer who would dare to lead and develop effective engineer/client relationships as part of that leadership role. History would indicate that learning or developing these traits by the school of hard knocks does not appear to be a viable option.

Relic of the Past

An observation made by management guru Peter F. Drucker who died November 11, 2005, at 95 years of age was used as the vehicle for a penetrating essay by columnist Froma Harrop titled "Are universities endangered species?" — 11/29/05 *Advocate*. Drucker observed that "...the modern university is a relic that will disappear in a few decades." That is a relic in the context of its former need that would appear to no longer exist in our evolving high-tech environment. Since it is the university that hosts the civil engineering department, this observation should strike a real nerve among the civil engineers who are concerned about civil engineering education and even the civil engineering research professors who are not.

I am a longtime and vehement critic of what I consider the inappropriate priorities and interests of the faculty in some undergraduate civil engineering programs of which I am aware. With their deleterious effect on undergraduate civil engineering education, I am not as troubled by Drucker's observation as much as I am delighted by the opportunities his prediction may portend if it comes to pass. It would appear to offer opportunities that will substantially improve the quality of the undergraduate civil engineering education, substantially reduce its cost and make it essentially insensitive to the misdirected priorities of a faculty. These priorities typically place undergraduate teaching "sixth" or worse in importance behind such functions as, research, publishing, graduate education, professional activities, public service, etc.

The foundation of Drucker's observation is that personal computer power and the ease of Internet communication make the classroom obsolete. Thereby, the bulk of the university infrastructure is "...hopelessly unsuited and totally unneeded..." for education. The presumption is that the form and flexibility of tele-commuting already applied to labor and the physical office can be applied if not more easily to learning and the physical classroom. Professors are already recording lecture series that are downloaded by their students who listen to them at their — the students' — convenience. This frees up much of the professors' time who can then provide their students the opportunity for brief but high quality, interactive discussions.

The crummy educators/lecturers typically among the university's most valued research pro-

fessors across the academic community including the engineering curriculum can be relieved of their poorly performed, undesirable, low value undergraduate teaching chores for which they are not held accountable anyway. Their time can be exclusively devoted to funded research, and their other higher priority functions. Also, the institution can instead choose from among the many recorded lecture series offered by the rare, gifted educators/lecturers from among the other institutions or services. There may be as few as one of these gifted people per subject per every 10 to more than 20 institutions offering lecture series from which to choose.

The same gifted educator/lecturer providing a lecture series may also author a companion textbook. Recorded lecture series can be integrated with high quality "guest" lecturer sessions and enhanced with demonstrative digital video components. Testing services and brief interactive discussions with the students regarding the lecture series can also be delegated via the Internet to the same gifted educators/lecturers who provide them. Beside providing a uniformly high quality educational experience for the undergraduate engineering student, the availability of the recorded lecture series and its related services would not depend on either local student demand or availability of faculty but offered every semester.

The undergraduate education function would be contained in — and sustained by — a library of recorded lecture series instead of a teaching faculty. Each recorded lecture series could be individually reviewed and assessed like — or as part of — the textbooks in the accreditation process for the undergraduate engineering program. Similarly, an engineering department's library of selected recorded lecture series as a whole could also be reviewed and assessed for its accreditation. The difference in cost is what is so surprising. A current example is one recorded lecture series costs \$100 a student. The conventional course with the same content costs \$3200 a student. There is a lot of room for the markup for a high quality lecture series, related textbook, and interactive discussions and testing services.

This may bode extremely well for the gifted educator/lecturer whose talents are now unappreciated and discounted as an undesirable overhead

expense. This is because they would collect substantial profits from the royalties for the use of their mass-marketed lecture series and from the fees for the related services used by hundreds of undergraduate engineering students each semester. This would supplement their and their institutions' income in the same way that funded research does now giving their individual teaching talent — if not undergraduate engineering education — an increased value relative to research.

The question of how the vacated university classroom infrastructure would be used appears to have an easy answer. Use them for the university's highest priority functions. The university's typical highest priority function is its athletic program. It has the most valued staffer on campus — the football coach — who is compensated at 10 to more than 20 times that of the engineering research professor. It is observed that there are only 10 universities in the U.S. that have a self-sustaining athletic program. The rest are subsidized to an alarming degree by fund-raising efforts and other university resources that ultimately compete with academics for subsidy. Consistent with its highest priority function, the university could in the name of college sports house and subsidize otherwise self-sustaining semiprofessional farm teams for the professional football, baseball and basketball leagues.

Completely relieved of the burdensome undergraduate education role that distracts their research professors, the departments in the colleges of engineering with few or no gifted educators/lecturers can similarly focus all of their resources on their higher priorities while freeing up most of their classroom infrastructure. Research professors can become completely dedicated to research and graduate studies in a not entirely self-sustaining contract engineering research environment.

Some modest space in the university's current undergraduate engineering education classroom infrastructure may be required to accommodate the undergraduate engineering project and laboratory courses that can be effectively taught or monitored by low-paid graduate students or adjunct instructors who are experienced, working engineers. The remainder of the classroom infrastructure can be dedicated to contract research and graduate studies and high priority university functions.

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