LOUISIANA CIVIL ENGINEER

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

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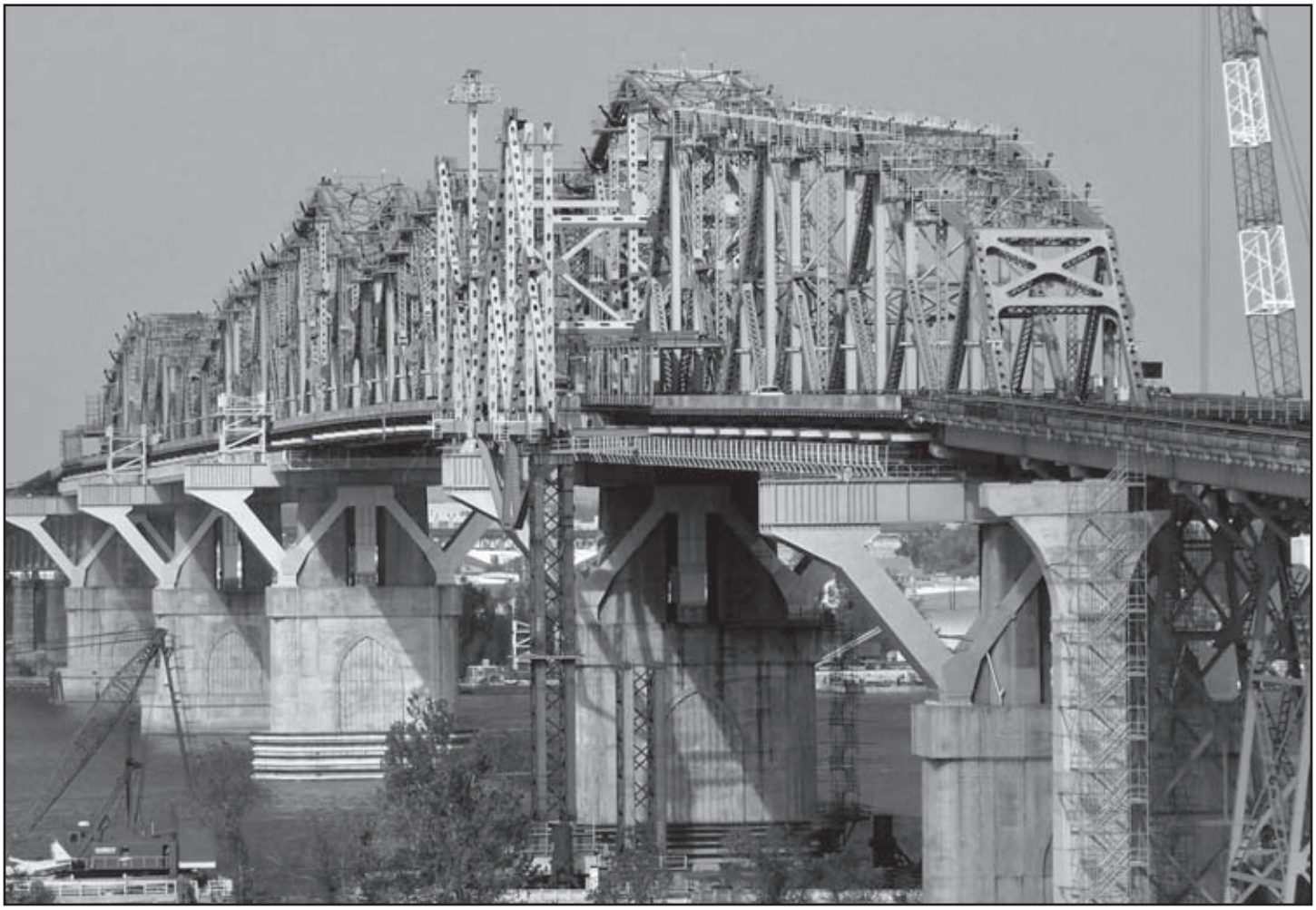

WIDENING OF THE HUEY P. LONG BRIDGE

MAY 2010
VOLUME 18 • NO 3

PROJECT PROFILE:

Cheniere Energy LNG Regasification Platforms

JOHNSON'S BAYOU, LOUISIANA

WASKEY

PROJECT TEAM MEMBERS

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

PROJECT DESCRIPTION

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

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

TECHNICAL DETAILS

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

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

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President's Message

By Christopher P. Knotts, PE

Christopher P. Knotts, PE

I write this message having just returned from the Spring Conference in Shreveport. Shreveport President Daniel Thompson and the rest of the ASCE Spring Conference team must be commended on a well planned and attended event. One of the more interesting non-technical events for me was the Thursday luncheon presentation by Major Harry Dyson of Barksdale Air Force Base. Major Dyson, a B-52 pilot, had the audience captured with his informative, insightful and humorous presentation. One of his statements that stuck with me is when he said that between ICBMs, nuclear submarines and B-52s bombers "the United States is positioned to deliver a nuclear warhead anywhere in the world within 30 minutes or less or the second one is free." I'm assuming this was truth delivered with a blend of humor, but it was one of the most interesting and entertaining lunch talks I've ever attended.

It is hard to believe that we are already at the midpoint of my term as President. While there is a good side to that, I, like all presidents before me, set out with an agenda of items I wanted to accomplish during my term. Some have been completed and for others and the year seems to slip away all too quickly. One major item I wanted to have completed this year was revising the Section's Constitution, Bylaws and Operation Guide. These documents were in desperate need of updating and coordination and Ali Mustapha and E. Ray DesOrmeaux took on this task. It was determined that if we properly revised the Constitution and Bylaws we could eliminate the Operating Guide which was redundant and confusing in many cases. The Board accepted the elimination of the Operating Guide and the drafts were provided the Section Board for review in February. The Board of Directors will discuss and hopefully vote on our revised Constitution and Bylaws at our June meeting. They will then be submitted for membership approval. Acadiana and Baton Rouge Branches revised their Bylaws and have submitted them to the Section for review. They were discussed in Shreveport and pending minor revisions will be approved in June. Revision of the Section's Constitution and the Branches' Bylaws will remove all inconsistencies and clearly define how the Section and its subsidiaries should function.

During the Friday luncheon, the Section Board conducted its Annual General Membership meeting. Secretary-Treasurer Nixon presented the financial report to the members in attendance. I am pleased to say that the Section remains in a very stable financial position. As you may expect, we are very conservative with our funds, which consist mainly of a portion of our dues. We are in the process of consolidating our financial business into one bank that has offices located in the principle cities of each Branch. This effort should be completed by the end of the year. Also, Past President Mustapha presented the Nominating Committee report for the upcoming year's Board of Directors. The slate of officers for next year will be President, Patrick Landry, President-Elect, Ronald Schumann, Vice President, Kurt Nixon, Secretary Treasurer, Robert Jacobsen, and I will move to Past President. As Ali Mustapha joked during the meeting, the envious position is Past Past President. Congratulations to all the members of the 2010-2011 Section Board of Directors! They take office on October 1, 2010. The officer's installation meeting will take place in Lafayette in September, date and time to be announced later. Please look for the meeting details and plan to attend if possible.

The Louisiana Section is on the cusp of initiating the effort to prepare an ASCE Louisiana Report Card. ASCE has prepared a national report card for years and that document is utilized by many to focus attention to the condition of our infrastructure. Active discussions of preparing a report card started at our February Board meeting after Patrick Landry attended the Region 5 Leadership Conference. He has decided to make completion of the report card one of his major agenda items for next year. We will be discussing the Report Card Committee structure at our June meeting. It is imperative that we structure our efforts wisely and efficiently otherwise we risk not completing this very ambitious task. The potential report card topics include roads, bridges, water, wastewater and levees. If you have an interest in one of these areas or would like to work on one not listed, please contact me or one of the other Section Board members and we will put you to work.

In closing, the Section Board is working hard to improve the Civil Engineering landscape in Louisiana. We need your continued support and direction to insure that we are doing the will of the membership. Please don't hesitate to contact a Board member if we can assist you in any way. I hope everyone has a safe and enjoyable summer.

2010-2011 Section Officers Elected

The following is a list of the 2010-2011 Louisiana Section Board who were elected at the General Membership Meeting in Shreveport on April 16, 2010 in conjunction with the Spring Conference. They will take office on October 1, 2010.

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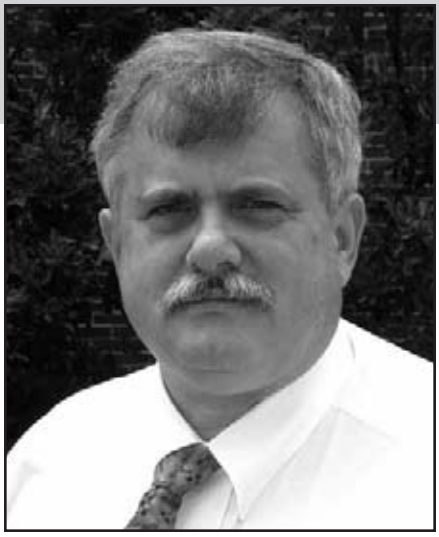
Section Leaders at Spring Conference (left to right): Chris Sanchez, Chris Knotts, Ali Mustapha, Nedra Davis, Patrick Landry, Ronnie Schumann, and Chris Humphreys

Widening of the Huey P. Long Bridge

By Bruce E. Peterson, PE



Bruce E. Peterson, PE

DESIGN OF MAIN BRIDGE WIDENING

History

Prior to the construction of the Huey P. Long Bridge, rail and highway traffic crossing the lower-most section of the Mississippi River used ferries to move goods and people from one side of the river to the other (Figure 1). The use of ferries as river crossings limited the volume of traffic that could cross the river and could be dangerous during times of bad weather and river conditions.

Figure 1 – Sunset Limited On Rail Ferry

As early as 1892 there were proposals to construct a railroad bridge in the lower section of the Mississippi River near New Orleans, Louisiana. The proposals consisted of various types of cantilever truss spans and one proposal by J. A. L. Waddell suggested the use of dual bascule truss movable spans. In 1924, the New Orleans Public Belt Railroad (NOPBRR) engaged Mr. Ralph Modjeski to develop plans and specifications for the river crossing. The initial submission to the War Department for a low level crossing was rejected. However, the subsequent design which was accepted, called for the construction of a cantilever truss with a 790 foot wide main span and a waterway clearance of 135 feet. When completed in December of 1935, the bridge was the longest railroad bridge in the world (from abutment to abutment) providing two railroad tracks and two roadways crossing the river. The roadways were 18 feet wide gutter to gutter and cantilevered off the sides of the main bridge and approaches. Each roadway provided two 9 foot wide travel lanes in each direction (Figures 2 & 3).

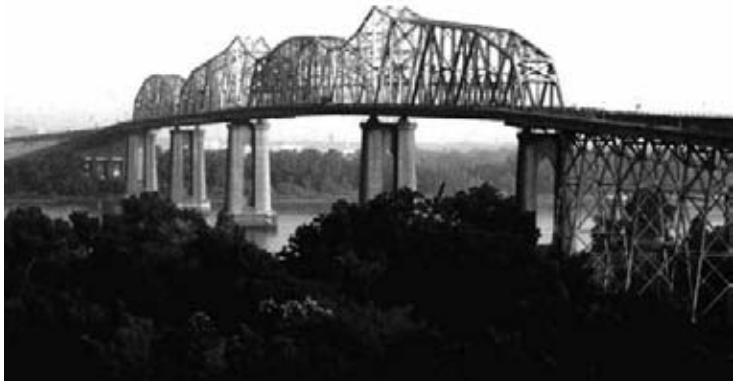


Figure 2 – Elevation Existing Huey P. Long Bridge

Figure 3 – Section Existing Huey P. Long Bridge

Since the bridge's construction in the 30's, traffic volumes have significantly increased and the motoring public no longer considers 9 foot wide traffic lanes to be acceptable. With the need to improve traffic capacity, traffic efficiency, and safety of the crossing, the Louisiana Department of Transportation and Development (LADOTD) began investigating options that were available to improve the existing crossing.

In 1982 a study for a new bridge located in the general area of the existing one was performed. Five alternates were considered, but unfortunately the high cost of a new bridge and the large amount of right-of-way that would be required made the project prohibitive and consequently consideration of a new crossing was eliminated.

The LADOTD authorized Modjeski and Masters, Inc. in 1986 to perform conceptual studies of widening alternatives for the existing bridge. The LADOTD wanted to investigate widening the existing bridge in lieu of constructing a new river crossing as this would reduce the environmental impacts, reduce the property takings, reduce the construction costs, and would reuse existing right-of-way and traffic corridors. Three different alternatives were investigated. Parallel truss widening was chosen as the most desirable alternative (Figure 4).

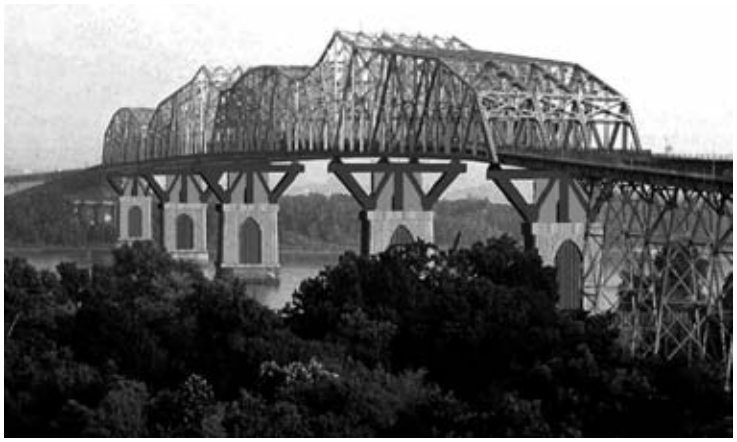


Figure 4 – Elevation Proposed Widened Huey P. Long Bridge

In 1990 a geotechnical investigation indicated that the soils under the caissons could support the increased loads that would result from the proposed widening. With this finding preliminary work could begin on the widened crossing. From 1992 to 1996 several important pieces of initial work were performed. A preliminary design of the main bridge widening based on a 40 foot wide roadway was completed. Line and grade investigations of several roadway approach alternates were performed and a fatigue evaluation of the existing main bridge and floor system was done. Finally in 1999 and 2000 initial environmental work was completed and the first of two public meetings was held.

After the initial work and public comment, the LADOTD decided that the roadway width on the main bridge needed to be increased from 40 to 43 feet in order to provide a shoulder for disabled vehicles on the main bridge portion of the crossing. The final lane configuration on the main bridge would consist of a 2 foot wide left shoulder, three 11 foot wide traffic lanes, and an 8 foot wide right shoulder. The approaches would be wider, providing 12 foot wide traffic lanes as well as increased widths for the left and right shoulders. While increasing the main bridge roadway width, the LADOTD eliminated from further consideration the longer and more elaborate approach alternatives on the east bank side of the river due to project costs.

Project Funding

The Huey P. Long Bridge is unique in that it is owned by the New Orleans Public Belt Railroad (NOPBRR). The State of Louisiana participated in the construction of the original bridge by providing for the additional costs to add roadways to the span. Consequently the NOPBRR and the Louisiana Department of Transportation and Development (LADOTD) jointly maintain the bridge. Funding for the widening comes from the TIMED (Transportation Infrastructure Model for Economic Development) Program, a $3.8 billion program designed to enhance economic development in Louisiana through an investment in transportation projects. The program is funded through voter approved taxes on gasoline.

Initially the project was managed by the LADOTD, however in late 2004 project control was transferred from the LADOTD to Louisiana TIMED Managers (LTM) a joint venture of several consulting engineering firms. Louisiana TIMED Managers serves as an extension of the Louisiana Department of Transportation & Development. LTM is under contract to the LADOTD to manage the TIMED Program in order to accelerate the completion of these projects. In addition to handling financial administration, LTM also performs project management, public outreach, right-of-way acquisition, utility construction, design consulting, and construction oversight on some of the projects.

DESIGN OF MAIN BRIDGE WIDENING

Existing Conditions

Both the main bridge and approaches are inspected annually. The bridge is well maintained by the owners and consequently there is no known section loss. The sub-floorbeams under the roadway deck have developed fatigue problems in recent years due to the structure's age, heavily loaded trucks, and a structural detail that is not permitted today, but was acceptable when the bridge was constructed. As the existing deck will be removed as part of the widening, this current problem will be eliminated at the end of the project.

A remaining fatigue life evaluation was performed on the existing main bridge superstructure and highway floor system in order to determine the remaining service life of the various components of the bridge. The results of this analysis determined the remaining safe fatigue life under present loads to be:

Trusses = 66 years
Floorbeams: End = 18 years
Interior = 76 years

Analysis of the widened bridge structure determined that nearly all of the existing truss members will support less total live load and impact forces and will have a smaller fatigue stress range than provided in the original design. As a result of these findings and in recognition of the 95% confidence level inherent in the safe fatigue life computation, the yearly inspections of the bridge, the lack of any current distress in the structure, and the internal redundancy of the truss members, it has been concluded that these existing truss members will behave satisfactorily for fatigue into the foreseeable future.

As the existing main bridge piers are utilized as part of the widening it was important to determine if they had adequate capacity to support the widening loads. The 1930 specifications for the existing concrete only required that the pier and caisson concrete have a minimum 28 day compressive strength of 2,000 psi. A review of the construction records found that the test cylinders had significantly higher compressive strengths than the minimum requirements and had good consistency among the tests. The ultimate compressive strength of portland cement concrete continues to improve after 28 days. There are several accepted methods of estimating concrete strengths beyond this time. The results of this work determined

that there was a high degree of confidence that the existing concrete strengths were in the range of 3800 – 4000 psi.

Finally, in April 2006 an underwater acoustic inspection of the 4 main river piers was performed. This inspection was made to verify that the existing piers were still in the same condition as when they were constructed and that there were no unknown conditions that might require rehabilitation prior to their widening. The inspection provided high resolution acoustic images of the piers and determined that there were no problems.

Design Criteria Main Bridge Superstructure

The design of bridges in the United States and the requirements these designs must meet are currently addressed by two sets of codes and specifications. Railroad bridges are governed by the American Railway Engineering and Maintenance of Way Association (AREMA). The two principal sections that govern bridge design are Chapters 8 and 15, reinforced concrete and steel bridges respectively of the AREMA manual. Highway bridges are governed by the American Association of State Highway and Transportation Officials (AASHTO).

As the AREMA and AASHTO codes do not necessarily govern for a bridge span as long as the Huey P. Long Bridge, the designer has the option of using these codes or to develop a separate code. However, for this structure there was an additional item to be considered; neither code provides any guidance nor requirements for a combined railway and highway structure. For the widening of this bridge, a conservative approach was developed for the design of the widening. The AREMA and AASHTO codes would be combined and applied as follows:

- Structural members supporting highway loads only, would be designed per the AASHTO code.
- Structural members supporting railroad loads only, would be designed per the AREMA code.
- Structural members supporting both highway and railroad loads would be designed based on both codes, using the more conservative, governing one, except for the application of the fatigue requirements to the existing trusses.

Using this very conservative approach, all members would be adequately designed and detailed.

The Service Load Design Method was used to design the main trusses and floorbeams. Chapter 15 of the AREMA code, which governs the design of steel bridges, does not provide Load Factor Design or LRFD Design; only the service load method is supported. As the AASHTO code provides a wider range of service load loading groups, the loading groups to be used to develop the design loads for the widened bridge were based on these AASHTO service load groups. These loading groups were modified to include railroad live loads with impact and wind on railroad live load, as described in the AREMA code. In addition, three additional loading groups were added to provide for hurricane wind loading and erection loading cases.

The allowable stresses for materials based on service load design are generally the same for both codes. Allowable stress ranges for fatigue are also similar. All new widening truss members were designed to meet this "modified" and conservative criteria. In addition, all existing truss members had their existing section properties re-evaluated, except for fatigue, using the same criteria.

The members of the new widening truss were designed to meet the most stringent fatigue requirements of either the AREMA or AASHTO codes. The existing truss members were not held to these same requirements since they were not originally designed to meet "modern" fatigue requirements.

The final problem to be considered in the development of the design criteria was the distribution of wind loads on the four truss planes making up the final widened bridge. The AREMA and AASHTO codes apply transverse wind differently, but the resulting total force on the bridge is nearly equal. Since the AASHTO code was used as the basic framework to develop the loading groups, the AASHTO wind load application model was used. The AASHTO distribution of wind loading was modified for multiple truss planes as follows:

Windward Truss	#1	= 1.0	75.00 psf
Leeward Truss	#2	= 0.5	37.50 psf
Leeward Truss	#3	= 0.5	37.50 psf
Leeward Truss	#4	= 0.25	18.75 psf

Since the final widened structure contains numerous structural members, the adoption of this wind loading distribution for the bridge widening design criteria recognized the wind shielding effect of each truss onto its adjacent leeward one without being as conservative as one that might be developed using the AREMA wind loading distribution model.

Design Criteria Main Bridge Substructure

The design of the widening trusses is based on service load design. One of the principal reasons is that service load design is the only method in common between the AASHTO and AREMA codes with respect to the design of steel structures.

Initially it was planned that the service load design (SLD) method would also be used for the design of the substructure widening. Load factor design (LFD) is advantageous for long span bridges because of the large amount of dead load that must be supported. Railroad bridges and their large live loads normally do not benefit from the use of LFD, however it was felt that the additional dead loads from the widened roadway deck and widening truss might be sufficient to result in LFD being advantageous in the design of the widened substructure even with the large railroad live loads. A review and comparison of the results from each method concluded

that the use of LFD would be beneficial for the design of the main bridge substructure (Figure 5).

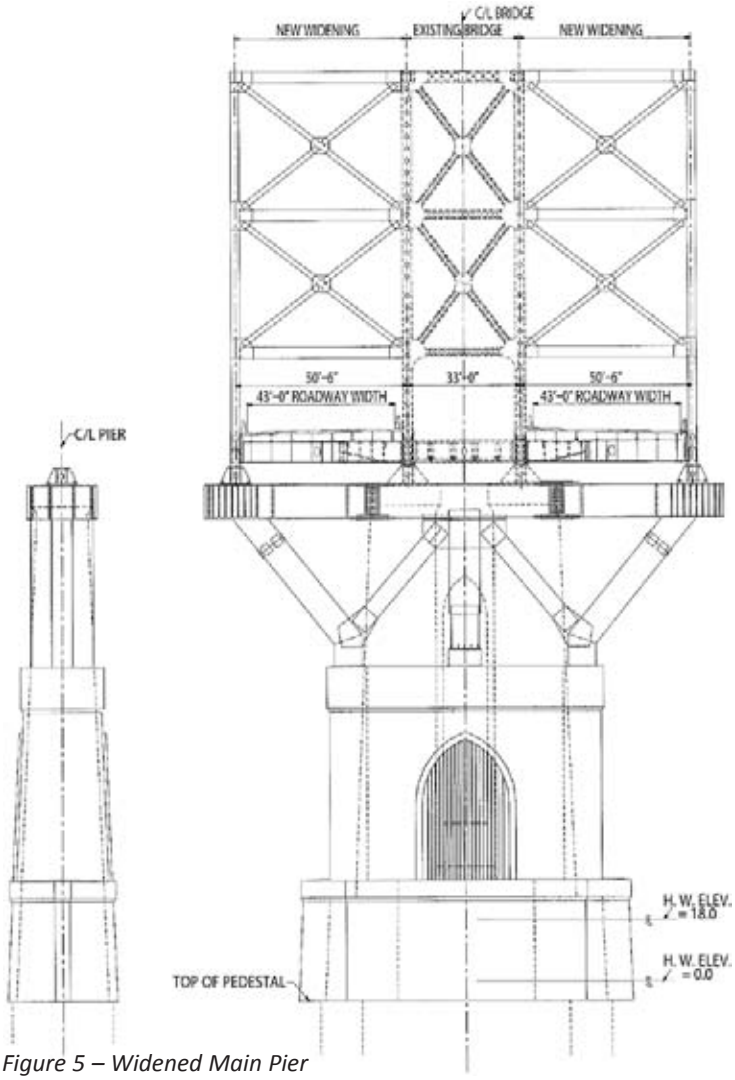


Figure 5 – Widened Main Pier

It should be noted that the lane reduction factors were applied differently for the development of the substructure widening design loads than for the development of the superstructure widening design loads. The superstructure has two 3 lane roadways separated by the railroad. For the development of the superstructure widening design loads, the roadways were treated independently when applying the AASHTO lane reduction factors. Thus the maximum reduction that was applied was only 0.9 even when all 6 lanes were loaded. Applying the factor this way is conservative and was done to reflect the arrangement of the roadways to the four truss planes and the limited amount of redistribution that occurs between these truss planes. The substructure is different. All of the highway live loads, regardless of which roadway or truss planes support the load, eventually are supported by the substructure. Consequently the application of a lane reduction factor of 0.75 for four or more lanes of highway traffic could be applied. It should be noted that as railroad live loads are significantly larger than highway loads, the application of the AASHTO 0.75 lane reduction factor to the highway loads has a relatively small effect on the final loads applied to the piers.

Main Bridge Superstructure Design Challenges

The combined widened structure is a four plane truss system with live load supported on floor systems between each truss plane. The final widened bridge is a complex 3-dimensional structure in which the development of the final dead and live loads in each member is not as simple as is normally calculated for a two plane truss system. The dead loads are distributed based on the sequence of construction and the fixity condition of the connections at the ends of the transverse members (sway frames, portals, floorbeam extensions) during the widening construction. The connections at the ends of the transverse members are detailed to permit the ends to articulate and rotate such that only the dead load reaction from the transverse members is supported by the existing truss. The transverse members must articulate and rotate so no deflection induced loads are imposed into the existing trusses.

The distribution of live load is more complex. Once the widened structure is integrated, the transverse members can no longer articulate and rotate and the distribution of live load is dependent on the stiffness of the sway frames, portals, and floor system. In order to develop the live loads in the truss members, an approximate method was used.

There were significant deflection related issues that had to be solved in the final design phase of the project. One of the deflection problems occurs during the erection of the widening truss. The widening truss is cambered for its final dead load plus changes in the geometry of the existing trusses due to widening dead loads that it will support. During erection the widening truss' joint geometry will not match the adjacent existing truss and will not line up with the existing truss joints until all dead load has been erected. This difference in elevation would have to be accommodated. In addition to the camber, the widening trusses were anticipated in the contract plans to be erected using the traditional methods normally used for the erection of this type of bridge. This would require falsework and cantilevering the main span from each of the main piers meeting over the center of the navigational channel. Erecting in this manner results in significant differences in vertical elevation between the widening trusses and existing trusses. These elevation differences will reduce as construction progresses, however the widening truss must be able to vertically deflect freely otherwise additional loads will be imposed into the existing trusses. This problem was resolved through the articulation of the ends of transverse members and by surcharging the widening trusses in order to minimize the difference in elevation between the existing and widening truss joints.

One of the requirements of the project was that the bridge must remain open to both rail and highway traffic during the main bridge widening construction. Maintaining rail traffic during the widening construction is not a significant problem as there is very little required work to be performed between the existing trusses where the rail tracks are located. However, the highway traffic can be

significantly affected during the widening construction. The problem was solved by utilizing the existing highway bracket as part of the widening floorbeam, which consequently did not have to be removed, and thus minimized highway traffic impacts.

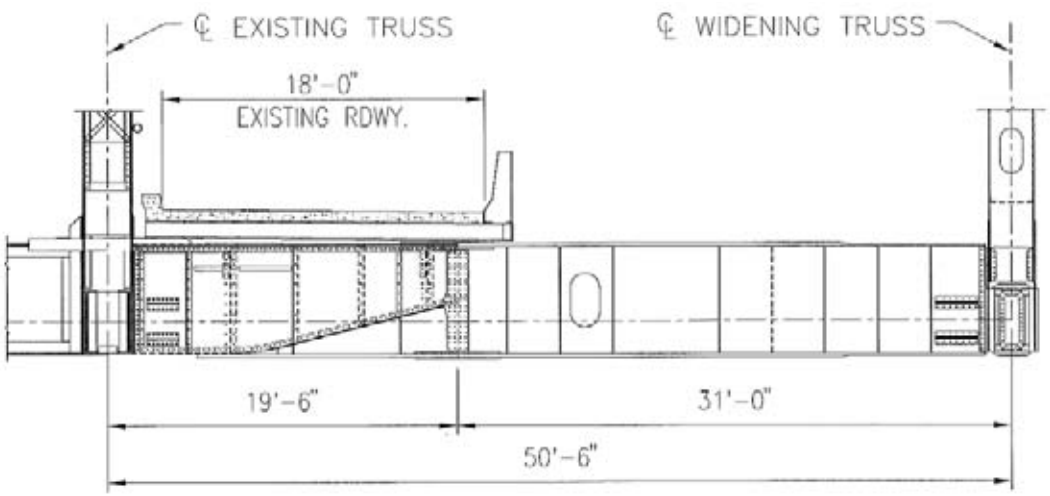


Figure 6 – Floorbeam Bracket Widening

By incorporating the existing floorbeam bracket into the widened floorbeam (Figure 6), two active traffic lanes could remain on both sides of the bridge during most of the widening construction work. There would be some time periods in which traffic would be reduced to one lane, but this would be a relatively short period of time during the construction.

DESIGN OF APPROACHES

Introduction

There are two approaches to the widened main span, the ones on the west bank side of the river and those on the east bank side. The West Bank Approach extends from the LA 18 - U.S. 90 Intersection to the west bank end of the main bridge. Beginning as a separated at-grade roadway, the west bank and east bank bound portions of the highway approach straddles and parallels the existing elevated railroad approach. Prior to Bridge City Ave. the main line portion of the approach is elevated on structure and passes over Bridge City Ave. The existing traffic circle at Bridge City Ave. will be replaced with a conventional interchange with ramps providing access to and from Bridge City Ave. with the bridge approaches as well as U.S. 90 toward Avondale. As the elevated approach spans approach the main bridge they get closer to the railroad spans in order to connect with the roadway supported by the widened truss. The elevated approaches consist of Type III, IV, BT, HPC-BT, and steel spans supported on reinforced concrete bents supported by foundations founded on steel H piles. The elevated spans are terminated at the ground using pile supported approach slabs and slab spans supported on pile bents concealed behind curtain walls.

The East Bank Approach extends from the east bank end of the main bridge to Clearview Parkway near Mounes Ave.. Beginning at the main bridge the highway approach straddles and parallels the existing elevated railroad trestle on elevated structure until it reaches the ground as an at-grade roadway. The existing non-conventional interchange at Jefferson Highway will be modified to a conventional interchange. This will require the removal of the existing Jefferson Highway overpass. Ramp access to and from the at-grade Jefferson Highway interchange will be provided. The mainline traffic will be carried over Jefferson Highway down to Clearview Parkway. The elevated approaches consist of Type III, IV, BT, HPC-BT, and steel spans supported on reinforced concrete bents supported by foundations founded on steel H piles. The elevated spans are terminated at the ground using pile supported approach slabs and slab spans supported on pile bents concealed behind curtain walls.

Structure Design

As noted above the approaches consist of several different types of structural systems common to the region. Lower elevation spans consist of reinforced concrete slab spans supported on pile bents concealed behind curtain walls.

Prestressed concrete girder spans make up most of the elevated portions of the approaches. Type III, IV, BT, and HPC-BT are used. For this region prestressed concrete girder spans are the most economical. They are inexpensive to build and maintain. The climate does not require winter salting to remove ice and consequently all concrete structures provide long life spans without significant maintenance costs.

The higher elevation and longer span portions of the approaches will be constructed of continuous steel girder spans. The west bank approach has a continuous steel girder 5-span unit consisting of a horizontally curved portion and a straight portion. While the radius of the curve is large and the curvature effects are small, the girders were designed as horizontally curved girders. The east bank approach also has a continuous steel girder 5-span unit with curvature, however in this case, the curvatures form an S curve shape (reverse curve) where the approaches are brought in closer to the existing railroad approach in order to connect with the main bridge. Fortunately the curves have extremely large radii and thus, curvature effects for the girders are negligible.

The most challenging problem with these girder spans is that they conflict with the existing roadways. Consequently they must be constructed in stages with a longitudinal deck closure pour between the two halves. During the construction of the approaches, the roadways on 3 of the 5 girders will be constructed, highway traffic will then be shifted from the existing approaches to this portion of

the new approaches, the existing roadways removed, and then the remaining portion of the approaches constructed.

Railroad Modifications

Modifications were required to the railroad approaches on both sides of the river. While the east and west bank bound roadways straddle the railroad during the river crossing, the roadways reconnect and are adjacent to each other on each side of the river. Thus one of the roadways must pass under the railroad approaches. The modifications to the railroad approaches will permit the mainline portion of the roadway to pass under the elevated rail structure and re-join with the opposite portion of the roadway.

On the west bank side of the river, the railroad modifications will require the replacement of an existing steel support tower with two steel cross girder straddle bents. The new cross girders were erected during a railroad closure period in which the existing railroad girders were jacked, the existing steel tower removed, the new cross girders were erected, and the existing railroad girders were placed on top of the cross girders. The design of the cross girders includes a special bearing arrangement as significant longitudinal loads are imparted into the cross girders and typical bearings used for simple spans would not function properly in this situation. The special bearing permits the cross girder to have end rotation and expansion along its axis for temperature, but is rigid for torsional rotation about its axis when resisting the longitudinal loads from the superstructure.

On the east bank side of the river, several steel tower bents were removed and replaced with new support bents and longer steel girder spans for the new roadways to pass underneath. New concrete bents were constructed to support the new steel railroad spans. The new longer steel railroad spans were erected in two railroad closure periods. During each rail closure the girders supporting one of the existing tracks were removed along with a portion of the supporting steel tower. Then the new longer steel girder spans were erected on the new bents and rail traffic was restored for that track. Later, the other track was closed and the process repeated. Once the existing girders were replaced with the longer steel girder spans, the remaining portion of the existing steel towers were removed.

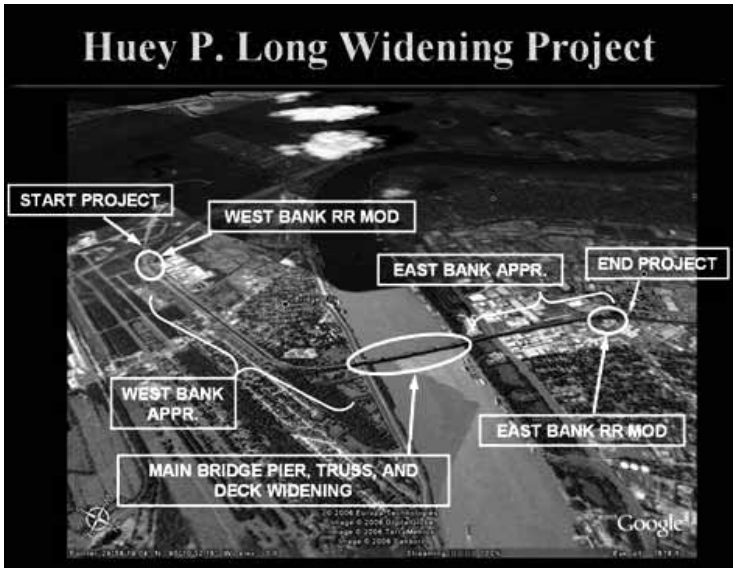


Figure 7 – Limits of Project

CONSTRUCTION

The entire project (Figure 7) was broken into four construction contracts:

- Main Bridge Pier Widening
- Railroad Modifications
- Main Bridge Truss Widening
- West Bank Approach, Main Bridge Deck Widening, and East Bank Approach

Main Bridge Pier Widening

The pier widening contract bid was opened on December 14, 2005. Massman Construction Co. was the successful bidder for the pier widening contract with a bid of $83,114,259.

Site work began with the erection of a materials dock on the east bank batture immediately downstream from the bridge. Pier preparation work began with the removal of the existing fender system and the installation of a work platform on the piers. The contractor's work platform was designed to be vertically adjustable on the pier, thus allowing access to all of the pier shaft faces. The platform was also sufficiently sized in order to permit the use of small tracked equipment which could handle heavier tools and thus provide improved production rates for the required tasks. From the platform, pier shaft preparation work consisting of artificially roughening the existing concrete using hydro-blasting and the installation of steel reinforcing dowels was performed.

Figure 8 – Erection of Pier Cofferdam

With the conclusion of the upper pier shaft preparation work, a cofferdam was erected around the pier (Figure 8) in order to provide dry work environment to construct the lower encasement. The cof-

ferdam extended from the top of the pier's distribution block to above the river's normal range of elevation. Once dewatered, pier surface preparation work and the construction of the reinforced concrete lower encasement was performed. Once completed, the cofferdam was removed and the concrete encasement work continued above the river surface until completed.

Figure 9 – Erection of Diagonal Strut

Concurrent with the pier widening work in the field, fabrication of the steel widening truss supports was also in progress. This steel fabrication work was performed by G&G Steel in Alabama as a subcontractor to Massman Construction. All of the completed metalwork was shipped by barge to the site for erection. Erecting the widening metalwork around the existing pier and bridge superstructure is a challenge that is not normally presented to a contractor (Figure 9). All of the erection went smoothly with few problems.

Railroad Modifications

The railroad modifications contract bid was opened on May 10, 2006. Boh Bros. Construction Co. was the successful bidder with a bid of $13,782,713.

West Bank Modifications

Site work began with the driving of steel H piles for the foundations for the cross girder support bents. The bent columns are reinforced concrete which support a steel box cross girder. Two straddle bents were required to replace the steel tower that had to be removed. The existing steel girder railroad spans remained.

The steel box cross girders were fabricated by G&G Steel in Alabama as a sub-contractor to Boh Bros. Construction. After fabrication the girders were shipped by rail to Avondale, Louisiana where they were off loaded and transported to the site and positioned using mobile transporters.

Figure 10 – Nearly Completed West Bank Railroad Modifications

The existing steel tower was removed and the cross girders erected during a rail closure period of approximately 30 hours (Figure 10). The existing superstructure was jacked off the tower and temporarily supported on falsework during the rail closure period.

East Bank Modifications

Like the west bank railroad modifications, site work began with the driving of steel H piles for the foundations for the three new concrete straddle bents. However, the east bank railroad modifications differ in that two railroad support towers are removed along with existing railroad girder superstructure. These removed structures were replaced with concrete straddle bents and longer steel girder railroad spans.

Like the west bank the straddle bents are used to allow the mainline roadways to reconnect with the existing highways.

The steel girder spans were fabricated by AFCO Steel in Arkansas as a sub-contractor to Boh Bros. Construction. After fabrication the girders were shipped by rail to the site. An assembly yard was established near the construction site where the girders were preassembled into bridge spans, complete with all timber rail ties and walkways.

Unlike the west bank, the steel erection was done during two separate partial rail closures; the east bank bound girders were replaced first and then the west bank bound girders were replaced. During the construction, rail traffic was permitted to operate on the other track during periods of time that were closely coordinated between the contractor and the New Orleans Public Belt Railroad. In this way rail traffic impacts were mitigated along with impacts to the contractor's work. As the longer girders are also deeper, portions

of the existing steel tower had to be removed during the closure. As the removal of portions of the tower would significantly impact the tower's load carrying capacity, the tower was strengthened with additional metalwork prior to the rail closure.

Once the existing spans had been replaced with the newer longer spans, New Orleans Public Belt Railroad personnel reestablished the rails and rail traffic resumed. Approximately a week later the same work was performed on the other track completing the rail modification work on the east bank side of the river (Figure 11).

Figure 11 – Completed East Bank Railroad Modifications

Main Bridge Truss Widening

The main bridge truss widening contract bid was opened on March 28, 2007. MTI, a joint venture of Massman Construction Co., Traylor Brothers, and IHI, Inc., was the successful bidder for the main bridge widening contract with a bid of $452,605,568.

One of the initial site work tasks was to install a truss monitoring system in order to evaluate the forces in the existing truss during erection. Erecting the widening trusses adjacent to the existing bridge has the potential to impose displacement induced loads into the bridge. The purpose of the system is to monitor for this situation so that corrective actions can to taken. The truss monitoring work was performed by CTL Group as a sub-contractor to MTI.

An extensive amount of work is required to be performed on the existing bridge prior to the erection of the widening trusses. This work includes:

- Floorbeam bracket strengthening
- Erection of the "wedge fill" on the floorbeam bracket
- Installation of gusset plate connections for laterals and sway frames
- Strengthening of the existing truss sway frames
- Removal and replacement of the existing sidewalk and barrier rail

In order to facilitate this work, the contractor erected a large work platform under nearly the entire bridge. The only exception was a movable platform which was used in the navigation channel. The location of this platform was coordinated with the U. S. Coast Guard and maritime traffic using the river. This work platform provided a near "shop like" work environment under the bridge greatly facilitating the rehabilitation work that was necessary on the existing highway floorsystem and the bottom chord of the bridge (Figure 12).

Figure 12 – Work Platform Under Bridge

Much of this preparatory work is now complete.

Fabrication of the widening steel metalwork is being done by ISC in their facilities in Gary, Indiana. Widening truss metalwork is currently being fabricated, delivered to the site, and is being erected.

The erection of the main bridge widening trusses will be one of the more spectacular sights during the widening construction. The contract plans provided the details and information to erect the widening trusses in a manner consistent with the traditional methods used to erect cantilever truss bridges including the original bridge. Falsework and cantilever construction is used to erect the trusses, member by member until the structure is completed. As this widening project is unique, the contract plans required that the contractor either select the method shown in the plans, working out the details, or he was permitted to submit his own method of erection. MTI has opted for this later approach hiring HNTB to provide construction engineering for an erection scheme that will erect some portions of the widening trusses in major complete sections. Some portions of the widening trusses (west anchor arm and tower sections over Piers I and II) will be erected in the "traditional manner", one structural member at a time. The remaining portions of the widening trusses (east anchor arm, suspended span, and through truss span) will be pre-assembled on barges and then lifted into place using strand jacks. Temporary steel frames will be used to maintain the stability of the trusses until metalwork can be erected between the existing trusses and the widening trusses. Current plans call for the erection of these sections to take place during a 48 hour river closure. A rendition of the erection of the

suspended span section of the widening truss using this method is shown in Figure 13.

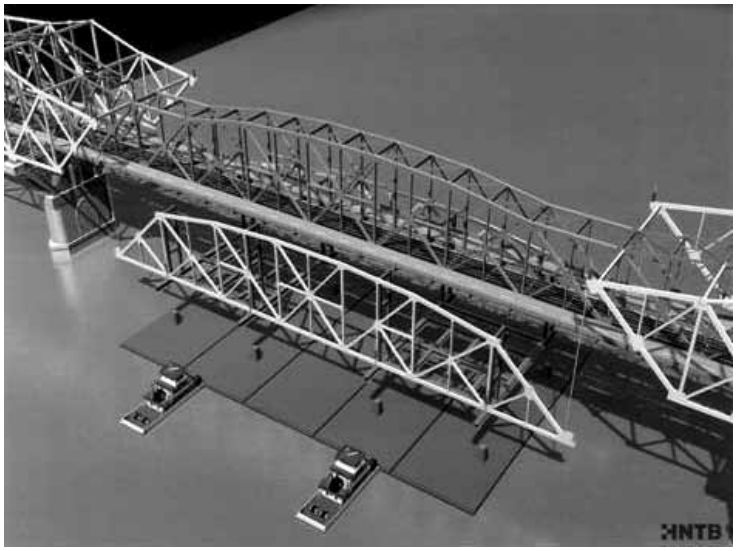


Figure 13 – Contractor's Erection Scheme

West Bank Approach, Main Bridge Deck Widening, and East Bank Approach

The west bank approach, main bridge deck widening, and east bank approach contract bid was opened on March 19, 2008. KMTC, a joint venture of Kiewit, Massman Construction Co., and Traylor Brothers, was the successful bidder for the main bridge widening contract with a bid of $433,950,000.

West Bank Approaches

Site work began on the west bank side of the river with the test pile program. While there are some prestressed concrete piles and timber piles for the lower elevation slab spans and approach slabs, the majority of the foundation piles are steel H piles.

At-grade roadways, drainage structures, and intersection changes proceeded concurrently with the construction of new elevated approaches. The lower elevation approaches consist of Type III and IV prestressed girder spans supported on reinforced concrete substructures. As the elevation of the structures increase as the approaches near the main river span, prestressed Type BT and HPC BT girder spans are used. The final section of the approaches consist of 5 span continuous steel girders. As portions of the new approaches conflict with the existing roadways, portions of the BT girder spans and the steel girder spans will have to be constructed in stages. At the end of the main bridge widening, traffic will be shifted to a portion of the new deck as well as the erected portions of the approaches. This is necessary so that the existing deck and approaches can be removed and the remaining portions of the new bridge deck and approaches can be constructed.

Most of the west bank approach from the west bank traffic circle at Bridge City Ave. to the river has been constructed as well as at grade roadway from Bridge City Ave. to LA 18.

East Bank Approaches

The east bank approaches are similar in construction to the west bank approaches. Most of the elevated structures are Type III & IV prestressed girder superstructures supported on reinforced concrete substructures and steel H pile foundations. As the elevation of the approaches increase Type BT prestressed girder spans and continuous steel girder spans are used at the connection to the main bridge.

Much of the work on the east approaches has not been started. The test pile program has been completed. Pier IVA, a large river pier used to support one of the bearings for the continuous steel girder spans is under construction. This pier is supported on 10 9 feet diameter drilled shafts. The shafts have been constructed and lower foundation work is progressing, but work has been delayed due to high water conditions in the river.

The remaining work for the east bank approaches will begin soon.

SUMMARY

The widening of the Huey P. Long Bridge has presented many unique and interesting design challenges that are not normally encountered in typical bridge design and rehabilitation projects. These challenges have been met and practical, workable solutions developed to meet the needs of the client, the owner, and the bridge users.

As of the writing of this paper, the Main Bridge Pier Widening and Railroad Modification Contracts are complete. The Main Bridge Truss Widening and the West Bank Approach, Main Bridge Deck Widening, East Bank Approach contracts are currently underway. The entire widening project is currently expected to be completed in the second half of 2013.

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4. *HNTB*

Bruce E. Peterson, PE is a Project Manager with the New Orleans, Louisiana office of Modjeski and Masters, Inc. Mr. Peterson is a graduate of The Pennsylvania State University with BS & MS degrees in civil engineering and has worked at Modjeski and Masters for 33 years. During his career he has worked on nearly all types of bridges, both fixed and movable. A large number of the projects he has worked on in recent years have been rehabilitation related projects where an existing infrastructure can be maintained and its service life extended. He was the Editor for the ASCE Journal of Bridge Engineering, 2003 – 2009 after serving as an Associate Editor since the Journal's founding in 1995.

2010 Legislative Fly-In Attended by ASCE Leaders

By Patrick Landry, PE

Patrick Landry, PE

"Infrastructure Investment = Jobs" was the theme for the 11th annual Legislative Fly-In held in Washington, D.C. on March 23-25, 2010. Approximately 200 ASCE members from 48 states arrived in our nation's capital to lobby the 111th Congress for passage of specific legislation that would address the country's declining infrastructure crisis and increase employment opportunities. Currently, the overall national unemployment rate hovers around 10% while the jobless rate in the construction field is at a staggering 27%.

Four ASCE members represented Louisiana at the Fly-In and had the opportunity to visit with Representative Charles Boustany, whose 7th District encompasses the southwest portion of the state. Other meetings included visits with the congressional staffs of Senators David Vitter and Mary Landrieu and Representative Steve Scalise. In attendance were: Dr. Norma Jean Mattei, PE, Dr. Kam Movassaghi, PE, Mr. Bo Bolourchi, PE, and Mr. Patrick Landry, PE. All of the delegates at the conference spent parts of Tuesday, March 23, and Wednesday, March 24, in training with ASCE's Washington, D.C. staff learning about and discussing four pieces of infrastructure legislation currently being debated in Congress.

The 111th Congress has already passed the American and Recovery and Reinvestment Act which provides nearly $100 billion for infrastructure needs but is just a fraction of the funds necessary. It is estimated that an investment of $2.2 trillion will be needed over the next five years to improve conditions. ASCE supports passage of four pieces of legislation that will help address our infrastructure needs and increase employment.

Louisiana delegation visits Congressman Charles Boustany (R-La.) in his Washington office during the Legislative Fly-in. From left: Norma Jean Mattei, Bo Bolourchi, Charles Boustany, Patrick Landry, and Kam Movassaghi

The four pieces of legislation are:

1. FAA Reauthorization (H.R. 915)

The federal law that funds the Federal Aviation Administration programs expired in September, 2007, and the program has operated under a series of short term extensions. ASCE supports an appropriate increase to the aviation user fee to meet a level of investment of $49.7 billion over five years.

2. Surface Transportation Authorization

ASCE strongly supports the timely enactment of a multi-year surface transportation bill. The current surface transportation bill will expire at the end of this year and ASCE is asking for a six year reauthorization bill. The House Transportation and Infrastructure Committee have developed a $500 billion authorization measure which would provide approximately $450 billion for highway and transit programs. The bill is currently being discussed in the Senate. ASCE would support a 25 cent increase in user fees.

3. Dam Rehabilitation and Repair Act (H.R. 1770/S. 732)

The act is a bipartisan bill which would provide $200 million over five years for the repair, rehabilitation or removal of publicly owned dams. The fund would establish a program within FEMA to fund dam rehabilitation and repairs. There are 90,000 dams nationwide with 15,000 of those determined to be high hazard dams (loss of life if there is dam failure). In Louisiana, there are 554 dams, with 31 considered high hazard dams.

4. Water Infrastructure Financing Act (S. 1005)

The bill would authorize $20 billion over five years for the Clean Water State Revolving Fund program, which provides low interest loans and subsidies to communities to improve wastewater infrastructure. It would also add roughly $15 billion to the Safe Water Drinking Program. The bill was approved by the House last year but is awaiting approval from the full Senate.

Overall, the Louisiana delegation we visited with supports these pieces of legislation and is encouraged that passage of at least a portion of these bills is possible. The Fly-In is an excellent opportunity for ASCE and Section leaders to develop relationships with our elected members of Congress and the Louisiana Section will continue to support this worthwhile program.

Design-Build in Louisiana-A Different Process for the Delivery of Public Works Projects

Editorial By Deborah Ducote Keller, PE

Deborah Ducote Keller, PE

Design-Build (DB) is an alternative process for government entities to seek competitive proposals for public works projects. It is also known as the Design/Construct and Single-Source Responsibility. In Louisiana, design professionals and contractors are more familiar with the long-standing traditional design-bid-build process in which the owner first contracts for design services and then publicly invites bidders to submit prices based on contract documents that contain sufficient design drawings and technical specifications for a prudent bidder to offer a price. The owner then enters a separate, second contract for construction.

The Design-Build Institute says that over the past 15 years, DB has become "one of the most significant trends in design and construction today."

While Louisiana's law under R.S. 38:2211-2296 has governed the public works process for most of our careers and there is an abundance of case law for guidance, DB is the new kid on the block for those seeking work under its rules. A recent Department of Transportation and Development (DOTD) presentation summed it up succinctly, "Design-Build is a 'different way' of doing business, and there are 'different ways' to do Design-Build Business."

DOTD was the first state entity approved to use DB in 1998. The legislation was twice amended. The John James Audubon Bridge is a DOTD project authorized by the legislature as a DB project in 2004 and construction will be complete within a year. In 2008 the law was expanded to include additional DB projects, if requested by DOTD and approved by the legislature. The fifth DOTD DB contract was executed in January 2010, but it took a court ruling to confirm the winner of the $60 million I-10 widening project.

My recent experience indicates that DB is uncharted territory for many civil engineers in both the design and the construction segments, so I offer this article about another legislative act that allows DB for public entities in areas damaged by Hurricanes Katrina or Rita. It is applicable only for the construction or repair of a public building or structure destroyed or damaged and under the jurisdiction of the Division of Administration, Recovery School District, City of New Orleans, and the parishes of Calcasieu, Cameron, Jefferson, Orleans, St. Bernard, St. Tammany, Vermillion, and the Board of Commissioners Port of New Orleans. Read statute La. R.S. 38:2225.2.1 for complete details that went into effect July 10, 2007, was extended for contracts executed before July 10, 2010, and has now been extended for one more year.

The Board of Commissioners Port of New Orleans adopted a DB ordinance of its own in 2009 as provided for under La. R.S. 38:2225.2.1. The Port's DB Ordinance mirrors the procedures promulgated by the Division of Administration Office of Facility Planning and Control. The first Port DB project was the Riverfront Cold Storage Facility Project at the Henry Clay Avenue Terminal, a project to re-build a warehouse that was damaged by Hurricane Katrina.

Both the state law and the subsequent procedures written by the Office of Facility Planning and Control were very specific. I had three main concerns as the Port staff issued the DB Request for Qualifications and Proposals (RFQ and RFP):

1. That the DB documents strictly adhered to both the letter and spirit of the law. Without any case law for this particular legislation to provide guidance, it was paramount that we not take liberties that could subject the result to unnecessary appeals and thus delay the project.

2. That the process was transparent such that everything we published was available on the project's website and easily accessible to any interested party. There was only one official source of information. All questions were to be emailed to a specific person and all questions and answers would be posted to the project website so that all parties knew the same information at the same time. In addition, all submittals from DB applicants and all documents issued by the Port were readily available in bound copies for inspection at the Port office upon request.

3. That the process was pure, for lack of a better word. By this I mean that the evaluation committee members were experts in their field, they possessed the highest level of integrity with no conflict of interest, and they strictly followed the evaluation rules. The time allowed for DB applicants to prepare their qualifications and proposals, as well as the time allowed for the evaluation committee to score them was fair and reasonable.

The Port received 21 Statements of Qualifications after issuance of the RFQ; issued three RFPs; and received two very competitive proposals from highly qualified DB applicants. The technical scores of the final DB applicants were very close, which should be expected at the final stage. The final Adjusted Score was the sum of the Proposal Price plus the Contract Time Value divided by the Technical Score. The Contract Time Value was the product of the Proposal Time in calendar days and the dollar value-per-calendar

day stated in advance by the Port. The lowest Adjusted Score was the winner.

Each DB applicant that submitted a proposal was able to review the competition's proposal. There were no appeals to the decision. The project was awarded within 90 days after receiving the proposals.

Having gone through the DB process firsthand, I would gladly do it again. Adhering to the three concerns expressed earlier is a matter of professional ethics to me, as it should be to any licensed professional engineer.

Two frequent questions I encountered during the process were: "I'm a licensed surveyor, so can I be the DB applicant?" (No.) and "How is this different from a routine RFQ/RFP for professional services?" (Because a single DB entity signs one contract for total design and total construction of the project.)

This indicated to me that at the very least, civil engineers, whether in design, surveying, or the construction segment of our profession, need to become familiar with the federal DB process, as well as the various statutes under which DB is allowed in Louisiana before they compete.

When we embarked on DB for the first time, I was asked if DB would be faster and cheaper than design-bid-build. My opinion now is the same as it was then. DB is about value. It may not be faster. I may not be cheaper. However, in this instance, it did result in both faster and cheaper than what was estimated.

DB reminds me of an earlier time in history when the engineering design and the construction were one process. I am very aware that there is much debate in our state regarding the merits of each process and which direction Louisiana's public works projects should use. I'll leave that to others. Look for my follow-up article in 2011 when the Port's first DB project is completed.

Louisiana Section Spring Conference

The annual Louisiana Section Spring Conference was held in Shreveport on April 15-16, 2010 at the Clarion Hotel. Over 60 civil engineers from across the state participated in the day and a half event which featured excellent speakers discussing a wide variety of topics. Dual concurrent technical sessions afforded conference attendees the opportunity to earn up to 11 professional development hours. Thursday's luncheon keynote speaker, Major Harry Dyson from Barksdale Air Force Base gave an enlightening and informative discussion on the importance of the air base and the B-52 bombers that are housed there.

Thursday night's banquet featured the presentation of the Life Member Award honorees. Sixteen Louisiana ASCE members qualified for the honor this year. They include: Mr. Pressley Campbell, PE, Mr. William Mead, PE, Mr. Charles Eustis, PE, Mr. Engin Egeseli, PE, Mr. Om Dixit, PE, Mr. Larry Jones, PE, Mr. Barry Bleichner, PE, Mr. Nolan Robichaux, PE, Mr. William Monroe, PE, Mr. Patrick Pickens, PE, Mr. Donald Harrison, PE, Mr. Larry Busch, PE, Mr. Jerry Au, PE, Mr. David Wagner, PE, Mr. William Cromartie, PE and Mr. Antoine Malek, PE.

Five of the Life Members (or their families) were present at the banquet to receive their plaques from Section President, Christopher Knotts and their pictures are shown below.
Friday's noon luncheon also served as the annual General Membership Meeting and the 2010-2011 Section Officers and Board of Directors were nominated and elected.

The Louisiana Section thanks the following exhibitors for participating in this year's Spring Conference: Ardaman & Associates, Contech Construction Products, East Jordan Iron Works, Helical Concepts, Industrial Fabrics, Johnson Equipment Company, and Terracon Consultants.

Special thanks and appreciation are also extended to Shreveport Branch President, Daniel Thompson, and his volunteer committee for the all of their hard work and effort in putting together a successful event.

Larry Jones, PE

Nolan Robichaux, PE

Jerry Au, PE

Charles Eustis, PE

Family of Donald Harrison, PE

Interstate 49 – A Historical Perspective

By Kam Movassaghi, PhD, PE

Kam Movassaghi, PhD, PE

THE BEGINNING

In 2006, the American Association of State Highway and Transportation Officials (AASHTO) led a yearlong celebration of the golden (50th) anniversary of our interstate system.[1] In February 1994 the, American Society of Civil Engineers (ASCE) declared this 46,508-mile network of superhighway as one of the "Seven Wonders of the United States." Other wonders include the Hoover Dam and the Golden Gate Bridge. The vision for the interstate system began with President Franklin Delano Roosevelt in 1937. As reported in NCHRP 20-24(52)[1]:

> The great image of the beginnings of the Interstate is often depicted when FDR summoned the Chief of the highway agency, Thomas MacDonald, to the White House and drew on a map his vision for a cross-country high level road system and asked for an evaluation. [A reproduction of that original map appears below.] The Congress also added its official request in Section 13 of the Federal Highway Act of 1938 which stated:
>
> *The Chief of the Bureau of Public Roads is hereby directed to investigate and make a report of his findings and recommend feasibility of building, and cost of, super highways not exceeding three in number, running in a general direction from the eastern to the western portion of the United States, and not exceeding three in number, running from the northern to the southern portion of the United States, including the feasibility of a toll system on such roads.*

Figure 1: Origins of Interstate, Unpublished Manuscript, W.L.Mertz[2]

In response to Congress' mandate, the Bureau of Public Roads produced a report that did not recommend a national toll system. The stated rationality was that the traffic volume of the time could not support the cost of the system. The report further recommended a 26,000-mile, non-toll "interregional" highway network.

It wasn't until 1956 that Congress got around to creating a meaningful program for the interstate system's funding and creation. During World War II, General Eisenhower became impressed with how quickly German (and latter, Allied) troops could move around the country using the autobahns built in 1935. During his presidency, he pressed for a national highway system. He convinced people that building such a system were a national issue and not a state one. On February 22, 1955, President Dwight D. Eisenhower stated[3]:

> Together, the united forces of our communication and transportation systems are dynamic elements in the very name we bear -United States. Without them, we would be a mere alliance of many separate parts.

The events leading to that historic first bill, which funded creation of the present Interstate system, are of interest. The following excerpts are a summary of those activities, as reported by AASHTO[1],

• The Federal-Aid Highway Act of 1944 created a 40,000-mile "National System of Interstate Highways" with no additional funding.

• The Federal-Aid Highway Act of 1952 authorized the first funding for system construction ($25 million a year for fiscal years 1954 and 1955), later authorizing another $175 million for the next two fiscal years (1956 and 1957).

• Signed by President Eisenhower on June 29, 1956, The Federal-Aid Highway Act of 1956 created today's interstate system by increasing its proposed length to 41,000 miles. The Highway Revenue Act of 1956 created the Highway Trust Fund as a dedicated source of funding for the Interstate Highway System. The federal government would pay 90% of the cost, because it realized that this project was national in scope. It further called for road design standards to accommodate traffic-level forecasts for 1975, which later grew into a 20-year forecast.

• In 1966, all Interstates were required to be at least four lanes with no at-grade railroad crossings.

• Subsequent acts by Congress extended the interstate system mileage to its current length of 46,837 miles.

• There is some disagreement over when the first Interstate actualized. Pennsylvania with its Turnpike, Missouri with its Interstates 44 and 70, and Kansas with its Interstate 70 all claim to be the first.

In 1957, AASHTO, in concurrence with the Bureau of Public Roads, developed the procedure to number the Interstate routes.[3] The procedure called for single- or two-digit numbers to designate major routes, with odd numbers indicating north-south routes and even numbers indicating east-west routes. The numbering code began in the west for north-south routes (I-5 in California) and in the south for east-west routes (I-10 in Louisiana). The following figure depicts the convention of numbering loops, by-passes, and spurs. Note the numbering sequences of three-digit numbers for three cities within a state.

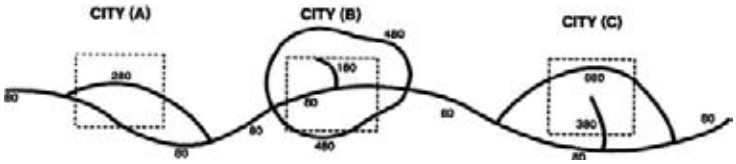

Figure 2: Interstate Numbering Convention (Adopted from 3)

THE BIRTH OF I-49

A close inspection of Figure 1 reveals that one of the five north-south superhighways envisioned by President Roosevelt connects south Louisiana (New Orleans) with Minneapolis/St. Paul. Unfortunately, the original 41,000 miles of highway identified in the Federal-Aid Highway Act of 1956 did not include this corridor in its entirety. According to Wikipedia[4], the original plans for Interstate Highways in Louisiana only included Interstates 10 and 20 with no connection in between. After the addition of Interstate 55 in the 1950s, the state considered building a toll road to connect I-10 in Southwestern Louisiana and I-20 in the northern part of the state but later rejected the idea.

In the mid 1970s, The Federal Highway Administration approved an Interstate Highway to run between I-10 and I-20, beginning at I-10 in Lafayette and ending at I-20 in Shreveport. Originally proposed as a toll road, federal funds ultimately constructed Interstate 49, with some funds redirected from unconstructed urban interstates within Louisiana and the rest (153 miles) coming from a "supplemental reserve."[5]

Construction of I-49 between Lafayette and Shreveport began in the early 1980s; the first signed segment from I-10 to Washington, Louisiana, opened in 1984. Upon completion of a 16.6-mile section of highway in Alexandria named the Martin Luther King Jr. Highway, construction stopped on May 1, 1996. Construction cost for this 212-mile highway segment totaled $1.38 billion.

Congress enacted the Intermodal Surface Transportation Efficiency Act (ISTEA) in 1991. This legislation established the National Highway System (NHS) by naming a set of 21 corridors, including I-49. The National Highway Designation Act of 1995 refined this list and ranked I-49 as first among High Priority Corridors (HPC) as the most important planned corridor in the NHS[6]. This designation stemmed from the fact that I-49 would provide a transcontinental highway linking the coastal ports of Louisiana to the central United States and central Canada. Designated as High Priority Corridor 1 (HPC-1), the corridor extends from Kansas City, Missouri, to Shreveport, Louisiana (along US-71), with the portion in Louisiana (from the Arkansas state line to Shreveport) referred to as "I-49 Extension North."

Six years later, the Transportation Equity Act for the 21st Century (TEA-21) designated US-90 in Lafayette to I-10 in New Orleans as HPC-37. The same legislation named this corridor the "Future I-49." Part of this design stipulated that a written agreement between the State of Louisiana and the Secretary of the US Department of Transportation would be executed, requiring the route to be improved to interstate standards within 12 years of the agreement's date. Known as "I-49 Extension South," the corridor includes a portion called the "I-49 Connector" that links I-10 in Lafayette to US 90 at the Lafayette Regional Airport.

Ed Anderson best describes the status of this corridor in a comprehensive article in The Times-Picayune*. Anderson states, "Engineers and planners have talked about it since the 1960s. Politicians have promised it for decades. Motorists have waited for years."

HPC – 1: NORTH-SOUTH CORRIDOR

The outline below contains the status of the corridor in Missouri, Louisiana, and Arkansas, with limits of HPC-1 defined as Kansas City, Missouri, to Shreveport, Louisiana[8].

HPC – 1 IN MISSOURI

Interstate 49 in Missouri stretches from south Kansas City to Bella Vista on the Stateline towards Arkansas. The corridor extends approximately 200 miles long. For the most part, the existing US-71 corridor between Joplin and Kansas City will be upgraded to Interstate standards.

Figure 3: I-49 Corridor in Missouri

In the past, the focus of Missouri's activities on this corridor has been from Interstate 44 near Joplin to the Arkansas state line (a distance of approximately 50 miles).[8] The current status of the segments of the corridor along US-71 in Missouri, as can be viewed on Google Maps,[9] are depicted on Figure 3 and reported below by the corresponding segment numbers.

1. I-435 in Kansas City to Harrisonville: An approximately 20-mile stretch of highway that meets interstate standards.

2. Harrisonville to Jasper: An approximately 100-mile stretch of four-lane divided highway that does not meet interstate standards.

3. Jasper to I-44 (East of Joplin): An approximately 20-mile distance meeting interstate standards.

4. I-44 to outskirts of Pineville (Highway H): With 43 miles, the highway meets interstate standards.

5. Pineville to Bella Vista (Arkansas Stateline): This is the last segment of the highway in Missouri (17 miles). This segment, known as Bella Vista Bypass, is 4-lane divided but does not meet the interstate standards.

HPC – 1 IN ARKANSAS

I-49 in Arkansas, which estimates to 300 miles, starts at Belle Vista (Missouri Stateline) and moves south, mostly on the current US-71 corridor, to Louisiana Stateline (5 miles south of Doddridge, Arkansas). Major construction for the new highway will occur between Texarkana and Fort Smith. In 2000, the cost of construction for this segment was estimated to be approximates $1.8 billion, with $1 billion slated for the portion from De Queen to Interstate 40. Currently, it remains unclear how Interstate 49 will be funded in Arkansas, with proposals ranging from diverting money from existing projects to implementing tolls on the future interstate. A summary of HPC-1 highway segments in Arkansas is presented below.

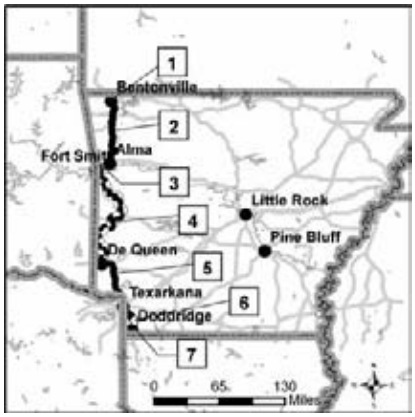

Figure 4: I-49 Corridor in Arkansas

1. Bella Vista to Bentonville (Start of I-540): Labeled as Bella Vista Way, this 6-mile segment, combined with its portion in Missouri, is a 4-lane divided highway with at-grade intersections that do not meet the interstate standards.

2. Bentonville to Alma (I-40) Along I-540: This 73-mile segment of I-540 connects Bella Vista to Fayetteville and then to Alma (I-40). The freeway continues south to Fort Smith. This freeway is part of HPC-1 and the proposed routing of Interstate 49.

3. Alma (I-40) to US 71 South of Fort Smith: Plans call for I-49 to bypass east Ft. Smith near Alma, complete with a new bridge over the Arkansas River.[10] According to Arkansas State Highway and Transportation Department (ASHTD), this plan would help alleviate the traffic problems created by the rapid eastward expansion of Fort Smith and the heavy traffic volume along I-540 through Ft. Smith. The length of this new segment is expected to be 17 miles.

4. US-71 South of Fort Smith to De Queen: This 120-mile segment of the highway traverses through Fort Chaffee Area with a majority of the right-of-way already deeded to the Highway Commission from the Department of Army.[10] In 2004, the total cost to construct the De Queen to Alma section in a new location reaches about $1.5 billion. The existing US-71 from Fort Smith to De Queen is not an interstate class highway.

5. De Queen to I-30 in Texarkana: This segment of the highway along US-71 and US-59 is approximately 50 miles and does not meet the interstate standards. I-30 and Arkansas Highway 245 form a partial loop around Texarkana. ASHTD announced it will designate this loop, a limited-access freeway, as Interstate I-130 upon completing the portion from Interstate 30 to US-71. The future I-49 will connect into this loop.

6. Texarkana to Doddridge (along Highway 549): Constructed to interstate standards, this 30-mile segment is in operation and ties into the Loop 245 in Texarkana. The current highway number will change to I-49 once it is connects to the section in Louisiana.

7. Doddridge to LA Stateline: This is the last segment of the highway in Arkansas. From the Louisiana Stateline to Texarkana. The section is 5 miles long and currently does not meet the interstate standards.

HPC – 1 IN LOUISIANA

Interstate 49 in Louisiana can be subdivided into 3 major segments: from Arkansas Stateline to Shreveport (HPC-1), from Shreveport to Lafayette (also part of HPC-1), and from Lafayette to New Orleans (HPC-37). Each of these major segments is detailed below.

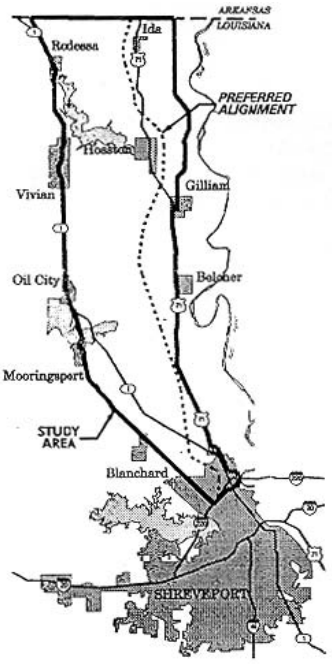

Figure 5: I-49 North-South Connector – (Adopted from 11)

HPC – 1 IN LOUISIANA: NORTH-SOUTH CONNECTOR

Interstate 49 will roughly follow a path in-between US 71 and LA-1 from Shreveport to Arkansas Stateline.

In summer 1999, the Louisiana Department of Transportation and Development (LADOTD) released a Draft Environmental Impact Statement (DEIS) for the North-South Connector/Interstate 49 that outlined a "Preferred Alignment."[11] The DEIS, outlining the details of the study, identified a "Preferred Alignment" (see Figure 5). The proposed alignment stretches from Stateline to I-220 in Shreveport.

On Thursday, April 7, 2005, the first phase of this corridor broke ground between Interstate 220 and the Arkansas Stateline. The project is 36-miles long, consisting of a four-lane interstate with a 4-foot inside shoulder and a 10-foot outside shoulder. The estimated total cost of the I-49 North project is $600 million, with federal earmarks and state matching funds securing $328 million. Table 1, shown below, summarizes the current status of the individual projects within the corridor, as reported by LADOTD.

Segment	Project Limits	Length	Cost	Construction Completion
A	Arkansas Stateline to LA- 168	2.0 Miles	$28.5 M Funded	Spring 2010
B	LA-168 to Mira-Myrtis Road	6.6 Miles	$42.78 M Funded	Fall 2010
C	Mira-Myrtis Road to LA-2	3.0 Miles	$19.4 M Funded	Fall 2009
D	LA-2 to US-71 (S)	3.2 Miles	$41.08 M Funded	Spring 2011
E	US-71 (S) to LA-170	3.0 Miles	$42.0 M Est. Partially Funded	R/W & Utility Complete Jan. 2010
F	LA-170 to LA-530	3.5 Miles	$26.0 M Est.	Scheduled March 2010-Fall 2011
G	LA-530 to LA-169	5.0 Miles	$36.5 M Est.	Scheduled March 2010-Spring 2012
H	LA-169 to LA-173	2.0 Miles	$10 M Est.	November 2009-Spring 2011
I	LA-173 to LA-1	5.5 Miles	$52 M Est.	Scheduled April 2010-Summer 2012
J	LA-1 to MLK Blvd.	4.25 Miles	$50 M Est. Unfunded	Not Scheduled
K	MLK Blvd. to I-220	1.0 Miles	$80 M Est. Unfunded	Not Scheduled

Table 1: Project Segments Within I-49 North-South Connector

HPC – 1 IN LOUISIANA: SHREVEPORT-BOSSIER CITY AREA

The current plan calls for the North-South Connector to intersect with I-220 south of LA-1/US-71 interchange with I-220. In the southern part of the town, I-49 (extending from Alexandria) intersects with LA-3132 (Inner Loop) and continues northward through town to terminate at I-20. Called the "I-49 Inner City Connector," the alignment that would connect this point to the North-South Connector (the terminus at I-220) remains unplanned. Currently, Northwest Louisiana Council of Government (NLCOG), the local MPO, is conducting feasibility studies on this project.[12]

HPC – 1 SHREVEPORT TO LAFAYETTE

This 212-mile interstate highway connects I-20 in Shreveport to Alexandria and then to I-10 in Lafayette. Portions of this highway have been in operation since 1966.

I-49 CONNECTOR

Discussions for extending I-49 through the City of Lafayette go back to the early 1980s. In 1987, the U.S. Congress authorized and funded a demonstration study "to provide limited continuous access between an interstate route and a highway on the Federal-Aid primary system in Lafayette, Louisiana."[13] In October 1990, the LADOTD began a comprehensive EIS study of potential transportation improvements in the US 90/US 167 Evangeline Thruway corridor in Lafayette.

Approved for public distribution and circulated in May 1992, a draft EIS entitled "I-49 Connector" received a Public Hearing on July 1, 1992. Public concerns during the hearing lead to the DEIS's withdrawal.

In 1993, the Greater Lafayette Chamber of Commerce convened an Arterial Task Force with the purpose of increasing interest in and further studying the feasibility of a badly needed North-South Highway corridor through Lafayette. Per the Task Force's request, the staff of the Metropolitan Planning Organization (MPO), also known as the Lafayette Areawide Planning Commission (LAPC), coordinated the preparation of a study evaluating the feasibility of a variety of alternative corridors. In September 1993, a published report[13] summarized the efforts of this Task Force.

Enacted by Congress in 1995, the National Highway System (NHS) designation identified a future portion of I-49 South from Lafayette to New Orleans as High Priority Corridor 37. Not much happened until September 1997, when Governor Foster, under pressure from the Acadiana Region leadership, by issuing an Executive Order, established the I-49 South Project Task Force. The Task Force was required to:

1. Document the need to upgrade US 90 from Lafayette to New Orleans to interstate standards.

2. Identify sources of funding for the project.

3. Measure the level of support for the project from the public, planning organizations and the Louisiana Legislature.

The Governor's Task Force issued its report entitled "Feasibility Analysis to Upgrade US 90 to I-49" In September 1998. The report concentrated on the corridor from south Lafayette to New Orleans and documented advantages of upgrading US-90 to an interstate highway. The report also responded to all requirements in the Executive Order.

Figure 6: I-49 Connector (Adopted from 14)

The portion of the highway running through Lafayette received a second chance for review in December 1997; LADOTD re-initiated a new project to study the feasibility of extending I-49 through Lafayette. Initiated with a reconciled set of alternatives, the project received the second Notice of Intent on April 14, 1998.[14]

After completion of the second Draft EIS for the I-49 Connector in November 2000, the final EIS underwent public distribution in September 2002. FHWA issues a Record of Decision (ROD) on January 8, 2003. The selected alignment for the connector links I-49 (at I-10) to US-90 (at the Lafayette regional Airport) by primarily following the Evangeline Thruway within the City of Lafayette. It is approximately 5 miles long.

Enacted in 1998, the Transportation Equity Act for the 21st Century (TEA-21) officially designated the route along US-90, between Lafayette and New Orleans, as the "Future I-49 Corridor." This designation raised hope that the highway would be funded and upgraded within 12 years. In October 1998, during a ceremony in Lafayette, Governor Foster installed the first "Future I-49" sign along the route. By the end of 1999, all portions of the corridor were signed accordingly.

HPC – 37: INTERSTATE 49 SOUTH CORRIDOR

HPC-37 starts at the Lafayette Regional airport and extends to New Iberia, Franklin, Morgan City, Houma/Thibodaux, I-310 at Boutte, Westwego, Westbank Expressway, Gretna, and finally to I-10 via Crescent City Connection (Mississippi River Bridge). This approximately 150- mile highway is four-lane divided with portions meeting interstate standards.

Today the entire HPC-37 corridor has been cleared environmentally by four separate RODs. Its upgrade to interstate status can begin as soon as a funding source can be identified. Outlined below is the status of each segment within HPC-37. Table 3 presents a summary of these segments where segment numbers are correlated with those shown on Figure 7.

HPC – 37: LAFAYETTE AIRPORT TO LA-88

This part (Segment 2 in Figure 7) of the proposed I-49 South extends from south of Kaliste Saloom Road (Lafayette Regional Airport) to the LA 88 interchange in Iberia Parish, a distance of 10.8 miles. The merits of I-49's further development, local traffic demands, and safety issues defined the project limits. The City of Lafayette, an urbanized area, is to the north of this segment and to the south lies

primarily rural and agricultural land. This project would connect the "I-49 Connector" segment to the segments south of LA 88.

The EIS report for this segment lists construction of about 10 major interchanges and service roads required for upgrading the highway to meet the interstate standards. The cost of the project estimates to $404 million.

Figure 7: I-49 Corridor Within Louisiana

HPC – 37: LA-88 TO WAX LAKE OUTLET

There are seven smaller projects within this portion (Segment 3 in Figure 7) of the corridor. Table 2 summarizes the status of various projects within this portion of the corridor.

Segment	Project Limits	Length	Cost	Construction Completion
A	LA-88 to LA-675	4.5 Miles	$39.4 Million	Interchange at LA-675 & Service Roads 2010
B	LA-675 to LA-83	5.3 Miles	-	Completed
C	LA-83 to Darnall Rd.	3.0 Miles	$10.3 Million (estimate)	Frontage Rds. 2011
D	Darnall Rd. to LA-85	6.5 Miles	$48.5 Million (estimate)	Interchange at LA-85 & Frontage Rds. 2012
E	LA-85 to LA-668	3.5 Miles	-	Completed
F	LA-668 to LA-318	3.5 Miles	$30 Million (Estimate)	Interchange at LA-318 & Frontage Rds. Not Scheduled
G	LA-318 to Wax Lake Outlet	20 Miles	-	Completed

Table 2: Project Segments within LA-88 to Wax Lake Outlet on I-49 South

HPC – 37: WAX LAKE OUTLET TO BERWICK

This 9-mile section stretches from Wax Lake Outlet to the community of Berwick (Segment 4), traversing through cities of Patterson and Bayou Vista. The existing location of BNSF railroad track and its adjacency to US-90, in addition to the commercial developments along the highway makes the upgrade difficult and expensive. The current cost estimate for this project approaches $300 million.

HPC – 37: BERWICK TO RACELAND

US-90 from Berwick to Raceland (LA-1) meets interstate standards and is currently in operation. Completed in 1999, this segment is 42 miles long. With $256 million, the Transportation Intermodal Model for Economic Development (TIMED) program funded the last 25-mile segment of this highway.

Segment	Project Limits	Length	Cost	Construction Completion
1	I-49 Connector	4.3 Miles	$750 Million (Estimate)	Not Scheduled
2	Lafayette Airport to LA-88	10.8 Miles	$404 Million (Estimate)	Not scheduled
3	LA-88 to Wax Lake Outlet	Various Projects, See Table 2		Partially Complete
4	Wax Lake Outlet To Berwick	9.0 Miles	$300 Million (Estimate)	Not Scheduled
5	Berwick to Raceland	42 Miles	-	Completed
6	Raceland to I-310	18 Miles	$2790.9 Million (Estimate)	Not Scheduled
7	I-310 to Ames Blvd.	18.3 Miles	$2208.3 Million (Estimate)	Not Scheduled
8	Ames Blvd. to I-10	6 Miles	-	Completed

Table 3: Current Status of I-49 South Projects

HPC – 37: RACELAND TO I-310

Segment 6 of the corridor extends from the LA-1/LA-308 interchange (at Bayou Lafourche near Raceland in Lafourche Parish) to the I-310 interchange with US-90. The project also includes an interchange with proposed I-49. The project consists of upgrading the US-90 and/or the construction of a new alignment. Estimated to cost $2,790 million, the project is approximately 18 miles long.[15]

HPC – 37: I-310 TO AMES BLVD. (WESTBANK EXPRESSWAY)

This is the last segment of I-49 South needing to be upgraded. The highway, for the most part, will follow US-90 alignment and will include a major interchange at US-90 Alternate (Huey P. Long Bridge), Union Pacific and BNSF railroads. The highway will terminate by connecting to the completed portion of the elevated Westbank Expressway near Ames Boulevard in Jefferson Parish. Estimated to cost $2,208 million, this segment is 18 miles long.

HPC – 37: AMES BLVD. TO I-10

This segment of I-49 South (Segment 8) is the existing Westbank Expressway in Jefferson Parish. This 6-mile segment terminates at I-10 by crossing the Mississippi River via the Crescent City Connection (Mississippi River Bridge).

AMERICA'S ENERGY CORRIDOR

Over the last seven years, the major emphasis of the LADOTD has been completion of I-49 North. Not much has happened along I-49 South or the I-49 Connector. To rejuvenate interest on this project in 2009, the Greater Lafayette Chamber of Commerce (GLCC), in collaboration with Lafayette Economic Development Authority (LEDA), initiated a study to assess the importance of this corridor with to the nation's production and supply of energy. The effort resulted in naming the highway "America's Energy Corridor," as well as the development of a fact-book and a website to provide information and statistics on the crucial role of US-90 (I-49 South) in energy production.[16] The best way to outline the importance of this corridor is to cite some relevant statistics from this study:

- 80% of the nation's offshore oil and gas supply comes from or through Louisiana, which amounts to almost 30% of the entire energy consumption in the country.

- The volume of crude oil and natural gas flowing through the Energy Corridor represents approximately $150 billion in annual energy revenue.

- Energy production off Louisiana's shores contributes an average $5 billion a year to the U.S. Department of Treasury, its second largest source of revenue.

- Nearly 2,000 oil and gas companies operate within the corridor, ranging from small businesses to companies with 3,000 employees.

- Louisiana as a whole has almost 60,000 oil and gas workers. The majority live within the corridor.

• The population of energy labor force living along the corridor is 4% of all energy workers in the U.S. Nowhere else can one find such a concentration.

• The Energy Corridor is home to 72% of platform fabrication facilities in the Gulf of Mexico.

• 4 of the top 10 ports in the U.S., in terms of tonnage, are accessible by the Energy Corridor.

• More than 80% of the major Offshore Support Vehicle Bases for the Gulf of Mexico are located along the Energy Corridor.

• More than 1/3 of the primary shipyards in the Gulf of Mexico are accessible by the Energy Corridor.

• Port Fourchon, along the corridor, services 90% of all deepwater rigs and platforms in the Gulf of Mexico, and it hosts the Louisiana Offshore Oil Port (LOOP).

CLOSING REMARKS

I-49 is a transcontinental highway that links coastal Louisiana to Kansas City, Missouri, and ultimately the central United States and central Canada. It is a highway that serves as a major evacuation route for almost one-third of Louisiana's population. It provides a transportation link for the production and distribution of 30% of the energy consumption in the United States. For all of those reasons, the United States Congress recognizes it as a major transportation corridor. With all that said, the significance of this highway remains unrecognized and its potential undeveloped. The only fully operational segment of this highway in Louisiana that lies between major metropolitan areas is the segment between Shreveport and Lafayette. I-49 South, the section between I-10 in Lafayette and I-10 in New Orleans, once upgraded, would greatly improve access throughout the southern region of the state. It will relieve congestion on I-10 between Lafayette and New Orleans. Transportation department officials say that if the state comes up with the necessary funds, it would still take 13 years to complete the project.[7] However, the author believes that with a bit of concentrated effort the timeline could be reduced.

Over the last few years, our state realized several billions in budgetary surplus, in addition to federal stimulus funds. The state's leadership chose other priorities on which to spend the money. Joey Durel, Mayor-President of Lafayette, made an interesting observation. He said, "Everybody campaigns on I-49... but little gets done." Over the last 15 years, I-49 South saw a series of slow improvements, such as road-widening or construction of an interchange with some service roads here and there. At its northern end (in Missouri and Arkansas), it seems that projects are progressing at a more rapid pace. However, improvements within our state (Louisiana) appear stalled, as no one can currently predict when I-49 will connect New Orleans to Kansas City.

REFERENCES

ABBREVIATIONS

ASHTD – Arkansan State Highway and Transportation Department
AASHTO – American Association of State Highway and Transportation Officials
DEIS – Draft Environmental Impact Statement
EIS – Environmental Impact Statement
FHWA – Federal Highway Administration
GLCC – Greater Lafayette Chamber of Commerce
HPC – High Priority Corridor
ISTEA – Intermodal Surface Transportation Equity Act
LADOTD – Louisiana Department of Transportation and Development
LAPC – Lafayette Areawide Planning Commission
LEDA – Lafayette Economic Development Authority
MPO – Metropolitan Planning Organization
NHS – National Highway System
NLCOG – Northwest Council of Government
ROD – Record of Decision
TEA-21 – Transportation Equity Act of 21st Century

*1- http://www.interstate50th.org
*2- NCHRP Project 20-24, FY 2006, Transportation Research Board of the National Academies, Washington, DC.
*3- The Dwight D. Eisenhower National System of Interstate and Defense Highways; Route Log and Finder List; Federal Highway Administration; U.S. Department of Transportation; March 2001.
*4- http://en.wikipedia.org/wiki/Interstate_49
*5- 50th Anniversary Interstate Highway System: Previous Facts of the Day: Federal Highway Administration; Retrieved 27 May, 2007.
*6- Environmental Impact Statement: I-49 South, US-90; Lafayette Regional Airport to LA 88; Louisiana Department of Transportation and Development, April, 2005.
*7- Ed Anderson; Plans for 'Interstate 49 corridor' linking New Orleans area to Lafayette still face bumpy road; The Times-Picayune, April 05, 2009.
*8- Future Interstate 49 High Priority Corridors 1 & 37; I-49 Coordinating Committee Information Summary; Prepared by: Arkansas State Highway and Transportation Department; January, 2004.
i- http://maps.google.com/maps?hl=en&tab=wl
ii- http://www.aaroads.com/high-priority/corr01.html
*11- http://www.dotd.state.la.us/press/north-south.html
*12- http://www.nlcog.org/Transport/I49%20Info.htm#I-49%20North
*13 - "Lafayette North/South Corridor Study; Path to Progress," Lafayette Areawide Planning Commission, September 1993.
*14- http://www.i49connector.com/overview_history.html
*15- Final Environmental Impact Statement; Raceland to Westbank Expressway; Louisiana Department of Transportation and Development, October 26, 2007.
*16- http://www.americasenergycorridor.org/

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Dr. Kam Movassaghi is a civil engineer with over 40 years of professional experience in industry, academia and public service. He is president of C.H. Fenstermaker & Associates, an engineering, surveying and environmental consulting firm in Lafayette, Louisiana.

He is a former secretary of Louisiana Department of Transportation and Development (DOTD), serving 1998-2004. In academia, he taught at three universities; over a period of 19 years, led a research institute, the Engineering Management Program and Civil Engineering Department at University of Louisiana (UL) at Lafayette

Kam's undergraduate degree is from UL and his graduate degrees are from Louisiana State University. He has served on a number of national transportation organizations and panels such as those of ASCE, AASHTO and TRB. He presided over Southeastern Association of State Highway and Transportation Officials in 2001-02 and the Transportation and Development Institute (T&DI) of ASCE in 2007-08.

He was recognized as the 2002 National Government Engineer of the Year by ASCE; he was elected to LSU Civil Engineering Hall of Distinction in 2005 and in 2008 was named National Associate of the National Research Council of the National Academies. Louisiana Section of ASCE recognized him with a Life Time Achievement Award in 2009.

His civic activities include Community Foundation of Acadiana, American Heart Association, Rotary Club and leadership positions with Greater Lafayette Chamber of Commerce.

ASCE-T&DI Louisiana Chapter News

By Karen Holden, PE

The ASCE-T&DI Louisiana Chapter held its most recent seminar on March 31, 2010 at the LSU TTEC facility in Baton Rouge. The seminar was titled "DOTD Traffic Impact Study Policies" and the speaker was Mr. Dwight Fox, Statewide Traffic Impact Engineer for DOTD. The seminar was intended for all professionals who are involved in land development and the preparation of Traffic Impact Studies (TIS). DOTD's new policy 'Traffic Impact Policy for New Access Requests' was implemented in March 2007 and requires new effort and understanding for all parties involved in this area of engineering. This policy requires that all new development or redevelopment (excluding single residential) seeking access to the state highway system must comply with this new policy. The policy specifies thresholds for determining if a TIS is necessary. If a TIS is required, then the study must be submitted to DOTD for approval.

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

* Building Green Highways and Infrastructures
* Huey P Long Bridge Superstructure Construction
* Roundabout Design for Busy Intersections
* Hurricane Evacuation

If you would like a seminar on a special topic, please contact the Executive Committee.

The ASCE-T&DI Louisiana Chapter was pleased to participate as judges in the Louisiana State Science Fair and presented the following winners with certificates and award checks:

Junior Division

The First Place ($100) award was given to ***Everett Thomas*** of Mandeville Junior High School for his project *"Don't Be a Drag."* The Second Place ($50) award went to ***Samuel Simpson*** of J.D. Meisler Middle School for his project *"The Effects of Materials Used on Levee Stability."*

ASCE- T&DI Seminar Speaker Dwight Fox, DOTD with Brin Ferlito Seminar Organizer

Senior Division

The First Place ($100) award was given to ***Justin West*** of *Haynes Academy for Advanced Studies* for his project *"Do Different Amounts of Water and Compaction Change the Strength of Soil?"* The Second Place ($50) award was given to ***Mathilde Silverberg*** of *St. Joseph's Academy* for her project *"A Hurricane Strikes: Developing a Rapid Levee Repair Device."*

ASCE T&DI congratulates all the winners and wishes them the best in their future aspirations.

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

ASCE-SEI New Orleans Chapter News

By Om Dixit, PE, FASCE

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

January 21, 2010 ***Hollow Structural Sections – Connections*** - Dr. Jeff Packer, (University of Toronto, Toronto, Canada) gave a very knowledgeable presentation about the connection design for hollow core structures. These connections are used routinely in offshore platforms and other building structures. The seminar was attended by about 60 members.

March 4, 2010 ***Smart Structures*** - Joe Church (Roctest, Inc., Charleston, South Carolina) provided information about the instrumentation available for monitoring the from bridge and skyscrapers to earthen levees. The case histories of I-35 Bridge in Minnesota, Local Levee projects and a few other projects were discussed. It was attended by about 50 members

April 08, 2010 ***Controversial Issues Surrounding Sustainability of Concrete****, (Annual David Hunter Lecture) Richard Stehly,* President ACI, Minneapolis, Minnesota. The Annual David Hunter Lecture this time will deal with the controversies surrounding the concrete as a greener material of choice.

More details about these seminars will be posted on the ASCE New Orleans Branch website as soon as they are finalized. The committee is looking for good topics and speakers for future presentations. Members with expertise in above areas would be welcome to join the Executive Committee. For any suggestion and information on joining the Executive Committee, contact Chairman William Rushing, Jr., PE, at Bill.Rushing@wsnelson.com.

ASCE SEI New Orleans Chapter made donations or sponsored several events including the Regional Mathcounts competition held at University of New Orleans with a donation of $200; awards of $150 each for Junior and Senior Division for the ***Greater New Orleans Regional Science Fair*** held in February 2010; and awards of $50 were also given to the Teachers of the first place project's school for encouraging their students to do a Structural Engineering project. These teachers were ***Leslie Nick*** of *J. D. Meisler Middle School* and ***Cathy Boucvalt*** of *John Curtis Christian*.

The ***Greater New Orleans Regional Science Fair*** award winners were:

Junior Division

The First Place ($150) award was given to ***Samuel Simpson*** of J.D.Meisler Middle School for his project *"The Effect of Materials used on Levee Stability"* The Second Place ($100) award went to ***Sabrina Cobos*** of T.H. Harris Middle School for her project *"How Does Sand to Cement Ratio Affect Concrete Strength."*

Senior Division

The First Place ($150) award was given to ***Joshua Bellau*** of John Curtis Christian for his project *"It's a Weld Known Fact"* The Second Place ($100) award was given to ***Justin West*** of *Haynes Academy for Advanced Studies* for his project *"Do Different amount of Water Change the Strength of Soils?"*

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

In Memoriam

Walter E. Blessey, PE

Walter Blessey, a member of the Tulane University engineering faculty for 42 years, died in Covington, Louisiana on February 17, 2010 at the age of 90. He earned his BS and MS degrees in Civil Engineering from Tulane and soon after joined the faculty as an assistant professor of experimental engineering in 1942 just prior to receiving a commission in the Navy's Civil Engineering Corps. During World War II, Mr. Blessey was a plans officer on Okinawa.

After the war, he returned to Tulane and in 1956 was appointed a professor and three years later became the chairman of the civil engineering department and held that position until he retired in June, 1984. Due to his dedicated service to Tulane and its civil engineering students, the school's civil engineering building was renamed Walter E. Blessey Hall in 2002.

In addition to being a teacher and administrator at Tulane, Mr. Blessey was a consultant on bridges, wharves and buildings throughout the south, and worked on many projects including the Superdome, the West Jefferson Medical Center and the Lake Ponchartrain Causeway. Among his projects were the development of long cylindrical piles and the design of the all-welded overpass. He traveled extensively to give lectures across the United States, as well as, Central and South America and China.

He was a former national president of ASCE and received the New Orleans Branch Lifetime Achievement Award in 1996 and was the first recipient of the Louisiana Section's Wall of Fame award in 2005. He was named the Tulane College of Engineering's outstanding alumnus in 1979.

He is survived by one son, two grandchildren and five great-grandchildren.

Charles William Hair, Jr., PE

Charles William Hair, Jr. was born November 6, 1919 and died November 15, 2009 in Baton Rouge. Mr. Hair graduated from LSU in 1941 with a BS in Civil Engineering and shortly after graduation, served in the US Army with General George Patton's Third Army in Europe.

Returning after the war, Mr. Hair was employed by Humble Oil and Refinery in the Galveston-Baytown area and Stone and Webster Engineering in Deer Park until returning to Baton Rouge in 1951. In the late 1950's and early 60's, Mr. Hair was employed with Parsons Brinkerhoff as a Project Engineer involved with the construction of several of the wastewater treatment plants in the Baton Rouge area.

He joined the East Baton Rouge City Parish Public Works Department where he served as District Engineer and later as City Engineer beginning in 1967 until 1980. Under his leadership, Baton Rouge saw major improvements to the downtown street network, parish-wide drainage improvements and the establishment of standardized specifications known as the "Green Book". Mr. Hair returned to private practice until his retirement in 1992.

He served as President of the Baton Rouge Branch of ASCE in 1966 and was President of the Louisiana Section in 1981. He was a Life Member and an ASCE Fellow and was a member of ASCE for 68 years. He received the Lifetime Achievement Award from the Baton Rouge Branch in 2009 and will be honored with Louisiana Section Wall of Fame Award later this year.

He is survived by three children, four step-sons, eleven grandchildren and three great grandchildren.

Mr. Donald R. Harrison, PE, PLS

Mr. Donald Harrison was born in Oklahoma on August 20, 1945 and died on February 9, 2010 in his hometown of Monroe, Louisiana. He grew up experiencing different cultures and foreign places through the various military bases that his family lived in throughout his childhood.

After receiving his BS in Civil Engineering degree from Louisiana Tech University, he joined the Navy Seabees where he served two tours of duty in Vietnam. Upon returning home, he went on to attain his Masters of Science Degree in Civil Engineering from Louisiana Tech.

He opened his own consulting engineering and land surveying firm after receiving his professional licenses and continued his practice, faithfully serving northeast Louisiana for nearly forty years. Mr. Harrison also served as the Parish Engineer for Ouachita Parish for over twenty five years.

Mr. Harrison had a passion for his work and expected perfection, holding each and every project to the highest standard. His brilliance and abilities as an engineer will live on through the numerous projects he worked on to enrich his community.

He is survived by his wife of 35 years, Janis, two daughters and sons-in-laws, his father, one brother, and four grandchildren.

Highlights of the February 26, 2010, Board Meeting

The Board met at Zea's Restaurant in New Orleans. President Christopher Knotts called the meeting to order and welcomed everyone. Eleven of fifteen board members, as well as three guests, were in attendance.

After approval of the agenda and the minutes of the February board meeting, Kurt Nixon presented the financial report. As of February 26th, the current balance in the operating account was $ 15,248.34 and the total value of the four certificates of deposit was $38,366.36. The Section has moved the operating account from Whitney Bank to Capitol One since it has locations in all of the cities that are home to our four branches. Whitney Bank does not have a presence in Shreveport.

Ronald Schumann gave a brief report on the 2009 tax return which is now required by the IRS and ASCE National. The return has been extended to May 15, and Ronald will need financial reports from all branches, student chapters, and institutes that use the Section's federal tax identification number. These reports will need to be included when the Section files its tax return.

Per ASCE National, if more than 75% of all time spent working on the Louisiana Civil Engineer journal is volunteer (and unpaid) time, then there will be no tax implications regarding the sponsorship ads. The Publication Chair will be responsible for keeping a log of volunteer time spent on each journal.

There were problems with the mailing list of approximately 100 copies of the February journal due to problems with incorrect suite numbers and the new postal mailing system. The Section agreed to incur the cost to individually mail out the 100 returned journals and ASCE National will be asked to update their mailing list database.

President Knotts reported that ASCE National has requested that all Sections conduct periodic self audits. Discussion followed on the different levels of auditing available and what changes the Section would need to implement regarding record keeping. Chris Sanchez and Ben Cody offered to gather more information and report back to the Board at our next meeting in April.

The Constitution, By-Laws, and Operating Guide have been modified significantly, and a final version should be available in April for final review.

The Spring Conference will be held in Shreveport in April. Jerry Kleir will be the Committee Chairman for the Outstanding Senior Student awards again this year. Ronald Schumann will Chair the Section Awards and will be requesting nominations from the branches in May.

The next board meeting will be held immediately following the Spring Conference on Friday, April 16th.

President Knotts adjourned the meeting at 2:01 pm.

Civil and Environmental Engineering Field Monitoring and Measurements Education Survey-Participants Requested

In collaboration with the Louisiana Transportation Research Center, faculty members at the University of New Orleans and Louisiana State University are investigating the need for education in Field Monitoring and Measurements (FMM) in Civil and Environmental Engineering at the undergraduate level. Their investigation includes conducting a survey of the current state of FMM practice in all the major civil engineering sub disciplines. The survey also includes questions to establish the perceived importance and need for incorporating FMM education into the undergraduate curriculum in civil engineering and environmental. Readers are invited to complete the on-line survey which will take no more than 10 minutes. The survey is found at the following URL:

http://www.zoomerang.com/Survey/WEB22ADADXWMPY

— Calendar of Events —

JUNE 2010	
	The ASCE New Orleans Branch and ACI New Orleans are now accepting technical presentation proposals for the 2010 Louisiana Civil Engineering Fall Conference and Show. Details may be found at http://louisianacivilengineeringconference.org
June 8-10, 2010	**State of the Coast Conference; Baton Rouge River Center; For more information, visit www.stateofthecoast.org**
June 17, 2010	**Baton Rouge Branch Awards Banquet & Past Presidents Lunch; 11:30am; Drusilla's**
June 18, 2010	**Louisiana Section Board Meeting; 10:00am; Coyote Blues on Acadian Thruway; Baton Rouge**
June 23, 2010	**Acadiana Branch Meeting; Tsunami; 12:00pm; Speaker: Ryan Fuselier w/Fenstermaker & Assoc., Advance Survey Equipment- Scan Data**
AUGUST 2010	
August 6, 2010	**SPAG Final Report due by Branches to ASCE National**

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

Branch News

ACADIANA BRANCH

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

I hope everyone had a very Happy Easter Holiday! Our Branch recently had a very successful February's Ethic's luncheon social at A La Carte on February 25, 2010. It was well attended and received, and David Grouchy, PE, our speaker, did a fantastic job. Also, as a result of the proceeds from the luncheon, we have donated $275 to the Haiti disaster relief efforts. Please contact us if you would like to send additional contributions through our website at http://www.asceacadiana.net/boardOfDirectors.aspx.

I also wanted to thank everyone again who was able to attend the recent JESC on January 28-29, 2010 at the Holidome in Lafayette. As a result of all the attendees attending our ASCE provided speakers' presentations, our branch received proceeds of $4,313! We are grateful for this. As a result of the JESC success we made two donations. We have donated $1,000 to *each* McNeese State University and UL Lafayette for their Deep South Conference in New Orleans. Our Branch has also recently donated a total of $1,000 to the Louisiana Engineering Foundation. This contribution combined with the other branches of this state along with the state section's contributions, will help establish the LA Section of ASCE Endowed Scholarship.

I would also like to congratulate the following recipients for being recognized and awarded our Spring 2010 ASCE Academic Scholastic Award & Scholarship:

McNeese State University: Senior Award: *Jada Renee' O'Blanc;* Junior Award: *Bridget Vasquez*

University of Louisiana – Lafayette: Senior Award: *Alison Lognion and* Senior Award: *Heath Michel*

All of these recipients submitted applications after being recommended and verified by their peers. They each demonstrated scholastic achievement as well as leadership and involvement with their respective communities and ASCE Student Chapters. Congratulations to all for a job well done and keep up the hard work!! We will be continuing this program this upcoming 2010-11 school year.
We had our yearly joint Crawfish Boil on Wednesday, April 28, 2010 at Girard Park on UL Campus. This free event is shared with IEEE and LES and respective student chapters (and faculty). We had tours of UL Team Beau Soliel's energy efficient home which is just a short walk across Girard Park.

NEW ORLEANS BRANCH

By Benjamin M. Cody, PE, Branch President

The New Orleans Branch has been busy over the past few months as the euphoria of the thrilling Super Bowl victory by our beloved New Orleans Saints has begun to subside. To celebrate E-Week, the New Orleans Branch hosted a day of service event at New Orleans' City Park on February 20, 2010. Approximately 25 to 30 volunteers spent a beautiful Saturday morning doing landscaping work at a children's playground at the park. In March, we returned to our monthly Branch luncheon meetings with an interesting presentation on the role of engineers in the ongoing litigation pertaining to tainted Chinese drywall. The presentation was given by Mr. Scott Wolfe of the Wolfe Law Group, and was held at the Parkview Terrace in the Timken Center in New Orleans' City Park. It was an interesting, and eye opening, presentation. The ASCE - SEI New Orleans Chapter also held a meeting on April 8. Mr. Richard Sealy, the president of ACI, gave a presentation on concrete sustainability at the University of New Orleans. A presentation on timber design was presented May 4, 2010.

The University of New Orleans' ASCE Student Chapter faced the daunting task of not only participating in but also hosting the Deep South Regional Conference. This annual event brings together student chapters from across the region to participate in the concrete canoe competition, the steel bridge competition, and other events. Participating schools included the University of New Orleans, Mississippi State University, Southern University, University of Tennessee – Martin, Christian Brothers University, University of Mississippi, McNeese State University, University of Louisiana at Lafayette, Louisiana Tech University, University of Memphis, Louisiana State University, Arkansas State University, and Jackson State University. The big winners in the concrete canoe competition and steel bridge competition were LA Tech and LSU. We wish them the best of luck at nationals. The real winners were everyone who participated, as the hosts of UNO put on a great event. The weather was beautiful, the crawfish were tasty, and everyone had a good time.

In addition to these local events, Dr. Jim Martin represented the Branch at the ASCE Multi-Region Leadership Conference in Atlanta, Georgia. This conference, attended by student chapter leaders, younger member leaders, and Branch and Section officers from across Region's 1,2, 4, and 5, provides a unique opportunity for leaders at all levels of ASCE to interact with each other, to exchange ideas, and to learn about resources that are available to better serve our membership.

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

New Orleans Branch Day of Service volunteers clean up City Park

BATON ROUGE BRANCH

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

As we near the mid-year point of 2010 it's time to look back over the first half of the year to see what we've accomplished and what we had hoped to but hadn't quite gotten there yet. I believe that I have been able to complete most of the goals I set for myself in early 2010. All in all it's been a great year thus far. Likewise, the Baton Rouge Branch has been very busy in the early months of 2010. At our January monthly luncheon we had Baton Rouge District 9 Councilman Joel Boe' speak to the membership on the Fair Share Program. Mr. Boe' provided his insight into why the Metro Council failed to either accept or reject the fair share policy proposal from the task force.

Also in January, Past-President Billy Wall led the St. Thomas More Middle School Future City Team to the regional competition in San Marcos, Texas where they were successful in winning first place honors. This afforded them the opportunity to attend the National competition in Washington DC over Mardi Gras weekend. The team made it to DC, but unfortunately fell short, but nevertheless, the kids were all upbeat about the experience.

February was also the host month for Mathcounts and eWeek. LES hosted another successful Mathcounts event, and there was a great turnout for the banquet. The ASCE Baton Rouge Branch awarded $500 scholarships to two deserving Southern University students.

The Baton Rouge Branch March luncheon included a PDH presentation by Mr. Joe Church of Roctest on Fiber Optic Levee Monitoring. His presentation covered the technology involved with utilizing fiber optics for monitoring. The focus of the presentation material was on levees since this is such an important local topic.

Also at our March meeting Clint Willson, SPAG Chairman, presented a check to Principal Onetha Albert and Engineering Program Coordinator Leah Brown of Scotlandville Middle School. The ASCE Branch received a $2500 SPAG grant which is being used to support the Pre-Engineering Program Engineering Design Challenge this year. The school will participate in the First Lego League (FLL) Smart Move Challenge. In April we had several of the students present their projects at the monthly Branch luncheon.

April was one of our best attended luncheons so far this year, which discussed the 2009 ASCE Infrastructure Report Card. Region 5 Director Norma Jean Mattei and Florida Region 5 Governor Fraser Howe presented. Thanks again to both of these regional representatives.

May is our joint meeting with LES and we have Mayor Kip Holden scheduled again this year.

Our past presidents and awards luncheon will be in June. Recipients for the 2010 ASCE Baton Rouge Branch Awards are as follows:

Educator of the Year – Dr. Ahyman Okeil
Lifetime Achievement – Ara Arman
Wall of Fame – Charlie Hair
Outstanding Civil Engineer – Bob Jacobsen
Outstanding Young Civil Engineer – Geoff Wilson
Outstanding Government Civil Engineer – Bijan Sharafkhani
Outreach – Joey Coco

Congratulations to each of these award nominees, and good luck at the Section level!

In conclusion, I want to thank the Baton Rouge membership for attending our monthly luncheons. Your interest and interaction is greatly appreciated. As a Board, we have strived to build upon the past years to provide you with topics of interest. We have several meetings left before we complete the 2009-2010 year, and the Board would like to encourage everyone to get involved and participate in the activities we have planned and to become active in the engineering community.

SHREVEPORT BRANCH

By Daniel Thompson, EI, Branch President

As the 2009-2010 year draws to a close, we look back on an extremely busy and successful year for the Shreveport Branch. Our meetings began in September and continued through March with a branch Christmas party in December. The annual can food drive was a huge success due to the generosity of our local firms and members. This is a great tradition in our branch that I hope will continue for many years. Our branch also had the opportunity to provide two scholarships to outstanding engineering students at Louisiana Tech University. This year I had the honor of presenting two $1000 checks to these recipients on behalf of our branch.

In April the Shreveport Branch hosted the Louisiana Section's Spring Conference and Awards Banquet. This is always a great event for our members to meet other engineers from across the state as well as providing the opportunity for continuing education. I would like to thank all of the registrants, exhibitors, sponsors, and speakers for their help in making the conference successful. I greatly appreciate the speakers for giving their precious time and money to attend this conference. I would also like to congratulate all of the state award and the Life Member recipients. These are truly special honors that deservingly go to each of these hard working individuals. Special thanks go out to my fellow officers Patrick Furlong, Matt Redmon, and Scott Hughes for their hard work preparing for this conference. In addition, I would like to thank Ali Mustapha and Elba Hamilton for volunteering for anything that we needed to be done. Each of these individuals put in countless hours in preparation for this event and helped me more than they know. Thanks again!

Soon after the conference ended we hosted our annual Spring Classic Golf Tournament in Bossier City. This tournament always closes our year out in May and begins our summer break. Each year this event proves to be a nice break from our technical sessions and provides a time for all of us to relax and enjoy a round of golf. The proceeds from the tournament are used to fund our student scholarships each year. This tournament came at a tough time for our officers and local firms because of the recent Spring Conference but it turned out to be a great event. I would like to thank each of our sponsors and players for their donations to a great cause. Special thanks go to Scott Hughes for taking the initiative in planning the tournament this year.

As the summer begins I am coming to the close of my term as the President of this great branch. It has been a meaningful experience that I will always be grateful for having the opportunity to participate. I have met a lot of great people across this state that make me proud to be a part of this organization. I would like to again thank my fellow officers for all of their help as well as my company, Aillet, Fenner, Jolly & McClelland for allowing me this opportunity.

LOUISIANA TECH UNIVERSITY

Louisiana Tech attended the 2010 Deep South Conference March 26th-27th at the University of New Orleans (UNO). Tech competed in the Daniel Mead paper, surveying, mystery event, steel bridge, and concrete canoe competitions. John Ziegler wrote and presented his Daniel Mead paper on the ethics of 2025 for the civil engineer but did not place in the top three. This year the construction technology students competed in the surveying competition for Tech and placed ninth. During the crawfish boil put on by UNO, Tech competed in the Mystery Event. These students were challenged to build the tallest structure out of paper, tape, and string that would hold a tennis ball for at least ten seconds. The structure did not fail, but they fell short of being the tallest structure.

Back (Left to Right): Austin Durbin, Matt Henry, Daniel Thiels, Troy Partington, Josh Nazar, Eric Slusser, Scott Ursery, Chris Warshaw. Front (Left to Right): Michele Schwarzlose, Jacqueline Ferrell, Stephanie Bayne, Miranda Williams

This is only the second year in the school's history that both the steel bridge and concrete canoe teams won bids to their respective national competitions. Tech's steel bridge placed second overall. They also placed first in economy, second in aesthetics and construction speed, and third in efficiency, lightness, and stiffness. The National Student Steel Bridge Competition (NSSBC) will be held May 28th-29th at Purdue University in West Lafayette, Indiana. The concrete canoe team lead *Deuces Wild* to a first place overall victory. Tech's canoe team also placed first in the final product, design paper, men's slalom, women's slalom, and women's sprint, second in co-ed sprint, fourth in the oral presentation, and fifth in men's sprint. The National Concrete Canoe Competition (NCCC) will be held June 17th-19th at California Polytechnic State University in San Luis Obispo, California.

Now that the steel bridge and concrete canoe teams have won their bids to nationals, they have to raise the money to get there. If you would like to make a donation or sponsor one or both of the teams, contact us at LATechASCE@gmail.com.

Left to Right: Ethan Rhodes, Eric Veuleman, Kyle Jones, Chris Rabalais, Chris Warshaw

We are still building an alumni database of civil alumni. If you would like to be added, please send your name, graduation month and year, e-mail address and phone number (personal and/or office), employer, and job title to the below e-mail address.

Congratulations to all graduating seniors in ASCE. We wish you the best of luck in all your endeavors: Graham Allen, Stephanie Bayne, Jacqueline Ferrell, Kyle Jones, Eric Slusser, Miranda Williams, and John Ziegler.

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

Left to Right: Matt Henry, John Ziegler, Stephanie Bayne

ULL STUDENT CHAPTER

by Alison Lognion, Student Chapter Vice President

The month of March was eventful for the University of Louisiana Lafayette ASCE Student Chapter. The College of Engineering hosted the annual Engineering and Technology week March 8th to the 12th. To kick off the week, the Dean of Engineering, Dr. Mark Zappi, and Dr. Don Hayes each gave presentations informing the students of their individual research involved in the university. Each department competed against one another in the mystery design competition Monday night and in the quiz bowl tournament Wednesday night. The top six students in the E.R. DesOrmeaux Undergraduate Paper Competition presented their research Tuesday night, and Dr. Carolina Cruz and her research team gave the engineering students virtual reality and interactive visual demonstrations Thursday night. Each night at least 125 engineering students from the college attended the events, and the LAGCO Engineering and Technology Week Banquet Friday night hosted an unprecedented 270 students and faculty.

The most important event of the week was Engineering and Technology Expo Day. Around 1300 Local high school and elementary students visited each department and explored the various curriculums. The ASCE students decorated the civil hallways and worked in all the civil labs: concrete, environmental, geotechnical, highways, hydraulics, and computer graphics. The ASCE lounge was even used to present previous years' senior design projects. The students enjoyed designing their own bridge using the West Point Bridge Designer. The perhaps most thrilling presentation was in the concrete lab, where concrete cylinders were compressed until they blew up. The visiting students voted the Civil Department first place in laboratory tours and presentations, as well as first place in overall department appearance.

The chapter attended the Deep South Conference at the University of New Orleans March 26th and 27th participating the survey competition and the MEAD paper and presentation competition. Sixteen students composed of three seniors, eight juniors, three sophomores, and two freshmen went to the conference. All enjoyed seeing those engineering principles learned in the classroom put into practice, particularly in the steel bridge competition.

In April, new officers were elected and appointed. The semester wrapped up with the ASCE Acadiana Branch's crawfish boil and the annual Chi Epsilon – ASCE end of the year banquet.

The chapter's momentum is growing with tremendous excitement from the students shown in their strong presence on Engineering Day and in their participation at the Deep South Conference for the first time in three years.

Wesley Miller, Nick Roy, and Nick Helminger of ULL, participate in the Survey Competition for Deep South Conference 2010 at UNO

LSU STUDENT CHAPTER

by Melissa Young, LSU-ASCE Student Chapter President

The LSU-ASCE student chapter has been really busy preparing for Deep South Regional Conference at UNO that was on March 26-27. The concrete canoe team spent much time preparing the canoe for the competition. The relatively lightweight canoe weighs in at an estimated 310 lbs, and is reinforced with 4-oz. fiberglass mesh. The team was very excited to race in the lake in City Park, New Orleans! The canoe team placed first in the final product category, second in the oral presentation, first in men's sprint, second in women's sprint, and third in co-ed sprint. The concrete canoe team also placed second overall. The canoe team members are, Andrew Windmann, James Parker, Sarah Laakso, Greg France, Jessica Shambra, Thomas Montz, and Chris Rome. The team captain is Maria George and co-captain is Ashleigh Williamson.

LSU Student Chapter: From left to right Andrew Windmann, Jessica Shambra, Greg France, Thomas Montz(in back), Ashleigh Williamson, James Parker, Sarah Laakso, Josh Porter, Mark Dunn, David Ziegler, David Craft, Chris Sciortino, Kristi Acuff

The steel bridge team has also been preparing for the regional competition. After months of fabrication, the steel bridge is finally complete. The team has returning members Josh Porter and David Craft, along with new members David Ziegler, Kristi Acuff, and Chris Sciortino. The team captain is Mark Dunn. Between the experience from team members on last year's team, and work put in by the new members involved, the team believes they have constructed one of the best steel bridges at LSU in recent years. The steel bridge team placed first in stiffness, efficiency, construction speed, and second in efficiency. They also placed first overall in the competition. They will be attending the national competition in West Lafayette, Indiana at Purdue University on May 28th and 29th. Their sponsors are Prospect Steel Company, Evans-Graves Engineers, Inc., ABMB Engineers, Inc., CSRS, Schrenk and Peterson Consulting Engineers, GEC, SJB Group, and GeoEngineers.

LSU also placed first overall for the whole conference. For the first time this year ASCE-LSU will have a team competing in the environmental competition, which is an onsite wastewater treatment. The participants were Melissa Young, Heather Smith, Justin Wagner, and Kresten Brown.

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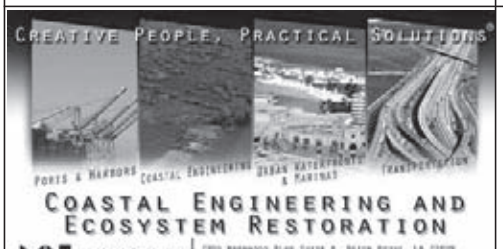

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