

**MINUTES OF  
SOUTHEAST LOUISIANA FLOOD PROTECTION AUTHORITY-EAST  
COASTAL ADVISORY COMMITTEE MEETING  
HELD ON AUGUST 17, 2017**

PRESENT: G. Paul Kemp, Chair  
Andrew Englande, Committee Member  
Richard A. Luettich, Jr., Committee Member

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The Coastal Advisory Committee of the Southeast Louisiana Flood Protection Authority-East (SLFPA-E or Authority) met on August 17, 2017, in the Franklin Avenue Administrative Complex, Meeting Room 201, 6920 Franklin Avenue, New Orleans, Louisiana. Mr. Kemp called the meeting to order at 2:00 p.m.

**Opening Comments:** None.

**Adoption of Agenda:** The agenda was adopted by the Committee as presented.

**Approval of Minutes:** The Committee approved the minutes of the Coastal Advisory Committee meeting held on April 20, 2017.

**Public Comments:** None.

**New Business:**

**C. Significant findings of TetraTech "Baseline Risk Evaluation Report".**

David Moore, P.E., Tetra Tech, reviewed the presentation on the Probabilistic Performance Analysis for all Major Structures in the Hurricane and Storm Damage Risk Reduction System (HSDRRS) and Redevelopment of Operations and Maintenance Manuals and Emergency Action Plans provided at the Board meeting held on July 20, 2017. He explained that the Risk Based Management System for the Complex Structure Gates is similar to the methodology used by the Dutch for the management of their flood protection system. The study was a risk assessment that included only the nine complex structures in the HSDRRS. The goal of the study was to identify ways to reduce risks through keeping spare parts on hand, additional operations and maintenance procedures, putting emergency contracts in place, additional maintenance activities and proposed repairs.

Mr. Moore reviewed the procedures and processes included in Phases 1 and 2 of the study: Reviews and Inspections, Failure Modes and Effects Analysis, HAZOP Study (workshop with Operations personnel), Fault Tree Analysis, System Consequences and Annual Probabilities, and Risk Reduction Recommendations. He noted that the term failure in the study refers to an inability to close a structure gate and not a catastrophic structural failure. Block diagrams were developed for each structure to determine the components for the fault tree, probability estimates were assigned, an event tree was developed and economic consequences were calculated. Mr. Moore discussed

examples to explain the procedures and processes used in the study. Risk reduction measures were developed and Tetra Tech determined the risk contributors.

Mr. Kemp asked about the next step in order to take advantage of the study. Mr. Moore responded that the next step is to review and rank the 20 risk reduction measures and determine how the Authority can work through the recommendations. He pointed out that most of the measures concern documenting or developing procedures. In addition, the Authority should conduct an annual review and risk reduction workshop.

Mr. Englande pointed out that the greatest risk seemed to be the Barge Gate and asked about recommendations relative to the structure. Mr. Moore replied that three or four Barge Gate specific risk reduction measures were recommended: tug boat contracts, hardening the sea chest, improvements (e.g., larger pumps to float and sink the barge faster or automation) and evaluation of velocities in order to safely close the gate.

Bob Jacobsen, part time employee of Tetra Tech on the risk reduction project, discussed residual risks related to the HSDRRS as opposed to residual risks related to the complex structures. He pointed out that the HSDRRS was designed for property protection (100-year level of protection). The one in 10,000-year level is driven towards life safety. He pointed out that there are a number of reasons to be concerned about the 100-year level design criteria (e.g., potential uncertainties, sea level rise trends, potential overtopping causing erosion, and not knowing which sections of the system could be inundated because of tracking issues); therefore, there is still a need for evacuations. He noted that there is probably a higher risk of damage within the IHNC corridor associated with scenarios other than a gate failure (a floating object striking the I-wall, high amounts of rainfall and the factor of safety for the I-walls).

#### **D. Use of Underwater Acoustic Sector Scanning to detect debris on Barge Gate Sill.**

Mr. Kemp explained that divers are needed to search for and remove debris before the Barge Gate can be closed. Moffat & Nichol developed an acoustic technique that can potentially prevent the need for putting divers in the water should the methodology determine that no debris is present.

Chace Hulon, P.E. and ADCI certified diver, advised that Moffat & Nichol has 23 divers (18 are licensed certified divers). Moffatt & Nichol is an ADCI company and must follow ADCI standards. Their divers are experienced with fast moving currents and deep depths. Moffatt & Nichol has several different imaging units available for many different applications. Examples of imagery from several different units were reviewed. Moffatt & Nichol is the leader in the industry and chartering new territory with quality. Moffatt & Nichol has created a specialized software system and database that increases the quality of its work. In addition to diving and imaging services, Moffatt & Nichol can provide compact portable bathymetry units and can quickly process the data.

Mr. Hulon explained that Moffatt & Nichol has offices in New Orleans and Baton Rouge and currently has equipment stored at the Seabrook Marina (nine miles away from the Barge Gate). He estimated that personnel and equipment can be on site in about 30 minutes (depending on traffic and the situation at the lock). Preliminary information can

be provided to the Authority while Moffatt & Nichol personnel are still on the boat. A minimum team of three divers is required should actual diving be needed.

**A. Pontchartrain Beach restoration - Lake Pontchartrain Basin Foundation**

John Lopez with the Lake Pontchartrain Basin Foundation (LPBF) reviewed highlights of the Pontchartrain Beach Nourishment Project presentation given at the April 20, 2017 Coastal Advisory Committee meeting. He explained that the project is basically to enhance the beach for public recreation. The LPBF obtained a 404 permit and a permit from the levee district for the removal of the sheetpile groin, placement of sand and construction of a breakwater. He explained that Felton Suthon and Ryan Foster, SLFPA-E Engineers, are working with the LPBF on the removal of the sheetpile groin. He commented that a small amount of funding that is dedicated to recreation could potentially be available for the restoration project. He also requested assistance with the design of the breakwater.

**B. Discussion of LSU C4G proposal to install 4 CORS receivers to monitor structure movement**

Cliff Mugnier, Chief of Geodesy, Center for GeoInformatics, LSU, reviewed the presentation provided at the Board meeting held on July 20, 2017. He advised that LSU's initial proposal for real time structural monitoring was for the placement of four antennas at locations selected by the Authority. Additional antennas can be added. Observations are taken at the speed of one per second. The data is logged and a continuous track is maintained of the current elevation conditions at the Authority's antenna locations. The system operates 24 hours a day and seven days a week.

Mr. Mugnier explained that the Authority adopted Resolution No. 08-18-16-10 authorizing an expenditure of \$75,000 for real time monitoring. The proposed cost for four antenna locations is \$150,000 (\$75,000 for equipment and installation and \$75,000 for maintenance, monitoring and analysis). The cost for maintenance, monitoring and analysis is an annual cost. Mr. Kemp asked would the annual cost diminish over time. Mr. Mugnier responded that it probably would diminish; however, it is not known at this time because this is the first instance where LSU has been asked to do actual structural deformation monitoring with respect to elevation. He estimated that the cost for the second year would be \$75,000. After LSU has a couple of years of experience, it would have a better handle of the true costs for maintenance, monitoring and analysis over a long period of time. Additional antennas are estimated to cost \$23,000 to \$25,000 (equipment and installation), but would have no effect on the analysis labor.

Mr. Turner commented that several Board members had questions and concerns. He suggested that additional discussion take place. The antenna locations (i.e., the floodwall located in St. Bernard Parish that is leaning, the Surge Barrier Sector Gate Complex, the Bayou Bienvenue Sector Gate and the Seabrook Complex) had been discussed with former Commissioner Stephen Estopinal.

There was no further business; therefore, the meeting was adjourned at 3:35 p.m.