MINUTES OF
SOUTHEAST LOUISIANA FLOOD PROTECTION AUTHORITY-EAST
COASTAL ADVISORY COMMITTEE MEETING
HELD ON JANUARY 20, 2016

PRESENT: G. Paul Kemp, Chair
Rick Luettich, Committee Member
Albert Gaude, Committee Member
John Lopez, Committee Member
Carlton Dufrechou, Committee Member

The Coastal Advisory Committee (CAC) of the Southeast Louisiana Flood Protection Authority-East (SLFPA-E or Authority) met on January 20, 2016, in Meeting Room 201, Orleans Levee District Franklin Administrative Complex, 6920 Franklin Avenue, New Orleans, Louisiana. Mr. Kemp called the meeting to order at 2:00 p.m.

Opening Comments: Mr. Kemp introduced the items on the agenda. He noted that Bob Jacobsen has been working with the SLFPA-E for a number of years on validating and reevaluating the oceanographic and engineering factors going into the design of the Hurricane and Storm Damage Risk Reduction System (HSDRRS). Mr. Jacobsen will address compartmentalization alternatives, which is the last part of the effort. Audience participation during the discussion was encouraged. John Lopez and Mehrez Elwaseif with Tremaine & Associates, a California company that developed a mechanism for obtaining synoptic views of a levee system from a geotechnical standpoint using remote sensing approaches, will report on the findings on a SLFPA-E demonstration project. Dr. John Lopez with the Lake Pontchartrain Basin Foundation (LPBF) will discuss an operational plan for the Bayou St. John Sector Gate.

Adoption of Agenda: The agenda was adopted as presented.

Approval of Minutes: Approval of the minutes of the CAC meeting held on November 18, 2015 was deferred.

Public Comments: None.

New Business:

A. Presentation and discussion on *Part IV. Evaluation of Compartmentalization Alternatives* - Bob Jacobsen

Robert Jacobsen explained that Parts I, II and III of the New Orleans East Bank Hurricane Surge Residual Risk Reduction study were presented at prior Committee and stakeholder meetings and provided a brief synopsis of each part:

- Part I addressed inundation risks within the east bank from a comprehensive risk management perspective. He pointed out that 100-year surge and 500-year surge estimates are scientific guestimates and commented on uncertainties. The

potential for overtopping and breaching, and the identification of weak links and compartmentalization opportunities were addressed. He noted that two weak links are St. Charles Parish due to low freeboard and the IHNC basin.

- Part II was a review of compartmentalization alternatives. Detailed descriptions of the topology of the polders and a review of past literatures were included. Thirty-six potential compartmentalization features around the HSDRRS and one operational project involving the IHNC basin were identified as alternatives.
- Part III included an ADCIRC high resolution 2-D model that was developed of each of the three independent polders using a 30,000 acre-foot breach (Class D overtopping inundation event) from several areas to determine the potential role of the different features. The modeling results were previously presented.

Mr. Jacobsen advised that Part IV addresses the screening process that reduced the 36 potential compartmentalization projects to five priority projects, the benefits and/or impacts of the projects, and costs. He requested feedback on the analysis of the five projects, comments regarding the prioritization of the projects and recommendations for going forward. He noted that a sixth project was identified that is in the jurisdiction of the Pontchartrain Levee District. St. Charles Parish was included in the study because it is within the hydraulic boundary of one of the polders.

Mr. Jacobsen reviewed the five priority projects identified through the screening process and potential upgrade options (Baseline, Option 1 and Option 2) for each project:

1. East Jefferson/St. Charles Parish Line Levee/Floodwall – The current general profile extends from the HSDRRS to the Mississippi River and includes three gaps (Airline Highway and railroad openings).

   Baseline Option – Complete the reminder of the alignment so that the assumed SWL Safe Limit of 6-ft. NAVD88 is achieved.

   Option 1 – Upgrade the existing features of the system to achieve a SWL Safe Limit of 8-ft. NAVD88.

   Option 2 – A new system (T-Wall and gates) to contain a Class D 30,000 acre-ft. breach at St. Rose and achieve a SWL Safe Limit of 14-ft. NAVD88.

2. Maxent Levee – The levee divides the New Orleans East polder east/west and is currently being certified for National Flood Insurance Program (NFIP) purposes for rainfall events. However, the levee could potentially be upgraded to function as a compartmentalization barrier should a breach occur in the HSDRRS perimeter levee.

   Baseline Option – Install resiliency measures (e.g., HPTRM) along the lower elevation points north of Interstate 10. In addition, review the geotechnical information to determine the factors of safety related to objectives for residual risk management.

   Option 1 – Improve levee (levee lift) north of Interstate 10 and install additional resiliency measures.

3. 40 Arpent/Violet Canal Levee/Floodwall –

   Baseline Option – Upgrade closures at Bayou Road and Violet.

   Option 1 – Improve a few segments to raise SWL Safe Limit to 8.0-ft. NAVD88 and install additional resiliency measures.

4. IHNC Basin Levee/Floodwalls – Mr. Jacobsen pointed out the need to look at the I-Walls that have not been upgraded since Hurricane Katrina. The NFIP 100-year and 500-year estimated still water elevations inside the IHNC basin are approximately 7-ft. and 9-ft. The still water elevations are driven by direct rainfall, pumping and overtopping at the IHNC Surge Barrier. A reevaluation of the elevations using more conservative information result in estimated still water elevations of 8-ft. and 11-ft.

   Baseline Option – Review the geotechnical information for all of the reaches along the IHNC to determine the factor of safety for residual risk management purposes and move forward with upgrades for the weak links.

   Option 1 – Upgrade the IHNC Basin Levee/Floodwall for major impact loading at 8.0-ft. NAVD88. 8.2 miles of I-wall upgraded to L-Wall

   Option 2 – Upgrade the IHNC Basin Levee/Floodwall for major impact loading at 11-ft. NAVD88. 13.1 miles of I-Wall upgraded to T-Wall.

5. IHNC Basin Operational Modifications –

   Baseline Option – Finalize analysis for using the Bayou Bienvenue Sector Gate to divert IHNC Basin surge into the Central Wetlands and modify the Master Water Control Manual for the IHNC Basin and OLD EOP Manual.

Mr. Jacobsen addressed operational concerns in the IHNC basin relative to impacts from barges, vessels and large buoyant structures. The U.S. Coast Guard updated its regulations in 2014 for the Regulated Navigation Area (RNA). Residual concerns continue regarding the mooring of vessels and large structures. He pointed out that this topic should be referred to the Coastal Protection and Restoration Authority (CPRA) to determine current practices, best practices and what should be done if there is a deviation between the current and best practices.

Mr. Jacobsen pointed out that Table 15.2 of the report summarizes the risk pros and cons for each option for the five priority projects. There is a net positive for all of the options; all of the options reduce risks. He pointed out that the project that introduces some negative impact is the East Jefferson/St. Charles Parish Line Barrier. The report assumes that evacuation orders will be given when necessary and prioritizes on the basis of the Class D scenario to determine what can be done to reduce the residual risks of property damage, economic damage and the loss of infrastructure and key facilities. He noted that there may be opportunities for the remaining 31 of the 36 projects since all of the projects provide benefits.

Mr. Jacobsen noted that Table 16.2 of the report provides cost estimates for the five priority compartmentalization alternatives/options. He commented that with the exception of the IHNC Floodwall, the costs associated with the Baseline Option are

fairly reasonable. The Baseline Option includes a new geotechnical analysis for purposes of residual risk management. Some of the modest soil and embankment improvements along the IHNC I-walls (Baseline Option) is estimated in the tens of millions of dollars. The cost estimates for the replacement of I-Walls with L-Walls and T-Walls in the IHNC Basin are in the hundreds of millions of dollars. He recommended that discussions be held with the U.S. Army Corps of Engineers (USACE) regarding the identification of any weak links along the IHNC I-Walls and improving strength and stability in those areas.

Mr. Kemp stated that the SLFPA-E wants to push the resiliency category as hard as possible and suggested bringing the CPRA into the discussion. Dr. Lopez commented that system-wide benefits are not experienced with compartmentalization and suggested that consideration be given to whether it is more beneficial to invest monies in the system perimeter. Mr. Jacobsen responded that pause should be given before going to Options 1 and 2 with costs in the tens of millions of dollars. He suggested that the geotechnical analysis be done for the Baseline Option in order to fully assess the option. Mr. Turner added that the benefit-cost ratio should be a part of the analysis for the Baseline Option and that the analysis should include whether risks are being transferred from one area to another. Mr. Jacobson noted that the report includes a rigorous qualitative analysis. Potential modifications to the operation of the Bayou Bienvenue Sector Gate in order to utilize the Central Wetlands for water storage was briefly discussed.

Mr. Kemp advised that a public hearing on the full report on the New Orleans East Bank Hurricane Surge Residual Risk, including System-Wide Compartmentalization Study, will be held in conjunction with the February 18th Board meeting.

B. Report by Tremaine and Associations on SLFPA-E levee imaging demonstration project.

Mr. Kemp explained that he met John Lopez with Tremaine and Associates (Tremaine) while in Sacramento, CA. Tremaine developed a technology that allows the visualization of the geotechnical condition of levees using a synoptic tool. The technology is intended to be used in conjunction with standard approaches, such as borings and CPTs, and to set a baseline for future comparisons.

Mr. Lopez advised that the technology developed by Tremaine allows subsurface surveys from 10 to 35 meters below the surface. The demonstration test was conducted on three levee segments (LPV 109, LPV 111 and MRL 11) to provide baseline information for Dr. Mehrez Elwaseif's analysis. The data sets were fused together to allow the visualization of detail using a single technology. The demonstration project not only addressed the development of a baseline, but also specific issues at each location. The methodology allows the visualization of water infiltration, voids, internal architecture of a levee and deformations of the levee. He explained that Tremaine was able to demonstrate that a great amount of data could be collected timely and that the vertical resolution needed to understand the issues for each of the levee segments could be achieved. Dr. Elwaseif briefly explained the

technology and methodology used. Data collected from each of the levee segments was reviewed.

C. Discussion of operation of the Bayou St. John Sector Gate for enhancing the bayou/ lake habitats.

John Lopez, LPBF Coastal Program Coordinator, explained that Bayou St. John and City Park are connected hydrologically via pumps and overtopping points. Bayou St. John historically drained from south to north off the natural levee of the river; however, the typography has reversed due to pumping activities. Therefore, communities adjacent to the bayou will flood if the Bayou St. John Sector Gate remains continuously open. Significant progress has been made on the effort to revitalize the bayou. The dam formerly located at Robert E. Lee Boulevard has been removed, dredging occurred at the mouth of the bayou and a marsh was created near the bayou's mouth.

Dr. Lopez advised that seven test openings of the Sector Gate took place from November, 2014, to June, 2015, in order to allow an exchange of water from the lake to the bayou. The openings, which were environmentally monitored, were based on head differential and lasted one to two hours. A constriction remains at Robert E. Lee Boulevard at the location of the former dam and culverts. Monitoring included timing, water quality conditions, temperature, salinity, oxygen and biological activities. The hydrologic graphs for two openings were reviewed. A table was developed for future use based upon the monitoring of the test openings and modeling.

Dr. Lopez pointed out that several species shown on the list of Freshwater and Estuarine Fishes located in Bayou St. John are unable to reproduce in the bayou and that their continued presence would depend on the Sector Gate openings. He stated that it is believed that the Sector Gate openings along with the presence of the marsh will enhance recruitment of species into Bayou St. John even though a strong signal was not presented in the monitoring. He briefly discussed the management of salinity levels in Bayou St. John and the Sector Gate Opening Criteria. Dr. Lopez added that a team is envisioned that would consider the various parameters and collectively, along with the major entities, arrive at a decision for operating the Sector Gate.

Dr. Lopez advised that the Bayou St. John Adaptive Management Plan dated July, 2015, has been under review and that it is the LPBF's opinion that all of the pieces are in place for the operation of the Sector Gate.

Dr. Lopez reviewed current and future efforts relative to the LPBF Bayou St. John Urban Project, which include:

- Continue monitoring
- Add interpretive signage
- Start a "School of Marsh" program for school children
- Addition of the site as a hotspot of ebird.org for bird usage data
- Enhanced bird habitat
- Enhanced fishing

Mr. Gaude recommended that the operation of the monitoring (gaging) stations be continued for operational and educational purposes. Dr. Lopez advised that most of monitoring stations have been removed. The costs of the stations were being subsidized by the Louisiana Department of Wildlife and Fisheries. Mark Schexnayder explained that the cost of the seven stations (three located in City Park and four located in Bayou St. John) was approximately $80,000 per month. All of the monitoring stations have been removed from the bayou. Dr. Lopez added that field observations can be accomplished by staff. He pointed out that a gage is located in the Lake at the New Canal Lighthouse and that a staff gage is located in Bayou St. John.

Mr. Kemp stressed that the ability to close the Sector Gage when needed must be a certainty. Gerry Gillen, O.L.D. Executive Director, explained that the Sector Gate is currently being exercised monthly in five minute openings that are scheduled in accordance with the opening criteria and the Operations and Maintenance Manual. The monthly openings could be adjusted in order to accommodate the efforts discussed.

When questioned about water flow through the sluice gates, Dr. Lopez explained that the biologists advised that more biological movement would be stimulated with a vigorous flow of water or pulse through the operation of the Sector Gate than with a continued flow of water through the sluice gates.

Mr. Kemp complimented the efforts and noted that the plan could be incrementally developed from a simple to a more complex plan as the benefits and need dictate. Mr. Schexnayder commented on the potential for shoreline improvements inside Bayou St. John.

There was no further business; therefore, the meeting was adjourned at 4:20 p.m.