

**MINUTES OF  
SOUTHEAST LOUISIANA FLOOD PROTECTION AUTHORITY-EAST (SLFPA-E)  
COASTAL ADVISORY COMMITTEE MEETING  
HELD ON AUGUST 5, 2011**

**PRESENT: Carlton Dufrechou, Committee Member  
Mark Schexnayder, Committee Member  
John Lopez, Committee Member  
Rusty Gaude, Committee Member  
George Losonsky, SLFPA-E Commissioner  
Robert Turner, SLFPA-E Regional Director  
Gerry Gillen, Executive Director Orleans Levee District**

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The Coastal Advisory Committee met on August 5, 2011, in the Second Floor Hall of the Lake Vista Community Center, 6500 Spanish Fort Blvd., New Orleans, Louisiana. The meeting was called to order at 10:15 a.m.

The agenda was amended to include a presentation on the 2011 Flood in the Bohemia Spillway. The Committee unanimously approved the amended agenda.

**1. Discussion of Bayou St. John Report (Phase 1)**

David Boyd with Burk Kleinpeter, Inc. (BKI) advised that BKI was contracted to study Bayou St. John and investigate the best way to reconnect the Bayou and Lake Pontchartrain using the existing flood control structures to improve the water quality and recruit marine organisms into the Bayou. He described some of the firm's efforts and the current conditions. Lidar data of the basin's elevations was used in connection with the U.S. Army Corps of Engineers' (USACE) HEC HMS model to study flows generated by rainfall events over the drainage basin. The USACE HEC RAS model was used to run the flows generated from the HEC HMS model through the Bayou St. John channel to evaluate flow rates and create a floodplain based on 2-year, 5-year, 100-year and 500-year rainfall events in order to evaluate the flooding that would occur from those events. The sector gate located at the mouth of Bayou St. John has two 24-inch and one 15-inch sluice gates operated by valves that are currently used to draw water from the Lake into the Bayou. A screen with four-inch spacing between the bars is located on the lakeside of the sluice gates, which prohibits the recruitment of substantial marine life into the Bayou. The old water control structure (waterfall structure) at Robert E. Lee Boulevard has three drainage pipes to provide flow through the structure; however, the valves on two of the pipes are not operable. Since only one drainage pipe is fully open, the movement of marine organisms is restricted. The water in the Bayou is currently kept at or below the safe water elevation (SWE) of -.8-ft. NAVD 88. Water within the SWE is contained within the Bayou's banks. Mr. Boyd discussed several scenarios used in the modeling.

Mr. Boyd reviewed the problems with the sluice gates relative to recruitment of marine life and water quality:

- Screens collect garbage and vegetation preventing marine organism recruitment.
- Entire water column not involved limiting the number and type of marine organisms that may be recruited.
- Stinging organisms grow on inside of pipe deterring marine organism recruitment.
- Tight quarters inhibit marine organism recruitment.
- Cavitation inhibits marine organism recruitment.
- Low attractant flow rates with high velocities inhibit marine organism recruitment.
- Long opening periods to raise the bayou water surface elevation.
- Poorer water quality flushing into the Bayou. (Stagnant, Low Dissolved Oxygen).

Mr. Boyd reviewed aspects of the sector gate that demonstrate that the gate would provide a more efficient method to improve water quality and recruit marine life into the Bayou:

- No screens.
- Entire water column is involved increasing the number and type of marine organisms that may be recruited.
- No stinging organisms.
- No cavitation issues.
- High attractant flow rates.
- Marine organisms are swept through the sector gate opening.
- Shorter opening times dependent upon water surface elevations in the Lake and the Bayou (head differential).
- Sandbar channel will improve water quality flushing into the Bayou.

Mr. Boyd showed a chart that exhibited examples of opening durations, flow rates and velocities for the sluice gates and for the models with the sector gate being open 3-ft., 4-ft. and 30-ft. (full opening).

Mr. Boyd explained that a winch and cable closure system is the primary method for closing the sector gate and a manual hand crank system is the secondary method. He reviewed possible emergency measures that could be used if the primary and secondary methods fail:

- Block and tackle come along system
- Stop logs at gates (dewatering system)
- Sandbagging below waterfall or Robert E. Lee Bridge (20' x 10')
- City Park 16" gravity pipe system
- City Park 3000 GPM and 99 GPM pumps
- New Orleans Sewerage and Water Board 48" drain pipe at LSU Dental School
- New Orleans Sewerage and Water Board 12" drain pipe at Orleans Ave.
- New Orleans Sewerage and Water Board Weir – 24" drainage pipe at Lafitte St.

Mr. Boyd reviewed the general criteria developed for opening the sector gate:

- Opening prohibited during Hurricane Season.
- Opening prohibited when Lake Pontchartrain water surface elevation is greater than 2.0' NAVD 88. Subject to change after Phase 2 Study and funds become available to enact its recommendations.

- Opening prohibited when Bayou St. John water surface elevation is greater than -0.8' NAVD 88. Subject to change after Phase 2 Study and funds become available to enact Phase 2 recommendations.
- Highest periods of marine organism recruitment April–June and October–November
- Cooperative-Adaptive Management Approach with University of New Orleans, Louisiana Wildlife and Fisheries Department, LSU Agriculture Center, City Park and Bayou St. John Civic Association.
- Calibrate opening times as it relates to stage and water quality criteria using real time data provided by YSI EcoNet website and UNO students-Professors stationed along the Bayou with communication capabilities with the sector gate operator.

Mr. Boyd explained that two possible funding sources (SeaGrant competition and Wildlife and Fisheries match) will be considered in Phase 2 of the Study for the removal of the waterfall structure and other work. The pilings of the Bayou St. John Bridge are approximately 105-ft. apart. BKI proposes that a channel 35-ft. wide and 5-1/2-ft. deep be dredged through the center of the sandbar to allow water from the Lake to freshen the Bayou. The dredging of a channel and its maintenance will be investigated in Phase 2 of the study. Signage will be used to denote the location of the channel in the sand bar. Vegetation plantings will be done to attract bait fish and organisms.

Mr. Boyd advised that Phase 2 Study objectives include ecological restoration (dredging and maintaining a channel through the sandbar), the preparation of demolition plans for the old control structure at Robert E. Lee Boulevard, flood protection (examination of bank heights), water quality, landscape aesthetics and jurisdiction responsibilities.

George Losonsky, SLFPA-E Commissioner, asked the reason for the proposed change for operating the Bayou St. John sector gate structure and maintaining the Bayou. Mr. Dufrechou advised that a series of public meetings were held in 2008 by the Bayou St. John Conservation Association concerning recreational opportunities along the Bayou. Mr. Schexnayder explained that in 1984, in response to the Orleans Levee District's (O.L.D.) attempt to construct an at-grade roadway with culverts across Bayou St. John, the neighborhood was successful in having the Bayou designated a Scenic River. A permit was issued by the Department of Wildlife and Fisheries (WL&F) to the O.L.D. to construct the sector gate structure in order to maintain navigation. The WL&F permit stipulated the removal of the old water control (waterfall) structure at Robert E. Lee Boulevard and that the sector gate be left open as much as practical. Safety is the main issue relative to opening the sector gate.

Mr. Boyd clarified that BKI is not proposing that the sector gate be kept open continuously because of the current safe water elevation. The navigation aspect of the permit is not feasible. The sector gate would be opened a small amount for four and eight hour periods. Keeping the sector gate open continuously or for very long periods of time would require a great amount of around the clock coordination and raising the banks along the Bayou. Mr. Dufrechou pointed out that a plan for managing the Bayou had never been developed. Mr. Turner explained that the O.L.D. has traditionally operated the sector gate as a flood control structure and tried to accommodate some of the ecological concerns by operation of the sluice gates to maintain a certain water level in the Bayou and to allow flow from the Lake into the Bayou. However, it was not

known how successful this effort has been through the years. One purpose of the study is to determine whether the O.L.D.'s past efforts have been sufficient. The SLFPA-E must determine whether the O.L.D.'s participation in trying to effect an eco-system change is a part of its mission. Mr. Gillen commented that pulsing the opening of the sector gate for short periods of time would require minimal personnel costs. Mr. Losonsky noted that additional criteria, such as seasonal, tidal, dawn and dusk and water quality factors, would act independently and add complications to the current water level criteria for operation. Mr. Gillen clarified that a joint effort would be required and that guidance will be required from other agencies relative to pulsing the sector gate.

Mr. Losonsky asked which entity would be responsible for maintaining the channel through the sandbar. Mr. Gillen replied that since it falls outside of the sector gate footprint, this is one of the jurisdictional questions that will be investigated in Phase 2 of the study. Mr. Schexnayder commented that the O.L.D. brought road grade material into the Bayou at its mouth when it attempted to construct the at-grade roadway. He pointed out, however, that sandbars at the mouth of Bayou St. John have been noted as a historic problem back to the 1690's. Mr. Losonsky asked, would the system be effective if the sandbar returns and is not removed? Mr. Boyd replied, no. Mr. Schexnayder added that one reason the sandbar is so large is that there is no flow back and forth into the Bayou. Mr. Losonsky asked about the potential change in sediment movement. Mr. Boyd responded that BKL did not anticipate much movement because the velocities through the sector gate would not be that great. BKL will investigate the creation of a rock jetty in Phase 2 to lessen the recurrence of the sandbar and the severity of the recurrence.

Henry Picard, III with BKL explained that the study was broken into two phases because it exceeded the amount of the grant received. Phase 1 of the study provided answers to the initial questions concerning feasibility. Phase 2 will address how these efforts can be accomplished.

Mr. Schexnayder listed contributions made by WL&F and others to the ecological effort: a \$300,000 Wallop Breaux grant for water monitors, an \$80,000 U.S.G.S. contract for maintenance and data cleanup, a \$130,000 grant (in conjunction with City Park) relative to Bayou St. John water quality, and funding for UNO studies for fisheries monitoring. Last year the State provided \$250,000 for the BKL study. Mr. Gaude advised that an application is being made for SeaGrant funding for the removal of the old water control (waterfall) structure at Robert E. Lee Boulevard. He pointed out that keeping the old water control structure in place would severely limit the effectiveness of any sector gate regime used.

Dr. Lopez commented that he was skeptical about modifying the sandbar because of several concerns. He agreed that a channel through the sandbar would refill very quickly. Dr. Lopez explained that the channel may not remain where it is originally marked because of the active processes involved and pointed out the potential hazard that could be created. The sandbar is probably the only natural feature along the entire lakefront and is used by the public for wading in the lake. He asked if there was a way to accomplish the objectives without cutting a channel through the sandbar. He noted

that the recommendations of the Phase I report are basically to do additional study. A prior report had short term recommendations, such as restoration of wetland habitat, which would not conflict with the Phase I report. He agreed that the structure at Robert E. Lee Boulevard should be modified to facilitate the exchange of water. However, he pointed out that there may be public concern with the removal of the structure, particularly when speaking about sandbagging at this location should other methods for closing the sector gate structure fail. He suggested that the structure at Robert E. Lee Boulevard could be modified in such a way so as to create a small open channel that could be closed with stop logs. Mr. Picard explained that the construction of the sector gate made the old water control structure at Robert E. Lee Boulevard obsolete. BKI recommended the removal of the structure because it serves no flood control benefit and is a detriment to the inter-tidal flow. Public concern about the removal of the structure could be addressed through education about the structure.

Mr. Gillen advised that the SLFPA-E has not yet accepted the BKI report. A forum of this type was needed to obtain final recommendations. The SLFPA-E has requested an Attorney General's opinion as to the recreation feature of the project.

Mr. Schexnayder recommended that the material artificially placed at the sandbar be removed. He suggested that some of the jurisdiction issues along the Bayou could be clarified and that some of the grass maintenance could potentially be turned over from the O.L.D. to the City's Parks and Parkways Department.

Robert Massard, a resident of New Orleans, commented on the example of integration of flood control, biological enhancement and recreation provided by this project.

Mr. Dufrechou requested that the Coastal Advisory Committee be periodically updated should the study continue to a second phase.

## **2. Status of MRGO Ecosystem**

Greg Miller with the USACE provided a brief status report on the MRGO Ecosystem Restoration Plan. The public comment period was completed in March, 2011, on the MRGO Ecosystem Study Report. Over 27,000 individuals submitted comments with over one-quarter million distinct comments. The USACE team is continuing to work through addressing the comments. The State's position is that no local cost share should be incurred for implementing the restoration plan, which is contrary to the USACE's interpretation of the authorization. The WRDA (Water Resources Development Act) authorization does not indicate that this is a federal cost only project; therefore, the cost share requirement is 65% Federal and 35% local. Guidance received from the Assistant Secretary of the Army is to push forward regardless of the cost share issue and to finish putting the plan together. Another issue is the location of the Violet Freshwater Diversion feature of the tentatively selected plan. The USACE looked at about 43 sites on the east bank of the Mississippi River from above the Bonnet Carre Spillway to below Caernarvon. The USACE focused on four sites in St. Bernard Parish because they were the shortest distances for delivering river water into the Lake Borgne and Biloxi Marsh systems. The USACE disclosed the impacts of all four alternatives and recommended the alternative with the least impacts and costs.

He pointed out that this is not a final decision. Guidance was recently received from the USACE Division Commander on completing and packaging the report for the Chief of Engineers for his decision. The direction received was not to change the tentatively selected plan to the point that it would trigger going out for additional rounds of review and comment, but to develop a phased mechanism for the entire restoration plan and to try to have feasibility detail for all projects recommended for construction. The signed Chief's report is anticipated to be completed in about one year.

Mr. Miller explained that it is most likely that the USACE will point to existing authorities as the method to implement the Violet Freshwater Diversion component. Section 3083 of WRDA authorizes the design and implementation of the Violet Freshwater Diversion and clearly defines the required cost share. The project will require an appropriation, and an agreement with the State will be required to proceed with the authority. Mr. Dufrechou strongly recommended that the USACE take another hard look at the Violet Freshwater Diversion project. Dr. Lopez advised that a recent discussion took place between Mr. Miller and some of the NGOs (non-governmental organizations) on rationalizing how to move forward. The Violet Freshwater Diversion feature can be moved to a separate track under the original separate authority for the project. The report could acknowledge that other alternative locations are being looked at under a separate authority. Mr. Miller clarified that should the plan move forward as anticipated, there will be a series of projects recommended for construct at this time, projects identified for additional analysis, and an adaptive management and monitoring program to collect data within the estuary to help inform the management of the projects built and how to pick additional projects that are under analysis. The WRDA Section 3083 authority provides the ability to look again at the Violet Freshwater Division site and to reconsider local concerns and factors. Additional National Environmental Policy Act (NEPA) compliance, an environmental impact statement and public comment would be required.

Mr. Miller advised that the preliminary cost estimate for construction of the MRGO Ecosystem Restoration Plan is \$3 billion, which includes the Violet Freshwater Diversion feature. The estimated cost does not include real estate, design, and operation and maintenance.

### **3. 2011 Flood in the Bohemia Spillway.**

Dr. Lopez provided a presentation on the 2011 Flood in the Bohemia Spillway in Southeast Louisiana – Preliminary Observations. Dr. Lopez explained that the observations are from a scientific perspective. The key feature of the Bohemia Spillway is that it is downriver of the termination of the Mississippi River & Tributaries (MRT) levee. In the late 1800's a 12-mile levee was built along the river that existed until the spillway was created in 1926. Segments of the levee remain in three areas with a roadway constructed on top of the levee. A USACE Land Loss map was viewed.

Dr. Lopez reviewed the research being conducted by the Lake Pontchartrain Basin Foundation (LPBF) in the Bohemia Spillway and the percentage of the work accomplished. Additional funding is needed to complete the investigations.

- 50% Vibracore program and recent geologic history

- 90% Vegetative mapping
- 60% Geomorphic and image analysis
- 90% Hydrologic survey during high and low water
- 90% Hydrologic survey of the river during high water
- 90% Hydrologic modeling
- 60% Forensic study of residual features
- 50% Land change analysis
- 30% Historical record analysis
- 10% Comprehensive Assessment & Data integration

Dr. Lopez discussed the hydrologic survey work performed during the 2011 high water event. UNO measured river discharges at the top and bottom of the spillway. The LPBF measured water depths and velocities along the road from top to bottom. UNO measured marsh flow patterns. Pictures were viewed of the active overland flow of water from the river into the spillway. About 80 percent of the Bohemia Spillway was overtopped during the height of the high water event with an average water depth of about 15-inches.

Dr. Lopez explained that a distributary channel is developing in the upper part of the Bohemia Spillway. A breach in the road developed during the highest part of the flood event and a new bypass channel was created by the end of the event. The last measurement taken of the breach indicated that it was about 150-ft. wide and 24-ft. deep. He reviewed some of the observations on the blowout of the roadway. The water depth was about 18 to 19 feet and the road was about 5 or 6 feet over the water surface; therefore, the breach was 24 to 25 feet deep.

Dr. Lopez advised that the channel has become well developed with active smaller channels and that in the next high water event could cut all the way to the river. Once the smaller channels cut through to the river, the discharge will probably increase quickly and a more efficient channel will be created more quickly. State and Parish officials have been made aware of this situation.

Dr. Lopez explained that the subject section of road has been maintained for an oil and gas facility (Sundown Oil and Gas) in the vicinity. The road is also used by hunters. He proposed that a low level single lane causeway bridge about 2,000-ft. in length be built over the problematic area of the road. A meeting will take place with Sundown Oil and Gas about the proposal.

Mr. Dufrechou commented that the Bohemia Spillway area is one of the few locations on the lower part of the Mississippi River that is self-sustaining.

Dr. Lopez explained that the Orleans Levee District was authorized by the Louisiana Legislature in 1924 to create a flood outlet for flood protection for New Orleans. At that point in time the USACE was entrenched in a "levees alone" idea for flood protection and did not believe in outlets. He noted that the Orleans Levee District had the vision to see outlets as an important component of flood protection. Eighty percent of the levee was removed in 1926—one year before the 1927 flood. The LPBF is attempting to understand the hydraulics of the Bohemia Spillway. The Bohemia Spillway was created

for flood protection and not coastal restoration. However, an offshoot has been the creation of a system that emulates the natural process and the goal is to determine whether this system can be emulated elsewhere. Mr. Schexnayder commented that this area should be recognized as one of the largest and most successful and cost effective coastal preservation and restoration projects in the history of Louisiana.

Dr. Lopez explained that a CWPPRA (Coastal Wetlands Planning, Protection and Restoration Act) project, which is currently proposed for design for the diversion of water from the river to the marsh, is located three miles from the location of the breach. The estimated construction cost of the CWPPRA project is \$20 - \$30 million. The breach is essentially doing what the CWPPRA project would be designed to accomplish. An alternative could be to switch projects. He suggested that a cooperative effort could be sought where the oil and gas company would construct the bridge and the State or Parish would maintain and control the breach.

Dr. Lopez offered a motion, which was seconded by Mr. Gaude and unanimously adopted, to recommend to the SLFPA-E that it request the State of Louisiana to consider the construction of a causeway as part of a coastal restoration effort.

#### **4. Status of Alligator Bend Project.**

Dr. Lopez provided a status report on the Alligator Bend Project. The project is located on the western side of Lake Borgne and is broken into two separate projects:

1. The CIAP (Coastal Impact Assistance Program) project is the southern reach from Alligator Point south to the GIWW. Demolition material from the Twin Span Bridge will be used. The design work has been done and the project is funded. The concrete material is being crushed and stockpiled on the north shore. The concrete rubble will be sandwiched between mats that will be laid along the shoreline. Deployment of the material could begin in about a month.
2. The CWPPRA project is the northern reach from Alligator Point to the Rigolets. The project has reached 30 percent design. A construction appropriation will be requested for Phase 2 under CWPPRA in January, 2012. The project was modified and reauthorized as a shoreline protection project. The need for the marsh creation component remains. A mitigation bank was established; however, there is no funding in the mitigation bank.

Mr. Dufrechou advised that the Coastal Advisory Committee was asked to provide its recommendation relative to modeling work for the New Orleans Land Bridge. The consensus of the Committee was the intermediation recommendation, which included sea level rise and subsidence.

Mr. Dufrechou suggested that the next meeting of the Committee for review of the status of coastal projects in the Pontchartrain Basin be held in late October or early November.

There was no further discussion; therefore, the meeting was adjourned at 1:10 p.m.