

**MINUTES OF
SOUTHEAST LOUISIANA FLOOD PROTECTION AUTHORITY-EAST
OPERATIONS COMMITTEE MEETING
HELD ON APRIL 19, 2018**

PRESENT: Herbert I. Miller, Chair
Mark L. Morgan, Committee Member
G. Paul Kemp, Committee Member
Clay Cosse, Committee Member

The Operations Committee of the Southeast Louisiana Flood Protection Authority-East (Authority or FPA) met on April 19, 2018, in the Second Floor Council Chambers, Joseph Yenni Building, 1221 Elmwood Park Blvd., Harahan, Louisiana. Mr. Miller called the meeting to order at 10:12 a.m.

Opening Comments: None

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

Approval of Minutes: The minutes of the March 15, 2018 Operations Committee meeting were approved.

Public Comments: None.

New Business:

New Business:

A. Discussion of the proposed award of a contract to Southern Delta Construction, LLC in the amount of \$354,140.00 for the NASA Levee Repair Project.

Stevan Spencer, Regional Chief Engineer, explained that the NASA Levee, located on the north side of the GIWW in New Orleans East, was raised by the U.S. Army Corps of Engineers (USACE). A request for technical assistance was submitted to the USACE relative to the poor grass growth and soil quality. The USACE responded that the levee condition is a maintenance issue. The FPA plans to regrade and reseed the levee using a special fertilizer treatment. The plans and specifications were prepared in-house and the work was advertised for bid. Eight bids were received with the lowest bid being submitted by Southern Delta Construction, LLC in the amount of \$354,140. Bids ranged from approximately \$350,000 to \$550,000, and the low bid was under the engineer's estimate. The bid documents were reviewed and found to be in order. Southern Delta Construction, LLC had not previously performed work for the FPA.

Derek Boese, Chief Administrative Officer, commented that special attention will be given to resident inspection and material testing for the project.

A motion was offered by Mr. Morgan, seconded by Mr. Kemp and unanimously adopted, to recommend that the Board approve the award of the contract to the lowest bidder.

B. Discussion of the proposed increase to the not to exceed cost of the levee lift portion of the LPV 109.01a and 111.01 Armoring/Levee Lift Projects.

Staff requested that the item be deferred.

C. Discussion of proposed contract modification in the amount of \$528,009.31 to Lamar Contractor for the construction of the EJLD Safe Room and Consolidated Facility for additional waterline and stormwater line work.

Mr. Boese explained that the East Jefferson Levee District (EJLD) Safe Room and Consolidated Facility was designed, permits were obtained and the project was advertised for bid. A contract for the construction of the facility was awarded to Lamar Contractor. After construction commenced, Kenner's Public Works and Permitting Department informed the FPA that two significant changes would be required (i.e., a storm water design change and a water line change for compliance with Jefferson Parish specification requirements). The changes were discussed with the Public Works Departments for Kenner and Jefferson Parish. The cost of the additional work is higher since the changes are taking place during construction; however, the final cost was significantly reduced through negotiations with the contractor. The contractor's current quote of \$528,000 is about \$350,000 less than the initial quote and credit is being received for some of the original storm water work that is no longer needed. Due to the potential of incurring cost delays of \$1,000 per day, approval was received from the President of the Board to proceed with the additional work.

Tommy Brown with Sizeler, Thompson, Brown Architects, advised that the contractor severed his contractual relationship with the initial subcontractor because of the numbers provided for the additional scope of work. The contractor received bids from other subcontractors, and the bids were reviewed with the architect's civil engineer. The additional work must be accomplished during the critical path of the construction. The anticipated tie into the water and storm drain lines at Worth Street is no longer being allowed resulting in the required installation of new storm drain and water lines (approx. 800-ft.). The high river level also caused delays to the project. Since the river level is falling, the USACE granted a waiver to allow work on the project with a river level up to +15-ft. In addition, the original water line was found to have asbestos and must be replaced with a non-asbestos line.

A motion was offered by Mr. Morgan, seconded by Mr. Kemp and unanimously adopted, to recommend that the Board approve the contract modification.

D. Discussion of seepage at Bellaire Drive, New Orleans, LA.

Mr. Boese explained that since the April 19th Board meeting, staff has continued monitoring the seepage site and participated in extensive discussions with the USACE and Coastal Protection and Restoration Authority (CPRA) about the issue. The USACE's current path forward on resolving the issue is to add a clay cap between 18-inches and two-feet in height on the entire site (approximately eight lots). The FPA expressed concern that a drain line and additional work may also be required based on the 2009 report produced by Ray Martin, Ph.D. P.E., D.GE, and Robert Bachus', Ph.D., P.E. Dr. Martin and Dr. Bachus, technical engineering experts with specialties in seepage, were engaged by the FPA to reevaluate the issues and provide an assessment.

Dr. Martin proceeded with his presentation on the Bellaire Drive seepage issue. He explained that in the initial study in 2009, he and Dr. Bachus reviewed information from the IPET study and other post Katrina studies, subsurface borings and laboratory testing data, and construction drawings. They also participated in a site visit to assess the seepage conditions, viewed the test trenches excavated by the USACE, and reviewed available piezometer data from the seepage area. Some limited stability and seepage analyses were also conducted.

Dr. Martin explained that the T-wall constructed to replace the failed I-wall is a very robust structure; therefore, there is no issue with the stability of the T-wall. A page from the IPET report showed the sheeting depth of the original I-wall compared to the sheeting depth of the T-Wall. The 23 piezometers available on the site in 2009 were monitored for a limited period of time. The piezometer data at that time indicated that the potential leakage was occurring in the northern portion of the site. The conclusion was that the possible sources of leakage were at the transition between the I-walls and the T-wall, in the interlocks of the sheet piles due to hard driving conditions, or over the top of the sheet piles embedded in the base of the T-wall. The sheet pile is embedded in the base of the T-wall; however, if any movement of the sheet piling occurs due to down drag or other conditions, or the sheet pile is not in contact with the water stop, some leakage could occur. The USACE's test trenches indicated that a large amount of granular material was placed on the site after the I-wall failed. Water was observed in at least two of the test trenches flowing from the direction of the canal.

Dr. Martin reviewed the findings of the initial 2009 Preliminary Report:

- The global stability of the T-wall was not an issue. The T-wall would be stable if the water level in the canal rose to the top of the wall.
- Uplift stability under the clay blanket could present a potential problem due to the perception that a problem exists because water is seen on the property.
- The factor of safety under canal water levels greater than El 0.82 was not considered because additional information was to be provided. The additional information was not received and Dr. Martin and Dr. Bachus did not proceed any further with this issue at that time.

Dr. Martin reviewed the conclusions of the 2009 Summary Report:

- The leakage beneath the levee/floodwall is relatively small.
- Observed seepage is due to the relatively high permeability of the granular fill placed at the site after the floodwall failure.
- Seepage will not adversely impact the global stability of the T-wall.
- Seepage could potentially impact the uplift stability.

Dr. Martin reviewed the preliminary recommendations from the 2009 Summary Report:

- Installation of a trench along the wall to collect the seepage. The trench would have a higher permeability; therefore, water coming through the wall would be captured by the trench and water below the trench would tend to come up into the trench because of the flow characteristics. The trench could eliminate the visible evidence of seepage in the area under the existing canal water conditions. The trench should be monitored to determine its success.
- Placement of a 2-ft. thick soil blanket in the field to improve the uplift stability.

Dr. Martin reviewed the 2009 Summary Report recommendations for additional study:

- Staff discuss the actual as built conditions with the USACE to ensure the proper understanding of the conditions.
- The USACE excavate some additional test trenches at the base of the T-wall to observe where the leakage was occurring.
- Evaluate the uplift stability under higher canal water levels.

Dr. Martin reviewed the work that he and Dr. Bachus did over the past week:

- Reviewed the 2009 Summary Report and prepared a preliminary report for the FPA.
- Reviewed the statement of work and contract drawings produced by the USACE.
- Visited the site to view the present seepage conditions

Dr. Martin reviewed the Preliminary Review comments:

- For a safe water elevation (SWE) of 8-ft. leakage rates and upward seepage pressures will increase and the calculated uplift stability factor of safety may be less than unity (depending on the findings of a seepage analysis).
- The thickness of the proposed non-granular fill (clay berm) must be evaluated based on the proposed seepage analysis. The USACE advised during discussions that their opinion is that the SWE is the extreme case; therefore, a factor of safety of about 1.1 is needed and water at elevation 6.5 would be the design case.

- The seepage analysis would allow the FPA to assess risks for varying canal water levels.
- The USACE's plan does not include a trench drain to collect the leakage. It will improve the stability and may reduce the amount of fill needed. It was pointed out that a trench drain is a very simple and inexpensive way to solve the problem.
- The proposed Statement of Work and contract plans at this time appear appropriate for the intended purpose.

Dr. Martin explained that one of the reasons that more water is currently accumulating on the site than in 2009 is because the site was stripped of all of the granular material that had previously been there. He reiterated that the seepage has nothing to do with the safety of the wall and that the wall is perfectly safe.

Dr. Martin reviewed his and Dr. Bachus' proposed approach:

- Observe the field conditions
- Perform additional uplift stability analysis and seepage analysis
- Design the recommended trench drain
- Provide additional comments on the USACE's proposed rehabilitation design, which is currently in an iterative process. The final design has not yet been received.

Dr. Martin added that the seepage collected in a trench drain could go into storm drains along Bellaire Drive. The trench drain is not currently a part of the USACE's design.

Mr. Boese advised that multiple discussions have taken place with the USACE about the trench drain. The USACE's intent is to return the site to its original condition, which would include the placement of the clay cap. He stressed that the trench drain is necessary in order to properly manage the seepage.

Chris Dunn, USACE Assistant Chief, New Orleans District Engineering Division, explained that the USACE concurs with Dr. Martin and that the USACE's internal investigations and analysis show that the floodwall is perfectly safe. He stated that Dr. Martin mirrored the analysis that would have been performed by the USACE during the design, which had water to the top of the wall. He noted that the factor of safety is more than adequate. He added that Dr. Martin's assertions were correct regarding the source of the leakage. The industry recognizes that sheet pile will seep and engineers design accordingly for seepage. The T-wall on the site was built using the standards in place in 2006. Subsequent to Hurricane Katrina, the USACE undertook the improvement of its design guidance, resulting in the Hurricane and Storm Damage Risk Reduction System (HSDRRS) design guidelines, which became effective in 2007. The 2006 design of the expansion joints between the floodwalls was a legacy detail. Water stops were placed between the joints and the sheet piling was embedded nine-inches into the floodwall

base slabs. Under the old detail, the water stops were laid directly on top of the sheet piling and there was no mechanical connection or sealing attempt; therefore, a small gap would be realized. The intent of the floodwall is to resist large volumes of water and that any seepage that would occur behind the floodwall would be managed. He pointed out that this is highly likely one of the main sources of the seepage.

Mr. Dunn advised that the USACE evaluated the 2009 report and used Dr. Martin's work to help inform the configuration of the berm being put in place. The USACE wanted to move quickly to get the lots back to their previous usable condition; however, it is continuing dialogue with FPA staff and Dr. Martin. The USACE and FPA/Dr. Martin are in the process of exchanging data. USACE engineering staff will review the data and perform some additional seepage analyses. He advised that the USACE will be in contact with FPA staff in moving forward and intends to exchange information as the analyses are completed. Additional dialogue can take place at that point about whether additional measures are warranted.

Mr. Morgan suggested that underground drainage be put in place to alleviate the concern about the seepage, improve aesthetics and facilitate the future use of the property.

Dr. Martin advised that the proposed trench would most likely be located at the toe of the levee and be about three to four feet deep. The trench would need to capture any water flowing horizontally and would create a gradient due to its higher permeability.

Mr. Dastugue asked about the FPA's standard procedure when seepage is discovered. Mr. Boese responded that the procedure would depend upon the circumstances. In this situation, staff was sent to the site as soon as the seepage was brought to the FPA's attention in order to view the site and engage the USACE and CPRA. This led to the analysis that determined that a global stability issue does not exist; however, actions are needed to rectify the seepage.

Mr. Kemp asked was the piezometer field still operational. Mr. Dunn responded, largely, no; a few remain in place adjacent to the T-wall, but he did not know whether they are fully functional. The USACE was able to obtain some readings from some of the piezometers about a week ago.

Mr. Miller pointed out that the property is still under the USACE's control and until recently was an active construction site for the PCCP contractor. No concern was expressed about water ponding on the site during the construction contract. After the equipment was moved from the site, the ponding water was brought to the Board's attention. He commented that from what he heard today that everyone appeared to be secure about the safety of the wall, but it is the consensus that some type of drainage system should be put in place to drain the water from a public perception standpoint, if not from a needs standpoint.

Mr. Dastugue commented that the public is not concerned about who is in control of the property, they just want to make sure that the wall does not fail again. He asked if there was a consensus about the stability of the wall, and everyone agreed that the wall is stable.

Mr. Boese reiterated that the USACE's intent is to return the property to its original condition. He pointed out that the original condition did not include ponding water; therefore, a trench is required in addition to the clay cap.

Mr. Morgan suggested that the USACE revisit its design and include a drainage system, and that Dr. Martin review the final design.

Mr. Miller thanked Mr. Dunn for coming to the meeting and asked that he continue working with FPA staff.

Mr. Spencer commented that during yesterday's site visit the lake was at zero and the elevation of the street is -7-ft., which demonstrates the bowl effect. The pictures with the greatest amount of water on the street were taken when the lake was over an elevation of one-foot.

There were no further discussions; therefore, the meeting was adjourned at 10:55 a.m.