Statement read at the September 16, 2010 Board Meeting of the Southeast Louisiana Flood Protection Authority-East by:

Mr. Roy M. Arrigo

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Attachments include: Portions of the May 15, 2008 SELFPA Board Meeting that are referred to here.

April 26, 2010 Times Picayune article that is referred to here.

Mr. Jackson, very early in hurricane season of 2008, you voted to give the Corps of Engineers the Right of Entry to remove fences and trees from the homeowners along the 17th Street Canal. You said that you had a responsibility to the people of Orleans and Jefferson whom you represent and that you were not willing to take any risk that would expose those people to a potential breach of the canal levee.

Mr. Pineda, your reasons for giving the Corps right of entry was that they were taking a tough stand on vegetation policy and if the trees were not removed, it would lead to decertification and loss of federal flood insurance.

Just before hurricane season of this year local Corps officials told levee commissioners a different story than they told two years prior. They said that they wouldn't advise cutting any more trees until there is further word from headquarters and that in cases where trees are not removed, Corps inspectors are not lowering the ratings of the levee systems and they are not decertifying the levees. The Times Picayune reported that "Corps officials said there's no chance that such punitive action (meaning decertification) would be taken against local levee districts for not cutting trees at this point". The article pointed out that all of the failure of the levees could be accounted for by floodwall design deficiencies, not by any trees. So much for the urgency to act due to hurricane season and their tough stance on vegetation policy!

The data that they said they had about the affect of trees on levees did not exist. There was no increased risk of flooding to the public, no decertification, and no loss of flood insurance. And now, after the property along the just outfall canals was taken, there isn't even a Tree and Fence Removal Program.

Mr. Barry, when you voted to give them the right of entry, you said if the issue was of lesser importance you would probably side with the homeowners, and that if a mistake was to be made, it must be made on the side of protecting the city. Mr. Barry, this issue was a lesser important issue. The mistake...believing the Corps on this issue, was made...it didn't result in any change of protection for the city.

Mr. Doody, when you gave them the right of entry, you said, it was because if the Corps is wrong, we lose trees, but if the homeowners are wrong, we lose a city. Your answer never considered if the

homeowners were right, they wanted the floodwalls fixed. Well, the Corps was wrong, yet the homeowners didn't just lose trees; they lost their property rights, even those homeowners who had no trees to begin with. Why? Lose a city? The city was never threatened by trees or fences; it was threatened by poorly built floodwalls. Mr. Doody, in 2005 we did lose a city, not from trees, but from when we trusted what the Corps said about their Category 3 hurricane protection. This board trusted them again in 2008 when they believed what the Corps said about trees and levees. They let you down both times.

When Mr. Goins voted against the right of entry, he asked the other board members to show courage to vote against it as well. Mr. Wittie, you showed that courage and insight, you said you didn't believe the Corp's reasons, as it turns out you were right.

Every reason that the Corps gave to justify the taking of this private property has turned out to be false. They pressured you to act, they claimed urgency...made threats...risk of flooding...decertification, and loss of flood insurance if you didn't. When you acquiesced to their demands, they reversed everything and left this board holding the bag.

Will this board continue to defend this decision? Why...just to save face? Were the reasons that each of you gave for that vote sincere or will you now come up with a new set of reasons to defend it? Today I am asking each of you to do the right thing by working to undo that misguided decision. Mr. Doody, I am asking, will you lead this board to correct and reverse the decision that it was mislead into making on May 15, of 2008.

MINUTES OF THE
SOUTHEAST LOUISIANA FLOOD PROTECTION AUTHORITY – EAST
BOARD MEETING
THURSDAY, MAY 15, 2008

The regular monthly Board Meeting of the Southeast Louisiana Flood Protection Authority - East (Authority or SLFPA-E) was held on Thursday, May 15, 2008, in the Second Floor Hall of the Lake Vista Community Center, 6500 Spanish Fort Boulevard, New Orleans, Louisiana, after due legal notice of the meeting was sent to each member and the news media and posted.

Mr. Doody called the meeting to order at 1:07 p.m. and led the Board in the pledge of allegiance.

The roll was called and a quorum of the Board was present.

Present:
Timothy P. Doody, President
Abril B. Sutherland, Vice President (left meeting at 5:30 p.m.)
John M. Barry, Secretary (left meeting at 7:00 p.m.)
David P. Barnes, Jr. (left meeting at 6:15 p.m.)
Stradford A. Goins
Thomas L. Jackson
Larry A. McKee
Ricardo S. Pineda
Louis E. Wittie

Absent:
George Losonsky, Ph.D., Treasurer
Sara Lee St. Vincent

OPENING COMMENTS:

Mr. Doody reminded everyone about the problems that the Board faces in trying to bring about the 100-year level of flood protection—and beyond that 500-year protection. Funding will be a huge issue. Local sponsors are being called upon to come up with the current cost share of $1.8 billion. A bill has been introduced to reduce the local cost share to approximately $1.3 billion; however, a decision has not yet been made. Borrow materials are another huge issue due to the quantities that will be needed and the costs and problems associated with locating, excavating and delivering these materials. Discussions are on-going concerning contractual language between the U.S. Army Corps of Engineers (USACE), Coastal Restoration and Protection Authority (CPRA), the State and local sponsors. Lands, easements and rights-of-way (a local responsibility and cost) is another huge issue. He noted, however, the biggest, unexpected problem is complacency, which is a feeling of quiet, pleasure or security often while unaware of some potential danger or defect—the danger is hurricanes and flooding, and the defect is the incomplete system. After Hurricanes Katrina and Rita, everyone was focused and worked together trying to assure protection from future

after the current Legislative Session, as requested by the representatives, senators and the New Orleans City Council. He further advised that the Coalition is trying to work out this issue and litigation would be a last resort; however, they were prepared to move forward and have counsel. He pointed out that there is nothing to enjoin until the Board votes.

Ms. Sutherland asked Mr. Maraldo exactly what was it that the Coalition wanted—compensation or for the trees to remain?

Mr. Maraldo replied the Coalition wants the best flood protection possible, which they believe can be provided without the taking of private property with rocks or sheet piling, and that two homes in Lakewood North have had this protection provided for them.

Mr. Barry expressed his disappointment in the reported lack of responsiveness by the USACE. He pointed out that although the USACE was talked about as having billions of dollars, money is not easy to come by. He added, sometimes you cannot always get the best solution and other times only the best solution can be accepted. However, the threat to decertify a levee is in reality a pretty, big stick and the entire City would suffer significantly if this levee is decertified in terms of outside investment, insurance and national perception. He asked how could the Board responsively run the risk of having the USACE decertify a levee with all the negative ramifications.

Mr. Maraldo replied that the USACE did not follow through with its threat in Portland, Oregon, and the comment was made in the context of showing how far they would go. Relative to the issue of money, the USACE has access to more funds than the Board and the means to come up with the funds to compensate the home owners. His point was that it was unconscionable for the USACE to force this matter and then tell the Board if it wants to do the right thing, it would have to come up with the money.

Mr. Doody pointed out that the residents have been instrumental in having the centerline of the levee section significantly moved towards the canal; therefore, the USACE has made some effort.

Mr. Maraldo stated that residents believe levee certification can be retained by the Board forcing the USACE to come back with the better and proper alternative of using rocks and sheet piling, which has been implemented in part along the canal. This would satisfy everyone's concerns, except the USACE who would then have to engage in a program where it would not be obtaining private property without compensation. He reiterated the USACE owes it to the residents and the Board to do the right thing, especially after what it put the city through, and that the criteria used should not be the least costly to the USACE.

Mr. Pineda clarified the issue of fences, trees and bushes falls under the USACE's ICW (Inspection of Completed Works) program. There is a box for checking operations and maintenance relative to levee certification, which is the link to FEMA. Should an unacceptable rating be received, it is considered by FEMA as not having the proper operations and maintenance being done, and FEMA places it in a flood zone. Levee districts on the west coast of the country have received unacceptable ratings and have

pieces of property as it proceeds with the development of a protection system. If the Board begins to say that one particular portion of the levee probably would withstand a hurricane, but farther down there is another portion that is terribly vulnerable to breaching, it is not being consistent in applying a standard of care that in the engineering profession it is compelled to apply. The Board must apply this standard of care to meet and fulfill its responsibilities across the board and cannot isolate it to single locations. He voiced his support of the motion, adding that this is one of the most difficult decisions he has had to make over a long period of time. He stated he spent a lot of time studying the information that was provided by the land owners and the USACE. He commented that he ran across a quote from Confucius -- "one of the things that you need to develop courage is caring". He suggested to the Board that if it really cared about the responsibilities of its job, and cared compassionately about the people it is here to protect, then it would have enough courage to support the motion.

Mr. Goins stated his opinion was that the Board should have the courage to tell the USACE that it had three years to come up with an alternative, which they have not done. This is the reason he did not support the motion. The USACE did a good job the first year after Hurricane Katrina, however, in the last two years it has not been enough. He stated this was just a patch, rather than a final solution.

Mr. Jackson stated he agreed with some of the things said by Mr. Goins. However, he supported the motion because he believes he has a responsibility to all the people in the City of New Orleans and Jefferson Parish, which he represents. He said he was not willing to take any risk that would expose the people of New Orleans to a potential breach of the canal levee during the sensitive operation of dual pump stations on the canal. He stated that he voiced his opinion to the USACE that the ultimate solution of the lakefront pumping stations must include the interior canals and interior pump stations.

Mr. Pineda explained he is a Civil Engineer with a Masters Degree working with the California State Department of Water Resources in Sacramento, which is responsible for 1,600 miles of Federal levees in the Central Valley and is dealing with these same issues. He advised he has worked 28 years as a civil engineer with 21 of those years working with flood issues and flood risk management. He discussed a number of points on which he is basing his vote. Flood control levees and other flood control structures need to be maintained to their highest standard as a nationwide policy. The levee section needs to be maintained free of encroachments, including fences, trees and brush, in order to allow the proper operations and maintenance and for access during a flood fight. The USACE levee vegetation policy is not new and has been in existence for some time; however, it has not been applied consistently throughout the nation. Post Katrina the USACE is strengthening its inspection program and taking a tough stand on the vegetation policy resulting in the issue the Board is dealing with today and that other levee maintaining agencies are dealing with throughout the country. Operations and maintenance of the 17th Street Canal levees are clearly the responsibility of the non-federal sponsor of the hurricane protection system, which is O.L.D. under the authority of SLFPAE. If the USACE does not remove the violating encroachments, then that responsibility will shift to the O.L.D. and SLFPAE. In addition, if the trees and vegetation on the levee are not removed, it would be appropriately noted

in the next USACE inspection report. Should the levee receive an unacceptable rating from USACE inspectors, the current policy being implemented in other parts of the country is that the levee reach or system will be expelled from the USACE's Public Law 84-99 emergency response and repair program. FEMA would then receive that report and more than likely de-credit the levee within the National Flood Insurance Program of providing 100-year protection and homeowners with federally backed loans or mortgages will be required to maintain flood insurance for the remaining balance on their mortgage or federal loan. In order to assure public safety and reduce risks, he recommended that the Board support the approval of the motion to grant right of entry. Given the need to deliver the 100-year project and eventually reach the 500 year level of protection, he did not believe the Board had any choice in this matter.

Mr. Wittie stated he was against granting the right-of-entry. He did not think the location of the levee toe was accurately defined. The trees are extremely close to the toe plus six feet and he did not think they were a detriment or a danger to the levee.

Mr. Barnes commented that some good points had been made; however, in the interest of moving forward and of not making an exception he would vote in favor of the motion.

Mr. Barry stated that the Board was asked to defer this request until after the Legislative session; however, it was said that the amendment of H.B. 1219 would not change but only clarify existing law. This would moot the issue of whether or not the Board should defer action. He commented the Board should have the same standards, but it also had the right to distinguish between different situations. However, in this case, the Board must protect the public. Dr. Gray said the crest could slide in one direction for one reason; however, the USACE has said it could not for another reason. Mr. Barry stated that if this was a less important issue, he would probably err on the side of the homeowners. However, this issue puts everyone at risk, and if a mistake is to be made, it must be made on the side of protecting the city. In addition to the real risk, there is a risk to the recovery process and a cascade of things could happen because of possible national exposure by refusing to allow the USACE to do what in its view is protecting the city. Therefore, he would vote in favor of the motion.

Mr. Doody stated he hoped that by hearing the comments of the Board members that the homeowners realize how carefully they have considered all the issues. He added, if the Board believes the USACE's experts, then trees may be lost; however, if it believes the homeowners' experts and they are wrong, we could lose a city. Therefore, he would vote in favor of the motion.

RESOLUTION #05-15-08-03 – 17th STREET CANAL RIGHT-OF-ENTRY FOR TREE AND FENCE REMOVAL ACTIVITIES AND RELATED SURVEYS

On the motion of Mr. Pineda,
Seconded by Mr. Jackson, the following resolution was offered:

WHEREAS, by letter dated April 4, 2008, the U.S. Army Corps of Engineers requested a right-of-entry to perform tree and fence removal activities and related surveys along the 17th Street Canal Levee and Floodwall, East Side, Lake

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Trees could face axe if Corps of Engineers enforces strict vegetation rules

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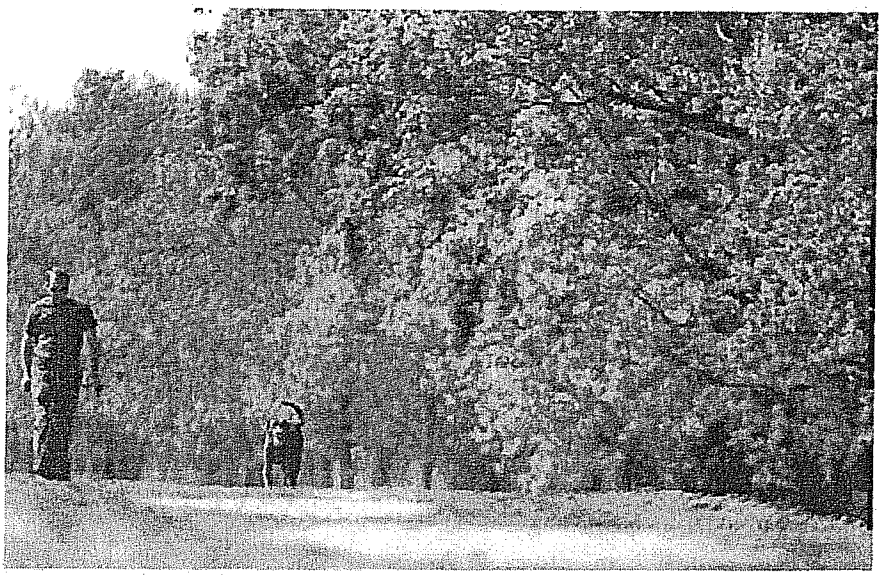
Sheila Grissett, The Times -Picayune



Ted Jackson / The Times-Picayune

B.J. Morgan and his dog Hank walk the levee as they enjoy the dog play area and the trees along the levee near the Riverbend section and the Mississippi River in New Orleans earlier this month. The mature line of trees runs afoul of an Army Corps of Engineers vegetation policy, previously ignored but now being aggressively enforced, that prohibits trees within 15 feet of levees and floodwalls.

Some 500 trees along the Mississippi River in East Jefferson and New Orleans -- and even the English ivy that has covered a French Quarter floodwall for decades -- are the next targets of a controversial **Army Corps of Engineers** vegetation policy that likely will require their removal.

Most of the trees are located behind homes that back up to the river in River Ridge, Harahan and Kenner, but a highly visible line of mature trees also flanks the western edge of the unofficial dog park along Leake Avenue, a clover-and-grass-covered **levee** slope long used by residents of Uptown New Orleans and the canines who walk them.

All of the trees, as well as vines blanketing the floodwall that separates the Moon Walk and parking lot east of Jax Brewery from Café du Monde and other iconic French Quarter establishments north of the wall, are now listed on annual corps levee inspection reports as "encroachments" in need of removal.

Local levee districts have been advised not to start cutting yet, however, as decision-makers at corps headquarters continue grappling with the fallout from their **post-Hurricane Katrina** decision to start aggressive enforcement of a previously ignored policy that prohibited trees within 15 feet of levees and floodwalls.

Not only has the policy raised the ire of naturalists, it has also spawned complex real estate and environmental issues that must be addressed.

When asked for advice on how to proceed, a corps operations supervisor in New Orleans recently told a group of regional levee commissioners and district executives that he wouldn't advise cutting riverside trees until there is further word from headquarters.

"I can't speak on behalf of the whole corps ... but I wouldn't move just yet," Jerry Colletti, assistant operations chief for the district, told the group. "We may know some more after a meeting we're having in a few weeks ... or by the end of the year.

"Trees are going to be an issue for a long time, and we've asked (headquarters) for a better waiver system and the ability to use some engineering judgment when it comes to deciding what needs removing in our districts," he said.

"I'd say don't do anything yet until we hear something else from them."

'Minimally acceptable'

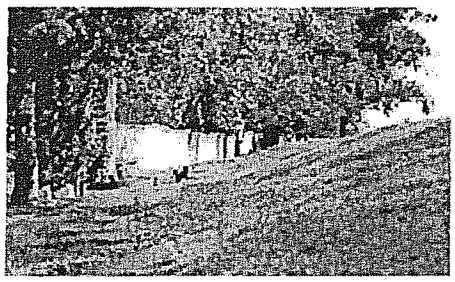
Colletti and corps geotechnical engineer Rich Varuso said agency inspectors have no choice but to note the existence of trees and other growth that seems to violate the vegetation policy. But they said inspectors aren't lowering the overall ratings the levee systems are given.

"The trees are noted and rated 'minimally acceptable,' and while I know the word 'minimal' is a red flag that raises concern, all it really means is that it's something for us to monitor," he said. "It doesn't mean that the levee isn't capable of functioning as designed."

If a tree or any other obstruction is discovered in a levee section proper, the tree is ordered removed.

But the corps isn't yet ordering that trees and shrubs be removed from the 15-foot-wide vegetative-free zones that are supposed to be maintained outside levee toes and floodwalls.

Corps commanders say the primary goal of vegetation regulations is to provide access and unobstructed views of levees and floodwalls in order to inspect them properly, detect developing trouble, perform required maintenance, make needed improvements and carry out emergency flood-fighting.



A dog runs to catch up to his master as they enjoy the dog play area and the trees along the Mississippi River levee near the Riverbend in New Orleans earlier this month.

Secondarily, they say, maintaining a grass-only system minimizes the presence of trees that, if blown over during a hurricane, could dislodge roots or rootballs, possibly destabilizing a levee or floodwall with tragic consequences.

A post-Katrina policy

A position paper issued by corps headquarters in April 2007 laid out its case publicly for strengthening vegetative regulations and mandating across-the-board enforcement with little hope of getting a waiver to sidestep them.

Ironically, some corps districts and levee districts have not only allowed trees, fences, swimming pools and even the occasional structure to go up in these "vegetation free zones, " the agencies even helped plant trees as part of community beautification programs. And not until after Katrina did corps levee inspectors even start to identify large trees on levees as an issue for correction, the corps' 2007 position paper noted.

But the document also made clear that in the future, the cost of noncompliance would be steep: Federal aid will be withheld in response to any future floods, and offending levee systems risk decertification and the loss of participation in the federal flood insurance program.

Corps officials said there's no chance that such punitive action would be taken against local levee districts for not cutting trees at this point.

There is still no certainty as to what role, if any, large trees blown over by Katrina might have played in floodwall breaches that led to the catastrophic flooding of New Orleans and parts of East Jefferson.

Lessons learned since then have revealed floodwall design deficiencies, including shallow foundations, that could well account for all the failures. But large trees growing in levee slopes near the major breaches were uprooted in the storm.

Tests explore trees' danger

In an effort to help resolve some of the dueling scientific theories regarding the marriage of trees and levees, the corps last year tasked the Army's own Engineer Research and Development Center to launch new research into the effects of woody vegetation on levee performance. The project, which includes computer

modeling and hands-on test sites in New Orleans and nine other cities in eight states, is scheduled to finish up this year.

In addition, the Army facility staff is also collaborating in research being led by a California consortium hoping to find a way to ensure levee safety while saving the last remnants of the riparian forest that once lined rivers in the Central Valley.

"This is a work in progress, and we're trying to be consistent, " Varuso said. "But on levees that have been around for a while, there are complicating issues. It takes time."

The push to eliminate everything but grass on or around federal levees and floodwalls was fueled by Katrina, and well before the position paper was ever published, the crackdown on trees was in full swing along hurricane protection levees on Lake Pontchartrain and floodwalls in New Orleans, Metairie and Kenner.

By the time it was over, some 5,000 trees had been cut, many of them along the breached London and 17th Avenue canals, and lawsuits filed as a result of the removals are still working their way through the courts.

Varuso and Colletti said it was necessary to cut trees off the levees, berms and adjoining 15-foot zones because of the Katrina experience.

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A Statement and Three Questions

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According to the Corps of Engineers' IER #27 Report concerning outfall canal remediation on the 17th Street Canal, sixty foot sheet pilings will soon be driven on the interior side of the canal wall. Three remediation methods used to address stability, deflection, and seepage are drawn out and discussed. Pages 15 and 20 (see attached) detail a stability berm that dramatically extends the existing toe of the levee which is currently on the private property of the homeowners on Bellaire Drive. Page 16 (see attached) details a new retaining wall raised at the toe of the levee directly on private property. Pages 12 and 13 of this report (see attached) even detail the possible installation of a pressure relief system at the toe of the protected side of the levee on the property of some canal residents (which would then drain back into the canal, according to the Corps).

While the ongoing lawsuit over the legality of the ROW maintenance servitude is still moving through the legal system, any one of these constructions on private land would be a further violation of the property rights of the citizens along the canal. In fact, the current illegal servitude ceased being a legal issue after the plaintiffs were given a favorable ruling for compensation by Judge Kern Reese in District Court in May of 2009. Since then, it has become a political issue at every step of the judicial and legislative process.

However, the gap is closing on the legislative front. Cedric Richmond's House Bill 1324 in the 2010 legislative session, although defeated for now, gained momentum prompting SLFPA-E Vice President, John Barry, to state on record at the July 15, 2010 meeting that House Bill 1324

was "filed for the benefit of a few wealthy landowners" and it "would have placed a huge financial burden of every levee district and parish in the State." The State's position seems to be: we were told we need it, we want it, we can't afford it, we exert political pressure and manipulate the judicial and legislative systems to take it. I respectfully request this Board to answer the following three questions:

1. The construction projects on our properties proposed in the IER #27 Report go well beyond "the maintenance and inspection" ROW issues in the current legal battle. Will the SLFPA-E facilitate, as it has in the past, the extension of the secret servitude rights in question along the 17th Street Canal for the Corps to install any of these remediation systems directly on our property?
2. Will the SLFPA-E support the driving of the 60 foot sheet pilings along the 17th Street Canal for reinforcement (which we agree is necessary for protection), although this development would seriously impede the prospect of any future Option 2 or 2A conversions?
3. Am I, a retired school teacher with a $27,000 a year pension and a small piece of property, now considered a wealthy landowner? Are all of the residents of the 17th and London Avenue Canals (many who can't even afford to return home) wealthy landowners? We all know the majority of Cedric Richmond's constituents are wealthy landowners, right? This would explain his motivation to support the removed amendment in House Bill 1324. Is this what this Board really believes?

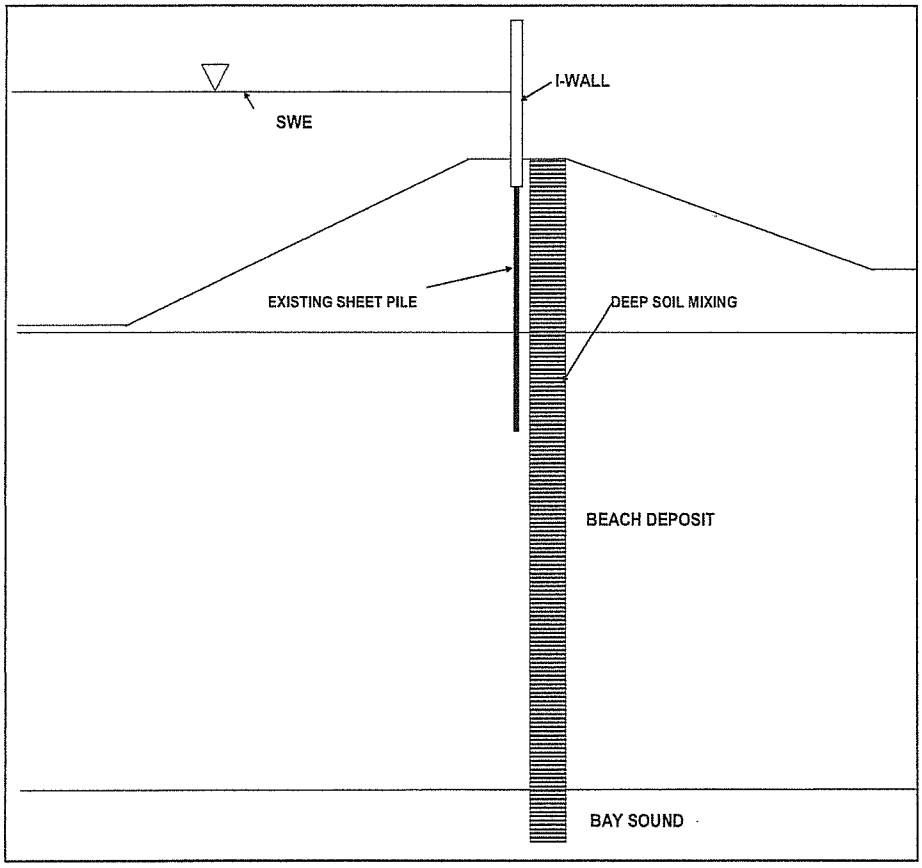

Figure 8 – Conceptual drawing of deep-soil mixed panel for cut-off wall or soil strengthening

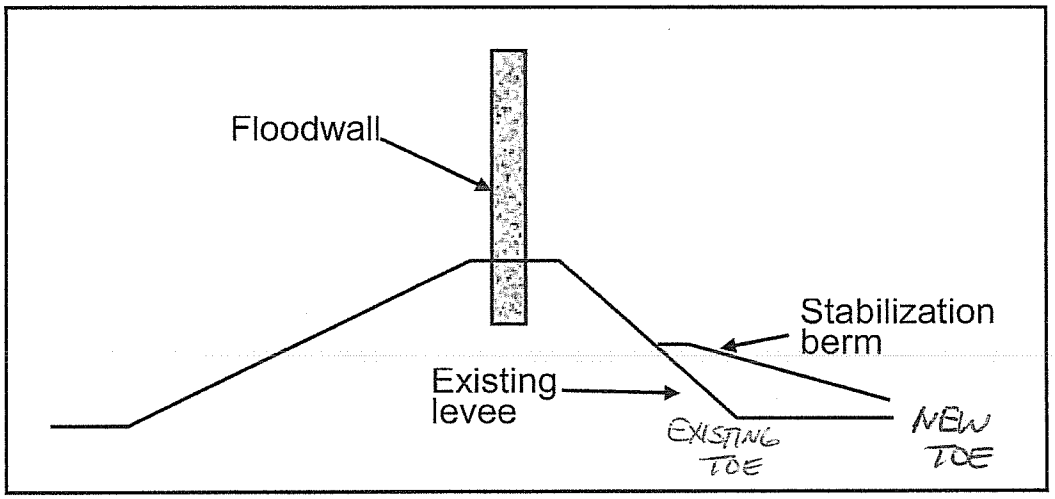

Figure 9 - Conceptual figure of addition of stabilization berm

within the canal on the flood side of the I-walls or from the ROW on the protected side of the I-walls. Construction access on the protected side of the flood wall may be necessary but the actual footprint of the installation operation will be relatively small due to the size of the required machinery. It is anticipated that the sheet pile would be installed in relatively close proximity to the existing I-wall so construction would be confined to the existing right of way.

Along the London Avenue Canal, as the new sheet pile cut-off wall approaches Filmore Avenue, it would turn perpendicular to the canal (parallel to Filmore Avenue) and extend approximately 50 feet along Filmore Avenue. The extension along Filmore is necessary to provide an acceptable factor of safety for seepage in this reach. The extent of this additional sheet pile is shown in red on figure 13.

2.2.2.4 Stability Berm

This alternative includes placement of fill at the toe of the levee to provide additional weight that would increase the factor of safety against a rotational or translational failure during construction or storm loading. Berms are generally used to concentrate the additional fill where it is needed most. The berm thickness and width are determined from stability analyses currently underway. The toe of the berm would remain within the existing right-of-way.

2.3 Alternatives to the Proposed Action

2.3.1 No Action Alternative

The alternative to the proposed action considered in detail for each canal was the no action alternative. The CEQ regulations require inclusion of the no action alternative, which serves as a baseline against which the impacts of the proposed action and alternatives can be evaluated. Under the no action alternative, no remediation of the canal walls and levees would take place. The previously authorized level of risk reduction under the no action alternative would be lower than the 100-year level of risk reduction; however, the permanent pump stations, located on the canals may reduce the risk.

2.4 Alternatives Eliminated from Further Consideration

2.4.1 Permanent Pump Stations at the Mouths of the Outfall Canals

This alternative consists of constructing new permanent pump stations at or near the mouths of the outfall canals and necessary canal modifications that would allow gravity-flow of storm water to the new pump station. The existing SWBNO pump stations (#3, #4, #6, and #7) would be taken out of commission and no longer convey storm water to the lakefront. The entire length of the outfall canals would be redesigned and deepened to allow the water that is currently pumped by the existing SWBNO pump stations to gravity-flow to the new pump stations. Gates are not required for this alternative, and the new pumping stations would operate anytime storm water flows in the canals. This would be expected to occur for most rain events. With the canals deepened, the existing floodwalls that flank the outfall canals would no longer remain an integral part of the city's internal flood protection system and would not require any improvements.

Reason for elimination: This alternative would not address the purpose and need of this project in a timely manner. This alternative could take 8-12 years for full implementation. This alternative would leave the project area vulnerable to increased risk of flooding and/or failure of the canal floodwalls until full implementation of the project was achieved. This alternative also exceeds the cost and is not congressionally authorized.

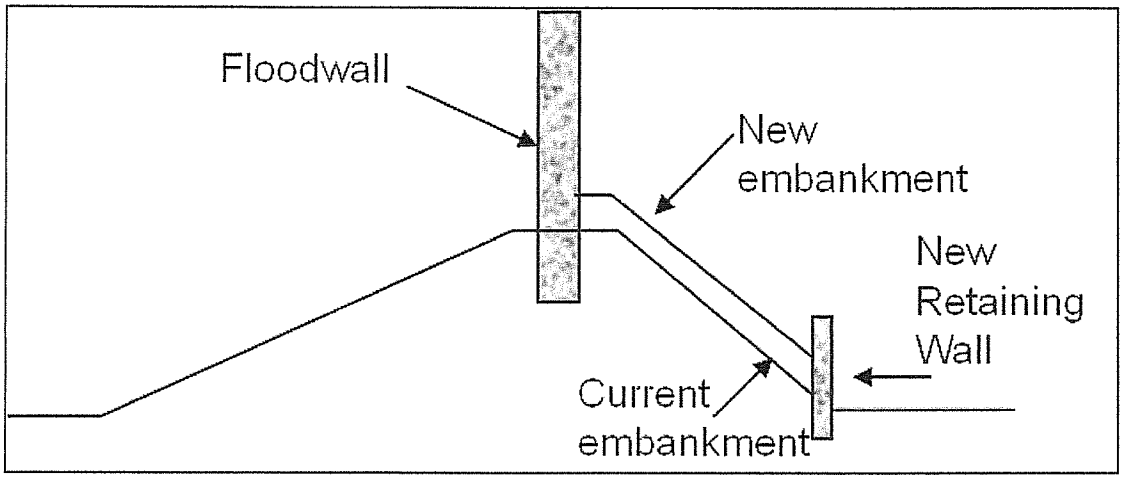

Figure 10 - Conceptual figure of net embankment increase

2.2.2 Remediation Methods

Engineering analyses to determine which reaches along each canal require remediation are not finalized; therefore, work along the entire length of all three canals is assumed for the purpose of impacts analysis. Because all restoration/reinforcement methods would be conducted within approximately the same footprint, within existing right of way and provide the same level of risk reduction, they are not considered separate alternatives and are all evaluated as part of the proposed action. No private property, with the exception of the staging areas identified in figures 11, 12, and 13, would be utilized by the proposed action.

2.2.2.1 Deep Soil Mixing

Using an auger, a mixture of Portland cement and bentonite would be mixed with subsurface soils to create an impermeable wall to cut-off subsurface flow through the subsurface sand layer. Maneuverability would be simpler if the construction took place from the protected side of the existing floodwall; however work on the protected side would only be done if it is not feasible to work from the floodside. Equipment would be located on a barge on the floodside and extended over the wall to construct the cutoff wall on the protected side. If the work had to be constructed from the protected side, all work would still occur within existing ROW.

2.2.2.2 Net Embankment Increase/Concrete Slab

The net embankment increase would require adding fill on the protected side of the I-Wall, the flood side of the I-Wall or both sides of the I-Wall to address deflection problems. A concrete slab tying the cut-off wall to the I-wall may be used to increase the embankment if the deflection issue cannot be resolved by adding fill alone. Construction of this alternative would require access on the protected and flood sides for equipment and material delivery. The increased embankment height would not be expected to exceed 2 feet above the existing embankment. All work would be within existing ROW.

2.2.2.3 Sheet pile cut-off

The sheet pile cut-off method requires sheet pile to be installed on the protected or flood side of the I-Wall through the Beach Sand Deposits and into the Bay Sound formation. The sheet piles would be installed using a sheet pile press-in device. Staging of materials and loading of the press-in device would either be from work barges assembled from modular sections placed

resulting in further impact to the natural or human environment, would be addressed in a supplemental IER.

These data gaps affect the impacts analysis of some resource areas, including traffic and transportation, aesthetics, air and noise, and socioeconomics. The construction of the proposed project could have impacts on home values in the immediate vicinity of the outfall canals, either raising or lowering the value of these homes. However, the degree of such an impact cannot be empirically predicted, nor would it be compensable. These resource areas cannot be precisely analyzed without knowledge of specific engineering details; therefore, the impacts analysis was completed utilizing information currently available based upon a maximum footprint scenario for each canal.

A study to determine the impacts related to the transportation of construction materials for the HSDRRS was completed March 2010 and published on Nolaenvironmental.com. It is the CEMVN's goal to publish a comprehensive write-up of the transportation impacts in the CED.

2. ALTERNATIVES

2.1 Alternatives Development and Preliminary Screening Criteria

NEPA requires that in analyzing alternatives to a proposed action a Federal agency consider an alternative of "No Action." Likewise, Section 73 of the WRDA of 1974 (PL 93-251) requires Federal agencies to give consideration to non-structural measures to reduce or prevent flood damage. The CEMVN Project Delivery Team (PDT) considered a proposed action, a no action alternative, an alternative involving modified operation of the planned pump stations at the mouths of the outfall canals and deepening of the canals, alternatives involving diversion of water from the outfall canals, and non-structural measures in this IER, discussed in sections 2.2 through 2.4.

2.2 Proposed Action

This project includes remediation of floodwalls along the three outfall canals (17th Street, Orleans Avenue, and London Avenue) in Jefferson and Orleans Parish, Louisiana to strengthen the canal walls in order to facilitate interior drainage at current and future capacities. Remediation of the canals is necessary to ensure that the canal walls can support the requirements of the Sewerage and Water Board of New Orleans (SWBNO) in removing rain water from the city unimpeded.

2.2.1 Proposed Remediation Methods

Various remediation methods are proposed for addressing three possible failure mechanisms along the three outfall canals: seepage, stability and deflection.

Seepage is the migration of water through soil from an area where there is higher water pressure to an area where there is lower water pressure. Uncontrolled seepage occurs when seepage is strong enough to move the soil it is migrating through, eventually opening up a pathway for water to flow through unobstructed.

Stability is the ability of a structure (such as a levee or a floodwall) to resist sliding or being moved as one large piece by the weight or pressure of whatever it is trying to hold back (such as water or soil).

Deflection is how much something moves under the weight or pressure of something else. Particularly applied to I-Walls, deflection describes movement of the I-Wall in relation to the levee.

The remediation which would be used to address each failure mechanism is listed below and described in the next section.

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- Failure mechanism 1: Seepage
    - Installation of pressure relief system at the toe of the protected side of an earthen levee to reduce pressure to safe levels, by providing controlled seepage locations (figure 5).
    - Installation of a sheet pile wall on the flood or protected side to prevent the flow of water through the sand layer below the existing wall (figure 6 and figure 7)
    - Installation of a deep soil mixed wall on the protected side to prevent the flow of water through the sand layer below the existing wall (figure 8)
- Failure mechanism 2: Stability
    - Installation of a deep soil mixed wall on the protected side to prevent the flow of water through the sand layer below the existing wall (figure 8)
    - Addition of a stabilization berm on the protected side (figure 9)
- Failure mechanism 3: Deflection
    - Net protected side embankment increase (figure 10)
    - Net flood side embankment increase
    - Net protected and flood side embankment increase

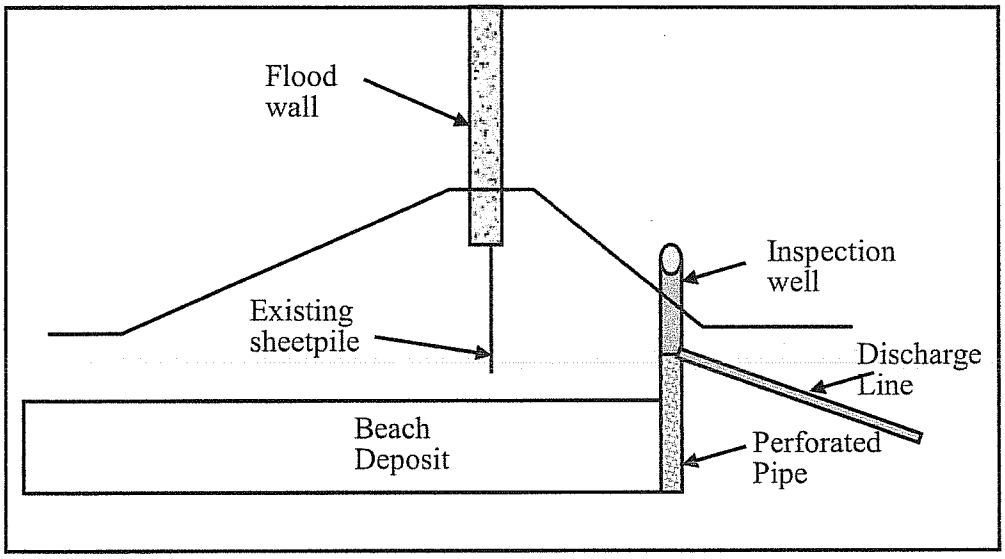

Figure 5 – Conceptual layout of pressure relief