US Army Corps of Engineers

Project Information Report

PL 84-99 Rehabilitation of Damaged Hurricane or Shore Protection Projects from Hurricane Katrina

Lake Pontchartrain, Louisiana and Vicinity, Hurricane Protection Project

Orleans Parish, Louisiana

ORLEANS EAST BANK

Revision #01

Revised 20 January 2006

Prepared by U.S. Army Corps of Engineers
New Orleans District

TABLE OF CONTENTS

TABLE OF CONTENTS (cont.)

APPENDIX **Page Number**

EXECUTIVE SUMMARY

The purpose of this revision is to update the original Project Information Report (PIR), dated 18 October 2005, to include actual costs for awarded contracts, updated costs of un-awarded contracts with a more reasonable estimate of modifications, and additional contracts related to restoring protection to the outfall canals. This includes interim gated closure structures and temporary pumps near the end of each of the three outfall canals and additional contracts to maximize the safe operating stage in each canal. This revision follows the outline of the original PIR. However, to expedite the development and review of this revision, only the sections that have changed will be included. The sections that have not changed will be identified and a reference to the original PIR will be included.

Hurricane Katrina weakened portions of the Orleans East Bank (OEB) outfall canal levee foundations causing catastrophic breaches at the 17th Street and London Avenue Outfall Canals. Hurricane Katrina also caused flooding near the pumping station at the Orleans Avenue Outfall Canal (the aforementioned three outfall canals). Combined with several breaches from overtopping of flood walls at the Inner Harbor Navigational Canal, flood waters covered 75 to 80 percent of the City of New Orleans. Due to the extensive amount of damage caused by Hurricane Katrina, permanent repairs to the protection along the outfall canals will take a minimum of 3 years to complete. In order to restore hurricane protection to the three outfall canals (17th Street, London Avenue and Orleans Avenue) and minimize the potential for rainfall flooding during storm events by 1 Jun 06, interim gated closure structures and temporary pumps are proposed. These interim closure structures and temporary pumps are needed so that water levels in the canals can remain at safe levels during permanent rehabilitation of the outfall canals and are required for adequate functioning of the hurricane protection system. Thus, the closure structures and pumps are integral to the permanent repair and rehabilitation effort.

It has been determined that interim canal closures and temporary pumping capacity are authorized under P.L. 84-99 as these features enable permanent repair and rehabilitation efforts of the Lake Pontchartrain and Vicinity Hurricane Protection Project and achieve adequate functioning of the hurricane protection system. Additionally, it was determined that interim canal closures and temporary pumping capacity are ongoing construction features that can be operated and maintained by the Corps of Engineers and will be removed by the Corps of Engineers upon completion of permanent repairs to the outfall canals.

The recommended alternative included in this revision is the construction of interim gated closures and temporary pump stations on the outfall canals. Also, recommended are certain bank stabilization measures (stability berms, seepage berms, relief wells, slurry trench, and sheetpile cutoffs) along the three outfall canals and replacing 3600 feet of damaged I-Wall along the IHNC West Levee with a buttressed I-wall or T-wall section because of changed foundation conditions from Hurricane Katrina. The updated total cost for repair is $333,815,813, with a benefit/cost ratio of 7.3 to 1.0.

1. NAME AND LOCATION

The **Lake Pontchartrain, LA. and Vicinity Hurricane Protection Project** is located in St. Bernard, Orleans, Jefferson and St. Charles Parishes in southeast Louisiana, generally in the vicinity of the city of New Orleans, and between the Mississippi River and Lake Pontchartrain. The Orleans East Bank portion of the project includes the east bank of the Mississippi River between the 17th Street Canal and Inner Harbor Navigational Canal (IHNC). See Figure 1 below.

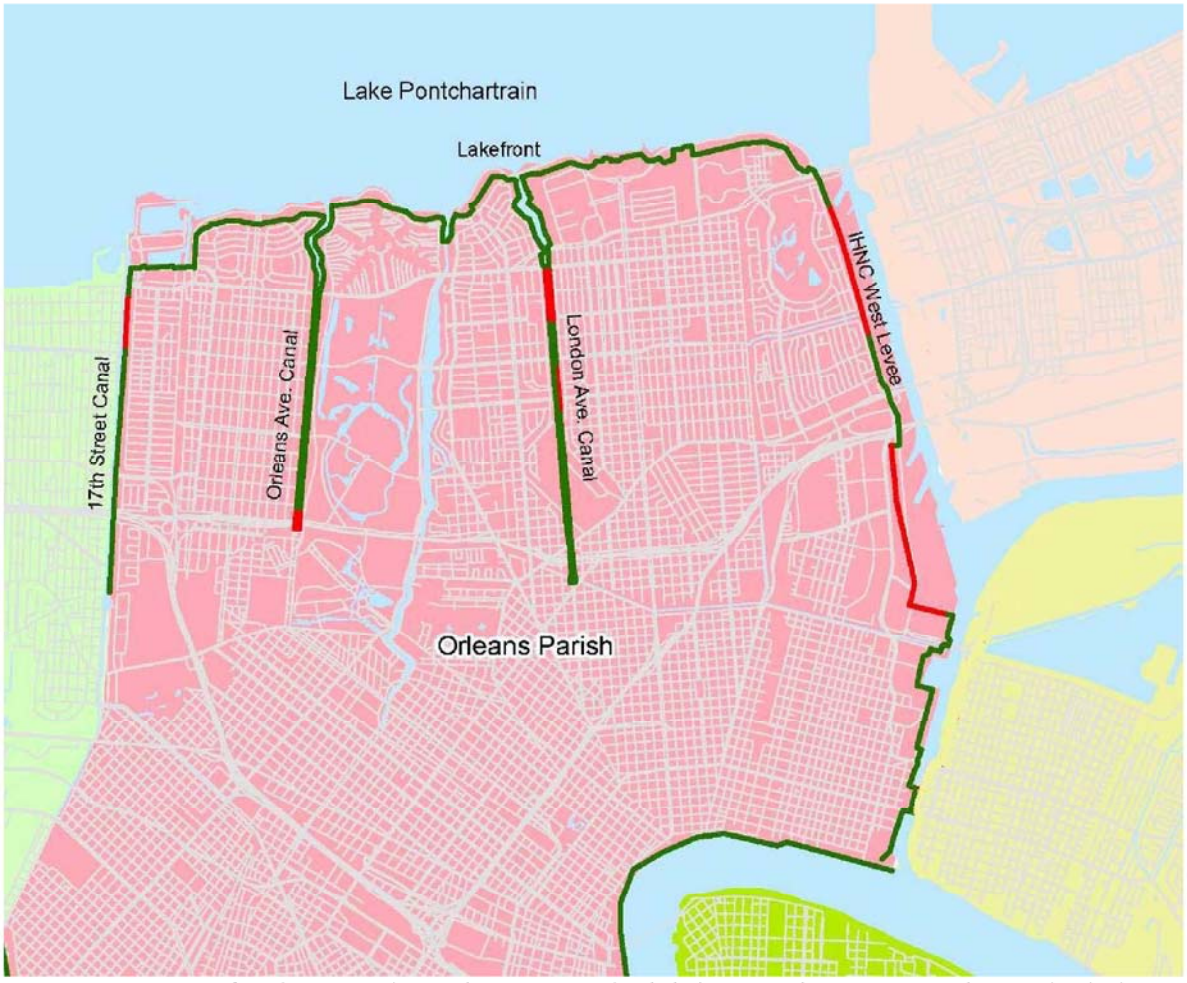

Figure 1. Map of Lake Pontchartrain, LA., and Vicinity Hurricane Protection. Shaded areas in red sustained major damage from Hurricane Katrina.

Features

17th Street Outfall Canal (Metairie Relief)

The 17th Street Outfall Canal lies in Jefferson Parish, immediately west of the Orleans Parish boundary line. The canal receives discharge from Pump Station No. 6 and the I-10 pump station. The total discharge capacity of the canal is 10,440 cfs. The canal extends

approximately 3 miles from Pump Station No. 6 near Interstate 10 to its confluence with Lake Pontchartrain. The parallel protection running the entire length of the canal varies in elevation from 12 at the pump station to 14 at Lake Pontchartrain.

London Avenue Outfall Canal

The London Avenue Outfall Canal is located on the south side of Lake Pontchartrain in Orleans Parish. The London Avenue Outfall Canal lies to the east of 17th Street Canal and Orleans Avenue Canal. The canal receives discharge from Pump Stations No. 3 and 4. The total discharge capacity of the canal is 7,980 cfs. The canal extends approximately 2.5 miles from Pump Station No. 3 near to its confluence with Lake Pontchartrain. The parallel protection running the entire length of the canal varies in elevation from 11.8 at the pump station to 13.3 at Lake Pontchartrain.

Orleans Avenue Canal

The Orleans Avenue Outfall Canal is located on the south side of Lake Pontchartrain in Orleans Parish and runs along the western boundary of City Park. The canal receives discharge from Pump Station No. 7. The total discharge capacity of the canal is 2,690 cfs. The Orleans Avenue Canal extends about 2.4 miles from Pumping Station No.7 in the vicinity of I-610 to its mouth at Lake Pontchartrain. The parallel protection running the entire length of the canal varies in elevation from 12 at the pump station to 14 at Lake Pontchartrain.

The Project Civil Works Information System (CWIS) Number: 009350; FCCE Class is 330.

2. PUBLIC SPONSORS

The Lake Pontchartrain and Vicinity Hurricane Protection Project consists of areas within St. Bernard, Orleans, Jefferson, and St. Charles Parishes. The additional requirements for the outfall canals require that work be performed in Jefferson and Orleans Parishes. The public sponsors for the Cooperation Agreements for the interim closures of the various outfall canals are the Orleans Levee District (OLD) and the Sewerage and Water Board of New Orleans (S&WB) for the interim closure of all three of the outfall canals; and, for the interim closure of the 17th Street Canal, the additional co-sponsors are the East Jefferson Levee District (EJLD) and Jefferson Parish.

On 15 September 2005, the New Orleans District Engineer, Colonel Richard P. Wagenaar issued a Notice to Public Sponsors notifying them that the application period to request Rehabilitation Assistance for Flood Damaged Flood Control Projects expired on 15 Oct 2005. Requests for assistance were received from the Orleans Levee District, the East Jefferson Levee District, the Sewerage and Water Board of New Orleans, and Jefferson Parish prior to the deadline.

Multiple inspections for damage survey reports were conducted from 8 September 2005 through 8 October 2005 to inspect damages to the levee and control structures resulting from the 2005 hurricane event. The following is the team that conducted the inspections:

Project Manager	Frederick Young
Assistant Project Manager	Mark Alvey
Project Manager (IHNC)	Stuart Waits
Geotechnical Engineer	Frank Vojkovich
Geotechnical Engineer	Rich Varuso
Structural Engineer	Darryl Bonura
Structural Engineer	Rob Dauenhauer
Civil Engineer	Danny Thurmond
Cost Estimating Engineer	Darrell Normand
Real Estate Specialist	Dawn Lambert

3. PROJECT AUTHORITY

No changes to this section. Refer to the 18 Oct 2005 PIR.

4. PROJECT CLASSIFICATION

No changes to this section. Refer to the 18 Oct 2005 PIR.

5. DESIGN DATA OF PROJECT

a. This portion of the project that protects the city of New Orleans was designed to protect 28,300 acres of urban and industrial lands. The levee portion is constructed with a 10-foot crown width and side slopes of 1 on 3. Along the Lake Pontchartrain Lakefront, the top elevation of the earthen levees range between elevation +13 and +18 feet National Geodetic Vertical Datum (NGVD). Floodwalls were designed to provide lines of protection along the outfall canals. Floodwalls consist of reinforced concrete T-wall floodwalls and reinforced concrete I-wall floodwalls constructed on the top of sheet-pile, and sheet piling without a concrete section. Top elevations of the floodwalls vary between elevation +13 and +15 feet. The level of protection was derived from providing protection from the design hurricane that used the combination of the following characteristics:

Central Pressure	**Max Winds Radius**	**Wind Speed**	**Max Forward Speed**
27.6	30	110 mph	5 – 11 knots

b. The Levee District is classified as urban Flood Control Works (FCW). The primary project features per last inspection in May 2005 are as follows:

			PL84-99		
			Eligible	Active	
Levee	FCW	FLU	Yes	Yes	Acceptable
Floodwall	FCW	FLU	Yes	Yes	Acceptable
Closure Structures	FCW	FLU	Yes	Yes	Acceptable
Orleans Ave. Canal	FCW	FLU	Yes	Yes	Acceptable

Primary Use codes: FCW= Flood Control Works
NFC= Non-Federal Control Works

Category Codes:		
1st Letter	2nd Letter	3rd Letter
F= Federally Constructed	F=Federally Maintained/Not Eligible	U=Urban
L= Locally Constructed	L=Locally Maintained, Eligible	A=Agricultural
	P=Locally Maintained/Not Eligible	

6. MAINTENANCE

Operation and maintenance of the interim canal closures and integrated pumps will be by the USACE and these features will be removed by the USACE upon completion of permanent repair and rehabilitation to the hurricane protection system.

7. PERIODIC NOURISHMENT

No changes to this section. Refer to the 18 Oct 2005 PIR.

8. PREVIOUS PL-84-99 ASSISTANCE

No changes to this section. Refer to the 18 Oct 2005 PIR.

9. DISASTER INCIDENT

No changes to this section. Refer to the 18 Oct 2005 PIR.

10. DAMAGE DESCRIPTION

No changes to this section. Refer to the 18 Oct 2005 PIR.

10.a. Advertised/Awarded Contracts covered in the 18 October 2005 PIR

1 OEB01 – Sheet Pile Repair 17th Street Canal Floodwall Breach (Phase I)
2 OEB02 - Sheet Pile Repair 17th Street Canal Floodwall Breach (Phase II)
3 OEB03 - London Ave. Canal Floodwall Breach, Mirabeau Ave
4 OEB05 – London Ave. Canal Floodwall Breach, Robert E. Lee Blvd.
5 IHNC02 – West Side, South of France Rd. Ramp to N. of Benefit St.
6 IHNC04 – West Side, Hayne Blvd. to Hwy. 90
7 IHNC05 – West Side, Vicinity of France Rd. Ramp to IHNC

10.b. Revised Damages

The surge from Hurricane Katrina affected the integrity of the parallel protection levee system in the three Outfall Canals in the Orleans East Bank basin. Hydrographic and overbank surveys at and near the breaches indicated that the surge caused degradation between and along the canal bank and channel bottoms. Geotechnical analyses of the flood protection along the canals were performed using USACE criteria and current survey data. The geotechnical conditions deteriorated from the effects of Hurricane Katrina thereby reducing the water elevation that the canals could safely handle post-Katrina. The integrity of the flood protection has been compromised along each canal.

17th Street Canal. The length of parallel protection in need of repair is 17,500 linear feet. Seepage analyses indicate a need for relief wells and/or seepage berms starting 600 feet north of Veterans Highway for a distance of 3900 feet towards Pumping Station No.6. On the east bank below Veterans Highway to Hammond Highway Bridge and on the west side below West Esplanade Boulevard the results of the geotechnical analyses indicated the need for stability berms. Not included in the above linear feet is the final repair for the breach near Hammond Highway Bridge which will be repaired with an Inverted T-wall.

London Avenue Canal. The length of parallel protection in need of repair is 18,300 linear feet. Seepage analyses indicate a need for relief wells and/or seepage berms from a distance 3,700 feet north of Pumping Station No. 3 to the Robert E. Lee Bridge on the west side of the canal and to Leon C. Simon Bridge on the east side of the canal. Above the Leon C. Simon Bridge seepage analyses indicated the need for a slurry trench with a clay cap tie-in for the existing levee. Not included in the above numbers are the repairs at the two breaches and the repair of the translated wall on the east side of the canal south of the Robert E. Lee Bridge.

Orleans Avenue Canal. The length of parallel protection in need of repair is 11,400 linear feet. Seepage analyses indicate a need for relief wells and/or seepage berms for multiple locations between Pumping Station No. 7 and Robert E. Lee Bridge. Above the Robert E. Lee Bridge analyses indicated the need for a slurry trench tied into to the existing levee with a clay cap. Not included in the above numbers are the linear feet of levee that is below grade at Pumping Station No. 7.

IHNC West Levee. Further geotechnical analysis has been performed along the IHNC west levee to assure adequate designs of the proposed repairs. The results of these analyses resulted in multiple modifications to foundations for several contracts. In addition it also identified other reaches along the west side protection of the IHNC not identified in the original PIR, which may be considered for repair/replacement. The increase from earlier estimates in this revision is to attempt to capture the increased costs for the foundation modifications and other areas that originally appeared to not need repair. Approximately 3600 feet of damaged I-wall floodwall will be replaced with a buttressed I-wall or a T-wall section along the IHNC west levee. This is need because of damage to the existing wall or changed foundation conditions caused by Hurricane Katrina. The replacement feature will be constructed on the existing alignment as the current I-wall. Additionally, all overtopping scour and erosion will be repaired. This repair will be armored to prevent future scour along this reach of levee/floodwall.

11. NEED FOR PL 84-99 REHABILITATION

Hurricane Protection Shore Protection (HSPP) Rehabilitation Assistance is necessary to return the system to adequate functioning of the project and reduce the immediate threat to life and improved property. Planned rehabilitation will return the system to the previously authorized height (returning the project to its previous lift height plus overbuild). Temporary closure structures in the three outfall canals will keep storm surge from exceeding a safe operating stage until rehabilitation of the protection has been completed. As a result of Hurricane Katrina, preliminary investigation data indicates that the parallel protection along the outfall canals is weakened, such that the maximum safe water elevation of each of the canals (the allowable safe operating stage in each of the outfall canals has been significantly reduced as a result of Hurricane Katrina) is less than that which existed prior to Hurricane Katrina. Finalization of these investigations will determine the maximum safe water elevation in each canal. The local pumping stations will not be able in the without project condition to pump water into these canals in the quantities that were available prior to Hurricane Katrina under certain conditions. The without project (post-Katrina) condition (being the project without construction of the sheet pile or interim closures and bank stabilization features herein described), imposes an increased risk of flooding from rainfall because local pumping capacity may have to be reduced to accommodate the post-Katrina maximum safe water elevations within each of the outfall canals.

The American Society of Civil Engineers/National Science Foundation (ASCE/NSF) expressed concerns about the existing condition of the outfall canals in the "Preliminary Report on the Performance of the New Orleans Levee Systems in Hurricane Katrina," released on 2 November 2005. The ASCE/NSF Preliminary Report points out that the outfall canals have not yet been tested to their design water heights. The Preliminary Report further recommends that "until these canals are more fully repaired and/or more permanent canal surge check structures are in place, having the ability to rapidly prevent storm surges down these canals is still needed."

PL 84-99 allows for the rehabilitation of the Lake Pontchartrain and vicinity Hurricane Protection system to pre-Katrina levels. Accordingly, since the Congress has deemed the outfall canals a feature of the hurricane protection project, the outfall canals are eligible for rehabilitation under PL 84-99.

12. Proposed Work

Project Repair Alternatives Considered

a. Description

(1) No Action. This alternative consists of providing no emergency repairs to this portion of the hurricane protection system under PL 84-99 authority or funding sources. The protected area would remain unprotected and would not be suitable for residential, industrial, or other urban usage.

(2) Non-Structural Flood Recovery / Floodplain Management. This alternative consists of non-structural strategies generally involving change in land use offered by other Federal and state programs. Such strategies would include: (1) Acquisition, relocation, elevation, and flood proofing existing structures; (2) acquisition of fee interest and/or conservation or other types of easements; and (3) restoration of wetland. The sponsors have not indicated any interest in this alternative.

(3) Rebuild Levee, Floodwalls, and Control Structures to authorized project height. This alternative consists of repairing the hurricane flood control line of protection to the lift height plus overbuild that was previously constructed.

(4) Construct outfall canal closure structures for the 17th Street, London Avenue, and the Orleans Avenue Canals to prevent storm surge from entering the canals. This alternative consists of building interim gated closure structures with temporary pumps at each of the canals near Lake Pontchartrain and any modifications to the levees north of the proposed structure to tie into the Lake Pontchartrain levees. Measures will also be taken to increase the safe operating stages in the canals.

b. Discussion

(1) No Action alternative is not acceptable to the sponsors because the area would remain unprotected and subject to flooding from even minimal coastal storms or any other event that increases water levels above normal tidal fluctuations. This situation would prevent reliable residential and industrial use of the land. Orleans Parish and Jefferson Parish are a densely populated, urban, and industrialized community with petrochemical industries that serve the Nation.

(2) Non-Structural Flood Recovery / Floodplain Management alternative

is not acceptable due to the numerous industrial uses for the lands within the protected area. In addition, there will be residents, businesses, and industries that will want to and will be allowed to rebuild their homes and businesses. The sponsor has not requested a non-structural alternative.

(3) Structural Repair alternative restores the hurricane protection system to the authorized project height that was previously constructed and is fully supported and desired by the sponsors. If the repair is not done, damage will continue to occur during future flooding events. Repairs would be the replacement of lost soil material to restore the levee alignment and cross section to authorized height and replacement of the damaged floodwall sections.

(4) In order to restore hurricane protection to the three outfall canals and minimize the potential for rainfall flooding, interim gated closure structures and temporary pumps are recommended. A brief discussion of the existing sheet pile closure structures and the recommended gated closure structures and temporary pumps is provided below. These closure structures are an interim measure and would be removed by the USACE when the authorized level of protection has been restored to the outfall canals.

Steel Sheet Piling Closure Structures. Hurricane Katrina caused major breaches on the 17th Street and London Avenue Outfall Canals. In order to facilitate the unwatering of the city, steel sheet piling was driven across both of these canals. The sheet piling was driven against existing bridges using the bridges to provide the necessary support. The sheet piling closure structures were constructed as part of the unwatering efforts and remain in place to ensure the ability to close off the canals should a storm cause increased stages in Lake Pontchartrain. When closed, the existing pumping stations located along the canals are not able to operate because the outlet to Lake Pontchartrain is closed. If the pumps were to begin operating while the canals were closed, water levels in the canals would quickly rise overtopping the protection and flooding the city. The structures are primarily left in the open position but have been closed when construction activities were occurring at the breach sites. The structures are opened and closed by pulling and then re-driving the center section of sheet piles. Each time the sheet piles are removed and then re-driven into place, the foundation supporting them is further disturbed. With enough opening and closing cycles, the foundation reaches a point where it will no longer provide adequate support against a storm surge in Lake Pontchartrain. Another problem with these closure structures is that it is very difficult to install or remove the sheet piling with any type of differential head or flow in the canal. As a result, the canals must be closed well in advance of an approaching storm and can't be pulled until well after the storm has passed. This subjects the city to extended periods with very limited pumping capacity. Providing an interim closure structure with pumping capacity would greatly reduce the risk of potential flooding. This reduction in potential flooding should therefore not be characterized as an inducement of flooding.

Gated Closure Structures with Pumps. The existing sheet pile closure structures on 17th

Street and London Ave. outfall canals would be replaced with interim gated closure structures. In addition, a gated closure structure would also be constructed on the Orleans Avenue outfall canal. These structures would include temporary pumps providing a total capacity, when fully implemented and operational, of approximately 2,000 cfs for Orleans Avenue Canal, 2,600 cfs for London Avenue Canal and 2,600 cfs for 17th Street Canal. The pumping capacity available on 1 Jun 06 at each closure structure might be less than the full design capacity due to time constraints, but construction will continue into the 2006 hurricane season and additional pumps will be brought online during that time. The gated closure structures and pumps would be a temporary solution while the permanent protection along the outfall canals is being restored.

The gated closure structures would be left in the open position except when weather conditions exist in Lake Pontchartrain that are capable of producing stages in the canals that would exceed the maximum safe water elevation (the allowable safe operating stage in each of the outfall canals has been significantly reduced as a result of Hurricane Katrina). The gates would remain closed until the storm had passed and the stages in Lake Pontchartrain had receded to a safe level. During this period of time that the gates are closed, the temporary pumps would operate to pump out any rainfall that was associated with the storm. By leaving the gates in the open position during non-tropical events, the pumping capacity of existing non-Federal pumping stations can be utilized during heavy rainfall events, but only to the maximum safe water elevation. The temporary pumps, located at the gated structures, would provide the city with limited pumping capacity. The gate mechanism would allow these structures to be repeatedly opened and closed without affecting the ability of the structure to withstand a hurricane surge. Opening and closing of the gates would be much quicker than pulling or driving the sheet piling associated with the existing closures. The gated closure structures would also remain operational with flow in the canals and with a limited head differential. This would significantly reduce the period of time the gated structures would need to be closed.

The capacity of the existing pumping stations along the outfall canals is, to a large extent, dependent on the water elevation in the canals. With normal stages in Lake Pontchartrain, the total pumping capacity into the canals is 10,440 cfs for the 17th Street Canal, 2,690 cfs for the Orleans Ave Canal, and 7,980 cfs for the London Ave Canal. When a tropical storm or hurricane is approaching the area, the stage in Lake Pontchartrain and the outfall canals becomes elevated. This increases the head differential across the pumping stations and reduces the efficiency of the pumps. The pumping capacity of the stations will decrease by 10 to 40 percent during a tropical storm or hurricane. During a tropical storm or hurricane event, the capacity of the fully implemented and operational temporary pumps (2,000 cfs for Orleans Avenue Canal, 2,600 cfs for London Avenue Canal and 2,600 cfs for 17th Street Canal) will provide, based upon currently available information, approximately 83 to 124 percent of the storm-reduced capacity of the pumps discharging into the Orleans Ave Canal; will provide approximately 36 to 54 percent of the storm-reduced capacity of the pumps discharging into London Avenue Canal, and provide approximately 28 to 41 percent of

the reduced capacity of the 17th Street Canal pumping stations. This will not eliminate the potential for rainfall flooding, but it will significantly reduce the likelihood of flooding when compared to the existing conditions (post-Katrina without sheet pile or interim closures). Without the construction of the interim closures at each outfall canal, the canals would be closed by driving steel sheet piling similar to what was done during Hurricane Rita. Only minimal pumping capacity provided by several small portable pumps would be available under these conditions. The pumping capacity available to minimize potential flooding throughout metropolitan New Orleans would be significantly greater with the interim gated closure structures and temporary pumps.

A model study is being conducted to evaluate impacts to Jefferson and Orleans Parishes associated with any losses in discharge capacity that may be caused by the temporary gated structures and pumps located at the outfall canals. Four hydrologic conditions will be evaluated: Hurricane Katrina without levee breaches; and three hydraulic conditions with the closure structure and pumps; a 10-year rainfall event and tide in Lake Pontchartrain; a 50-year rainfall event and tide in Lake Pontchartrain; and a 100-year rainfall event and tide in Lake Pontchartrain. The model will account for surface and subsurface flow interchange between interior watersheds. The results of the model will be used to evaluate the need for additional pumping capacity. The model will also be used to quantify the benefits of incorporating additional pumping capacity with the closure structures. Finally, the benefits associated with the timing of the gate closures versus a structure with no gates can be evaluated.

A review of the last 40 years of tide gage records and rainfall data indicates that with lake stage of approximately 5 feet and rainfall in excess of 2-inch in a 24 hour period, the gate structure would have been close on average less that once in every eight years.

The gated outfall canal closure structures are an interim measure and would be removed as soon as the protection along the outfall canals has been restored to authorized levels. Several options for restoring the protection along the outfall canals are being considered, including T-walls, relief wells, seepage and stability berms, and full levee sections. The plan for each of the outfall canals will probably involve a combination of these options. The time frame for restoring the permanent protection is approximately 2-3 years. Should Congress authorize permanently closing the outfall canals and constructing new pumping stations, the need for the gated closure structures would be eliminated when the newly authorized work is complete.

The gated closure structures and pumps are temporary and will only be needed until the permanent protection along the outfall canals has been restored. Therefore, operation and maintenance costs will be 100 percent Federal until the completion of the permanent repairs and rehabilitation to the hurricane protection system in the outfall canal areas. ER 500-1-1 (paragraph 5-19) states "The non-Federal sponsor must operate, maintain, repair, replace, and rehabilitate the completed project." However, the gated closure structures and temporary pumps are interim measures that are only needed until the permanent repairs to the outfall canals have been completed and will not be part of the project once

the rehabilitation efforts are complete. ER 500-1-1 (paragraph 5-20.c) further states "Emergency repair and rehabilitation of HSPP's with FCCE funds will be limited to that necessary to allow for adequate functioning of the project or restoration to pre-storm condition, whichever is less." The "adequate functioning of the project" is dependent on the gates and pumps being operational during a storm until the protection along the canals has been restored. The costs to construct, operate, and maintain the gated closure structures and temporary pumps are all part of permanently rehabilitating the hurricane protection system and will be 100 percent Federal. The removal of the interim gated closure structures and temporary pumps will also be by the USACE.

13. RECOMMENDED ALTERNATIVE

(a) The recommendations proposed in the 18 October 2005 PIR are still valid and currently being implemented. Please refer to that PIR for a list of the previously approved recommendations.

(b) To address the concerns in the three (3) outfall canals, interim closure structures near the confluence of each canal with Lake Pontchartrain are recommended. Each gated structure will consist of a steel structure with operable gates adjacent to existing landside protection. Temporary pumps will be installed adjacent to the structures for drainage to reduce the area that might otherwise have the potential for flooding. Additionally, any required modifications to the levee system reaching from the proposed structure to the lake will be included. The USACE will operate and maintain the interim canal closures and integrated pumps until they are removed by the USACE upon completion of permanent repair and rehabilitation to the hurricane protection system. Also, recommended are certain bank stabilization measures (stability berms, seepage berms, relief wells, slurry trench, and sheetpile cutoffs) at certain areas damaged by Hurricane Katrina along the three outfall canals.

(c) The IHNC West Levee will replace 3600 feet of damaged I-wall floodwall with a buttressed I-wall or a T-wall section because of changed foundation conditions from Hurricane Katrina and or related damages. It will be constructed on the same alignment. All overtopping scour and erosion will be backfilled with compacted clay material and fortified to prevent future scour along the IHNC West Levee/Floodwall and Lakefront Levee/floodwall.

14. ECONOMICS

a. Economic Analysis

(1) General. The revised economic feasibility analysis for the Orleans East Bank Lakefront portion of the Lake Pontchartrain Hurricane Protection Project was conducted under the authority of EP 500-1-1 in support of the repair and reconstruction of Federally-authorized flood control works as provided for under Public Law 84-99.

(2) Benefit Analysis. The total average annual benefits associated with the New Orleans Eastbank reach of the Lake Pontchartrain Hurricane Protection Project are $136,879,000. The source of this estimate is the "Lake Pontchartrain, La. and Vicinity Hurricane Protection Project Reevaluation Study (July 1984), the latest approved decision document, as updated in June 2005 in support of the FY 2007 Congressional budget submission. Inundation damage reduction benefits include those associated with avoided losses to residential, commercial, and industrial structures, their contents, and vehicles associated with these structures. This figure is estimated using 2005 price levels and an FY 2006 current Federal discount rate of 5.125 percent. These benefits are based upon an expectation that all damaged or destroyed facilities will be fully restored and is consistent with current planning guidance that requires adjustments if there is specific information that indicates such restoration will not occur. No adjustments thus far were made to account for partial replacement in kind of structures that have been damaged or destroyed by Hurricane Katrina.

(3) Cost Analysis. The total first cost for the rehabilitation work is (b) (6) The total average annual cost associated with repair of the damaged portions of the east bank reach of Orleans Parish (west of the industrial canal) is (b) (6) This estimate includes construction costs, contingencies, engineering and design costs, and construction management costs. The total first costs reflect October 2005 price levels and were amortized at the FY 2006 Federal discount rate of 5.125 percent over a 50-year period of analysis. Since the repair is expected to be completed within one year, no interest during construction accrues. No incremental operations and maintenance costs are expected since the scope of the original project design has not changed.

(4) Benefit Cost Ratio. The degree to which average annual project benefits exceeds average annual project costs is the measure of positive average annual net project benefits and is consistent with a benefit-to-cost ratio of 1.0 or greater. Net benefits for the rehabilitation project is The benefit-to-cost ratio is accordingly 7.3 to 1.0.

b. Cost Estimate

Table 14 summarizes the overall estimated costs for the project with each row estimating the costs of each planned contract. The breakdown cost estimates of each contract are included in Appendix L.

To appropriately reflect the change this additional work represents, costs for previously approved project features have been updated in this report. The estimated costs to operate and maintain the gated closure structures and temporary pumps along with the costs to remove the structures when the permanent protection has been restored are included. This includes the use of actual construction contract award amounts on six (6) awarded contracts. Also, given the emergency conditions under which the design and contract documents have been prepared, the short amount of time allowed for construction completion, and high level of competition for construction contractor resources in the

area, a 30 percent contingency is being used for contracts not yet awarded. The need for this is evidenced by bids received on awarded contracts generally exceeding construction estimates and it is anticipated that there will be a higher than normal percentage of contract modifications. The contingency for awarded contracts is 10 percent.

Table 14 - Summary of Orleans East Bank Cost Estimates

Reach	**Total Cost**
Table L-1 - Phase I Floodwall Repairs - 17 St. Canal (OEB01)*	
Table L-2 - Phase II Floodwall Repairs - 17 St. Canal (OEB02)	
Table L-3 - Phase I Floodwall Repairs - London Ave Canal at Mirabeau Ave (OEB03)*	
Table L-4 - Phase II Floodwall Repairs - London Ave Canal at Mirabeau Ave (OEB04)	
Table L-5 - Phase I Floodwall Repairs - London Ave Canal at Robert E. Lee Blvd (OEB05)*	
Table L-6 - Phase II Floodwall Repairs - London Ave Canal at Robert E. Lee Blvd (OEB06)	
Table L-7 - Floodwall Repairs - London Ave Canal East Side at Robert E. Lee Blvd (OEB08)	
Table L-8 - IHNC West Side Floodwall Repairs - Hwy 90 To Lake (IHNC04)*	
Table L-9 - IHNC West Side Floodwall and Minor Scour Repairs - Hwy 90 to IHNC Lock (IHNC08 & IHNC09)	
Table L-10 - IHNC West Side Floodwall Repairs - France Rd to Benefit Rd (IHNC02)*	
Table L-11 - IHNC West Side Floodwall Repairs - France Rd to IHNC (IHNC05)*	
Table L-12 - Orleans Ave Canal - Channel Scour and Slope Pavement Repairs (OEB07)	
Table L-13 - Lakefront Levee Scour and Floodwall Repairs (OEB07)	
Table L-14 -Closure Structure at 17th Street Canal (OEB09)	
Table L-15 -Closure Structure at London Avenue Canal (OEB10)	
Table L-16 -Closure Structure at Orleans Avenue Canal (OEB11)	
Table L-17 - Bank Stabilization for 17th Street Canal (OEB12)	
Table L-18 -Bank Stabilization for London Avenue Canal (OEB13)	
Table L-19 -Bank Stabilization on Orleans Canal (OEB14)	
Subtotal	
Contingency (Awarded Contracts = 10%)	
Contingency (Unawarded Contracts = 30%)	
Demolition of Interim Gates and Temporary Pumps	
Temporary Pumps	
Subtotal	
Engineering and Design (E&D = 10%)	
Supervision and Administration (S&A = 10%)	
LERRDs: 17th Street Canal - $1,400,000; London Avenue Canal @ Mirabeau Avenue - $1,650,000; London Avenue Canal @ Robert E. Lee Boulevard - $3,400,000; 17th Street Canal Closure Structure - $2,500,000	
Operation and Maintenance of interim closures and temporary pumps ($1.45M/ year for 3 years)	
Total	

NOTE: * indicates an awarded contract

15. ENVIRONMENTAL CONCERNS

The New Orleans District Commander has considered the probable environmental consequences of the proposed work under this PIR.

A portion of the proposed work will occur within the existing footprint for the project and is categorically excluded from additional National Environmental Policy Act (NEPA) documentation as per Engineering Regulation ER 200-2-2, Paragraph 9.a., which provides for NEPA exclusion of "activities at completed Corps projects which carry out the authorized project purposes." Examples of such activities include "repair, rehabilitation, replacement of existing structures and facilities, such as … levees." The requirements of other applicable environmental laws and regulations remain in effect and the proposed work will comply with them.

It is anticipated that new work within the existing footprint for the project will not result in significant environmental impacts. However, this new work has not been the subject of any prior Federal environmental review. The dredging, if any, of the outfall canals from the lake to the sites of the recommended interim gated closure structures, and construction of closure structures and floodwalls would cause temporary adverse impacts to aquatic resources at the construction sites located at the mouths and along the sides of three urban drainage canals. Even though these canals extend into urban Orleans Parish, they provide estuarine nursery habitat for a variety of species and likely contribute to the overall productivity of Lake Pontchartrain. Since the proposed closure structures would be left open to allow tidal flow except when extremely high tidal conditions are expected, and considering that the structures will provide a large opening for aquatic resources to enter and exit the canals except when extremely high tidal conditions are expected, there should be a minimal effect on the aquatic productivity of the canals from the proposed work. The proposed work is not expected to adversely affect wildlife habitats, threatened or endangered species, or other natural or cultural resources.

The balance of the proposed work under this PIR would cause impacts to areas immediately adjacent, but outside the existing project footprint, and so have not been the subject of any prior Federal environmental review. All of the lands required for this work have been previously impacted by human activities and contain no threatened or endangered species or other natural or cultural resources. The required new rights of way are developed residential and commercial properties, roads, road rights of way, and canal waterbottoms. Interested Federal and state agencies have been advised of the proposed work.

The effects of new work within the existing project footprint and work outside of the existing project footprint will be included in an after-the-fact environmental assessment that is under preparation for all of the flood protection repair work being undertaken by the Corps in the Metropolitan New Orleans area. The authority for this approach is per ER 500-1-1, Paragraph 2-3.k(1), and ER 200-2-2, Paragraph 8, and a determination made by the New Orleans District Commander on 5 January 2006, that this work prevents or

reduces an imminent risk of life, health, property, or severe economic losses. (See Appendix M).

The proposed action will require quantities of earthen clay material. This PIR revision allows for large amounts of earthen clay material to be procured or supplied by the contractor, in lieu of the Government obtaining an interest in land. It further allows for earthen clay material to be procured/supplied by an indefinite delivery/indefinite quantity contract solicited by the Government to furnish and deliver the material, also in lieu of the government obtaining an interest in land. If the Government furnishes borrow areas to the contractors for work under this PIR then, at a minimum, upfront coordination will be performed with the Federal and state resource agencies, including the U.S. Fish and Wildlife Service, the National Marine Fisheries Service, the State Historic Preservation Officer, and the Louisiana Department of Natural Resources, before the sources were approved for use. The environmental effects of utilizing the Government-furnished borrow areas will be included in the after-the-fact environmental assessment described above.

16. PERMITS

No changes to this section. Refer to the 18 Oct 2005 PIR.

17. REAL ESTATE REQUIREMENTS

DESCRIPTION OF LERRDS

The project consists of levee/floodwall repairs to the outfall canals and interim canal closure structures and temporary pumps at each of the outfalls canals near Lake Pontchartrain, Orleans and Jefferson Parishes, Louisiana.

The levee/floodwall repairs and the interim canal closure structures and temporary pumps will require the acquisition of standard Flood Protection Easements and Temporary Work Area Easements. Borrow material used for construction of these projects will be obtained from the Bonnet Carre' Spillway, and/or by use of an alternative method as described below, if necessary.

Approximately 47 residential properties and some commercial land will be affected by the construction, to include approximately 1.8 acres of perpetual Flood Protection Levee/Floodwall Easements and approximately 8.3 acres of Temporary Work Area Easements. Documentation of the real estate "before" construction will be made through video and/or photography.

UNIFORM RELOCATION ASSISTANCE (P.L.91-646) AS AMENDED, TITLE II

Additional right-of-way for levee/floodwall repairs and the interim canal closure structures and integrated pumps will require commandeering by the Mayor of New

Orleans through an Executive Order granting use of property that affects approximately 47 ownerships. Benefit payments under the provisions of Title II of the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, Public Law 91-646, as amended, may be applicable on a case-by-case basis. It is estimated that construction of these projects will require the displacement of approximately 26 habitable residences. Title III procedures are applicable.

FACILITY/UTILITY RELOCATIONS

There are no known utilities that will be affected by the construction of these projects.

LANDOWNER CONCERNS

There are approximately 47 properties affected by construction. Many landowners are concerned that compensation based on the date of taking will not allow them adequate financial support to rebuild their residences that were destroyed by Hurricane Katrina. At least one landowner has insisted that his entire property should be taken and not just the portion required for construction, operation and maintenance.

EARTHEN CLAY MATERIAL SOURCES

Typically, borrow areas required for construction projects are governed by ER 405-1-12, Chapter 12, as pertaining to the lands, easements, rights-of-way, and disposal and borrow areas, which are all considered interests in real property. However, an exception exists for small amounts of borrow, which can be considered a construction supply item that is furnished by the construction contractor through use of a readily available commercial site.

The Orleans East Bank sponsor has obtained borrow sources from the Mayor's commandeering of land for borrow for earthen clay material used in the repair and rehabilitation of hurricane protection projects, following the devastation of Hurricane Katrina. Sufficient sites have been identified and tested to cover the material required in this revised PIR. However, the material found in this region has a high moisture content. Processing the material to an acceptable level, especially in the upcoming rainy season, will take valuable time. These delays could prevent the completion of any levee tie-in contracts and prevent our objective of providing hurricane protection on or before 1 June 2006.

In accordance with ER-405-1-12, Chapter 12, paragraph 12-9e, concurrent approval is requested to pursue one or both of the following two alternatives to borrow areas in order to expedite obtaining earthen clay material for immediate use are:

(1) Allowing large amounts of earthen clay material to be procured/supplied by the contractor, as opposed to obtaining an interest in land. The construction contract solicitation documents would clearly request bids for the material and

provision of such material by the construction contractor would be in the nature of a construction item.

(2) Earthen clay material procured/supplied by an Indefinite Delivery/Indefinite Quantity contract solicited by the Government to furnish and deliver the material, as opposed to obtaining an interest in land. The non-Federal sponsors would receive stockpiled materials from the earthen clay material contractor by providing location(s) within its jurisdictional boundaries for use as stockpile area(s). If the stockpile area(s) are not owned or controlled by the sponsors, they must be commandeered and those interests in privately-owned real property will be Federally-funded.

These expediting alternatives will be used if necessary, once a variety of factors are weighed that include an analysis of cost, reasonableness, time, availability, proximity to jobsite, etc., keeping in mind that any material used must be environmentally cleared, prior to its use. Both of these alternatives allow contractors to take advantage of access to known suitable commercial and/or acceptable clay material sources unknown to the Government, and allow for free and open competition amongst offerors to arrive at fair and reasonable prices for the needed clay materials. Determination has previously been made by CEMVD-PD-SP that these alternatives are acceptable.

18. PROJECT MANAGEMENT

a. Funding Authority

(1) Program and Appropriation: FCCE, 96x3125

(2) Class: 330

(3) CWIS Number: 009350

b. Project Funds.

(1) Total estimated construction cost including E&D [redacted]

(2) Other Non-Federal cost $0

c. Project Repair Schedule. There will be a minimum of 19 construction contracts used for the repair of the Orleans East Bank Lakefront hurricane protection system. The first thirteen (13) contracts were discussed in the original PIR and the new six contracts are discussed below. Three contracts will include gated-closure structures constructed at the end of each outfall canal near the lake; the closure structures will include a large gated-control structure to allow flow during lake stages at or below elevation 6.0 NAVD 88 and supplemental pumps to ensure continued internal drainage when the lake stage exceeds elevation 6.0 NAVD 88 and the gates are closed. Two

construction contracts to stabilize the banks of the London Avenue and 17th Street Canals will include driving sheet pile cutoffs and placing a concrete cap between the cutoff sheet piles and the existing walls. One construction contract to stabilize the banks of the Orleans Avenue Canals will include driving sheet pile cutoffs and placing a concrete cap between the cutoff sheet piles and the existing walls on the west bank and placing berms in two area on the protected side of the east bank protection.

19. ONE-TIME DEVIATION FROM THE POLICY REQUIREMENTS OF COOPERATION FOR THE REHABILITATION EFFORTS.

Pursuant to CECW-HS, Memorandum for Assistant Secretary of the Army for Civil Works (ASA(CW)), SUBJECT: Recommendations for One-Time Deviations to Certain Policies Regarding Use of P. L. 84-99 (33 U.S.C. 701n) in New Orleans and Vicinity following Hurricane Katrina-FOR APPROVAL, dated October 7, 2005 (a copy of which is attached hereto as Appendix N), approved by the ASA(CW) on October, 12, 2005 (Appendix O), and affirmed by the Office of Management and Budget on October 17, 2005, the Government shall utilize Flood Control and Coastal Emergencies (FCCE) funds, at full Federal expense pursuant to the provisions of P. L. 84-99, to fund the performance of the following activities as a one-time exception of policy specific to flood control works in St. Bernard, Orleans, Jefferson, and Plaquemines Parishes, Louisiana, following Hurricane Katrina, as follows:

a. For federally authorized and constructed projects that have been turned over to the non-federal sponsor, use FCCE funds at full federal expense to fund the acquisition of lands, easements, rights-of-way, and disposal or borrow areas not owned or under the control of the non-federal sponsor, as well as the performance of relocations, that are needed for the rehabilitation.

b. For non-federal flood damage reduction projects, including pumps and pump stations, not active in the RIP, at full federal expense use FCCE funds, to 1) undertake permanent rehabilitation to pre-storm condition and 2) fund the acquisition of lands, easements, rights-of-way, and disposal or borrow areas not owned or under the control of the non-federal sponsor, as well as the performance of relocations, that are needed for the rehabilitation.

c. For those segments of federally authorized projects not be officially "turned over" but for which the sponsors are performing operation and maintenance, use FCCE funds at full federal expense to 1) undertake permanent rehabilitation to pre-storm condition and 2) fund the acquisition of lands, easements, rights-of-way, and disposal or borrow areas not owned or under the control of the non-federal sponsor, as well as the performance of relocations, that are needed for the rehabilitation.

d. For those segments of federally authorized projects under active construction, use FCCE funds at full federal expense to 1) undertake permanent rehabilitation to pre-storm condition and 2) fund the acquisition of lands, easements, rights-of-way, and

disposal or borrow areas not owned or under the control of the non-federal sponsor, as well as the performance of relocations, that are need for the rehabilitation.

20. REQUIREMENTS OF FEDERAL AND PUBLIC SPONSOR COOPERATION FOR THE REHABILITATION EFFORTS

Paragraphs a – f have no changes; refer to the 18 Oct 2005 PIR.

g. Operation and Maintenance. After the completion of the permanent repair and rehabilitation of the hurricane protection system in the area of the outfall canals, the non-Federal sponsor will be responsible for the OMRR&R of the rehabilitated project. However, during the period of construction of the permanent repair and rehabilitation of this portion of the hurricane protection project, USACE will operate, maintain, and repair the interim canal closure and associated pumping capacity. Based on the discussion presented earlier in this report, the proposed structures will only be needed until the permanent protection along the outfall canals has been restored. The USACE will remove these features after the completion of the permanent repair and rehabilitation of the hurricane protection system.

21. PROJECT SUMMARY

a. Conclusions

(1) The Orleans East Bank Lakefront Area Plan of the Lake Pontchartrain, LA., and Vicinity Hurricane Protection Project was damaged by Hurricane Katrina in August 2005. The damage consisted of extensive breaches, scour and erosion of the levee along the 17th Street Canal, London Avenue Canal, and the IHNC, and minor damage to the levees and floodwalls along Lake Pontchartrain. In addition there was extensive damage to the floodwalls that are in these same segments of the hurricane protection system along Orleans Lakefront and Orleans Avenue Canal.

(2) Alternatives consisting of No Action, Non-Structural Recovery, and Structural Repairs were considered. Structural repair of the hurricane protection system was selected as the recommended alternative. Further, recommended actions are to construct interim canal closures and integrated pumps as ongoing construction features at the 17th St., Orleans Avenue, and London Avenue Outfall canals that will be operated, maintained, and removed by the USACE upon completion of permanent repair and rehabilitation of the hurricane protection system.

(3) Structural repairs to the project would consist of restoring the levee to its pre-flood alignment via replacement of each damaged section of floodwall and levee embankment to match the authorized project height that was previously constructed.

(4) Several breaches in the outfall canals have not yet been fully repaired. Due to

this and other concerns, it is believed that the existing condition of the outfall canals may not allow the adequate functioning of the hurricane protection system during the 2006 hurricane season. Thus, there is a risk of system failure and potential flooding of the majority of the City of New Orleans without the proposed action, i.e., the proposed interim closure structures with temporary pumping capacity. Providing an interim closure structure with pumping capacity would greatly reduce the risk of potential flooding during a tropical storm or hurricane. While closing of the outfall canals in storm conditions might temporarily reduce pumping capacity which might lead to an increased risk of flooding from rainfall, the proposed action would reduce the area that may experience flooding.

(5) The total rehabilitation project cost is approximately [redacted] with a benefit-to-cost ratio of 7.3 to 1. Without repairs to the Hurricane Protection Project, the threat of future coastal storm events would continue to leave the area unprotected.

b. Recommendations/Project Authentication

(1) As stated throughout this report, because the outfall canals are not able to withstand their design parameters, regardless of the repaired breaches, the interim gated closure structures and temporary pumps are required for the Lake Pontchartrain and Vicinity project to function properly. Thus, it is recommended that this Project be repaired under PL84-99. The recommended alternative of structural repair as described including the construction of interim canal closures and temporary pumps as ongoing construction features at the 17th Street, Orleans Avenue, and London Avenue outfall canals that will be operated, maintained, and removed by the USACE upon completion of permanent repair and rehabilitation of the hurricane protection system, should be implemented. Also, recommended are certain bank stabilization measures (stability berms, seepage berms, relief wells, slurry trench, and sheetpile cutoffs) along the three outfall canals and replacing 3600 feet of damaged I-Wall along the IHNC West Levee with a buttressed I-wall or T-wall section because of changed foundation conditions from Hurricane Katrina.

(2) It is also recommended that this project be approved and that Federal funds in the amount of [redacted] be provided. The final designs will be completed with contract awards scheduled to ensure repairs are complete, or interim protection has been provided, by the beginning of the 2006 Atlantic Hurricane Season.

Project Information Report for Orleans East Bank – Revision #01
Lake Pontchartrain, LA., and Vicinity Hurricane Project
January 2006

DISTRICT PROJECT AUTHENTICATION
Project Information Report
Lake Pontchartrain, LA., and Vicinity Hurricane Protection Project
Orleans East Bank – Revision # 01

PIR Prepared By: Chris Hibra 1/20/2006
Date

Emergency Management Approval By: Herbert J. Wagner 1/20/06
Herbert J. Wagner Date
Acting Chief, Emergency Operations

CERTIFICATION OF LEGAL REVIEW

The Project Information Report (PIR) Revision #01 for repair of the Lake Pontchartrain, LA., and Vicinity Hurricane Protection Project, Orleans East Bank has been reviewed by the Office of Counsel, New Orleans District and is approved as a legally sufficient document for commencement of construction.

Reviewed by: 1/20/06
Assistant District Counsel Date

Certified by: Mary V. Kinsey 20 Jan 2006
District Counsel Date

District-Level Approval By: 21 Jan 06
for Richard P. Wagenaar LTC, U.S. Army Date
Colonel, US Army Deputy District Eng.
District Engineer

DISTRICT PROJECT AUTHENTICATION
Project Information Report
Lake Pontchartrain, LA., and Vicinity Hurricane Protection Project
Orleans East Bank – Revision # 01

PIR Prepared By: _____
Date

Emergency Management Approval By: _____
Herbert J. Wagner Date
Acting Chief, Emergency Operations

CERTIFICATION OF LEGAL REVIEW

The Project Information Report (PIR) Revision #01 for repair of the Lake Pontchartrain, LA., and Vicinity Hurricane Protection Project, Orleans East Bank has been reviewed by the Office of Counsel, New Orleans District and is approved as a legally sufficient document for commencement of construction.

Reviewed by: _____
Assistant District Counsel Date

Certified by: _____
District Counsel Date

District-Level Approval By: _____
Richard P. Wagenaar Date
Colonel, US Army
District Engineer

Project Information Report for Orleans East Bank – Revision #01
Lake Pontchartrain, LA., and Vicinity Hurricane Project
January 2006

DIVISION PROJECT APPROVAL
Project Information Report
Lake Pontchartrain, LA., and Vicinity Hurricane Protection Project
Orleans East Bank – Revision # 01

Emergency Management Approval By: _____
Chief, MVD Emergency Operations Date

CERTIFICATION OF LEGAL REVIEW

The Project Information Report (PIR), Revision #01 for repair of the Lake Pontchartrain, LA., and Vicinity Hurricane Protection Project, Orleans East Bank has been reviewed by the Office of Counsel, Mississippi Valley Division and is approved as a legally sufficient document for commencement of construction.

Certified by: G. Rogers Sloan by Denise Frederick 21 Jan 2006
Mississippi Valley Division Counsel Date
Assistant Chief Counsel

Division-Level Approval By: _____
Albert M. Bleakley Date
Colonel, Engineer
Deputy Division Commander

DIVISION PROJECT APPROVAL
Project Information Report
Lake Pontchartrain, LA., and Vicinity Hurricane Protection Project
Orleans East Bank – Revision # 01

Emergency Management Approval By: _____
Chief, MVD Emergency Operations Date

CERTIFICATION OF LEGAL REVIEW

The Project Information Report (PIR), Revision #01 for repair of the Lake Pontchartrain, LA., and Vicinity Hurricane Protection Project, Orleans East Bank has been reviewed by the Office of Counsel, Mississippi Valley Division and is approved as a legally sufficient document for commencement of construction.

Certified by:_____
Mississippi Valley Division Counsel Date
Assistant Chief Counsel

Division-Level Approval By: _____
Albert M. Bleakley Date
Colonel, Engineer
Deputy Division Commander

APPENDIX A
PROJECT SPONSOR'S REQUEST FOR ASSISTANCE

In addition to the Requests for Assistance submitted by Orleans Levee District, the Request for Assistance submitted by the East Jefferson Levee District, the Parish of Jefferson, and the Sewerage and Water Board of New Orleans is provided.

October 15, 2005

Corps of Engineers, New Orleans District
Attn: Operations Division, Readiness Branch (Herbert J. Wagner)
7400 Leake Avenue
New Orleans, Louisiana 70118-3651

This letter is a written request for rehabilitation assistance for the following flood control project constructed by the non-Federal sponsor in Jefferson Parish, Louisiana: rock protection on shore of Lake Pontchartrain, recreation facilities located on flood protection work, levee on 17th Street Canal from Pumping Station #6 to Mississippi River, low-lying areas between Jefferson and St Charles Parishes on the East Bank of the Mississippi River between the MR&T levees and Airline Highway and all other levees within the East Jefferson Parish, and flood control structures owned or controlled by the East Jefferson Parish Levee District or other similarly situated project(s).

1) Name of Requesting Agency: East Jefferson Levee District, State of Louisiana

Points of Contact: Phone Number:

Fran Campbell [redacted]

James Baker

2) Corps assistance with Levee damage assessment: __X__ Yes _____ No
Corps assistance with Floodgate damage assessment: __X__ Yes _____ No

3) Flood Control Project Location (Section, Township, Range, City and Parish): East Jefferson Parish, Jefferson Parish, State of Louisiana

4) Locations of damage: All project features for projects listed above protecting East Jefferson Parish, State of Louisiana.

5) Waterway causing the damage: All waterways, lakes and bodies of water adjacent to and running through Jefferson Parish, Louisiana, such as Lake Pontchartrain and Mississippi River.

6) Financial Capability of the Non-Federal Sponsor: Hurricane Katrina, August 29, 2005, was a devastating hurricane of catastrophic proportions. The undersigned non-Federal Sponsor requests that the Federal Government assume responsibility and/or cost of the following items of non-Federal responsibility under the requirements of Public Law 84-99: [SIGNIFY REQUEST BY PLACING AN "X" IN THE SPACE PROVIDED.]

a. After required new real property interests identified by the Federal Government are commandeered by or on behalf of the non-Federal sponsor, assume responsibility for acquisition and funding of land payments and incidental cost thereof, of newly acquired lands, easements, rights-of-way, relocations, and disposal areas (Lards), including credit/reimbursement for fair market value, settlement or final judgment for Lards commandeered by or on behalf of the non-Federal sponsor, subject to the requirement that the Federal Government must provide prior approval of fair market value and settlement determinations prior to the non-Federal tender of an offer to land owner: X

b. All reasonable, allocable and allowable cost of the project Rehabilitation Effort: X

c. Costs of Hazardous, Toxic, and Radioactive Waste (HTRW) Investigation: X

7) The need for Federal Government assumption of cost-sharing responsibility for the above items of local obligation is requested due to the extraordinary demands upon the fiscal resources of the undersigned non-Federal sponsor, as follows: The East Jefferson Levee District has suffered the catastrophic loss of its tax base, its business and industry community, its population base, its physical infrastructure, its employee base and now has physical restraints upon recovering some or all reasonable portion of any or all of the forgoing assets without Federal assumption of cost-sharing.

8) Despite current and anticipated future non-Federal fiscal constraints, the non-Federal sponsor can provide the following services and/or items of local obligation, without credit or reimbursement: assist in conducting property title searches, assist in identifying borrow areas, assist in negotiation with property owners for donations, acquiring or obtaining real property, i.e. immovable property, rights and titles.

9) It is in the national interest to provide permanent rehabilitation of the above described projects for the following reasons: Jefferson Parish is a suburb of New Orleans. LA, which is one of the largest ports in the world, and the largest in the nation, at the base of the largest river system in the nation serving as a major economic gateway for industry and commerce to the nation and the world including the export market for the nations grain to the world. The East Jefferson Levee System protects a half of million parish residents, the evacuation routes of over a million people in the surrounding parishes, seven drainage pumping station, two hospitals, 280 billions dollars in infrastructure and property, and the Louis Armstrong International Airport. Many of its residents also support the three petroleum refineries, which producing fuel at a critical juncture in our nation's energy plan and natural gas pipelines, which serve major portions of the Northeastern United States.

10) It is understood and agreed that the Government's decision regarding the request in Paragraph 6 above will be within the Government's sole discretion, and will be determined based on the facts and circumstances applicable to each project.

Sincerely,

James W. Baker Jr.

Printed Name: James W. Baker Jr.
Official Title: Superintendent of Operations
By Direction

October 15, 2005

Corps of Engineers, New Orleans District
Attn: Operations Division, Readiness Branch (Herbert J. Wagner)
7400 Leake Avenue
New Orleans, Louisiana 70118-3651

This letter is a written request for rehabilitation assistance for the following flood control project constructed by the non-Federal sponsor in Orleans Parish, Louisiana: all drainage pumping stations, drainage canals and collection systems, and related power plants and flood control structures owned or controlled by the Sewerage and Water Board of New Orleans or other similarly situated projects.

1) Name of Requesting Agency: Sewerage and Water Board of New Orleans

Points of Contact: Phone Number:

Marcia St. Martin

Joseph Sullivan

Rudy St. Germain

2) Corps assistance with Drainage Canals and Collection systems damage assessments: _X_ Yes __No
Corps assistance with Pump Station damage assessments: __X__ Yes ____ No
Corps assistance with Power Plant damage assessment: __X__ Yes _____ No

3) Flood Control Project Location (Section, Township, Range, City and Parish): Parish of Orleans, State of Louisiana

4) Locations of damage: All project features for projects listed above protecting Parish of Orleans, State of Louisiana

5) Waterway causing the damage: All waterways, lakes and bodies of water adjacent to and running through Orleans Parish, Louisiana, such as Lake Pontchartrain and the Mississippi River.

6) Financial Capability of the Non-Federal Sponsor: Hurricane Katrina, August 29, 2005, was a devastating hurricane of catastrophic proportions. The undersigned non-Federal Sponsor requests that the Federal Government assume responsibility and/or cost of the following items of non-Federal responsibility under the requirements of Public Law 84-99: [SIGNIFY REQUEST BY PLACING AN "X" IN THE SPACE PROVIDED.]

a. After required new real property interests identified by the Federal Government are commandeered by or on behalf of the non-Federal sponsor, assume responsibility for acquisition and funding of land payments and incidental cost thereof, of newly acquired lands, easements, rights-of-way, relocations, and disposal areas (LERRDs), including credit/reimbursement for fair market value, settlement or final judgment for LERRDs commandeered by or on behalf of the non-Federal sponsor, subject to the requirement that the Federal Government must provide prior approval of fair market value and settlement determinations prior to the non-Federal tender of an offer to land owner: ___X____

b. All reasonable, allocable and allowable cost of the project Rehabilitation Effort: ___X___

c. Costs of Hazardous, Toxic, Radioactive Waste (HTRW) Investigation: ___X_____

7) The need for Federal Government assumption of cost-sharing responsibility for the above items of local obligation is requested due to the extraordinary demands upon the fiscal resources of the undersigned non-Federal sponsor, as follows: The Sewerage and Water Board of New Orleans has suffered the catastrophic loss of its tax base, its business and industry community, its population base, its physical infrastructure, municipal employees and now has physical restraints upon recovering any reasonable portion of any or all of the forgoing municipal assets without Federal assumption of cost-sharing.

8) Despite current and anticipated future non-Federal fiscal constraints, the non-Federal sponsor can provide the following services and/or items of local obligation, without credit or reimbursement: Assist in securing property title searches including assisting Orleans Levee Board when necessary, and assist in negotiations with property owners and acquisition of real property, i.e. immovable property, rights and titles.

9) It is in the national interest to provide permanent rehabilitation of the above described projects for the following reasons: New Orleans is one of the largest ports in the world, and the largest in the nation, at the base of the largest river system in the nation serving as a major economic gateway for industry and commerce to the nation and the world including the export market for the nations grain to the world. There are three petroleum refineries producing a fuel at a critical juncture in our nation's energy plan and serving natural gas pipelines serving major portions of the Northeastern United States. The Sewerage and Water Board of New Orleans provides water and sewerage services, and drainage to many of the aforementioned businesses and many residents who are employed in the aforementioned industries and business. Additionally, the Sewerage and Water Board of New Orleans drains 2,200 acres of the adjacent parish, Jefferson Parish.

10) It is understood and agreed that the Government's decision regarding the request in Paragraph 6 above will be within the Government's sole discretion, and will be determined based on the facts and circumstances applicable to each project.

Sincerely,

Printed Name: MARCIA D. ST. MARTIN
Official Title: EXECUTIVE DIRECTOR

Jefferson Parish
1221 Elmwood Park Blvd., Suite 1002
Jefferson, Louisiana 70123
(504) 364-2700

Aaron F. Broussard
Parish President

October 15, 2005

Corps of Engineers, New Orleans District
Attn: Operations Division, Readiness Branch (Herbert J. Wagner)
7400 Leake Avenue
New Orleans, Louisiana 70118-3651

This letter is a written request for rehabilitation assistance for the following flood control project constructed by the non-Federal sponsor in Jefferson Parish, Louisiana: all interim levees and drainage systems within Jefferson Parish, all pumping stations, sewerage and water treatment plants, and related power plants and flood control structures owned or controlled by Jefferson Parish or other similarly situated project(s).

1) Name of Requesting Agency: Jefferson Parish

Points of Contact: Phone Number:

Aaron F. Broussard, Parish President

Tim Whitmer, Chief Administrative Assistant

Jose' Gonzalez, Director of Public Works

2) Corps assistance with inspection and Levee damage assessment: Yes
Corps assistance with inspection and Drainage canal and collection system damage assessment:Yes
Corps assistance with inspection and Pump Station damage assessment: Yes

3) Flood Control Project Location Jefferson Parish, State of Louisiana

4) Locations of damage: All project features for projects listed above protecting Jefferson Parish, State of Louisiana.

5) Waterways causing the damage: All waterways, lakes and bodies of water adjacent to Jefferson Parish, Louisiana, such as Lake Pontchartrain, the Mississippi River and the Harvey Canal.

6) Financial Capability of the Non-Federal Sponsor: Hurricane Katrina, August 29, 2005, was a devastating hurricane of catastrophic proportions. The undersigned non-Federal Sponsor requests that the Federal Government assume responsibility and/or cost of the following items of non-Federal responsibility under the requirements of Public Law 84-99: [SIGNIFY REQUEST BY PLACING AN "X" IN THE SPACE PROVIDED.]

a. After required new real property interests identified by the Federal Government are acquired or commandeered by or on behalf of the non-Federal sponsor, assume responsibility for acquisition and funding of land payments and incidental cost thereof, of newly acquired lands, easements, rights-of-way, relocations, and disposal areas (LERRDs), including credit/reimbursement for fair market value, settlement or final judgment for LERRDs acquired or commandeered by or on behalf of the non-Federal sponsor, subject to the requirement that the Federal Government must provide prior approval of fair market value and settlement determinations prior to the non-Federal tender of an offer to land owner: X

b. All reasonable, allocable and allowable cost of the project Rehabilitation Effort: X

c. Costs of Hazardous, Toxic, Radioactive Waste (HTRW) Investigation: X

7) The need for Federal Government assumption of cost-sharing responsibility for the above items of local obligation is requested due to the extraordinary demands upon the fiscal resources of the undersigned non-Federal sponsor, as follows: Jefferson Parish has suffered substantial loss of its tax base, its business and industry community, its population base, its physical infrastructure and now has physical restraints upon recovering any reasonable portion of any or all of the forgoing municipal assets without Federal assumption of cost-sharing.

8) Despite current and anticipated future non-Federal fiscal constraints, the non-Federal sponsor can provide the following services and/or items of local obligation, without credit or reimbursement: Assist the Parish in securing property title searches, acquisition of borrow areas, negotiation with property owners and acquisition of real property, i.e. immovable property, rights and titles.

9) It is in the national interest to provide permanent rehabilitation of the above described projects for the following reasons: Jefferson Parish which is part of the New Orleans Metropolitan Area has a population of approximately 500,000 residents and is located immediately adjacent to the City of New Orleans, which is one of the largest ports in the world, and the largest in the nation, at the base of

the largest river system in the nation serving as a major economic gateway for industry and commerce to the nation and the world including the export market for the nations grain to the world. The seafood industry is a significant industry which provides products throughout the United States. The area supports petroleum refineries producing fuel at a critical juncture in our nation's energy plan and serving natural gas pipelines serving major portions of the Northeastern United States. It is a gateway and guard house for the nation between the world and North and South and Central America. The tourism industry is also of substantial importance to our area providing economic boost to the local economy.

10) It is understood and agreed that the Government's decision regarding the request in Paragraph 6 above will be within the Government's sole discretion, and will be determined based on the facts and circumstances applicable to each project.

Jefferson Parish

J.C. Aaron F. Broussard

Aaron F. Broussard, Parish President

Official Time: 11:55 PM

APPENDIX B
Project Map

APPENDIX C
PROJECT OVERVIEWS

No changes to this appendix refer to the 18 Oct 2005 PIR.

APPENDIX D
PROJECT DESIGN DATA

No changes to this appendix refer to the 18 Oct 2005 PIR.

APPENDIX E
PROJECT MAINTENANCE DATA

Refer to the 18 Oct 2005 PIR for previous Project Maintenance Data and paragraph 6, Part II of the Main Report for the Project Maintenance Data associated with this Revision.

APPENDIX F
PERIODIC MAINTENANCE DATA

No changes to this appendix refer to the 18 Oct 2005 PIR.

APPENDIX G
PERIODIC RENOURISHMENT DATA

No changes to this appendix refer to the 18 Oct 2005 PIR.

APPENDIX H
PREVIOUS PL84-99 OR OTHER FEDERAL AGENCY ASSISTANCE

No changes to this appendix refer to the 18 Oct 2005 PIR.

APPENDIX I
DISASTER INCIDENT

No changes to this appendix refer to the 18 Oct 2005 PIR.

APPENDIX J
DAMAGE DESCRIPTION

No changes to this appendix refer to the 18 Oct 2005 PIR.

APPENDIX K
PROPOSED WORK

No changes to this appendix refer to the 18 Oct 2005 PIR.

APPENDIX L
COST ESTIMATE DATA

The detailed cost estimates for the projects located within Orleans East Bank are presented in Appendix L. Table 14 found in the main report lists a summary of the associated project costs for Orleans East Bank.

Table L-1 - Phase I Floodwall Repairs - 17 St. Canal (OEB01)*					
Item	**Description**	**Quantity**	**Unit**	**Unit Cost**	**Cost**
1	Mob & Demob	1	LS	[redacted]	
2	Piling, Steel Sheet, Type PZ35	53,300	SF		
3	Debris Removal	1	LS		
4	Earthwork, Crushed Stone Fill	9,500	CY		
5	Stone Riprap	34,100	TON		
	TOTAL				
	ROUNDED TOTAL				

Table L-2 - Phase II Floodwall Repairs - 17 St. Canal (OEB02)					
Item	**Description**	**Quantity**	**Unit**	**Unit Cost**	**Cost**
1	Mobilization and Demobilization	1	LS	[redacted]	
2	Truck Wash Down Rack	1	LS		
3	Pull & Salvage Existing AZ-26 Sheet Piles	410	EA		
4	Temporary Retaining Structure	1	LS		
5	Excavation	42200	CY		
6	Selective Demolition	1	LS		
7	Clearing and Grubbing	1	LS		
8	Construction Unwatering	1	LS		
9	Non Granular Fill	15250	CY		
10	Miscellaneous Metalwork	1	LS		
11	Steel H Piles	46944	LF		
12	Reinforced Concrete	1	LS		
13	Piling, Steel Sheet, Type PZ 27	8250	SF		
14	Piling, Steel Sheet, Type PZ 35	36050	SF		
15	Fertilizing, Seeding and Mulching	1	LS		
	TOTAL				
	ROUNDED TOTAL				

Table L-3 - Phase I Floodwall Repairs - London Ave Canal at Mirabeau Ave (OEB03)*					
Item	**Description**	**Quantity**	**Unit**	**Unit Cost**	**Cost**
1	Mob & Demob	1	LS		
2	Selective Demolition	1	LS		
3	Clearing and Grubbing	1	LS		
4	Graded Stone (Rip Rap)	9,300	TON		
5	Bedding Stone	11,000	CY		
6	Reinforced Concrete	1	LS		
7	Piling, Steel Sheet, Type PZ35	33,000	SF		
8	Separator Geotextile	550	SY		
9	Jet Grouting	1	LS		
10	Clay Removal	7,000	CY		
	TOTAL				
	ROUNDED TOTAL				

Table L-4 - Phase II Floodwall Repairs - London Ave Canal at Mirabeau Ave (OEB04)					
Item	**Description**	**Quantity**	**Unit**	**Unit Cost**	**Cost**
1	Mobilization and Demobilization	1	LS		
2	Truck Wash Down Rack	1	LS		
3	Unwatering	1	LS		
4	Temporary Cofferdam	1	LS		
5	Excavation	1	LS		
6	Selective Demolition	1	LS		
7	Clearing and Grubbing	1	LS		
8	Embankment, Compacted Fill	32750	CY		
9	Stone	5700	TON		
10	Bedding Stone	120	CY		
11	Relief Wells	9	EA		
12	Pump Test New Wells	9	EA		
13	Steel H Piles	15056	LF		
14	Reinforced Concrete	1	LS		
15	Piling, Steel Sheet, Type PZ 27	24600	SF		
16	Fertilizing, Seeding and Mulching	1	ACRE		
17	Separator Geotextile	3460	SY		
	TOTAL				
	ROUNDED TOTAL				

Table L-5 - Phase I Floodwall Repairs - London Ave Canal at Robert E. Lee Blvd (OEB05)*					
Item	**Description**	**Quantity**	**Unit**	**Unit Cost**	**Cost**
1	Mob & Demob	1	LS	[redacted]	
2	Selective Demolition	1	LS		
3	Clearing and Grubbing	1	LS		
4	Graded Stone (Rip Rap)	12,000	TON		
5	Bedding Stone	6,000	CY		
6	Lightweight Aggregate Fill	2,300	CY		
7	Reinforced Concrete	1	LS		
8	Piling, Steel Sheet, Type PZ35	55,300	SF		
9	Excavation	3,200	CY		
10	Jet Grouting	1	LS		
	TOTAL				
	ROUNDED TOTAL				

Table L-6 - Phase II Floodwall Repairs - London Ave Canal at Robert E. Lee Blvd (OEB06)					
Item	**Description**	**Quantity**	**Unit**	**Unit Cost**	**Cost**
1	Mobilization and Demobilization	1	LS	[redacted]	
2	Truck Wash Down Rack	1	LS		
3	Unwatering	1	LS		
4	Temporary Cofferdam	1	LS		
5	Excavation	1	LS		
6	Selective Demolition	1	LS		
7	Clearing and Grubbing	1	LS		
8	Embankment, Compacted Fill	24600	CY		
9	Stone	6900	TON		
10	Bedding Stone	170	CY		
11	Relief Wells	16	EA		
12	Pump Test New Wells	16	EA		
13	Steel H Piles	28625	LF		
14	Reinforced Concrete	1	LS		
15	Piling, Steel Sheet, Type PZ 27	43850	SF		
16	Fertilizing, Seeding and Mulching	1.5	ACRE		
17	Separator Geotextile	4680	SY		
	TOTAL				
	ROUNDED TOTAL				

Table L-7 - Floodwall Repairs - London Ave Canal East Side at Robert E. Lee Blvd (OEB08)					
Item	**Description**	**Quantity**	**Unit**	**Unit Cost**	**Cost**
1	Mobilization and Demobilization	1	LS	[redacted]	
2	Stone Rip-Rap	700	TON		
3	T-Wall				
	A. Concrete T - Wall Base (2.5' thk.)	500	CY		
	B. Concrete T- Wall Stem	263.3	CY		
	C. Concrete Stabilization Slab	66.7	CY		
	D. Sheet Pile (PZ 27)	30000	SF		
	E. HP 14 x 73 x 80 ft, long	15360	LF		
	F. Scour Protcction Slab (6" thk. X 6' widc)	50	CY		
4	Excavate				
	A. Canal Side	787	CY		
	B. Land Side	4054	CY		
	C. Relocate Temp. Sheetpile Floodwall	40000	SF		
	D. Pull Temp. Sheetpile Floodwall	40000	SF		
5	Demo old conc. and sheetpile floodwall				
	A. Demo Old Concrete	300	CY		
	B. Pull Sheetpile	11250	SF		
	TOTAL				
	ROUNDED TOTAL				

Table L-8 - IHNC West Side Floodwall Repairs - Hwy 90 To Lake (IHNC04)					
Item	**Description**	**Quantity**	**Unit**	**Unit Cost**	**Cost**
1	Mobilization and Demobilization	1	LS	[redacted]	
2	Separator Geotextile	3655	SY		
3	Place Embankment Fill	3450	CY		
4	Grading Embankment	5.5	AC		
5	Stone Scour Protection - Grouted	1622	CY		
6	Piling, Steel Sheet, PS27.5	196850	SF		
7	Bentonite Cement Grout	7500	CF		
8	Relief Wells East Side	24	EA		
9	Relief Wells West Side	15	EA		
10	Inspect & Clean East Collector Pipe	1	LS		
11	Pump Test Existing Wells	88	EA		
12	Pump Test New Wells	39	EA		
13	Inspect & Clean Existing Wells	88	EA		
14	Test Borings	700	LF		
15	Piezometers	10	EA		
16	Rail Groove Blocking Closures	2	EA		
17	Topsoil	220	CY		
18	Establishment of Turf	5.5	AC		
19	Railroad Insurance	1	LS		
20	Truck Wash Down Racks	1	LS		
21	Silt Fences	9000	LF		
	TOTAL				
	ROUNDED TOTAL				

Table L-9 - IHNC West Side Floodwall and Minor Scour Repairs - Hwy 90 to IHNC Lock (IHNC08 & IHNC09)					
Item	**Description**	**Quantity**	**Unit**	**Unit Cost**	**Cost**
1	Mobilization and Demobilization	1	LS		
2	Silt Fences	2600	LF		
3	Truck Wash Down Racks	1	LS		
4	Concrete Removed From Floodwalls	1328	LF		
5	Extraction of Sheet Piling	28750	SF		
6	Clearing & Grubbing	1	LS		
7	Excavation	1000	CY		
8	Removal of Stone Dikes	2000	CY		
9	Structural Excavation	500	CY		
10	Embankment, Semi-compacted Fill	11200	CY		
11	Piling, Concrete 12-inch	5300	LF		
12	Alternative 1 - Steel H Piles	4000	LF		
13	Alternative 1 - Steel Pipe Piles	4000	LF		
14	Granular Backfill	1250	CY		
15	Piling, Steel Sheet, PZ27	31500	SF		
16	Establishment of Turf	3	AC		
17	Concrete Stabilization Slab	1	LS		
18	Reinforced Concrete Floodwall Base	1	LS		
19	Reinforced Concrete Floodwall Stem	1	LS		
20	Temporary Flood Protection	1	LS		
21	Railroad Insurance	1	LS		
	TOTAL				
	ROUNDED TOTAL				

Table L-10 - IHNC West Side Floodwall Repairs - France Rd to Benefit Rd (IHNC02)*					
Item	**Description**	**Quantity**	**Unit**	**Unit Cost**	**Cost**
1	Mobilization and Demobilization	1	LS		
2	Silt Fences	2600	LF		
3	Truck Wash Down Racks	1	LS		
4	Concrete Removed From Floodwalls	1328	LF		
5	Extraction of Sheet Piling	28750	SF		
6	Clearing & Grubbing	1	LS		
7	Excavation	1000	CY		
8	Removal of Stone Dikes	2000	CY		
9	Structural Excavation	500	CY		
10	Embankment, Semi-compacted Fill	5200	CY		
11	Piling, Concrete 12-inch	5300	LF		
12	Alternative 1 - Steel H Piles	4000	LF		
13	Alternative 1 - Steel Pipe Piles	4000	LF		
14	Granular Backfill	1250	CY		
15	Piling, Steel Sheet, PZ27	31500	SF		
16	Establishment of Turf	1	AC		
17	Concrete Stabilization Slab	1	LS		
18	Reinforced Concrete Floodwall Base	1	LS		
19	Reinforced Concrete Floodwall Stem	1	LS		
20	Temporary Flood Protection	1	LS		
21	Railroad Insurance	1	LS		
	TOTAL				
	ROUNDED TOTAL				

Table L-11 - IHNC West Side Floodwall Repairs - France Rd to IHNC (IHNC05)*					
Item	**Description**	**Quantity**	**Unit**	**Unit Cost**	**Cost**
1	Mobilization and Demobilization	1	LS		
2	Silt Fences	3140	LF		
3	Truck Wash Down Racks	1	LS		
4	Clearing & Grubbing	1	LS		
5	Excavation	6750	CY		
6	Embankment, Semi-compacted Fill	10250	CY		
7	Granular Backfill	200	CY		
8	Piling, Steel Sheet, PZ27	25650	SF		
9	Geotextile	1600	SY		
10	Bedding Material	270	TONS		
11	Piling, Concrete 12-inch	25300	LF		
12	Alternative 1 - Steel H Piles	10000	LF		
13	Alternative 1 - Steel Pipe Piles	10000	LF		
14	Establishment of Turf	1	AC		
15	Concrete Stabilization Slab	1	LS		
16	Reinforced Concrete Floodwall Base	1	LS		
17	Reinforced Concrete Floodwall Stem	1	LS		
18	Concrete Paving	1	LS		
19	Temporary Flood Protection	1	LS		
20	Concrete Removed From Floodwalls	90	LF		
21	Extraction of Sheet Piling	1800	SF		
	TOTAL				
	ROUNDED TOTAL				

Table L-12 - Orleans Ave Canal - Channel Scour and Slope Pavement Repairs (OEB07)					
Item	**Description**	**Quantity**	**Unit**	**Unit Cost**	**Cost**
1	Mobilization and Demobilization	1	LS		
2	Stone Riprap Placement In Channel Scour	3900	TON		
3	Demo Damaged Concrete Paving (4" thick)	6500	SF		
4	Scour Protection Slab (6" thick)	120	CY		
	TOTAL				
	ROUNDED TOTAL				

Table L-13 - Lakefront Levee Scour and Floodwall Repairs (OEB07)					
Item	**Description**	**Quantity**	**Unit**	**Unit Cost**	**Cost**
1	Mob & Demob	1	LS		
2	Floodwall Stem Repair	1	LS		
3	Embankment Scour Repair	300	CY		
4	Establishment of Turf	1	AC		
	TOTAL				
	ROUNDED TOTAL				

Table L-14 -Closure Structure at 17th Street Canal (OEB09)					
Item	**Description**	**Quantity**	**Unit**	**Unit Cost**	**Cost**
1	Steel Sheet Piling (PZ-35)	48,100.00	SF		
2	30" x 1/2" Pipe Piles	13,420.00	LF		
3	Whalers and Struts	200.00	Tons		
4	Excavation within Cofferdam	1,500.00	CY		
5	Concrete Foundation	4,100.00	CY		
6	Steel Pipe Jacket Structure	210.00	Tons		
7	Steel Closure Gates	97.00	Tons		
8	Guide Beams	26.00	Tons		
9	4" Galv. Grating	8,000.00	SF		
10	Crane Deck Beams	40.00	Tons		
11	Access Ramps - crushed stone	35.00	Tons		
12	T-Wall	550.00	LF		
13	Steel Roller Gate	20.00	Tons		
14	Miscellaneous Metal	1.00	Lump Sum		
15	Miscellaneous Site Work	1.00	Lump Sum		
16	RipRap	2,500.00	Tons		
17	Remove Bucktown Bridge	1.00	Lump Sum		
18	Dredging	10,000.00	CY		
19	Asphalt Pavement	150.00	Tons		
20	Miscellaneous Electrical Items (lighting)	1.00	Lump Sum		
21	Mobilization and Demobilization	1	Lump Sum		
22	Temporary Traffic Control	1	Lump Sum		
23	Engineering Layout	1	Lump Sum		
24	Project Sign	1	Each		
25	Construction Fence	1500	Lin. Ft.		
26	Inspectors Field Office	1	Lump Sum		
27	Overhead Costs for Corps Submittals, etc.	1	Lump Sum		
28	Contractors Quality Control Plan	1	Lump Sum		
29	Contractors Field Office	1	Lump Sum		
30	Cofferdam Design	1	Lump Sum		
31	Dewatering/Rewatering	1	Lump Sum		
32	Pump Platform	1	LS		
	TOTAL				
	ROUNDED TOTAL				

Table L-15 -Closure Structure at London Avenue Canal (OEB10)					
Item	**Description**	**Quantity**	**Unit**	**Unit Cost**	**Cost**
1	Mobilization and Demobilization	1.00	LS	[redacted]	
2	Clearing and Grubbing	1.00	LS		
3	Separator Geotextile	120.00	SY		
4	Bedding Stone and Granular Fill	5,000.00	CY		
5	Graded Stone (Rip-Rap)	20,000.00	Tons		
6	Embankment, Semicompacted Fill	500.00	Tons		
7	Surfacing	50.00	CY		
8	Fertilizing, Seeding and Mulching	1.00	AC		
9	Reinforced Concrete Cap	2,000.00	CY		
10	Tremie Concrete	600.00	CY		
11	Grout	1.00	LS		
12	Pipe Frames	500,000.00	LB		
13	Needle Gates	14.00	Each		
14	Sill Cap	1.00	LS		
15	Steel H-Piles	6,600.00	LF		
16	Steel Pipe Piles	5,800.00	LF		
17	Piling, Steel Sheet, Type PZ 27	121,300.00	SF		
18	Piling, Steel Sheet, Type PS 27.5	44,106.00	SF		
19	Piling, Steel Sheet, Type PSA 23	18,050.00	SF		
20	Sheet Pile Cells	1.00	LS		
21	Cement-Bentonite Slurry Trench	350,000.00	SF		
	TOTAL				
	ROUNDED TOTAL				

Table L-16 -Closure Structure at Orleans Avenue Canal (OEB11)					
Item	**Description**	**Quantity**	**Unit**	**Unit Cost**	**Cost**
1	Mobilization and Demobilization	1.00	LS		
2	Clearing and Grubbing	1.00	LS		
3	Separator Geotextile	120.00	SY		
4	Bedding Stone and Granular Fill	5,000.00	CY		
5	Graded Stone (Rip-Rap)	20,000.00	Tons		
6	Embankment, Semicompacted Fill	500.00	Tons		
7	Surfacing	50.00	CY		
8	Fertilizing, Seeding and Mulching	1.00	AC		
9	Reinforced Concrete Cap	2,000.00	CY		
10	Tremie Concrete	600.00	CY		
11	Grout	1.00	LS		
12	Pipe Frames	500,000.00	LB		
13	Needle Gates	14.00	Each		
14	Sill Cap	1.00	LS		
15	Steel H-Piles	6,600.00	LF		
16	Steel Pipe Piles	5,800.00	LF		
17	Piling, Steel Sheet, Type PZ 27	121,300.00	SF		
18	Piling, Steel Sheet, Type PS 27.5	44,106.00	SF		
19	Piling, Steel Sheet, Type PSA 23	18,050.00	SF		
20	Sheet Pile Cells	1.00	LS		
21	Cement-Bentonite Slurry Trench	350,000.00	SF		
	TOTAL				
	ROUNDED TOTAL				

Table L-17 - Bank Stabilization for 17th Street Canal (OEB12)					
Item	**Description**	**Quantity**	**Unit**	**Unit Cost**	**Cost**
1	Mobilization and Demobilization	1	LS		
2	Truck Wash Down Racks	1	LS		
3	Clearing & Grubbing	1	AC		
4	Relief Wells	0	EA		
5	Collection System	0	LS		
6	Bedding Material	0	TONS		
7	Piling, varies 49.5' to 54.5' Steel Sheet, PZ22	179850	SF		
8	Painting	535953	LF		
9	Separator Geotextile	0	SY		
10	Silt Fences	0	LF		
11	Slope Paving	60	SY		
	TOTAL				
	ROUNDED TOTAL				

Table L-18 -Bank Stabilization for London Avenue Canal (OEB13)					
Item	**Description**	**Quantity**	**Unit**	**Unit Cost**	**Cost**
1	Mobilization and Demobilization	1	LS		
2	Truck Wash Down Racks	1	LS		
3	Clearing & Grubbing	3	AC		
4	Relief Wells	0	EA		
5	Collection System	0	LS		
6	Bedding Material	0	TONS		
7	Piling, varies 42' to 55' Steel Sheet, PZ22	497750	SF		
8	Painting	1483295	SF		
9	Separator Geotextile	0	SY		
10	Silt Fences	0	LF		
11	Slope Paving	11000	SY		
	TOTAL				
	ROUNDED TOTAL				

Table L-19 - Bank Stabilization on Orleans Canal (OEB14)					
Item	**Description**	**Quantity**	**Unit**	**Unit Cost**	**Cost**
1	Mobilization and Demobilization	1	LS		
2	Truck Wash Down Racks	1	LS		
3	Clearing & Grubbing	3	AC		
4	Relief Wells	0	EA		
5	Collection System	0	LS		
6	Bedding Material	0	TONS		
7	Piling, Steel Sheet, PZ22	118,410	SF		
8	Painting	352,862	LF		
9	Separator Geotextile	0	SY		
10	Silt Fences	800	LF		
11	Seepage Berm	6,810	CY		
12	Slope Paving	2,556	SY		
	TOTAL				
	ROUNDED TOTAL				

APPENDIX M
ENVIRONMENTAL CONSIDERATIONS

See the 18 Oct 2005 PIR for original information and the Letter of Imminent Threat below.

DEPARTMENT OF THE ARMY
NEW ORLEANS DISTRICT, CORPS OF ENGINEERS
P.O. BOX 60267
NEW ORLEANS, LOUISIANA 70160-0267

REPLY TO
ATTENTION OF:

Planning, Programs and Project
Management Division
Environmental Planning and
Compliance Branch

MEMORANDUM FOR New Orleans District Staff and All Interested Parties

SUBJECT: Imminent Threat of Flooding Due to Damaged Hurricane Protection Works

1. On August 29, 2005, Hurricane Katrina caused major damage to the hurricane protection system in Orleans, St. Bernard, Plaquemines, and Jefferson Parishes, Louisiana. Since the storm, the U.S. Army Corps of Engineers has been working to restore the hurricane protection system to the level of protection provided prior to the 2005 hurricane season. These efforts have been conducted mainly under the authority provided by Public Law 84-99, Rehabilitation of Damaged Flood Control Works.

2. While significant progress is being made in restoring the hurricane protection system to its pre-storm conditions, the system remains vulnerable to tropical weather systems. It is imperative that all hurricane protection works are restored to their pre-storm conditions as soon as possible to protect life, health, property, and economic losses.

3. Engineering Regulation 200-2-2, Environmental Quality, Procedures for Implementing the National Environmental Policy Act (NEPA) provides for District commanders to respond to emergency situations to prevent or reduce imminent risk of life, health, property, or severe economic losses without first preparing specific documentation and following the procedural requirements of the NEPA. Engineering Regulation 500-1-1, Emergency Employment of Army and Other Resources - Civil Emergency Management Program, provides that emergency flood control activities performed under Public Law 84-99 are not subject to the NEPA documentation requirements if risk to life, health, property, or severe economic losses is imminent. This regulation defines imminent risk as a subjective, statistically supported evaluation of how quickly a threat scenario can develop, how likely that threat is to develop in a given geographical location, and how likely the threat will produce catastrophic consequences to life and improved property. Implicit in the timing aspect can be considerations of time or season or of known cyclical activities.

4. Several words in the above definition are important in determining if there is an imminent threat to flooding within the four parishes listed above. The first is "subjective" which allows a decision to be based on sound reasoning. The second and third are "statistically supported evaluation" and "how likely that threat is to develop in a given geographical location." During the past four hurricane seasons, New Orleans has had 13 tropical storms or hurricanes pass within 300 miles of the city (three in 2002, two in 2003, three in 2004, and five in 2005), an average of over three storms per hurricane season. The National Hurricane Center has been reporting for the past several years that we have entered a period of more active hurricane seasons. The next key phrase is "how likely the threat will produce catastrophic consequences to life and improved property." Nothing demonstrates this better than Hurricane Rita in 2005. Hurricane Rita came ashore along the Louisiana/Texas state line, approximately 250 miles from New Orleans, yet the impacts of the storm in the Metropolitan New Orleans area were significant. Without a complete rehabilitation of the hurricane protection system to pre-storm levels, the New Orleans area could again be faced with the potential for catastrophic damages from a storm making landfall hundreds of miles away. The last phrase of significance is "known cyclical activities." As every day passes, the 2006 hurricane season gets closer, and the threat to life and property increases without adequate storm surge protection.

5. Based upon applicable regulations and guidance, I consider the Metropolitan New Orleans Area to be under an imminent threat from flooding due to the damaged hurricane protection system. I consider this threat to remain in effect until the hurricane protection system is restored to its pre-storm condition. The District will continue preparing an environmental assessment of the impacts associated with restoration of the hurricane protection system, and release the document for public and agency review and comment as soon as possible after all features of the restoration work are determined.

1/5/06
Date

Richard P. Wagenaar
Colonel, U.S. Army
District Engineer

APPENDIX N
CECW-HS, MEMORANDUM FOR ASSISTANT SECRETARY OF THE ARMY FOR CIVIL WORKS (ASA(CW)), SUBJECT: RECOMMENDATIONS FOR ONE-TIME DEVIATIONS TO CERTAIN POLICIES REGARDING USE OF P. L. 84-99 (33 U.S.C. 701N) IN NEW ORLEANS AND VICINITY FOLLOWING HURRICANE KATRINA-FOR APPROVAL, DATED OCTOBER 7, 2005

No changes to this appendix refer to the 18 Oct 2005 PIR.

APPENDIX O
LETTER FROM OFFICE OF ASSISTANT SECRETARY OF THE ARMY FOR CIVIL WORKS (ASA(CW)) JOHN PAUL WOODLEY, JR. TO DIRECTOR OF OFFICE OF MANAGEMENT AND BUDGET, JOSHUA BOLTEN, DATED OCTOBER 12, 2005

No changes to this appendix refer to the 18 Oct 2005 PIR.

APPENDIX P
PIR POINTS OF CONTACT

No changes to this appendix refer to the 18 Oct 2005 PIR.

APPENDIX R
NOT USED

APPENDIX S
NOT USED

APPENDIX T
NOT USED

APPENDIX U
NOT USED

APPENDIX V
NOT USED

APPENDIX W
NOT USED

APPENDIX X
NOT USED

APPENDIX Y
NOT USED

APPENDIX Z
PIR REVIEW CHECKLIST (HSPP)

PIR Review Checklist for HSPP Rehabilitation Assistance				
	YES	**NO**	**N/A**	
1.	X			The project is a Federally authorized and constructed hurricane or shore protection project. [ER, 5-20.a.]
2.	X			The project is Active in the RIP. [ER, 5-2.a.] Last inspection date: _May 2005_____
3.	X			The Public Sponsor has requested HSPP Rehabilitation Assistance in writing. [EP, 5-18.b.]
4.	X			The FCCE-funded HSPP Rehabilitation Assistance is necessary (a) to allow for adequate functioning of the project; (b) to reduce the immediate threat to life and improved property; and (c) is to a level no more than the pre-storm condition. [ER, 5-20.a., c., and d.]
5.	X			There is sufficient evidence in the PIR to support a finding that the HSPP was damaged by an extraordinary storm. [ER, 5-20.e.]
6.	X			There are "significant amounts of damage" to the HSPP. [ER, 5-20.e.(2)] The criterion used to make this determination is: _____ the cost of the construction effort to effect repair of the HSPP *(exclusive of dredge mob/demob costs)* (a) exceeds $1 million and (b) is greater than 2 percent of the original project construction costs (expressed in current day dollars.); or, __X__ the cost of the construction effort to effect repair of the HSPP *(exclusive of dredge mob/demob costs)* exceeds $6 million; or, ____ more than one-third of the planned or historically placed sand for renourishment was lost. ____ only hard features are involved.
7.	X			The public sponsor has agreed to sign the Cooperation Agreement, which will occur before USACE begins rehabilitation work. [EP, 5-18.l.]
8.	X			The rehabilitation project has a favorable benefit cost ratio of greater than 1.0:1. [ER, 5-20.a.]
9.	X*			The Public Sponsor has access to sufficient funds to meet its required cost contributions. [EP, 5-18.h.] *Please note * Based upon the sponsor's request for assistance, it appears that the Public Sponsor will have to seek financial assistance from the State of Louisiana.*
10.	X			The cost estimate in the PIR itemizes the work and identifies the Public Sponsor's cost responsibility for items such as deferred and deficient maintenance. [ER, 5-2.g.]
11.			X	The cost estimate in the PIR allocates costs between what may be paid for under PL 84-99 Rehabilitation Assistance, and what is cost shared between the Corps (using CG funds) and the public sponsor under periodic renourishment terms of the project PCA. [EP, 5-18.d.]]
12.			X	Dredge mobilization/demobilization costs are borne proportionally among contributing sources of funds for sand renourishment. [ER, 5-20.i.]
13.		X**		Contingency funds for the FCCE-funded portion of the project are limited to 15 percent for dredging-related costs, and 10 percent for all other costs. [ER, 5-2.v.]
14.	X			The repair option selected is the option that is the least cost to the Federal government. [ER, 5-2.h.]
15.	X			The benefit cost ratio calculation excludes all recreation benefits. [ER, 5-20.a.]
16.			X	Betterments are paid by the Public Sponsor. [ER, 5-2.o.]
17.			X	Cost for any betterments are identified separately in the cost estimate. [ER, 5-2.o.]
18.	X			Based on the projected schedule, project history, anticipated degree of contention of undertaking the project, and similar items, the Rehabilitation Assistance will be finished prior to the onset of the next storm season, or within one year of the date of

				occurrence of the damage, whichever is less. [ER, 5-20.j.]
19.	X			The proposed work will not modify the HSPP to increase the degree of protection or capacity, or provide protection to a larger area. [ER, 5-2.n.]
20.	X***			An assessment of environmental requirements was completed. [ER, 5-13.e.]
21.	X			The Endangered Species Act was appropriately considered. Dredging will not be adversely impacted. [ER, 5-13.e.]
22.	X			The Archeological and Historical Preservation Act was appropriately considered. [ER, 5-13.h.]
23.			X	EO 11988 was appropriately considered. [ER, 5-13.f.]
24.	X			Other permitting and evaluations were appropriately considered, and result in no impediment to the Rehabilitation Assistance effort. [ER, 5-13.a.]
25.	X			The cover letter forwarding the PIR to the MSC will contain the projected schedule for completing the Rehabilitation Assistance. [EP, 5-18.f.(2)]
26.	X			The completed PIR has been reviewed and the PIR Checklist has been reviewed and signed by the Emergency Management Office. [EP, 5-18.f.(1)
27.	X			The completed PIR meets all policy, procedural, content, and formatting requirements of ER 500-1-1 and EP 500-1-1. [ER, 2-3.b.]

NOTES:
* A one time exception to policy from ASA(CW) provides for repairs to be 100% Federal. Should other related obligations arise the Public Sponsors might seek financial assistance from other sources, such as the State of Louisiana.
** Rational for us of the 30% contingency for the contracts yet to be awarded is based on the emergency conditions under which the design and contract documents have been prepared, the short amount of time allowed for construction completion, and the high level of competition for construction contractor resources in the area. The need for this is evidenced by bids received on awarded contracts generally exceeding construction estimates and it is anticipated that there will be a higher than normal percentage of contract modifications.
*** An imminent threat declaration has been issued by the Commander of the New Orleans District. Refer to Appendix M of this report for this Declaration.

REVIEWING OFFICIAL'S SIGNATURE

_____
NAME: Herbert J. Wagner
TITLE: Acting Emergency Operations Manager
TELEPHONE NUMBER: [redacted]

PIR Review Checklist for HSPP Rehabilitation Assistance				
	YES	**NO**	**N/A**	
19.	X		[redacted]	The proposed work will not modify the HSPP to increase the degree of protection or capacity, or provide protection to a larger area. [ER, 5-2.n.]
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