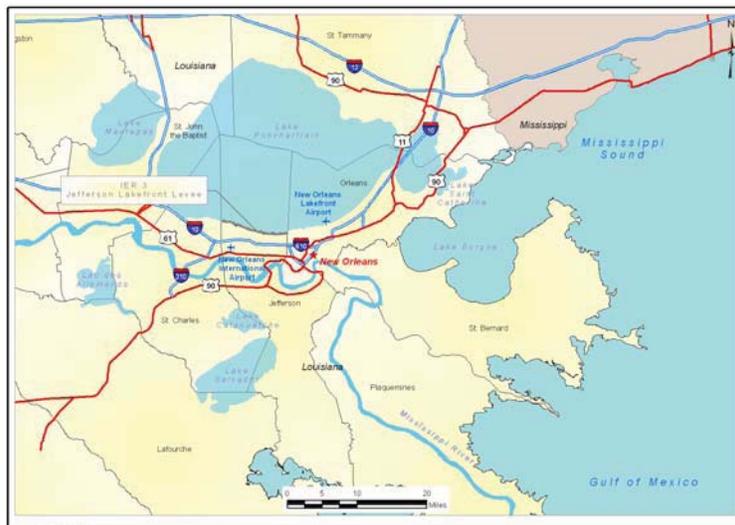


DRAFT INDIVIDUAL ENVIRONMENTAL REPORT SUPPLEMENTAL

LPV, JEFFERSON EAST BANK

JEFFERSON PARISH

IERS 3.a



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**US Army Corps
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November 2009

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1.0 INTRODUCTION

The U.S. Army Corps of Engineers (USACE), Mississippi Valley Division, New Orleans District (CEMVN), has prepared this Individual Environmental Report Supplemental #3.a (IERS # 3.a) to evaluate the potential impacts associated with the proposed project revisions within the IER # 3 project area such as the construction of wave attenuation berms and foreshore along the Jefferson Parish lake front and a T-Wall, overpass bridge, and traffic detour lane bridge spans at the Lake Pontchartrain Causeway Bridge abutment.. The proposed action is located in Jefferson Parish, Louisiana (figure 1). For the purposes of this IER Supplemental, the Lake Pontchartrain and Vicinity (LPV) area has been divided into numerous reaches, and each reach is identified by a project identification number (e.g., LPV 00; figure 2).

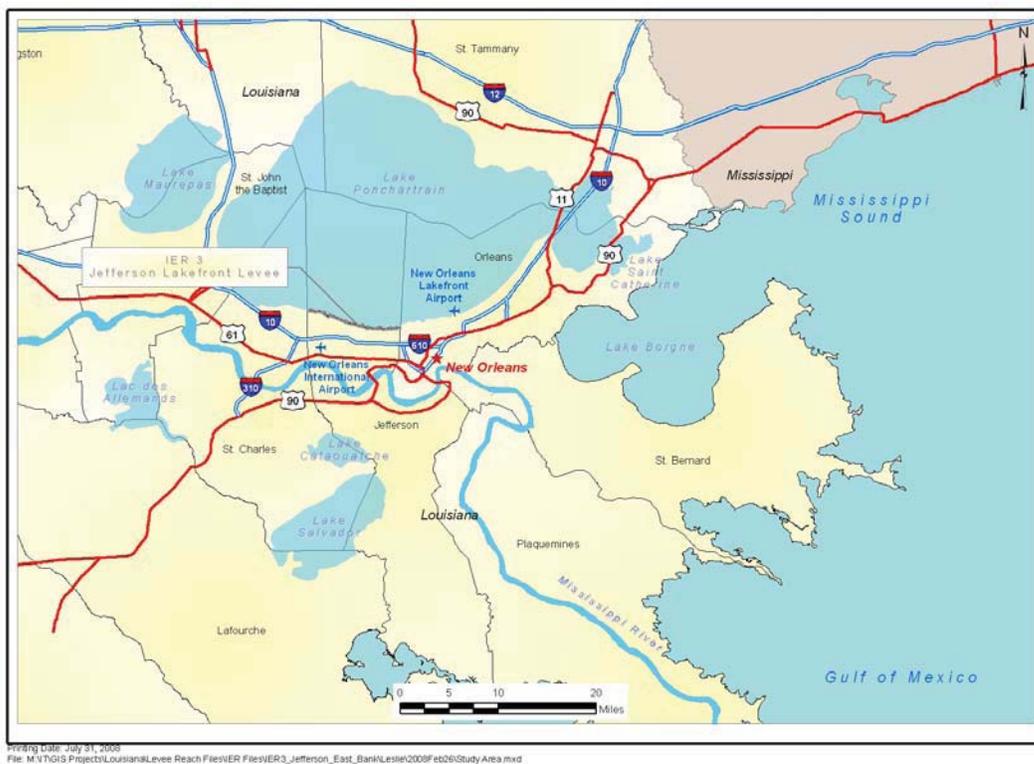


Figure 1. Jefferson Parish east bank reaches, vicinity map

On July 25, 2008, the District Commander signed the Decision Record for IER 3. IER 3 is hereby incorporated by reference into this supplemental document. Copies of the document and other supporting information are available upon request or at nolaenvironmental.gov. This supplemental document has been prepared to address proposed changes in the Government's approved plan.

IER # 3 Supplemental has been prepared in accordance with the National Environmental Policy Act (NEPA) of 1969 and the Council on Environmental Quality's Regulations (40 Code of Federal Regulations [CFR] 1500-1508), as reflected in the USACE Engineering Regulation (ER) 200-2-2. The execution of an IER, in lieu of a traditional Environmental Assessment (EA) or

Environmental Impact Statement (EIS), is provided for in ER 200-2-2, Environmental Quality (33 CFR 230), Procedures for Implementing the NEPA, and pursuant to the Council on Environmental Quality (CEQ) NEPA Implementation Regulations (40 CFR 1506.11).



Figure 2. IER # 3.a Supplemental Jefferson Parish east bank reaches

1.1 PRIOR REPORTS

A number of studies and reports in the proposed project area have been prepared by the USACE, other Federal, state, and local agencies, research institutes, and individuals. Pertinent studies, reports, and projects since July 2008 are discussed below. All other relevant reports are listed in the original IER # 3 and are incorporated herein by reference.

Lake Pontchartrain and Vicinity Relevant Reports:

- On October 29, 2009, the CEMVN Commander signed the Decision Record on IERS # 2.a entitled “West Return Floodwall, Jefferson and St. Charles Parishes, Louisiana.” The supplemental document evaluates the potential effects associated with the proposed project revisions to the original IER # 1.
- On September 28, 2009, the CEMVN District Commander signed a Decision Record on IER #30 entitled “Contractor-Furnished Borrow Material #5, St. Bernard and St. James

Parishes, Louisiana, and Hancock County, Mississippi.” The document evaluates the potential impacts associated with the actions taken by commercial contractors as a result of excavating contractor-furnished borrow areas for use in construction of the HSDRRS.

- On September 8, 2009, the CEMVN Commander signed the Decision Record on IER # 29 entitled “Pre-approved Contractor Furnished Borrow Material # 4, Orleans, St. John the Baptist, and St. Tammany Parishes, Louisiana.” The document was prepared to evaluate the potential impacts associated with the actions taken by commercial contractors as a result of excavating borrow areas for use in construction of the HSDRRS.
- On August 30, 2009, the CEMVN Commander signed the Decision Record on IER # 28 entitled “Government Furnished Borrow material # 4 Plaquemines, St Bernard and Jefferson Parishes, Louisiana.” The document was prepared to evaluate the potential impacts associated with the possible excavation of two Government Furnished borrow areas and the construction of a separate borrow access road.
- On June 30, 2009, the CEMVN Commander signed the Decision Record on IER # 5 entitled “Lake Pontchartrain and Vicinity, Permanent Protection System for the Outfall Canals Project on 17th Street, Orleans Avenue, and London Avenue Canals, Jefferson and Orleans Parishes, Louisiana.” The document evaluates the potential effects associated with the construction and maintenance of a permanent protection system for the 17th Street, Orleans Avenue, and London Avenue Canals.
- On June 29, 2009, the CEMVN Commander signed the Decision Record on IER Supplemental # 1 entitled “Lake Pontchartrain and Vicinity, La Branche Wetlands Levee, St. Charles Parish, Louisiana.” The supplemental document evaluates the potential effects associated with the proposed project revisions to the original IER # 1.
- On June 25, 2009, the CEMVN Commander signed the Decision Record on IER # 6 entitled “Lake Pontchartrain and Vicinity, New Orleans East Citrus Lakefront Levee, Orleans Parish, Louisiana.” The document evaluates the potential effects associated with proposed improvements to three reaches of the East Orleans Hurricane Risk Reduction Levee that were originally constructed as part of the LPV project.
- On June 23, 2009, the CEMVN Commander signed the Decision Record on IER # 8 entitled “Lake Pontchartrain and Vicinity, Bayou Dupre Control Structure, St. Bernard Parish, Louisiana.” The document evaluates the potential effects associated with the proposed improvement or replacement of a flood control structure on Bayou Dupre.
- On June 19, 2009, the CEMVN Commander signed the Decision Record on IER # 7 entitled “Lake Pontchartrain and Vicinity, New Orleans Lakefront to Michoud Canal, Orleans Parish, Louisiana.” The document evaluates the potential effects associated with proposed improvements to three reaches of the East Orleans Hurricane Risk Reduction Levee that were originally constructed as part of the LPV project.
- On May 26, 2009, the CEMVN Commander signed the Decision Record on IER # 10 entitled “Lake Pontchartrain and Vicinity, Chalmette Loop Levee, St. Bernard Parish, Louisiana.” The document evaluates the potential impacts associated with the proposed construction of a T-wall floodwall on top of the existing Chalmette Loop levee.
- On March 13, 2009, the CEMVN Commander signed the Decision Record on IER # 4 entitled “Lake Pontchartrain and Vicinity, Orleans East Bank, New Orleans Lakefront Levee, West of Inner Harbor Navigation Canal to east bank of 17th Street Canal, Orleans

Parish, Louisiana.” The document was prepared to evaluate the potential impacts associated with improving the Orleans lakefront hurricane risk reduction features.

- On February 18, 2009, the CEMVN Commander signed the Decision Record on IER # 12 entitled “GIWW, Harvey, and Algiers Levees and Floodwalls, Jefferson, Orleans, and Plaquemines Parishes, Louisiana.” The document was prepared to evaluate potential impacts associated with the proposed construction and upgrades of levees, floodwalls, floodgates, and pumping station(s) within a portion of the WBV HSDRRS.
- On February 3, 2009, the CEMVN Commander signed the Decision Record on IER # 25 entitled “Government Furnished Borrow Material # 3, Orleans, Jefferson, and Plaquemines Parishes, Louisiana.” The document was prepared to evaluate the potential impacts associated with the possible excavation of four Government Furnished borrow areas.
- On October 21, 2008, the CEMVN Commander signed the Decision Record on IER # 11 Tier 2 Borgne entitled "Improved Protection on the Inner Harbor Navigation Canal, Tier 2 Borgne, Orleans and St. Bernard Parishes, Louisiana." The document was prepared to evaluate the potential impacts associated with constructing a surge barrier near Lake Borgne.
- On 20 October 20, 2008, the CEMVN Commander signed the Decision Record on IER # 26 entitled "Pre-Approved Contractor Furnished Borrow Material # 3, Jefferson, Plaquemines, and St. John the Baptist Parishes, Louisiana, and Hancock County, Mississippi." The document was prepared to evaluate the potential impacts associated with the actions taken by commercial contractors as a result of excavating borrow areas for use in construction of the HSDRRS.

2.0 ALTERNATIVES

At the time of completion of the original IER # 3 report, engineering designs had not been finalized for all of the actions and alternatives. Since that time, engineering details (e.g., necessity of wave attenuation berms along Jefferson Parish lake front) of the action approved in IER #3 have been revised based on the final engineering reports. Therefore, the changes to the action approved in IER #3 that could result in further impact to the natural or human environment are being addressed in this IER Supplemental.

2.1 DESCRIPTION OF THE ALTERNATIVES

No Action. Under the no action alternative for this IER Supplemental, the government-approved action as described in IER # 3 would be constructed. The proposed action described in IER # 3 became the Government-approved action on July 27, 2008, when IER # 3 was signed by the CEMVN Commander.

Proposed Action. The proposed action would be instrumental in providing 100-year level of risk reduction for Jefferson Parish, Louisiana. As discussed in IER # 3, the elevations of the existing levees, floodwalls, structures, and gates within the LPV projects would be raised to +16.5 ft to 17.5 ft, with the exception of the breakwaters at the pumping stations, which would be modified

and/or constructed to elevation +10 ft to 14 ft. The proposed changes to the action approved in IER #3 were developed to ensure that the most engineeringly feasible, least damaging, and cost effective alternative would be brought forward for construction.

Modifications to the approved action in IER # 3 were proposed in order to incorporate into the HSDRRS wave attenuation berms and foreshore protection along the Lake Pontchartrain Jefferson Parish lake front, a T-Wall, overpass bridge and detour lane bridge spans at the Lake Pontchartrain Causeway Bridge, additional rock armoring of a breakwater along the Lake Pontchartrain lakeshore, movement of a breakwater access bridge, and an earthen ramp in lieu of a gate within the recurve I-Wall, (figure 3).

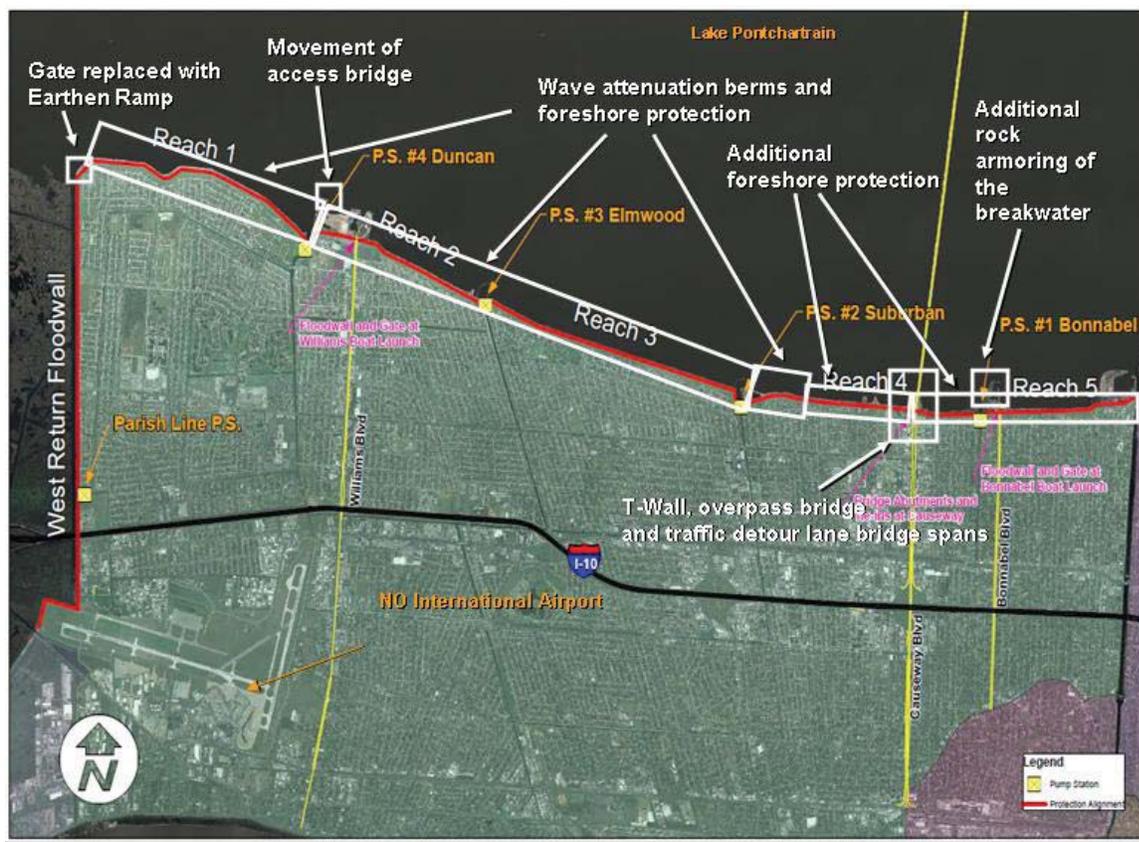


Figure 3. Proposed modifications to the Government-approved action in IER # 3.

The following reaches would be included in the proposed action (see figure 2). All elevations are established using North American Vertical Datum 1988 (NAVD88) projection.

- LPV 00 Reach 1 Lakefront Levee – consists of approximately 10,560 ft of levees starting at LPV 13 (Recurve I-wall in Northwest Kenner) running to Duncan Pumping Station (LPV 12). LPV 00 is currently at an average elevation of 16.8 ft.

- LPV 01 Reach 2 Lakefront Levee – consists of approximately 7,825 ft of levees, starting at the Duncan Pump Station, running to Elmwood Pump Station . LPV 01 is currently at an average elevation of +15.5 ft.
- LPV 02 Reach 3 Lakefront Levee – consists of approximately 11,960 ft of levees, starting at Elmwood Pump Station, running to Suburban Pump Station. LPV 02 is currently at an average elevation of +16.8 ft.
- LPV 09 Pump Station # 1 (Bonnabel) and associated Fronting Protection and Floodwall Tie-ins – currently there are no breakwaters associated with LPV 09. However, there is back flow protection (air suppression and valves) in place for the station. The current elevation ranges from +16 ft at the tie-ins to +22 ft at the pump station.
- LPV 12 Pump Station # 4 (Duncan) and associated Fronting Protection and Floodwall Tie-ins – currently there are no breakwaters associated with LPV 12. However, there is back flow protection (air suppression and valves) in place for the station. The current elevation ranges from +16 ft at the tie-ins to +22 ft at the pump station.
- LPV 17 Bridge Abutment and Floodwall Tie-ins at Causeway Bridge – consists of I-Wall levee tie-ins with an average elevation of approximately 15.5 ft.
- LPV 19 Reach 4 Lakefront Levee – consists of approximately 10,285 ft of levees, starting at Suburban Pump Station, and running to Bonnabel Pump Station. LPV 19 is currently at an average elevation of +16.8 ft.
- LPV 20 Reach 5 Lakefront Levee – consists of approximately 6,820 ft of levees, starting at Bonnabel Pump Station, and running to the 17th Street Canal. LPV 20 is currently at an average elevation of +15.5 ft.

For each reach addressed in this IER # 3 Supplemental, the Government-approved action, as discussed in IER # 3, is described first as the no action alternative, and the proposed action is described second.

LPV 00 Levee Reach 1, LPV 01 Levee Reach 2, LPV 02 Levee Reach 3, LPV 19 Levee Reach 4, and LPV 20 Levee Reach 5

No Action

The proposed action for these reaches would consist of raising the levee from current elevations to the 2057 elevation of +17.5 ft, modifying the levee to widen the crown from +7 ft to +10 ft in a straddle configuration to the extent possible (a slight flood-side shift could be incorporated as needed), and adding rock foreshore protection to elevation +6 ft at 150 ft from the centerline on the flood-side of the existing breakwater (figure 4). The rock foreshore protection would fill into Lake Pontchartrain approximately 25 ft from the existing shoreline. The actual location of the foreshore protection could be greater than 150 ft but, in general, would follow the shoreline. Additional rock foreshore protection would not be added to the existing riprap along the portion

of LPV 19 levee reach 4 east of the Lake Pontchartrain Causeway Bridge or to LPV 20 levee reach 5.

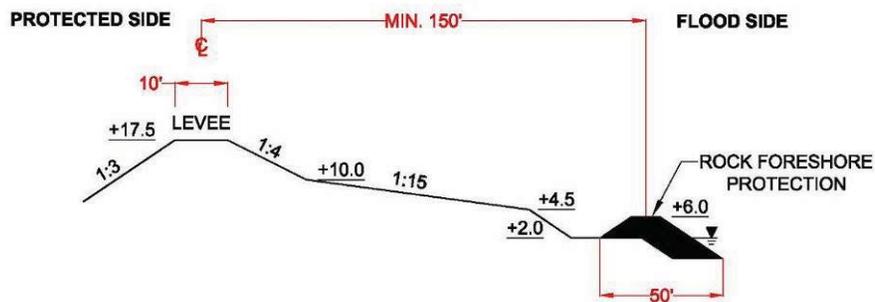


Figure 4. Approved Action for Levee Reaches

As an additional feature, armoring may be incorporated to protect against erosion and scour on the protected side of critical portions of levees and floodwalls. These critical areas include: transition points (where levees transition into any hardened feature such as other levees, floodwalls, pump stations, etc.), utility pipeline crossings, floodwall protected side slopes, and earthen levees that are exposed to wave and surge overtopping during a 500-year hurricane storm event. The proposed method of armoring could be one of the following: articulated concrete blocks (ACB) covered with soil and grass; turf reinforcement mattress (TRM); ACB/TRM; TRM/grass; or good grass cover. The armoring would be incorporated into the existing levee or floodwall footprint and no additional environmental impacts would be anticipated.

Proposed Action

The most recent bathymetric data shows that Lake Pontchartrain near shore depths in Jefferson Parish are greater than what was initially used to develop the 100-year lakefront levee elevations. As a result, overtopping rates would be greater than current HSDRRS design criteria. Because the levee design elevations have already been optimized (with respect to location and soil foundation conditions), the addition of wave attenuation berms in front of the levees along levee reaches 1, 2, 3, and an 1,800 ft segment of levee reach 4 west of Causeway Bridge are required to meet the 100 year level of risk reduction. Levee reach 4 east of Causeway Bridge and levee reach 5 would not require wave attenuation berms due to shallow enough lake depths flood side of those levee reaches, but would require more foreshore protection than what was anticipated in IER # 3.

Construction of the wave attenuation berms and foreshore protection for levee reaches 1, 2, and 3 would consist of filling approximately 90 ft of lake bottom (approximately 65 ft beyond what was approved in IER # 3) with earthen material to an elevation of +1.5 ft to 4.5 ft and the placement of graded stone along the new shoreline. Construction of the wave attenuation berm and foreshore protection in the 1,800 ft segment of levee reach 4 west of Causeway would consist of filling approximately 50 ft of lake bottom (approximately 25 ft beyond what was approved in IER # 3) with earthen material to an elevation of +1.5 ft to 4.5 ft and the placement of graded stone along the new shoreline (figure 6a). The remainder of levee reach 4 west of Causeway would not require earthen fill, but would incur additional lake bottom impacts from placement of rock foreshore protection extending approximately 40 ft out from the current shoreline (approximately 15 ft beyond what was approved in IER # 3; figure 6b). The construction of the wave attenuation berms and foreshore protection in levee reaches 1 through 3

and reach 4 west of Causeway Bridge would result in an additional 53 acres of permanent impacts to lake bottom than what was approved in IER # 3. Foreshore protection for levee reach 4 east of Causeway and levee reach 5 would consist of filling approximately 40 ft of lake bottom with graded stone and would result in 8 acres of permanent impacts to lake bottom that was not originally approved in IER # 3 (figure 7).

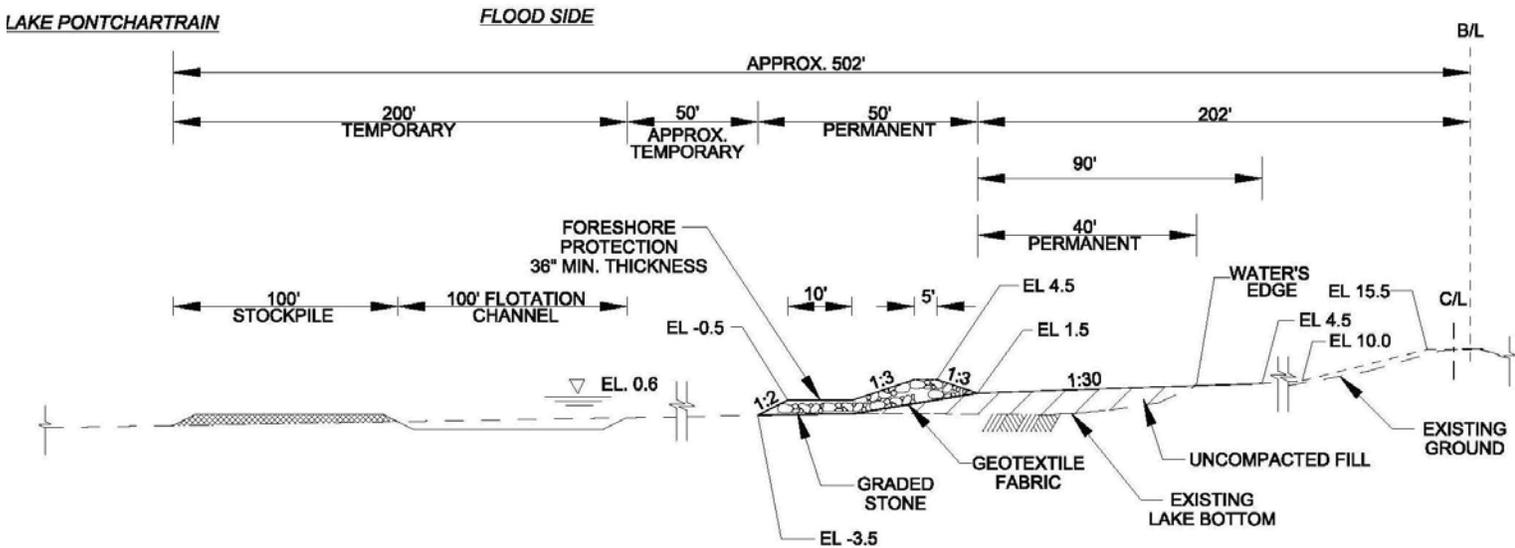


Figure 5. Proposed action for levee reaches 1, 2, & 3 (wave berm and rock foreshore)

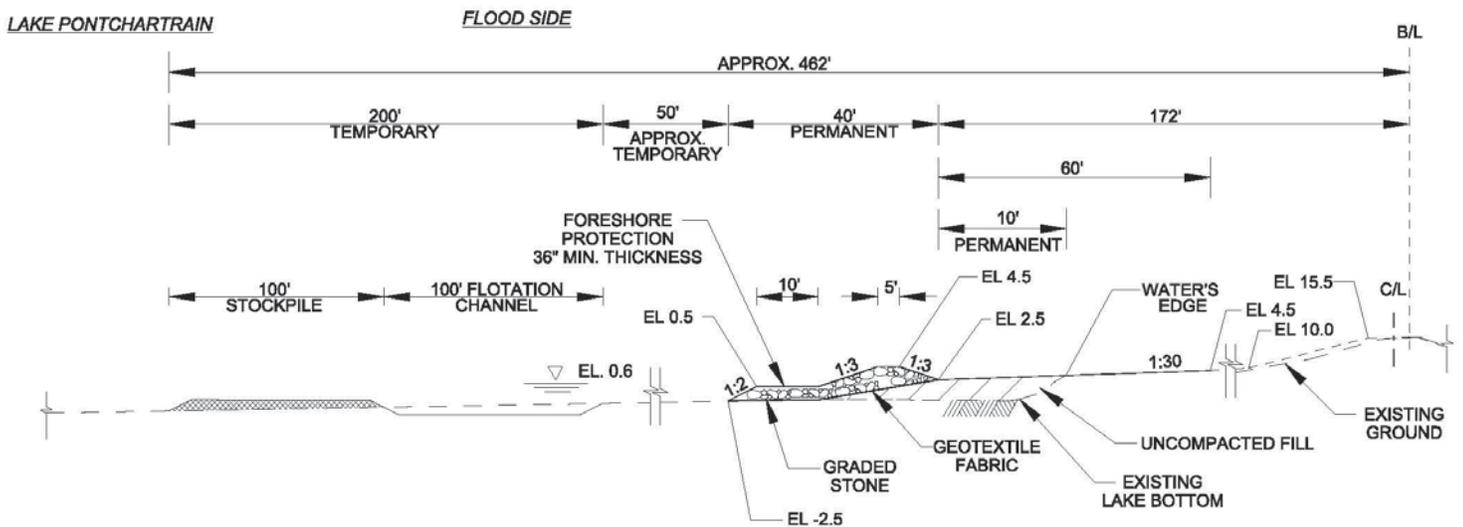


Figure 6a. Proposed action for the 1,800 ft segment of levee reach 4 west of Causeway Bridge (wave berm and rock foreshore)

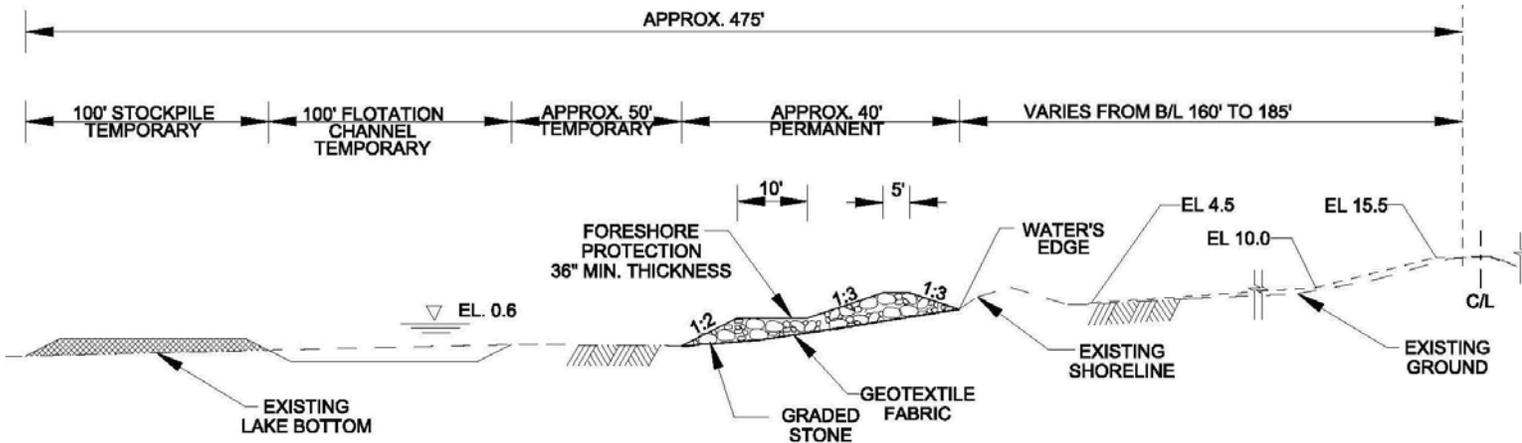


Figure 6b. Proposed action for the remainder of levee reach 4 west of Causeway Bridge (only rock foreshore)

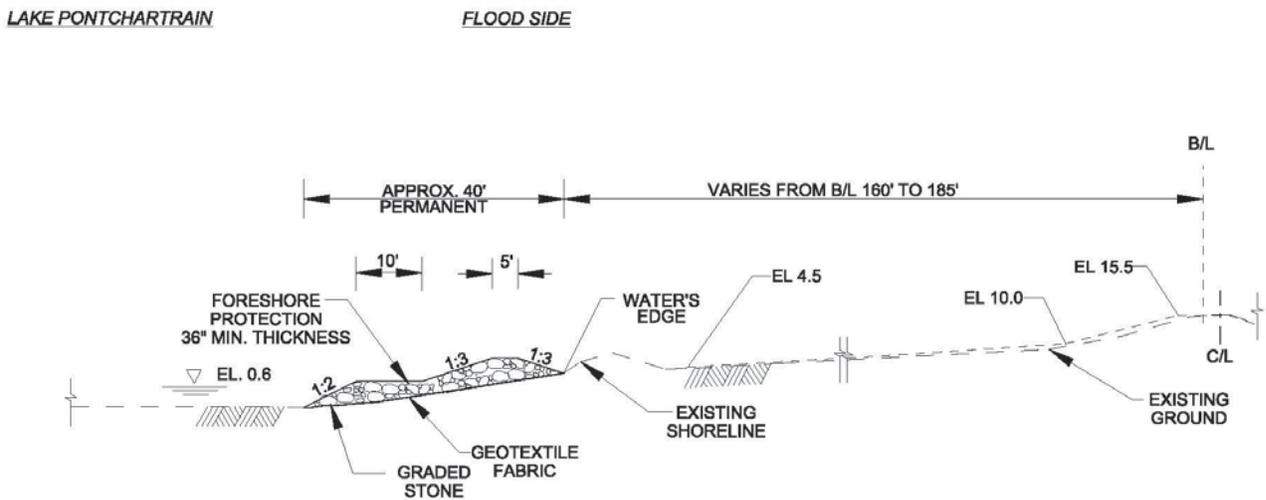


Figure 7. Proposed action for levee reach 4 and 5 east of Causeway Bridge (only rock foreshore)

Placement of rock for the foreshore protection would require perpendicular and parallel access channels west of the Causeway Bridge (figures 8 through 12). Perpendicular accesses would

begin at the -7 ft contour of the lake and extend 250 ft to 350 ft to where they would adjoin the parallel access channels along the shoreline. Both parallel and perpendicular access channels would be 100 ft wide and the stockpile sites would be 150 ft wide. Temporary impacts to approximately 200 acres of the lake bottom would result from construction of the access channels and use of the stockpile sites. All stockpiled access channel material would be returned to its original location upon project completion. Placement of rock for foreshore protection east of the Causeway Bridge would be delivered by truck and/or barge. Barge access into the levee reach 5 area would be via the two existing access channels at the Bonnabel breakwater and Coast guard station. Rock for levee reaches 1 through 3 and levee reach 4 west of Causeway Bridge would be offloaded from the barges along the lake front shoreline. Barged in rock within levee reach 4 and 5 east of Causeway Bridge would be offloaded at the peninsula of land near the Bonnabel breakwater and /or the Coast Guard Station. All earthen material for the wave attenuation berm would be transported by truck and placed via land. Either the earthen material would be placed first and the rock added afterward, or the rock first and the earthen material next. If the earthen material is added after the rock is placed, filling would start either in the middle of the reach working toward the ends or start at one end working towards the opposite end.

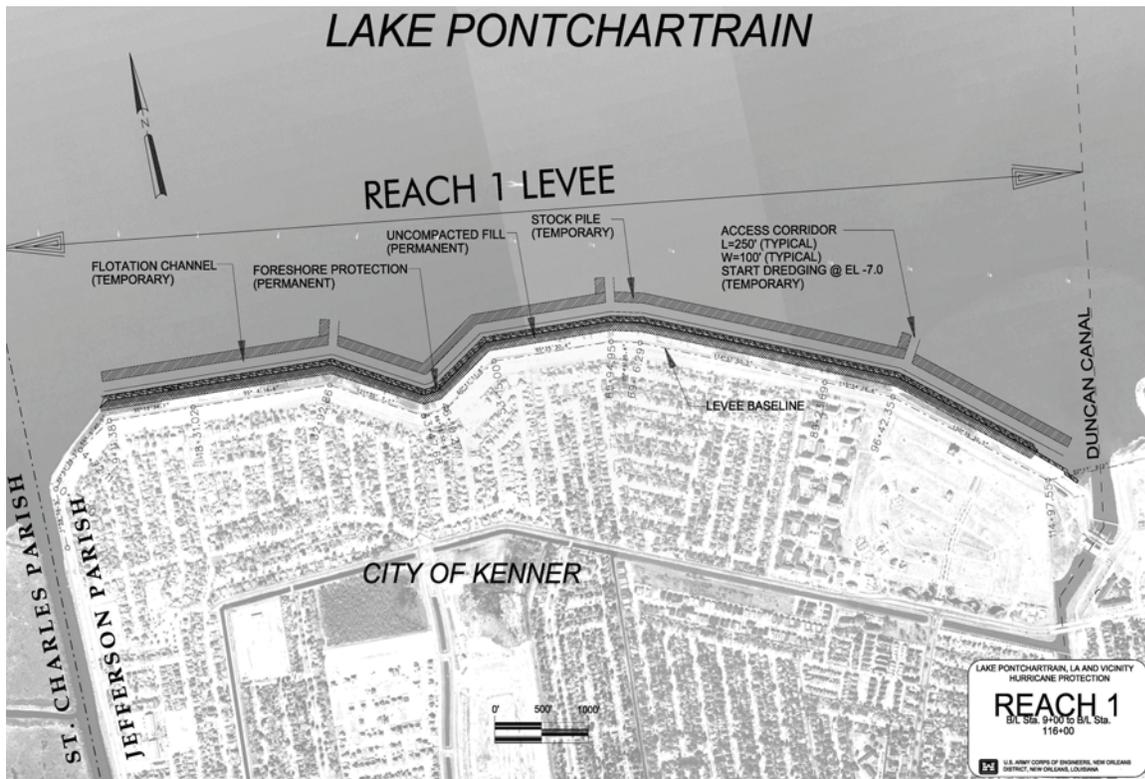


Figure 8. Levee reach 1 proposed perpendicular and parallel access channels



Figure 9. Levee reach 2 proposed perpendicular and parallel access channels



Figure 10. Levee reach 3 proposed perpendicular and parallel access channels



Figure 11. Levee reach 4 proposed perpendicular and parallel access channels

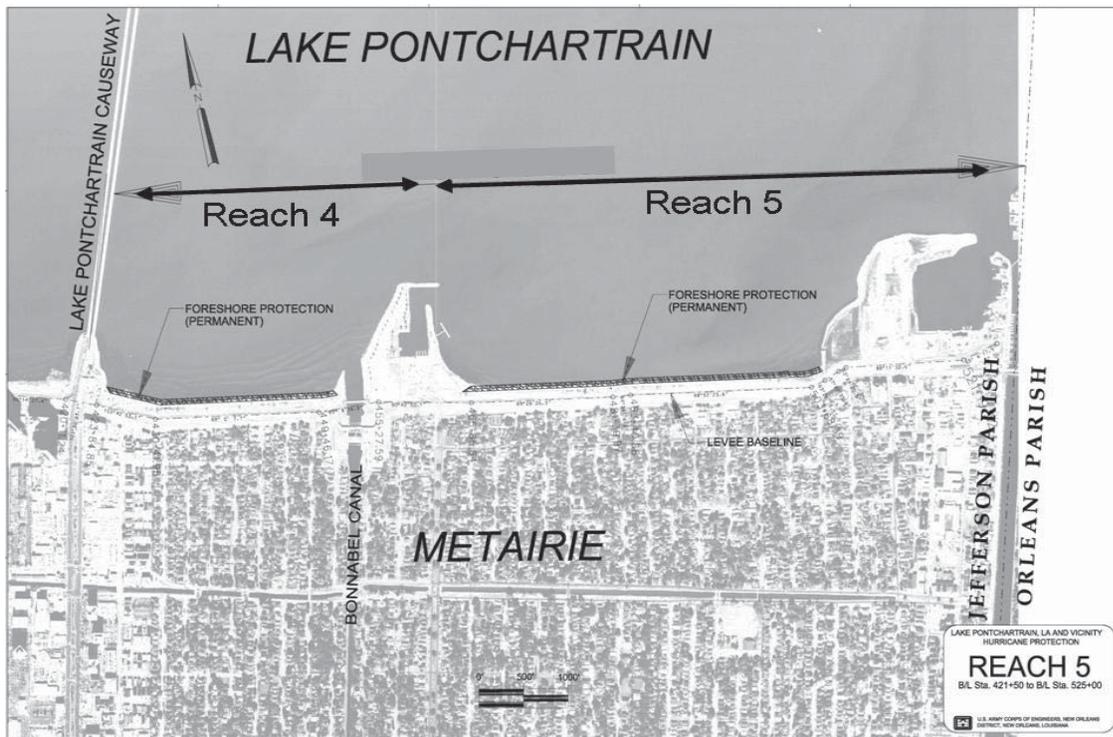


Figure 12. Levee reach 4 and 5 east of Causeway Bridge proposed rock foreshore protection

Lastly, the proposed action would consist of constructing an earthen ramp within the levee alignment near where the recurve I-Wall ties into the levee reach 1 to provide vehicular access for flood side inspection. This earthen ramp would be constructed in lieu of replacing the vehicular gate in the re-curve I-Wall, west of levee reach 1 (see IER Supplemental #2 for further details regarding the gate removal in the recurve I-Wall). The earthen ramp would be constructed completely within the levee footprint and existing levee right-of-way and would result in no additional impacts to any significant resources within the area.

LPV 09 Pump Station #1 (Bonnabel) Breakwater and LPV 12 Pump Station #4 (Duncan) Breakwater Access Bridge

No Action

At pumping station # 1 (Bonnabel), a new breakwater would be added to elevation +14 ft and it would extend from onshore into the lake. The length of the breakwater footprint on the lake bottom would be approximately 500 ft at pumping station # 1. With the rock riprap that would be placed along the toe of the breakwaters to provide erosion protection, the total width of the footprint of the breakwater would be approximately 130 ft. The area of the footprint of the breakwater on the lake bottom would be approximately 1.5 acres at pumping station # 1. Additional lake bottom could be temporarily impacted through the creation of a flotation channel required for construction of the breakwater and the stockpiling of dredged sediment adjacent to the channel until its use in backfilling the channel once construction is complete.

At pumping station # 4 (Duncan), a new breakwater would be added to elevation + 14 ft. It would begin approximately 150 ft offshore and would be connected to the shore by a bridge (figure 6a).

Proposed Action

At pumping station # 1 (Bonnabel): Hydraulic model results have indicated higher velocities than anticipated in the area where the Bonnabel breakwater is located, thus additional rock armoring around the breakwater would be required. This additional rock would permanently fill approximately 3.5 acres of lake bottom beyond what was cleared in IER # 3.

At pumping station # 4 (Duncan): The bridge that would tie the Duncan Pump Station Breakwater to the land on the western side of the breakwater would be constructed in an alternate location on the eastern side of the breakwater (figure 13).

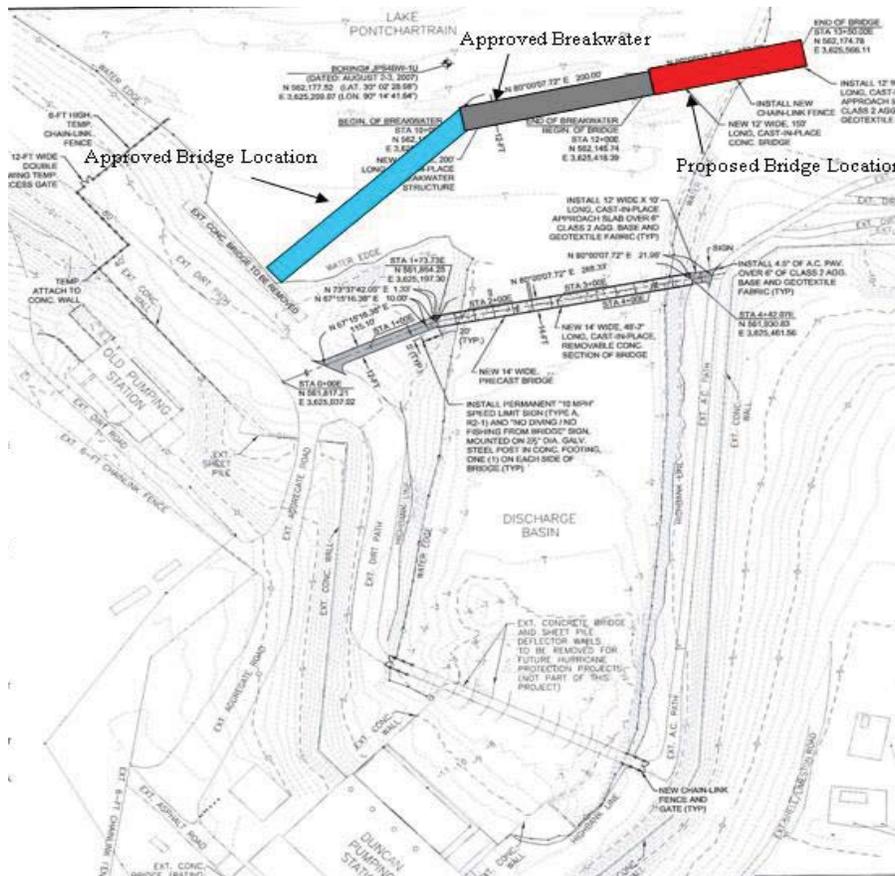


Figure 13. Access bridge at Duncan Breakwater.

LPV 17 Bridge Abutment and Floodwall Tie-ins at Causeway Bridge

No Action

The proposed action for this reach consists of extending the existing levee system across Causeway Blvd. The new levee would have a crown/crest elevation of +16.5 ft. Causeway Blvd would be modified, beginning at 6th Street, and would slope up to the crest elevation of the levee. The roadway would then slope back down to the elevation of the bridge abutment. The new road would be supported by vertical and mechanically stabilized earth walls to minimize the impact at the base and allow construction of sidewalks and accesses to existing buildings and streets.

Proposed Action

Use of mechanically stabilized earthen walls was eliminated during the engineering design phase due to the project footprint increasing in size and associated costs to achieve adequate risk reduction in the area. Instead, a T-Wall crossing the Causeway Peninsula in line with the existing levee alignment and a bridge over the floodwall are proposed (figure 14). Upon project completion, North Causeway Boulevard traffic at ground level would drive up onto the overpass bridge to enter onto the Causeway Bridge. The opposite would occur for south bound traffic.



Figure 14. Proposed detour lanes, T-Wall and overpass bridge at Causeway Bridge.

Construction sequencing would require the use of detour lanes on the Causeway Bridge to divert traffic while the T-Wall and new overpass bridge are being constructed. The detour lane bridge spans on the northbound side of Causeway would have a total width of 41 ft (three 11 ft lanes and two 2 ft shoulders) while the southbound side would have a total width of 53 ft (four 11 ft lanes and two 4 ft shoulders). The detour lanes bridge spans would begin on land and extend approximately 500 ft out onto the bridge from the shoreline. Dredging for barge access and flotation and temporary stockpiling of material adjacent to the access channel would be required for detour lane construction (figure 15). Access channels on both sides of the Causeway Bridge would be approximately 500 ft long, 100 ft wide, dredged to elevation -9 ft and would connect to flotation channels (elevation -5 ft) that would run the final distance to the foot of the bridge. Temporary stockpile sites adjacent to the access and flotation channels would be approximately 1,000 ft long and 125 ft wide. Temporary impacts east of the Causeway Bridge would total approximately 5.2 acres (2.7 acres access and flotation channel impacts; 2.5 acres stockpile impacts). Temporary impacts west of the Causeway Bridge would total 5.3 acres (2.7 acres access channel impacts; 2.6 acres stockpile impacts). The stockpile site east of Causeway would be encircled on all sides, except the side closest to the access channel, by a silt curtain in an effort to contain the dredged material to the maximum extent practicable. All stockpiled access and flotation channel material would be returned to its original location upon project completion.

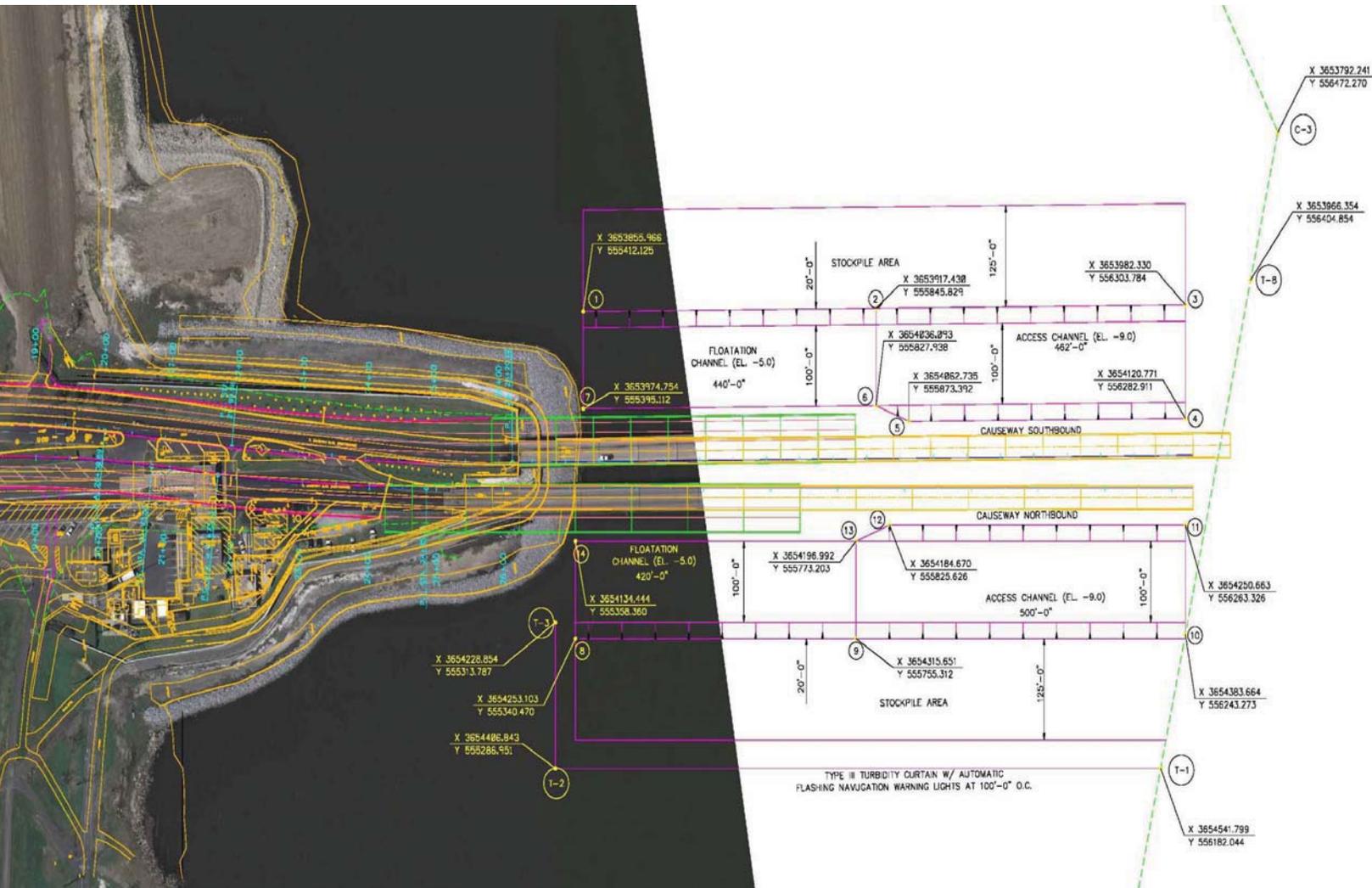


Figure 15. Proposed Causeway Bridge Detour Lane Access Dredging Location

By constructing bypass lanes, traffic impacts during the construction phase of the proposed action would be expected to be less than the impacts projected to occur if the approved earthen ramp as discussed in IER # 3 were constructed.

Construction of the traffic detour lane bridge spans would require the demolition of the Greater New Orleans Expressway Commission (GNOEC) administrative, office and police station buildings along with the southern toll plaza that includes the concrete canopy, the “Lake Pontchartrain Causeway” sign, and a single toll takers booth. All the functions within those buildings and the southern toll plaza would be relocated to another, yet to be determined location. In addition, the GNOEC buildings and southern toll plaza are historically significant (see section 3.2.6 Cultural Resources for further details).

Construction-Related Information for Proposed Action

Construction of the proposed action could begin in the spring of 2010 and the construction

activities would be expected to last for 18 months to 36 months (approximately 3 years). Advanced measures of 100 year risk reduction are projected to be in place by June 2011. A significant amount of construction equipment would be required to conduct the work; including barges, bulldozers, hydraulic cranes, mechanical cranes, hydraulic excavators, welders, 45,000-pound (lb) trucks, concrete pump trucks, rollers, pile hammers, graders, tractors, front-end loaders, flatbed trucks, and pickup trucks.

Clearing and grubbing activities of levee reaches would be completed before construction of the proposed action could begin. Clearing would consist of the complete removal above ground of all trees, stumps, down timber snags, brush, vegetation, loose stone, abandoned structures, fencing, and similar debris. Trees would be felled in such a manner as to avoid damage to trees to be left standing or to existing structures. Grubbing would consist of the removal of all stumps, roots, buried logs, old piling, old paving, old foundations, pipes, drains, and other unsuitable matter. All holes caused by grubbing operations shall be backfilled with suitable material in 12-inch layers to the elevation of the adjacent ground surface, and each layer compacted to a density at least equal to that of the adjoining undisturbed material. All debris resulting from clearing and grubbing operations at the construction site would be disposed of by removal from the site. Reasonable efforts would be made to channel merchantable material into the commercial market to make beneficial use of materials resulting from clearing and grubbing operations. Remaining debris, including asphalt and crown surfacing from the site, would be disposed of in compliance with all applicable Federal, state, and local laws.

Table 1 provides information on the approximate volumes of materials that would be required for construction of the proposed action at each LPV reach.

Table 1. Additional Volumes of Construction Materials for Proposed Action								
	Earthen Fill (CY)	Concrete (CY)	Sheet Piling (SqFT)	H-Piling (LF)	Pipe Pile (LF)	Pre-Cast Concrete Pile (LF)	Geotextile (SY)	Rock (Tons)
LPV 00	121000	N/A	N/A	N/A	N/A	N/A	56700	89200
LPV 01	92000	N/A	N/A	N/A	N/A	N/A	26700	47300
LPV 02	163000	N/A	N/A	N/A	N/A	N/A	64500	101400
LPV 19	9200	N/A	N/A	N/A	N/A	N/A	34400	50800
LPV 20	0	N/A	N/A	N/A	N/A	N/A	36000	51800
LPV 17	0	6,194	0	N/A	3,200	28,920	N/A	13,760
LPV 09	N/A	N/A	N/A	N/A	N/A	N/A	9600	22,000
LPV 12	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Truck access to the project sites would be via I-10 to Bonnabel Blvd, to Causeway Blvd, Clearview Blvd, or Williams Blvd. Barges could also be used during construction and would access the project area via Lake Pontchartrain.

The earthen fill (borrow) material would be obtained from the Bonnet Carré Spillway, off Airline Highway (U.S. 61), approximately 13 miles to 21 miles from the project area. The use of borrow

material obtained from the Bonnet Carré Spillway was evaluated in IER # 18 (see section 1.3 in IER # 3). Concrete would likely be transported to the site via mixing trucks and pumped on-site. Steel sheet piling and H-piling would likely be shipped by rail into the city from the manufacturer. The materials would be shipped via railways and transloaded to trucks at a terminal near the project site. The bulk of the truck traffic would occur on Airline Highway, I-310, I-10, Williams Blvd, Bonnabel Blvd, and a number of other local roads exiting off of I-10 and leading toward the lakefront. Rock used in the construction of foreshore protection would be shipped by barge to the project area. Staging, stockpile areas, and flotation channels along the lakefront would be required to handle the rock delivery and storage.

2.2 ALTERNATIVES TO THE PROPOSED ACTION

Alternatives that were considered in addition to the proposed action include:

No Action Alternative

Under the No Action alternative, the Government-approved action, which as described in IER # 3, would be constructed. Please reference section 2.1 for more detailed description of the Government's approved action as described in IER # 3.

Alternatives for LPV 00 Reach 1, LPV 01 Reach 2, LPV 02 Reach 3, LPV 19 Reach 4, and LPV 20 Reach 5 (wave attenuation and foreshore protection)

Alternative 1 – Rock wave break -

Under this alternative, a rock breakwater would be constructed along the existing shoreline using graded rock and core crushed stone (figure 16). For levee reaches 1 through 3, the rock wave break would extend approximately 60 ft into Lake Pontchartrain, and for part of levee reach 4 west of the Causeway Bridge, the rock wave break would extend out approximately 55 ft into Lake Pontchartrain. As within the proposed action, rock within the remainder of levee reach 4 west of the Causeway Bridge and levee reach 4 and 5 east of Causeway Bridge would extend out 40 ft from the existing shoreline. This alternative would permanently impact 48 acres of lake bottom.

Alternative 2 – Gabion Basket wave break-

Under this alternative, a breakwater would be constructed along the existing shoreline using Gabion baskets and filled with graded rock (figure 17). For levee reaches 1 through 3, the Gabion basket wave break would extend approximately 50 ft into Lake Pontchartrain, and for part of levee reach 4 west of Causeway Bridge, the Gabion basket wave break would extend approximately 45 ft into Lake Pontchartrain. As within the proposed action, rock within the remainder of levee reach 4 west of the Causeway Bridge and levee reach 4 and 5 east of Causeway Bridge would extend out 40 ft from the existing shoreline. This alternative would permanently impact 41 acres of lake bottom.

Alternative 3 – 300 ft wave attenuation berm with hydraulically dredged fill material and rock dike-

Under this alternative, for levee reaches 1 through 3 and part of levee reach 4 west of Causeway, a stone retention dike would be constructed at a distance of 300 ft from the levee centerline and

hydraulic fill would be utilized to backfill to the existing wave berm (figure 18a). Fill material would be obtained from Lake Pontchartrain by hydraulic dredge (figures 18b-18d). As within the proposed action, rock within the remainder of levee reach 4 west of the Causeway Bridge and levee reach 4 and 5 east of Causeway Bridge would extend out 40 ft from the existing shoreline. This alternative would permanently impact 280 acres of lake bottom (116 acres of impacts for wave attenuation berm and rock dike; 164 acres of impacts for borrow).

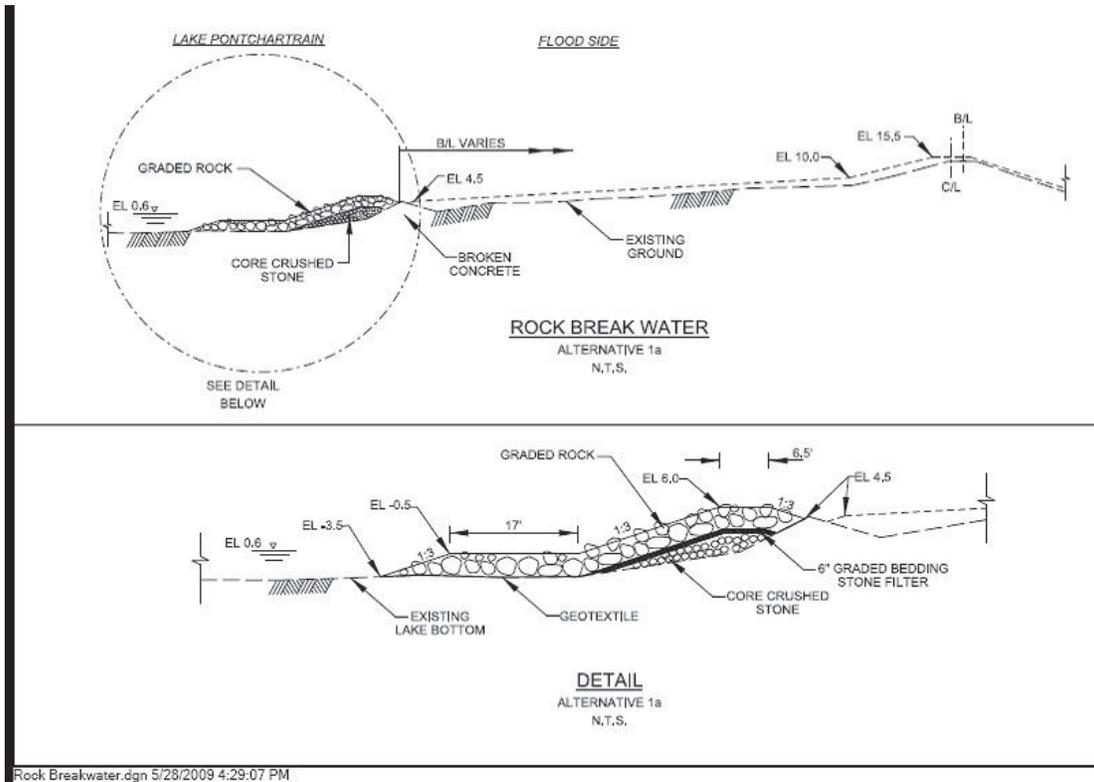


Figure 16. Alternative 1 - Rock breakwater cross-section.

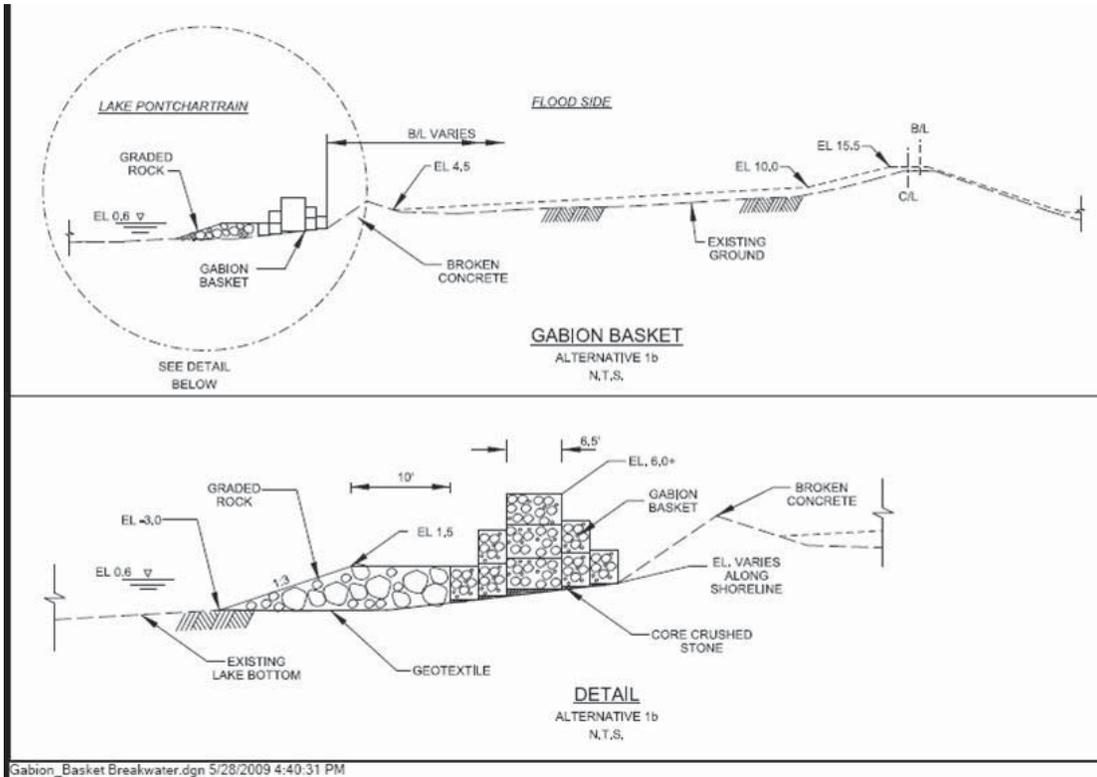


Figure 17. Alternative 2 – Gabion Basket breakwater cross-section.

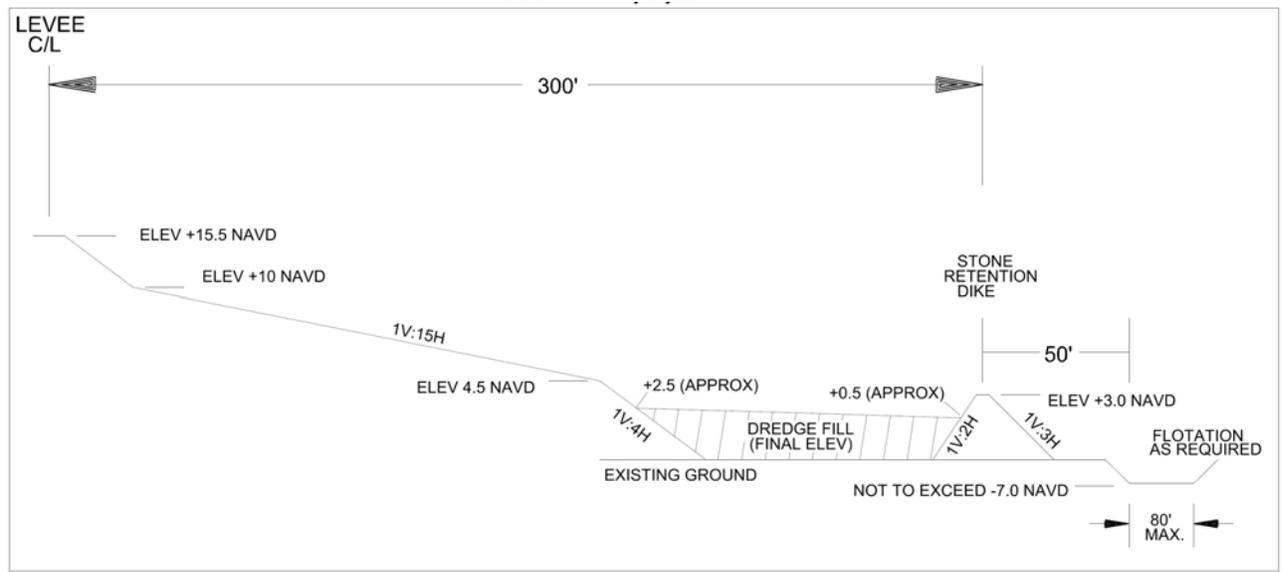


Figure 18a. Alternative 3 – 300 ft wave berm and rock dike cross-section.



Figure 18b. Alternative 3 dredge borrow site for levee reach 1.

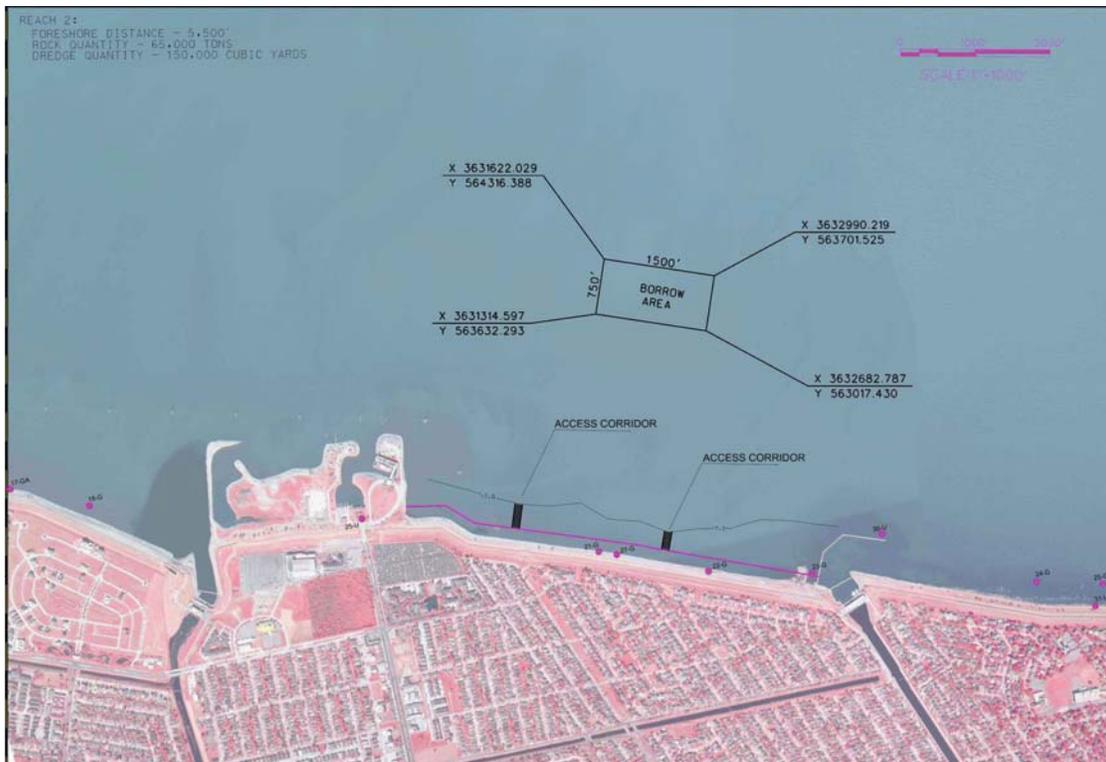


Figure 18c. Alternative 3 dredge borrow site for levee reach 2.

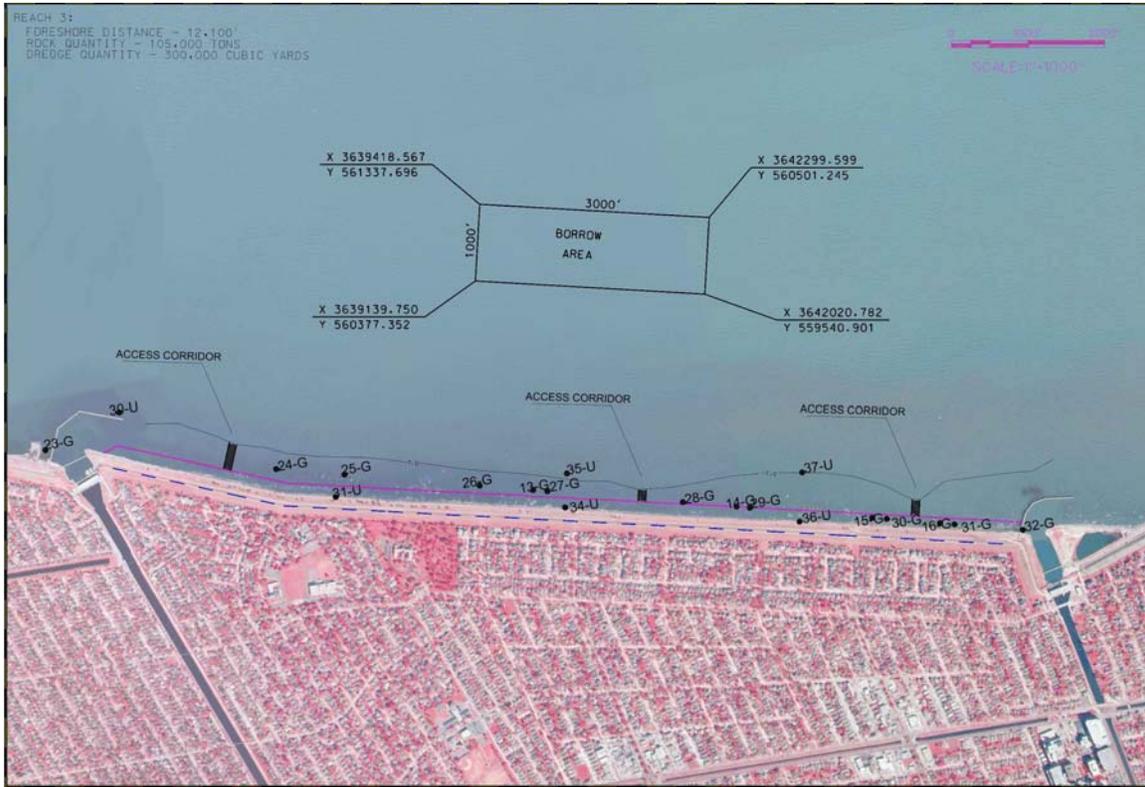


Figure 18d. Alternative 3 dredge borrow site for levee reach 3.

Alternatives for LPV 17 Bridge Abutment and Floodwall Tie-ins at Causeway Bridge

Alternative 1 - T-Wall North of existing levee alignment

Under this alternative, a reinforced concrete T-Wall constructed to elevation +16.5 ft and supported by sheet pile would be offset approximately 330 ft towards the lake from the centerline of the existing levee alignment and 15 ft from the existing floodwall (figure 19). This alternative would also require traffic detour lane bridge span construction to divert traffic during various construction phases; however, the detour lanes would extend beyond 500 ft into Lake Pontchartrain to accommodate traffic and bypass the area under construction for the new T-Wall. Thus, this alternative would also require access and flotation channel dredging as described in the proposed action, but the extent of traffic detour lane bridge span construction and required access and flotation channel dredging would be more extensive.

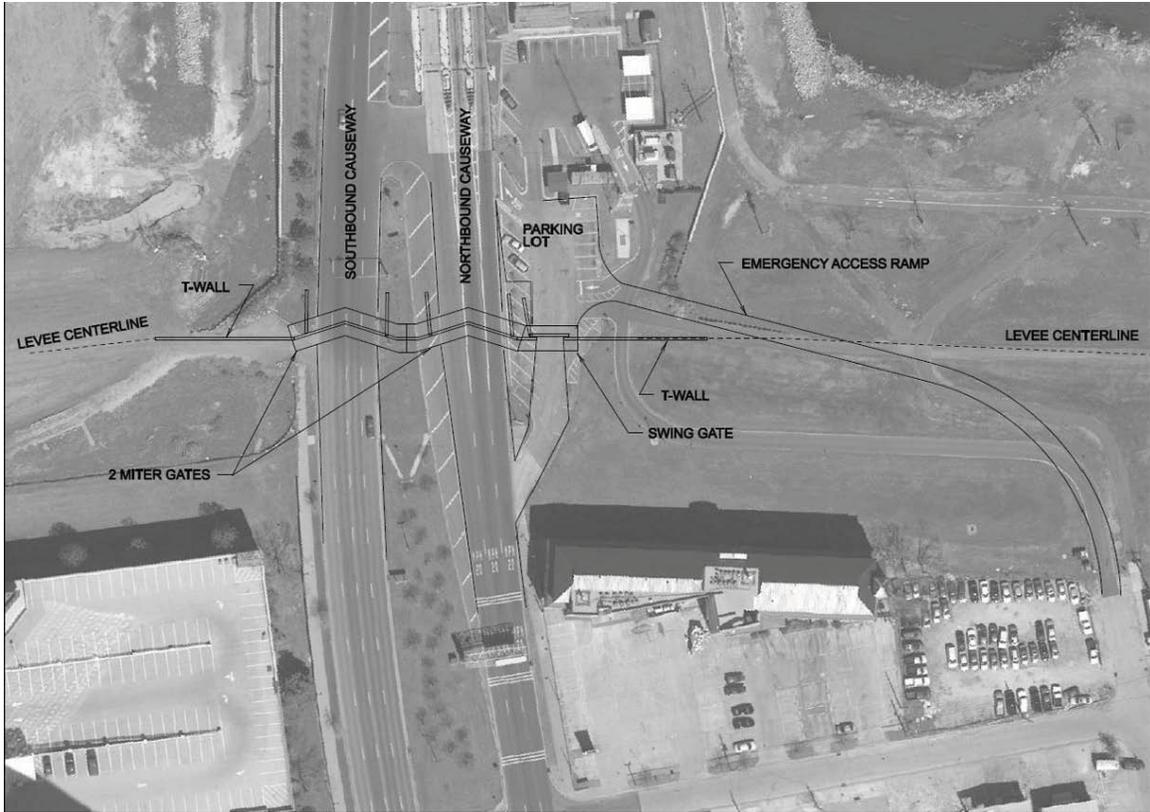


Figure 20. Alternative 2 –Flood gate within the existing levee alignment

3.0 AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

3.1 ENVIRONMENTAL SETTING

IER # 3 contains a complete discussion of the environmental setting for the project area and is incorporated by reference into this document. As such, no discussion of environmental setting is made in this document.

3.2 SIGNIFICANT RESOURCES

This section contains a list of the significant resources located in the vicinity of the proposed action and describes in detail those resources that would be impacted, directly or indirectly, by the alternatives. Direct impacts are those that are caused by the action taken and occur at the same time and place. Indirect impacts are those that are caused by the action and are later in time or further removed in distance, but are still reasonably foreseeable. Cumulative impacts are the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person

undertakes such actions. Cumulative impacts are discussed in conjunction with each resource and in section 4.

The resources described in this section are those recognized as significant by laws, executive orders, regulations, and other standards of national, state, or regional agencies and organizations; technical or scientific agencies, groups, or individuals; and the general public. Table 2 shows those significant resources found within the project area, and notes whether they would be impacted by the proposed action.

Table 2. Significant Resources in Project Study Area		
Significant Resource	Impacted	Not Impacted
Lake Pontchartrain/ Canals/Drainageways	X	
Wetlands		X*
Fisheries	X	
Essential Fish Habitat	X	
Wildlife	X	
Endangered or Threatened Species	X	
Cultural	X	
Recreational		X*
Aesthetic (Visual)		X*
Air Quality		X*
Noise		X*
Transportation		X*
Socioeconomic		X*
Land Use, Population, Employment		X*
Environmental Justice		X*
* - Proposed action poses no or de minimus additional impacts from those described in IER # 3 and as such are not discussed in this document Impacts to those resources from the approved project were described in detail in IER # 3.		

Existing Conditions are discussed in IER # 3 and are incorporated by reference for each significant resource discussed.

3.2.1 Lake Pontchartrain/Canals/Drainageways

Future Conditions with No-Action

Under the no action alternative, the Government-approved action, as discussed in IER # 3 would be constructed. Consequently, direct, indirect, and cumulative impacts to Lake

Pontchartrain/Canals/Drainageways would not differ from those described previously in the original IER # 3.

LPV 00, 01, 02, 19, and 20 – Lakefront Levee Reaches 1 through 5

Future Conditions with the Proposed Action

Direct Impacts

The expanded footprint of the levees to the flood side, within levee reaches 1 through 3 and part of 4, for wave attenuation berms and foreshore protection would result in some loss of lake bottom habitat because the footprint of the new structure would expand into Lake Pontchartrain approximately 90 ft (levee reaches 1 through 3) and 50 ft (levee reach 4 west of Causeway Bridge) from the existing shoreline. Placement of additional rock for foreshore protection in the remainder of levee reach 4 and levee reach 5 would also impact a 40 ft corridor of lake bottom habitat.

The placement of earthen fill and/or rock along the already riprap-covered shoreline would permanently cover approximately 61 acres of lake bottom (53 acres west of the Causeway bridge; 8 acres east of the Causeway Bridge; see table 3 below). The area of this inshore, lake bottom habitat that would be filled is very small relative to the extent of similar aquatic habitat within the expanse of Lake Pontchartrain.

Fill required for the wave attenuation berms would be brought to three previously approved land-based staging/stockpile areas by truck. Rock for the foreshore protection would be brought in by barge. As discussed in IER # 3, potential rock staging/stockpile areas could include the boat ramp at Williams Blvd, the Bonnabel boat launch, or the old Coast Guard Station off of Lakeshore Drive. Additional access channels for rock delivery and placement would be created via bucket dredge. The dimensions required for a tug boat and barge to access the shoreline would be approximately elevation -7 ft and 100 ft wide. Access channels would be dredged both perpendicular and parallel to the shoreline for rock delivery and placement.

Perpendicular access channels would begin at the elevation -7 ft contour of the lake and extend 250 ft to 350 ft to where they would adjoin the parallel access channels along the shoreline. Both parallel and perpendicular access channels would be 100 ft wide, while the stockpile sites would be 150 ft wide. Temporary impacts to the lake bottom from construction of the access channels and use of the stockpile sites would be approximately 200 acres. The access channels would be backfilled with the adjacently stockpiled material and the stockpile sites would be brought to pre-construction lake bottom elevations upon project completion. Occasional re-dredging of the channels due to natural siltation would likely be necessary during the course of construction.

Placement of rock for foreshore protection east of the Causeway Bridge would be delivered by truck and/or barge. Barge access into the levee reach 5 area would be via the two existing access channels at the Bonnabel breakwater and Coast guard station. Rock for levee reaches 1 through 3 and 4 west of Causeway Bridge would be offloaded from the barges along the lake front

shoreline. Barged in rock within levee reach 4 and 5 east of Causeway Bridge would be offloaded at the peninsula of land near the Bonnabel breakwater and /or the Coast Guard Station. With the use of existing access channels, there would be no additional lakeshore or lake bottom impacts associated with barged in rock for levee reach 4 and 5 east of Causeway Bridge.

Dredging could cause increased turbidity which could immediately reduce water quality in the project area. However, turbidity would be minimized by the use of a bucket dredge, and be reduced by the movement of the tides. Impacts to the waters and substrate of the lake from the proposed action would be temporary. The impacts of dredging, material delivery, and construction would occur primarily during the construction period of 1.5 years to 2.5 years, with some effects potentially lasting until the areas have stabilized.

Indirect Impacts

Potential indirect impacts from the proposed action for lakefront levee reaches 1 through 5 would primarily consist of effects from increased turbidity within the project area from access dredging, material stockpiling and construction related runoff. However, these impacts would be minimized through the use of best management practices and adherence to regulations governing storm water runoff at construction sites. The potential indirect adverse impacts to the lake from the proposed action would be minimized by the small area affected relative to the size of the lake and the temporary nature of these impacts.

Cumulative Impacts

Potential cumulative impacts on the lake from the proposed action for lakefront levee reaches 1 through 5 would involve the combined effects to the lake from the multiple LPV risk reduction projects in the New Orleans area. In addition, with the amount of proposed access dredging and material stockpiling across the Lake Pontchartrain south shore, there would likely be temporary cumulative impact of increased turbidity across the entire Lake Pontchartrain south shore. These impacts would be temporary and would occur primarily during the construction period.

The actions along the lake would be mainly temporary during the construction period. The project area would be modified very slightly relative to the size of the lake and the magnitude of historical changes to the shoreline.

Future Conditions with the Alternatives

Alternative 1 – Rock wave break –

Direct Impacts

The expanded footprint of the levees to the flood side, within levee reaches 1 through 3 and part of 4, for the rock wave break would result in some loss of lake bottom habitat because the footprint of the new structure would expand into Lake Pontchartrain approximately 60 ft (levee reaches 1 through 3) and 55 ft (part of levee reach 4 west of Causeway Bridge) from the existing shoreline. Placement of additional rock for foreshore protection in the remainder of levee reach 4 and levee reach 5 would also impact a 40 ft corridor of lake bottom habitat.

Placement of the rock along the already riprap-covered shoreline within levee reaches 1 through 5 would permanently cover approximately 40 acres of lake bottom habitat (40 west of Causeway Bridge; 8 acres east of Causeway Bridge; see table 3 below). The area of this inshore, lake bottom habitat that would be filled is very small relative to the extent of similar aquatic habitat within the expanse of Lake Pontchartrain.

Barge access would be required for construction for rock delivery and placement. Proposed access dredging material stockpiling and all associated temporary impacts for this alternative would be identical to those of the proposed action.

Indirect and Cumulative Impacts

All indirect and cumulative impacts to Lake Pontchartrain/canals/drainageways for this alternative would be very similar to those for the proposed action.

Alternative 2 – Gabion Basket wave break-

Direct Imapacts

The expanded footprint of the levees to the flood side, within levee reaches 1 through 3 and part of 4, for the Gabion basket wave break would result in some loss of lake bottom habitat because the footprint of the new structure would expand into Lake Pontchartrain approximately 50 ft (levee reaches 1 through 3) and 45 ft (levee reach 4 west of Causeway Bridge) from the existing shoreline. Placement of additional rock for foreshore protection in the remainder of levee reach 4 and levee reach 5 would also impact a 40 ft, corridor of lake bottom habitat.

Placement of the rock along the already riprap-covered shoreline within levee reaches 1 through 5 would permanently cover approximately 41 acres of lake bottom (33 west of Causeway Bridge; 8 acres east of Causeway Bridge; see table 3 below). The area of this inshore, lake bottom habitat that would be filled is very small relative to the extent of similar aquatic habitat within the expanse of Lake Pontchartrain.

Barge access would not be required for construction, thus this alternative would have no additional temporary impacts associated with access dredging and material stockpiling.

Indirect Impacts

There should be little to no indirect impacts as a result of constructing this alternative, as this alternative does not require barge access dredging and material stockpiling. There would likely be an increase in turbidity as the Gabion baskets are stacked and the wave break is constructed; however, the temporary increase in turbidity would be much less than the increase that would be incurred during the construction of the proposed action, alternative 1 or alternative 3.

Cumulative Impacts

All cumulative impacts to Lake Pontchartrain/canals/drainageways for this alternative would be very similar in nature to those for the proposed action but would be less extensive as this alternative would impacts less lake bottom habitat.

Alternative 3 – 300 ft wave attenuation berm with hydraulically dredged fill material and rock dike-

Direct Impacts

The expanded footprint of the levees to the flood side, within levee reaches 1 through 3 and part of 4, for the 300 ft wave attenuation berm and rock dike would result in the greatest loss of lake bottom habitat because the footprint of the new structure would expand into Lake Pontchartrain approximately 300 ft from the existing shoreline for levee reaches 1 through 3 and part of 4 west of the Causeway bridge. Placement of additional rock for foreshore protection in the remainder of levee reach 4 and levee reach 5 would also impact a 40 ft, corridor of lake bottom habitat. Direct impacts to Lake Pontchartrain/Canals/Drainageways would be similar in nature but more extensive than those of the proposed action because this alternative would impact a larger area of lake bottom habitat.

Placement of the earthen fill and rock along the already riprap-covered shoreline within levee reaches 1 through 5 would permanently cover approximately 116 acres of lake bottom (108 west of Causeway bridge; 8 acres east of causeway bridge; table 3 below). Even though this alternative would have the greatest impacts, the area of this inshore, lake bottom habitat that would be filled is very small relative to the extent of similar aquatic habitat within the expanse of Lake Pontchartrain.

This alternative would require that fill material for the earthen berm be hydraulically dredged from three borrow site locations approximately 3,000 ft from the shoreline within Lake Pontchartrain. Borrow pits would be dredged to no greater than elevation -10 ft. The dredging of material from these three borrow sites would permanently impact approximately 164 acres of lake bottom habitat.

Barge access would be required for construction for rock delivery and placement. Proposed access dredging material stockpiling and all associated temporary impacts for this alternative would be identical to those of the proposed action.

Indirect Impacts

All indirect impacts for this alternative would be very similar to those for the proposed action; however, the construction of this alternative would result in a greater amount of turbidity, as the fill would be dredged from three location within Lake Pontchartrain and pumped into a retention area in which the material would de-water and likely carry with it suspended sediments. These impacts would be minimized through the use of best management practices such as silt curtains on the inner side of the rock retention dike.

Cumulative Impacts

All cumulative impacts for this alternative would be very similar in nature to those for the proposed action, but impacts would be more extensive as this alternative would impact a significantly larger area of lake bottom habitat.

See the table below for impact comparisons among the proposed action and three alternatives within lake front levee reaches 1 through 5.

Table 3. Lake Front Levee Reaches 1-5 Alternative Comparison								
Reach	Proposed Action - Earthen Wave Attenuation Berm and Rock Foreshore Protection		Alt 1 - Rock Breakwater		Alt 2 - Gabion Basket		Alt 3 – 300 ft Wave Attenuation Berm and Rock Dike	
	Permanent	<u>Temporary</u>	Permanent	<u>Temporary</u>	Permanent	<u>Temporary</u>	Permanent	<u>Temporary</u>
LVP 00, 01, 02, 19, 20	61	<u>200</u>	48	<u>200</u>	41	<u>0</u>	280	<u>200</u>

LPV 09 and 12 - Bonabel Pump Station Breakwater and Duncan Pump Station Breakwater Access Bridge

Future Conditions with the Proposed Action

Direct Impacts

The additional rock armoring of the breakwater at Bonabel pump station would permanently replace 3.5 acres of lake bottom habitat (assuming a 130 ft wide base and length of 500 ft). The lake habitat that would be removed as a result of additional rock amoring at the pump station breakwater is proportionately a very small area relative to the extent of similar habitat within the expanse of Lake Pontchartrain. Construction of the operation and maintenance bridge for the Duncan pump station breakwater in the proposed location would not result in additional impacts. The new bridge would have a footprint similar to the approved bridge.

Indirect and Cumulative Impacts

There would be no additional indirect or cumulative impacts to Lake Pontchartrain /canals /drainageways due to additional rock armoring at the Bonnabel pump station breakwater or the movement of the Duncan breakwater access bridge.

LPV 17 Bridge Abutment and Floodwall Tie-ins at Causeway Bridge

Future Conditions with the Proposed Action

Direct Impacts

Dredging for barge access and flotation and temporary stockpiling of material adjacent to the access channel would be required for detour lane construction. Access channels on both sides of the Causeway Bridge would be approximately 500 ft long, 100 ft wide and have elevation -9 ft and connect to flotation channels elevation -5 ft that would run the final distance to the foot of the bridge. Temporary stockpile sites adjacent to the access/flotation channels would be approximately 1,000 ft long and 125 ft wide. Temporary impacts east of the Causeway Bridge would total approximately 5.2 acres (2.7 acres access/flotation channel impacts; 2.5 acres stockpile impacts). Temporary impacts west of the Causeway Bridge would total 5.3 acres (2.7 acres access channel impacts; 2.6 acres stockpile impacts). The stockpile site east of Causeway would be encircled on all sides except the side closest to the access channel by a silt curtain in an effort to contain the dredged material to the maximum extent practicable. All stockpiled access and flotation channel material would be returned to its original location upon project completion.

Indirect Impacts

Potential indirect impacts from the proposed action would primarily consist of effects from increased turbidity to the wetland and lake areas surrounding the project area from access dredging, material stockpiling, and construction related runoff. However, these impacts would be minimized through the use of best management practices and adherence to regulations governing storm water runoff at construction sites. The potential indirect adverse impacts to the lake bottom habitat from the proposed action would be minimized by the small area affected relative to the size of the lake and the temporary nature of these impacts.

Cumulative Impacts

The proposed action would not result in long term, permanent cumulative impacts; however, with the amount of proposed access dredging and material stockpiling across the Lake Pontchartrain south shore, there would likely be a temporary cumulative impact of increased turbidity across the entire Lake Pontchartrain south shore. These impacts would be primarily during the construction period, which would be expected to last for 18 months to 36 months (approximately 3 years).

Future Conditions with the Alternatives

Alternative 1 - T-Wall North of existing levee alignment

Direct, indirect, and cumulative impacts on Lake Pontchartrain/canals/drainageways from this alternative would be essentially the same as those described for the proposed action; however, impacts would likely be more extensive as detour lane bridge spans would be longer and require longer access and flotation channels.

Alternative 2 - Floodgate within the existing levee alignment

This alternative would not result in additional direct, indirect, or cumulative impacts to Lake Pontchartrain/canals/drainageways.

See the table below for a summary of the approved and proposed impacts within the IER 3 project area.

Table 4. Lake Pontchartrain / Canals / Drainageways Impacts (acres)				
Reach	Approved in IER # 3		Additional Impacts Proposed in IER Supplemental # 3	
	Permanent	Temporary	Permanent	Temporary
LVP 00, 01, 02, 19, 20	22	0	61	200*
LPV 09 and 12	2.7	58	3.5	0
LPV 11 and 12	1.7	58	N/A	N/A
LPV 16 and 18	0	0	N/A	N/A
LPV 17	0	0	0	10.5
Total	26.4	116	64.5	210.5
Cumulative Impacts IER # 3 and IER Supplemental # 3	91 acres of permanent impacts; 326.5 acres of temporary impacts			
*This number corresponds with the total access dredging and material stockpiling within levee reaches 1-3 and the part of 4 west of the Causeway Bridge). There are no temporary impacts within the levee reaches 4 and 5 east of Causeway Bridge.				

3.2.2 Fisheries

Future Conditions with No Action

Under the no action alternative, the Government's action, as approved in IER # 3 would be constructed. Consequently, direct, indirect, and cumulative impacts to fisheries would not differ from those described in the original IER # 3.

LPV 00, 01, 02, 19, and 20 – Lakefront Levee Reaches 1 through 5

Future Conditions with to the Proposed Action

Direct Impacts

The addition of wave attenuation berms and rock foreshore protection within lake front levee reaches 1 through 5 approximately 40 ft to 90 ft from the existing shoreline could permanently cover approximately 53 acres of lake bottom habitat along the shoreline west of the Causeway Bridge and 8 acres east of the Causeway Bridge. The removal of this habitat represents proportionately a very small area of similar aquatic habitat within the expanse of Lake Pontchartrain, which has an area of over 400,000 acres.

The dredging and material stockpiling to provide access to deliver and place the rock for foreshore protection could temporarily displace and possibly destroy the benthic organisms (including clams) within a total area of approximately 200 acres west of Causeway Bridge. All stockpiled material would be returned to its original location upon project completion. Increased turbidity from access dredging could affect fish and other organisms by clogging gills, reducing growth rates, and adversely affecting egg and larval development. Most mobile species would avoid the areas temporarily impacted by dredging as well as shoreline areas that would be permanently lost due to filling. Stockpile areas would be brought to pre-construction lake bottom elevations upon project completion, which would minimize impacts to the lake bottom and reestablish fish habitat in the area. Impacts to less mobile benthic species from these activities likely would occur, but would be temporary, approximately 1.5 years to 2.5 years in duration, with effects lasting until the areas have stabilized. Once the proposed action is complete, sediment would settle, benthos would repopulate, and fish and other mobile aquatic species would return.

Existing fisheries habitat that would be destroyed under the proposed action would be replaced by earthen fill and a rocky foreshore that would be suitable for colonization by periphyton and sessile organisms. The crevices in the riprap could provide protective cover for various species of shellfish and small finfish. Thus, the proposed action would create a new habitat that is uncommon in Lake Pontchartrain and potentially more productive than the very common mud bottoms.

Indirect Impacts

Potential indirect impacts on fisheries from construction of the proposed action for lakefront levee reaches 1 through 5 would consist mainly of effects from siltation and suspended sediment in adjacent areas of the lake, which could affect fish and other organisms by clogging gills, reducing growth rates, and adversely affecting egg and larval development. Effects such as these from wave attenuation berm and foreshore protection would be minimized by the use of best management practices to control sediment transport. In addition, reductions in habitat associated with the proposed action could incrementally reduce available prey for some species. However, the area of permanently lost habitat would be very small in comparison to the remaining similar habitat in the lake and most indirect impacts would be temporary, approximately 1.5 years to 2.5 years in duration, with effects lasting until the areas have stabilized.

Cumulative Impacts

Potential cumulative impacts on fisheries in the lake from the proposed action for lakefront levee reaches 1 through 5 would involve the combined effects from the multiple LPV risk reduction projects in the New Orleans area. With the amount of proposed access dredging and material stockpiling across the Lake Pontchartrain south shore, there would likely be a temporary cumulative impact of increased turbidity across the entire Lake Pontchartrain south shore. These impacts would be primarily during the construction period. The total area of the lake potentially affected would be small and most areas would be affected only temporarily, as discussed previously. The project area would be modified very slightly relative to the size of the lake and the magnitude of historical changes to the shoreline.

Future Conditions with the Alternatives

Alternative 1 – Rock wave break –

Direct Impacts

The expanded footprint of the levees to the flood side for the rock wave break would permanently cover approximately 48 acres of lake bottom habitat. The permanent and temporary impacts to fisheries associated with construction of the wave break, access dredging, and material stockpiling would be similar to those of the proposed action.

Indirect and Cumulative Impacts

All indirect and cumulative impacts to fisheries for this alternative would be very similar to those for the proposed action.

Alternative 2 – Gabion Basket wave break-

Direct Impacts

The expanded footprint of the levees to the flood side would permanently cover approximately 41 acres of lake bottom habitat. The permanent impacts to fisheries associated with construction of the wave break would be similar to those of the proposed action; however, barge access would not be required for construction, thus this alternative would have no additional temporary impacts to fisheries associated with access dredging and material stockpiling.

Indirect Impacts

There should be little to no additional indirect impacts to fisheries as a result of constructing this alternative, as this alternative does not require barge access dredging and material stockpiling. There would likely be an increase in turbidity as the Gabion baskets are stacked and the wave break is constructed; however, the temporary increase in turbidity would be much less than the increase that would be incurred during the construction of the proposed action, alternative 1, or alternative 3.

Cumulative Impacts

All cumulative impacts to fisheries for this alternative would be very similar to those for the proposed action with the exception that this alternative would not require access dredging and material stockpiling and would not contribute to increased turbidity across the entire Lake Pontchartrain south shore..

Alternative 3 – 300 ft wave attenuation berm with hydraulically dredged fill material and rock dike-

Direct Impacts

The expanded footprint of the levees to the flood side would permanently cover approximately 116 acres of open water lake bottom habitat. This alternative would also require that fill material for the earthen berm be hydraulically dredged from 3 borrow site locations approximately 3,000 ft from the shoreline within Lake Pontchartrain. Borrow pits would be dredged to no greater than elevation -10 ft. The dredging of material from these three borrow sites would permanently impact approximately 164 acres of lake bottom habitat. Direct impacts to fisheries would be similar in nature to those of the proposed action though impacts incurred due to this alternative would be more extensive since a larger area of lake bottom habitat would be impacted.

Barge access would be required for rock delivery and placement along the lake shore. The temporary impacts associated with access dredging and material stockpiling for this alternative would be identical to those of the proposed action.

Indirect Impacts

All indirect impacts to fisheries for this alternative would be very similar to those for the proposed action; however, the construction of this alternative would result in a greater amount of turbidity, as the fill would be dredged from three locations within Lake Pontchartrain and pumped into a retention area in which the material would de-water and likely carry with it some suspended sediments. These impacts would be minimized through the use of best management practices such as silt curtains on the inner side of the rock retention dike.

Cumulative Impacts

All cumulative impacts for this alternative would be very similar in nature to those for the proposed action, but impacts would be more extensive as this alternative would impact a significantly larger area of lake bottom habitat.

LPV 09 and 12 - Bonnabel Pump Station Breakwater and Duncan Pump Station Breakwater Access Bridge

Future Conditions with the Proposed Action

Direct Impacts

The additional rock armoring at the Bonnabel pump station breakwater could permanently cover approximately 3.5 acres of lake bottom habitat. Most (3.5 acres) of the existing fisheries habitat that would be destroyed under the proposed action would be replaced by additional rock that would be suitable for colonization by periphyton and sessile organisms. The new habitat would provide protective cover for various species of shellfish and finfish. Thus, the proposed action would create a new habitat that is uncommon in Lake Pontchartrain and potentially more productive than the very common mud bottoms. The fish habitat of water and water bottoms that would be removed as a result of this additional rock armoring at the breakwater is proportionately a very small area relative to the extent of similar habitat within the expanse of Lake Pontchartrain.

There would be no additional direct impacts associated with the relocation of the Duncan pump station breakwater access bridge.

Indirect Impacts

Indirect impacts on fisheries from the proposed action for additional rock armoring of Bonnabel pump station breakwater would be essentially the same as those discussed above for lake front levee reaches 1 through 5 under the proposed action

There would be no additional indirect impacts associated with the relocation of the Duncan pump station breakwater access bridge.

Cumulative Impacts

Cumulative impacts on fisheries from the proposed action for additional rock armoring of Bonnabel pump station breakwater would be essentially the same as those discussed above for

lake front levee reaches 1 through 5 under the proposed action

There would be no additional cumulative impacts associated with the relocation of the Duncan pump station breakwater access bridge.

LPV17 – Bridge Abutment and Floodwall Tie-ins at Causeway Bridge

Future Conditions with the Proposed Action

Direct Impacts

Dredging for barge access/flotation and temporary stockpiling of material adjacent to the access channel would be required for detour lane construction. Access channels on both sides of the Causeway Bridge would be approximately 500 ft long, 100 ft wide and elevation -9 ft and connect to flotation channels elevation -5 ft that would run the final distance to the foot of the bridge. Temporary stockpile sites adjacent to the access/flotation channels would be approximately 1,000 ft long and 125 ft wide. Temporary impacts east of the Causeway Bridge would total approximately 5.2 acres (2.7 acres access/flotation channel impacts; 2.5 acres stockpile impacts). Temporary impacts west of the Causeway Bridge would total 5.3 acres (2.7 acres access channel impacts; 2.6 acres stockpile impacts). The stockpile site east of Causeway would be encircled on all sides except the side closest to the access channel by a silt curtain in an effort to contain the dredged material to the maximum extent practicable. All stockpiled access and flotation channel material would be returned to its original location upon project completion.

Increased turbidity from access dredging could affect fish and other organisms by clogging gills, reducing growth rates, and adversely affecting egg and larval development. Most mobile species would avoid the areas temporarily impacted by dredging as well as shoreline areas that would be permanently lost due to filling. Stockpile areas would be brought to pre-construction lake bottom elevations upon project completion, which would minimize impacts to the lake bottom and reestablish fish habitat in the area. Impacts to less mobile benthic species from these activities likely would occur but would be temporary, approximately 1.5 years to 2.5 years in duration, with effects lasting until the areas have stabilized. Once the proposed action is complete, sediment would settle, benthos would repopulate, and fish and other mobile aquatic species would return.

Indirect and Cumulative Impacts

Indirect and cumulative impacts to fisheries due to the proposed action would be very similar to those impacts for the proposed action within lake front levee reaches 1 through 5.

Future Conditions with the Alternatives to the Proposed Action

Alternative 1 - T-Wall North of existing levee alignment

Direct, indirect, and cumulative impacts on fisheries from this alternative would be essentially the same as those described for the proposed action ; however, impacts would likely be more extensive as detour lane bridge spans would be longer and require longer access and flotation channels.

Alternative 2 - Floodgate within the existing levee alignment

This alternative would not result in additional direct, indirect, or cumulative impacts to fisheries.

3.2.3 Essential Fish Habitat

Future Conditions with No Action

Under the no action alternative, the Government’s action, as approved in IER # 3 would be constructed. Consequently, direct, indirect, and cumulative impacts to wetlands would not differ from those described previously in the original IER # 3.

LPV 00, 01, 02, 19, and 20 – Lakefront Levee Reaches 1 through 5

Future Conditions with the Proposed Action

Direct, Indirect, and Cumulative Impacts

The direct impacts on EFH from the proposed action at levee reaches 1 through 5 would be essentially the same as described above for fisheries. Limited areas of existing EFH would be impacted temporarily (approximately 200 acres) for dredged access channels and smaller areas (approximately 61 acres) would be permanently lost from the placement of wave attenuation berms and foreshore protection. All direct, indirect, and cumulative impacts on EFH from the proposed action within levee reaches 1 through 5 would be essentially the same as described for fisheries.

Future Conditions with the Alternatives to the Proposed Action

Alternative 1 – Rock wave break –

Direct, Indirect, and Cumulative Impacts

The expanded footprint of the levees to the flood side for the rock wave break would permanently cover approximately 48 acres of lake bottom habitat. The temporary impacts to EFH associated with construction of the wave break, access dredging and material stockpiling would be approximately 200 acres. All direct, indirect, and cumulative impacts to EFH for this alternative would be essentially the same as described for fisheries.

Alternative 2 – Gabion Basket wave break-

Direct, Indirect, and Cumulative Impacts

The expanded footprint of the levees to the flood side would permanently cover approximately 41 acres of lake bottom. The permanent impacts to EFH associated with construction of the wave break would be similar to those of the proposed action; however, barge access would not be required for construction, thus this alternative would have no additional temporary impacts to fisheries associated with access dredging and material stockpiling. All direct, indirect and cumulative impacts to EFH for this alternative would be essentially the same as described for fisheries.

Alternative 3 – 300 ft wave attenuation berm with hydraulically dredged fill material and rock dike-

Direct, Indirect, and Cumulative Impacts

The expanded footprint of the levees to the flood side would permanently cover approximately 116 acres of lake bottom. This alternative would also require that fill material for the earthen berm be hydraulically dredged from 3 borrow site locations approximately 3,000 ft from the shoreline within Lake Pontchartrain. Borrow pits would be dredged to no greater than elevation -10 ft. The dredging of material from these three borrow sites would permanently impact approximately 164 acres of lake bottom habitat. Barge access would be required for rock delivery and placement along the lake shore. The temporary impacts to EFH associated with access dredging and material stockpiling for this alternative would be approximately 200 acres. All direct, indirect, and cumulative impacts to EFH within these reaches would be essentially the same as described for fisheries

LPV 09 and 12 - Bonnabel Pump Station Breakwater and Duncan Pump Station Breakwater Access Bridge

Future Conditions with the Proposed Action

Direct, Indirect, and Cumulative Impacts

The additional rock armoring at the Bonnabel pump station breakwater could permanently cover approximately 3.5 acres of lake bottom habitat. The EFH that would be removed as a result of this additional rock armoring at the breakwater is proportionately a very small area relative to the extent of similar habitat within the expanse of Lake Pontchartrain.

Direct, indirect, and cumulative impacts to EFH within these reaches would be essentially the same as described for fisheries.

There would be no additional direct, indirect, and cumulative impacts to EFH associated with the relocation of the Duncan pump station breakwater access bridge.

LPV17 – Bridge Abutment and Floodwall Tie-ins at Causeway Bridge

Future Conditions with the Proposed Action

Direct, Indirect, and Cumulative Impacts

Dredging for barge access/flotation and temporary stockpiling of material adjacent to the access channel would be required for detour lane construction. Access channels on both sides of the Causeway Bridge would be approximately 500 ft long, 100 ft wide with elevation -9 ft and would connect to flotation channels at elevation -5 ft that would run the final distance to the foot of the bridge. Temporary stockpile sites adjacent to the access/flotation channels would be approximately 1,000 ft long and 125 ft wide. Temporary impacts east of the Causeway Bridge would total approximately 5.2 acres (2.7 acres access/flotation channel impacts; 2.5 acres stockpile impacts). Temporary impacts west of the Causeway Bridge would total 5.3 acres (2.7 acres access channel impacts; 2.6 acres stockpile impacts). The stockpile site east of Causeway would be encircled on all sides except the side closest to the access channel by a silt curtain in an effort to contain the dredged material to the maximum extent practicable. All stockpiled access and flotation channel material would be returned to its original location upon project completion.

All direct, indirect, and cumulative impacts to EFH within this reach would be essentially the same as described for fisheries.

Future Conditions with the Alternatives to the Proposed Action

Alternative 1 - T-Wall North of existing levee alignment

Direct, indirect, and cumulative impacts on EFH from this alternative would be essentially the same as those described for the proposed action; however, impacts would likely be more extensive as detour lane bridge spans would be longer and require longer access and flotation channels.

Alternative 2 - Floodgate within the existing levee alignment

This alternative would not result in additional direct, indirect, or cumulative impacts to EFH.

3.2.4 Wildlife

Future Conditions with No Action

Under the no action alternative, the Government's action, as approved in IER # 3 would be constructed. Consequently, direct, indirect, and cumulative impacts to wetlands would not differ from those described in the original IER # 3.

LPV 00, 01, 02, 19, and 20 – Lakefront Levee Reaches 1 through 5

Future Conditions with the Proposed Action

Direct Impacts

The addition of wave attenuation berms and rock foreshore protection within lake front levee reaches would entail the placement of earthen material and rock along the shoreline and out in the lake bottom habitat of Lake Pontchartrain. The expanded footprint of the wave berm and foreshore protection would permanently impact approximately 61 acres of lake bottom habitat. The wildlife (other than fish) that utilize the shoreline and inshore aquatic habitat immediately adjacent to the shoreline principally are birds. Adverse effects on birds from construction of the wave attenuation berms and rock foreshore protection under the proposed action would be limited by the large area of similar lake habitat within the shallow expanse of Lake Pontchartrain where birds avoiding the shoreline construction area could forage.

Rock used in the construction of the foreshore protection along the five levee reaches would be shipped to the project area by barge on Lake Pontchartrain. Access channels would be dredged perpendicular and parallel to the shoreline for rock delivery and placement. Approved access channels to be dredged in to the pumping stations for breakwater construction could also potentially be utilized for material delivery. Staging/stockpile areas on land along the lakefront would be utilized in delivery and storage of the rock. As discussed in IER # 3, potential rock staging/stockpile areas include open, grassy areas near the Williams Blvd boat launch, the Bonnabel boat launch, and the old Coast Guard Station off of Lakeshore Drive. The greatest potential for effects on terrestrial wildlife associated with the stockpiling of rock would occur during the construction period (approximately 1.5 to 2.5 years). The presence of rock stockpiles and construction-related activity, machinery, and noise would cause wildlife to avoid the terrestrial habitat of the stockpile areas during construction. Similarly, dredging activities to provide barge access for rock delivery and placement and associated noise likely would cause wildlife to temporarily avoid the aquatic habitat in the dredging areas while these activities are occurring. Excavated sediment from the access channels would be stockpiled near the channels and used to backfill the channels after completion of the project. As a result, these areas could be re-colonized after construction by benthic invertebrates and fish that are prey for waterfowl and other birds. Effects on wildlife would be predominantly temporary, occurring during and immediately after the construction period.

In summary, impacts from construction of the proposed action for this reach on wildlife would be limited by the ability of the principal wildlife present (birds) to move to adjacent terrestrial habitats during construction, and the low quality of the terrestrial habitat that would be temporarily avoided during construction but utilized again after completion and re-vegetation. Other, less-mobile wildlife that may occur in the area (e.g., common species of mice, lizards, and toads) could become casualties of the construction. However, their current populations are likely to be small given the marginal habitat present, and these species would be free to recolonize the area after construction is complete. Direct adverse impacts on aquatic wildlife from the proposed action would be limited by the relatively small areas of shoreline and aquatic habitat that would be covered by the addition of earthen fill and rock foreshore protection, the temporary nature of the effects from dredging of access channels, the more diverse aquatic habitat that

would be created within the rock riprap, and the mobility of these species, which would allow them to avoid these areas during construction.

Indirect Impacts

Potential indirect impacts on wildlife from the proposed action for lakefront levee reaches 1 through 5 mainly would involve the displacement of wildlife populations, predominantly birds, from the project area. Movement of the limited numbers of wildlife that currently inhabit this corridor into nearby, unimpacted habitats would not be expected to result in exceedances of the carrying capacity of the extensive, similar terrestrial and aquatic habitats in the vicinity. Thus, the potential indirect impacts on wildlife from the proposed action would be minimized by the small populations and habitat areas affected and the capacity of adjacent, extensive habitats to support the immigrants.

Cumulative Impacts

Potential cumulative impacts on wildlife from the proposed action for lakefront levee reaches 1 through 5 would mainly involve the combined effects on wildlife of habitat loss and displacement of wildlife populations from the multiple LPV risk reduction projects in the New Orleans area. The displacement of the majority of wildlife would be temporary during the construction period, and the displaced individuals likely would return following project completion.

The potentially impacted aquatic habitat is a relatively narrow corridor of inshore, brackish lake habitat. This corridor occupies a very small area in the context of similar habitat within the expanse of the lake. If the area impacted by the wave attenuation berm and foreshore protection were added to the areas of similar aquatic habitats potentially impacted by other LPV projects along Lake Pontchartrain, the loss of this type of wildlife habitat would be still be a fraction of the available habitat remaining around Lake Pontchartrain, which has over 640 mi² of available surface area.

Movement of the limited numbers of wildlife, principally birds, which currently inhabit these terrestrial and aquatic habitat areas into surrounding, unimpacted habitats would not be expected to result in exceedances of the carrying capacity of the extensive, adjacent habitats. Thus, the potential cumulative impacts on wildlife from the proposed action for lakefront levee reaches 1 through 5 in conjunction with other risk reduction projects in the region would be limited given the relatively small populations and habitat areas affected and the capacity of the extensive habitats remaining in the region.

Future Conditions with the Alternatives to the Proposed Action

LPV 09 and 12 - Bonabel Pump Station Breakwater and Duncan Pump Station Breakwater Access Bridge

Future Conditions with the Proposed Action

Direct, Indirect, and Cumulative Impacts

Inshore aquatic habitat would be affected by the additional rock armoring at Bonnabel pump station breakwater. The additional rock would increase the footprint of the breakwater on the lake bottom by approximately 3.5 acres at pumping station, therefore resulting in a total footprint of 5 acres. The presence of construction-related activity, machinery, and noise would be expected to cause most wildlife to avoid the terrestrial, shoreline, and inshore habitats of the project area during the construction period. After construction, the existing habitat types would be restored except where permanent features such as breakwaters would be constructed, and wildlife could return to the area. Only small numbers of wildlife would be temporarily displaced. The incremental contribution of this action to cumulative adverse impacts in conjunction with other projects in the region would be limited by the existing wildlife habitat, project scope and impact, and by proposed wetland restoration projects that would benefit wildlife habitat in the region.

There would be no additional impacts to wildlife associated with the relocation of the Duncan pump station breakwater access bridge.

LPV 17 – Bridge Abutment and Floodwall Tie-ins at Causeway Bridge

Future Conditions with the Proposed Action

Direct, Indirect, and Cumulative Impacts

The existing Causeway Bridge spans provide an area to roost for some migratory bird species such as the Purple Martin (*Progne subis*); however, as only approximately 500 ft of the north and south bound bridge spans near the south shore would be temporarily impacted by the construction of the traffic detour lane bridge spans, the remainder of the bridge is available for roosting and the proposed action would not result in adverse effects to the Purple Martin population. The migratory species are mobile and could avoid the project area during the construction period, and the displaced individuals could return to the temporarily impacted areas following project completion.

There would be dredging and stockpiling of material to provide barge access for construction of the Causeway Bridge traffic detour lanes that would temporarily displace and possibly destroy the benthic organisms (including clams) within a total area of approximately 10.5 acres (5.2 acres east and 5.3 acres west of Causeway Bridge); however, access dredging and material stockpiling should result in little to no impacts to wildlife. The stockpile site east of Causeway Bridge would be encircled on all sides except the side closest to the access channel by silt curtain in an effort to contain dredged material to the maximum extent practicable and reduce turbidity. All stockpiled access channel material would be returned to its original location upon project completion.

The presence of construction-related activity, machinery, and noise would be expected to cause wildlife to avoid the terrestrial and aquatic habitat of the project area, as well as nearby shoreline habitats, during the construction period. Movement of the limited numbers of wildlife, principally birds, which currently inhabit these terrestrial and aquatic habitat areas into

surrounding, unimpacted habitats would not be expected to result in exceedances of the carrying capacity of the extensive, adjacent habitats. Thus, the potential cumulative impacts on wildlife from the proposed action for LPV 17 in conjunction with other risk reduction projects in the region would be limited given the relatively small populations and habitat areas affected and the capacity of the extensive habitats remaining in the region.

Future Conditions with the Alternatives to the Proposed Action

Alternative 1 - T-Wall North of existing levee alignment

Direct, indirect, and cumulative impacts on wildlife from this alternative would be essentially the same as those described for the proposed action; however, impacts would likely be more extensive as detour lane bridge spans would be longer and require longer access and flotation channels.

Alternative 2 - Floodgate within the existing levee alignment

This alternative would not result in additional direct, indirect, or cumulative impacts to wildlife.

3.2.5 Endangered or Threatened Species

Future Conditions with No Action

Under the no action alternative, the Government's action, as approved in IER # 3 would be constructed. Consequently, direct, indirect, and cumulative impacts to wildlife would not differ from those described previously in the original IER # 3.

LPV 00, 01, 02, 19, and 20 – Lakefront Levee Reaches 1 through 5

Future Conditions with the Proposed Action

Direct Impacts

Wave attenuation berms and rock foreshore protection would be constructed in levee reaches 1 through 3 and part of levee reach 4 along the shoreline west of the Lake Pontchartrain Causeway, and additional rock foreshore protection would be added to a section of levee reach 4 west of the causeway and levee reach 4 and 5 east of the causeway bridge along the shoreline. The earthen fill and rock would be placed on the existing riprap and would also fill some lake bottom habitat. Thus, a narrow corridor of shoreline within levee reaches 1 through 5 in waters less than 2.5 ft to 3.5 ft deep and totaling about 61 acres, would be impacted by the addition of earthen fill foreshore protection. There would be 53 acres of permanent impacts west of the Causeway Bridge and 8 acres of impacts east of the Causeway Bridge within Gulf sturgeon critical habitat.

Rock and fill required for the levee improvements would be brought to three land-based staging/stockpile areas by truck or by barge utilizing access channels. As discussed in IER # 3, potential staging/stockpile areas could include the boat ramp at Williams Blvd, the Bonnabel boat launch, or the old Coast Guard Station off of Lakeshore Drive.

Access channels would be dredged perpendicular and parallel to the shoreline for rock delivery and placement. Temporary impacts to the lake bottom from construction of the access channels and use of the stockpile sites would be approximately 200 acres. Perpendicular accesses would begin at the elevation -7 ft contour of the lake and extend 250 ft to 350 ft to where they would adjoin the parallel access channels along the shoreline. Both parallel and perpendicular access channels would be 100 ft wide and their stockpile sites would be 150 ft wide. Sediment excavated from these channels would be temporarily stockpiled adjacent to the channels. The access channels would be backfilled using the dredged material stockpiled adjacent to the channels, and these would be brought to pre-construction lake bottom elevations upon project completion. No additional channels would be dredged east of Causeway bridge. Barge access into the levee reach 5 area would be via the two existing access channels at the Bonnabel breakwater and Coast guard station. Barged in rock within levee reach 4 and 5 east of Causeway Bridge would be offloaded at the peninsula of land near the Bonnabel breakwater and /or the Coast Guard Station. All earthen material for the wave attenuation berm would be transported by truck and placed via land. Either the earthen material would be placed first and the rock added afterward, or the rock first and the earthen material next. If the earthen material is added after the rock is placed, filling would start either in the middle working toward the ends or start at one end working towards the opposite end.

The presence of construction-related activity, machinery, and noise would be expected to cause the brown pelican, manatee, Gulf sturgeon, and Kemp's ridley, loggerhead, and green sea turtles to avoid the shoreline habitats in the project area during the construction period. In addition, due to the shallowness of the water where the wave attenuation berms and foreshore protection would be placed (less than 2.5 ft to 3.5 ft deep), neither manatees, Gulf sturgeon, nor sea turtles are anticipated to utilize these areas. Within the portion of the project area that adjoins the critical habitat for the Gulf sturgeon, additional rock foreshore protection would be added to the existing riprap, so there would be a permanent loss of 8 acres of lake bottom habitat associated with construction in this critical habitat area. Brown pelicans forage for fish in the waters along the project area throughout the year. However, extensive, similar aquatic and benthic habitat exists where the brown pelican, manatee, Gulf sturgeon, and sea turtles could forage or swim during and after construction within the expanse of Lake Pontchartrain.

Brown pelicans forage for fish in the waters along the project area throughout the year. However, the ability of the pelican to avoid the area during construction and the presence of extensive habitat for foraging in other parts of Lake Pontchartrain minimize the possibility of adverse impacts on this species. Thus, the potential short-term or long-term direct effects on the brown pelican resulting from the proposed action within the IER # 3 project area would be negligible.

Manatees prefer to forage in shallow grass beds in quiet areas of canals, creeks, lagoons, or rivers, using deeper channels as migratory routes. Substantial food sources (submerged or floating aquatic vegetation) have not been observed in the vicinity of the project area in the open waters of Lake Pontchartrain, and occurrence of the manatee has not been recorded in Jefferson Parish. Given the extensive areas of relatively undisturbed wetlands in the region and the lack of

food sources in the IER # 3 project area, it is unlikely that the manatee would occur in the inshore waters along the project area other than sporadically while transiting the lake.

In order to minimize the potential for construction activities under the proposed action to cause adverse impacts to manatees during the construction period (approximately 2 years to 2.5 years), and in accordance with recommendations from the USFWS in their consultation letter of February 22, 2008, regarding IER # 3, the following standard manatee protection measures would be implemented:

All contract personnel associated with the project would be informed of the potential presence of manatees and the need to avoid collisions with manatees. All construction personnel would be responsible for observing water-related activities for the presence of manatees. Temporary signs would be posted prior to and during all construction/dredging activities to remind personnel to be observant for manatees during active construction/dredging operations or within vessel movement zones (i.e., the work area), and at least one sign would be placed where it is visible to the vessel operator. Siltation barriers, if used, would be made of material in which manatees could not become entangled and would be properly secured and monitored. If a manatee is sighted within 100 yards of the active work zone, special operating conditions would be implemented, including: moving equipment would not operate within 50 ft of a manatee; all vessels would operate at no wake/idle speeds within 100 yards of the work area; and siltation barriers, if used, would be re-secured and monitored. Once the manatee has left the 100-yard buffer zone around the work area of its own accord, special operating conditions would no longer be necessary, but careful observations would be resumed. Any manatee sighting would be immediately reported to the U.S. Fish and Wildlife Service (337/291-3100) and the Louisiana Department of Wildlife and Fisheries, Natural Heritage Program (225/765-2821). These procedures have been recommended by the USFWS and adopted by the USACE for use in situations where in-water construction activities potentially could occur when manatees may be present.

With implementation of these procedures for preventing disturbance or injury to manatees are employed, the potential for short-term or long-term direct effects during the period of construction of the proposed action at lakefront levee reaches 1 through 5 would be minimal and unlikely to adversely affect the manatee.

Gulf sturgeon potentially could forage in the waters adjacent to the IER # 3 project area principally during the three to four coolest, winter months and periods of migration between marine environments (Lake Borgne and the Mississippi Sound) and rivers that drain into Lake Pontchartrain. The proposed action would temporarily decrease the prey available to the Gulf sturgeon in the areas that are being dredged for the project's access and flotation channels, as well as the adjacent areas used as temporary stockpile sites for the dredged material. However, since Gulf sturgeon prefer to forage over sandy substrates, and the substrate of the portion of Lake Pontchartrain that lies within the IER # 3 project area is characterized by high concentrations of silts and mud and typically contains less than 10 percent sand, it is not expected that the substrates in the project area would constitute preferred foraging habitat for Gulf sturgeon. In addition, the sediments stockpiled during the dredging of the access channels would be returned to their original location and used to fill the channels upon project completion,

thereby allowing for any benthic prey species utilized by Gulf sturgeon to quickly re-colonize these areas. Dredging activities would result in localized and temporary increases in turbidity. However, these effects would be reduced by the use of silt curtains and by the movement of the tides. Any Gulf sturgeon in the area would be able to relocate during construction since the project area encompasses only a small segment of the shoreline of the over 403,000-acre lake. There would be no changes in the temperature, salinity, pH, hardness, oxygen content, or other chemical characteristics of the waters of Lake Pontchartrain as a result of the proposed action. The type of sediment presently occurring in the project area would not change with the depth of the material being removed; thus, the removal of sediments from the dredged channels would not alter the existing texture and other chemical characteristics of the sediment supportive of Gulf sturgeon and their prey. The proposed action would not hinder the migratory movements of Gulf sturgeon between their riverine, estuarine, and marine habitats since the rivers they are migrating to are on the opposite side of Lake Pontchartrain from the proposed action.

In an effort to avoid direct impacts on individual Gulf sturgeon the bucket drop procedure developed by the USFWS also would be employed to encourage any Gulf sturgeon in the vicinity to leave the project area. Due to the location of the project area, depths in the project area, the type of substrate in the project area, the use of silt curtains and the ability of the benthic organisms on which the sturgeon feeds to rapidly re-colonize disturbed areas, the CEMVN believes that the proposed action is not likely to adversely affect the Gulf sturgeon or its critical habitat.

Sea turtles potentially could forage in the waters of Lake Pontchartrain along the IER # 3 project area, principally during the warmer months. Due to their mobility, sea turtles could avoid equipment and noise in the project area during the construction period. The bottom substrate does not support submerged aquatic vegetation, and it is unlikely to provide substantial invertebrate populations that would attract sea turtles to the area. In addition, the adjacent areas of the lake provide extensive, alternative areas for sea turtle foraging and refuge.

In summary, the potential for direct, adverse impacts on threatened or endangered species (brown pelican; manatee; Gulf sturgeon; and Kemp's ridley, loggerhead, and green sea turtles) from the proposed action lake front levee reaches 1 through 5 would be influenced by the following factors: the mobility of these species; their minimal dependence on the project area for habitat; their ability to avoid the project area during construction; the temporary nature of many of the effects of construction activity and dredging on this limited area of inshore habitat; the use of procedures to avoid manatee injury, and the extensive, adjacent habitat available for use. As a result, direct effects from the proposed action on threatened or endangered species would be unlikely to adversely affect these species or Gulf sturgeon critical habitat.

Indirect Impacts

Potential indirect impacts on endangered or threatened species from the proposed action for lakefront levee reaches 1 through 5 would mainly consist of effects from siltation and suspended sediment in adjacent areas of the lake. Effects such as these from wave attenuation berm and foreshore protection construction would be minimized by best management practices to control sediment transport, adherence to regulations governing storm water runoff at construction sites,

and by the movement of the tides. Thus, indirect impacts on endangered or threatened species from the proposed action in the IER # 3 project area at the lake front levee reaches 1 through 5 would be unlikely to adversely affect these species.

Cumulative Impacts

Potential cumulative impacts on endangered or threatened species from the proposed action for lake front levee reaches 1 through 5 mainly would involve the combined adverse effects on the brown pelican, manatee, Gulf sturgeon, and sea turtles from the multiple LPV risk reduction projects in the New Orleans area. These species are mobile and could avoid project areas during the construction period, and the displaced individuals could return to the temporarily impacted areas following project completion. The permanently impacted aquatic habitat is a relatively small corridor of inshore, brackish lake habitat. Neither manatees nor Gulf sturgeon are anticipated to utilize the shallow water areas where the wave attenuation berms and foreshore protection would be placed, and extensive, similar aquatic and benthic habitat exists where the brown pelican, manatee, Gulf sturgeon, and sea turtles could forage or swim. If the area impacted by the wave attenuation berms and foreshore protection were added to the areas of similar aquatic habitats potentially impacted by other LPV projects along Lake Pontchartrain, the loss of this type of wildlife habitat would still be a small fraction of the available habitat remaining, and use of these adjacent similar habitats by these six species would not result in exceedances of the carrying capacity of these habitats for these species. Additionally, the use of silt curtains would help prevent any adverse impacts to the Gulf sturgeon. Thus, cumulative impacts on endangered or threatened species from the proposed action in the IER # 3 project area would be unlikely to adversely affect these species.

Future Conditions with the Alternatives to the Proposed Action

Alternative 1 – Rock wave break –

Direct, Indirect, and Cumulative Impacts

The expanded footprint of the levees to the flood side for the rock wave break would permanently cover approximately 48 acres of lake bottom habitat. The permanent and temporary impacts on endangered or threatened species associated with construction of the wave break, access dredging and material stockpiling would be similar to those of the proposed action.

All direct, indirect, and cumulative impacts on endangered or threatened species for this alternative would be very similar to those for the proposed action; however, impacts for this alternative would be less as only 48 acres of lake bottom habitat would be impacted.

Alternative 2 – Gabion Basket wave break-

Direct Impacts

The expanded footprint of the levees to the flood side would permanently cover approximately 41 acres of lake bottom habitat. The permanent impacts on endangered or threatened species

associated with construction of the wave break would be similar to those of the proposed action; however, the impacts for this alternative would be less as only 41 acres of lake bottom habitat would be impacted. Also barge access would not be required for construction. Thus, this alternative would have no additional temporary impacts on endangered or threatened species associated with access dredging and material stockpiling.

Indirect Impacts

There should be little to no additional indirect impacts on endangered or threatened species as a result of constructing this alternative, as this alternative does not require barge access dredging and material stockpiling. There would likely be an increase in turbidity as the gabion baskets are stacked and the wave break is constructed; however, the temporary increase in turbidity would be much less than the increase that would be incurred during the construction of the proposed action, alternative 1 or alternative 3.

Cumulative Impacts

All cumulative impacts on endangered or threatened species for this alternative would be very similar to those for the proposed action with the exception that this alternative would impact less habitat and not require access dredging and material stockpiling.

Alternative 3 – 300 ft wave attenuation berm with hydraulically dredged fill material and rock dike-

Direct Impacts

The expanded footprint of the levees to the flood side would permanently cover approximately 108 acres of lake bottom habitat. This alternative would also require that fill material for the earthen berm be hydraulically dredged from 3 borrow site locations approximately 3,000 ft from the shoreline within Lake Pontchartrain. Borrow pits would be dredged to no greater than elevation -10 ft. The dredging of material from these three borrow sites would permanently impact approximately 164 acres of lake bottom habitat. Direct impacts on endangered or threatened species would be similar to those of the proposed action though impacts incurred due to this alternative would be more extensive since a larger area of lake bottom habitat would be impacted.

Barge access would be required for rock delivery and placement along the lake shore. The temporary impacts associated with access dredging and material stockpiling for this alternative would be identical to those of the proposed action.

Indirect Impacts

All indirect impacts on endangered or threatened species for this alternative would be very similar to those for the proposed action; however, the construction of this alternative would result in a greater amount of turbidity, as the fill would be dredged from three locations within Lake Pontchartrain and pumped into a retention area in which the material would de-water and

likely carry with it some suspended sediments. Increased turbidity would be minimized through the use of best management practices such as silt curtains on the inner side of the rock retention dike.

Cumulative Impacts

All cumulative impacts on endangered or threatened species for this alternative would be very similar in nature to those for the proposed action, but impacts would be more extensive as this alternative would impact a significantly larger area of lake bottom habitat.

LPV 09 and 12 - Bonnabel Pump Station Breakwater and Duncan Pump Station Breakwater Access Bridge

Future Conditions with the Proposed Action

Direct Impacts

The additional rock armoring at the Bonnabel pump station breakwater could permanently cover approximately 3.5 acres of lake bottom habitat east of the Causeway Bridge in Gulf sturgeon critical habitat. The habitat of water and water bottoms that would be removed as a result of this additional rock armoring at the breakwater is proportionately a very small area relative to the extent of similar habitat within the expanse of Lake Pontchartrain. The presence of construction-related activity, machinery, and noise would be expected to cause the endangered or threatened species of concern (the brown pelican, manatee, Gulf sturgeon, and Kemp's ridley, loggerhead, and green sea turtles) to avoid the inshore habitat of the project area during the construction period. Brown pelicans forage for fish in the waters along the project area throughout the year. However, the ability of the pelican to avoid the area during construction and the presence of extensive habitat for foraging in other parts of Lake Pontchartrain minimize the possibility of adverse impacts on this species. In order to minimize the potential for construction activities under the proposed action to cause impacts to the manatee, standard manatee protection measures, as described previously for impacts from the proposed action at the lake front levee reaches 1 through 5, would be followed. In an effort to avoid direct impacts to Gulf sturgeon critical habitat and to individual Gulf sturgeon, the bucket drop procedure developed by the USFWS also would be employed throughout the project area to encourage any Gulf sturgeon (as well as sea turtles) in the vicinity to leave the project area. Accordingly, the impacts on endangered or threatened species from the proposed action in the IER # 3 project area would be unlikely to adversely affect these species.

There would be no additional impacts on endangered or threatened species associated with the relocation of the Duncan pump station breakwater access bridge.

Indirect Impacts

Potential indirect impacts on endangered or threatened species from the proposed action for the pumping stations would mainly consist of effects from increased turbidity, siltation, and suspended sediment in adjacent areas of the lake from construction-related runoff. However, these impacts would be minimized by use of best management practices to control sediment

transport, adherence to regulations governing storm water runoff at construction sites, and by the movement of the tides. Thus, indirect impacts on endangered or threatened species from the proposed action in the IER # 3 project area would be unlikely to adversely affect these species.

There would be no additional impacts on endangered or threatened species associated with the relocation of the Duncan pump station breakwater access bridge.

Cumulative Impacts

Potential cumulative impacts on endangered or threatened species from the proposed action mainly would involve the combined adverse effects on the brown pelican, manatee, Gulf sturgeon, and Kemp's ridley, loggerhead, and green sea turtles from the multiple LPV flood control projects in the New Orleans area. These species are mobile and could avoid project areas during the construction period, and the displaced individuals could return to the temporarily impacted areas following project completion. The permanently impacted aquatic habitat is a relatively small area of inshore, brackish lake habitat. Neither manatees, Gulf sturgeon, nor sea turtles are anticipated to utilize the shallow water areas where the fronting protection and breakwaters would be placed, and extensive, similar aquatic and benthic habitat exists where the brown pelican, manatee, Gulf sturgeon, and sea turtles could forage or swim. If the area permanently impacted by the proposed action were added to the areas of similar aquatic habitats potentially impacted by other LPV projects along Lake Pontchartrain, the loss of this type of wildlife habitat would still be a small fraction of the available habitat remaining, and use of these adjacent similar habitats by these species would not result in exceedances of the carrying capacity of these habitats for these species. Thus, cumulative impacts on endangered or threatened species from the proposed action in the IER # 3 project area at LPV 09 through LPV 12 would be unlikely to adversely affect these species.

There would be no additional impacts on endangered or threatened species associated with the relocation of the Duncan pump station breakwater access bridge.

LPV 17 – Bridge Abutment and Floodwall Tie-ins at Causeway Bridge

Future Conditions with the Proposed Action

Direct Impacts

Dredging and stockpiling of material to provide barge access for construction of the Causeway Bridge traffic detour lanes would temporarily displace and possibly destroy the benthic organisms (including clams) within a total area of approximately 10.5 acres (5.2 acres east and 5.3 acres west of Causeway Bridge). The Stockpile site east of Causeway Bridge would be encircled on all sides except the side closest to the access channel by silt curtain in an effort to contain dredged material to the maximum extent practicable. All stockpiled access channel material would be returned to its original location upon project completion.

Temporary impacts on endangered or threatened species associated with dredging and material stockpiling would essentially be the same as those dredging and stockpiling impacts within lake front levee reaches 1 through 5 along the Lake Pontchartrain lake front. These impacts would be

temporary in nature and approximately 1.5 years to 2.5 years in duration, with effects lasting until the areas have stabilized.

Indirect Impacts

Indirect impacts on endangered or threatened species associated with dredging and material stockpiling would essentially be the same as those dredging and stockpiling impacts within lake front levee reaches 1 through 5 along the Lake Pontchartrain lake front.

Cumulative Impacts

Cumulative impacts on endangered or threatened species associated with dredging and material stockpiling would essentially be the same as those dredging and stockpiling impacts within lake front levee reaches 1 through 5 along the Lake Pontchartrain lake front.

Future Conditions with the Alternatives to the Proposed Action

Alternative 1 - T-Wall North of existing levee alignment

Direct, indirect, and cumulative impacts on endangered or threatened species from this alternative would be essentially the same as those described for the proposed action; however, impacts would likely be more extensive as detour lane bridge spans would be longer and require longer access and flotation channels.

Alternative 2 - Floodgate within the existing levee alignment

This alternative would not result in additional direct, indirect, or cumulative impacts on endangered or threatened species.

3.2.6 Cultural Resources

Future Conditions with No Action

Under the no action alternative, the Government-approved action as discussed in IER # 3 would be constructed. Consequently, direct, indirect, and cumulative impacts to cultural resources would not differ significantly from those described previously in the original IER # 3. The CEMVN held meetings with the Louisiana State Historic Preservation Office staff and Tribal governments to discuss the emergency Alternative Arrangements for implementing the NEPA compliance and then formally initiated Section 106 consultation for the Hurricane and Storm Risk Reduction System, which includes IER # 3, in a letter dated April 9, 2007. In a letter sent to the State Historic Preservation Officer (SHPO) and Indian tribes dated December 12, 2007, CEMVN provided IER # 3 project documentation, evaluated cultural resources potential in the project area, and found that the Government's approved action would have no impact on cultural resources. The SHPO, Choctaw Nation of Oklahoma and the Chitimacha Tribe of Louisiana

concluded with our "no adverse effect" finding in letters dated January 7, 2008, December 26, 2007, and December 27, 2007, respectively. No other Indian tribes responded to our second request for comments.

In a letter to SHPO and Indian tribes dated March 3, 2009, CEMVN provided documentation for additional project areas proposed for flotation channel excavation and found that the Government's proposed action as described in this IER Supplemental would have no impact on cultural resources. The SHPO, Quapaw Tribe of Oklahoma and the Choctaw Nation of Oklahoma concurred with our "no historic properties affected" finding on March 20, 2008, March 3, 2008, and April 3, 2008, respectively. No other Indian tribes responded to our third request for comments. Section 106 consultation for the Government's proposed action is concluded.

Future Conditions with the Proposed Action

LPV 00, 01, 02, 19, and 20 – Lakefront Levee Reaches 1 through 5

There would be no additional direct, indirect, or cumulative impacts to cultural resources within these reaches for the proposed action.

Alternative 1 – Rock wave break –

There would be no additional direct, indirect, and cumulative impacts from construction of this alternative.

Alternative 2 – Gabion Basket wave break-

There would be no additional direct, indirect, and cumulative impacts from construction of this alternative.

Alternative 3 – 300 ft wave attenuation berm with hydraulically dredged fill material and rock dike-

The construction of a wave attenuation berm and rock dike proposed under this alternative would be located within the project area previously investigated for cultural resources in the original IER # 3. No terrestrial or submerged cultural resources were identified within the proposed wave attenuation berm and rock dike footprint. However, hydraulic dredging of the lake-bottom sediments at three proposed off-shore borrow areas has the potential to impact submerged cultural resources. These off-shore borrow areas were not investigated for cultural resources in the original IER # 3, and these investigations would be required to adequately assess direct, indirect and cumulative impacts. Additional consultation with the SHPO and Federally recognized Indian tribes would also be required to complete Section 106 requirements under the National Historic Preservation Act of 1966 prior to construction of this alternative..

LPV 09 and 12 - Bonnabel Pump Station Breakwater and Duncan Pump Station Breakwater Access Bridge

There would no additional direct, indirect, or cumulative impacts to cultural resources within these reaches.

LPV 17 Bridge Abutment and Floodwall Tie-ins at Causeway Bridge

Direct Impacts

In the initial cultural resources investigations conducted by R. Christopher Goodwin and Associates, Inc., researchers utilized background research, previous cultural resources investigation review, soil and topographic analyses, field reconnaissance data and Phase 1 terrestrial and nautical investigations to identify and assess archaeological sites, historic structures, and high potential areas for cultural resources in the IER # 3 study area (Heller et. al 2007, Nowak and Ryberg 2008).

The terrestrial portion of the proposed action project area has been subjected to extensive and severe ground disturbing activities including land filling, shoreline stabilization, and bridge, road, earthen levee and floodwall construction. Consequently, researchers found no archaeological deposits in the terrestrial portion of the proposed action project area. Remote sensing survey in the nautical portions of the proposed action project area in Lake Pontchartrain found no targets exhibiting cultural resources characteristics. Researchers determined that the likelihood for intact and undisturbed archaeological deposits in the proposed action project area is extremely minimal and no further archaeological investigation is recommended.

Researchers identified one historic property in the proposed action project area. The Lake Pontchartrain Expressway is a two-span, pre-stressed concrete, low-level trestle bridge with mid-span bascule. Originally constructed across Lake Pontchartrain as a single-span toll bridge in 1956, the original west span measures 23.87 miles in length and when completed was the longest bridge the world. The second span was completed on the east side of the original span in 1969. Toll plaza facilities are located in Metairie, Jefferson Parish and Mandeville, St. Tammany Parish. Five hundred feet of the Lake Pontchartrain Expressway and the southern toll plaza are located in the proposed action project area. The southern toll plaza contains original 1956 buildings and structures including a concrete canopy with the original "Lake Pontchartrain Causeway" sign, one remaining toll-takers booth located under the canopy, an administration office building, police department building and meeting room building.

It is the CEMVN's opinion that the Lake Pontchartrain Expressway and associated southern toll plaza are eligible for listing on the National Register of Historic Places (NRHP). These structures and buildings are significant in the areas Community Planning and Development under Criterion A and Engineering under Criterion C. The Lake Pontchartrain Expressway clearly made a significant contribution to the mid-twentieth century development of St. Tammany Parish and its north shore communities, most notably Mandeville. When completed in 1956, the Lake Pontchartrain Expressway was the longest bridge in the world and remains today the longest bridge over water. It clearly illustrates the developing mid-twentieth century technology associated with pre-cast concrete structural systems, which made bridge construction over large bodies of water possible.

Based on a review of the information summarized previously, implementation of the proposed

action would have a direct impact on historic properties. Proposed construction would require the permanent addition of an exterior access lane to the last 500 ft of the existing 1956 bridge span and the demolition of the southern toll plaza facility, including the canopy, toll booth, administration office building, police department building and meeting room building. In letters sent to SHPO, Indian tribes, and consulting parties dated July 16, 2009 and July 22, 2009, the CEMVN provided project documentation, evaluated cultural resources, found that the proposed action would have an adverse effect on historic properties, and invited letter recipients to participate in further consultation to resolve adverse effects.

The SHPO concurred with our NRHP evaluation of the Lake Pontchartrain Expressway/southern toll plaza and our "adverse effect" finding in a letter dated August 17, 2009. The Advisory Council on Historic Preservation, Choctaw Nation of Oklahoma, Jena Band of Choctaw Indians, Alabama-Coushatta Tribe of Texas, and the Seminole Tribe of Florida declined to participate in further consultation in letters dated August 10, 2009, July 30, 2009, August 3, 2009, August 14, 2009, and August 26, 2009, respectively.

In an email dated July 17, 2009, the Mississippi Band of Choctaw Indians declined to participate in further consultations regarding the Lake Pontchartrain Expressway and southern toll plaza. However, they expressed a concern about the potential for prehistoric human remains in the nautical portion of the proposed action project area and recommended monitoring of proposed flotation channel excavations during project construction. In a telephone call to the Mississippi Band of Choctaw Indians on September 14, 2009, and a follow-up letter dated September 18, 2009, the CEMVN conveyed additional project information and found that the potential for human remains in the proposed action project area was extremely minimal due to previous and extensive construction activity and long term shoreline wave action. Based on this information, the Mississippi Band of Choctaw concurred with the CEMVN's recommendation that monitoring of proposed flotation channel excavations was not necessary in our September 14, 2009, telephone call, but has not responded to the CEMVN's September 18, 2009, follow-up letter. The 30 day review period to respond to our letter has expired. In accordance with 36 CFR 800 (c) (1), the agency official may proceed after close of the 30 day review period if the SHPO/Tribal Historic Preservation Officer (THPO) has agreed with the finding or has not provided a response.

Further consultation to resolve adverse effects to the Lake Pontchartrain Expressway and southern toll plaza continued during a series of meetings held in August-September 2009 between the CEMVN, SHPO, Greater New Orleans Expressway Commission (GNOEC), Louisiana Coastal Protection and Restoration Authority, Jefferson Parish Council, East Jefferson Levee District and other consulting parties. Several alternatives to resolve adverse effects were evaluated, including an effort to preserve the toll plaza canopy by moving it to a new location. After several discussions, it was agreed that moving the canopy was ultimately too problematic from both an engineering and safety perspective. The current structural condition of the canopy is unknown. The future structural condition of the canopy, once it is removed from its integrated foundation, temporarily stored, moved again, and then placed on new foundations is unknown. There is concern that unforeseen weakening, or internal structural damage to the canopy could result from these activities. Placing a possibly weakened and unsafe historic structure in a new location creates an unknown and possibly unacceptable level of risk and liability. In addition, GNOEC was also concerned that the historic canopy's current function, which is now used for the placement of cameras and electronic equipment, would be lost when the historic canopy is

moved to a new location. Finally, it was acknowledged that the northern toll plaza canopy, although superficially hidden under modern material, is still intact and well preserved and all of the original toll booths remain intact.

Based on the discussions summarized previously, it was agreed that HABS/HAER documentation of the southern toll plaza facility, Louisiana Historical Marker placement, and construction of a new canopy structure would be appropriate mitigation measures. The new structure would be safer, meet current height restrictions, and maintain the required function necessary to operate the expressway. The original "Lake Pontchartrain Causeway" sign would be removed from the historic canopy and mounted onto the new canopy. A draft Memorandum of Agreement stipulating the mitigation measures the CEMVN will follow to resolve adverse effects was presented at a public meeting held September 23, 2009. No substantive comments on the draft MOA were received. The final MOA was executed on October 26, 2009, (appendix C). Section 106 consultation for the proposed action is concluded. However, if any unrecorded cultural resources are determined to exist within the proposed action boundaries, then no work would proceed in the area containing these cultural resources until a CEMVN archaeologist has been notified and final coordination with the SHPO and Indian tribes has been completed.

Indirect Impacts

Implementation of the proposed action could provide an added level of risk reduction to known and unknown archaeological sites and historic structures in the project vicinity on the protected side of the levee by reducing the damage caused by flood events. Erosion of archaeological deposits and water damage to historic structures during flood events can result in severe damage and destruction of cultural resources.

Cumulative Impacts

Implementation of the proposed action would have beneficial cumulative impacts on historic properties in the greater New Orleans metropolitan area. This proposed action is part of the ongoing Federal effort to reduce the risk to properties posed by flooding. The combined effects from construction of the multiple projects underway and planned for the LPV portion of the HSDRRS would reduce flood risk and storm damage to significant archaeological sites, individual historic properties, engineering structures, and historic districts.

Alternative 1 - Construction of the T-Wall North of existing levee alignment

Direct, indirect, and cumulative impacts from this alternative would be essentially the same as those described for the proposed action.

Alternative 2 - Construction of a Floodgate within the existing levee alignment

Direct, indirect, and cumulative impacts from this alternative would be essentially the same as those described for the no action alternative.

4.0 CUMULATIVE IMPACTS

Table 5 provides a summary of the cumulative impacts to be mitigated for the HSDRRS projects completed (draft or final) to date. Many of the 100-year level of risk reduction projects are currently in the planning and design stages, but some are currently moving into the construction phase. Mitigation for impacts from these component projects would be addressed in separate Mitigation IERs.

The proposed action would have cumulative beneficial impacts to socioeconomic resources in the New Orleans Metropolitan area. It is part of the ongoing Federal effort to reduce the threat to life, health, and property posed by flooding. The LPV project would be improved to provide additional hurricane, storm, and flood damage protection, reducing the threat of inundation of infrastructure due to severe tropical storm events. The combined effects from construction of the multiple projects underway and planned to complete the HSDRRS in the area would reduce flood risk and storm damage to residences, businesses, and other infrastructure from storm-induced and tidally-driven flood events and, thereby, encourage recovery. Providing 100-year level of risk reduction within all reaches of the LPV allows for FEMA certification of that level of protection. Improved hurricane, storm, and flood damage risk reduction would benefit all residents, regardless of income or race, increase confidence, reduce insurance rates, and allow for development and redevelopment of existing urban areas.

In conclusion, although there are many ongoing and planned projects that would similarly impact resources in the Lake Pontchartrain Basin portion of Louisiana, most of the resulting impacts would be temporary. Those adverse impacts that would not be temporary in nature would be directly mitigated or would be indirectly mitigated by other projects in the region that would provide positive long-term impacts to the same resource (e.g., wetlands or EFH). Cumulative impacts to social and economic resources would not only be beneficial, but are considered essential.

Table 5. HSDRRS Impacts and Compensatory Mitigation to be Completed

IER	Parish		Non-wet		BLH <i>acres</i>	BLH <i>AAHUs</i>	Swamp		Marsh <i>acres</i>	Marsh <i>AAHUs</i>	Water Bott <i>acres</i>
			<i>acres</i>	<i>AAHUs</i>			<i>acres</i>	<i>AAHUs</i>			
1 LPV, La Branch Wetlands Levee	St. Charles	Protected Side	-	-	-	-	73.23	39.53	-	-	-
		Flood Side	-	-	-	-	38.48	29.73	-	-	-
1 Supplemental LPV, La Branch Wetlands Levee	St. Charles	Protected Side	-	-	-	-	-	-	-	-	-
		Flood Side	-	-	-	-	-	-	-	-	-
2 LPV, West Return Floodwall	St. Charles, Jefferson	Protected Side	-	-	-	-	-	-	17.00	9.00	-
		Flood Side	-	-	-	-	-	-	17.00	9.00	-
3 LPV, Jefferson Lakefront Levee	Jefferson	Protected Side	-	-	-	-	-	-	-	-	26.40
		Flood Side	-	-	-	-	-	-	-	-	-
4 LPV, Orleans Lakefront Levee	Orleans	Protected Side	-	-	-	-	-	-	-	-	-
		Flood Side	-	-	-	-	-	-	-	-	-
5 LPV, Lakefront Pump Stations	Jefferson, Orleans	Protected Side	-	-	-	-	-	-	-	-	3.29
		Flood Side	-	-	-	-	-	-	-	-	-
6 LPV, Citrus Lands Levee	Orleans	Protected Side	-	-	-	-	-	-	-	-	6.90
		Flood Side	-	-	-	-	-	-	4.00	-	-
7 LPV, Lakefront Levee	Orleans	Protected Side	-	-	151.70	79.30	-	-	100.40	36.80	106.00
		Flood Side	-	-	30.00	11.90	-	-	70.00	37.20	-
8 LPV, Bayou Dupre Control Structure	St. Bernard	Protected Side	-	-	-	-	-	-	-	-	0.30
		Flood Side	-	-	-	-	-	-	-	-	-
10 LPV, Chalmette Loop	St. Bernard	Protected Side	-	-	38.32	16.44	-	-	106.55	57.31	95.00
		Flood Side	-	-	35.31	15.22	-	-	323.04	209.94	-
11 Tier 2 Borgne IHNC	Orleans, St. Bernard	Protected Side	-	-	-	-	-	-	-	-	-
		Flood Side	-	-	15.00	2.59	-	-	122.00	24.33	-
12 GIWW, Harvey, Algiers	Jefferson, Orleans, Plaquemines	Protected Side	-	-	251.70	177.3	-	-	-	-	-
		Flood Side	-	-	2.30	1.90	74.90	38.50	-	-	-
14 WBV, Westwego to Harvey Levee	Jefferson	Protected Side	-	-	45.00	30.00	-	-	-	-	-
		Flood Side	-	-	45.50	18.58	29.75	17.02	-	-	-
15 WBV, Lake Cataouatche Levee	Jefferson	Protected Side	-	-	23.50	6.13	-	-	-	-	-
		Flood Side	-	-	3.60	1.35	-	-	-	-	-
16	Jefferson, St. Charles	Protected Side	-	-	-	-	-	-	-	-	-

17	Company Canal Floodwall	Jefferson	Flood Side	-	-	-	-	-	-	-	-	-	-	-	137.80	66.30	-
			Protected Side	-	-	5.50	2.69	-	-	-	-	-	-	-	-	-	-
			Flood Side	-	-	-	-	19.00	17.09	-	-	-	-	-	-	-	-
18	GFBM	Jefferson, Orleans, Plaquemines, St. Bernard, St. Charles	Protected Side	379.30	152.32	-	-	-	-	-	-	-	-	-	-	-	-
			Flood Side	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19	CFBM	Hancock County, MS; Iberville, Jefferson, Orleans, Plaquemines, St. Bernard	Protected Side	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			Flood Side	-	-	-	-	-	-	-	-	-	-	-	-	-	-
22	GFBM	Jefferson, Plaquemines	Protected Side	244.69	118.54	-	-	-	-	-	-	-	-	-	-	-	-
			Flood Side	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23	CFBM	Hancock County, MS; Plaquemines, St. Bernard, St. Charles	Protected Side	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			Flood Side	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25	GFBM	Jefferson, Orleans, Plaquemines	Protected Side	933.00	284.00	-	-	-	-	-	-	-	-	-	-	-	-
			Flood Side	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26	CFBM	Jefferson, Plaquemines, St. John the Baptist, Hancock County, MS	Protected Side	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			Flood Side	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28	GFBM	Jefferson, Plaquemines, St. Bernard	Protected Side	19.94	8.45	-	-	-	-	-	-	-	-	-	-	-	-
			Flood Side	-	-	-	-	-	-	-	-	-	-	-	-	-	-
29	CFBM	Orleans, St. Tammany, St. John the Baptist	Protected Side	107.30	48.60	-	-	-	-	-	-	-	-	-	-	-	-
			Flood Side	-	-	-	-	-	-	-	-	-	-	-	-	-	-
30	CFBM	St. Bernard and St. James; Hancock, MS	Protected Side	225.00	189.40	-	-	-	-	-	-	-	-	-	-	-	-
			Flood Side	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Totals			Protected Side	1909.23	801.31	515.72	311.89	73.23	39.53	223.95	103.11	00.00					
			Flood Side	-	-	131.71	51.54	162.13	102.34	673.84	346.77	230.99					
			Both	1909.23	801.31	647.43	363.43	235.36	141.87	897.79	449.88	230.99					

- Not applicable to the IER or number impacted is 0
GFBM: Government Furnished Borrow Material // CFBM: Contractor Furnished Borrow Material

5.0 SELECTION RATIONALE

The proposed action consists of constructing wave attenuation berms and foreshore protection along the Jefferson Parish lake front, constructing a T-Wall, overpass bridge and traffic detour lane bridge spans at the Causeway Bridge abutment, and adding additional rock on a breakwater. The proposed action was selected because it would provide adequate structural measures to meet the 100-year level of flood risk reduction for Jefferson Parish, not disturb existing commercial, industrial or public complexes, minimize the encroachment on existing transportation infrastructure, and be possible within the time constraints and technology available, while minimizing impacts to natural resources like wetlands, fisheries, wildlife, and threatened or endangered species.

Within LPV 00, 01, 02 ,19, and 20 (lake front reaches 1 through 5), the proposed action was selected because it was determined to be the most reliable, cost effective, and sustainable alternative. Although the wave break alternatives were less environmentally intrusive, the proposed action would provide greater risk reduction and reliability and would be more cost effective than the other alternatives. Furthermore, the 300 ft wave attenuation berm and rock dike would have significantly greater environmental impacts and cost than all of the other alternatives.

Within LPV 17, the proposed action was selected because it was the most reliable and time and cost effective alternative. The floodwall north of the existing alignment alternative would have required longer lengths of T-Wall to tie back into the existing levee therefore a longer construction duration and higher cost and additional risk with greater amount of storm exposure. This alternative would result in greater environmental impacts as the traffic detour lane bridge spans would have been longer to bypass the construction area and accommodate safe vehicular traffic and would require more access dredging than the proposed action. Furthermore, the gates closure system across Causeway Boulevard was not brought forward as the proposed action because although this is a feasible alternative, a gate closure across the Causeway Bridge would restrict potential evacuation activities, causing increased complexity to the flood fighting efforts in the area. This alternative would require a more complex operations and maintenance plan to ensure this active control would be in proper working order anytime it would be needed. There is also an added complexity to this alternative as the gate system would be utility dependent because gate systems this size would require an electronic closure design.

6.0 COORDINATION AND CONSULTATION

6.2 AGENCY COORDINATION

Preparation of this IER Supplemental has been coordinated with appropriate Federal, state, and local interests, as well as environmental groups and other interested parties. An interagency environmental team was established for this project in which Federal and state agency staff played an integral part in the project planning and alternative analysis phases of the project. This interagency environmental team was integrated with the CEMVN PDT to assist in the planning of this project and to complete a mitigation determination of the potential direct and indirect

impacts of the proposed action. Monthly meetings with resource agencies were also held concerning this IER Supplemental and other IER projects.

The USFWS reviewed the proposed action to see if it would affect any threatened or endangered species, or their critical habitat. The USFWS concurred with the CEMVN in a letter dated August 20, 2009, that the proposed action would not have adverse impacts on threatened or endangered species (appendix C).

The NMFS reviewed the proposed action to see if it would affect any threatened or endangered species, or their critical habitat. The NMFS concurred with the CEMVN in a letter dated August 31, 2009, that the proposed action would not have adverse impacts on threatened or endangered species or their critical habitat (appendix C).

The LDNR reviewed the proposed action for consistency with the Louisiana Coastal Resources Program (LCRP). The proposed actions were found to be consistent with the LCRP, as per a letter dated September 16, 2009 (appendix C).

The Louisiana Department of Environmental Quality (LDEQ) reviewed the proposed action and stated the requirements for Water Quality Certification have been met in accordance with LAC 33:IX.1507. A-E in a letter dated October 21, 2009.

The SHPO concurred with the CEMVN National Register of Historic Places evaluation of the Lake Pontchartrain Expressway/southern toll plaza and our "adverse effect" finding in a letter dated August 17, 2009. The Advisory Council on Historic Preservation, Choctaw Nation of Oklahoma, Jena Band of Choctaw Indians, Alabama-Coushatta Tribe of Texas, and the Seminole Tribe of Florida declined to participate in further consultation in letters dated August 10, 2009, July 30, 2009, August 3, 2009, August 14, 2009, and August 26, 2009, respectively. The final Memorandum of Agreement (MOA) to resolve adverse effects to the Lake Pontchartrain Expressway and southern toll plaza was executed on October 26, 2009 (appendix C). In addition, the Mississippi Band of Choctaw concurred with the CEMVN recommendation that monitoring of proposed flotation channel excavations was not necessary in a teleconference on September 18, 2009. Section 106 consultation for the proposed action is concluded.

Coordination with the USFWS on the Alternative Arrangements process was initiated by letter on March 13 2007, and concluded on August 6, 2007. A draft Fish and Wildlife Coordination Act Report (CAR) was provided by the USFWS on January 11, 2008. This report concludes that there would be no habitat impacted as a result of the proposed action. The draft CAR provides fish and wildlife conservation recommendations that would be implemented concurrently with project implementation. Additional project documentation regarding dredging of access channels in Lake Pontchartrain perpendicular to each of the four pumping stations was subsequently provided to the USFWS. The USFWS responded with a supplemental letter on January 17, 2008, which recommends backfilling all access channels in the lake and the use of silt curtains. In addition, as discussed previously in section 3.2.6, measures recommended by the USFWS in their letter dated February 22, 2008, for protection of the manatee would be followed during construction of the proposed action. A copy of the CAR and supplemental letters are provided in appendix D in IER # 3. Most recently, the USFWS responded in a letter dated

October 9, 2009, that they believe there would be no significant impacts to fish and wildlife resources as a result of the proposed action in this supplemental.

The USFWS' programmatic recommendations are available in IER # 3 and are hereby incorporated by reference.

The USFWS project-specific recommendations for the IER Supplemental # 3 proposed action are listed below. Each recommendation is followed by the CEMVN response.

Recommendation 1: All gates and/or culverts being replaced or modified should be operated according to previously developed operational plans to avoid further degradation of the project area.

CEMVN Response 1: Concur.

Recommendation 2: The Service shall be provided an opportunity to review and submit recommendations on the draft plans and specifications for all levee work addressed in this report.

CEMVN Response 2: Concur.

Recommendation 3: Any proposed change in levee, floodwall, or drainage structure features, locations or plans shall be coordinated in advance with the Service, NMFS, LDWF, and Louisiana Department of Natural Resources.

CEMVN Response 3: Concur.

Recommendation 4: If the proposed project has not been constructed within one year or if changes are made to the proposed project, the Corps should re-initiate ESA consultation with the Service to ensure that the proposed project would not adversely affect any Federally listed threatened or endangered species or their habitat.

CEMVN Response 4: Concur.

Recommendation 5: The Service recommends backfilling all access channels in Lake Pontchartrain after construction is complete. In order to have sufficient material to backfill the access channels and minimize turbidity in the lake, the Service also recommends the use of silt curtains.

CEMVN Response 5: Concur.

7.0 MITIGATION

Quantitative analysis utilizing existing methodologies for water resource planning has identified the acreages and habitat type for the direct or indirect impacts of implementing the proposed

action. Although the proposed actions were selected because they would minimize impacts to the surrounding environment, approximately 326.5 acres (116 approved in IER # 3; 210.5 proposed in this document) of lake habitat could be temporarily impacted, and approximately 91 acres (26.4 approved in IER # 3; 64.5 proposed in this document) could be permanently impacted (lost to hard fill). However, those 91 acres would be mitigated for in coordination with the Federal and state resource agencies.

Best management practices to reduce sediment loading to the surface water of Lake Pontchartrain canals and wetland areas would be used and would reduce effects on water quality and aquatic life, specifically EFH. Other temporary impacts on the lake bottom that could result from dredging to provide access to the shoreline for delivery of fill and riprap could be limited by accessing areas by land when feasible. Dredging pathways would avoid SAV, emergent vegetation, and any areas known to have sediment contamination. Any EFH-related impacts from the proposed actions would be compensated based on the agreed terms between the CEMVN and NMFS.

A complementary comprehensive mitigation IER will be prepared documenting and compiling these unavoidable impacts and those for all other proposed actions within the Lake Pontchartrain and Vicinity Hurricane Protection Project that are being analyzed through other IERs. Mitigation planning is being carried out for groups of IERs, rather than within each IER, so that large mitigation efforts could be taken rather than several smaller efforts, increasing the relative economic and ecological benefits of the mitigation effort.

Mitigation for unavoidable impacts to the human and natural environment described in this and other IERs will be addressed in separate mitigation IERs. The CEMVN has partnered with Federal and state resource agencies to form an interagency mitigation team that is working to assess and verify these impacts, and to look for potential mitigation sites in the appropriate hydrologic basin. This effort is occurring concurrently with the IER planning process in an effort to complete mitigation work and construct mitigation projects expeditiously. As with the planning process of all other IERs, the public will have the opportunity to give input about the proposed work. These mitigation IERs will, as described in section 1 of this IER, be available for a 30-day public review and comment period.

These forthcoming mitigation IERs would implement compensatory mitigation as early as possible. All mitigation activities would be consistent with standards and policies established in the Clean Water Act Section 404 and the appropriate USACE policies and regulations governing this activity.

8.0 COMPLIANCE WITH ENVIRONMENTAL LAWS AND REGULATIONS

Construction of the proposed action would not commence until the proposed action achieves environmental compliance with all applicable laws and regulations, as described below.

Environmental compliance for the proposed action will be achieved upon coordination of this IER Supplemental with appropriate agencies, organizations, and individuals for their review and comments; the USFWS confirmation that the proposed action would not be likely to adversely affect any endangered or threatened species; LDNR concurrence with the determination that the proposed action is consistent, to the maximum extent practicable, with the Louisiana Coastal Resources Program; receipt of a Water Quality Certificate from the state of Louisiana; public review of the Section 404(b)(1) Public Notice and signature of the Section 404(b)(1) Evaluation; coordination with the Louisiana SHPO; receipt and acceptance or resolution of all Fish and Wildlife Coordination Act recommendations; receipt and acceptance or resolution of all LDEQ comments on the air quality impact analysis documented in the IER Supplemental; and receipt and acceptance or resolution of all EFH recommendations.

<u>Agency / Organization</u>	<u>Date Responded</u>
Endangered Species Act Section 7 concluded (USFWS):	Aug 20, 2009
Endangered Species Act Section 7 concluded (NMFS):	“NLAA” – Aug 31, 2009
Coastal Zone Management Consistency Determination:	Sept 16, 2009
Clean Water Act Section 401 Water Quality Certification:	Oct 21, 2009
USFWS Draft Coordination Act Report:	Oct 9, 2009
Advisory Council on Historic Preservation:	Aug 10, 2009
National Historic Preservation Act Sect. 106 (SHPO and/or ACHP):	Aug 17, 2009
MOA executed:	Oct 26, 2009
Federal tribes with interests (that responded):	
Mississippi Band of Choctaw Indians	July 17, 2009 / Sept 14, 2009
Choctaw Nation of Oklahoma	July 30, 2009
Jena Band of Choctaw Indians	Aug 3, 2009
Alabama-Coushatta Tribe of Texas	Aug 14, 2009
Seminole Tribe of Florida	Aug 26, 2009
MPRSA Section 103 Evaluation:	N/A
Clean Air Act:	July 1, 2008
Clean Water Act Section 404(b)(1) signed:	TBD
USFWS Final Coordination act Report:	TBD

9.0 CONCLUSIONS

9.1 INTERIM DECISION

The proposed action for LPV 00, 01, 02, 19, and 20 (lake front levee reaches 1 through 5) constructing wave attenuation berms and rock foreshore protection to 40 ft to 90 ft from the existing shoreline out into Lake Pontchartrain.

The proposed action for LPV 9 and 12 consists of adding additional rock onto the Bonnabel pump station breakwater and relocating the Duncan pump station breakwater access bridge.

The proposed action for LPV 17 (bridge abutment and floodwall tie-ins for Causeway Bridge) consists of constructing a T-Wall within the existing levee system across Causeway Blvd, an overpass bridge to move traffic up and over the floodwall, and traffic detour lane bridge spans to divert traffic during various phases of construction. The new T-Wall would be +16.5 ft.

Causeway Blvd would be modified, beginning at 6th Street. The overpass bridge would slope up to clear the top of the floodwall and slope down to ground level before the bridge abutment begins to slope up.

The CEMVN has assessed the environmental impacts of the proposed action and has determined that the proposed action would have the following impacts:

Lake Pontchartrain

- LPV 00, 01, 02, 19, and 20 (levee reaches) – 63 acres of permanent impacts to lake bottom lost to hard fill; 200 acres of temporary impacts associated with access dredging and material stock piling.
- LPV 09, and 12 (pump station breakwaters) – 3.5 acres of permanent impacts to lake bottom lost to hard fill within LPV 09; no additional impacts within LPV 10.
- LPV 17 (Causeway bridge) – 10.5 acres of temporary impacts associated with access dredging and material stock piling

Wetlands

- LPV 00, 01, 02, 09, 12, 17, 19, and 20 (levee reaches, breakwaters, and Causeway bridge) - no additional impacts.

Fisheries

- LPV 00, 01, 02, 19, and 20 (levee reaches) – 63 acres of permanent impacts to lake bottom lost to hard fill; 200 acres of temporary impacts associated with access dredging and material stock piling.
- LPV 09, and 12 (pump station breakwaters) – 3.5 acres of permanent impacts to lake bottom lost to hard fill within LPV 09; no additional impacts within LPV 10.
- LPV 17 (Causeway bridge) – 10.5 acres of temporary impacts associated with access dredging and material stock piling

EFH

- LPV 00, 01, 02, 19, and 20 (levee reaches) – 63 acres of permanent impacts to lake bottom (shell/silty-sand/mud bottom and water column) lost to hard fill; 200 acres of temporary impacts associated with access dredging and material stock piling.
- LPV 09, and 12 (pump station breakwaters) – 3.5 acres of permanent impacts to lake bottom (shell/silty-sand/mud bottom and water column) lost to hard fill within LPV 09; no additional impacts within LPV 10.
- LPV 17 (Causeway bridge) – 10.5 acres of temporary impacts to lake bottom (shell/silty-sand/mud bottom and water column) associated with access dredging and material stock piling

Wildlife

- LPV 00, 01, 02, 19, and 20 (levee reaches) – reduction in lake habitat, utilized primarily by avian species and temporary impacts to wildlife within the vicinity of the project area during construction.
- LPV 09, and 12 and (breakwaters) – temporary impacts to wildlife within the vicinity of the project area during construction.
- LPV 17 (Causeway bridge) – temporary impacts to wildlife within the vicinity of the project area during construction.

Endangered or Threatened Species

- LPV 00, 01, 02, 09, 12, 17, 19, and 20 (levee reaches, breakwaters, and Causeway bridge) – unlikely to have adverse impacts. Wave attenuation berm, foreshore protection and access channel construction across the Lake Pontchartrain south shore would result in impacts to Gulf sturgeon critical habitat (5.2 acres of temporary due to dredging and material stockpiling; 8 acres of permanent impacts due to hard fill). The NMFS concurred with CEMVN's determination that the proposed action would not have adverse impacts on threatened or endangered species or their critical habitat in a letter dated August 31, 2009.

Cultural Resources

- LPV 00, 01, 02, 19, and 20 (levee reaches) – no cultural resources would be impacted.
- LPV 09, and 12 (breakwaters) – no cultural resources would be impacted.
- LPV 17 (Causeway bridge) – adverse effects to historic structures: concrete canopy with the original "Lake Pontchartrain Causeway" sign, one remaining toll-takers booth located under the canopy, the GNOEC administrative office, police department and meeting room buildings.

Recreation

- LPV 00, 01, 02, 09, 12, 17, 19, and 20 (levee reaches, breakwaters, and Causeway bridge) - no additional impacts.

Aesthetics (Visual) Resources

- LPV 00, 01, 02, 09, 12, 17, 19, and 20 (levee reaches, breakwaters, and Causeway bridge) - no additional impacts.

Air Quality

- LPV 00, 01, 02, 09, 12, 17, 19, and 20 (levee reaches, breakwaters, and Causeway bridge) - no additional impacts.

Noise

- LPV 00, 01, 02, 09, 12, 17, 19, and 20 (levee reaches, breakwaters, and Causeway bridge) - no additional impacts.

Transportation

- LPV 00, 01, 02, 09, 12, 17, 19, and 20 (levee reaches and breakwaters) - no additional impacts.
- LPV 17 (Causeway bridge) – no additional impacts; impacts may be reduced due to traffic detour lane bridge span construction.

Socioeconomic Resources

- LPV 00, 01, 02, 09, 12, 17, 19, and 20 (levee reaches, breakwaters, and Causeway bridge) - no additional impacts.

Environmental Justice

- LPV 00, 01, 02, 09, 12, 17, 19, and 20 (levee reaches, breakwaters, and Causeway bridge) - no additional impacts.

9.2 PREPARED BY

The point of contact for this IER # 3 Supplemental is Ms. Joan Exnicios, USACE, New Orleans District CEMVN-PM-RS. Table 5 lists the preparers of relevant sections of this report. Ms. Exnicios can be reached at the U.S. Army Corps of Engineers, New Orleans District; Protection and Restoration Office, P.O. Box P.O. Box 60267, 7400 Leake Avenue; New Orleans, Louisiana 70118.

IER Section	Team Member
Environmental Team Leader	Joan Exnicios, USACE
Environmental Manager	Lissa Lyncker, HDR
Cultural Resources	Michael Swanda, USACE
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Technical Editor	Jennifer Darville, USACE
Internal Technical Review	Thomas Keevin, USACE

9.3 LITERATURE CITED

Heller, Nathanael, Troy Nowack, Robert Lackowicz and Alice Ivas

2007 *Management Summary: Phase 1A Cultural Resources Records Review, Field Reconnaissance and Remote Sensing Program Performed for Lake Pontchartrain and Vicinity Project, Individual Environmental Report Area 3 (IER #3): Jefferson Parish, Louisiana.* R. Christopher Goodwin & Associates, Inc., New Orleans. Prepared for the U.S. Army Corps of Engineers, New Orleans District under Contract W91P8-07-D-0042, Delivery Orders 002/003.

Nowak, Troy J. and Kathryn Ryberg

2008 *Supplemental Management Summary: Submerged Cultural Resources Investigations of Four Access Channels in the Vicinity of the Bonnabel, Duncan, Elmwood and Suburban Canals for the Lake Pontchartrain and Vicinity Project, IER #3, Jefferson Parish, Louisiana.* R. Christopher Goodwin & Associates, Inc., New Orleans. Prepared for the U.S. Army Corps of Engineers, New Orleans District under Contract W91P8-07-D-0042, Delivery Orders 0009.

APPENDIX A
LIST OF ACRONYMS AND DEFINITIONS OF COMMON TERMS

AAHU	average annual habitat unit
ACB	articulated concrete blocks
ADT	average daily traffic
AST	above-ground storage tank
ASTM	American Society for Testing and Materials
BLH	bottomland hardwood
Blvd	Boulevard
°C	Celsius
CAA	Clean Air Act of 1963
CAR	Coordination Act Report
CED	Comprehensive Environmental Document
CEMVN	Corps of Engineers, Mississippi Valley Division, New Orleans District
CEQ	Council on Environmental Quality
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFBM	contractor-furnished borrow material
CFR	Code of Federal Regulations
CO	carbon monoxide
CWPPRA	Coastal Wetlands Planning, Protection, and Restoration Act
CY	cubic yard
dB	decibel
dBA	A-weighted decibel
DDT	dichloro-diphenyl-trichloroethane
DNL	day-night average sound level
EA	Environmental Assessment
EJ	Environmental Justice
EFH	Essential Fish Habitat
EIS	Environmental Impact Statement
ER	Engineering Regulation
ESA	Endangered Species Act
ESRI	Environmental Systems Research Institute, Inc.
°F	Fahrenheit
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
FMC	Fishery Management Council
FMP	Fishery Management Plan
FONSI	Finding of No Significant Impact
ft	feet
FWCA	Fish and Wildlife Coordination Act
GFBM	government-furnished borrow material
GIWW	Gulf Intracoastal Waterway
GMFMC	Gulf of Mexico Fishery Management Council
GNOEC	Greater New Orleans Expressway Commission

GNOHSDRRS	Greater New Orleans Hurricane and Storm Damage Risk Reduction System
GSMFC	Gulf States Marine Fisheries Commission
HPO	Hurricane Protection Office
HTRW	hazardous, toxic, and radioactive waste
IER	Individual Environmental Report
IHNC	Inner Harbor Navigation Canal
III	Insurance Information Institute
km ²	square kilometer(s)
LADOTD	Louisiana Department of Transportation and Development
lb	pound
LCA	Louisiana Coastal Area
LCRP	Louisiana Coastal Resources Program
LDEQ	Louisiana Department of Environmental Quality
LDNR	Louisiana Department of Natural Resources
LDOL	Louisiana Department of Labor
LDWF	Louisiana Department of Wildlife and Fisheries
LF	linear feet
LNHP	Louisiana Natural Heritage Program
LOS	level of service
LPV	Lake Pontchartrain and Vicinity
µg/m ³	microgram(s) per cubic meter
mi ²	square mile(s)
mph	miles per hour
MRGO	Mississippi River Gulf Outlet
MSA	Magnuson-Stevens Fishery Conservation & Management Act
NAAQS	National Ambient Air Quality Standards
NAVD88	North American Vertical Datum 1988
NEPA	National Environmental Policy Act
NHTSA	National Highway Traffic Safety Administration
NMFS	National Marine Fisheries Service
NO ₂	nitrogen dioxide
NOAA	National Oceanic and Atmospheric Administration
NOV	New Orleans to Venice
NPS	National Park Service
NRC	National Research Council
NWR	National Wildlife Refuge
O ₃	ozone
OMRR&R	Operation, Maintenance, Repair, Replacement and Rehabilitation
PA	Programmatic Agreement
Pb	lead
PDT	Project Delivery Team
PL	Public Law
PM	particulate matter
PPA	Project Partnering Agreements
ppm	parts per million

ppt	parts per thousand
RCRA	Resource Conservation and Recovery Act
REC	recognized environmental condition
ROD	Record of Decision
ROW	right-of-way
SAV	submerged aquatic vegetation
SIR	Supplemental Information Report
SHPO	State Historic Preservation Office
SO ₂	sulfur dioxide
sq ft	square feet
TRB	Transportation Research Board
TRM	turf reinforcement mattress
U.S.	United States
U.S. 61	Airline Highway
USACE	U.S. Army Corps of Engineers
USC	United States Code
USCB	U.S. Census Bureau
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
UST	underground storage tank
vpd	vehicles per day
WBV	West Bank and Vicinity
WRDA	Water Resources Development Act

APPENDIX B
PUBLIC COMMENTS

APPENDIX C
INTERAGENCY CORRESPONDENCE

- USFWS Threatened and Endangered Species Concurrence
- NMFS Threatened and Endangered Species Concurrence
- LDNR LCRP Consistency Determination
- USFWS Fish and Wildlife Coordination Act Report
- LDEQ Water Quality Certification
- Memorandum of Agreement (MOA) for Mitigation of Impacts to Historical Structures



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

July 29, 2009

RECEIVED
JUL 31 2009
FISH & WLDL. SERV
LAFAYETTE, LA

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

James Boggs
Field Supervisor
U.S. Fish and Wildlife Service
646 Cajundome Blvd - Suite 400
Lafayette, LA 70506

This project has been reviewed for effects to Federal trust resources under our jurisdiction and currently protected by the Endangered Species Act of 1973 (Act). The project, as proposed,
() Will have no effect on those resources
() Is not likely to adversely affect those resources.
This finding fulfills the requirements under Section 7(a)(2) of the Act.

[Signature]
Acting Supervisor
Louisiana Field Office
U.S. Fish and Wildlife Service

20A, 09
Date

Dear Mr. Boggs:

The CEMVN has proposed modifications to the Government's approved action within the Individual Environmental Report (IER) 3, Lake Pontchartrain and Vicinity (LPV), Lakefront Levee, Jefferson Parish, Louisiana. Associated with the IER 3 project, The U.S. Fish and Wildlife Service (USFWS), in its Fish and Wildlife Coordination Act Report for this project (January 11, 2008), identified two federally listed species that may occur in the project area: the endangered West Indian manatee (*Trichechus manatus*) and the threatened Gulf sturgeon (*Acipenser oxyrinchus desotoi*). Due to the proposed modifications to the Government's approved action, a revised project description, project location map, and determination of the effect the proposed action will have on threatened and endangered (T&E) species within the IER 3 project area are enclosed for your review and comment. It is the CEMVN determination that impacts from the proposed action would be unlikely to be adversely affect T&E species that may occur within the IER project area. The proposed modifications for the project will be addressed within IER Supplemental (IERS) 3, Lakefront Levee, Jefferson Parish, Louisiana. The IERS 3 will be completed in the next few weeks and will be forwarded to you upon completion.

Project Description

The project area is located in Jefferson Pa extending from near the Jefferson-St. Charles Orleans Parish boundary line on the east. I proposed action (Figure 1):

- LPV 00 Reach 1 Lakefront Levee – cor at LPV 13 (Recurve I-wall in Northwest Kenner) and running to the Duncan Pumping Station.
- LPV 01 Reach 2 Lakefront Levee – consists of approximately 7,825 ft of levees, starting at the Duncan Pumping Station and running to Elmwood Canal.
- LPV 02 Reach 3 Lakefront Levee – consists of approximately 11,960 ft of levees, starting at Elmwood Canal and running to Suburban Canal.

OPTIONAL FORM 99 (7-90)

FAX TRANSMITTAL

of pages > 1

To: <i>Gib Owen</i>	From: <i>David Walther</i>
Dept./Agency	Phone #
Fax #	Fax #

NSN 7540-01-317-7368 5099-101 GENERAL SERVICES ADMINISTRATION



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE

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AUG 31 2009

F/SER31:KS

Mr. Richard E. Boe
New Orleans District Corps of Engineers
P.O. Box 60267
New Orleans, Louisiana 70160-0267

Re: IERs 3 and 11 Tier 2

Dear Mr. Boe:

This responds to your letter dated June 23, 2009, requesting section 7 consultation pursuant to the Endangered Species Act (ESA) for the Army Corps of Engineers' (COE) Individual Environmental Reports (IER) 3 and 11 Tier 2. The reports evaluate the COE's proposal to upgrade the existing hurricane protection system to protect communities and infrastructure in Orleans Parish, Louisiana, from 100-year level storms. The proposed projects modify previously authorized activities under IERs 3 and 11 Tier 2 by adding additional foreshore protection features along the southern shoreline of Lake Pontchartrain, detour lanes for the Lake Pontchartrain Causeway, and a storm surge protection structure at the Inner Harbor Navigation Canal (IHNC) near New Orleans, Louisiana. You requested concurrence from the National Marine Fisheries Service (NMFS) with your determination the projects are not likely to adversely affect the threatened Gulf sturgeon and its designated critical habitat. NMFS' determinations regarding the effects of the proposed action are based on the description of the action in this and all related consultation documents. You are reminded that any changes to the proposed action may negate the findings of the present and completed consultations and may require reinitiation of consultation with NMFS.

Alternative Arrangements for NEPA and Incremental ESA Analysis

The hurricane protection projects proposed in IERs 3 and 11 Tier 2 are components of the COE's comprehensive plan to upgrade existing structures in the Greater New Orleans Hurricane and Storm Damage Risk Reduction System, which was authorized and funded under Public Law 109-234, Emergency Supplemental Appropriations Act for Defense, the Global War on Terror, and Hurricane Recovery (2006). The 17 projects included in the proposed comprehensive plan will upgrade the existing hurricane protection system, damaged and weakened by Hurricanes Katrina and Rita in 2005, to reduce the threats to communities and infrastructure from 100-year level storms. On March 13, 2007, the COE implemented Alternative Arrangements under the provisions of the Council on Environmental Quality Regulations for Implementing the National Environmental Policy Act (NEPA; 40 CFR 1506.11) to expedite complete environmental



analysis for the proposed comprehensive plan. The Alternative Arrangements allow decisions on individual components of the overall proposed action so that the process can be completed more quickly than under the traditional NEPA process. The COE deemed the Alternative Arrangements necessary to reduce the risk of flooding and to restore public confidence in the hurricane protection system so that economic recovery of the area could proceed. When sufficient information is available from each of the IERs analyzing the proposed individual projects making up the comprehensive plan, the COE will produce a draft Comprehensive Environmental Document (CED). The CED will incorporate the IERs by reference and address the work completed, as well as the remaining work to be completed, on a system-wide scale and include a final mitigation plan. The COE has committed to NMFS that if individual and/or cumulative effects to listed species or designated critical habitat not previously addressed in IERs that have undergone consultation are subsequently identified in the CED, the COE will reinitiate consultation with NMFS.

The Endangered Species Act has been interpreted by courts, including the Supreme Court of the United States, as requiring comprehensive consultation on the entire scope of a proposed project or plan. Incremental consultation on separate stages or phases of a project is allowable only where the project is implemented under statutes that authorize staged decision-making, including staged environmental reviews and the potential for modification or cancellation of subsequent stages.

The regulations implementing the ESA include provisions at 50 CFR 402.14(k) for consulting on projects in incremental steps that are based on the caselaw discussed above. Section 402.14(k) provides that:

Incremental steps. When the action is authorized by a statute that allows the agency to take incremental steps toward the completion of the action, the Service shall, if requested by the Federal agency, issue a biological opinion on the incremental step being considered, including its views on the entire action. Upon the issuance of such a biological opinion, the Federal agency may proceed with or authorize the incremental steps of the action if:

- (1) The biological opinion does not conclude that the incremental step would violate section 7(a)(2);
- (2) The Federal agency continues consultation with respect to the entire action and obtains biological opinions, as required, for each incremental step;
- (3) The Federal agency fulfills its continuing obligation to obtain sufficient data upon which to base the final biological opinion on the entire action;
- (4) The incremental step does not violate section 7(d) of the Act concerning irreversible or irretrievable commitment of resources; and
- (5) There is a reasonable likelihood that the entire action will not violate section 7(a)(2) of the Act.

In accordance with these provisions, the consultation on each incremental step must be in the context of the entire action (i.e., the effects of all previous steps should be considered in the evaluation of the effects of the current step). NMFS has previously completed consultations on

IERs 2, 3, 5, 6, 7, and 11. Therefore, this consultation will consider the effects of those projects in the evaluation of the effects of the currently proposed actions, modified IERs 3 and 11 Tier 2, on listed species and critical habitat under NMFS purview.

Previously Authorized IER Projects

Section 7 consultation was completed on IER 2 on June 6, 2008. The project consists of replacing existing floodwalls with new T-walls, constructing a breakwater, and dredging a channel for equipment access in the western portion of Lake Pontchartrain in Jefferson and St. Charles Parishes, Louisiana. NMFS determined project activities are not likely to adversely affect Gulf sturgeon or listed sea turtles (Kemp's ridley, green, or loggerhead) potentially found in the project area. The project is not located in designated Gulf sturgeon critical habitat and has not yet been constructed.

Consultation for IER 3 was completed on May 28, 2008; consultation on modifications to the project was completed on November 6, 2008. The project, as modified, consists of the construction of a cement breakwater, the addition of rock riprap to existing foreshore protection along the shoreline, and dredging for equipment access in Lake Pontchartrain in Jefferson Parish, Louisiana. NMFS determined project activities are not likely to adversely affect Gulf sturgeon or listed sea turtles (Kemp's ridley, green, or loggerhead) potentially found in the project area. In addition, NMFS determined that IER 3 was not likely to adversely affect designated Gulf sturgeon critical habitat in Unit 8. Water quality impacts related to dredging and stockpiling of dredged material are expected to be insignificant because they will be temporary and minimized by the use of silt curtains. Potential effects to sediment quality resulting from dredging and stockpiling of dredged material will also be insignificant. While dredging may temporarily uncover a layer of finer-grained sediment, the original material will be placed back in the channel and sediment quality will be returned to pre-project conditions. Prey abundance will be temporarily affected by the dredging of 9 acres of waterbottom and the placement of dredged material on 20 acres of waterbottom. However, the project area encompasses only a small portion of the 403,200 acres of available habitat in Lake Pontchartrain supporting Gulf sturgeon prey items. Stockpiled material will be placed back into the dredged channels upon project completion and returned to pre-project contours. Benthic invertebrates utilized by Gulf sturgeon are expected to recolonize the dredged area rapidly, as they have been found to recolonize within one year when sediment composition and depth remain consistent. The permanent loss of 9 acres of habitat (due to the construction of the breakwater, riprap, and foreshore protection) on prey abundance is also expected to be insignificant. Gulf sturgeon prey are expected to be found in sandy substrate, while the substrate found at the site of the breakwater is mainly hard bottom. Further, Gulf sturgeon are expected to be found in deeper waters (2 to 4 meters) than those at the site of the proposed foreshore protection (less than 1 meter). The project has not yet been constructed.

Consultation on IER 11 was completed on August 12, 2008. The project consists of construction of storm surge protection structures (flood control gates and concrete floodwalls) and dredging for equipment access between the IHNC and Lake Borgne in Orleans and St. Bernard Parishes, Louisiana. NMFS determined project activities are not likely to adversely affect Gulf sturgeon or listed sea turtles (Kemp's ridley, green, or loggerhead) potentially found in the project area. Although not located in designated Gulf sturgeon critical habitat, the project is hydrologically

connected to designated critical habitat in Unit 8. Based on modeling reports and analyses provided by the COE, the project will not significantly affect hydroperiod, salinity, ability for benthic communities to be established and maintained, water velocity, dissolved oxygen, siltation, or accessibility; therefore, NMFS determined the project was not likely to adversely affect designated Gulf sturgeon critical habitat. This project is currently under construction.

Consultation for IERs 6 and 7 was completed on March 13, 2009. The projects include the placement of rock on the existing foreshore protection to raise its elevation on several sections of the levee system on Lake Pontchartrain near New Orleans, Louisiana. The elevation of 11 miles of existing foreshore protection will be raised to 14 feet NAVD88 by placing additional rock on the structure. To access the foreshore protection for rock placement, a bucket dredge will be used to excavate. Approximately 44 acres of waterbottom will be dredged and 134 acres of waterbottom will be temporarily covered by the stockpiled dredged material, resulting in temporary impacts to 178 acres of benthic habitat through burying and physical disruption of potential prey. Permanent impacts will result from the placement of rock on the existing foreshore protection, which will extend into the water and permanently cover an additional 14 acres of waterbottom. Water depths in the area where the rock will be placed are less than 1 meter deep. NMFS concluded that sea turtles and Gulf sturgeon are not likely to be adversely affected by the proposed projects. NMFS also determined that the temporary loss of 178 acres of benthic habitat due to dredging and stockpiling of dredged material, and the permanent loss of 14 acres of habitat due to placement of rock on the existing foreshore protection is not likely to adversely affect Gulf sturgeon critical habitat. Water depths at the project sites are less than 1 meter and these areas experience high wave energy. Gulf sturgeon are suction feeders; due to their feeding morphology, they are usually found at deeper depths (2 to 4 meters), where lower wave energy at the substrate, compared to the shallower swash zone, interferes less with feeding. IERs 6 and 7 have not yet been constructed.

Formal consultation for IER 5 was completed on April 17, 2009. The proposed action includes the installation of a 104- by 600-foot breakwater in front of the 17th Street canal pump station and a 116- by 700-foot breakwater at the Orleans Avenue canal pump station. Breakwaters will be constructed out of rock and concrete, and materials will be placed from land by crane where pumping station outfall canals meet Lake Pontchartrain. No dredging is required. NMFS concluded that listed sea turtles and Gulf sturgeon are not likely to be adversely affected by the proposed project. Construction will result in the permanent loss of 3.3 acres of designated critical habitat for Gulf sturgeon due to breakwater construction. NMFS analyzed the project's effects on the primary constituent elements of Gulf sturgeon critical habitat. Prey abundance will be adversely affected by the project, but not to the extent that it would reduce the critical habitat's ability to support Gulf sturgeon conservation.

Currently Proposed Projects

The project proposed under IER 3 is located at 30.0211°N, 90.1450°W (WGS84) in Jefferson Parish, Louisiana. The original project proposal involved the placement of rock on the existing foreshore protection to raise its elevation on five sections of the levee system on Lake Pontchartrain near New Orleans, Louisiana. Recent nearshore bathymetric data in Lake Pontchartrain show that the water depths are greater than what was initially used to develop the 100-year lakefront levee elevations. Because levee design is constrained by project location and

soil substrate conditions, the project has been modified to add wave attenuation structures on the lakeside of the levees to meet the wave overtopping rate criteria. Wave attenuation structures consisting of earthen berms with graded rock will be added to Reaches 1-3 of the project area. Reaches 4 and 5 will not require wave attenuation structures, but will require additional rock foreshore protection beyond what was originally proposed. The foreshore protection structures originally proposed for IER 3 would permanently cover 26 acres of waterbottoms in Lake Pontchartrain, 4 acres of which were located in Gulf sturgeon critical habitat. The wave attenuation structures and additional foreshore protection proposed in this modification to IER 3 will result in 57 acres of additional permanent impacts to Lake Pontchartrain, 4 acres of which (associated with the additional foreshore protection proposed for Reach 5) will occur in Gulf sturgeon critical habitat. Water depth in the area where the foreshore protection will be constructed is less than 1 meter.

Placement of rock on foreshore protection proposed in IER 3 will require the dredging of barge access channels in Lake Pontchartrain. Bottom substrates in the project area consist of a 7-foot layer of silty sand, underlain by a 4-foot layer of soft clay. Dredging would occur entirely within the 7-foot silty sand layer. A bucket dredge will be used to create access channels between 250 and 350 feet long. Dredged material will be stockpiled adjacent to the access channels in an area 100 feet wide and will be returned to the channel upon project completion. In addition, construction activities on the Lake Pontchartrain Causeway will require the construction of detour lanes. A bucket dredge will be used to create 500- x 100-foot access channels on both sides of the Lake Pontchartrain Causeway for equipment barge access. Dredged material will be stockpiled adjacent to the access channels in an area 1000- by 125-feet wide and will be returned to the channel upon project completion. Silt curtains will be used to contain stockpiled dredged material until it is placed back in the access channels. Dredging access channels and stockpiling of dredged material originally proposed in IER 3 would temporarily affect 116 acres of waterbottoms in Lake Pontchartrain, 29 acres of which are located in Gulf sturgeon critical habitat. The additional access channel dredging and stockpiling of dredged material proposed in this modification to IER 3 will temporarily affect 203.5 acres of waterbottoms, 5.2 acres of which are located in Gulf sturgeon critical habitat.

The project proposed under IER 11 Tier 2 is centered at 30.0064°N, 89.9146°W (WGS84) in Orleans and St. Bernard Parishes. The proposed action consists of the installation of a steel sector gate and two vertical lift gates in the IHNC. Floodwalls would connect the gates to earthen levees on the banks of the IHNC. A 350- by 1,050-foot, 86-foot-deep scour hole in the footprint of the proposed sector and lift gates will be filled with sand. Levees, floodwalls, and the channel may also be armored to prevent erosion and additional scouring. A cofferdam will be put in place during construction and will block water flow from the IHNC into Lake Pontchartrain for a period of 6 to 12 months. Gulf sturgeon have never been observed in the IHNC. The primary pathway between Lake Pontchartrain, Mississippi Sound, and the riverine portions of Gulf sturgeon critical habitat is through Lake Borgne and The Rigolets. While Gulf sturgeon could potentially enter the IHNC, this location is a less suitable access point for Gulf sturgeon to enter and exit Lake Pontchartrain, as it is an artificial canal in a heavily industrialized area and represents a much lengthier, circuitous route between critical habitat areas. As a precautionary measure, before the cofferdam is dewatered for construction activities to

commence, the area will be surveyed for the presence of Gulf sturgeon. If any sturgeon are observed, the COE will reinitiate consultation with NMFS on the appropriate means for relocating Gulf sturgeon to a safe location away from the project area. Once construction is completed and the cofferdam removed, unrestricted flow between the IHNC and Lake Pontchartrain will be restored. Although not located in designated Gulf sturgeon critical habitat, the project is hydrologically connected to designated critical habitat in Unit 8.

Effects to Species and Designated Critical Habitat from Previous and Currently Proposed IER Projects

As discussed in a previous section of the document, in accordance with the provisions of the ESA at 50 CFR 402.14(k), section 7 consultation on each incremental step of a phased/staged action must be in the context of the entire action (i.e., the effects of all previous steps should be considered in the evaluation of the effects of the current step). NMFS has previously completed consultations on IERs 2, 3, 5, 6, 7, and 11. Therefore, this consultation will consider the effects of those projects in the evaluation of the effects of the currently proposed actions, IERs 3 and 11 Tier 2, on listed species and critical habitat under NMFS purview.

In addition to Gulf sturgeon, three listed species of sea turtles may occur at the project sites: the endangered Kemp's ridley, the threatened/endangered¹ green, and the threatened loggerhead. The currently proposed IER 3, as well as IERs 5, 6, and 7, are located within designated Gulf sturgeon critical habitat Unit 8. Although not located in critical habitat, IER 11 Tier 2 is hydrologically connected to Unit 8. The primary constituent elements (PCEs) essential for the conservation of Gulf sturgeon present in Unit 8 include: abundant prey items; water quality and sediment quality necessary for normal behavior, growth, and viability of all life stages; and, safe and unobstructed migratory pathways necessary for passage within and between riverine, estuarine, and marine habitats. Of these PCEs, NMFS believes water quality, sediment quality, and prey abundance may be affected.

NMFS has analyzed the routes of potential effects from the proposed projects in IERs 2, 3, 6, 7, and 11 and concluded that listed sea turtles and Gulf sturgeon are not likely to be adversely affected from the suite of activities proposed. The risk of injury to listed species from dredging activities associated with IERs 3, 6, and 7 will be discountable based on the type of dredges being used. There are no reported takes of sea turtles or Gulf sturgeon by a bucket dredge. In addition, dredging will occur within a May to September dredging window for IERs 6 and 7. Gulf sturgeon are not likely to be present during dredging activities for IERs 6 and 7 because they primarily utilize Lake Pontchartrain for winter foraging and dredging will only occur in the summer. Further, the likelihood of sea turtles and Gulf sturgeon being struck by the transit and anchoring of equipment and vessels at the project site is discountable due to these species' mobility. The likelihood of effects to Gulf sturgeon and sea turtles from dredging and the transit and anchoring of equipment and vessels were also determined to be discountable in the consultations on IERs 2 and 11 Tier 2 due to these species' mobility, the type of dredges being used, and/or the lack of species' presence in dredging sites located in marsh or in heavily

¹Green turtles are listed as threatened, except for breeding populations in Florida and the Pacific Coast of Mexico, which are listed as endangered.

controlled artificial waterways of low habitat value.

NMFS considers the temporary loss of 203.5 acres of benthic habitat due to dredging and stockpiling of dredged material, and the permanent loss of 57 acres of habitat due to the construction of foreshore protection and wave attenuation structures, proposed in IER 3 as having insignificant effects on sea turtles and Gulf sturgeon. The project area encompasses only a small portion of the 403,200-acre lake and there is similar habitat in the vicinity such that impacts to foraging success, reproduction, resting, or other activities that might occur in the area are expected to be minor and insignificant. The area likely provides poor quality habitat for listed species under NMFS' purview. The bottom substrate does not support submerged aquatic vegetation and is likely a poor source of other forage resources for sea turtle species. Due to the shallow water depth and high-energy wave environment where the rock will be placed, the project area provides poor foraging habitat for Gulf sturgeon, as well. Water depths at the site are less than 1 meter. Gulf sturgeon are usually found at deeper depths (2 to 4 meters), where lower wave energy at the substrate, compared to the shallower swash zone, interferes less with feeding.

We evaluated the potential impacts on listed species from the additive loss of a total of 653.8 acres of habitat (546.8 temporarily, 107 permanently) from implementing IERs 2, 3, 6, 7 and 11. If all impacts occurred in areas utilized by species under NMFS' purview, then only 0.16 percent of the available habitat in Lake Pontchartrain would be temporarily or permanently lost. There is sufficient available habitat in the vicinity such that impacts to foraging success, reproduction, resting, or other behaviors are expected to be minor and insignificant. However, all of the permanent impacts and a portion of the temporary impacts will occur in areas that are not utilized by listed species under NMFS' purview because: (1) they consist of marsh, peat substrate, or hardbottom that do not support prey species or other foraging resources for sturgeon and sea turtles; (2) the sites have high wave energy that interferes with feeding; and, (3) they are much shallower (less than 1 meter) than depths preferred by sturgeon and sea turtles. Project activities in IER 11 will not impact habitat in Lake Pontchartrain, but may cause sea turtles and Gulf sturgeon to temporarily avoid the project site due to construction noise. Also, the operation of flood control structures could potentially hinder access by sea turtles and sturgeon to Lake Pontchartrain, but the structures will remain open at all times with the exception of major storms or hurricanes and many other access points to the lake will remain available to these species.

NMFS and the United States Fish and Wildlife Service jointly designated Gulf sturgeon critical habitat on April 18, 2003 (50 CFR 226.214). NMFS believes the suite of project activities in IERs 3, 6, 7, and 11 Tier 2² may affect but are not likely to adversely affect Gulf sturgeon critical habitat in Unit 8. While construction of the breakwaters in IER 5 will diminish prey abundance locally, it will not reduce the critical habitat's ability to support Gulf sturgeon conservation. Water quality PCE impacts related to dredging and stockpiling of dredged material in IERs 3, 6, and 7 are expected to be insignificant because they will be temporary and minimized by the use of silt curtains. Potential effects to the sediment quality PCE resulting from dredging and stockpiling of dredged material will also be insignificant. Sediment substrates remaining in access channels after dredging associated with IERs 3, 6, and 7 are expected to be the same as the

²Project activities in IER 2 are not located in designated critical habitat.

pre-project sediments. The original material will be placed back in the channels after project construction and sediment quality will be returned to pre-project conditions. Further, the placement of inert, non-toxic rock in these projects will not affect water quality or sediment quality. Prey abundance will be temporarily affected by the dredging of 55.7 acres of waterbottom and the placement of dredged material on 156.5 acres of waterbottom associated with IERs 3, 6, and 7. The total temporary loss of Gulf sturgeon critical habitat from activities in IERs 3, 6, and 7 of 212.2 acres will be insignificant. This represents only a small portion (0.05 percent) of the available habitat in Lake Pontchartrain supporting Gulf sturgeon prey items. Further, stockpiled material will be placed back into the dredged channels upon project completion and returned to pre-project contours. Benthic invertebrates utilized by Gulf sturgeon are expected to recolonize the dredged area rapidly, as they have been found to recolonize within one year when sediment composition and depth remain consistent. The permanent loss of 30.3 acres of designated critical habitat will result from the construction of foreshore protection and breakwaters associated with IERs 3, 5, 6, and 7. The adverse effects to prey abundance from the construction of breakwaters on 3.3 acres of waterbottom associated with IER 5 was evaluated in a formal consultation. NMFS determined the project's effects will not reduce the critical habitat's ability to support Gulf sturgeon conservation. The total permanent loss of prey associated with construction activities in IERs 3, 6, and 7 affecting 27 acres will be insignificant and will not have adverse cumulative effects when combined with the activities in IER 5. Water depths at the project sites are less than 1 meter and these areas experience high wave energy. Gulf sturgeon are suction feeders; due to their feeding morphology, they are usually found at deeper depths (2 to 4 meters), where lower wave energy at the substrate, compared to the shallower swash zone, interferes less with feeding. Although not located in designated Gulf sturgeon critical habitat, project activities in IER 11 are hydrologically connected to designated critical habitat in Unit 8. Based on modeling reports and analyses provided by the COE, the project will not significantly affect hydroperiod, salinity, the ability for benthic communities to be established and maintained, water velocity, dissolved oxygen, siltation, or accessibility; therefore, NMFS determined the project was not likely to adversely affect designated Gulf sturgeon critical habitat.

Analysis of Compliance with 50 CFR 402.14(k)

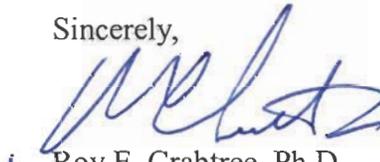
As discussed above, NMFS has determined that the incremental step of implementing IERs 3 and 11 Tier 2 will not violate section 7(a)(2) of the ESA, as required in 50 CFR 402.12(k)(1). The COE has complied with 50 CFR 402.14(k) paragraphs (2) and (3) by consulting with NMFS on all newly proposed IERs that may affect species or critical habitat under NMFS' purview, and through ongoing information collection, reinitiated consultation when projects were modified and new or unanticipated effects of previous actions became apparent. Based on information provided by the COE, the current consultation is the last consultation for projects proposed as part of the Greater New Orleans Hurricane and Storm Damage Risk Reduction System and contains a complete assessment of the impacts of all projects on listed species and critical habitat under NMFS' purview. Because no further consultations will occur, there will be no irreversible or irretrievable commitment of resources that would foreclose the implementation of reasonable and prudent alternatives, as prohibited by paragraph (4) of 50 CFR 402.14(k) of the ESA. After reviewing the effects of IERs 3 and 11 Tier 2 in conjunction with the effects associated with the other IER projects evaluated to date as part of the Greater New Orleans Hurricane and Storm Damage Risk Reduction System, we conclude that there are no additive effects of the overall

projects that rise above the level of effects considered for each of the individual component projects. As required by 50 CFR 402.14(k) paragraph (5), we conclude that the entire action will not violate section 7(a)(2) of the ESA. Therefore, based on available information to date, we conclude that consultations on the IER projects under the Alternative Arrangements comply with all the provisions contained in 50 CFR 402.14(k) for consultations on incremental actions.

This concludes your consultation responsibilities under the ESA for species under NMFS' purview unless additional information on IER projects under the comprehensive plan to upgrade the Greater New Orleans Hurricane and Storm Damage Risk Reduction System becomes available. Consultation must also be reinitiated if a take occurs or new information reveals effects of the action not previously considered, or the identified action is subsequently modified in a manner that causes an effect to the listed species or critical habitat in a manner or to an extent not previously considered, or if a new species is listed or critical habitat designated that may be affected by the identified action. We have enclosed additional information on other statutory requirements that may apply to this action, and on NMFS' Public Consultation Tracking System (PCTS) to allow you to track the status of ESA consultations.

Thank you for your continued cooperation in the conservation of threatened and endangered species under NMFS' purview. If you have any questions on this consultation or PCTS, please contact Kelly Shotts at (727) 824-5312, or by e-mail at kelly.shotts@noaa.gov.

Sincerely,



Roy E. Crabtree, Ph.D.
Regional Administrator

Enclosure

cc: F/SER43, Hartman/Williams

File: 1514-22 F.1. LA

Ref: I/SER/2009/03605

**PCTS Access and Additional Considerations for ESA Section 7 Consultations
(Revised 7-15-2009)**

Public Consultation Tracking System (PCTS) Guidance: PCTS is an online query system at <https://pcts.nmfs.noaa.gov/> that allows federal agencies and U.S. Army Corps of Engineers' (COE) permit applicants and their consultants to ascertain the status of NMFS' Endangered Species Act (ESA) and Essential Fish Habitat (EFH) consultations, conducted pursuant to ESA section 7, and Magnuson-Stevens Fishery Conservation and Management Act's (MSA) sections 305(b)2 and 305(b)(4), respectively. Federal agencies are required to enter an agency-specific username and password to query the Federal Agency Site. The COE "Permit Site" (no password needed) allows COE permit applicants and consultants to check on the current status of Clean Water Act section 404 permit actions for which NMFS has conducted, or is in the process of conducting, an ESA or EFH consultation with the COE.

For COE-permitted projects, click on "Enter Corps Permit Site." From the "Choose Agency Subdivision (Required)" list, pick the appropriate COE district. At "Enter Agency Permit Number" type in the COE district identifier, hyphen, year, hyphen, number. The COE is in the processing of converting its permit application database to PCTS-compatible "ORM." An example permit number is: SAJ-2005-000001234-IPS-1. For the Jacksonville District, which has already converted to ORM, permit application numbers should be entered as SAJ (hyphen), followed by 4-digit year (hyphen), followed by permit application numeric identifier with no preceding zeros. For example: SAJ-2005-123; SAJ-2005-1234; SAJ-2005-12345.

For inquiries regarding applications processed by COE districts that have not yet made the conversion to ORM (e.g., Mobile District), enter the 9-digit numeric identifier, or convert the existing COE-assigned application number to 9 numeric digits by deleting all letters, hyphens, and commas; converting the year to 4-digit format (e.g., -04 to 2004); and adding additional zeros in front of the numeric identifier to make a total of 9 numeric digits. For example: AL05-982-F converts to 200500982; MS05-04401-A converts to 200504401. PCTS questions should be directed to Eric Hawk at Eric.Hawk@noaa.gov. Requests for username and password should be directed to PCTS.Usersupport@noaa.gov.

EFH Recommendations: In addition to its protected species/critical habitat consultation requirements with NMFS' Protected Resources Division pursuant to section 7 of the ESA, prior to proceeding with the proposed action the action agency must also consult with NMFS' Habitat Conservation Division (HCD) pursuant to the MSA requirements for EFH consultation (16 U.S.C. 1855 (b)(2) and 50 CFR 600.905-.930, subpart K). The action agency should also ensure that the applicant understands the ESA and EFH processes; that ESA and EFH consultations are separate, distinct, and guided by different statutes, goals, and time lines for responding to the action agency; and that the action agency will (and the applicant may) receive separate consultation correspondence on NMFS letterhead from HCD regarding their concerns and/or finalizing EFH consultation.

Marine Mammal Protection Act (MMPA) Recommendations: The ESA section 7 process does not authorize incidental takes of listed or non-listed marine mammals. If such takes may occur an incidental take authorization under MMPA section 101 (a)(5) is necessary. Please contact NMFS' Permits, Conservation, and Education Division at (301) 713-2322 for more information regarding MMPA permitting procedures.



State of Louisiana
DEPARTMENT OF NATURAL RESOURCES
OFFICE OF COASTAL RESTORATION AND MANAGEMENT

September 16, 2009

Joan Exnicios
Chief, Environmental Planning and Compliance Branch
Department of the Army
New Orleans District, Corps of Engineers
P. O. Box 60267
New Orleans, Louisiana 70160-0267

RE: **C20080227 (mod1) Coastal Zone Consistency Modification**
COE-NOD
Direct Federal Action
IER 3: Lakefront Levee, Lake Pontchartrain and Vicinity Hurricane Storm Damage Risk
Reduction System, **Jefferson Parish, Louisiana**

Dear Ms. Exnicios:

The above referenced modification has been reviewed for consistency with the approved Louisiana Coastal Resource Program (LCRP) as required by Section 307 of the Coastal Zone Management Act of 1972, as amended. The modification, as proposed in the application, is consistent with the LCRP.

If you have any questions concerning this determination, please contact Carol Crapanzano of the Consistency Section at (225) 342-9425 or 1-800-267-4019.

Sincerely yours,

A handwritten signature in black ink, appearing to read "Gregory J. DuCote".

Gregory J. DuCote
Administrator
Interagency Affairs/Field Services Division

GJD/JDH/cmc

cc: Dave Butler, LDWF
Jason Smith, Jefferson Parish
Frank Cole, IA/FSD FI



United States Department of the Interior

FISH AND WILDLIFE SERVICE
646 Cajundome Blvd.
Suite 400
Lafayette, Louisiana 70506



October 9, 2009

Colonel Alvin B. Lee
District Engineer
U.S. Army Corps of Engineers
Post Office Box 60267
New Orleans, Louisiana 70160-0267

Dear Colonel Lee:

Please reference the "Individual Environmental Report (IER) Lake Pontchartrain and Vicinity (LPV) Jefferson East Bank, Jefferson, Louisiana (IER3). That study was conducted in response to Public Law 109-234, Emergency Supplemental Appropriations Act for Defense, the Global War on Terror, and Hurricane Recovery, 2006 (Supplemental 4). That law authorized the Corps of Engineers (Corps) to upgrade some existing hurricane protection projects to provide protection against a 100-year hurricane event.

The Corps has recently modified the IER3 project. The U.S. Fish and Wildlife Service (Service) provided recommendations on the previously proposed IER3 project to the Corps in a July 17, 2008, Fish and Wildlife Coordination Act (FWCA) Report and in a January 17, 2008 Supplemental FWCA Letter. This letter supplements that report and first supplemental letter and is submitted in accordance with provisions of the Fish and Wildlife Coordination Act (FWCA; 48 Stat. 401, as amended; 16 U.S.C. 661 et seq.) and constitutes the report of the Secretary of the Interior as required by Section 2(b) of that Act.

A description of the study area and a discussion of the significant fish and wildlife resources (including habitats) that occur within that study area are contained in our July 2008 report. For brevity, that information and discussion is incorporated by reference herein. Modifications to the approved action in IER 3 were proposed in order to incorporate wave attenuation berms, additional foreshore protection, Causeway Bridge detour lanes, T-Wall and overpass bridge at the Causeway Bridge, and additional rock armoring at a pump station breakwater.

With the additional feature the Service continues to believe there will be no significant fish and wildlife resources impacted as a result of the proposed project. Therefore, the Service believes that the recommendations (presented below) provided in our July and January 2008, FWCA Report and supplemental letter continue to remain valid.

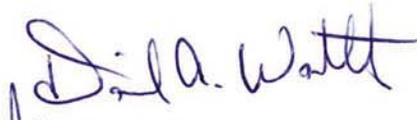
1. All gates and/or culverts being replaced or modified should be operated according to previously developed operational plans to avoid further degradation of the project area.

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2. The Service shall be provided an opportunity to review and submit recommendations on the draft plans and specifications for all levee work addressed in this report.
3. Any proposed change in levee, floodwall, or drainage structure features, locations or plans shall be coordinated in advance with the Service, NMFS, LDWF, and LDNR.
4. If the proposed project has not been constructed within 1 year or if changes are made to the proposed project, the Corps should re-initiate Endangered Species Act consultation with the Service to ensure that the proposed project would not adversely affect any federally listed threatened or endangered species or their habitat.
5. The Service recommends backfilling all access channels in Lake Pontchartrain after construction is complete. In order to have sufficient material to backfill the access channels and minimize turbidity in the lake, the Service also recommends the use of silt curtains.

Thank you for the opportunity to review the draft IER 3 report and its proposed revision. If the project scope or design changes, the Service requests that the Corps reinitiate FWCA coordination to ensure that the above recommendations remains valid. If you or your staff has any questions regarding this matter, please have them contact Catherine Breaux (504/862-2689) of this office.

Sincerely,


James F. Boggs
Acting Supervisor
Louisiana Field Office

cc: LA Dept. of Wildlife and Fisheries, Baton Rouge, LA
LA Dept. of Natural Resources (CMD), Baton Rouge, LA
National Marine Fisheries Service, Baton Rouge, LA
Fish and Wildlife Service, Atlanta, GA (AES)
Environmental Protection Agency, Dallas, TX
Natural Resources Conservation Service, Alexandria, LA

BOBBY JINDAL
GOVERNOR



HAROLD LEGGETT, Ph.D.
SECRETARY

State of Louisiana
DEPARTMENT OF ENVIRONMENTAL QUALITY
ENVIRONMENTAL SERVICES

OCT 21 2009

U.S. Army Corps of Engineers- New Orleans District
CEMVN-PM-RS
P.O. Box 60267
New Orleans, LA 70160-0267

Attention: Gib Owen

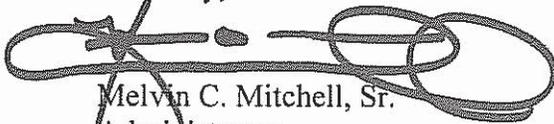
RE: Water Quality Certification (WQC 080512-01/AI 157821/CER 20090001)
Individual Environmental Report (IER #3)
Jefferson Parish

Dear Mr. Owen:

The Department has reviewed your revised application for the construction of the Jefferson Lakefront levee, along Lake Pontchartrain in Jefferson Parish. This revision concerns the construction of wave attenuation and foreshore protection features (various reaches along Lakefront Levee); the placement of additional rock armoring (LPV 09 Bonnabel Pump Station Breakwater); & the dredging and placement of spoil and fill material to construct detour lanes and a T-wall across the Causeway Peninsula (LPV 17 Causeway Bridge).

The requirements for Water Quality Certification have been met in accordance with LAC 33:IX.1507.A-E. Based on the information provided in your application, we have determined that the placement of the fill material will not violate the water quality standards of Louisiana provided for under LAC 33:IX.Chapter 11. Therefore, the Department has issued a Water Quality Certification.

Sincerely,



Melvin C. Mitchell, Sr.
Administrator
Water Permits Division
MCM/jjp

**MEMORANDUM OF AGREEMENT
AMONG THE U.S. ARMY CORPS OF ENGINEERS,
THE GREATER NEW ORLEANS EXPRESSWAY COMMISSION, THE
COASTAL PROTECTION AND RESTORATION AUTHORITY OF LOUISIANA
AND THE LOUISIANA STATE HISTORIC PRESERVATION OFFICER
REGARDING THE LAKE PONTCHARTRAIN EXPRESSWAY AND
SOUTHERN TOLL PLAZA
JEFFERSON AND ST. TAMMANY PARISHES, LOUISIANA**

Whereas, Hurricane Katrina and Hurricane Rita resulted in major damage to the Federal and non-Federal Hurricane and Storm Damage Risk Reduction System (HSDRRS) in Louisiana in August and September 2005; and

Whereas, the United States Army Corps of Engineers (USACE) has been working with state and local officials to restore the Federal and non-Federal HSDRRS projects and related works in affected areas since the disasters; and

Whereas, USACE is undertaking the construction of levee and floodwall improvements for the Jefferson East Bank Project as part of the HSDRRS; and

Whereas, the environmental assessment of the Jefferson East Bank Project is being studied under the emergency alternative arrangements approved by the Council on Environmental Quality for the HSDRRS and will appear in Individual Environmental Report #3 and Supplemental Individual Environmental Report #3; and

Whereas, the Lake Pontchartrain Expressway and southern Toll Plaza have been determined eligible for listing on the National Register of Historic Places; and

Whereas, USACE has consulted with the Louisiana State Historic Preservation Officer (LASHPO) pursuant to 36 CFR Part 800 of the regulations implementing Section 106 of the National Historic Preservation Act (16 U.S.C. §470f) and determined that the undertaking will have an adverse effect on the Lake Pontchartrain Expressway and southern Toll Plaza; and

Whereas, USACE has notified the Alabama Coushatta Tribe of Texas, the Caddo Nation of Oklahoma, the Chitimacha Tribe of Louisiana, the Choctaw Nation of Oklahoma, the Coushatta Tribe of Louisiana, the Jena Band of Choctaw Indians, the Mississippi Band of Choctaw Indians, the Quapaw Tribe of Oklahoma, the Seminole Nation of Oklahoma, the Seminole Tribe of Florida, and the Tunica-Biloxi Tribe of Louisiana, of the current Undertaking and the Tribes have declined to participate; and

Whereas, USACE has identified the consulting parties and invited them to participate in the Section 106 process (Attachment 2); and

Whereas, in accordance with 36 CFR Part 800.6(a)(1), USACE notified the Advisory Council on Historic Preservation (ACHP) of the USACE's adverse effect determination with specified documentation, and the ACHP has declined to participate in this Memorandum of Agreement (MOA) (Attachment 3); and

Whereas, the Greater New Orleans Expressway Commission (GNOEC) and the Coastal Protection and Restoration Authority (CPRA) has been invited to participate as Signatory Parties to this MOA, and have agreed to participate; and

Whereas, USACE has identified measures in this MOA to mitigate this adverse effect caused by the construction of the Jefferson East Bank Project;

NOW, THEREFORE, the USACE, GNOEC, CPRA and the LASHPO agree that the Undertaking shall be implemented in accordance with the following stipulations in order to take into account the effect of the Undertaking on historic properties.

STIPULATIONS

USACE, in coordination with LASHPO, GNOEC and CPRA shall ensure that the following measures are carried out;

I. RECORDATION TREATMENT MEASURE

A. Prior to any modification of the western span of the Lake Pontchartrain Expressway and the demolition and/or removal of any building or structure located in the southern Toll Plaza, USACE will document the last 500 feet of the western span of the Lake Ponchartrain Expressway, the concrete canopy with the original "Lake Pontchartrain Causeway" sign, the toll booth located under the canopy, the administration office building, and the police department building. USACE, in consultation with the National Park Service (NPS), will determine the level of HABS/HAER recordation required. The recordation will proceed in accordance with NPS recommendations, and be performed by, or under the direct supervision of, an individual who meets the Secretary of the Interior's Professional Qualification Standards (48 FR 44716) for history, architectural history, or historic architecture.

- i. At a minimum, the photographs will document setting, elevations and character-defining architectural features of the span, structures, and building listed in Section I.A., above.
- ii. USACE will prepare a narrative history commensurate with the significance of the Lake Pontchartrain Expressway and southern Toll Plaza. This narrative will address site specific history, significant engineering technologies and the significant associations to the State of Louisiana.
- iii. USACE will prepare eight sets of documents (including photographic prints and a CD-ROM containing the digital versions of the photographs). USACE will submit two sets to LASHPO, one set to the Jefferson Parish

ESA 10.22.09

Library, one set to the St. Tammany Parish Library, one set to the Jefferson Parish Historical Society, and one set to the GNOEC.

II. PUBLIC INTERPRETATION TREATMENT MEASURE

- A. USACE in consultation with LASHPO will erect a Louisiana Historical Marker interpreting the history of the Lake Pontchartrain Expressway and southern Toll Plaza. The marker's historic narrative will be developed by USACE based on the narrative histories developed for the Recordation Treatment Measure.
- B. USACE in consultation with LASHPO, GNOEC, and CPRA will place the marker at an appropriate location at or near the Expressway.

III. CANOPY REPLACEMENT TREATMENT MEASURE

The USACE, in consultation with GNOEC, will design and construct a new replacement canopy in a location agreed upon by USACE and GNOEC. The new canopy will span the northbound roadway and replicate the function of the original canopy including the display of the "Lake Pontchartrain Causeway" historic signage. The original sign components will be preserved prior to demolition of the original canopy and placed on the new canopy once constructed.

IV. DISPUTE RESOLUTION

- A. Should any Signatory Party object within 15 days to any plans, specifications, or actions provided for review pursuant to this Agreement, USACE will consult further with the LASHPO and Signatory Parties to seek resolution. If USACE, LASHPO and Signatory Parties determine that the objection cannot be resolved, USACE shall forward all documentation relevant to the dispute to the ACHP within 15 days after receipt of all pertinent documentation. The ACHP will either 1) provide USACE with recommendations, which USACE will take into account in reaching a final decision regarding the dispute; 2) notify USACE that it will formally comment, pursuant to the dispute; or 3) notify USACE that it will not comment. Any recommendations or comment provided by ACHP will be interpreted to pertain only to the subject matter of the dispute, and USACE's responsibility to carry out all other actions under this Agreement not subject to the dispute will remain unchanged.
- B. At any time during the implementation of the measures stipulated in this Agreement, should an objection to any measure or its manner of implementation be raised by a Signatory Party, USACE shall take the objection into account and consult as needed with the Signatory Party and LASHPO to address and resolve the objection.

V. MONITORING

- A. LASHPO may monitor any activities carried out pursuant to this Agreement, and ACHP may review any activities, if requested, USACE will cooperate with the LASHPO in carrying out such monitoring and review responsibilities, and will maintain records that document compliance with the terms of this Agreement for all elements of the undertaking covered by this Agreement.

VI. AMENDMENTS

- A. Any Signatory Party to this Agreement may request in writing that it be amended, whereupon the parties will consult in accordance with 36 CFR 800.6 (c)(7) to consider such amendment. No Amendment will be effective unless it is executed by all Signatory Parties.

VII. TERMINATION

- A. Any Signatory Party to this Agreement may terminate the Agreement by providing 30 days written notice to the other Signatory Parties, provided that the parties will consult during the period prior to the termination to seek agreement on amendments or other actions that would avoid termination.
- B. This Agreement will remain in effect from the date of execution, or until the work described herein has been completed.

VIII. DURATION

If measures specified in the previous sections have not been implemented by January 1, 2013, the USACE, LASHPO, GNOEC, CPRA and the ACHP shall review this MOA to determine whether revisions are needed. If revisions are needed, USACE, GNOEC, CPRA and the ACHP will consult with 36 CFR Part 800 to make such revisions.

IX. EFFECTIVE DATE AND IMPLEMENTATION OF MOA

This MOA shall become effective immediately upon signature by the Signatory Parties. USACE shall provide each Signatory Party with a complete copy of the MOA including all executed signature pages.

X. EXECUTION AND IMPLEMENTATION

Execution of the Memorandum of Agreement is evidence that USACE has afforded the ACHP a reasonable opportunity to comment on the Undertaking and its effects on historic properties, that USACE has taken into account the effects of the Undertaking on historic properties, and that USACE has satisfied its responsibilities under Section 106 of the National Historic Preservation Act and applicable implementing regulations.

SIGNATORIES

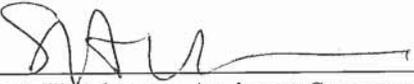
United States Army Corps of Engineers



Alvin B. Lee
Colonel, US Army
District Commander

Date: 10/26/09

Louisiana State Historic Preservation Officer



Scott Hutcheson, Assistant Secretary

Date: 10/21/09

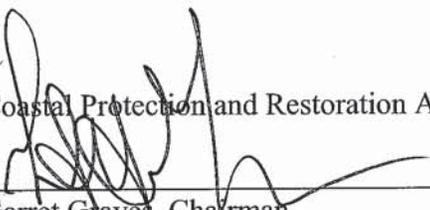
Greater New Orleans Expressway Commission



Carlton Dufrechou, General Manager

Date: 10.22.09

Coastal Protection and Restoration Authority of Louisiana



Garret Graves, Chairman

Date: 10/20/09

Attachments:

Attachment 1, List of Consulting Parties

Attachment 2, Letter from ACHP declining participation

Attachment 1: List of Consulting Parties

Mr. Scott Hutcheson
State Historic Preservation Officer
Office of Cultural Development
Department of Culture, Recreation, and Tourism
P.O. Box 44247
Baton Rouge, Louisiana 70804

Mr. Reid Nelson, Director
Office of Federal Agency Programs
Advisory Council on Historic Preservation
Old Post Office
1100 Pennsylvania Avenue, NW, Suite 809
Washington, D.C. 20004

Mr. Frank Levy, Chairman
Greater New Orleans Expressway Commission
P.O. Box 7656
Metairie, LA 70010

Mr. Carlton Dufrechou, General Manager
Greater New Orleans Expressway Commission
P.O. Box 7656
Metairie, LA 70010

Mr. Robert J. Lambert, Director of Transition and Hurricane
Greater New Orleans Expressway Commission
P.O. Box 7656
Metairie, LA 70010

Mr. Garret Graves, Chairman
Coastal Protection and Restoration Authority of Louisiana
1051 North 3rd Street, Suite 138
Baton Rouge, LA 70802

Mr. Aaron F. Broussard, Parish President
1221 Elmwood Park Blvd., Suite 1002
Jefferson, LA 70123

Mr. Thomas J. Capella, Chairman
1221 Elmwood Park Blvd., 10th floor
Jefferson, LA 70123-2337

Mr. John Young, Vice Chairman
1221 Elmwood Park Blvd., 10th floor
Jefferson, LA 70123-2337

Mr. Kevin Davis, Parish President
St. Tammany Parish Council
21490 Koop Drive
Mandeville, LA 70471

Mr. Fran Campbell, Executive Director
East Jefferson Levee District
203 Plauche Court
Harahan, LA 70123

Oscola Clayton M. Sylestine, Principal Chief
Alabama Coushatta Tribe of Texas
571 State Park Rd. 56
Livingston, TX 77351

LaRue Parker, Chairperson
Caddo Nation of Oklahoma
P.O. Box 487
Binger, OK 73009

Lonnie L. Martin, Chairman
Chitimacha Tribe of Louisiana
P.O. Box 661
Charenton, LA 70523

Gregory E. Pyle, Chief
Choctaw Nation of Oklahoma
P.O. Box Drawer 1210
Durant, OK 74701

Kevin Sickey, Chief
Coushatta Tribe of Louisiana
P.O. Box 818
Elton, LA 70532

Christine Norris, Principal Chief
Jena Band of the Choctaw Indians
P.O. Box 14
Jena, LA 71342

Beasley Denson, Chief
Mississippi Band of Choctaw Indians
P.O. Box 6257
Choctaw, MS 39350

John Berry, Chairman
Quapaw Tribe of Oklahoma
P.O. Box 765
Quapaw, OK 74363

Enoch Kelley Haney, Principal Chief
Seminole Nation of Oklahoma
Wewoka Agency
P.O. Box 1498
Wewoka, OK 74884

Mitchell Cypress, Chairman
Seminole Tribe of Florida
6300 Stirling Road
Hollywood, FL 33024

Earl J. Barbry, Sr., Chairman
Tunica-Biloxi Tribe of Louisiana
P.O. Box 1589
Marksville, LA 71351

Ms. Caroline Bennett, Executive Director
The Foundation for Historical Louisiana
P.O. Box 908
Baton Rouge, LA 70821

Mr. Walter Gallas, Director
National Trust for Historic Preservation
New Orleans Field Office
923 Tchoupitoulas Street
New Orleans, LA 70130

Dr. Mary Grace Curry, Commission Chairlady
Jefferson Parish Historical Commission
3404 Tolmas Drive
Metairie, LA 70002-3818

Ms. Patricia Gay, Executive Director
Preservation Resource Center of New Orleans
923 Tchoupitoulas Street
New Orleans, LA 70130

Ms. Sally K. Reeves, President
Louisiana Historical Society
5801 St. Charles Avenue
New Orleans, LA 7011

Ms. Stacy Jamieson, Executive Director
Louisiana Trust for Historic Preservation
P.O. Box 1587
Baton Rouge, LA 70821

Ms. Susan Lloyd McClamroch
Louisiana Landmarks Society
Pitot House
1440 Moss Street
New Orleans, LA

Attachment 2, Letter from ACHP declining participation:



Preserving America's Heritage

August 10, 2009

Ms. Joan M. Exnicios
Chief, Environmental Planning and Compliance Branch
New Orleans District, Corps of Engineers
P.O. Box 60267
New Orleans, LA 70160-0267

**Ref: Proposed Construction of T-wall at Jefferson East Bank (Lake Pontchartrain and Vicinity Project)
Jefferson Parish, Louisiana**

Dear Ms. Exnicios:

On July 21, 2009, the Advisory Council on Historic Preservation (ACHP) received your notification and supporting documentation regarding the adverse effects of the referenced project on properties listed on and eligible for listing in the National Register of Historic Places. Based upon the information you provided, we have concluded that Appendix A, *Criteria for Council Involvement in Reviewing Individual Section 106 Cases*, of our regulations, "Protection of Historic Properties" (36 CFR Part 800), does not apply to this undertaking. Accordingly, we do not believe that our participation in the consultation to resolve adverse effects is needed. However, if we receive a request for participation from the State Historic Preservation Officer (SHPO), Tribal Historic Preservation Officer, affected Indian tribe, a consulting party, or other party, we may reconsider this decision. Additionally, should circumstances change, and you determine that our participation is needed to conclude the consultation process, please notify us.

Pursuant to 36 CFR §800.6(b)(1)(iv), you will need to file the final Memorandum of Agreement (MOA), developed in consultation with the Louisiana SHPO and any other consulting parties, and related documentation with the ACHP at the conclusion of the consultation process. The filing of the MOA and supporting documentation with the ACHP is required in order to complete the requirements of Section 106 of the National Historic Preservation Act.

Thank you for providing us with the opportunity to review this undertaking. Also, the ACHP is moving towards transmitting correspondence electronically. In order for us to correspond with you electronically, **please include an email address in all future correspondence.** If you have any questions or need assistance, feel free to contact Tom McCulloch at 202-606-8554, or via email at tmcculloch@achp.gov.

Sincerely,

Raymond V. Wallace
Historic Preservation Technician
Federal Property Management Section
Office of Federal Agency Programs

ADVISORY COUNCIL ON HISTORIC PRESERVATION
1100 Pennsylvania Avenue NW, Suite 803 Washington, DC 20004
Phone: 202-606-8503 | Fax: 202-606-8647 | achp@achp.gov | www.achp.gov



REPLY TO
ATTENTION OF:

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

October 16, 2009

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

Mr. Garret Graves, Chairman
Coastal Protection and Restoration Authority of Louisiana
1051 North 3rd Street, Suite 138
Baton Rouge, LA 70802

RE: Request to Continue Consultation Under Section 106 of the National Historic Preservation Act for Lake Pontchartrain and Vicinity Project, Jefferson East Bank, Hurricane and Storm Damage Risk Reduction System (HSDRRS), Individual Environmental Report (IER) #3, Jefferson Parish, Louisiana.

Dear Mr. Graves:

The US Army Corps of Engineers, Mississippi Valley Division, New Orleans District (CEMVN), in consultation with the Greater New Orleans Expressway Commission, Coastal Protection and Restoration Authority of Louisiana, and the Louisiana State Historic Preservation Office, has prepared the enclosed Memorandum of Agreement (MOA) regarding the Lake Pontchartrain Expressway and Southern Toll Plaza. This agreement details the stipulations the CEMVN will follow in order to mitigate for adverse effects caused by proposed improvements to the Jefferson East Bank project, HSDRRS, Jefferson Parish, Louisiana.

We request that you review and sign all four enclosed original copies of the MOA, make a photocopy for your files, and the return all four original signed copies to our office. The CEMVN will provide you with one original copy of the signed agreement when all signatures

have been obtained. If you have any questions and/or concerns, please contact Mr. Michael Swanda of my staff at (504) 862-2036.

Sincerely,

A handwritten signature in black ink that reads "Joan M. Exnicios". The signature is written in a cursive style with a large initial "J" and "E".

Joan M. Exnicios
Chief, Environmental Planning
and Compliance Branch

Enclosure