Modification to the
1985 Clean Water Act Section 404(c)
Final Determination for Bayou aux Carpes

I. Introduction

Section 404(c) of the Clean Water Act (CWA), 33 U.S.C. §1344(c), authorizes the Environmental Protection Agency (EPA) to restrict or prohibit the use of a wetland area as a disposal site for dredged or fill material if the discharge will have unacceptable adverse effects on municipal water supplies, shellfish beds and fishery areas (including spawning and breeding areas), wildlife, or recreational areas. The regulations establishing procedures to be used by EPA in applying this provision are found at 40 CFR Part 231. In 1984 and 1985 these procedures were employed by EPA when the existing Bayou aux Carpes CWA Section 404(c) designation was made. Key milestones during that process included a hearing and opportunity for the public to provide written comments, a Recommended Determination proposed by EPA Region 6, and a Final Determination issued by EPA Headquarters and noticed in the Federal Register on November 15, 1985 (50 Fed. Reg. 47267).

EPA proceeded with a similar process for the review of the Army Corps of Engineers' request for a modification of the 404(c) designation for the Bayou aux Carpes area. On November 4, 2008, the New Orleans District of the Corps requested that EPA modify the Bayou aux Carpes CWA Section 404(c) designation to accommodate discharges to the Bayou aux Carpes wetlands associated with the proposed enhanced flood protection system in Jefferson Parish, Louisiana. The proposed discharge for construction of the flood wall would impact no more than 9.6 acres of wetlands within the Bayou aux Carpes area. A notice of Proposed Determination was published in the Federal Register on January 14, 2009, and a public hearing was held in New Orleans on February 11, 2009. Public comments were accepted through February 23, 2009. Based on the record developed during the public comment period, the Regional Administrator[1] makes a decision to either withdraw the Proposed Determination, or prepare a Recommended Determination in accordance with the regulations. On April 2, 2009, Acting EPA Regional Administrator (Region 6) Lawrence E. Starfield signed the Recommended Determination (RD) for modification of the Bayou aux Carpes 404(c) action. The RD and associated documents were transmitted to EPA's Office of Water (OW) for Final Determination action by the Assistant Administrator for Water (AAOW).[2] Upon receipt of the RD and the administrative record, the AAOW makes a Final Determination (FD) affirming, modifying or rescinding the recommendation.

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[1] Lawrence E. Starfield is the Deputy Regional Administrator for the U.S. Environmental Protection Agency, Region 6, in Dallas, Texas, and is currently acting as Regional Administrator.

[2] Signature authority on issuance of Section 404(c) Final Determinations has been delegated by the Administrator to the Assistant Administrator for Water.

II Background

A. Project History: Bayou aux Carpes CWA Section 404(c)

1985 Bayou aux Carpes CWA Section 404(c) Determination

On October 16, 1985, the EPA Assistant Administrator for External Affairs[3] issued a FD pursuant to Section 404(c) of the CWA restricting the discharge of dredged or fill material in the Bayou aux Carpes site, Jefferson Parish, Louisiana based on findings that the discharges of dredged or fill material into that site would have unacceptable adverse effects on shellfish beds, fishery areas (including spawning and breeding areas), wildlife, and recreational areas. EPA published the FD prohibiting, with three exceptions, future discharges of dredged or fill material to wetlands into the Bayou aux Carpes site at 50 Fed. Reg. 47267 (November 15, 1985). The first exception provided for discharges associated with the completion of the U.S. Army Corps of Engineers' (Corps) modified design for the Harvey Canal – Bayou Barataria Levee Project. The second exception provided for discharges associated with routine operation and maintenance of the Southern Natural Gas Pipeline. The third exception addressed discharges associated with EPA approved habitat enhancement activities. The CWA Section 404(c) action was based upon a thorough record of investigations, including field surveys, remote sensing, and other technical analyses conducted by three EPA facilities, the U.S. Fish and Wildlife Service (USFWS), the National Park Service (NPS), and the Louisiana State University (LSU) Center for Wetland Resources. These study reports and additional documentation supporting the designation may be found at: http://www.nolaenvironmental.gov/nola_public data/projects/usace levee/docs/original/BayouAuxCarpes404c1985RecDeterm.pdf.

1992 Modification to Bayou aux Carpes CWA Section 404(c) Action

After completion of the FD, several requests for modifications were reviewed by EPA.[4] The one request that was granted was for an emergency exception to bury an existing pipeline deeper via horizontal drilling techniques as a response to unstable soil conditions and a leaking pipeline. Shell Pipe Line Corporation (Shell) petitioned EPA for reconsideration of exceptions identified in EPA's 1985 FD concerning the Bayou aux

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[3] In 1985 the signature authority for CWA Section 404(c) had been delegated to the Assistant Administrator for External Affairs. This responsibility has been subsequently delegated to the Assistant Administrator for Water.

[4] In 1988 the Corps requested an exception to allow construction of the West Bank Hurricane Protection Levee such that the toe of the V-shaped levee would extend into the 404(c) protected area. That request was based only on potential cost savings, did not fall within the bounds of the exceptions set out in the 404(c) Final Determination, and was therefore considered to be a restricted action. In response, the Corps modified the levee alignment and constructed the levee without discharges into the Bayou aux Carpes CWA Section 404(c) site.

Carpes site on December 18, 1991.[5] Shell requested a modification to the FD in order to (1) temporarily discharge dredged or fill material associated with performing emergency work to relocate an existing below ground pipeline located in the restricted Section 404(c) area; and (2) except from the Bayou aux Carpes Section 404(c) restriction future discharges associated with routine operation and maintenance of this pipeline. On February 28, 1992, Shell's request for modification was approved by the AAOW on the basis that relocating the pipeline to non-wetlands was infeasible from the perspectives of engineering alternatives and public safety, the work would have only minimal and temporary impacts on the wetlands, and the work was essentially the same as that envisioned under the second exception granted in the 1985 FD (57 Fed. Reg. 3757).

Current Modification to Bayou aux Carpes
CWA Section 404(c) Action Request

As a result of the residential, commercial, and industrial damages caused by Hurricanes Katrina and Rita in 2005, Congress directed the Corps of Engineers (Corps) to enhance the existing Lake Pontchartrain and Vicinity Hurricane Protection project and the West Bank and Vicinity Hurricane Protection project to the 100-year level of protection, as determined by the Federal Emergency Management Agency. The overall Corps project to provide protection to southern Louisiana involves two large levee systems, the West Bank and Vicinity Hurricane Protection Project and the Lake Pontchartrain and Vicinity Hurricane Protection Project, and approximately 350 miles of earthen levees and floodwalls throughout five parishes in the New Orleans metropolitan area. One section of this much larger project is within the Bayou aux Carpes area. The Corps' proposal for providing increased hurricane and storm damage risk reduction for this area does not fall within one of the three exceptions provided for in the 1985 Section 404(c) Final Determination. Since the construction of the Corps' project would result in discharges of dredged or fill material within the Bayou aux Carpes site, a request for modification of EPA's FD was submitted for consideration and final decision.

On November 4, 2008, the New Orleans District of the Corps requested that EPA modify the Bayou aux Carpes CWA Section 404(c) designation to accommodate discharges to the Bayou aux Carpes wetlands associated with the proposed enhanced flood protection system in Jefferson Parish, Louisiana. Region 6 completed a RD on April, 2, 2009, and transmitted the RD and associated documents to EPA's OW for review and final decision pursuant to CWA Section 404(c).

B. Project Description

Prior to the November 2008 request for the Section 404(c) modification, the Corps' preferred alternative initially included a 3,000 foot long levee and then a 3,000 foot floodwall, bisecting the Bayou aux Carpes CWA Section 404(c) site. However, early in the planning process, EPA Region 6 notified the Corps that this alternative bisecting the site would present irreparable environmental impacts and would most likely result in the loss of over 600 acres of unique flotant marsh wetlands within the Bayou aux Carpes site.

[5] Additional information supporting Shell's request for modification was received by EPA on January 17, 1992 and January 21, 1992.

EPA Region 6, in coordination with the National Park Service, suggested a conceptual alternative, which the Corps subsequently designed. This alternative is now the current proposed project alternative, also known as the West Closure Complex. The floodwall is located within the Bayou aux Carpes CWA Section 404(c) site on an area comprised of bottomland hardwood and cypress-tupelo habitat that has formed on top of the western bank of the Gulf Intracoastal Waterway (GIWW), established when the waterway was originally created. The bank is low and undulating and shows signs of downed and damaged trees as a result of recent hurricane winds. The Corps plans to construct an improved storm surge barrier system and tie into a new array of flood gates and pumping stations crossing the GIWW as part of the aforementioned 100 year flood protection plan. The significant structural element that will be within the Bayou aux Carpes site is a floodwall that would be constructed on the previously impacted GIWW spoil bank (Fig. 1).

Figure 1. West Closure Complex features on the Bayou aux Carpes site and vicinity. Note 4,200 foot T-wall.

Once the West Closure Complex alternative became the preferred design, EPA requested the Corps to consider any siting or design options that could reduce the environmental impacts further. Alternatives which would have built the floodwall within the same alignment but closer to the GIWW or completely within the water outside the boundary of the Bayou aux Carpes CWA Section 404(c) site were considered. A number of environmental organizations also focused on this issue. After considerable evaluation, the Corps found this was not a practicable alternative that would meet the project purpose based on a determination that this alternative design and siting posed significant

navigational safety issues and would not meet the cost, social, and engineering risk and reliability criteria. Furthermore, the US Coast Guard agrees with the Corps' assessment that constructing a floodwall in the waterway would increase hazards to navigation and the possibility of a major marine accident. In a letter to the EPA, dated February 23, 2009, the US Coast Guard stated that it objects to the construction of any segment of the floodwall in the GIWW channel based on these navigation hazard concerns. After careful review of the Corps' analysis on these alternative designs and siting, EPA accepted those conclusions.

The Corps has incorporated into the West Closure Complex alternative a number of innovative designs and construction techniques to reduce the wetland impacts. The structure proposed in the Bayou aux Carpes CWA Section 404(c) area would be constructed as a "T-wall" style floodwall in lieu of an earthen levee in order to minimize the footprint (Fig. 2.). A berm to protect the floodwall from barge collisions would be constructed on the water side and would incorporate a maintenance access road. This configuration would contain impacts within a maximum 100 foot width. The floodwall would be built from the water side to reduce construction impacts. Further, the Corps has located the gates and pumps that would span the GIWW as far north as practical to further reduce the length of the structure along the boundary of the Bayou aux Carpes CWA Section 404(c) site. These factors have resulted in a maximum corridor for the floodwall of 4,200 feet by 100 feet.

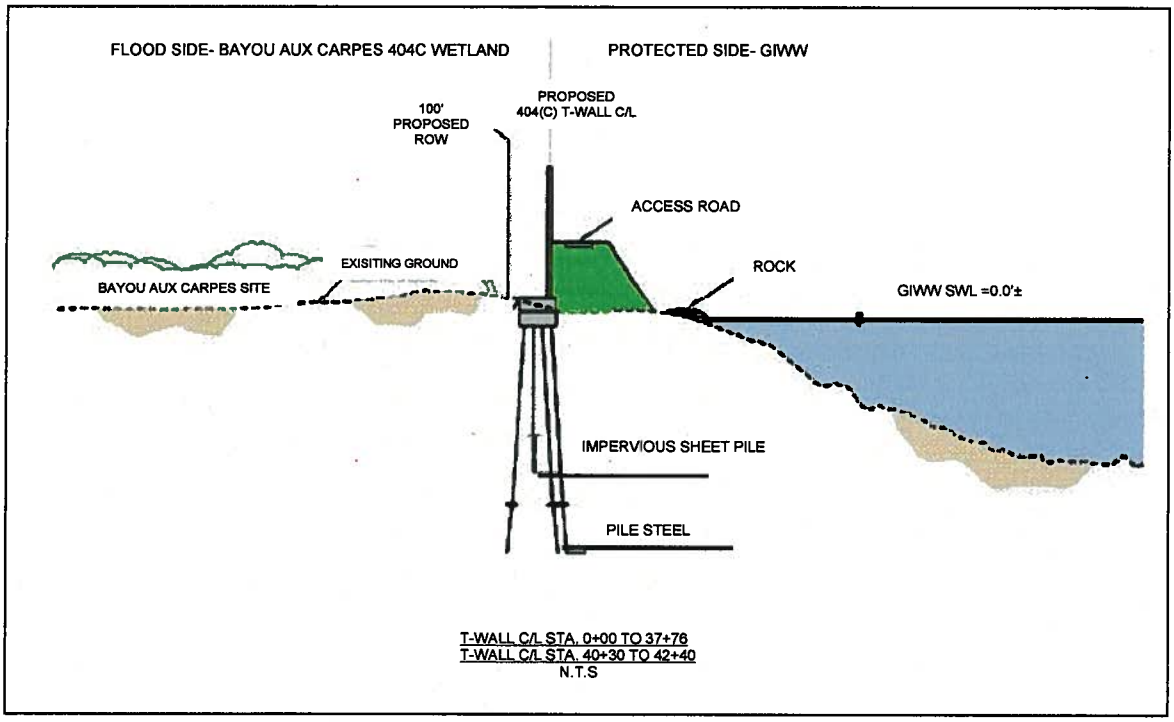

Figure 2. Cross-section of the proposed T-Wall design.

The T-wall would tie into the proposed flow control structure at the end of the Old Estelle Outfall Canal to the north and the closure and pump station complex that would cross the

GIWW to the south. The T-wall is designed to an elevation of +16.0 ft (NAVD 88 2004.65). A continuous steel sheet pile wall will be provided beneath the base slab for seepage cutoff purposes.

Construction of the proposed action would impact no more than 9.6 acres within the Bayou aux Carpes 404(c) boundary. The location of the wall away from the waterway's edge increases the safety of the wall against potential catastrophic vessel impacts by absorbing the energy of the impact in the embankment, thus stopping the vessel before it contacts the wall. Placement of the protected earthen berm outside the channel results in no constriction of the waterway as a storm water evacuation route. The placement of the wall within the 100 ft by 4,200 ft corridor on the previously impacted area of the Bayou aux Carpes 404(c) area, along with the commitment by the Corps to provide augmentation and mitigation measures to enhance the hydrology and habitat of the Bayou aux Carpes 404(c) area to offset any potential impacts due to construction, provides the most practical approach from an environmental perspective while ensuring the 100-yr level of risk reduction is achieved.

C. EPA Headquarters Action

The key elements of a Section 404(c) process have been followed as EPA considered this modification request. These include a hearing and opportunity for the public to provide written comments, preparation and submittal of a RD proposed by EPA Region 6 to EPA Headquarters, a FD (this document) issued by EPA Headquarters and subsequent notice in the Federal Register of the final decision.

On January 14, 2009, a notice for the proposed modification of the Bayou aux Carpes Section 404(c) was published in the Federal Register. A public hearing, which EPA OW representatives attended, was held in New Orleans on February 11, 2009. Public comments were accepted through February 23, 2009. On February 10, 2009, representatives from the EPA OW and EPA Region 6, accompanied by personnel from the National Park Service, US Geological Service, and the Fish and Wildlife Service, conducted a site visit of the Bayou aux Carpes area (Photos 1 and 2). On April 2, 2009, Acting Regional Administrator for Region 6, Lawrence E. Starfield, signed the RD for modification of the Bayou aux Carpes 404(c) action and the RD was transmitted to EPA's OW for FD action by the AAOW. Upon receipt of the RD and the administrative record, the AAOW makes a FD affirming, modifying or rescinding the recommendation. During this review period the OW provided an opportunity to the Corps to meet with EPA officials for further consultation.

III. Site Characterization

The Bayou aux Carpes site (Fig. 3) lies in the upper Barataria basin within the Mississippi deltaic plain, an area experiencing some of the highest historic rates of coastal wetland loss in the country. Coastal wetland loss has been widespread in

Photos 1 and 2. Bayou aux Carpes February 10, 2009 field visit EPA Office of Water, EPA Region 6, National Park Service, US Geological Service and US Fish and Wildlife Service.

Louisiana over the past half century averaging approximately 100 km^2 per year during the 1960's through the 1980's, but decreasing to approximately 62 km^2 per year between 1990 and 2000. An additional loss of approximately 1300 km^2 is anticipated by 2050.[6] Although this region experienced a spike in wetland loss and degradation as a result of hurricanes over the last few years, the Bayou aux Carpes site has weathered the storms and other natural and human-induced forces. Today the approximately 3,000 acres of unique and productive wetlands of the Bayou aux Carpes CWA Section 404(c) site are an important regional and national asset providing ecological, flood storage, and water quality benefits. The Bayou aux Carpes CWA Section 404(c) site is bounded on the north by the east–west Old Estelle Pumping Station Outfall Canal, on the east by Bayou Barataria (Gulf Intracoastal Waterway, or GIWW), on the south by Bayou Barataria and Bayou des Familles, and on the west by State Highway 3134 and the "V-Levee." Immediately across State Highway 3134 to the west of the site is the Barataria Preserve unit of Jean Lafitte National Historical Park and Preserve (Fig. 4).

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[6] Evers, D. Elaine, Erick M. Swenson, Lee Stanton, and Charles E. Sasser. *Distribution and Ecological Characteristics of the Marshes in the Eastern Mississippi River Delta Plain, Louisiana.* June 2007. Louisiana State University, Coastal Ecology Institute, Baton Rouge. Prepared for U.S. Environmental Protection Agency, Dallas, Texas.

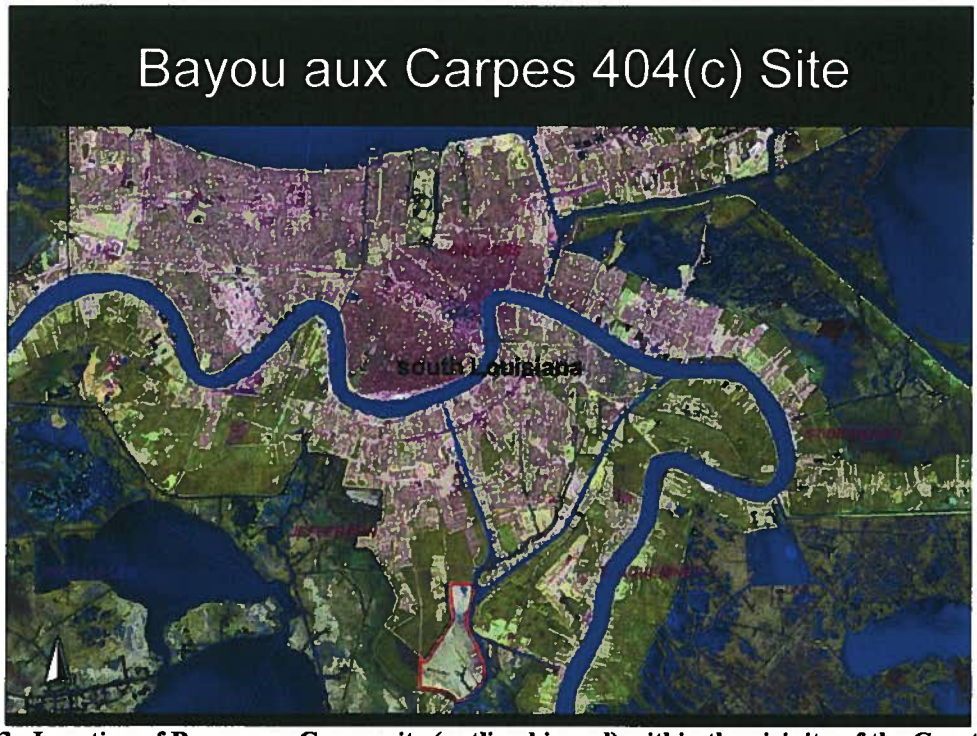

Figure 3. Location of Bayou aux Carpes site (outlined in red) within the vicinity of the Greater New Orleans Metro area, Louisiana.

Today, the habitat of Bayou aux Carpes looks much the same as it did at the time of the 1985 Section 404(c) action. The Bayou aux Carpes site is a diverse estuarine ecosystem consisting of a mosaic of habitats, including forested wetland, shrub wetland, cypress-tupelo swamp, marsh, and open water. From an ecological perspective, the Bayou aux Carpes CWA Section 404(c) site exhibits some particularly notable habitat features. Within the forested swamps, naturally regenerating cypress trees may be found, a situation all too uncommon along the Louisiana coast where natural and human-induced alterations have resulted in conditions limiting natural regeneration. In addition to the forested wetland systems, the site also contains flotant (or floating) marsh, an ecologically valuable and unique wetland type. This type of wetland has also become increasingly rare because of major losses in the floating marshes that historically covered extensive areas, particularly in the Mississippi River Deltaic Plain.

The Bayou aux Carpes CWA Section 404(c) site also incorporates valuable coastal resources and provides a wide array of benefits to the citizens of this area. For example, the Bayou aux Carpes CWA Section 404(c) wetlands provide floodwater storage and water quality benefits. During the 1984 -1985 studies, the relatively flat topography was found to enhance the capacity of the area to detain surface waters and slow the release of water downstream. Most of the site is now federally owned and the CWA Section 404(c) designation continues to apply to all wetlands within the site, regardless of ownership. The most recent federal action was finalized on March 30, 2009, as the President signed the Omnibus Public Land Management Act of 2009, which added the federally owned portion of the CWA Section 404(c) site to the Barataria Preserve Unit of Jean Lafitte National Historical Park and Preserve.

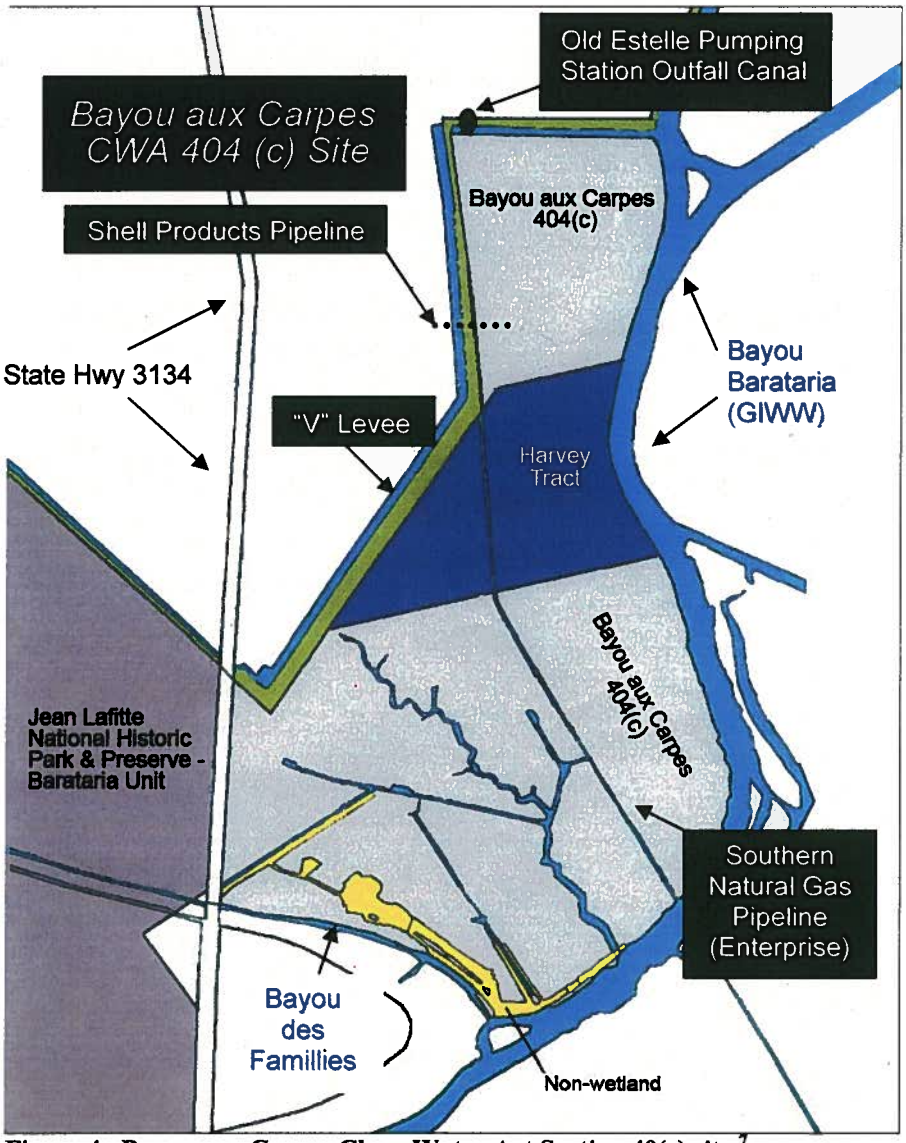

Figure 4. Bayou aux Carpes Clean Water Act Section 40(c) site.[7]

During the field studies in 1984 and 1985, at least 70 wildlife species, at least 23 species of freshwater fish, and 27 taxa of macroinvertebrates were observed.[8] The field data showed the area to be seasonally brackish, supporting species that can tolerate both fresh and brackish salinities. The Bayou aux Carpes drainage area and associated habitats provide valuable spawning, feeding, and nursery habitat for recreationally-important freshwater and estuarine fish. The USFWS 1985 habitat analysis determined that the bottomland hardwood and forested swamp habitat in this drainage area provided valuable

[7] On March 30, 2009, the federally owned portion of the CWA Section 404(c) site was added to the Barataria Preserve Unit of Jean Lafitte National Historical Park and Preserve.

[8] USFWS. Fish and Wildlife Resources of the Bayou aux Carpes Drainage Area, Jefferson Parish, Louisiana. June 1985. Lafayette, Louisiana.

habitat and the 2008 field studies revealed that the habitat continues to be significant for fish and wildlife.

IV. Adverse Environmental Impacts

A. Adverse Impacts to Wetlands

The proposed floodwall would impact no more than 9.6 acres within a 100 foot width from the GIWW toward the interior of the Bayou aux Carpes CWA Section 404(c) site. A maximum of 7.2 acres of cypress-tupelo swamp and 2.4 acres of bottomland hardwood wetlands within the site would be directly and permanently impacted by mechanical clearing and grubbing prior to construction of the new floodwall. Hydrologic impacts to the CWA Section 404(c) site from the floodwall are expected to be minimal. No additional indirect effects are anticipated.

The planning, engineering, and interagency review process has resulted in the development of this storm damage risk reduction alternative, the West Closure Complex alternative, which has avoided and minimized impacts to the Bayou aux Carpes CWA Section 404(c) area to the maximum extent practicable. However, implementation of this alternative will still result in unavoidable impacts, or discharges, to wetlands in the restricted site. Loss of this habitat value is not expected to jeopardize the ecological integrity of Bayou aux Carpes wetland site and the loss of habitat will be fully compensated, as described below.

V. Mitigation and Enhancement Features

Early in the planning process, EPA advised the Corps that unavoidable wetland impacts to the Bayou aux Carpes CWA Section 404(c) site must be fully and appropriately mitigated and compensated for consistent with the regulations. EPA Region 6 staff has provided guidance to the Corps on avoiding and minimizing the impacts to the Bayou aux Carpes CWA Section 404(c) site from the West Closure Complex alternative. In addition, Region 6 is working with an interagency team, including the Corps, to evaluate an array of additional features that might provide environmentally beneficial hydrologic and wetland effects to this area. These enhancement features are being evaluated and considered in order to add an extra measure of environmental benefits in light of the unique status of the Bayou aux Carpes site.

Evaluation of these features continues and agreement has been reached with the Corps and the interagency review team regarding the minimum amount of mitigation required to offset the wetland impacts. The Corps has also agreed to fund and implement additional ecological enhancement features, if the results of ongoing investigations indicate that they will contribute environmental benefits. An adaptive management approach will be utilized to monitor changes over time, evaluate the observed results with respect to intended objectives, and apply any changes needed to achieve the desired outcome.

Mitigation procedures and requirements regarding impacts within the Bayou aux Carpes 404(c) area are being coordinated with the EPA, USFWS, USGS, NOAA Fisheries,

National Park Service, and other State representatives on the interagency team. Although a final mitigation plan has yet to be finalized, the District Commander for the New Orleans District in a letter to the Regional Administrator for EPA Region 6 dated November 4, 2008, (Appendix 1) committed to mitigate for all unavoidable adverse impacts to the Bayou aux Carpes CWA Section 404(c) area within the Bayou aux Carpes CWA Section 404(c) area and/or Jean Lafitte National Historical Park and Preserve, as per an agreement with EPA and the resource agencies. Furthermore, the Corps committed that mitigation projects will be designed and implemented concurrently with the design and construction of the project. The District Commander in that letter also stated that "full mitigation within this unique environment may require mitigation in addition to acres indicated by the Wetland Value Assessment." Based on the minimum mitigation that the Corps has committed to and is required to perform pursuant to Section 2036 of the Water Resources Development Act of 2007,[9] as well as on the Corps' commitment to provide additional mitigation and augmentation features EPA believes that any discharges of dredged or fill material associated with the Corps' West Closure Complex alternative would not result in unacceptable adverse effects to the Bayou aux Carpes wetland resources. Additionally, EPA expects the final mitigation plan to be adequate to offset unavoidable impacts consistent with mitigation regulations (33 CFR 332) with the goal to ensure no net loss of either wetland acres or functions. EPA must agree with the proposed mitigation plan prior to the mitigation plan being finalized. In addition to mitigation, project augmentation measures will be considered by the interagency team to enhance the wetland functions and values of the site and provide added compensation for any unavoidable impacts.

VI. Final Determination

A. Findings and Conclusion

EPA has carefully reviewed the proposal and the information submitted by EPA Region 6, the New Orleans District of the U.S. Army Corps of Engineers, comments received pursuant to the notice published in the Federal Register on January 14, 2009, and public hearing held in New Orleans on February 11, 2009, the alternative NEPA documents for the proposed project, and the existing Bayou aux Carpes administrative record. Based on EPA's review of the Corps' recommendations regarding the relative flood risk reduction benefits, social and economic costs, as well as the hydrologic, engineering, and navigation constraints, EPA concludes the West Closure Complex alternative has the potential to accomplish the Corps' flood control, navigation, timing, and engineering objectives while avoiding and minimizing the impacts to the Bayou aux Carpes CWA Section 404(c) area to the maximum degree possible. In reaching a decision, EPA considered whether the discharges of dredged or fill material associated with the Corps' West Closure Complex would result in unacceptable adverse effects on the shellfish beds, fishery areas (including spawning and breeding), wildlife, and recreational areas of the

[9] Section 2036 "Mitigation for Fish and Wildlife and Wetlands Losses" of the Water Resources Development Act of 2007 requires the Corps to mitigate losses to flood damage reduction capabilities and fish and wildlife resulting from a water resources project, the Corps is required to ensure that the mitigation plan for each water resources project complies with the mitigation standards and policies established pursuant to the regulatory programs administered by the Corps.

Bayou aux Carpes Section 404(c) area. EPA concludes that the discharges of dredged or fill material associated with the West Closure Complex alternative would not result in unacceptable adverse effects to the Bayou aux Carpes Section 404(c) wetland resources.

The West Closure Complex project sited on the Bayou aux Carpes area is a part of a much larger project with the intent to reduce risks to the 286,000 people living on the west bank of the Mississippi River and to infrastructure supporting the greater New Orleans area by building a more resilient and reliable storm damage and risk reduction system, as directed by Congress. In an effort to reconcile the potentially conflicting goals of increased flood protection and ecological protection, the Corps and EPA worked closely together and with other federal partners, State and local agencies, and many stakeholders in an effort to understand fully the possibilities for accommodating these serious needs in an environmentally sensitive manner. EPA agrees with Corps' conclusion that there is no reasonable and less environmentally damaging practicable structural alternative for achieving the Congressional directive of levee enhancement than to locate a sector gate adjacent to the Bayou aux Carpes CWA Section 404(c) site.

In conclusion, EPA believes that compelling circumstances justify a modification of the Bayou aux Carpes CWA Section 404(c) designation, that there are no less environmentally damaging practicable alternatives that would adequately address those circumstances, and that all feasible means of minimizing adverse wetland effects to the Bayou aux Carpes site will be implemented, and any discharges of dredged or fill material associated with the Corps' West Closure Complex would not result in unacceptable adverse effects to the Bayou aux Carpes section 404(c) wetland resources. Therefore, EPA is modifying the 1985 Bayou aux Carpes CWA Final Determination, with specific conditions on the modification to allow for discharges associated with construction of the West Closure Complex alternative not to exceed 9.6 acres of impact on the Bayou aux Carpes 404(c) site as described in the Corps of Engineers' November 4, 2008, request for Section 404(c) modification. EPA believes that this FD for modification achieves a balance between the national interest in reducing overwhelming flood risks to the people and critical infrastructure of southern Louisiana while avoiding and minimizing adverse effects to the ecologically significant Bayou aux Carpes CWA Section 404(c) site to the maximum extent practicable. EPA has a long record of protecting these wetlands, dating back to the early 1970's and does not believe that this modification, coupled with EPA approved mitigation and site augmentation features, will result in significant or unacceptable adverse effects to the Bayou aux Carpes CWA Section 404(c) wetland resources. The projected construction impacts will be limited in time and area, the unavoidable impacts will be appropriately mitigated, additional environmental augmentation features will be developed and implemented, and the site will be monitored and managed for any adverse changes for the life of the Corps project.

B. Modification and Conditions

The October 16, 1985, Bayou aux Carpes Final Determination is hereby modified, subject to conditions specified below, by adding the following: The US Army Corps of Engineers may discharge dredged or fill material for the purpose of constructing the West Closure Complex alternative, as described by Colonel Alvin B. Lee, District Commander

for the New Orleans District, in the November 4, 2008, letter requesting modification of the 1985 Bayou aux Carpes 404(c) FD. In this letter (Appendix 1), Colonel Lee requested modification of the 404(c) designation of the site to allow for the construction of a 4,200 foot floodwall and earthen berm within a 100 ft by 4,200 ft corridor along the eastern boundary of the Bayou aux Carpes 404(c) site, Jefferson Parish, Louisiana.

As stated above, this modification is subject to the specific conditions that EPA found were necessary in order for the Agency to grant this modification. The conditions are consistent with EPA and Corps regulations for mitigation and must be implemented in order for any discharges of dredged or fill material to comply with the terms of the 1985 Bayou aux Carpes 404(c) Final Determination. Not-with-standing the fact that the conditions contained in the Final Determination are binding requirements on the Corps, in order to demonstrate the high level of inter-agency cooperation and commitment that compensatory mitigation projects will be provided and maintained, a letter agreeing to the conditions below must be provided by the Corps to EPA (e.g., a formal, documented commitment from a government agency or public authority) (33 CFR 332.3 (n)), as soon as possible and in any event prior to any construction activities authorized by this Final Determination modification. The District Commander for the New Orleans Corps District must provide in writing to EPA AAOW a commitment to plan, design, ensure full funding, implement and monitor all mitigation, augmentation and monitoring measures that are conditions on which this modification was based to the satisfaction of EPA. EPA recognizes that full funding of the mitigation, augmentation and monitoring measures is subject to the availability of appropriated funds, however the District Commander for the New Orleans Corps District would agree to request through the Corps' budget process the funding that is necessary to fully implement and monitor the mitigation, augmentation and monitoring measures as detailed below.

As set forth in this modification, this action is reflective of a unique set of circumstances. The modification granted today does not have any bearing on any other CWA Section 404(c) designations or modification requests. Each CWA Section 404(c) designation represents a unique situation that responds to a specific set of parameters unlike any other.

i. Project Design and Construction

1. During final project design, the New Orleans District of the Corps (Corps) shall utilize all feasible engineering and construction practices to reduce impacts to the Bayou aux Carpes CWA Section 404(c) wetlands.[10]

2. During project construction, the Corps shall comply with the conservation recommendations as specified in the "Fish and Wildlife Coordination

[10] This commitment was stated in a November 4, 2008, request for Section 404(c) modification letter to Mr. Lawrence E. Starfield, Deputy Regional Administrator EPA Region 6 from Colonel Alvin B. Lee, District Commander for the New Orleans District for the US Army Corps of Engineers (Appendix 1). Note: enclosed documents referenced in this letter are not attached in Appendix 1, but can be found in EPA Region 6 Recommended Determination dated April 2, 2009.

Act Report, Individual Environmental Report (IER) 12, Harvey to Algiers" (February 18, 2009), or as they may be amended by the USFWS, Ecological Service, Lafayette.

ii. Mitigation

1. The New Orleans District of the Corps shall ensure full funding and implementation of mitigation measures to compensate for the unavoidable adverse impacts of the project. EPA will make the final determination as to whether compensation is adequate, appropriate, and satisfactorily implemented in a timely manner.

2. The New Orleans District of the Corps shall obtain written approval from EPA Region 6, after consulting with the Greater New Orleans Hurricane and Storm Damage Risk Reduction System (GNOHSDRRS) interagency review team, prior to implementing any mitigation feature. At a minimum, the Corps shall document for EPA Region 6 the concurrence or non-concurrence on each mitigation feature by the National Park Service (Jean Lafitte National Historical Park and Preserve), US Fish and Wildlife Service (USFWS), National Marine Fisheries Service (NMFS), US Geological Survey (USGS), Louisiana Department of Natural Resources, Louisiana Department of Environmental Quality, and Louisiana Department of Wildlife and Fisheries.

3. The New Orleans District of the Corps shall be responsible for obtaining all necessary permits and conducting all required regulatory coordination and approvals prior to implementing any mitigation feature. The Corps shall coordinate with the Jean Lafitte National Historical Park and Preserve to determine the appropriate lead agency for conducting the interagency coordination and approval processes and shall obtain all necessary National Park Service permits.

iii. Augmentation Features

1. The New Orleans District of the Corps shall insure full funding and implementation of augmentation features to enhance the wetland functions and values of the site. EPA will make the determination as to whether augmentation features are adequate, appropriate, and satisfactorily implemented in a timely manner.

2. The New Orleans District of the Corps shall obtain written approval from EPA Region 6, after consulting with the GNOHSDRRS interagency review team, prior to implementing any augmentation feature. At a minimum, the Corps shall document for EPA Region 6 the concurrence or non-concurrence on each augmentation feature by the NPS (Jean Lafitte National Historical Park and Preserve), USFWS, NMFS, USGS, Louisiana Department of Natural Resources, Louisiana Department of Environmental Quality, and Louisiana Department of Wildlife and Fisheries.

3. The Corps shall be responsible for obtaining all necessary permits and conducting all required regulatory coordination and approvals prior to implementing any augmentation feature. The Corps shall coordinate with the Jean Lafitte National Historical Park and Preserve to determine the appropriate lead agency for conducting the interagency coordination and approval processes and shall obtain all necessary National Park Service permits.

iv. Long-term Monitoring and Operation

1. The New Orleans District of the Corps shall coordinate the development of a long-term site monitoring plan, to be approved in writing by EPA, after consulting with the GNOHSDRRS interagency review team. EPA will make the determination as to whether the monitoring plan is adequate and appropriate.

2. The New Orleans District of the Corps and EPA Region 6 shall develop and sign a Memorandum of Agreement with those willing and active State, federal, and local participants with natural resource management missions who have participated on the IER # 12 [11]interagency review team. The Memorandum of Agreement shall document the commitment to participate in the planning and analyses specified by the long-term monitoring plan.

3. The New Orleans District of the Corps shall obtain written approval from EPA Region 6, after consulting with the GNOHSDRRS interagency review team, prior to implementing the long-term monitoring plan. At a minimum, the Corps shall document for EPA Region 6 the concurrence or non-concurrence on the long-term monitoring plan by the NPS (Jean Lafitte National Historical Park and Preserve), USFWS, NMFS, USGS, Louisiana Department of Natural Resources, Louisiana Department of Environmental Quality, and Louisiana Department of Wildlife and Fisheries.

4. The New Orleans District of the Corps shall be responsible for ensuring implementation of a long-term site monitoring plan, to extend no less than the first 50 years of the Corps project life, unless otherwise addressed in a long-term agreement with another party approved by EPA.[12] The long-term monitoring plan for the Bayou aux Carpes Modification mitigation and augmentation features will focus on monitoring both the mitigation and augmentation features, as well as the impacts of the floodwall. The plan should provide for making adjustments if the mitigation or augmentation features prove not to perform as expected. Though it is not expected that the Corps would need to make future adjustments to the floodwall, the effects of the floodwall are to be monitored to determine unexpected impacts which may warrant other corrective actions.

5. The New Orleans District of the Corps shall provide EPA Region 6 with digital aerial photography of the site (season and flood stage to be determined jointly) prior to

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[11] The Corps has divided the study area for the GNOHSDRRS into 17 project component areas. Each of these component areas will report on plans for those areas in Individual Environmental Reports (IERs). The proposed plans for the Bayou aux Carpes CWA Section 404(c) area are reported in IER #12.

[12] The ultimate responsibility to plan, design, fully fund, implement and monitor all mitigation, augmentation and monitoring measures that are conditions on which this determination was based are the responsibility of the U.S. Army Corps of Engineers. Although the Corps may enter into long term agreements with another party with respect to the work authorized by this modification, such agreements do not obviate the Corps' responsibility for meeting the conditions of this modification, and any concerns EPA may have will be raised with the Corps, not other involved parties.

constructing the floodwall along the perimeter of the site and annually for the first five years after its construction, and at other times as specified by EPA Region 6.

6. The New Orleans District of the Corps shall gather the monitoring data and report results to EPA Region 6 annually, on a schedule to be specified by EPA Region 6, each year for the first five years, and at other times as specified by EPA Region 6.

7. Throughout the life of the project, the New Orleans District of the Corps shall ensure that any necessary adaptive construction modifications, including removal or repair, of any mitigation or augmentation feature is instituted based on the recommendations of EPA.

8. In the event that EPA determines during the life of the project that operation, maintenance, or long-term management by the Corps of the flood protection/risk reduction features, mitigation features, or augmentation features is causing unanticipated and unacceptable wetland impacts, EPA may modify the terms of these conditions.

Michael Shapiro

Michael H. Shapiro
Acting Assistant Administrator for Water

5/28/09

Date

Appendix 1

Modification to the 1985 Clean Water Act Section 404(c) Final Determination for Bayou aux Carpes

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

REPLY TO
ATTENTION OF

NOV 04 2008

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

Mr. Lawrence E. Starfield
Deputy Regional Administrator
Environmental Protection Agency
1445 Ross Avenue, Suite 1200
Dallas, Texas 75202-2733

Dear Mr. Starfield:

The purpose of this letter is to request modification of the Environmental Protection Agency (EPA) Bayou aux Carpes 404 (c) Final Determination issued October 16, 1985. The US Army Corps of Engineers (Corps) requests that the EPA consider approving a modification that would allow the Corps to construct a segment of the West Bank and Vicinity Hurricane Protection Project / Hurricane and Storm Damage Risk Reduction System (HSDRRS) along the northeastern property boundary. The intent of the Corps proposed action is to reduce risk to the citizens of Greater New Orleans Metropolitan area by building a more resilient and reliable storm damage and risk reduction system. We can accomplish this by constructing an improved storm surge barrier system around the Bayou aux Carpes site, crossing the Gulf Intracoastal Waterway (GIWW) with a floodgate(s)/pumping station structure, and then tying into the existing Hero Canal Federal levee (GIWW West Closure Complex (GIWW WCC) alternative, see enclosed map and floodwall cross section).

The Corps has been working closely with EPA and other federal and state resource agency staff for several months to come up with the least environmentally damaging alternative that lowers the risk of storm surge damage to the greatest number of people in the area. It is our determination that the proposed action, GIWW WCC is the best alternative to provide the greatest level of risk reduction while minimizing environmental impacts. The Corps intends to make a final decision in the upcoming months concerning this project by circulating a draft of Individual Environmental Report (IER) # 12 and a Clean Water Act Section 404 (b) (1) public notice for a 30-day public comment period. Upon completion of the 30-day comment period, the Corps will review all comments received along with the data and analysis discussed in the IER in order to make a decision on the proposed action. The Corps will not make a decision on this portion of the proposed action until the EPA makes a determination on a modification to the Bayou aux Carpes 404 (c).

The proposed alternative would require the construction of a floodwall and earthen berm along the eastern boundary of the 404 (c) site. To construct this alternative the Corps would need to impact an area within the 404 (c) area no greater then 4,200 LF by 100 LF. This action would impact no greater then 9.6 acres along the west bank of the GIWW within the Bayou aux Carpes 404 (c) area. Please refer to the enclosed documentation that describes in detail the:

a. Need to modify the original HSDRRS alignment;

b. Need to modify the Bayou aux Carpes 404 (c) Final Determination;

c. Measures taken to ensure the avoidance and/or minimization of all adverse impacts to the Bayou aux Carpes 404 (c) area;

d. Planning and design considerations to avoid additional impacts from any reasonable foreseeable future flood protection measures (i.e., the Louisiana Coastal Protection and Restoration (LACPR) Study);

e. Plans for adequate site specific mitigation for all unavoidable adverse impacts to the Bayou aux Carpes 404 (c) area;

f. Review of projected wetland impacts as per Corps 404 (b)(1) guidelines and the EPA 404 (b)(1) and 404 (c) procedures found in 40 CFR Parts 230 & 231; and

g. Draft Path Forward with GIWW WCC.

Summarizing the above attachments: The Corps has determined that the GIWW WCC alternative, which alters the current system alignment, is the government's proposed action for this segment of the HSDRRS because this alternative would provide the most reliable, time sensitive and cost effective solution with the least adverse environmental impacts. Though this alternative would impact the Bayou aux Carpes 404 (c) area, the Corps agrees that final design efforts would utilize all feasible engineering and construction practices to reduce impacts to these nationally significant wetlands. In order to minimize the footprint of the surge barrier component to no greater than 4,200 LF by 100 LF along the western side of the GIWW within the Bayou aux Carpes 404 (c) area, the Corps agrees to investigate and utilize innovative techniques to design and build a structure that incorporates a floodwall and earthen berm rather than an earthen levee. The Corps would also locate the GIWW floodgate(s) as close to the Harvey and Algiers Canals confluence as engineeringly feasible in order to minimize impacts to the 404 (c) area. To further ensure the minimization of adverse impacts within the 404 (c) area, construction of the floodwall and earthen berm / access road would occur from the GIWW side of the construction area. In addition, project feature augmentations, such as allowing Old Estelle effluent into the 404 (c) area by gapping the spoil bank and removing the shell plug at Bayou aux Carpes, are being studied and would be incorporated as project features if the results of the

environmental studies demonstrate that this proposed action would augment the Corps actions to minimize effects to the 404 (c) wetland habitat. Additional project feature augmentations, such as the gapping of other canal banks in the 404 (c) area are also being studied and would be incorporated into the project if it is found that the features further minimize impacts as a result of the Corps proposed action. The Corps agrees that mitigation for all unavoidable adverse impacts to the Bayou aux Carpes 404 (c) area would occur within the Bayou aux Carpes 404 (c) area and/or Jean Lafitte National and Historical Park. Mitigation projects would be designed and implemented concurrently with the design and construction of the floodwall and earthen berm / access road. Full mitigation within this unique environment may require mitigation in addition to acres indicated by the Wetland Value Assessment. The Corps further agrees to work in collaboration with the interagency team to monitor the area to ensure mitigation is successful in reaching its targeted goal and to utilize adaptive management efforts to ensure the project feature augmentations are assisting to minimize adverse impact within the 404 (c) area. The total funding required for the entire HSDRRS, $16.8 billion, has been appropriated by Congress. This funding includes funds for the design and construction of all HSDRRS mitigation measures. The Corps would ensure that all impacts due to upgrading structures currently outlining the Bayou aux Carpes 404 (c) area would occur on the protected side and would not impact the 404 (c) area. Lastly, the GIWW WCC proposed action, would have the greatest adaptability to accommodate an enlargement associated with future system upgrades, i.e., LACPR.

We recognize the significance of this request and greatly appreciate the cooperation the EPA has shown in working with the Corps in our efforts to construct the most reliable hurricane risk reduction system possible.

If you have any questions or concerns please contact Mr. Gib Owen by E-mail: gib.a.owen@usace.army.mil or by phone at (504) 862-1337.

Sincerely,

Alvin B. Lee

Alvin B. Lee
Colonel, US Army
District Commander

Enclosure

See page 4 for list of copies furnished.

Mr. Garret Graves
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Mr. Jerry Spohrer
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