



DEPARTMENT OF THE ARMY
NEW ORLEANS DISTRICT, CORPS OF ENGINEERS
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REPLY TO
ATTENTION OF

APR 01 2013

Engineering Division
Engineering Control

MEMORANDUM FOR Commander, Mississippi Valley Division (CEMVD-PD-N/
Mr. Rayford Wilbanks)

SUBJECT: Results of the Independent External Peer Review of West Bank and Vicinity, LA (WBV) Project Description Document (PDD) and Individual Environmental Review (IER) for Providing 100-Year Level of Risk Reduction to the Harvey-Algiers Canal

1. Reference subject Final Independent External Peer Review (IEPR) Report, May 27, 2009. This memo summarizes the results of the IEPR and provides final responses to comments offered by the IEPR team.
2. The IEPR was conducted from September 2008 through May 2009. The independent team consisted of five Panel Members from five engineering disciplines; geotechnical, structural, hydraulic, mechanical and environmental. The IEPR effort included an Orientation Visit (October 17, 2008), a Teleconference (February 4, 2009) and a face-to-face IEPR Conference (March 12, 2009). Representatives for the local sponsor were invited to participate in the face-to-face conference held at the offices of the New Orleans District.
3. Two documents were reviewed by the team:
 - a. **IER #12, Draft, January 2009.** The Harvey Algiers Individual Environmental Report (IER) #12 evaluates potential impacts associated with the proposed construction of and improvements to levees, floodwalls, floodgates, and pumping stations for the Harvey and Algiers Canals of the WBV Hurricane and Storm Damage Risk Reduction System (HSDRRS).
 - b. **PDD #9, February 2009.** The Project Description Document (PDD) #9 describes the alternatives evaluated and provides a recommended plan to reduce risk to the Harvey-Algiers portion of the WBV Project. The document describes several alternatives that were considered, including the potential environmental impacts, real estate requirements, and preliminary cost estimates. The project provides risk-reduction measures that will allow the community to participate in the National Flood Insurance Program (NFIP).
4. The IEPR team submitted 76 comments on EIR #12 and 68 comments for PDD #9 for a total of 144 comments. Reviewers initially categorized 20 of those comments as "critical," which is defined as a comment that addresses an issue related to public safety, health and welfare. The

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defined as a comment that addresses an issue related to public safety, health and welfare. The USACE PDT evaluated each comment and provided a response. Issues that did not lend themselves to resolution by comment and response in DrChecks were discussed and resolved in the teleconference and during the face-to-face conference noted above. There were no remaining open issues or critical comments at the conclusion of the IEPR.

5. The IEPR final report notes that within the comments the IEPR Team recommended the addition of details and clarifications to improve the documents. Following is additional information on each issues listed in the Executive Summary of the final report.

a. IER #12

- i. IEPR Comment: Construction staging as it relates to barge traffic, temporary structures, and water control measures including costs associated with those items/measures.

USACE Response: Construction staging issues were addressed via consultations with the ECI team and within the contract specifications resulting from the ECI contracting method utilized on this project. Barge traffic was successfully accommodated through coordination with the navigation industry and the USCG. For most of the construction period barge traffic passed uninterrupted through the bypass located on the west side of the major construction activity. Construction activities were coordinated with passing navigation traffic via marine radios on the contractor vessels. The longest delay experienced by navigation occurred during the placement of the sector gate leafs: these delays did not exceed 18 hours each. Upon installation of the gates, marine traffic was routed through the gates while the remaining gap of the bypass was closed.

- ii. IEPR Comment: Fulfill borrow needs including determining the suitability of borrow material.

USACE Response: Borrow utilized in the construction of the levees for the WCC was obtained from three different sources. All of the sources met or

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exceeded all of the criteria for material used in levee construction as specified in the construction documents. The sources were: 1. Walker Road Borrow Pits, Plaquemines parish, LA 2. Idelwield Plantation, Plaquemines Parish, LA 3. St. Tammany Holdings, Slidell, LA

- iii. IEPR Comment: Hydraulic modeling pertaining to the storm water detention pond as it relates to pond performance for the design storm events.

USACE Response: Hydraulic modeling has continued throughout the development of the project. Extensive numerical modeling detailing the effects of differing rainfall intensities, different pumping rates and different water management strategies have been developed and are included in the document titled, "Report on the Interior Hydrology and Hydraulic Analysis for the GIWW West Closure Complex."

- iv. IEPR Comment: Information supporting the cost estimates.

USACE Response: Detailed cost estimates were developed throughout the ECI Pre-Construction Services and throughout the ECI Construction contract that resulted in the construction option final cost falling between the target and the ceiling price for the original solicitation. Additional modifications to the work initiated after conversion to the final negotiated firm fixed price settlement are estimated and negotiated on a case by case basis. All information required for supporting and justifying cost are contained within the negotiation documents.

- v. IEPR Comment: Calculation of the acreage of impacts avoided by providing the innovative T-wall in lieu of a levee adjacent to the 404(c) area.

USACE Response: Construction of the T-wall required 9.64 acres. It is estimated that a levee would have required between 29 and 38 acres for construction of the levee to the 2057, 1% elevation.

- vi. IEPR Comment: Clarification of the USACE Project Delivery Team (PDT) commitments to long term adaptive management.

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USACE Response: The USACE environmental team is currently working with the EPA and the National Park Service as well as USFW Service and USGS to refine and develop the monitoring and adaptive management techniques that will be employed to meet the commitments of the May 28, 2009 Modification of the 1985 Bayou aux Carpes 404c Wetland Determination.

- vii. IEPR Comment: Purpose of dredging the Algiers Canal, the estimate of dredging frequency, and importance of the dredging to the GIWW West Closure Complex pump station sizing.

USACE Response: The purpose of dredging the Algiers Canal was to increase the conveyance capacity of the canal. The dredging was considered necessary after detailed hydraulic modeling indicated that the conveyance capacity of the Algiers Canal in the original condition was not sufficient to meet the demands of the project.

- viii. IEPR Comment: Alternatives development, decision factors and evaluation process to better support the decision making process.

USACE Response: The rationale for all of the evaluations and the decision build the West Closure Complex were based upon the best technical data available at the time. Information and designs were in a continual state of refinement as the design and construction of the project moved forward.

- ix. IEPR Comment: Measures that would be taken to reduce noise impacts during construction.

USACE Response: Construction of the project proceeded at an accelerated pace requiring construction activities to continue on a 24-hours-per-day schedule. The work was performed using two 10-hour shifts, six days per week. The contractor scheduled activities to the greatest extent possible to minimize noise impacts to nearby residents. Some impacts were unavoidable as there were some pile driving operations and hauling operations that occurred during the late evening and early morning hours. Hydraulic

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vibratory hammers were used when possible. Most complaints received were about trucking operations on Walker Road.

- x. IEPR Comment: Creation of a checklist of Environmental Commitments/Requirements to help assure that the commitments are fulfilled and are not lost or overlooked as project implementation proceeds and Operation and Maintenance, Repair, Replacement and Rehabilitation (OMRR&R) activities are accomplished.

USACE Response: The requirements for long term monitoring and adaptive management of the 404c area are clearly spelled out in the IER via the incorporation of the 2009 Modification of the 1985 Bayou aux Carpes 404c Final Determination. These commitments are binding requirements as conditions for building and operating the WCC.

- xi. IEPR Comment: Creation of a Memorandum of Agreement or Understanding developed to capture understandings with other agencies and commitments to other agencies.

USACE Response: The commander of the New Orleans District provided a memorandum to the EPA prior to the EPA action to issue the 2009 Modification of the 1985 Bayous Aux Carpes 404c Final Determination. Additionally, the USACE environmental team is currently working with the EPA and the National Park Service as well as USFW Service and USGS to refine and develop the monitoring and adaptive management techniques that will be employed to meet the commitments of the 2009 Modification of the 1985 Bayou aux Carpes 404c Wetland Determination.

b. PDD #9

- i. IEPR Comment: Hydraulic modeling as it relates to the detention system maximum stage for the design storm event.

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USACE Response: Hydraulic modeling has continued throughout the development of the project. Extensive numerical modeling detailing the effects of differing rainfall intensities, different pumping rates and different water management strategies have been developed and are included in the document titled, "Report on the Interior Hydrology and Hydraulic Analysis for the GIWW West Closure Complex".

- ii. IEPR Comment: Effects of pile installation on existing structures near the proposed WBV-38.2 T-walls.

USACE Response: Pile driving for all structures associated with the construction of the West Closure Complex has no effects on the proposed WBV-38.2 T-walls.

- iii. IEPR Comment: Likelihood of change to the current designs due to changes in the location and size of the GIWW-WCC structure and gates.

USACE Response: Since this final document response is written when the construction of the West Closure Complex is more than 90% complete, we can affirm that significant changes were made to the original design concepts presented in the documentation provided to the IEPR team. Of note is the removal of the small sector gate, the addition of 5 sluice gates, a change in the number of pumps from 16 to 13, and a reduction in the total capacity of the pumping station to 19,140 cfs.

- iv. IEPR Comment: Location, elevation, explanation and illustration of the line of risk reduction of the various components of the system exposed to hurricane surge to make them consistent, correct, or clearly explained.

USACE Response: All elements of the project are clearly defined in the design documents for the project.

- v. IEPR Comment: Purpose and need for the project and the process and conclusions conducted as a part of IER #12.

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USACE Response: The final IER #12 clearly defines the purpose and need for the project and provides extensive documentation as back-up to the process and the ultimate conclusions developed. This information is included by reference in PDD #9.

- vi. IEPR Comment: Pumping station fronting risk reduction (and backflow prevention), flood gates, and line of risk reduction for the detention basin area.

USACE Response: In addition to risk reduction provided directly by the WCC, various improvements on the detention basin were implemented as part of the WBV HSDRRS including fronting protection and backflow prevention at the interior pump stations along the Harvey and Algiers Canals. Another major improvement was the encapsulation of the tunnel within a set of floodgates. Additionally, stability berms and seepage cutoff were added to levees as required by application of the new design criteria.

- vii. IEPR Comment: Depiction, design, and preliminary layout of the proposed 404(c) flood wall, access road and rock revetment throughout the GIWW Closure Complex.

USACE Response: Design alternatives for the 404c floodwall were developed and presented to the EPA and the public, with extensive discussion for the need to locate on the 404c area. The modification to the 1985 Bayou aux Carpes 404c Final Determination that allowed for the construction of the floodwall to proceed was granted by the EPA on 28 May 2009.

- viii. IEPR Comment: Safety guidelines to be used in design.

USACE Response: Newly developed HSDRRS Design Guidelines were used in addition to all specific applicable Army Corps Design Standards for the various specialties: Concrete, Steel, Levees, Earthwork, Site work, Pumps, Navigation Channel Standards, and Hydraulic Standards, etc. A separate IEPR of the technical design aspects of this project was initiated under a separate task order and completed subsequent to this IEPR with the report dated December 22, 2011.

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- ix. IEPR Comment: Discussion of the coordination with the project sponsor/operator on right-of-way, site access, and maintenance/patrol roads.

USACE Response: Extensive coordination prior to the start of construction as well throughout construction, with the local sponsor (OCPR and SLFPA-W) as well as Plaquemines Parish Government Officials, resulted in a relatively smooth project delivery with regards to right-of-way, site access, and maintenance/patrol roads issues. As required by events on the ground, issues were resolved as they arose via close coordination with the affected groups and the appropriate governmental entity.

- x. IEPR Comment: Clarify that environmental commitments made in response to comments received on Draft IER #12 and those contained in pending documents be added to the environmental commitment sheet as they occur.

USACE Response: The commander of the New Orleans District provided a memorandum to the EPA prior to the EPA action to issue the 2009 Modification of the 1985 Bayous Aux Carpes 404c Final Determination. Additionally, the USACE environmental team is currently working with the EPA and the National Park Service as well as USFW Service and USGS to refine and develop the monitoring and adaptive management techniques that will be employed to meet the commitments of the 2009 Modification of the 1985 Bayou aux Carpes 404c Wetland Determination. These efforts have been ongoing and continue as of the writing of this response.

6. The IEPR Team agreed that, in general, PDD #9 was “technically adequate, properly documented, and the document satisfied established quality requirements.” Reviewers also concluded that, in general, the alternatives, criteria, evaluation process and the alternative recommended for implementation in IER #12 were “reasonable and appropriate for the project.” The report notes that, “The selection of the GIWW West Closure Complex as the proposed action was determined to be well-reasoned and credible.”

7. The USACE PDT appreciates the input of the IEPR Team during this review process. As the project has evolved substantially through design and construction, the comments and

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recommendations of the IEPR Team contributed much to the process. This report concludes the IEPR action for this project.

8. Point of contact for this action is Timothy M. Ruppert, P.E. at (504) 862-2106.



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