APPENDIX C-1
Summary of WBV HSDRRS
Construction Impacts as Documented in the IERs

IER 12

IER12, Decision Record signed by the CEMVN Commander on 18 February 2009, 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, including the areas of Harvey-Westwego, Gretna-Algiers, and Belle Chase.

Based on preliminary assessments, the Decision Record dated 18 February 2009 and IER12 impact discussions included a total impact to 328.9 acres (217.7 AAHUs) of BLH and swamp, however the final CAR dated 18 February 2009 revised those impacts and disclosed the corrected total impact to 328.8 acres (215.5 AAHUs) of BLH and swamp. This total included anticipated losses to 251.7 acres (175.1 AAHUs) of PS BLH, 2.4 acres (2 AAHUs) FS BLH-Wet, and 74.7 acres (38.4 AAHUs) of FS swamp. Of the total impact, approximately 9.6 acres (6.1 AAHUs) of FS habitat would be permanently impacted within the Bayou aux Carpes CWA Section 404 (c) area comprising 2.3 acres (1.9 AAHUs) of BLH-Wet and 7.3 acres (4.2 AAHUs) of swamp. Impacted forested wetland acreage would require in-kind mitigation.

IERS 12 Addendum, Decision Record signed by the CEMVN Commander on 20 November 2010, entitled the Addendum to Draft IER Supplemental #12 "GIWW, Harvey and Algiers Levees and Floodwalls, Jefferson, Orleans and Plaquemines Parishes, Louisiana". Design changes which occurred prior to the final release of Draft IERS 12 resulted in this Addendum which addressed the potential impacts associated with the use of the Westbank Site N borrow site for disposal as proposed in the Draft IERS 12. Also, it evaluated impacts due to additional design changes not assessed in IER12 including the construction of floodwalls and the relocation of the Barriere Golf Course access road in the vicinity of the Belle Chasse Tunnel, as well as the proposed temporary tunnel.

Modifications to the proposed actions in IER12 was not anticipated to result in significant adverse impacts to fish and wildlife resources as stated in the DR, IER and USFWS letter to CEMVN dated 29 October 2010.

IERS 12.a, Decision Record signed by the CEMVN Commander on 22 February 2011, entitled "GIWW, Harvey and Algiers Levees and Floodwalls, Jefferson, Orleans and Plaquemines Parishes, Louisiana." The document was prepared to evaluate the potential impacts associated with the construction of an access road, the use of a pontoon bridge in the V-Line Levee Canal, and the placement of riprap along approximately 850 feet of the V-Line Canal.

An impact reduction of 27.5 acres (19.25 AAHUs) for non-jurisdictional BLH as described in IER #12.a, was anticipated to occur as a result of the proposed design changes at the WBV 14e.2 Levee Reaches and the V-Line Levee Canal area. No additional significant environmental impacts were expected as a result of the proposed action as stated in DR, IERS12.a and draft USFWS CAR dated 3 January 2011.

Total IER12 impact discussion
The total impact associated with the proposed actions in IER 12 and supplements is 301.3 acres (196.25 AAHUs) including 224.2 acres (155.85 AAHUs) of PS BLH-Dry, 74.7 acres (38.4 AAHUs) of FS swamp, 2.4 acres (2 acres) of FS BLH-Wet. Of the total impact, approximately 9.6 acres (6.1 AAHUs) of FS habitat would be permanently impacted within the Bayou aux Carpes CWA Section 404 (c) area comprising 2.3 acres (1.9 AAHUs) of BLH-Wet and 7.3 acres (4.2 AAHUs) of swamp.

IER 12/13
IER12/13, Decision Record signed by the CEMVN Commander on 2 February 2011, entitled "GIWW, Harvey and Algiers Levees and Floodwalls/Hero Canal Levee and Eastern Tie-in, Plaquemines Parish, IERS12/13 Waterline." The document was prepared to evaluate the potential impacts associated with operations and maintenance of the Western Closure Complex.

Total temporary impact as a result of the proposed action would include impacts to 0.34 acres (0.12 AAHUs) of PS, BLH-Dry as stated in the DR, IER, and final CAR dated 3 January 2011.

IER 13
IER13 and Final Addendum, Decision Record signed by the CEMVN Commander on 4 December 2009, entitled "West Bank and Vicinity, Hero Canal Levee and Eastern Tie-In, Plaquemines Parish, Louisiana." These documents evaluate the potential effects associated with the proposed enlargement to the Hero Canal levee, and construction of the Eastern Tie-In portion of the West Bank and Vicinity. Due to written and verbal comments received during the public review period for draft IER13, the Addendum was prepared by the USACE to address comments and provide additional information concerning the alternatives presented in IER 13 including clarifications and inclusion of addition hydraulic and engineering information.

The total of 71 acres (46.66 AAHUs) wetland habitat would be impacted as a result of the proposed action including 13 acres (7.80 AAHUs) of PS BLH-Dry, 19 acres (10.59 AAHUs) of FS BLH-Wet, and 39 acres (28.27 AAHUs) of FS swamp. The final CAR provided by USFWS on 24 November 2009 concurs with the final impact totals as stated in the DR and IER.

IERS 13a, Decision Record signed by the CEMVN Commander on 21 April 2011, entitled "West Bank and Vicinity Hero Canal Levee and Eastern Tie-in, Plaquemines Parish, Louisiana." IERS 13a contains a modification to the original plan as stated in IER13 which includes the potential closing of Hero Canal for a maximum of approximately 60 days and a minimum of approximately 30 days within a 90 day time frame. The proposed action is located in Plaquemines Parish near New Orleans, Louisiana.

Modifications to the proposed actions in IER13 would not result in significant adverse impacts to fish and wildlife resources as stated in the DR, IER, Final CAR dated 15 April 2011.

Total IER13 impact discussion
Therefore, the total impact as a result of IER13 and IER13 Supplement 13a include a total of 71 acres (46.66 AAHUs) of swamp and bottomland hardwoods habitat including 13 acres (7.80) of PS BLH-Dry, 19 acres (10.59 AAHUs) of FS BLH-Wet, and 39 acres (28.27 AAHUs) of FS swamp.

IER 14
IER14, Decision Record signed by the CEMVN Commander on 26 August 2008, entitled "Westwego to Harvey Levee, Jefferson Parish, Louisiana." The proposed action included

enlarging eart`hen levees, rebuilding floodwalls, constructing fronting protection for three pump stations, replacing a floodgate with a swing gate, and raising an existing ramp to ensure a continuous line of risk reduction in the levee and floodwall system.

The total of 120.25 acres (84.19 AAHUs) of swamp and bottomland hardwoods habitat were anticipated to be impacted as a result of the proposed action including 45 acres (30 AAHUs) of PS BLH-Wet, 45.5 acres (37.17 AAHUs) of FS BLH-Wet, and 29.75 acres (17.02 AAHUs) of FS cypress-tupelo swamp as stated in the final CAR provided by USFWS on 13 January 2010. An incorrect BLH AAHU impact value (18.58) within reach WBV14f was disclosed by USFWS in the original IER14 CAR dated 18 August 2008 and incorporated into the IER and DR impact discussions. However, this value (18.58 AAHUs) was corrected by USFWS in the IER14.a Supplemental final CAR dated 13 January 2010 as 37.17 AAHUs of FS BLH-Wet habitat for reach WBV14f.

IERS 14.a, Decision Record signed by the CEMVN Commander on 9 February 2010, entitled "West Bank and Vicinity, Westwego to Harvey Levee, Jefferson Parish, Louisiana." The document evaluated the potential effects associated with proposed project revisions to the original IER14, including a proposed FS shift of approximately 3.29 miles of earthen levees, and proposed revisions to fronting protection and floodwall alignment at the Ames and Mount Kennedy Pumping Stations.

Modifications to the proposed actions documented in IER14 would result in a total of 42 acres (24 AAHUs) of FS cypress-tupelo swamp habitat impact. In addition, temporary and permanent impacts to 1.38 acres of open water was anticipated to occur including 1.1 acres permanently filled within the Millaudon Canal for floodwall construction and 0.28 acres of temporary fill for the construction of temporary retention structures.

Total IER14 impact discussion
Total impact as a result of the proposed actions of IER14 and IER14.a Supplement was 162.25 acres (108.19 AAHUs) including 45 acres (30 AAHUs) of PS BLH-Wet, 45.5 acres (37.17 AAHUs) of FS BLH-Wet, and 71.75 acres (41.02 AAHUs) of FS cypress-tupelo swamp. In addition, temporary and permanent impacts to 1.38 acres of open water were expected.

IER 15
IER15, Decision Record signed by the CEMVN Commander on 12 June 2008, entitled "Lake Cataouatche Levee, Jefferson and Plaquemines Parishes, Louisiana." The proposed action included constructing and maintaining a 100-year level of protection along the project area in Jefferson Parish, Louisiana.

Total impacts as a result of the proposed actions disclosed in IER15 are 27.1 acres (7.47 AAHUs) of BLH-Wet as stated in the IER, DR, and final CAR dated 28 July 2008 comprising 3.6 acres (1.35 AAHUs) of BLH-Wet habitat along the Outer Cataouatche Canal on the FS of the BFI landfill and 23.5 acres (6.12 AAHUs) of PS BLH-Wet habitat east of the Cataouatche pump stations between the Bridgeline pipeline and the Bayou Segnette State Park. Additionally, 6.5 acres of aquatic habitat in the Outer Cataouatche Canal were anticipated to be permanently lost.

IERS 15.a and Final Addendum, Decision Record signed by the CEMVN Commander on 7 September 2011, entitled "Lake Cataouatche Levee Jefferson Parish, Louisiana." The document evaluated the relocation of a Chevron pipeline. Due to significant comments received during the public review period for draft IERS15.a and NPS intent to conduct its own environmental

assessment of the proposed action in accordance with NEPA (EA FONSI signed 30 August 2011), the Addendum was prepared by the USACE to further evaluate the alternatives initially considered in IERS 15.a but eliminated and evaluated additional alternatives identified by the NPS.

Approximately 23 acres (3.85 AAHUs) of wetlands as stated in the final CAR dated 14 November 2011 was anticipated to be impacted as a result of the proposed action and included temporary impacts to 8 acres (0.82 AAHUs) of PS BLH-Dry north of the Lake Cataouatche levee and 15 acres (3.03 AAHUs) of temporary impact to FS high quality fresh marsh within JLNHPP to be mitigated at Yankee Pond. Additionally, 13.1 acres of water bottoms in the Outer Cataouatche Canal, at the temporary access wheel wash/dredging stockpile area, and in the pontoon bridge areas were anticipated to be impacted. The final CAR updated values disclosed in the IER and DR, including the correction of impacted habitat from BLH-Wet to BLH-Dry. Temporary impacts to 0.29 acres of BLH-Dry due to the construction of an access road and staging area are mentioned in the IER and DR; however, these impacts are not discussed in the final CAR.

Total IER15 impact discussion
Total impact as a result of the proposed actions of IER15 and IER15.a Supplement and Final Addendum was 50.1 acres (11.32 AAHUs) including 23.5 acres (6.12 AAHUs) of PS BLH-Wet, 8.29 acres (0.82 AAHUs) of PS BLH-Dry, 15 acres (3.03 AAHUs) of FS fresh marsh, and 3.6 acres (1.35 AAHUs) of BLH-Wet. Also, temporary impacts to 19.6 acres of open water were incurred. Of the total impacts, 15 acres (3.03 AAHUs) of FS fresh marsh would be temporarily impacted within JLNHPP.

IER 16
IER16, Decision Record signed by the CEMVN Commander on 12 June 2009, entitled
"Western Tie-In, Jefferson and St. Charles Parishes, Louisiana." The document evaluated the potential impacts associated with constructing levees, floodwalls and a closure structure to meet the 100-year level of risk reduction from the Lake Cataouatche Levee westerly to the Davis Pond Freshwater Diversion's east guide levee.

Approximately 212.7 acres (101.7 AAHUs) of FS wetlands as stated in the Final CAR dated 8 June 2009 were anticipated for impact as a result of the proposed action including 78.6 acres (36.2 AAHUs) of BLH-Wet and 134.1 acres (65.5 AAHUs) of fresh marsh. Impact totals to fresh marsh 137.8 acres (66.3 AAHUs) disclosed within the DR and IER impact discussions were updated by the final CAR (8 June 2009) to 134.1 acres (65.5 AAHUs). Additionally, permanent lost of 12 acres of aquatic habitat was anticipated and the isolation of the western portion of the Outer Cataouatche Canal from flow-through was expected to indirectly affect water quality within the 60 acre partially enclosed area.

IER16S 16.a, Decision Record signed by the CEMVN Commander on 24 August 2010, entitled "Western Tie-In, Jefferson and St. Charles Parishes, Louisiana." The document evaluated the potential impacts associated with utility relocations, replacing the Highway 90 pump station, adding bank stabilization to some areas, retaining the detour roads as permanent access for Highway 90 and the construction of a ramp at Highway 18 instead of a floodgate.

Modifications to the proposed actions disclosed in IER16 would have a total impact to 93.2 acres (46.26 AAHUs) of FS wetlands as stated in the IER, DR, and final CAR 11 August 2010 comprising 79.1 acres (37.26 AAHUs) of BLH-Wet and 14.1 acres (9 AAHUs) of fresh marsh habitat. In addition, permanent lost of 16.5 acres of aquatic habitat was anticipated.

Total IER16 impact discussion
Therefore, the total impacts from the proposed actions of IER16 and supplement included 148.2 acres (74.5 AAHUs) of fresh/intermediate marsh and 157.7 acres (73.46 AAHUs) of BLH-Wet for a total impact of 305.9 acres (147.96 AAHUs) on the FS. Also, 28.5 acres of open water impact was expected.

IER 17
IER17, Decision Record signed by the CEMVN Commander on 21 January 2009, entitled "West Bank and Vicinity, Company Canal Floodwall, Jefferson Parish, Louisiana." The document evaluated the potential impacts associated with the proposed construction and maintenance of a 100-year level of risk reduction along the WBV, Company Canal Floodwall from the Bayou Segnette State Park to the New Westwego Pumping Station including the construction of a new alignment, sector gate and pumping station.

Approximately 24.5 acres (19.78 AAHUs) of wetlands as stated in DR, IER Section 3.2.6 and Final CAR dated 22 December 2008 would be impacted as a result of the proposed action including 5.5 acres (2.69 AAHUs) of PS BLH-Wet and 19 acres (17.09 AAHUs) of FS cypress-tupelo swamp on the dredge disposal island north of Lapalco Boulevard. In addition, 9 acres of aquatic habitat would be impacted including 4 acres of temporary impact north of Lapalco Boulevard and 5 acres of permanent impact due to fill placed within an existing PS canal in reach 1. The Mitigation Section 7.0 of the IER incorrectly attributed 24.5 acres of impact to swamp habitat which should have been disclosed as 5.5 acres of impact to BLH-Wet and 19 acres of impact to swamp as listed from the final CAR.

IER 33
IERS 33, Decision Record signed by the CEMVN Commander on 31 December 2010, entitled "West Bank and Vicinity and Mississippi River Levee Co-Located Levees, Plaquemines Parish and Orleans Parish, Louisiana." The document evaluated the proposed construction and maintenance of the 100-year level of hurricane damage risk reduction along the Mississippi River Levee on the west bank of the Mississippi River, from the Eastern Tie-in of the West Bank and Vicinity project with the MRL at Oakville in Plaquemines Parish to a point approximately 15.5 miles upriver southeast of the Algiers Lock in Orleans Parish.

Temporary impacts to 27 acres of wetlands within the currently maintained ROW would not require compensatory wetland mitigation since the habitat exist as regularly moved grasses and herbs as confirmed in the IER, DR, and final CAR dated 30 December 2010.

IERS 33.a, Decision Record signed by the CEMVN Commander on 11 January 2012, entitled "West Bank and Vicinity and Mississippi River Levee Co-Located Levees, Plaquemines Parish and Orleans Parish, Louisiana." The document evaluated the potential impacts associated with modifications to the proposed action of IER33 for the proposed construction and maintenance of Resilient Features in order to improve the resiliency and longevity of previously implemented Engineered Alternative Measures (EAM), addressed under IER33, along the West Bank and Vicinity – Mississippi River Levee (WBV-MRL) Co-Located Project.

The total of 162 acres (99.06 AAHUs) of bottomland hardwoods habitat would be impacted as a result of the proposed action including 80 acres (48.93 AAHUs) of PS BLH-Dry and 82 acres (50.13 AAHUs) of FS BLH-Wet as stated in the final CAR dated 9 January 2012. The IER and DR are in agreement with the total acreage for impacts to BLH-Wet and BLH-Dry with the exception of the Mitigation Section of the IER which fails to mention mitigation for 80 acres of

non-wet forested habitat. Also, 2 acres of aquatic habitat would temporarily be impacted by the proposed action within reaches WBV-MRL 1.2b and WBV-MRL 3.2.

Total IER33 impact discussion
The total impacts from the proposed actions of IER33 and supplement include 162 acres (99.06 AAHUs) of bottomland hardwoods including 80 acres (48.93 AAHUs) of PS BLH-Dry and 82 acres (50.13 AAHUs) of FS BLH-Wet. Two acres of aquatic habitat would also be temporarily impacted.

Government Furnished Borrow IERs and Impacts

In order to raise the level of risk reduction for the HSDRRS system, large quantities of earthen material (borrow) were required. In 2007, CEMVN began an unprecedented search for suitable material to rebuild and reinforce the HSDRRS in the Greater New Orleans Metropolitan Area. Approximately 93 million cubic yards of material was estimated to be required for the HSDRRS construction borrow program. To date, no wetlands have been impacted in the acquisition of borrow for the HSDRRS. Thus far, the only impacted habitat type requiring mitigation for the HSDRRS borrow is BLH-Dry.

The first stages of borrow procurement for the HSDRRS work utilized identification of sites with appropriate material for acquisition by the Federal Government (Government). Once the sites were either acquired or an easement over them obtained, they were then provided to the HSDRRS construction contractors as potential sources of borrow material. Because the government is providing these sites for borrow excavation in connection with a Federal action, mitigation for habitat impacts if these sites are utilized is the responsibility of the Government. Below are the IERs that assessed the borrow sites located in the WBV basin and the potential habitat impacts that would occur if they are fully utilized.

IER 18
IER18, Decision Record signed by CEMVN Commander on 21 February 2008, entitled "Government Furnished Borrow Material, Jefferson, Orleans, Plaquemines, St. Charles, and St. Bernard Parishes, Louisiana". The document evaluates the potential impacts associated with approving twelve government furnished borrow areas throughout the New Orleans Metropolitan area for use in construction of the HSDRRS.

Four of the 12 proposed borrow sites evaluated in IER18 fall within the WBV mitigation basin; however, only three of these sites would require mitigation for impacts if selected for use in HSDRRS construction (Table 1).

Table 1: Impacts to non-jurisdictional BLH

Proposed Borrow Area	Parish	BLH Impacted (acres)	AAHUs Needed
Belle Chasse	Plaquemines	8.0	3.68
Churchill Farms Pit A	Jefferson	29.9	10.62
Westbank G Site	Jefferson	82.0	45.52
Total		119.9	59.82

The total potential impact to PS non-jurisdictional BLH within the WBV mitigation basin for the proposed action is 119.9 acres (59.82 AAHUs) as noted in the DR, IER and final November 15, 2010 CAR.

IER 22

IER22, Decision Record signed by CEMVN Commander on 30 May 2008, entitled "Government Furnished Borrow Material, Plaquemines and Jefferson Parishes, Louisiana". The document evaluates the potential impacts associated with approving five government furnished borrow areas located in Jefferson and Plaquemines Parishes for use in construction of the HSDRRS.

Four of the five proposed borrow sites evaluated in IER22 fall within the WBV mitigation basin; however, the Brad Buras site and Westbank N Site located in Plaquemines Parish would not have impacts which required mitigation. The two remaining sites, located in northern Jefferson Parish, would require mitigation for non-jurisdictional BLH impact if selected for use in HSDRRS construction and include 148 acres (85 AAHUs) at Westbank F Site and 9.76 acres (4.64 AAHUs) at Westbank I Site.

The total potential impact to PS non-jurisdictional BLH within the WBV mitigation basin for the proposed action is 157.76 acres (89.64 AAHUs) as noted in the DR, IER and final November 15, 2010 CAR.

IER 25

IER25 Decision Record signed by CEMVN Commander on 3 February 2009, 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.

Three of the 4 proposed borrow sites evaluated in IER25 fall within the WBV mitigation basin; however, only 2 would require mitigation for impacts if selected for use in HSDRRS construction. The Westbank E Site located in Jefferson Parish requires mitigation for 25.1 acres (13.10 AAHUs) of non-jurisdictional BLH in Phase 1 and 53.2 acres (27.8 AAHUs) of non-jurisdictional BLH in Phase 2. The second borrow site, Tac Carrere, located in Plaquemines Parish requires mitigation for 17.7 acres (12.10 AAHUs) of non-jurisdictional BLH.

The total potential impact to PS non-jurisdictional BLH within the WBV mitigation basin is 96 acres (53 AAHUs) as noted in the DR, IER Mitigation Section, and the Final CAR dated November 15, 2010. Please note, an error in the impact discussions within the IER inaccurately states the impact total for all proposed actions in IER25 to non-jurisdictional BLH as 942.1 acres; however, this number was based on a preliminary WVA assessment. The correct value should be 933 acres as reflected in the DR, Mitigation Section of the IER, and Final CAR dated 15 November 2010.

IERS 25.a Decision Record signed by CEMVN Commander on 13 January 2012, entitled "Government Furnished Borrow Material #3, Orleans Parish, Louisiana." The document evaluates the "after the fact" modifications to IER25, which include placing approximately 105,000 cubic yards of excess material, known as Recycled Embankment Material (REM), on a 22.4-acre site. Of the 22.4 acres utilized for the stockpiling of REM, 7.93 acres had been previously authorized under IER # 25 for the purposes of vegetative clearing and excavation of suitable borrow material to be used in the LPV 109 and LPV 111 levee sections.

IER 28

IER28, Decision Record signed by CEMVN Commander on 31 July 2009, 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 three government furnished borrow areas and the construction of a separate borrow access road.

The proposed Westbank F site access route evaluated in IER28 is located within the WBV mitigation basin in upper Jefferson Parish. The proposed action at this site would impact 0.29 acres (0.17 AAHUs) of non-jurisdictional BLH as noted in the DR, IER, and final CAR dated 27 July 2009 if selected for use in HSDRRS construction. Impacts to the two borrow areas, Bazile and Johnson/Crovette, located within the LPV mitigation basin will be addressed in the LPV mitigation IER36.

<u>WBV Original Construction</u>

EA437
EA 437 entitled “West Bank and Vicinity, New Orleans, Louisiana Hurricane Protection Project, Lake Cataouatche Levee Enlargement Highway 90 to Cataouatche Pump Stations” was prepared to evaluate the potential impacts associated with the proposed enlargement to the Lake Cataouatche Area levee, relocation of the drainage canal, excavation of a new borrow pit, and construction of a new haul road and fence.

The proposed action was anticipated to result in impacts to 162 acres (130 AAHUs) of early successional, protected side (PS) BLH-Dry including 129 acres (102.5 AAHUs) of forested wetlands and 33.1 acres (27.5 AAHUs) of no-canopy/highly-disturbed BLH forest based on preliminary analysis disclosed in the EA and CAR letter dated 29 September 2006. The AAHU values were modified by the final supplement CAR dated 6 June 2011 to correct the impact calculation based on 57 year period of analysis required per changes to ER 1105-2-100. The corrected impacts were disclosed as 129 acres (37.39 AAHUs) young BLH and 33.1 acres (14.24 AAHUs) of disturbed BLH for a total of 162.1 acres (51.63 AAHUs). The final CAR dated 26 October 2012 recalculated the impacts. The corrected impacts were disclosed as 162.10 acres (58.95) of PS BLH-Dry including 129 acres (44.71 AAHUs) of young BLH and 33.1 acres (14.24 AAHUs) of disturbed BLH.

EA439
EA439 entitled “West Bank and Vicinity, New Orleans, Louisiana Hurricane Protection Project: Westwego to Harvey Canal Highway 45 Borrow Pits, Jefferson Parish, Louisiana” was prepared to retroactively identify the environmental impacts and propose mitigation for six borrow pits excavated on the FS of the levee along Highway 45 for levee enlargement. EA439 is a modification to a prior authorized project entitled, "West Bank of the Mississippi River in the Vicinity of New Orleans, La., Feasibility Report and EIS," dated December 1986.

The total impact from the proposed action resulted in the loss of 110 acres of mixed bottomland hardwoods and cypress swamps as stated in the EA, however, AAHU values were not provided in the EA due to the anticipated completion of a mitigation plan which would include AAHU calculations for mitigation of WBV HPP impacts. The mitigation plan was never finalized; therefore these impacts were to be included in HSDRRS mitigation. The AAHU values were later quantified and amended by the CAR dated 29 April 2011 as (63.53 AAHUs) of FS mixed BLH wetlands and cypress swamps including 21.5 acres (15.09 AAHUs) of BLH and 88.5 acres (48.44 AAHUs) of swamp. However, the impact analysis in the CAR was calculated on a temporal range used for the original FR/FEIS rather than the period of analysis required per

changes to ER 1105-2-100. In addition, the AAHU value used in the analysis for swamp impacts was calculated on an inaccurate acreage value (85.8 instead of 88.5). The draft CAR dated 31 October 2011 recalculated the swamp impacts based on the corrected acreage value of 88.5 and updated the AAHU values for the required period of analysis. The disclosed values included 21.5 acres (15.20 AAHUs) of FS BLH-Wet and 88.5 acres (50.71 AAHUs) of FS swamp for a total of 110 acres (65.91 AAHUs). The final CAR dated 26 October 2012 recalculated the impacts. The corrected impacts were disclosed as 110 acres (65.81) of FS mixed swamp and BLH including 21.5 acres (15.1 AAHUs) of young BLH and 88.5 acres (50.71 AAHUs) of swamp.

APPENDIX C-2
IER IMPACT DISCREPANCY MEMO

CEMVN-PDN-CEP 18 December 2013

MEMORANDUM FOR RECORD

SUBJECT: Discrepancies in public disclosure of West Bank and Vicinity (WBV) Hurricane Storm Damage Risk Reduction System (HSDRRS) impact acreages and Average Annual Habitat Units (AAHUs)

1. Reference the construction of the WBV HSDRRS projects beginning in March 2007. During the National Environmental Policy Act (NEPA) process, a number of documents were released disclosing the potential construction impact acres and AAHUs of the HSDRRS projects [ie. Individual Environmental Reports (IERs) and USFWS Coordination Act Reports (CAR)]. At the time, acreages and AAHUs presented in the IERs were estimates of anticipated impacts based on early conceptual designs. In some cases, there were noted discrepancies in the impact numbers disclosed within and among these documents. This memo identifies those discrepancies and corrects the impact numbers to be reported when referencing the WBV HSDRRS IERs (attachment 1).

2. A forthcoming Mitigation IER will disclose the updated impacted acreages and AAHUs, based on 100% project plans and as-built drawings (if available). In addition, an analysis of aerial imagery will be conducted on the footprints identified in these plans to verify the HSDRRS construction impacts have been correctly quantified. Once As-Builts for the whole HSDRRS are available, this process will be repeated to determine the final mitigation requirement for the HSDRRS work.

3. The discrepancies, and their respective resolutions, are provided below:

Project	Discrepancy	Resolution
IER12	The Decision Record dated 18 February 2009 and IER12 impact discussions included a total wetland impact as 328.9 acres (217.7 AAHUs) including 251.7 acres (177.3 AAHUs) of PS BLH, 2.4 acres (1.9 AAHUs) of BLH FS, and 74.9 acres (38.5 AAHUs) of swamp which were based on preliminary assessments from the Draft CAR dated 24 December 2008. ********** Impacts to 404c area only included 9.8 acres (6.1 AAHUs) based on preliminary assessments from the Draft CAR dated 24 December 2008.	Final CAR dated 18 February 2009 revised those impacts and disclosed the corrected impacts as 328.8 acres (215.5 AAHUs) including 251.7 acres (175.1 AAHUs) of PS BLH, 2.4 acres (2 AAHUs) of BLH FS, and 74.7 acres (38.4 AAHUs) of swamp. ********** Impacts to 404c area only included 9.6 acres (6.1 AAHUs) were corrected with the final CAR .

Project	Discrepancy	Resolution
IER 14	An incorrect BLH AAHU impact value (18.58 AAHUs) was provided by USFWS in the original IER14 CAR dated 18 August 2008 for levee reach WBV14f and also disclosed in IER14 and IER14 DR signed 26 August 2008.	In IER14.a Supplemental final CAR dated 13 January 2010, USFWS corrected the total floodside wet BLH habitat AAHUs as 37.17 for reach WBV14f as a result of the proposed actions in IER14.
IERS15.a	The IERS15.a and decision record disclosed total wetland habitat impact of 22.5 acres (4.02 AAHUs) including 8 acres (0.82 AAHUs) of PS wet BLH and 14.5 acres (3.2 AAHUs) of FS fresh marsh based on preliminary impact assessments. ********** Additional, temporary impacts to 0.29 acres of dry BLH are mentioned in the IER; however, these impacts are not discussed in the final CAR.	These totals were updated by the final USFWS CAR dated 14 November 2011 as total wetland habitat impact of 23 acres (3.85 AAHUs) including 8 acres (0.82 AAHUs) of PS dry BLH and 15 acres (3.03 AAHUs) of FS fresh marsh. ********** These impacts were added to the total IER impact total after the fact to be considered in HSDRRS mitigation.
IER 16	The total wetland habitat impact of 211 acres stated in the decision record dated 12 June 2009 and IER impact discussions were based on preliminary impact assessments. Additionally, the impacts from the draft CAR dated 13 March 2009 were disclosed in Table 1 of the DR and throughout the IER with the total wetland habitat impact of 216.4 acres (102.48 AAHUs) including 78.6 acres (36.18 AAHUs) of wet BLH and 137.8 acres (66.3 AAHUs) of fresh marsh.	The impacts were updated by the final CAR dated 8 June 2009. This assessment corrected the total impact as a result of the proposed action to 212.7 acres (101.7 AAHUs) including 78.6 acres (36.2 AAHUs) of wet BLH and 134.1 acres (65.5 AAHUs) of fresh marsh.
IERS16.a	Wetland impact discussions within section 3.2.5 and 3.2.6 of IER 16.a Supplemental, discuss maximum impact values (119 acres of wetlands impacted) based on the worst case scenario for the proposed action. ********** In IER16.a supplement, the impact discussions for Significant Resources mention a total of 211 acres of wetland impacts from IER16 ********** Also, impact discussions within the Section 3.2.3.1.2 "Terrestrial Habitat" disclosed general habitat and potential maximum impacts within the project area, but not necessarily the habitats impacted by the proposed action. ********** Section 3.2.4.1.2 of IER16.a supplement was mis-titled "No Action"	The correct impacts are noted in the mitigation section, DR, and final CAR dated 11 August 2010 comprising 79.1 acres (37.26 AAHUs) of wet BLH and 14.1 acres (9 AAHUs) of fresh marsh habitat. ********** The correct total is 212.7 acres as updated in the final CAR dated 8 June 2009 .********** The correct impacts are noted in the mitigation section, DR, and final CAR dated 11 August 2010 comprising 79.1 acres (37.26 AAHUs) of wet BLH and 14.1 acres (9 AAHUs) of fresh marsh habitat. ********** Section 3.2.4.1.2 of IER16.a supplement should be titled "Proposed Action" instead of "No Action"

Project	Discrepancy	Resolution
IER17	In the Mitigation Section 7.0 of IER17, 24.5 acres of impact were incorrectly attributed to swamp habitat. ********** In Section 9.1 "Final Decision" of IER17, permanent loss to aquatic habitat was disclosed as 9 acres including 5.5 acres in Bayou Segnette State Park and 5 acres in Bayou Segnette. However, the 5.5 acres was mistakenly attributed to aquatic habitat instead of wet BLH.	The correct total impacts are 5.5 acres of impact to wet BLH and 19 acres of impact to swamp. ********** The correct impact totals should be 9 acres of aquatic habitat impacted including 4 acres of temporary impact north of Lapalco Boulevard and 5 acres of permanent impact due to fill placed within an existing protected side canal in reach 1.
IERS33.a	IER supplement 33.a did not include a discussion of mitigation for 80 acres of non-wet forested habitat; however, it provided discussion of mitigation for 82 acres of forested wetland habitat. Only the overall AAHUs impact total of 99.06 AAHUs for both wet bottomland forest and non-wet bottomland hardwoods was provided.	The final CAR dated 9 January 2012 disclosed the final impact totals for 82 acres (50.13 AAHUs) of floodside, wet BLH and 80 acres (48.93 AAHUs) of protected side, dry BLH.
EA437	EA437 and draft CAR letter dated 29 September 2006 disclosed preliminary impact values for 162 acres (130 AAHUs) of early successional, protected side dry BLH including 129 acres (102.5 AAHUs) of forested wetlands and 33.1 acres (27.5 AAHUs) of no-canopy/highly-disturbed BLH forest. ********** The 29 April 2011 draft CAR supplemental for EA437 was calculated with a 100 year period of analysis. Due to changes per ER 1105-2-100, the period of analysis needed to be changed to 57 years for HSDRRS mitigation. ********** The draft CAR dated 6 June 2011 contained a calculation error for PS Dry, young BLH (EA437) within the analysis resulting in an incorrect AAHU value of 37.39 AAHUs. ********** The 26 October 2012 letter date was mistakenly submitted as 26 October 2011 for the draft CAR supplemental for EA437 and EA439.	The USFWS draft CAR dated 29 April 2011 updated the impact totals as 129 acres (51.63 AAHUs) of PS Dry young BLH and 33.1 acres (13.6 AAHUs) of PS Dry disturbed BLH. WVA values calculated on 100 year period of analysis. ********** The USFWS final CAR dated 6 June 2011 updated the impact totals as 129 acres (37.39 AAHUs) of PS Dry young BLH and 33.1 acres (14.24 AAHUs) of PS Dry disturbed BLH to reflect the WVA recalculation based on 57 year period of analysis. ********** The final Amended USFWS CAR dated 26 October 2012 disclosed the corrected impact totals as 129 acres (44.71 AAHUs) of PS Dry young BLH and 33.1 acres (14.24 AAHUs) of PS Dry disturbed BLH. WVA value calculations based on a 57 year period of analysis. ********** The draft supplemental CAR should be dated 26 October 2012.

Project	Discrepancy	Resolution
EA439	EA439 disclosed a loss of 110 acres of mixed bottomland hardwoods and cypress swamps; however, AAHU values were not provided in the EA due to the anticipated completion of a mitigation plan which would include AAHU calculations for mitigation of WBV HPP impacts. The mitigation plan was never finalized; therefore these impacts were to be included in HSDRRS mitigation.	The draft USFWS CAR dated 29 April 2011 disclosed the updated impact totals as 21.5 acres (15.09 AAHUs) of FS BLH and 88.5 acres (48.44 AAHUs) of FS swamp. WVA values were calculated on a 100 year period of analysis.
	**********	**********
	The 29 April 2011 draft CAR supplemental EA439 was calculated with a 100 year period of analysis. Due to changes per ER 1105-2-100, the period of analysis needed to be changed to 57 years for HSDRRS mitigation. In addition, an error occurred when the acreage value 88.5 for EA439 swamp was transposed to 85.8 and used to calculate AAHUs in the analysis.	The USFWS final CAR dated 6 June 2011 recalculated the impacts based on the 57 year period of analysis resulting in impacts to 21.5 acres (15.1 AAHUs) of FS BLH and 88.5 acres (46.97 AAHUs) of FS swamp.
	**********	**********
	The USFWS final CAR dated 6 June 2011 for EA439 did not resolve the calculation errors to swamp impacts as a result of an incorrect acreage value of 85.8 as noted in the 29 April 2011 draft CAR supplemental, prior to recalculating impacts based on 57 year period of analysis.	The 31 October 2011 draft CAR supplemental for EA439 resolved the calculation errors to swamp impacts using the correct acreage value of 88.5. Therefore the correct impact totals based on a 57 year period of analysis are 21.5 acres (15.1 AAHUs) of FS BLH and 88.5 acres (50.71 AAHUs) of FS swamp.
	**********	**********
	The 26 October 2012 letter date was mistakenly submitted as 2011 for the final CAR supplemental for EA437 and EA439.	The draft supplemental CAR should be dated 26 October 2012.

4. The point of contact for this analysis is Ms. Elizabeth Behrens, x2025

Sandra Stiles

Sandra Stiles
Chief, Coastal Environmental Planning Section
Environmental Planning Branch

Attachment

WBV FINAL IMPACTS BASED from IERs

	Protected Side										Flood Side												
IER*	Fresh/ Intermediate Marsh		Brackish Marsh		Swamp		BLH wet		BLH dry		Fresh/ Intermediate Marsh		Brackish Marsh		Swamp		BLH wet		BLH dry		Open Water	TOTAL	
	Acres	AAHUs	Acres	AAHUs	Acres	AAHUs	Acres	AAHUs	Acres	AAHUs	Acres	AAHUs	Acres	AAHUs	Acres	AAHUs	Acres	AAHUs	Acres	AAHUs	Acres	Acres	AAHUs
12	0	0	0	0	0	0	0	0	224.20	155.85	0	0	0	0	74.70	38.40	2.40	2.00	0	0	0	301.30	196.25
IER12-13	0	0	0	0	0	0	0	0	0.34	0.12	0	0	0	0	0	0	0	0	0	0	0	0.34	0.12
13	0	0	0	0	0	0	0	0	13.00	7.80	0	0	0	0	39.00	28.27	19.00	10.59	0	0	0	71.00	46.66
14	0	0	0	0	0	0	45.00	30.00	0	0	0	0	0	0	71.75	41.02	45.50	37.17	0	0	1.38	162.25	108.19
15	0	0	0	0	0	0	23.50	6.12	8.29	0.82	15.00	3.03	0	0	0	0	3.60	1.35	0	0	19:60	50.39	11.32
16	0	0	0	0	0	0	0	0	0	0	148.20	74.50	0	0	0	0	157.70	73.46	0	0	28.50	305.90	147.96
17	0	0	0	0	0	0	5.50	2.69	0	0	0	0	0	0	19.00	17.09	0	0	0	0	9.00	24.50	19.78
33	0	0	0	0	0	0	0	0	80.00	48.93	0	0	0	0	0	0	82.00	50.13	0	0	2.00	162.00	99.06
EA 437	0	0	0	0	0	0	0	0	162.10	58.95	0	0	0	0	0	0	0	0	0	0	0	162.10	58.95
EA 439	0	0	0	0	0	0	0	0	0	0	0	0	0	0	88.50	50.71	21.50	15.10	0	0	0	110.00	65.81
18 (Churchhill Farms)	0	0	0	0	0	0	0	0	29.90	10.62	0	0	0	0	0	0	0	0	0	0	0	29.90	10.62
TOTAL	*0*	*0*	*0*	*0*	*0*	*0*	*74.00*	*38.81*	*517.83*	*283.09*	*163.20*	*77.53*	*0*	*0*	*292.95*	*175.49*	*331.70*	*189.80*	*0*	*0*	*60.48*	*1379.68*	*764.72*