DRAFT INDIVIDUAL ENVIRONMENTAL REPORT

CONTRACTOR-FURNISHED BORROW MATERIAL #6

ASCENSION, PLAQUEMINES, AND ST. CHARLES PARISHES, LOUISIANA

IER #32

US Army Corps of Engineers®

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TABLE OF CONTENTS

LIST OF TABLES

TITLE **PAGE**

LIST OF FIGURES

LIST OF APPENDICES

1. INTRODUCTION

The U.S. Army Corps of Engineers (USACE) Mississippi Valley Division, New Orleans District (CEMVN), has prepared this Individual Environmental Report #32 (IER #32) to evaluate the potential impacts associated with the possible excavation of the proposed Bocage, Citrus Lands, Conoco Phillips, Idlewild Stage 1, Nairn, Plaquemines Dirt & Clay, and 3C Riverside Phase 3 contractor-furnished borrow areas. The proposed borrow areas are located in southeastern Louisiana (figure 1). The term "borrow" is used in the fields of construction and engineering to describe material that is dug in one location for use at another location. The proposed contractor-furnished borrow areas could be used for construction of the Hurricane and Storm Damage Risk Reduction System (HSDRRS).

IER #32 has been prepared in accordance with the National Environmental Policy Act (NEPA) of 1969 and the Council on Environmental Quality's (CEQ) Regulations (40 CFR §1500-1508), and the USACE Engineering Regulation (ER) 200-2-2, Environmental Quality, Procedures for Implementing the NEPA. The preparation of an IER, in lieu of a traditional Environmental Assessment (EA) or Environmental Impact Statement (EIS), is provided for in ER 200-2-2 (33 CFR §230) and pursuant to the CEQ NEPA Implementation Regulations (40 CFR §1506.11).

The CEMVN implemented Alternative Arrangements on 13 March 2007, under the provisions of the Council on Environmental Quality Regulations for Implementing the NEPA (40 CFR §1506.11). The Alternative Arrangements were developed and implemented in the aftermath of Hurricanes Katrina and Rita in order to evaluate environmental impacts arising from HSDRRS projects in a timely manner, utilizing the NEPA emergency procedures found at 40 CFR 1506.11. The Alternative Arrangements were published on 13 March 2007 in 72 FR 11337, and are available for public review at www.nolaenvironmental.gov.

The Alternative Arrangements were implemented in order to expeditiously complete environmental analysis for any changes to the authorized HSDRRS, formerly known as the Hurricane Protection System (HPS), authorized and funded by Congress and the Administration. The proposed contractor-furnished borrow areas discussed in this IER are located in southeastern Louisiana and are part of the Federal effort to rebuild and complete construction of the HSDRRS in the New Orleans metropolitan area as a result of Hurricanes Katrina and Rita in 2005.

This draft IER will be distributed for a 30-day public review and comment period. A public meeting specific to the proposed action will be held, if requested by a stakeholder, during the review period. Any comments received during this public meeting would be considered part of the official record. After the 30-day comment period, and public meeting if requested, the CEMVN District Commander will review all comments received during the review period and determine if they rise to the level of being substantive in nature. If comments are not considered to be substantive, the District Commander will make a decision on the proposed action. This decision will be documented in an IER Decision Record. If a comment(s) is determined to be substantive in nature, an Addendum to the IER will be prepared and published for an additional 30-day public review and comment period. After the expiration of the public comment period, the District Commander will make a decision on the proposed action. The decision will be documented in an IER Decision Record.

Six potential contractor-furnished borrow areas investigated by the CEMVN are discussed in this IER. The CEMVN's engineers currently estimate that over 31,000,000

cubic yards of suitable material would be required to complete HSDRRS projects. Due to the importance of providing safety to the citizens of the New Orleans metropolitan area, and the amount of borrow needed to supply levee projects for the HSDRRS, multiple borrow IERs are being prepared as additional potential borrow sites are evaluated.

1.1 PURPOSE AND NEED FOR THE PROPOSED ACTION

The purpose of the proposed action is to locate suitable borrow material for use in the construction of the HSDRRS. The completed HSDRRS would lower the risk of harm to citizens and damage to infrastructure during a storm event. The safety of people in the region is the highest priority of the CEMVN. The proposed action results from the need to provide a total of over 31,000,000 cubic yards of suitable clay for the HSDRRS projects that include the construction and improvement to hurricane risk reduction levees and floodwalls in southeastern Louisiana. Raising existing levee elevations and completing new levees would require the excavation of material from borrow areas to ensure that the HSDRRS is constructed to the authorized levels of flood and storm damage risk reduction for local communities.

The term "100-year level of risk reduction," as it is used throughout this document, refers to a level of risk reduction, which reduces the risk of hurricane surge and wave driven flooding that the New Orleans metropolitan area has a 1 percent chance of experiencing each year.

1.2 AUTHORITY FOR THE PROPOSED ACTION

The authority for the proposed action was provided as part of hurricane and storm damage risk reduction projects in southeastern Louisiana, specifically, the Lake Pontchartrain and Vicinity (LPV) Project and the West Bank and Vicinity (WBV) Project. Congress and the Administration granted a series of supplemental appropriation acts following Hurricanes Katrina and Rita in 2005 to repair and enhance the systems damaged by the storms.

The LPV project was authorized under the Flood Control Act of 1965 (Public Law [P.L.] 89-298, Title II, Section [Sec.] 204), which, as amended, authorized a "project for hurricane protection on Lake Pontchartrain, Louisiana ... substantially in accordance with the recommendations of the Chief of Engineers in House Document 231, Eighty-ninth Congress." The original statutory authorization for the LPV Project was amended by the Water Resources Development Acts (WRDA) of 1974 (P.L. 93-251, Title I, Sec. 92), 1986 (P.L. 99-662, Title V3, Sec. 805), 1990 (P.L. 101-640, Sec. 116), 1992 (P.L. 102-580, Sec. 102), 1996 (P.L. 104-303, Sec. 325), 1999 (P.L. 106-53, Sec. 324), and 2000 (P.L. 106-541, Sec. 432); and the Energy and Water Development Appropriations Acts of 1992 (P.L. 102-104, Title I, Construction, General), 1993 (P.L. 102-377, Title I, Construction, General), and 1994 (P.L. 103-126, Title I, Construction, General).

The Westwego to Harvey Canal Project was authorized by the WRDA of 1986 (P.L. 99-662, Sec. 401(b)). The WRDA of 1996 modified the project and added the Lake Cataouatche Project and the East of Harvey Canal Project (P.L. 104-303, Sec. 101(a)(17) & P.L. 104-303, 101(b)(11)). The WRDA of 1999 combined the three projects into one project under the West Bank and Vicinity Hurricane Protection Project (P.L. 106-53, Sec. 328).

The Department of Defense, Emergency Supplemental Appropriations to Address Hurricanes in the Gulf of Mexico, and Pandemic Influenza Act of 2006 (3rd

Supplemental - P.L. 109-148, Chapter 3, Construction, and Flood Control and Coastal Emergencies) appropriated funds to accelerate the completion of the previously authorized projects and to restore and repair the projects at full Federal expense. The Emergency Supplemental Appropriations Act for Defense, the Global War on Terror, and Hurricane Recovery of 2006 (4th Supplemental - P.L. 109-234, Title II, Chapter 3, Construction, and Flood Control and Coastal Emergencies) appropriated funds and added authority to raise levee heights where necessary, reinforce and replace floodwalls, and otherwise enhance the projects to provide the levels of risk reduction necessary to achieve the certification required for participation in the National Flood Insurance Program. Additional Supplemental Appropriations include the U.S. Troop Readiness, Veterans' Care, Katrina Recovery, and Iraq Accountability Appropriations Act of 2007 (P.L. 110-28, Title IV, Chapter 3, Flood Control and Coastal Emergencies, section 4302) (5th Supplemental), and the 6th Supplemental (P.L. 110-252, Title 3, Chapter 3, Construction).

1.3 PRIOR REPORTS

A number of studies and reports on water resources development in the proposed project area have been prepared by the USACE, other Federal, state, and local agencies, research institutes, and individuals. Pertinent studies, reports, and projects are discussed below:

Lake Pontchartrain and Vicinity Project

- On 29 October 2009, the CEMVN District Commander signed a Decision Record on IER Supplemental #2 entitled "Lake Pontchartrain and Vicinity, West Return Flood Wall, Jefferson and Orleans Parishes, Louisiana." The document describes the impacts associated with replacing the existing floodwall with a new T-wall approximately 35 feet to the west of the current alignment along the east embankment of the Parish Line Canal on the border of Jefferson and Orleans Parishes, Louisiana.

- On 28 September 2009, the CEMVN District Commander signed a Decision Record on IER #30 entitled "Contractor-Furnished Borrow Material #5, St. Bernard and St. James Parishes, Louisiana, and Hancock County, Mississippi." The document evaluates the potential impacts associated with the actions taken by commercial contractors as a result of excavating contractor-furnished borrow areas for use in construction of the HSDRRS.

- On 20 September 2009, the CEMVN District Commander signed a Decision Record on IER #29 entitled "Pre-Approved Contractor-Furnished Borrow Material #4, Orleans, St. John the Baptist, and St. Tammany Parishes, Louisiana." The document evaluates the potential impacts associated with the actions taken by commercial contractors as a result of excavating contractor-furnished borrow areas for use in construction of the HSDRRS.

- On 31 July 2009, the CEMVN District Commander signed a Decision Record on IER #28 entitled "Government-Furnished Borrow Material #4, Plaquemines, St. Bernard, and Jefferson Parishes, Louisiana." The document evaluates the potential impacts associated with approving government-furnished borrow areas and an access route for use in construction of the HSDRRS.

- On 30 June 2009, the CEMVN District Commander signed a Decision Record for IER #5, entitled "Lake Pontchartrain and Vicinity, Permanent Protection System for the Outfall Canals Project on 17th Street, Orleans Avenue, and London

Avenue Canals, Jefferson and Orleans Parishes, Louisiana." The document evaluates the potential impacts related to constructing permanent pumps on the 17th Street, Orleans Avenue, and London Avenue Canals to provide for 100-year level of risk reduction.

- On 29 June 2009, the CEMVN District Commander signed a Decision Record for IER Supplemental (IERS) #1, entitled "Lake Pontchartrain and Vicinity, LaBranche Wetlands Levee, St. Charles Parish, Louisiana." The document evaluates the potential impacts related to modifications to actions approved in IER #1.

- On 25 June 2009, the CEMVN District Commander signed a Decision Record for IER #6, entitled "Lake Pontchartrain and Vicinity, New Orleans East, Citrus Lakefront Levee, Orleans Parish, Louisiana." The document evaluates the potential impacts associated with constructing improved levees on the south shore of Lake Pontchartrain in New Orleans East, Orleans Parish, Louisiana.

- On 23 June 2009, the CEMVN District Commander signed a Decision Record for IER #8, entitled "Lake Pontchartrain and Vicinity, Bayou Dupre Control Structure, St. Bernard Parish, Louisiana." The document evaluates the potential impacts associated with constructing a new flood control structure on Bayou Dupre.

- On 19 June 2009, the CEMVN District Commander signed a Decision Record for IER #7, entitled "Lake Pontchartrain and Vicinity, New Orleans East Lakefront to Michoud Canal, Orleans Parish, Louisiana." The document evaluates the potential impacts associated with reconstructing levees, floodwalls, and floodgates around the Bayou Sauvage National Wildlife Refuge.

- On 26 May 2009, the CEMVN District Commander signed a Decision Record for IER #10, entitled "Lake Pontchartrain and Vicinity, Chalmette Loop Levee, St. Bernard Parish, Louisiana." The document evaluates the impacts related to improving hurricane risk reduction structures in St. Bernard Parish, Louisiana.

- On 13 March 2009, the CEMVN District Commander signed a Decision Record for IER #4, entitled "Lake Pontchartrain and Vicinity, Orleans East Bank, New Orleans Lakefront Levee, West of Inner Harbor Navigation Canal to Eastbank of 17th Street Canal, Orleans Parish, Louisiana." The document evaluates the potential impacts associated with improving the Orleans lakefront hurricane risk reduction features.

- On 3 February 2009, the CEMVN District Commander signed a Decision Record on IER #25 entitled "Government-Furnished Borrow Material, Orleans, Plaquemines and Jefferson Parishes, Louisiana." The document evaluates the potential impacts associated with approving government-furnished borrow areas for use in construction of the HSDRRS.

- On 21 October 2008, the CEMVN District Commander signed a Decision Record on IER #11 Tier 2 Borgne entitled "Improved Protection on the Inner Harbor Navigation Canal, Tier 2 Borgne Orleans and St. Bernard Parishes, Louisiana." The document was prepared to evaluate the potential impacts associated with constructing a surge barrier on Lake Borgne.

- On 20 October 2008, the CEMVN District Commander signed a Decision Record on IER #26 entitled "Pre-Approved Contractor-Furnished Borrow Material #3, Jefferson, Plaquemines, and St. John the Baptist Parishes, Louisiana, and Hancock County, Mississippi." The document evaluates the potential impacts associated with the actions taken by commercial contractors as a result of excavating contractor-furnished borrow areas for use in construction of the HSDRRS.

- On 25 July 2008, the CEMVN District Commander signed a Decision Record on IER #3, entitled "Lake Pontchartrain and Vicinity, Lakefront Levee, Jefferson Parish, Louisiana." The proposed action includes raising approximately nine and a half miles of earthen levees, completing upgrades to foreshore protection, replacing two floodgates, and completing fronting protection modifications to four existing pump stations in Jefferson Parish, Louisiana.

- On 18 July 2008, the CEMVN District Commander signed a Decision Record on IER #2, entitled "LPV, West Return Floodwall, Jefferson and St. Charles Parishes, Louisiana." The proposed action includes replacing over 17,900 linear feet of floodwalls in Jefferson and St. Charles Parishes, Louisiana.

- On 9 June 2008, the CEMVN District Commander signed a Decision Record on IER #1, entitled "Lake Pontchartrain and Vicinity, La Branche Wetlands Levee, St. Charles Parish, Louisiana." The proposed action includes raising approximately nine miles of earthen levees, replacing over 3,000 feet of floodwalls, rebuilding or modifying four drainage structures, closing one drainage structure, and modifying one railroad gate in St. Charles Parish, Louisiana.

- On 30 May 2008, the CEMVN District Commander signed a Decision Record on IER #22 entitled "Government-Furnished Borrow Material, Plaquemines and Jefferson Parishes, Louisiana." The document evaluates the potential impacts associated with approving government-furnished borrow areas for use in construction of the HSDRRS.

- On 6 May 2008, the CEMVN District Commander signed a Decision Record on IER #23 entitled "Pre-Approved Contractor-Furnished Borrow Material #2, St. Bernard, St. Charles, Plaquemines Parishes, Louisiana, and Hancock County, Mississippi." The document evaluates the potential impacts associated with approving contractor-furnished borrow areas for use in construction of the HSDRRS.

- On 14 March 2008, the CEMVN District Commander signed a Decision Record on IER #11 (Tier 1) entitled "Improved Protection on the Inner Harbor Navigation Canal, Orleans and St. Bernard Parishes, Louisiana." The document evaluates potential impacts associated with building navigable and structural barriers to prevent storm surge from entering the Inner Harbor Navigation Canal from Lake Pontchartrain and/or the Gulf Intracoastal Waterway-Mississippi River Gulf Outlet-Lake Borgne complex. Two Tier 2 documents discussing alignment alternatives and designs of the navigable and structural barriers, and the impacts associated with exact footprints, are being completed.

- On 21 February 2008, the CEMVN District Commander signed a Decision Record on IER #18 entitled "Government-Furnished Borrow Material, Jefferson, Orleans, Plaquemines, St. Charles, and St. Bernard Parishes, Louisiana." The

document evaluates the potential impacts associated with approving government-furnished borrow areas for use in construction of the HSDRRS.

- On 14 February 2008, the CEMVN District Commander signed a Decision Record on IER #19 entitled "Pre-Approved Contractor-Furnished Borrow Material, Jefferson, Orleans, St. Bernard, Iberville, and Plaquemines Parishes, Louisiana, and Hancock County, Mississippi." The document evaluates the potential impacts associated with approving contractor-furnished borrow areas for use in construction of the HSDRRS.

- In July 2006, the CEMVN District Commander signed a Finding of No Significant Impact (FONSI) on an EA #433 entitled, "USACE Response to Hurricanes Katrina & Rita in Louisiana." The document evaluates the potential impacts associated with the actions taken by the USACE as a result of Hurricanes Katrina and Rita.

- On 30 October 1998, the CEMVN District Commander signed a FONSI on EA #279 entitled "Lake Pontchartrain Lakefront, Breakwaters, Pump Stations 2 and 3." The report evaluates the impacts associated with providing fronting protection for outfall canals and pump stations. It was determined that the action would not significantly impact resources in the immediate area.

- On 2 October 1998, the CEMVN District Commander signed a FONSI on EA #282 entitled "LPV, Jefferson Parish Lakefront Levee, Landside Runoff Control: Alternate Borrow." The report investigates the impacts of obtaining borrow material from an urban area in Jefferson Parish. No significant impacts to resources in the immediate area were expected.

- On 2 July 1992, the CEMVN District Commander signed a FONSI on EA #169 entitled "LPV, Hurricane Protection Project, East Jefferson Parish Levee System, Jefferson Parish, Louisiana, Gap Closure." The report addresses the construction of a floodwall in Jefferson Parish to close a "gap" in the levee system. The area was previously leveed and under forced drainage, and it was determined that the action would not significantly impact the already disturbed area.

- On 22 February 1991, the CEMVN District Commander signed a FONSI on EA #164 entitled "LPV Hurricane Protection – Alternate Borrow Area for the St. Charles Parish Reach." The report addresses the impacts associated with the use of borrow material from the Mississippi River on the left descending back in front of the Bonnet Carré Spillway Forebay for LPV construction.

- On 30 August 1990, the CEMVN District Commander signed a FONSI on EA #163 entitled "LPV Hurricane Protection – Alternate Borrow Area for Jefferson Parish Lakefront Levee, Reach 3." The report addresses the impacts associated with the use of a borrow area in Jefferson Parish for LPV construction.

- On 2 July 1991, the CEMVN District Commander signed a FONSI on EA #133 entitled "LPV Hurricane Protection – Alternate Borrow at Highway 433, Slidell, Louisiana." The report addresses the impacts associated with the excavation of a borrow area in Slidell, Louisiana for LPV construction.

- On 12 September 1990, the CEMVN District Commander signed a FONSI on EA #105 entitled "LPV Hurricane Protection – South Point to Gulf Intracoastal Waterway, A. V. Keeler and Company Alternative Borrow Site." The report

addresses the impacts associated with the excavation of a borrow area in Slidell, Louisiana for LPV construction.

- On 12 March 1990, the CEMVN District Commander signed a FONSI on EA #102 entitled "LPV Hurricane Protection – 17th Street Canal Hurricane Protection." The report addresses the use of alternative methods of providing flood protection for the 17th Street Outfall Canal in association with LPV activity. Impacts to resources were found to be minimal.

- On 4 August 1989, the CEMVN District Commander signed a FONSI on EA #89 entitled "LPV Hurricane Protection, High Level Plan - Alternate Borrow Site 1C-2B." The report addresses the impacts associated with the excavation of a borrow area along Chef Menteur Highway, Orleans Parish for LPV construction. The material was used in the construction of a levee west of the Inner Harbor Navigation Canal.

- On 27 October 1988, the CEMVN District Commander signed a FONSI on EA #79 entitled "LPV Hurricane Protection – London Avenue Outfall Canal." The report investigates the impacts of strengthening hurricane risk reduction at the London Avenue Outfall Canal.

- On 21 July 1988, the CEMVN District Commander signed a FONSI on EA #76 entitled "LPV Hurricane Protection – Orleans Avenue Outfall Canal." The report investigates-the impacts of strengthening hurricane risk reduction at the Orleans Avenue Outfall Canal.

- On 26 February 1986, the CEMVN District Commander signed a FONSI on EA #52 entitled "LPV Hurricane Protection – Geohegan Canal." The report addresses the impacts associated with the excavation of borrow material from an extension of the Geohegan Canal for LPV construction.

- Supplemental Information Report (SIR) #25 entitled "LPV Hurricane Protection – Chalmette Area Plan, Alternate Borrow Area 1C-2A" was signed by the CEMVN District Commander on 12 June 1987. The report addresses the used of an alternate contractor-furnished borrow area for LPV construction.

- SIR #27 entitled "LPV Hurricane Protection – Alternate Borrow Site for Chalmette Area Plan" was signed by the CEMVN District Commander on 12 June 1987. The report addresses the use of an alternate contractor-furnished borrow area for LPV construction.

- SIR #28 entitled "LPV Hurricane Protection – Alternate Borrow Site, Mayfield Pit" was signed by the CEMVN District Commander on 12 June 1987. The report addresses the use of an alternate contractor-furnished borrow area for LPV construction.

- SIR #29 entitled "LPV Hurricane Protection – South Point to GIWW Levee Enlargement" was signed by the CEMVN District Commander on 12 June 1987. The report discusses the impacts associated with the enlargement of the GIWW.

- SIR #30 entitled "LPV Hurricane Protection Project, Jefferson Lakefront Levee" was signed by the CEMVN District Commander on 7 October 1987. The report investigates impacts associated with changes in Jefferson Parish LPV levee design.

- SIR #17 entitled "LPV Hurricane Protection – New Orleans East Alternative Borrow, North of Chef Menteur Highway" was signed by the CEMVN District Commander on 30 April 1986. The report addresses the use of an alternate contractor-furnished borrow area for LPV construction.

- SIR #22 entitled "LPV Hurricane Protection – Use of 17th Street Pumping Station Material for LPHP Levee" was signed by the CEMVN District Commander on 5 August 1986. The report investigates the impacts of moving suitable borrow material from a levee at the 17th Street Canal in the construction of a stretch of levee from the Inner Harbor Navigation Canal to the London Avenue Canal.

- SIR #10 entitled "LPV Hurricane Protection, Bonnet Carré Spillway Borrow" was signed by the CEMVN District Commander on 3 September 1985. The report evaluates the impacts associated with using the Bonnet Carré Spillway as a borrow source for LPV construction, and found "no significant adverse effect on the human environment."

- In December 1984, an SIR to complement the Supplement to final EIS on the LPV Hurricane Protection project was filed with the U.S. Environmental Protection Agency (USEPA).

- The final EIS for the LPV Hurricane Protection Project, dated August 1974. A Statement of Findings was signed by the CEMVN on 2 December 1974. Final Supplement I to the EIS, dated July 1984, was followed by a Record of Decision (ROD), signed by the CEMVN on 7 February1985. Final Supplement II to the EIS, dated August 1994, was followed by a ROD signed by CEMVN on 3 November 1994.

- A report entitled "Flood Control, Mississippi River and Tributaries," published as House Document No. 90, 70th Congress, 1st Session, submitted 18 December 1927, resulted in authorization of a project by the Flood Control Act of 1928. The project provided comprehensive flood control for the lower Mississippi Valley below Cairo, Illinois. The Flood Control Act of 1944 authorized the USACE to construct, operate, and maintain water resources development projects. The Flood Control Acts have had an important impact on water and land resources in the proposed project area.

<u>West Bank and Vicinity Project</u>

- On 28 September 2009, the CEMVN District Commander signed a Decision Record on IER #30 entitled "Contractor-Furnished Borrow Material #5, St. Bernard and St. James Parishes, Louisiana, and Hancock County, Mississippi." The document evaluates the potential impacts associated with the actions taken by commercial contractors as a result of excavating contractor-furnished borrow areas for use in construction of the HSDRRS.

- On 20 September 2009, the CEMVN District Commander signed a Decision Record on IER #29 entitled "Pre-Approved Contractor-Furnished Borrow Material #4, Orleans, St. John the Baptist, and St. Tammany Parishes, Louisiana." The document evaluates the potential impacts associated with the actions taken by commercial contractors as a result of excavating contractor-furnished borrow areas for use in construction of the HSDRRS.

- On 31 July 2009, the CEMVN District Commander signed a Decision Record on IER #28 entitled “Government-Furnished Borrow Material #4, Plaquemines, St. Bernard, and Jefferson Parishes, Louisiana.” The document evaluates the potential impacts associated with approving government-furnished borrow areas and an access route for use in construction of the HSDRRS.

- On 12 June 2009, the CEMVN District Commander signed a Decision Record on IER #16, entitled “Western Tie-In, Jefferson and St. Charles Parishes, Louisiana.” The document describes the potential impacts associated with constructing a new levee to provide 100-year level of risk reduction for the project vicinity.

- On 18 February 2009, the CEMVN District Commander signed a Decision Record on IER #12, entitled "Gulf Intracoastal Waterway (GIWW), Harvey, and Algiers Levees and Floodwalls, Jefferson, Orleans, and Plaquemines Parishes, Louisiana." The document describes the potential impacts associated with construction of approximately 3 miles of levee and floodwall in the project vicinity.

- On 3 February 2009, the CEMVN District Commander signed a Decision Record on IER #25 entitled “Government-Furnished Borrow Material, Orleans, Plaquemines and Jefferson Parishes, Louisiana.” The document evaluates the potential impacts associated with approving government-furnished borrow areas for use in construction of the HSDRRS.

- On 21 January2009, the CEMVN District Commander signed a Decision Record on IER #17 entitled “Company Canal Floodwall, Jefferson Parish, Louisiana.” The document evaluates the proposed construction and maintenance of the 100-year level of hurricane and storm damage risk reduction along the Company Canal from the Bayou Segnette State Park to the New Westwego Pumping Station.

- On 20 October 2008, the CEMVN District Commander signed a Decision Record on IER #26 entitled “Pre-Approved Contractor-Furnished Borrow Material #3, Jefferson, Plaquemines, and St. John the Baptist Parishes, Louisiana, and Hancock County, Mississippi.” The document evaluates the potential impacts associated with approving contractor-furnished borrow areas for use in construction of the HSDRRS.

- On 18 February 2009, the CEMVN District Commander signed a Decision Record on IER #12, entitled "Gulf Intracoastal Waterway (GIWW), Harvey, and Algiers Levees and Floodwalls, Jefferson, Orleans, and Plaquemines Parishes, Louisiana." The document describes the potential impacts associated with construction of construct approximately 3 miles of levee and floodwall in the project vicinity.

- On 26 August 2008, the CEMVN District Commander signed a Decision Record on IER #14, entitled “Westwego to Harvey, Levee Jefferson Parish, Louisiana.” The document was prepared to examine the potential environmental impacts associated with the proposed construction and maintenance of 100-year level of hurricane and storm damage risk reduction along the WBV, Westwego to Harvey Levee project area.

- On 12 June 2008, the CEMVN District Commander signed a Decision Record on IER #15, entitled “Lake Cataouatche Levee, Jefferson Parish, Louisiana.” The

proposed action includes constructing a 100-year level of protection in the project area.

- On 30 May 2008, the CEMVN District Commander signed a Decision Record on IER #22 entitled "Government-Furnished Borrow Material, Plaquemines and Jefferson Parishes, Louisiana." The document was prepared to evaluate the potential impacts associated with approving government-furnished borrow areas for use in construction of the HSDRRS.

- On 6 May 2008, the CEMVN District Commander signed a Decision Record on IER #23 entitled "Pre-Approved Contractor-Furnished Borrow Material #2, St. Bernard, St. Charles, Plaquemines Parishes, Louisiana, and Hancock County, Mississippi." The document was prepared to evaluate the potential impacts associated with approving contractor-furnished borrow areas for use in construction of the HSDRRS.

- On 21 February 2008, the CEMVN District Commander signed a Decision Record on IER #18 entitled "Government-Furnished Borrow Material, Jefferson, Orleans, Plaquemines, St. Charles, and St. Bernard Parishes, Louisiana." The document was prepared to evaluate the potential impacts associated with approving government-furnished borrow areas for use in construction of the HSDRRS.

- On 14 February 2008, the CEMVN District Commander signed a Decision Record on IER #19 entitled "Pre-Approved Contractor-Furnished Borrow Material, Jefferson, Orleans, St. Bernard, Iberville, and Plaquemines Parishes, Louisiana, and Hancock County, Mississippi." The document was prepared to evaluate the potential impacts associated with approving contractor-furnished borrow areas for use in construction of the HSDRRS.

- In July 2006, the CEMVN District Commander signed a FONSI on an EA #433 entitled, "USACE Response to Hurricanes Katrina & Rita in Louisiana." The document was prepared to evaluate the potential impacts associated with the actions taken by the USACE as a result of Hurricanes Katrina and Rita.

- On 23 August 2005, the CEMVN District Commander signed a FONSI on EA #422 entitled "Mississippi River Levees – West Bank Gaps, Concrete Slope Pavement Borrow Area Designation, St. Charles and Jefferson Parishes, Louisiana." The report investigates the impacts of obtaining borrow material from various areas in Louisiana.

- On 22 February 2005, the CEMVN District Commander signed a FONSI on EA #306A entitled "West Bank Hurricane Protection Project – East of the Harvey Canal, Floodwall Realignment and Change in Method of Sector Gate." The report discusses the impacts related to the relocation of a proposed floodwall moved because of the aforementioned sector gate, as authorized by the LPV Project.

- On 5 May 2003, the CEMVN District Commander signed a FONSI on EA #337 entitled "Algiers Canal Alternative Borrow Site."

- On 19 June-2003, the CEMVN District Commander signed a FONSI on EA #373 entitled "Lake Cataouatche Levee Enlargement." The report discusses the

impacts related to improvements to a levee from Bayou Segnette State Park to Lake Cataouatche.

- On 16 May 2002, the CEMVN District Commander signed a FONSI on EA #306 entitled "West Bank Hurricane Protection Project - Harvey Canal Sector Gate Site Relocation and Construction Method Change." The report discusses the impacts related to the relocation of a proposed sector gate within the Harvey Canal, as authorized by the LPV Project.

- On 30 August 2000, the CEMVN District Commander signed a FONSI on EA #320 entitled "West Bank Hurricane Protection Features." The report evaluates the impacts associated with borrow sources and construction options to complete the Westwego to Harvey Canal Hurricane Protection Project.

- On 18 August 1998, the CEMVN District Commander signed a FONSI on EA #258 entitled "Mississippi River Levee Maintenance - Plaquemines West Bank Second Lift, Fort Jackson Borrow Site."

- The final EIS for the WBV, East of Harvey Canal, Hurricane Protection Project was completed in August 1994. A ROD was signed by the CEMVN District Commander in September 1998.

- The final EIS for the WBV, Lake Cataouatche, Hurricane Protection Project was completed. A ROD was signed by the CEMVN District Commander in September 1998.

- In December 1996, the USACE completed a post-authorization change study entitled, "Westwego to Harvey Canal, Louisiana Hurricane Protection Project Lake Cataouatche Area, EIS." The study investigates the feasibility of providing hurricane surge protection to that portion of the west bank of the Mississippi River in Jefferson Parish between Bayou Segnette and the St. Charles Parish line. A Standard Project Hurricane (SPH) level of protection was recommended along the alignment followed by the existing non-Federal levee. The project was authorized by Section 101 (b) of the WRDA of 1996 (P. L. 104-303) subject to the completion of a final report of the Chief of Engineers, which was signed on 23 December 1996.

- On 12 January 1994, the CEMVN District Commander signed a FONSI on an EA #198 entitled, "West Bank of the Mississippi River in the Vicinity of New Orleans, Louisiana, Hurricane Protection Project, Westwego to Harvey Canal, Jefferson Parish, Louisiana, Proposed Alternate Borrow Sources and Construction Options." The report evaluates the impacts associated with borrow sources and construction options to complete the Westwego to Harvey Canal Hurricane Protection Levee.

- In August 1994, the CEMVN District Commander completed a feasibility report entitled "WBV (East of the Harvey Canal)." The study investigates the feasibility of providing hurricane surge protection to that portion of the west bank of metropolitan New Orleans from the Harvey Canal eastwards to the Mississippi River. The final report recommends that the existing West Bank Hurricane Project, Jefferson Parish, Louisiana, authorized by the WRDA of 1986 (P.L. 99-662), approved November 17, 1986, be modified to provide additional hurricane protection east of the Harvey Canal. The report also recommends that the level of protection for the area east of the Algiers Canal deviate from the National

Economic Development Plan's level of protection and provide protection for the SPH. The Division Engineer's Notice was issued on 1 September 1994. The Chief of Engineer's report was issued on 1 May 1995. Preconstruction, engineering, and design was initiated in late 1994 and is continuing. The WRDA of 1996 authorized the project.

- On 20 March 1992, the CEMVN District Commander signed a FONSI on EA #165 entitled "Westwego to Harvey Canal Disposal Site."

- In February 1992, the USACE completed a reconnaissance study entitled "West Bank Hurricane Protection, Lake Cataouatche, Louisiana." The study investigated the feasibility of providing hurricane surge protection to that portion of the west bank of the Mississippi River in Jefferson Parish, between Bayou Segnette and the St. Charles Parish line. The study found a 100-year level of protection to be economically justified based on constructing a combination levee/ sheetpile wall along the alignment followed by the existing non-Federal levee. Due to potential impacts to the Westwego to Harvey Canal project, the study is proceeding as a post-authorization change.

- On 3 June 1991, the CEMVN District Commander signed a FONSI on EA #136 entitled "West Bank Additional Borrow Site between Hwy 45 and Estelle PS."

- On 15 March 1990, the CEMVN District Commander signed a FONSI on EA #121 entitled "West Bank Westwego to Harvey Changes to EIS." The report addresses the impacts associated with the use of borrow material from Fort Jackson for LPV construction. The material was used for constructing the second life for the Plaquemines West Bank levee upgrade, as part of LPV construction.

- In December 1986, the USACE completed a Feasibility Report and EIS entitled, "West Bank of the Mississippi River in the Vicinity of New Orleans, La." The report investigates the feasibility of providing hurricane surge protection to that portion of the west bank of the Mississippi River in Jefferson Parish between the Harvey Canal and Westwego, and down to the vicinity of Crown Point, Louisiana. The report recommends implementing a plan that would provide SPH level of protection to an area on the west bank between Westwego and the Harvey Canal north of Crown Point. The project was authorized by the WRDA of 1986 (P.L. 99-662). Construction of the project was initiated in early 1991.

1.4 INTEGRATION WITH OTHER IERS

In addition to evaluating proposed borrow areas in IERs, the CEMVN is preparing a draft Comprehensive Environmental Document (CED) that will describe all HSDRRS work completed and remaining to be constructed. The purpose of the draft CED is to document the work completed by the CEMVN on a system-wide scale. The draft CED will describe the integration of individual IERs into a systematic planning effort. Analysis of overall cumulative impacts, a finalized mitigation plan, and future operations and maintenance requirements will also be included. Additionally, the draft CED will contain updated information for any IER that had incomplete or unavailable data at the time it was available for public review.

The draft CED will be available for a 60-day public review period. The document will be posted on www.nolaenvironmental.gov, or can be requested by contacting the CEMVN. A notice of availability will be mailed/e-mailed to interested parties advising them of the availability of the draft CED for review. Additionally, a notice will be placed in national

and local newspapers. Upon completion of the 60-day review period all comments will be compiled and appropriately addressed. Upon resolution of any comments received, a final CED will be prepared, signed by the District Commander, and made available to any stakeholders requesting a copy.

Compensatory mitigation for unavoidable impacts associated with this and other proposed HSDRRS projects will be documented in forthcoming mitigation IERs, which are being written concurrently with all other IERs. Mitigation will also be discussed in the CED.

1.5 PUBLIC CONCERNS

The CEMVN has provided numerous opportunities to the public to provide input and comments about the proposed HSDRRS work throughout the planning process through a number of outlets (i.e., public meetings; written and verbal comments; www.nolaenvironmental.gov). IER #18, IER #19, IER #22, IER #23, IER #25, IER #26, IER #28, IER #29, and IER #30 discuss the impacts of borrow excavation related to the HSDRRS. These documents contain public comments regarding borrow issues (appendix B – all documents), and are available at www.nolaenvironmental.gov, or upon request.

The foremost public concern in the project area is reducing the risk of hurricane, storm, and flood damage for businesses and residences, and enhancing public safety during major storm events in the Greater New Orleans metropolitan area. Comments at public meetings indicated concern over the risk to current levees and floodwalls from overtopping from storm-induced tidal surges during major storm events, and the potential risk of levee or floodwall failure during a major storm event. A key concern of local officials is to increase public confidence in the HSDRRS so that the physical and economic recovery of the area can proceed. The scheduling of construction of the HSDRRS is also a concern. Local officials also want the public to be aware that the completed HSDRRS is not intended to invalidate evacuation measures.

Residents in the vicinity of proposed borrow areas have expressed concern over the potential or perceived impact on potential future development, land values, and public safety. Some members of the public have stated that they would prefer that remaining land in coastal parishes either not be excavated, or should be developed as residential, commercial, or industrial areas. Members of the public have also said that they feel that borrow areas should be backfilled. Non-governmental organizations have commented on the importance of avoiding impacts to jurisdictional wetlands when looking for borrow sources. The CEMVN is currently avoiding impacts to all jurisdictional wetlands, as other reasonable alternatives are available (see section 2.1). Residents in the vicinity of proposed borrow areas are concerned about truck haulers causing traffic congestion and noise. The public is also concerned about safety issues during and after the borrow area is excavated. Finally, landowners are concerned about the USACE using their privately owned property as a source of borrow material and not being fairly compensated.

1.6 DATA GAPS AND UNCERTAINTIES

At the time of submission of this IER, geotechnical evaluations have been completed for the proposed contractor-furnished borrow areas. Final selection and/or footprints of borrow areas could vary based on the results of these evaluations. Borrow area footprints would be decreased in the case of negative geotechnical findings; areas not included in this investigation would be discussed in subsequent IERs.

Transportation impacts and routes for the delivery of borrow material have not been fully determined, as it is currently uncertain to which construction sites each proposed contractor-furnished borrow area would provide material. Large quantities of material would be delivered to construction sites within the New Orleans metropolitan area. This could have localized short-term impacts to transportation corridors that cannot be quantified at this time. The CEMVN is completing a transportation study to determine potential impacts associated with the transporting of material to construction sites. This analysis will be discussed in the CED.

Cumulative noise impacts are not fully known at this time. Any additional noise impacts that have not been identified will be discussed in the CED. Once the impacts associated with the proposed contractor-furnished borrow areas described in this IER in addition to any currently unidentified noise and transportation impacts associated with all of the HSDRRS work are determined, an analysis will be discussed in the CED.

Details on environmental justice impacts from potential use of proposed borrow areas will be further analyzed when additional project planning data become available at the conclusion of small group neighborhood focus meetings. These details will be included in the CED.

The excavation of the proposed contractor-furnished borrow areas is subject to compliance with local and state regulations or ordinances, including any local or state rules concerning backfilling excavated sites. It is the responsibility of the landowner to coordinate and secure appropriate permits from the local parish/county authority before starting any work on the property. Some unknown impacts due to backfilling activity may include traffic impacts, river dredging impacts, impacts to threatened and endangered species, stockpile/staging locations, sediment pipeline routes, and water quality impacts.

Air quality impacts from the excavation of the proposed contractor-furnished borrow areas are not fully known at this time, and additional or cumulative air impacts will be discussed in the CED.

Cumulative visual impacts from the excavation of the contractor-furnished proposed borrow areas are not fully known at this time. Additional or cumulative visual impacts will be discussed in the CED.

2. ALTERNATIVES

2.1 ALTERNATIVES DEVELOPMENT AND PRELIMINARY SCREENING CRITERIA

NEPA requires that in analyzing alternatives to a proposed action a Federal agency consider an alternative of "No Action." Likewise, Section 73 of the WRDA of 1974 (P.L. 93-251) requires Federal agencies to give consideration to non-structural measures to reduce or prevent flood damage. This IER discusses the potential impacts associated with excavating proposed contractor-furnished borrow areas, and as such there are no non-structural alternatives. Non-structural alternatives have and will be evaluated in the IERs discussing the construction of the HSDRRS levees, floodwalls, and structures.

The CEMVN is pursuing three avenues of obtaining the estimated amount of borrow material needed for construction of the HSDRRS. The three avenues being pursued by the CEMVN to obtain borrow material are government-furnished (the Government

acquires rights to property), pre-approved contractor-furnished (a CEMVN levee construction contractor works in partnership with a landowner to provide suitable borrow material from the landowner's property), and supply contract (a landowner or corporation delivers a pre-specified amount of suitable borrow material to a designated location for use by a CEMVN levee construction contractor). Two of the avenues being pursued (contactor furnished and supply contract) would allow a private individual(s) or corporation(s) to propose a site where borrow material could come from. It is possible that some of the government-furnished, contractor-furnished, and supply contract sources of borrow material may come from anywhere in the United States.

IER #18, IER #22, IER #25, and IER #28 discuss the potential impacts related to use of approved government-furnished borrow areas. The potential impacts related to use of approved contractor-furnished borrow areas are discussed in IER #19, IER #23, IER #26. IER #29, and IER #30. This IER discusses potential contractor-furnished borrow alternatives. Additional borrow IERs will be prepared as future potential government-furnished and contractor-furnished borrow areas are identified.

The U.S. Fish and Wildlife Service (USFWS) supports the CEMVN's prioritization of selection for potential borrow areas in the following order: existing commercial areas, upland sources, previously disturbed/manipulated wetlands within a levee system, and low-quality wetlands outside a levee system (letter dated August 7, 2006, appendix D). The USFWS recommends that prior to utilizing borrow areas, every effort should be made to reduce impacts by using sheetpile and/or floodwalls to increase levee heights wherever feasible. The USFWS also recommends the following protocol be adopted and utilized to identify borrow sources in descending order of priority:

1. "Permitted commercial sources, authorized borrow sources for which environmental clearance and mitigation have been completed, or non-functional levees after newly constructed adjacent levees are providing equal protection.

2. Areas under forced drainage that are protected from flooding by levees, and that are:

    a) non-forested (e.g., pastures, fallow fields, abandoned orchards, former urban areas and non-wetlands;

    b) wetland forests dominated by exotic tree species (i.e., Chinese tallow) or non-forested wetlands (e.g., wetland pastures), excluding marshes;

    c) disturbed wetlands (e.g., hydrologically altered, artificially impounded).

3. Areas that are outside a forced drainage system and levees, and that are:

    a) non-forested (e.g., pastures, fallow fields, abandoned orchards, former urban areas) and non-wetlands;

    b) wetland forests dominated by exotic tree species (i.e., Chinese tallow) or non-forested wetlands (e.g., wetland pastures), excluding marshes;

    c) disturbed wetlands (e.g., hydrologically altered, artificially impounded)."

The USFWS is currently assisting the CEMVN in meeting this protocol.

2.2 DESCRIPTION OF THE ALTERNATIVES

Two alternatives were considered. These include the no action and the proposed action.

No Action. Under the no action alternative, the proposed contractor-furnished borrow areas would not be used in connection with construction of the HSDRRS. The HSDRRS levee and floodwall projects would be built to authorized levels using government-furnished borrow areas and contractor-furnished borrow areas described in IER #18, IER #19, IER #22, IER #23, IER #25, IER #26, IER #28, IER #29, and IER #30, or other sources yet to be identified.

Proposed Action. The proposed action consists of excavating the proposed Bocage, Citrus Lands, Conoco Phillips, Idlewild Stage 1, Nairn, Plaquemines Dirt & Clay, and 3C Riverside Phase 3 contractor-furnished borrow areas, as discussed in section 2.3.

The CEMVN is pursuing three avenues of obtaining the estimated amount of borrow material needed for construction of the HSDRRS. They include:

- Government-Furnished Borrow Material. The Government would acquire the rights to property, from which suitable borrow material could be used for construction of the HSDRRS. Government-furnished borrow alternatives are discussed in IER #18, IER #22, IER #25, and IER #28, and will be explored in future borrow IERs.

- Contractor-Furnished Borrow Material. A CEMVN levee contractor would work in partnership with a landowner to obtain suitable pre-approved contractor-furnished borrow material from the landowner's property. The six proposed sites are potential contractor-furnished borrow areas. If the proposed sites are approved, a CEMVN levee contractor could select any of these sites for use in a contract for construction of the HSDRRS. If a levee contractor selected one of these proposed contractor-furnished borrow areas, he would work in partnership with the borrow area landowner to provide suitable borrow material from the selected borrow area. Other contractor-furnished borrow alternatives are discussed in IER #19, IER #23, IER #26, IER #29, and IER #30, and will be explored in future borrow IERs.

- Supply Contract Borrow Material. The supply contract would allow a private individual(s) or corporation(s) to deliver a pre-specified amount of suitable borrow material from an area(s) anywhere in the United States. The individual or corporation would deliver the borrow material to a designated location for use by a CEMVN construction contractor.

2.3 PROPOSED ACTION

The proposed action (preferred alternative) consists of potentially excavating all suitable material from the proposed Bocage, Citrus Lands, Conoco Phillips, Idlewild Stage 1, Nairn, Plaquemines Dirt & Clay, and 3C Riverside Phase 3 contractor-furnished borrow areas for construction of the HSDRRS (figure 1). Material would be excavated by a CEMVN contractor who has made a financial arrangement with the contractor-furnished borrow area landowner. Once excavated and processed, the material would be transported to a HSDRRS construction site.

The landowners of the Bocage, Citrus Lands, Conoco Phillips, Plaquemines Dirt & Clay, and 3C Riverside Phase 3 sites have stated they do not plan to backfill the sites. The

landowners of the Idlewild Stage 1 and Nairn sites have expressed an intention to backfill the sites with material from a commercial source.

In order to meet the borrow needs of the HSDRRS, personnel from the CEMVN investigated and completed environmental coordination of the proposed contractor-furnished borrow areas, and is currently investigating others. Future potential borrow areas will be discussed in future borrow IERs.

Landowners or their agents for the proposed borrow areas discussed in this IER submitted the following information to the CEMVN for review: 1) a signed right of entry; 2) maps showing the property boundaries and areas being proposed for use as a contractor-furnished borrow area; 3) an approved Jurisdictional Determination from the CEMVN Regulatory Functions Branch indicating no jurisdictional wetland impacts; 4) a Coastal Use Permit or Letter of No Objection from the Louisiana Department of Natural Resources, Coastal Management Division (LADNR) (or state agency equivalent if the proposed site is in a state other than Louisiana), and a local parish/county Coastal Use Permit, when applicable; 5) a concurrence letter from the U.S. Department of the Interior, USFWS indicating that no threatened or endangered (T&E) species or their critical habitat would be affected by the proposed action; 6) a cultural resources assessment; 7) a Phase I Environmental Site Assessment (ESA); and 8) geotechnical boring logs and soil analysis identifying the suitability of potential borrow material. These materials are incorporated by reference.

This IER details the potential impacts related to the potential excavation of the proposed Bocage, Citrus Lands, Idlewild Stage 1, Nairn, Plaquemines Dirt & Clay and 3C Riverside Phase 3contractor-furnished borrow areas.

- The proposed 57-acre Bocage site is located in Ascension Parish, Louisiana (figures 2 and 3). The site is located in a rural area, and is currently used as cattle pasture.

- The proposed 353-acre Citrus Lands site is located in Plaquemines Parish, Louisiana (figures 4 and 5). The site is located in a rural area, and is currently used as pastureland.

- The proposed 517-acre Conoco Phillips site is located in Plaquemines Parish, Louisiana (figures 6 and 7). The site is located in a rural area, and is currently used as pastureland.

- The proposed 129-acre Idlewild Stage 1 site is located in Plaquemines Parish, Louisiana (figures 8 and 9). The site is located in a rural area, and is currently used as pastureland.

- The proposed 20-acre Nairn site is located in Plaquemines Parish, Louisiana (figures 10 and 11). The site is located in a rural area, and is currently a mixture of forested and grassy land.

- The proposed 209-acre Plaquemines Dirt & Clay site is located in Plaquemines Parish, Louisiana (figures 12 and 13). The site is currently used as cattle pasture. There are some inactive private borrow pits located on the site that have filled with water.

- The proposed 253-acre 3C Riverside Phase 3 site is located in St. Charles Parish, Louisiana (figures 14 and 15). The site is located in a rural area, and was recently

dominated by bottomland hardwood forest until cleared by the landowner. Approximately 49 acres of coastal lands within the jurisdiction of the LDNR Louisiana Coastal Program will be remediated, as stipulated by the LDNR. Jurisdictional wetlands located on the site were not impacted.

Figure 1: Area map of the proposed contractor-furnished borrow areas

1: Bocage / 2: Citrus Lands / 3: Conoco Phillips / 4: Idlewild Stage 1 / 5: Nairn / 6: Plaquemines Dirt & Clay (same as 2) / 7: 3C Riverside Phase 3

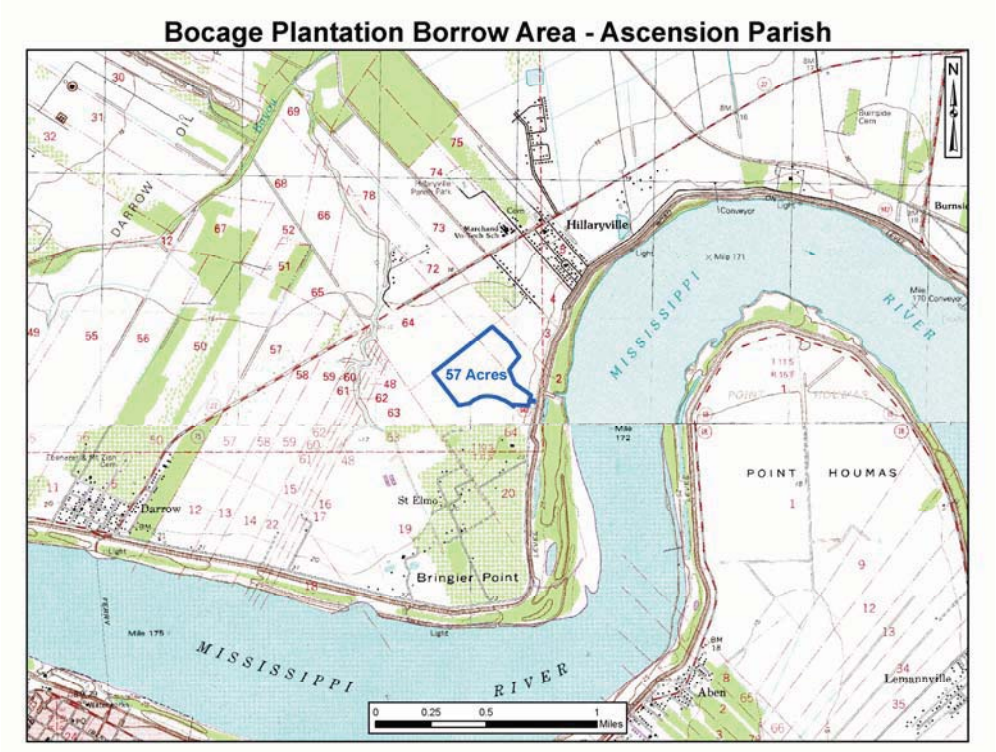

Figure 2: Area map of the proposed Bocage contractor-furnished borrow area

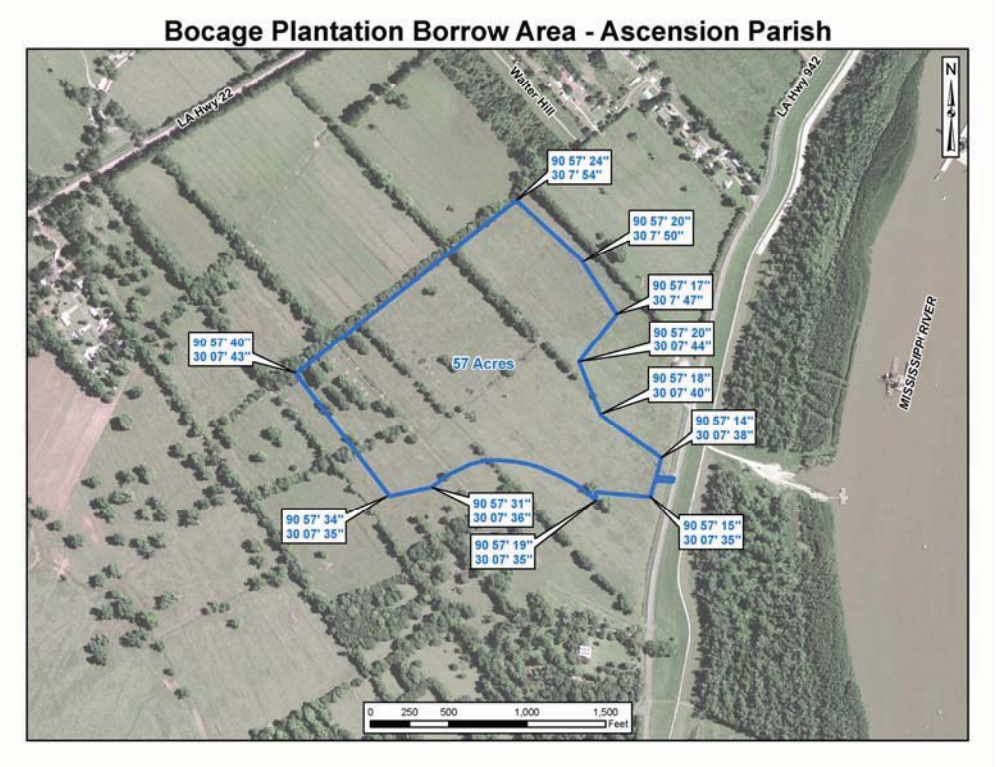

Figure 3: Site map of the proposed Bocage contractor-furnished borrow area

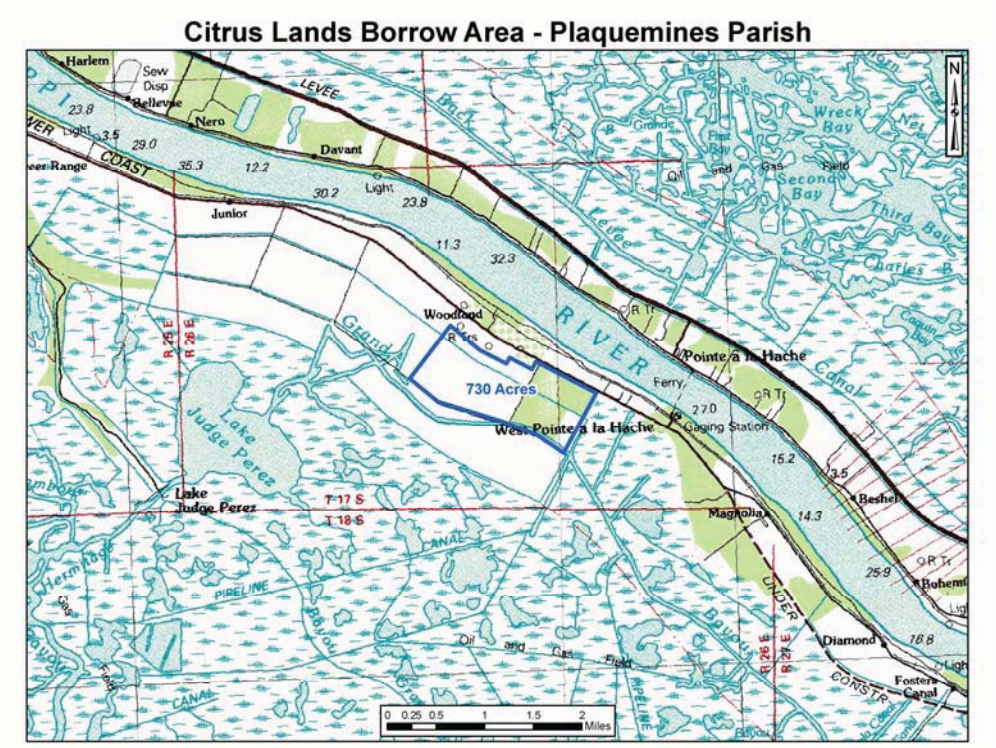

Figure 4: Area map of the proposed Citrus Lands contractor-furnished borrow area

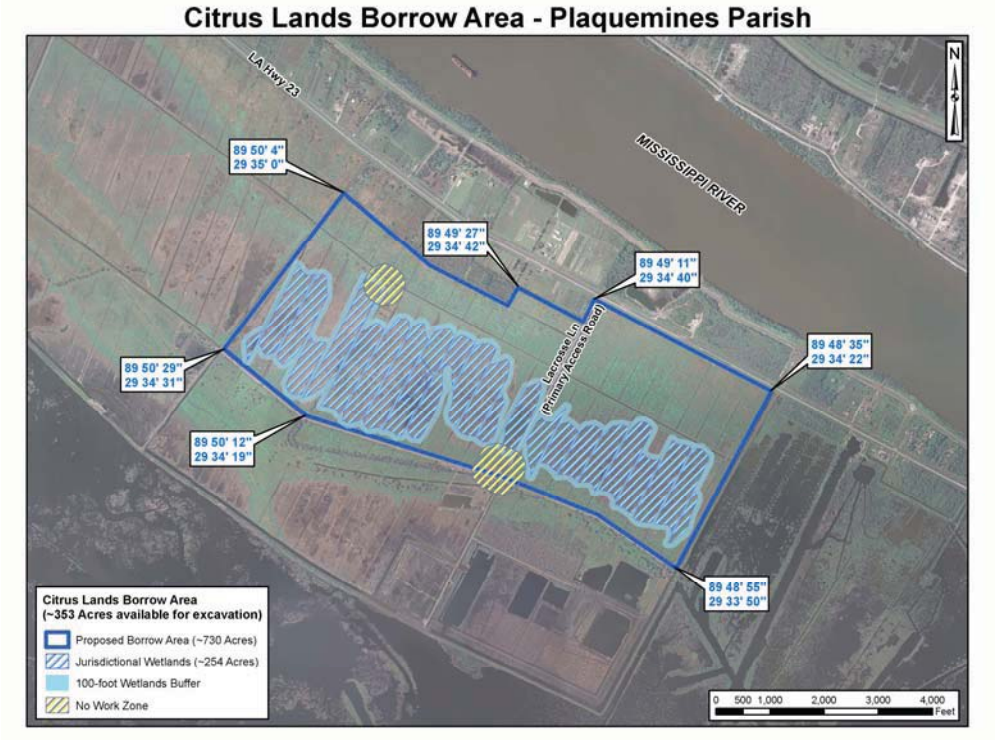

Figure 5: Site map of the proposed Citrus Lands contractor-furnished borrow area

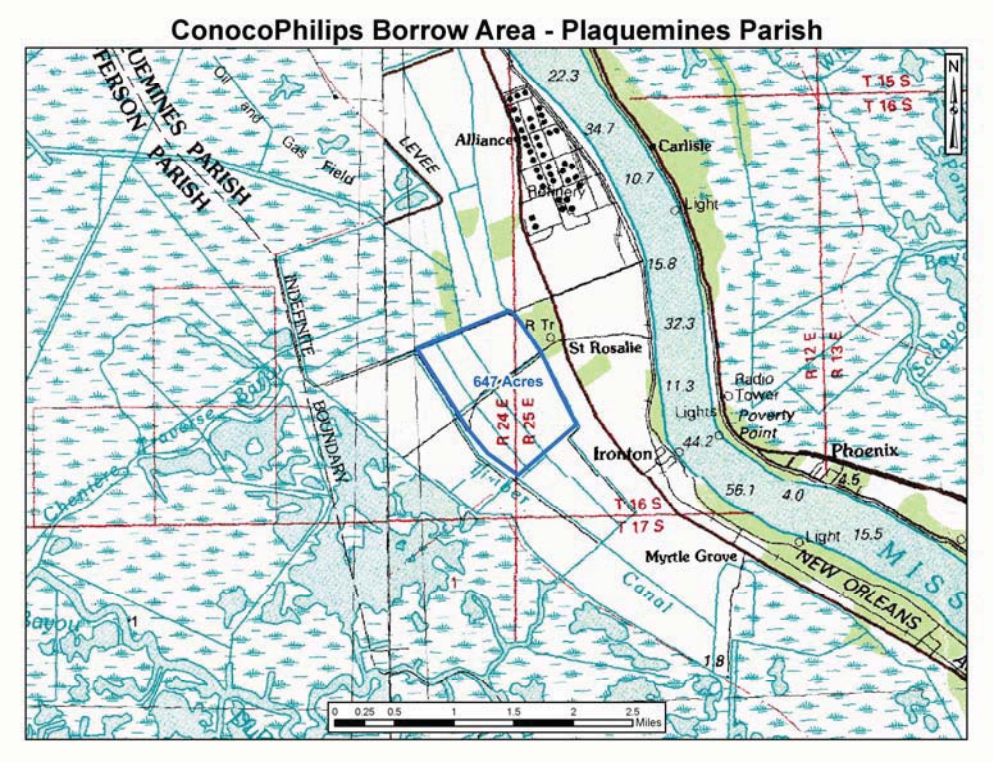

Figure 6: Area map of the proposed Conoco Phillips contractor-furnished borrow area

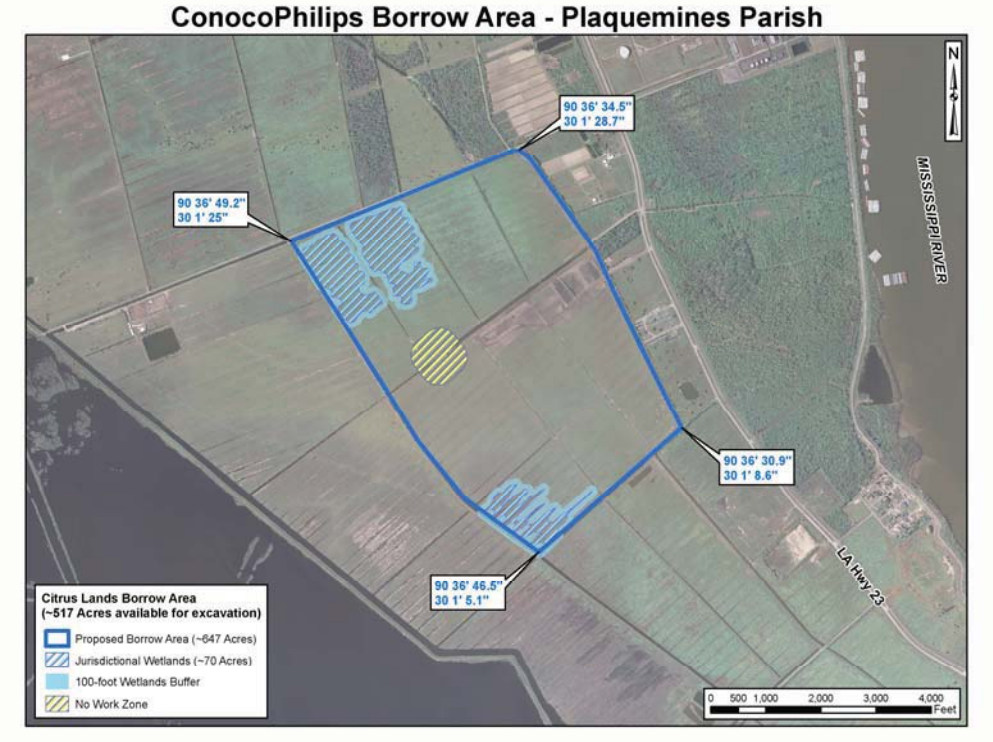

Figure 7: Site map of the proposed Conoco Phillips contractor-furnished borrow area

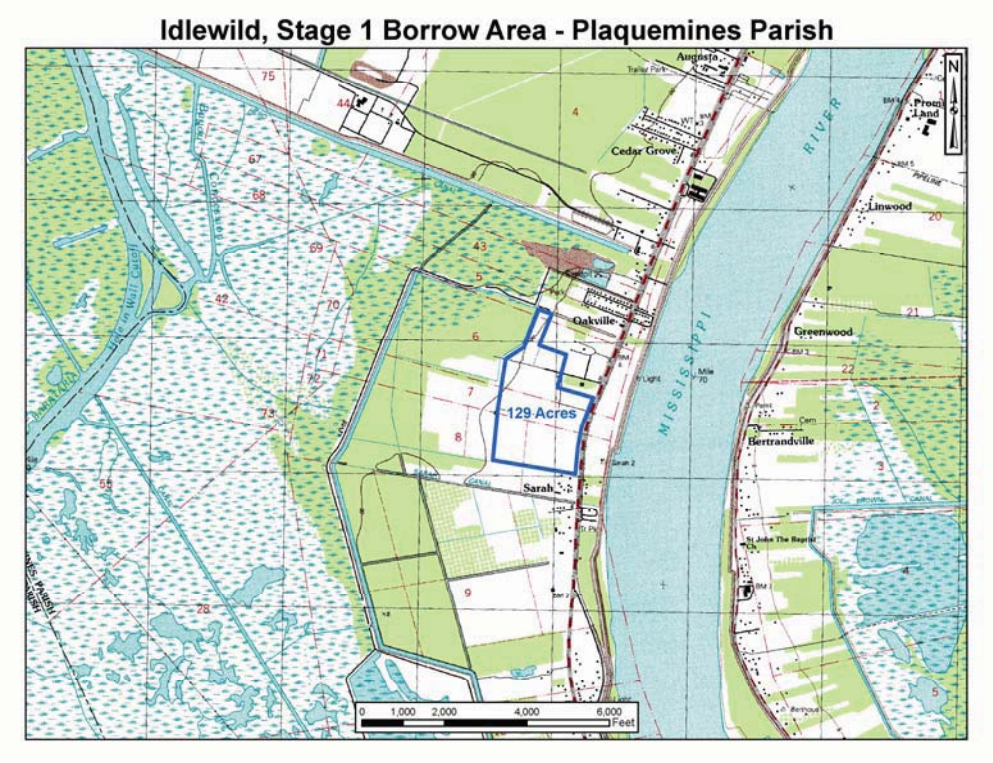

Figure 8: Area map of the proposed Idlewild Stage 1 contractor-furnished borrow area

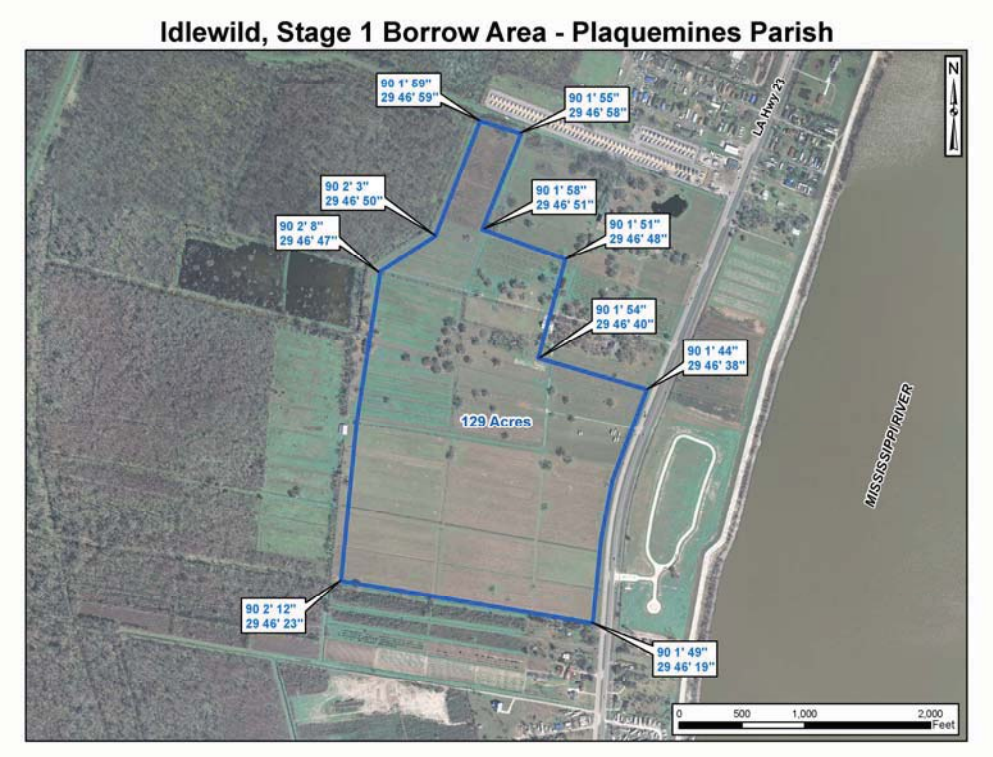

Figure 9: Site map of the proposed Idlewild Stage 1 contractor-furnished borrow area

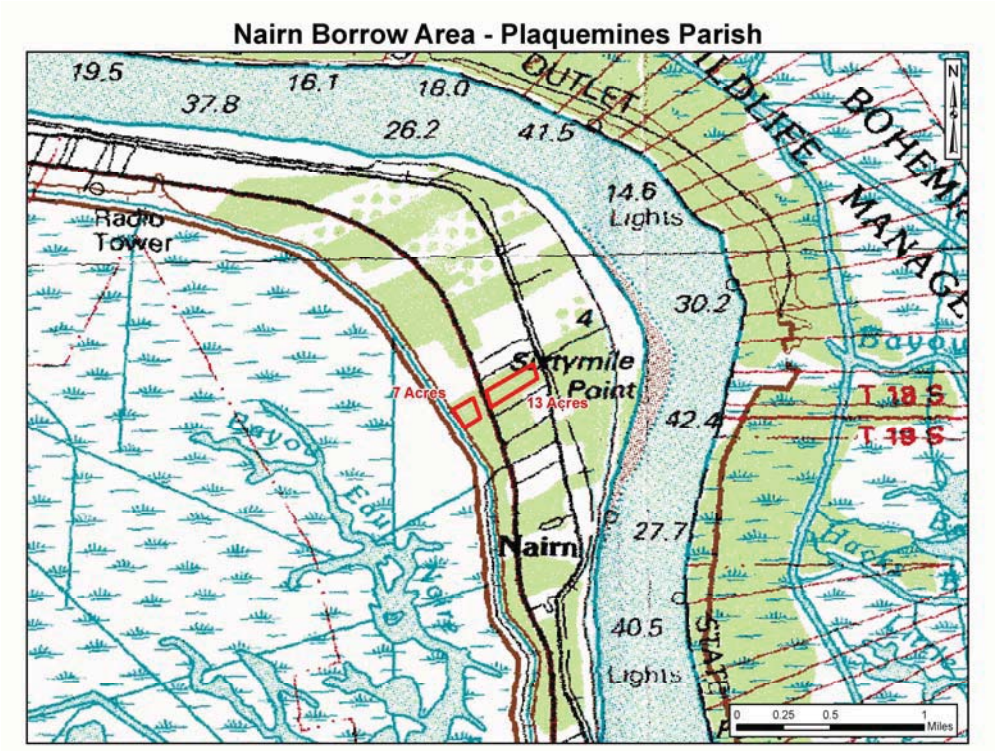

Figure 10: Area map of the proposed Nairn contractor-furnished borrow area

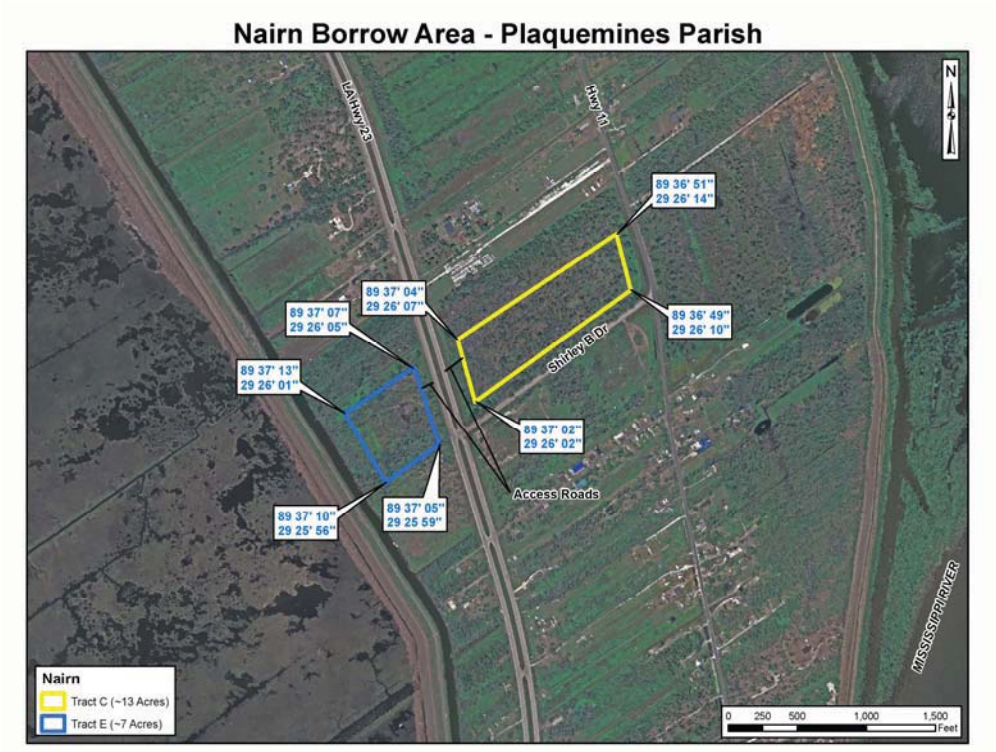

Figure 11: Site map of the proposed Nairn contractor-furnished borrow area

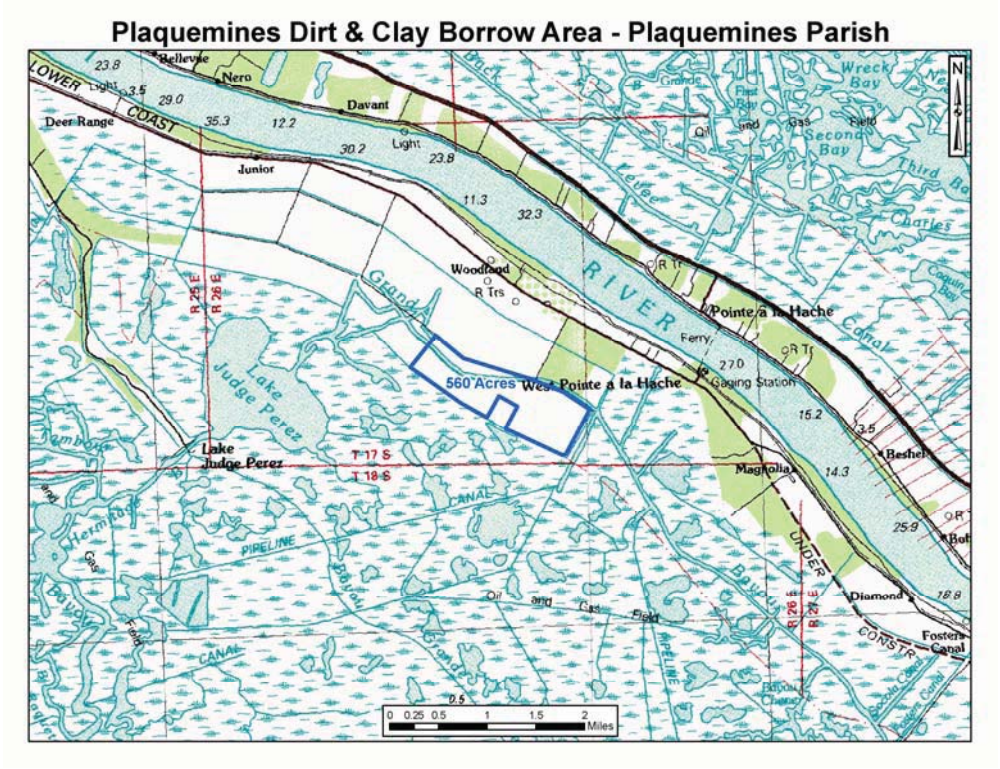

Figure 12: Area map of the proposed Plaquemines Dirt & Clay contractor-furnished borrow area

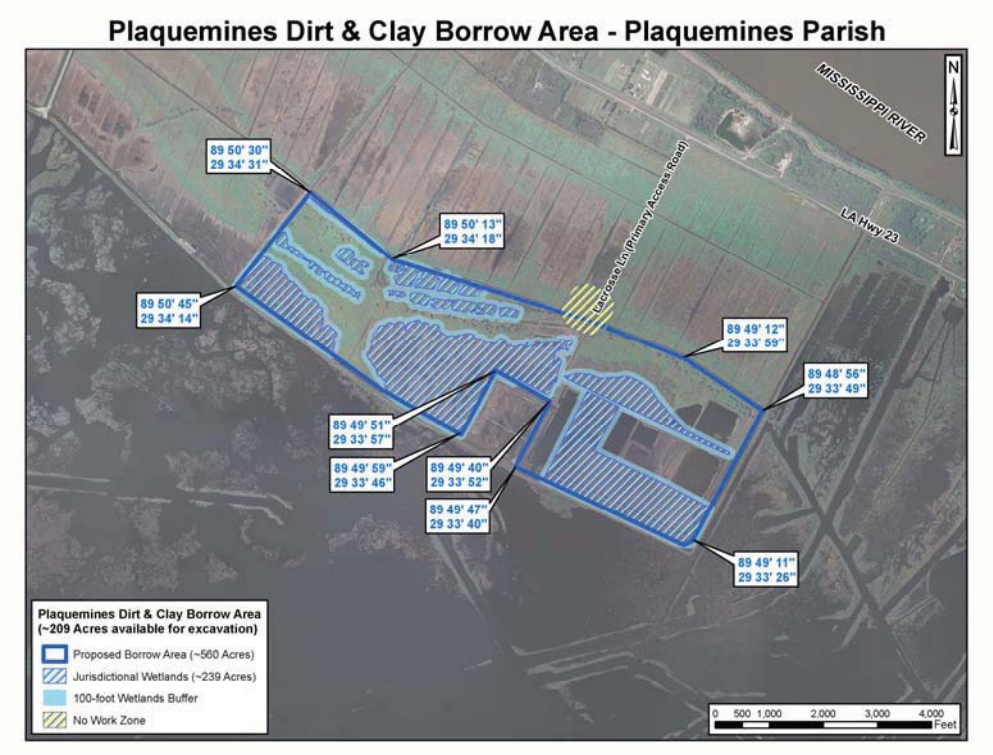

Figure 13: Site map of the proposed Plaquemines Dirt & Clay contractor-furnished borrow area

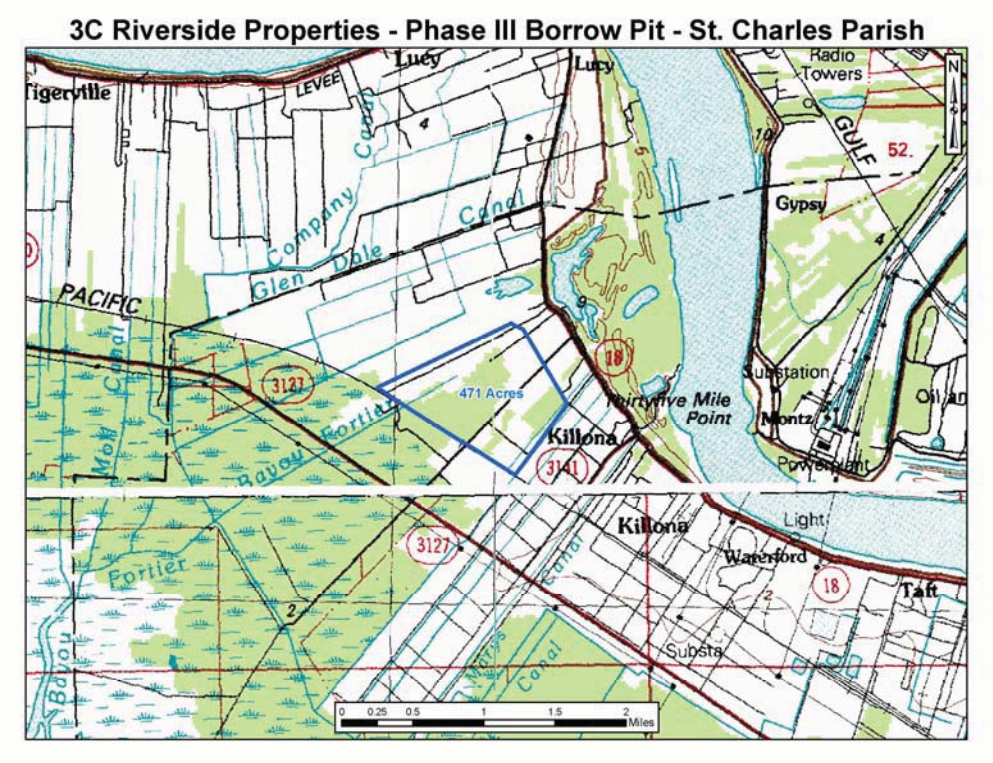

Figure 14: Area map of the proposed 3C Riverside Phase 3 contractor-furnished borrow area

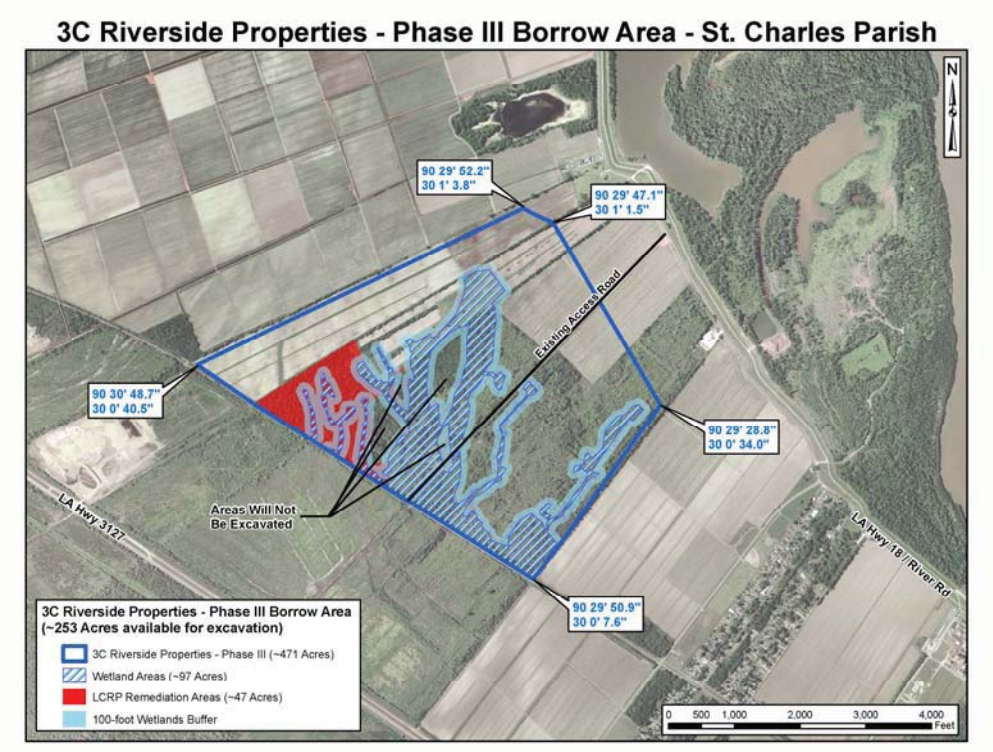

Figure 15: Site map of the proposed 3C Riverside Phase 3 contractor-furnished borrow area

2.4 ALTERNATIVES TO THE PROPOSED ACTION

The alternative to the proposed action is the no action, as described in section 2.2.

3. AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

3.1 ENVIRONMENTAL SETTING

The proposed contractor-furnished borrow areas described in this report are located in southeastern Louisiana. For the purposes of this report, the project study area is defined as southeastern Louisiana.

Fauna and Flora

The Louisiana Coastal Plain area contains an extraordinary diversity of estuarine habitats that range from narrow natural levee and beach ridges to expanses of bottomland hardwood (BLH) forest, forested swamps and fresh, brackish, saline marshes, and pasturelands. The wetlands support various functions and values, including commercial fisheries, harvesting of furbearers, recreational fishing and hunting, ecotourism, critical wildlife habitat (including that for threatened and endangered species), water quality improvement, navigation and waterborne commerce, flood control, and buffering protection from storms.

Terrestrial animals that may inhabit some of the proposed contractor-furnished borrow areas include nutria, muskrat, raccoon, mink, and otter, which are harvested for their furs. White-tailed deer, feral hogs, rabbits, various small mammals, and a variety of birds, reptiles, amphibians, and mosquitoes also occur in the study area. Agricultural crops grown in the vicinity of some of the proposed contractor-furnished borrow areas include sugar cane, citrus fruits, and truck crops.

Soils

The USACE HSDRRS Design Guidelines, of which the below-stated soil standards are a part, are reviewed and updated as necessary. Changes to the guidelines are reviewed and approved by USACE staff at the local, regional and headquarters level; additional reviews are completed by academia and private individuals who are recognized experts in their fields. Additionally, the guidelines being utilized by the CEMVN have been reviewed by members of the Interagency Performance Evaluation Team (IPET). The design guidelines may be updated from time to time to respond to new engineering analysis of improved technology, innovative processes, or new data.

The term “borrow” is used in the fields of construction and engineering to describe material that is dug in one location for use at another location. The term “suitable” as it relates to borrow material is defined as meeting the following current criteria after placement as levee fill:

- Soils classified as clays (CH or CL) are allowed as per the Unified Soils Classification System;
- Soils with organic contents greater than 9 percent are not allowed;
- Soils with plasticity indices (PI) less than 10 are not allowed;
- Soils classified as silts (ML) are not allowed;

- Clays will not have more than 35 percent sand content.

Clay Specifications

The earthen clay material shall be naturally occurring or contractor blended. Addition of lime, cement, or other soil amendments for any reason is not permitted. Soil that is classified in accordance with ASTM D 2487 and the Unified Soil Classification System as CH and CL are suitable. Soil classified as ML shall be considered unsuitable; however, minor amounts of ML may be suitably blended with CH or CL to formulate a material that classifies as a CL as per ASTM D 2487. Soil must be free from masses of organic matter, sticks, branches, roots, and other debris, including hazardous and regulated solid wastes. Soil from a contractor-supplied earthen clay material source may not contain excessive amounts of wood. However, isolated pieces of wood would not be considered objectionable in the embankment provided their length does not exceed 1 foot, their cross-sectional area is less than 4 square inches, and they are distributed throughout the fill. Not more than 1 percent (by volume) of objectionable material shall be contained in clay material ordered by the Government. Pockets and/or zones of wood shall not be acceptable. Material consisting of greater than 35 percent sands (by dry weight) or materials with a PI of less than 10 will not be accepted as well as material having an organic content exceeding 9 percent by weight. Under no circumstances shall frozen earth, snow, or ice in the material be considered acceptable.

The geotechnical analysis consists of the following:

1. A geotechnical report stamped and signed by a licensed civil engineer with a specialization in geotechnical engineering certifying that the proposed source contains suitable material meeting the specifications outlined in the CEMVN's Soil Boring Factsheet.

2. The geotechnical report must consist of a summary and conclusion section in the main body of the report with any supporting data attached separately. The licensed engineer shall determine the sub-surface investigations required. These investigations could include but are not limited to soil borings, test sites, or cone penetrometer tests.

3. Investigations shall be spaced according to the geotechnical engineer's sub-surface evaluation and be representative of the entire proposed source. The licensed engineer's test plan must provide a comprehensive sampling to at least 5 feet below the bottom of the proposed excavation.

4. All soil samples must be classified in accordance with the Unified Soil Classification system. The supporting data attached to the geotechnical report shall be comprehensive and include as a minimum all field logs, soil sampling and testing results and a detailed investigation location map with the location of the potential borrow source and all investigation locations superimposed. The soil investigation locations must include latitudes and longitudes for plotting purposes.

Laboratory tests include:

1. Soil classification shall be performed in accordance with the Unified Soil Classification System and ASTM D 2487.

2. Atterberg Limits Test shall be performed in accordance with ASTM D 4318.

3. Determination of moisture content shall be performed in accordance with ASTM D 2216 or ASTM D 4643.

4. Determination of organic content shall be performed in accordance with ASTM D 2974, Method C.

5. Control compaction curves shall be established in accordance with ASTM D 698 (Standard Proctor Compaction Tests). A control compaction curve is required for each soil type from each source. Where material is blended and stockpiled, a control compaction curve would be required for each resulting blend of material and would be utilized in lieu of those required for the "unblended materials."

6. Sand Content shall be determined by 200 wash in accordance with ASTM D 1140.

Test Procedures for borings include:

1. A moisture content determination shall be made and recorded on all samples classified as (CH), (CL), and (ML) at no less than 2 foot intervals.

2. For (CH), (CL), and (ML) soils, Atterberg Limits and Organic Content Testing (ASTM D 2974, Method C) is required every 5 feet (minimum).

3. Samples with moisture contents at 70 percent or higher or having a Liquid Limit of 70 or higher must be tested for organic content for that sample as well as for a sample 2 feet above and 2 feet below that sample.

4. Sand content tests would be required for samples that classify as CL (with a PI greater than 10) and for all clay samples (CH and CL) with greater than 10 percent coarse grain materials estimated by visual classification for 2 or more consecutive feet.

5. Sand content tests would be limited to one test every 5 feet of sampling and shall conform to ASTM D1140-00 (#200 sieve required).

6. Sand content tests would be required for samples that classify as a ML, but limited to one test every 5 feet of sampling.

The resulting classification, plasticity, water content, and organic content determinations and borrow area boring logs with GPS readings at the boring locations have been or will be analyzed for potential use by the CEMVN to determine the suitability of the soil. Geotechnical testing and soil analysis is ongoing at some of the areas, so it is possible that the area of suitable acreage may decrease as results are finalized.

Government-Furnished Sites
For potential government-furnished borrow areas, the CEMVN conducts site visits, performs soil borings and testing, acquires all pertinent environmental clearances, and is responsible for borrow site acquisition. Using this method, the landowner provides the CEMVN with a signed right-of-entry (ROE) form and the Government completes all required testing and analysis.

Contractor-Furnished Sites
For potential contractor-furnished borrow areas, individual landowners are responsible for soil boring and testing, and acquiring all applicable local, state, and Federal environmental clearances. Upon completing all required tasks, the landowner submits a complete package to the CEMVN for approval. The Government completes an analysis of the site and the material proposed for use based upon the information supplied to the

Government by the landowner. Upon approval of the site by the Government, the potential borrow site would be placed on the complimentary list of potential pre-approved contractor-furnished borrow sources. The CEMVN may opt to provide in construction contracts a complimentary list of contractor-furnished clay sources that have been deemed to have material that meets geotechnical standards and to be environmentally acceptable. The CEMVN does, however, caution that it cannot vouch for the availability, suitability or quantity of borrow material from such listed sources. The construction contractor is not obligated to select a site from the contractor-furnished clay source list. However, if the contractor chooses to obtain borrow material elsewhere, then it must demonstrate that its source has undergone environmental clearance conforming to the CEMVN's requirements and that the source meets the CEMVN's geotechnical standards. Agreements for use of a contractor-furnished site would solely be between a construction contractor and the landowner, and at no point in time would the landowner have an agreement with the CEMVN. Additionally, there are no guarantees that the landowner will sell borrow material for construction of the HSDRRS. For a construction contractor to use borrow from the contractor-furnished clay source list, the contractor must reach an agreement with the site owner(s) and compensate the owner for the material used from the site, based on that agreement. Reaching the agreement and compensating the landowner are the responsibility of the construction contractor.

Supply Contract

The Government may secure borrow material through a supply contractor that would deliver material to the construction site and/or stockpile area for placement by a construction contractor. For potential supply contract borrow sites, individual bidders are responsible for geotechnical testing and acquiring state and Federal environmental clearances. Upon completing all required tasks, the landowner submits a complete package to the CEMVN for approval when requested, as per a contract Request For Proposal. Sites are evaluated by the CEMVN for environmental compliance and soil suitability. If approved, the bidders would be allowed to participate in the supply contract process.

3.2 SIGNIFICANT RESOURCES

This section contains a list of the significant resources located in the vicinity of the proposed contractor-furnished borrow areas, and describes in detail those resources that may be impacted directly, indirectly, or cumulatively by the proposed action. Direct impacts are those that are caused by the action taken and occur at the same time and place (40 CFR §1508.8(a)). Indirect impacts are those that are caused by the action and are later in time or further removed in distance, but are still reasonably foreseeable (40 CFR §1508.8(b)). Cumulative impacts are impacts that result from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such actions (40 CFR §1508.7).

The resources described in this section are those recognized as significant by laws, executive orders, regulations, and other standards of Federal, state, or regional agencies and organizations; technical and scientific agencies, groups, and individuals; and the general public. Further detail on the significance of each of these resources can be found by contacting the CEMVN, or on www.nolaenvironmental.gov, which offers information on the ecological and human value of these resources, as well as the laws and regulations governing each resource. Search for "Significant Resources Background Material" in the website's digital library for additional information. Table 1 shows those significant resources found within the project area, and notes whether they would be impacted by the proposed action.

The impacts discussed in this report are those impacts specifically associated with utilizing the proposed Bocage, Citrus Lands, Conoco Phillips, Idlewild Stage 1, Nairn, Plaquemines Dirt & Clay, and 3C Riverside Phase 3 contractor-furnished borrow areas.

Table 1: Significant Resources in the Project Area

Significant Resource	Impacted	Not Impacted
Jurisdictional Wetlands		X
Non-Jurisdictional Bottomland Hardwood Forest	X	
Upland Areas	X	
Farmland & Farmland Soils	X	
Wildlife	X	
Threatened and Endangered Species		X
Cultural Resources		X
Recreational Resources	X	
Noise	X	
Air Quality	X	
Water Quality	X	
Aesthetics	X	
Socioeconomics	X	

3.2.1 Jurisdictional Wetlands

Existing Conditions

The CEMVN is working diligently to avoid impacts to jurisdictional wetlands (as defined by Section 404 of the Clean Water Act [CWA]) when investigating and approving potential borrow sites for use in construction of the HSDRRS. The CEMVN selection prioritization of potential borrow areas (section 2.1), as well as guidance from the USFWS (appendix D), relating to potential impacts to jurisdictional wetlands have been and will continue to be followed. The CEMVN will coordinate with governmental agencies and the public if jurisdictional wetlands may be impacted during future proposed government-furnished, contractor-furnished, or supply contract borrow activities.

During initial investigations, a jurisdictional wetland determination from the CEMVN Regulatory Functions Branch was completed for the six potential contractor-furnished borrow areas discussed in this IER.

- *Bocage*
  The CEMVN jurisdictional wetland determination MVN 2008-02880-SZ dated 30 September 2008 indicates that the site contains jurisdictional “404 other waters,” which for this site are manmade drainage canals. The term "other waters" is meant to differentiate the manmade drainage canals found on the proposed contractor-furnished borrow area from Clean Water Act Section 404 jurisdictional wetlands, which are not found on the project site, per 33 CFR 328.3. The drainage canals would be excavated during borrow site construction.

- *Citrus Lands*
  The CEMVN jurisdictional wetland determination MVN 2009-00532-SZ dated 24 March 2009 indicates that jurisdictional wetlands and jurisdictional “404 other

waters" (drainage canals) are located on the site. The drainage canals would be excavated during borrow site construction.

- *Conoco Phillips*
  The CEMVN jurisdictional wetland determination MVN 2009-00898-SY dated 5 May 2009 indicates that jurisdictional wetlands and jurisdictional "404 other waters" (drainage canals) are located on the site. The drainage canals would be excavated during borrow site construction.

- *Idlewild Stage 1*
  The CEMVN jurisdictional wetland determination MVN-2008-03510-SZ dated 05 February 2009 for the proposed Idlewild Stage 1 contractor-furnished borrow area indicates that the site does not contain jurisdictional wetlands or jurisdictional "404 other waters."

- *Nairn*
  The CEMVN jurisdictional wetland determination MVN-2008-03377-SZ dated 04 November 2008 for the proposed Nairn contractor-furnished borrow area indicates that the site contains jurisdictional "404 other waters," which for this site are manmade drainage ditches. The drainage canals would be excavated during borrow site construction.

- *Plaquemines Dirt & Clay*
  The CEMVN jurisdictional wetland determination MVN 2009-00531-SZ dated 25 March 2009 indicates that jurisdictional wetlands and jurisdictional "404 other waters" (drainage canals) are located on the site. The drainage canals would be excavated during borrow site construction.

- *3C Riverside Phase 3*
  The CEMVN jurisdictional wetland determination MVN-2008-00414-SU dated 9 June 2008 for the proposed 3C Riverside Phase 3 contractor furnished borrow area indicates that approximately 97 acres jurisdictional wetlands are located on the site. The size of the proposed contractor furnished borrow area was minimized to 253 acres to avoid direct impacts and potential indirect impacts to jurisdictional wetland areas. The limits of the proposed contractor furnished borrow area were further reduced due to a request from the Louisiana Department of Natural Resources (LDNR) Coastal Management Division, as discussed in section 3.2.2.

  Jurisdictional wetlands on the 3C Riverside Phase 3 site are currently impacted by the placement of temporary mats on a 0.04-acre area of wetlands by the landowner to allow for crossing to non-wetland areas. The mats used are 16 feet wide, and span for 100 feet. These impacts are temporary and not related to the proposed action. In addition, the affected wetlands would be restored to their pre-construction state after excavation is complete. This action was permitted through CEMVN's CWA Section 404 regulatory program (MVN 2009-0698-EBB).

Discussion of Impacts

No Action

- *Bocage, Citrus Lands, Conoco Phillips, Idlewild Stage 1, Nairn, & Plaquemines Dirt & Clay*

Direct Impacts

Under the no action alternative, no direct impacts to jurisdictional wetlands would occur at the proposed Bocage, Citrus Lands, Conoco Phillips, Idlewild Stage 1, Nairn, and Plaquemines Dirt & Clay contractor-furnished borrow areas. The proposed sites would not be used as contractor-furnished borrow areas. Any potential direct impacts to jurisdictional wetlands would depend on what the landowners decide to do with the proposed contractor-furnished borrow areas.

The Nairn site, which was approved for HSDRRS use as the Tac Carrere government-furnished borrow area in IER #25, could be excavated as a government-furnished borrow area under the No Action alternative. Direct impacts to jurisdictional wetlands would be similar to those described in the Proposed Action for the Nairn site.

Indirect Impacts

Under the no action alternative, there would be no indirect impacts to jurisdictional wetlands at the proposed Bocage, Citrus Lands, Conoco Phillips, Idlewild Stage 1, Nairn, and Plaquemines Dirt & Clay contractor-furnished borrow areas. The proposed sites would not be used as contractor-furnished borrow areas. Any potential indirect impacts to jurisdictional wetlands would depend on what the landowners decide to do with the proposed contractor-furnished borrow areas.

Cumulative Impacts

Under the no action alternative, the proposed Bocage, Citrus Lands, Conoco Phillips, Idlewild Stage 1, Nairn, and Plaquemines Dirt & Clay sites would not be used as contractor-furnished borrow areas, and as such there would be no cumulative impacts to jurisdictional wetlands at the proposed contractor-furnished borrow areas or in the project areas due to the proposed action. Under this alternative, the proposed HSDRRS projects would be built to authorized levels using potential government-furnished and/or contractor-furnished borrow areas described in IER #18, IER #19, IER #22, IER #23, IER #25, IER #26, IER #28, IER #29, IER #30, or other sources yet to be identified.

The proposed Bocage site is the only potential borrow area in Ascension Parish that has been approved or is being investigated for use in the HSDRRS (figure 16). Jurisdictional wetlands would not be cumulatively impacted in Ascension Parish because of HSDRRS borrow activity or construction of the HSDRRS.

The proposed Citrus Lands, Conoco Phillips, Idlewild Stage 1, Nairn, and Plaquemines Dirt & Clay sites are located in Plaquemines Parish (figures 17 through 20). The Nairn site was previously approved for use as the Tac Carrere government-furnished site in IER #25, and could be excavated as a government-furnished borrow area under the No Action alternative. The approved Bazile, Belle Chasse, Brad Buras, Kimble 2, Meyer, Myrtle Grove, Tabony, Triumph, and Westbank N borrow areas are also located in Plaquemines Parish. In addition, the proposed Citrus Lands, Conoco Phillips, Plaquemines Dirt & Clay, Westbank L Phase 1, and Westbank L Phase 2 borrow areas are located in Plaquemines Parish. None of the sites contain jurisdictional wetlands. It is reasonably foreseeable that these sites could be used for construction of the HSDRRS. However, because none of the sites contain jurisdictional wetlands, their use would not contribute to cumulative jurisdictional wetland impacts in Plaquemines Parish.

Cumulative impacts to jurisdictional wetlands would continue in the project area under the no action alternative. Historical and present wetland losses and gains in southeastern Louisiana have been caused by a multitude of natural and anthropogenic actions (Barras et al., 2004). Coastal wetland loss has occurred for thousands of years in Louisiana, and has until the 20th century been balanced by various natural wetland building processes (LACOAST, 1997). Multiple factors have been associated with coastal land loss, including the inhibition of sediment movement into coastal systems due to levee systems along the Mississippi River; man-made canals and their associated hydrologic changes (i.e., saltwater intrusion); a decline of suspended sediments coming from the Mississippi River due to upriver dams and other projects; erosion caused by wave action and boating activity; geologic compaction and faulting; storm events, including hurricanes; and relative sea level rise (Boesch et al., 1994). Public and private wetland creation and restoration projects have contributed to wetland gain in southeastern Louisiana. Major programs and initiatives include the Coastal Wetlands Planning, Protection and Restoration Act program; the Beneficial Use of Dredged Material program; WRDA restoration projects (e.g., Davis Pond Freshwater Diversion, Caernarvon Freshwater Diversion); vegetation restoration projects (e.g., National Resources Conservation Service Plant Materials Center); Louisiana state restoration projects; the Louisiana Parish Coastal Wetland Restoration Program; Federal Emergency Management Agency restoration projects; public and private parties' initiatives, including those of non-governmental organizations and corporations; and private mitigation banks. It is expected that the trend of wetland loss would continue, the rate of which would be slowed by the previously mentioned wetland creation and restoration initiatives.

Human-induced impacts to wetlands have contributed the most to wetland loss in leveed areas. Most of these impacts have been associated with the conversion of wetland areas for agriculture and residential housing. These actions are regulated by the USACE CWA Section 404 regulatory program, and wetland losses are mitigated for through the program. It is expected that this historical trend of anthropogenic impacts would continue to impact non-protected leveed wetlands in the region.

Federal and non-Federal borrow activity has contributed to the loss of wetlands in the region. Historically, borrow material was taken from sources near levees, sometimes within wetland areas. At this time, it is the policy of the CEMVN not to impact wetlands when obtaining borrow for the proposed HSDRRS projects (section 2.1). Other Federal and non-Federal levee projects may incrementally impact wetlands for borrow acquisition and levee construction in the reasonably foreseeable future.

Historical and projected losses of wetlands in southeastern Louisiana have been analyzed and discussed in Coast 2050: Towards a Sustainable Coastal Louisiana (LCWCRTF, 1998), the final Louisiana Coastal Area (LCA), Louisiana - Ecosystem Restoration Study (USACE, 2004), Louisiana's Comprehensive Master Plan for a Sustainable Coast (LACPRA, 2007), and the ongoing USACE Louisiana Coastal Protection and Restoration project.

- *3C Riverside Phase 3*

  Direct Impacts

Jurisdictional wetlands on the 3C Riverside Phase 3 site are currently directly impacted by the placement of temporary mats on a 0.04-acre area of jurisdictional wetlands by the landowner to allow for crossing to non-wetland areas. These impacts are temporary and not related to the proposed action. Any potential direct impacts to jurisdictional wetlands would depend on what the landowner decides to do with the proposed contractor-furnished borrow area.

Indirect Impacts

Under the no action alternative, indirect impacts to jurisdictional wetlands may occur at the proposed 3C Riverside Phase 3 contractor-furnished borrow area. The site was recently cleared of all habitats except for wetland areas. This action may have affected the hydrology and nutrient dynamics at the site, indirectly impacting jurisdictional wetlands on or near the site. These changes have not been quantified. These impacts are not related to the proposed action.

The temporary matted crossing is not expected to indirectly impact jurisdictional wetlands at the site.

Cumulative Impacts

Under the no action alternative, the proposed 3C Riverside Phase 3 site would not be used as a contractor-furnished borrow area, and as such there would be no cumulative impacts to jurisdictional wetlands at the proposed contractor-furnished borrow area or in the project area due to the proposed action. Under this alternative, the proposed HSDRRS projects would be built to authorized levels using potential government-furnished and/or contractor-furnished borrow areas described in IER #18, IER #19, IER #22, IER #23, IER #25, IER #26, IER #28, IER #29, IER #30, or other sources yet to be identified.

The proposed 3C Riverside Phase 3 site is located on the west bank of the Mississippi River in St. Charles Parish (figure 21). The approved 3C Riverside Phase 1 and 3C Riverside Phase 2 contractor-furnished borrow areas are also located in St. Charles Parish. The approved sites do not contain jurisdictional wetlands. It is reasonably foreseeable that these sites would be used for construction of the HSDRRS, and their use would not cumulatively impact jurisdictional wetlands on the west bank of the Mississippi River in St. Charles Parish.

The approved Willow Bend Phase 1 and Willow Bend Phase 2 are also located within 5 miles of the proposed 3C Riverside Phase 3 site. The approved contractor-furnished sites do not contain jurisdictional wetlands. It is reasonably foreseeable that the approved Willow Bend Phase 1 and Willow Bend Phase 2 sites could be used for construction of the HSDRRS, and their use would not cumulatively impact jurisdictional wetlands in the vicinity.

Additional cumulative impacts under the No Action alternative would be similar to those described for the No Action alternative for the proposed Bocage, Citrus Lands, Conoco Phillips, Idlewild Stage 1, Nairn, & Plaquemines Dirt & Clay sites.

Proposed Action

- *Bocage, Idlewild Stage 1, & Nairn*

  Direct Impacts

No direct impacts to jurisdictional wetlands would occur with use of the proposed Bocage, Idlewild Stage 1, and Nairn contractor-furnished borrow areas. The wetlands found at the proposed contractor-furnished borrow areas would be avoided, and would not be excavated. Any jurisdictional wetland areas outside of the proposed contractor-furnished borrow areas would be avoided. The excavated areas would be converted to ponds and small lakes if water is retained, or to vegetated areas if water is not retained. Additional potential direct impacts to jurisdictional wetlands would depend on what the landowners decide to do with the proposed contractor-furnished borrow areas following excavation.

The manmade drainage ditches and canals on the Bocage and Nairn sites that are classified as jurisdictional "404 other waters" would not be excavated. The term "other waters" is meant to differentiate the manmade ditches found on the proposed contractor-furnished borrow area from Clean Water Act Section 404 jurisdictional wetlands, which are not found on the project site, per 33 CFR 328.3.

Indirect Impacts
Use of the proposed Bocage, Idlewild Stage 1, and Nairn contractor-furnished borrow areas may result in indirect wetland impacts. There are wetlands located approximately 250 feet from the proposed excavation area at the Nairn site. Additionally, jurisdictional wetlands are located on the other side of a drainage canal at the Idlewild Stage 1 site. Excavation of the proposed contractor-furnished borrow areas may affect nearby jurisdictional wetlands by changing the hydrology and nutrient dynamics in their vicinities. These changes have not been quantified.

If ponds or small lakes form after excavation of the sites, wetland habitat may form around them. Wetland species from nearby habitat would be expected to colonize the area.

Additional potential indirect impacts to jurisdictional wetlands would depend on what the landowners decide to do with the sites following excavation.

Cumulative Impacts
Excavation of the proposed Bocage, Idlewild Stage 1, and Nairn contractor-furnished borrow areas would not contribute to cumulative wetland impacts if nearby wetlands are not indirectly adversely impacted. Any potential cumulative impacts to jurisdictional wetlands would depend on what the landowners decide to do with the proposed contractor-furnished borrow areas following excavation.

Additional cumulative impacts to jurisdictional wetlands would continue in the project area and would be similar to those described for the No Action alternative.

- *Citrus Lands, Conoco Phillips, Plaquemines Dirt & Clay, & 3C Riverside Phase 3*

Direct Impacts
No direct impacts to jurisdictional wetlands would occur with use of the proposed Citrus Lands, Conoco Phillips, Plaquemines Dirt & Clay, and 3C Riverside Phase 3 contractor-furnished borrow areas. The wetlands found at the sites would be avoided with a 100-foot buffer, and would not be excavated. Any jurisdictional wetland areas outside of the proposed contractor-furnished borrow areas would be avoided. The excavated areas would be converted to ponds and small lakes if water is retained, or to a vegetated area if water is not retained. Additional potential direct impacts to jurisdictional wetlands would depend on what the

landowners decide to do with the proposed contractor-furnished borrow areas following excavation.
The manmade drainage ditches and canals on the Citrus Lands, Conoco Phillips, and Plaquemines Dirt & Clay sites that are classified as jurisdictional "404 other waters" would be excavated. The term "other waters" is meant to differentiate the manmade ditches found on the proposed contractor-furnished borrow area from Clean Water Act Section 404 jurisdictional wetlands, which are not found on the project site, per 33 CFR 328.3.

Indirect Impacts
Use of the proposed Citrus Lands, Conoco Phillips, Plaquemines Dirt & Clay, and 3C Riverside Phase 3 contractor-furnished borrow areas may result in indirect wetland impacts. There are wetlands located throughout the sites, and excavation is planned within at least 100 feet of them. Excavation of the proposed contractor-furnished borrow areas may affect adjacent jurisdictional wetlands by changing the hydrology and nutrient dynamics in the vicinity. These changes have not been quantified.

If ponds or small lakes form after excavation of the sites, wetland habitat may form around them. Wetland species from nearby habitat would be expected to colonize the area.

Additional potential indirect impacts to jurisdictional wetlands would depend on what the landowners decide to do with the proposed contractor-furnished borrow areas following excavation.

Cumulative Impacts
Excavation of the proposed Citrus Lands, Conoco Phillips, Plaquemines Dirt & Clay, and 3C Riverside Phase 3 contractor-furnished borrow area would not contribute to cumulative wetland impacts if the on-site wetlands are not indirectly adversely impacted. Any potential cumulative impacts to jurisdictional wetlands would depend on what the landowner decides to do with the proposed Citrus Lands, Conoco Phillips, Plaquemines Dirt & Clay, and 3C Riverside Phase 3 contractor-furnished borrow area following excavation.

Additional cumulative impacts to jurisdictional wetlands would continue in the project area and would be similar to those described for the No Action alternative.

3.2.2 Non-Jurisdictional Bottomland Hardwood Forest

Existing Conditions
Bottomland hardwood forest (BLH) is a habitat that is found throughout southeastern Louisiana. The typically productive forests are found in low-lying areas, and are usually dominated by deciduous trees such as hackberry, Chinese tallow tree, pecan, American elm, live oak, water oak, green ash, bald cypress, black willow, box elder, and red maple. Typical understory plants include dewberry, elderberry, ragweed, Virginia creeper, and poison ivy. Hard mast (nuts) and soft mast (samaras, berries) provide a valuable nutritional food source for birds, mammals, and other wildlife species.

The USACE has regulatory authority over jurisdictional Waters of the United States, including wetlands, pursuant to Section 404 of the Clean Water Act (CWA), as discussed in section 3.2.1. Non-jurisdictional BLH are those habitats that do not meet all three wetland criteria (hydrophytic vegetation, hydric soils, and wetland hydrology), and thus

are out of the USACE's jurisdiction (USACE, 1987). Section 906(b) of WRDA 1986 requires mitigation for impacts to BLH caused by an USACE project.

Staff from the CEMVN and the USFWS visited the proposed contractor-furnished borrow areas to assess the value of these BLH habitats. Table 2 lists these values, as calculated by using a habitat evaluation model.

- *Bocage*
  The proposed Bocage contractor-furnished borrow area is currently used as pastureland, and does not presently include any BLH habitat.

- *Citrus Lands*
  The proposed Citrus Lands contractor-furnished borrow area is currently used as pastureland, and does not presently include any BLH habitat.

- *Conoco Phillips*
  The proposed Conoco Phillips contractor-furnished borrow area is currently used as pastureland, and does not presently include any BLH habitat.

- *Idlewild Stage 1*
  The proposed Idlewild contractor-furnished borrow area is currently used as pastureland, and does not presently include any BLH habitat.

- *Nairn*
  The USACE and USFWS have determined that approximately 20.5 acres of the 20.5-acre proposed Nairn contractor-furnished borrow area is comprised of non-jurisdictional BLH.

- *Plaquemines Dirt & Clay*
  The proposed Plaquemines Dirt & Clay contractor-furnished borrow area is currently used as pastureland, and does not presently include any BLH habitat.

- *3C Riverside Phase 3*
  The USACE and USFWS have determined that approximately 202.1 acres of the 253-acre proposed 3C Riverside Phase 3 contractor-furnished borrow area was comprised of non-jurisdictional BLH. All non-jurisdictional BLH on the site was recently cleared. In accordance with the landowner's Coastal Use Permit, 49 acres of the habitat will be remediated on the property; this area is adjacent to but not within the boundaries of the proposed borrow area.

Discussion of Impacts

No Action

- *Bocage, Citrus Lands, Conoco Phillips, Idlewild Stage 1, Nairn, & Plaquemines Dirt & Clay*

  Direct Impacts
  Under the no action alternative, no direct impacts to non-jurisdictional BLH would occur at the proposed Bocage, Citrus Lands, Conoco Phillips, Idlewild Stage 1, Nairn, and Plaquemines Dirt & Clay contractor-furnished borrow areas. The proposed sites would not be used as contractor-furnished borrow areas.

The Nairn site, which was approved for HSDRRS use as the Tac Carrere government-furnished borrow area in IER #25, could be excavated as a government-furnished borrow area under the No Action alternative. Direct impacts to non-jurisdictional BLH habitat at the Tac Carrere site were discussed in IER #25.

Indirect Impacts

Under the no action alternative, no indirect impacts to non-jurisdictional BLH would occur at the proposed Bocage, Citrus Lands, Conoco Phillips, Idlewild Stage 1, Nairn, and Plaquemines Dirt & Clay contractor-furnished borrow areas due to the proposed action. The proposed sites would not be used as contractor-furnished borrow areas.

Cumulative Impacts

Under the no action alternative, no cumulative impacts to non-jurisdictional BLH at the proposed Bocage, Citrus Lands, Conoco Phillips, Idlewild Stage 1, Nairn, and Plaquemines Dirt & Clay contractor-furnished borrow areas would occur due to the proposed action. The proposed sites would not be used as contractor-furnished borrow areas. Under this alternative, the proposed HSDRRS projects would be built to authorized levels using potential government-furnished and/or contractor-furnished borrow areas described in IER #18, IER #19, IER #22, IER #23, IER #25, IER #26, IER #28, IER #29, IER #30, or other sources yet to be identified.

Cumulative impacts to non-jurisdictional BLH would continue in the project area under the no action alternative. There are 48 approved potential borrow areas in southeastern Louisiana and southwestern Mississippi that may be utilized for construction of the HSDRRS.

The proposed Bocage site is the only potential borrow area in Ascension Parish that has been approved or is being investigated for use on the HSDRRS (figure 16). Non-jurisdictional BLH would not be cumulatively impacted in Ascension Parish because of HSDRRS borrow activity or construction of the HSDRRS.

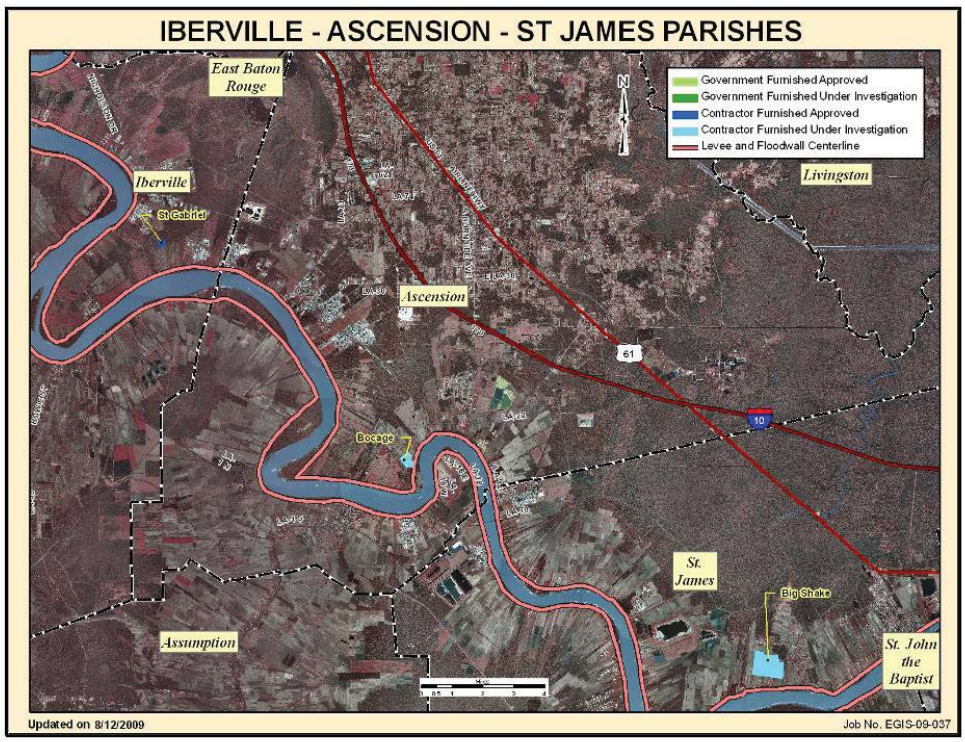

Figure 16: Proposed and Approved HSDRRS Borrow Areas in Iberville, Ascension, and St. James Parishes

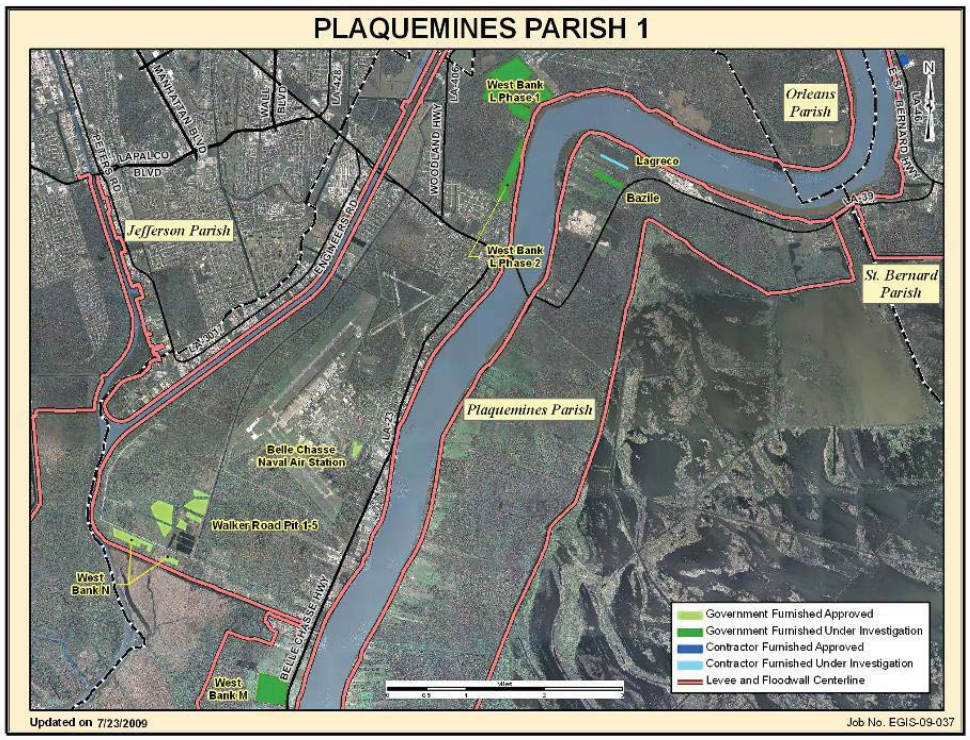

Figure 17: Proposed and Approved HSDRRS Borrow Areas in Plaquemines Parish (1 of 4)

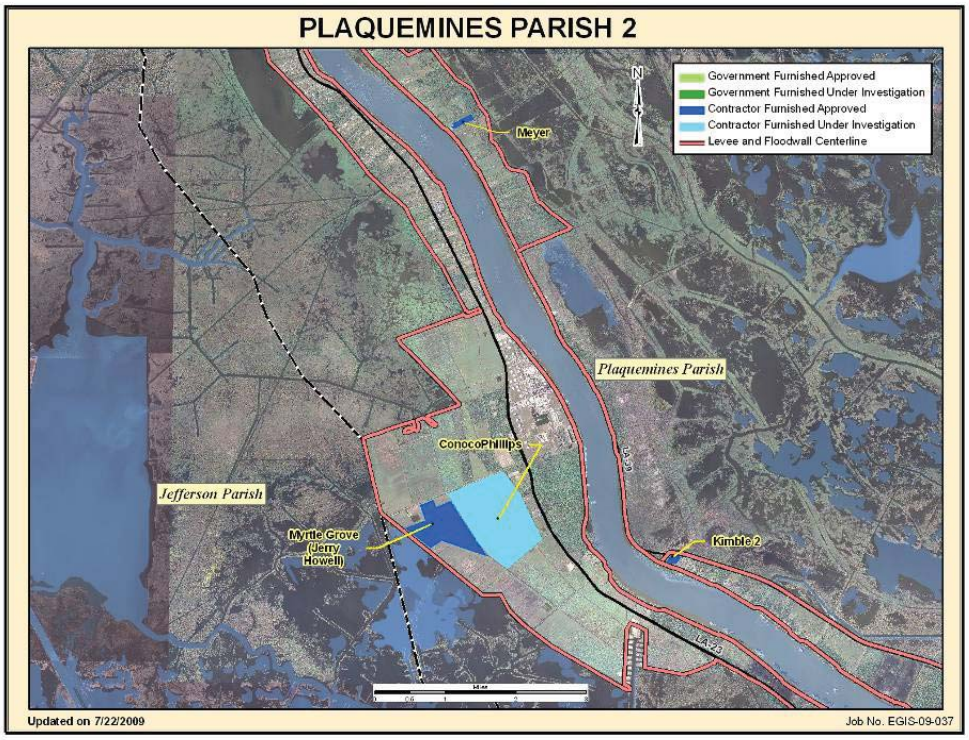

Figure 18: Proposed and Approved HSDRRS Borrow Areas in Plaquemines Parish (2 of 4)

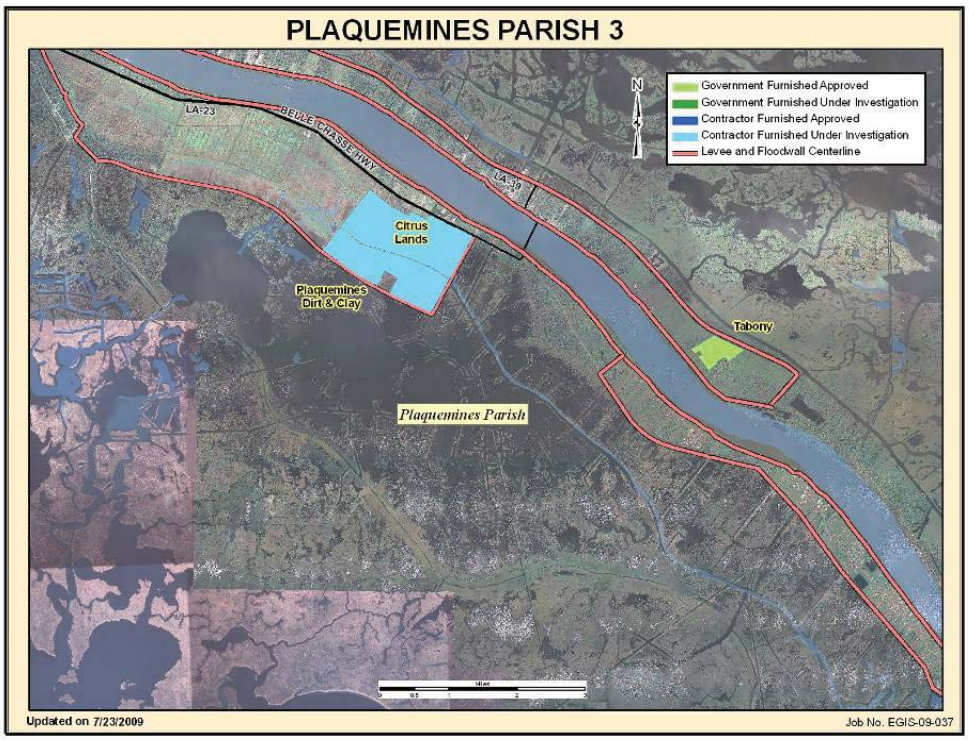

Figure 19: Proposed and Approved HSDRRS Borrow Areas in Plaquemines Parish (3 of 4)

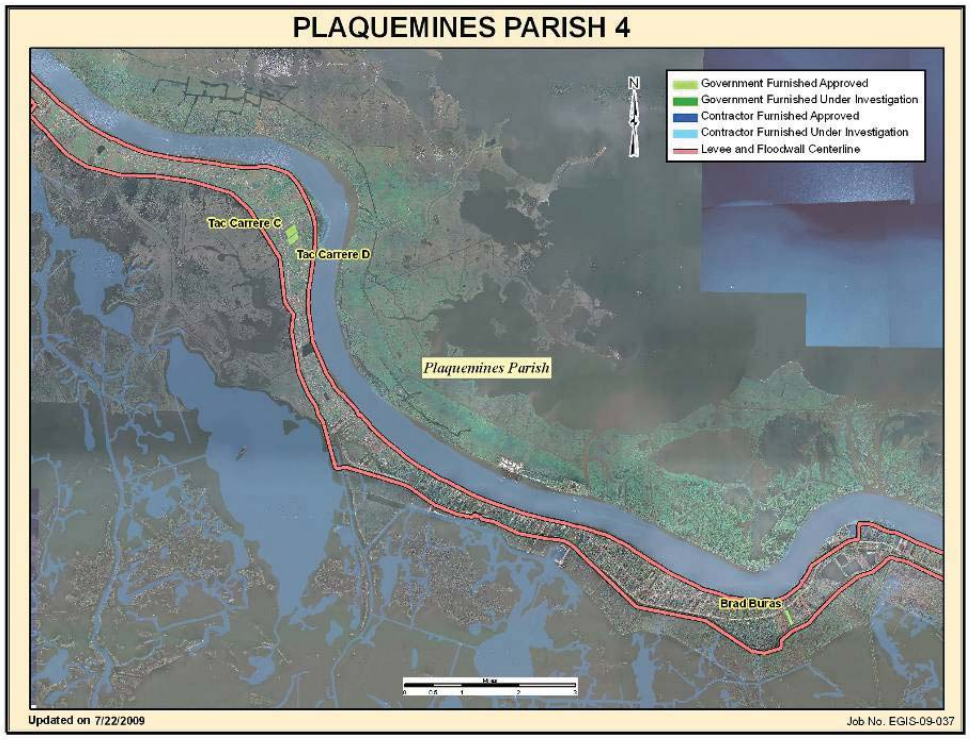

Figure 20: Proposed and Approved HSDRRS Borrow Areas in Plaquemines Parish (4 of 4)

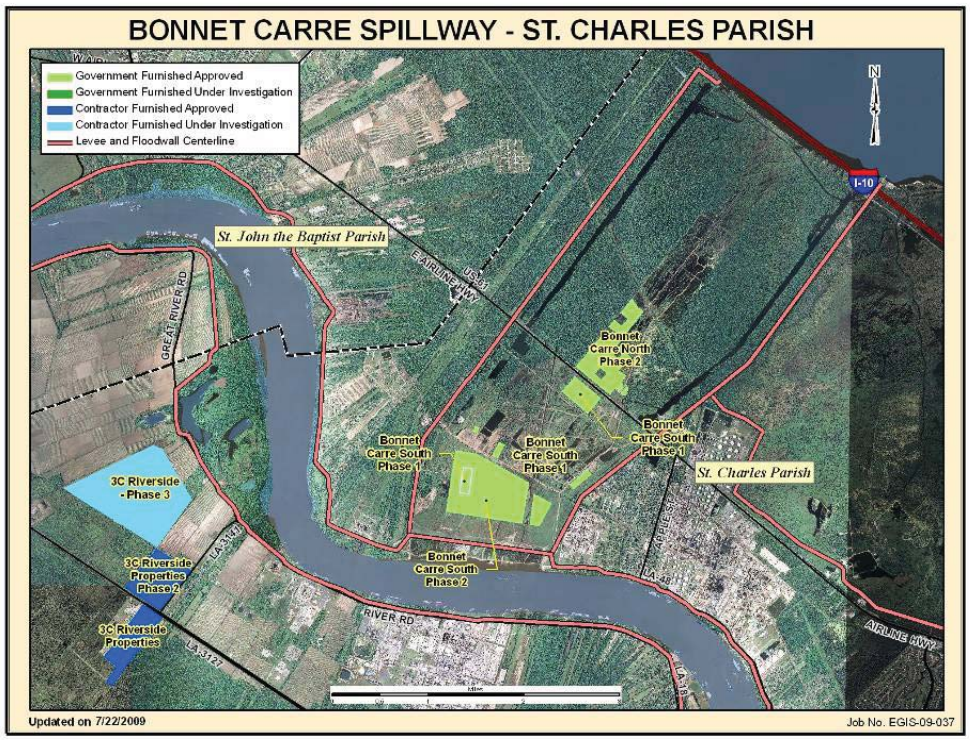

Figure 21: Proposed and Approved HSDRRS Borrow Areas in St. Charles Parish

The proposed Citrus Lands, Conoco Phillips, Idlewild Stage 1, Nairn, and Plaquemines Dirt & Clay sites are located in Plaquemines Parish (figures 17 through 20). The Nairn site was previously approved for use as the Tac Carrere government-furnished site in IER #25, and could be excavated for use in construction of the HSDRRS as a government-furnished borrow area under the No Action alternative. The approved Bazile, Belle Chasse, Brad Buras, Kimble 2, Meyer, Myrtle Grove, Tabony, Triumph, and Westbank N borrow areas are also located in Plaquemines Parish. In addition, the proposed Westbank L Phase 1, and Westbank L Phase 2 borrow areas are located in the parish. Most of these approved and proposed sites contain non-jurisdictional BLH. It is reasonably foreseeable that the approved sites would be used for construction of the HSDRRS, and their use would cumulatively impact non-jurisdictional BLH in the parish.

Non-jurisdictional BLH habitat in the project area has historically been affected by residential, commercial, and industrial development. Land has been converted for residential, commercial, and industrial uses in a significant portion of leveed areas in the region. It is expected that this historical trend would continue to impact non-jurisdictional BLH habitat in the region.

- *3C Riverside Phase 3*

Direct Impacts
The landowner recently cleared non-jurisdictional BLH at the proposed 3C Riverside Phase 3 contractor-furnished borrow area, which directly impacted this habitat. Under the no action alternative, the proposed site would not be used as a contractor-furnished borrow area. Additional potential direct impacts to non-jurisdictional BLH at the site would depend on what the landowner decides to do with the site.

Indirect Impacts
Under the no action alternative, no indirect impacts to non-jurisdictional BLH would occur due to the proposed action. The proposed site would not be used as a contractor-furnished borrow area. The landowner's recent clearing of the site may indirectly affect nearby non-jurisdictional BLH by changing the hydrology and nutrient dynamics in the vicinity. These changes have not been quantified. Additional potential indirect impacts to non-jurisdictional BLH would depend on what the landowner decides to do with the site.

Cumulative Impacts
The landowner's recent clearing of the proposed 3C Riverside Phase 3 site contributed to the cumulative impact to non-jurisdictional BLH in the project area. Under the no action alternative, the proposed site would not be used as a contractor-furnished borrow area. The proposed HSDRRS projects would be built to authorized levels using potential government-furnished and/or contractor-furnished borrow areas described in IER #18, IER #19, IER #22, IER #23, IER #25, IER #26, IER #28, IER #29, IER #30, or other sources yet to be identified.

Cumulative impacts to non-jurisdictional BLH would continue in the project area under the no action alternative. There are 48 approved potential borrow areas in southeastern Louisiana and southwestern Mississippi that may be utilized for construction of the HSDRRS.

The proposed 3C Riverside Phase 3 site is located on the west bank of the Mississippi River in St. Charles Parish (figure 21). The approved 3C Riverside Phase 1 and 3C Riverside Phase 2 contractor-furnished borrow areas are also located in St. Charles Parish. Neither of the approved sites contain non-jurisdictional BLH. It is reasonably foreseeable that these sites could be used for construction of the HSDRRS, and their use would not cumulatively impact non-jurisdictional BLH on the west bank of the Mississippi River in St. Charles Parish.

The approved Willow Bend Phase 1 and Willow Bend Phase 2 contractor-furnished borrow areas are located within 5 miles of the proposed 3C Riverside Phase 3 site. The Willow Bend Phase 1 site contains non-jurisdictional BLH. It is reasonably foreseeable that use of the approved Willow Bend Phase 1 and Willow Bend Phase 2 sites could be used for construction of the HSDRRS, and their use would cumulatively impact non-jurisdictional BLH in the vicinity.

Non-jurisdictional BLH habitat in the project area has historically been affected by residential, commercial, and industrial development. Land has been converted for residential, commercial, and industrial uses in a significant portion of leveed areas in the region. It is expected that this historical trend would continue to impact non-jurisdictional BLH habitat in the region.

Proposed Action

The USFWS has assessed the environmental impacts of the proposed action. The agency has determined that the proposed action would have unavoidable impacts to a number of acres of non-jurisdictional BLH, which is quantified by Average Annualized Habitat Units (AAHUs) (table 2). Habitat Units (HU) represent a numerical combination of habitat quality (Habitat Suitability Index) and habitat quantity (acres) within a given area at a given point in time. AAHUs represent the average number of HUs within any given year over the project life for a given area.

Use of the proposed Bocage contractor-furnished borrow area would not cause impact to non-jurisdictional BLH, as the site does not contain any of this habitat type. Use of the proposed Nairn and 3C Riverside Phase 3 contractor-furnished borrow areas would cause unavoidable impacts to 222.6 acres (109.0 AAHUs) of non-jurisdictional BLH on the site (table 2). Mitigation for unavoidable impacts to non-jurisdictional BLH is discussed in section 7, and will be described under a separate IER.

Table 2: Non-jurisdictional BLH at proposed contractor-furnished borrow areas

Proposed Borrow Area	Acres Non-jurisdictional BLH	AAHUs
Bocage	0.0	0.0
Citrus Lands	0.0	0.0
Conoco Phillips	0.0	0.0
Idlewild Stage 1	0.0	0.0
Nairn	20.5	11.6
Plaquemines Dirt & Clay	0.0	0.0
3C Riverside Phase 3	202.1	97.43
Total	222.6	109.0

- *Bocage, Citrus Lands, Conoco Phillips, Idlewild Stage 1, Plaquemines Dirt & Clay*

Direct Impacts
No direct impacts to non-jurisdictional BLH would occur with use of the proposed Bocage, Citrus Lands, Conoco Phillips, Idlewild Stage 1, and Plaquemines Dirt & Clay contractor-furnished borrow areas because the sites do not contain any non-jurisdictional BLH.

Indirect Impacts
Use of the proposed Bocage, Citrus Lands, Conoco Phillips, Idlewild Stage 1, and Plaquemines Dirt & Clay contractor-furnished borrow areas would not likely result in indirect impacts to non-jurisdictional BLH because the habitat type is not near any of the sites.

Cumulative Impacts
Use of the proposed Bocage, Citrus Lands, Conoco Phillips, Idlewild Stage 1, and Plaquemines Dirt & Clay contractor-furnished borrow areas would not contribute to the cumulative loss of non-jurisdictional BLH in the project area because the sites do not contain any non-jurisdictional BLH.

Cumulative impacts to non-jurisdictional BLH would continue in the project area and would be similar to those described for the No Action alternative.

- *Nairin & 3C Riverside Phase 3*

Direct Impacts
Excavation of the proposed Nairn and 3C Riverside Phase 3 contractor-furnished borrow areas would directly impact 22.6 acres of non-jurisdictional BLH (table 2).

The landowner's recent clearing of the proposed 3C Riverside Phase 3 site contributed to the direct impact to non-jurisdictional BLH in the project area. Because the site was cleared in anticipation of the proposed action, the landowner will complete mitigation for the loss of non-jurisdictional BLH if their proposed site is used for construction of the HSDRRS. Proof of mitigation for non-jurisdictional BLH impacts would be supplied to the CEMVN prior to excavation. If the site is used as a contractor-furnished borrow area and mitigation is completed by the landowner, the landowner's mitigation will be discussed in upcoming mitigation IERs and the CED.

At the Narin site, mature trees would be cut down with the use of chainsaws or pushed down with bulldozers and excavators. Woody debris would be cleaned up and all berms would be leveled to eliminate hydrologic impacts. Mobile fauna would be expected to vacate the area during construction, most likely to similar habitat to the south of the site. All non-mobile fauna and flora would be destroyed.

Any additional potential direct impacts to non-jurisdictional BLH would depend on what the landowners decide to do with the proposed contractor-furnished borrow areas following excavation.

The landowners of the proposed Nairn and 3C Riverside Phase 3 sites will complete mitigation for the loss of non-jurisdictional BLH if their proposed sites are used for construction of the HSDRRS. Proof of mitigation for non-jurisdictional BLH impacts would be supplied to the CEMVN prior to excavation. If these sites are used as a contractor-furnished borrow areas and mitigation is

completed by the landowner(s), the landowner's mitigation will be discussed in upcoming mitigation IERs and the CED.

Indirect Impacts
Use of the proposed Nairn and 3C Riverside Phase 3 contractor-furnished borrow areas may result in indirect impacts to non-jurisdictional BLH. The excavation of borrow material and the excavated borrow areas may affect nearby non-jurisdictional BLH by changing the hydrology and nutrient dynamics in the vicinity. These changes have not been quantified.

The landowner's recent clearing of the proposed 3C Riverside Phase 3 borrow area may indirectly affect nearby non-jurisdictional BLH by changing the hydrology and nutrient dynamics in the vicinity. These changes have not been quantified. Additionally, use of the proposed 3C Riverside Phase 3 contractor-furnished borrow area may result in indirect impacts to non-jurisdictional BLH. The excavation of borrow material and the excavated borrow area may affect nearby non-jurisdictional BLH by changing the hydrology and nutrient dynamics in the vicinity. These changes have not been quantified.

Additional potential indirect impacts to non-jurisdictional BLH would depend on what the landowners decide to do with the sites following excavation.

Cumulative Impacts
Use of the proposed Nairn and 3C Riverside Phase 3 contractor-furnished borrow areas would contribute to the cumulative loss of non-jurisdictional BLH in the project area. Additional potential cumulative impacts to non-jurisdictional BLH would depend on what the landowners decide to do with the sites following excavation.

The proposed Nairn site is located in Plaquemines Parish (figures 17 through 20). The site was previously approved for use as the Tac Carrere government-furnished site, and could be excavated for use in construction of the HSDRRS as a contractor-furnished borrow area. The approved Bazile, Belle Chasse, Brad Buras, Kimble 2, Meyer, Myrtle Grove, Tabony, Triumph, and Westbank N borrow areas are also located in Plaquemines Parish. In addition, the proposed Citrus Lands, Conoco Phillips, Plaquemines Dirt & Clay, Westbank L Phase 1, and Westbank L Phase 2 borrow areas are located in the parish. Most of these sites contain non-jurisdictional BLH. It is reasonably foreseeable that the approved sites could be used for construction of the HSDRRS, and their use would cumulatively impact non-jurisdictional BLH in the parish.

The recent clearing of the proposed 3C Riverside Phase 3 contractor-furnished borrow area contributed to the cumulative loss of non-jurisdictional BLH in the project area. Additional potential cumulative impacts to non-jurisdictional BLH would depend on what the landowner decides to do with the site following excavation.

Cumulative impacts to non-jurisdictional BLH would continue in the project area and would be similar to those described for the No Action alternative.

3.2.3 Upland Resources
For the purposes of this IER, upland resources are considered to be any non-wetland areas. Non-jurisdictional BLH habitat, although part of this definition, are discussed separately in section 3.2.2. Impacts to farmland and farmland and farmland soils, which

may be located in upland areas, are discussed in section 3.2.4. Upland areas include maintained and unmaintained pasture, overgrown/vacant areas, and forested areas that are neither wetland nor non-jurisdictional BLH.

Existing Conditions
Some species identified in non-wet pasture areas include Johnson grass, yellow bristle grass, annual sumpweed, arrow-leaf sida, vasey grass, and Brazilian vervain. Scrub/ shrub areas may be comprised of Chinese tallow tree, eastern false-willow, wax myrtle, giant ragweed, dewberry, elderberry, red mulberry, pepper vine, and dog fennel.

- *Bocage*
  The proposed Bocage contractor-furnished borrow area is currently being used as cattle pasture.

- *Citrus Lands*
  The proposed Citrus Lands contractor-furnished borrow area is currently used as pastureland.

- *Conoco Phillips*
  The proposed Conoco Phillips contractor-furnished borrow area is currently used as pastureland.

- *Idlewild Stage 1*
  The proposed Idlewild Stage 1 contractor-furnished borrow area is currently used as pastureland.

- *Nairn*
  The proposed Nairn contractor-furnished borrow area is dominated by non-jurisdictional BLH; impacts to this habitat are discussed in section 3.2.2. The site also includes some vacant grassy areas.

- *Plaquemines Dirt & Clay*
  The proposed Plaquemines Dirt & Clay contractor-furnished borrow area is currently used as cattle pasture. There are some inactive private borrow pits located on the site that have filled with water.

- *3C Riverside Phase 3*
  The proposed 3C Riverside Phase 3 contractor-furnished borrow area was recently dominated by non-jurisdictional BLH; impacts to this habitat are discussed in section 3.2.2. The site also includes some pastureland and vacant grassy areas.

Discussion of Impacts

No Action

- *All Sites*

  Direct Impacts
  Under the no action alternative, no direct impacts to upland areas would occur at the proposed Bocage, Citrus Lands, Conoco Phillips, Idlewild Stage 1, Nairn, Plaquemines Dirt & Clay, and 3C Riverside Phase 3 contractor-furnished borrow areas due to the proposed action. The proposed sites would not be used as contractor-furnished borrow areas. Any potential direct impacts to upland areas

would depend on what the landowners decide to do with the proposed contractor-furnished borrow areas.

Indirect Impacts
Under the no action alternative, no indirect impacts to upland areas would occur at the proposed Bocage, Citrus Lands, Conoco Phillips, Idlewild Stage 1, Nairn, Plaquemines Dirt & Clay, and 3C Riverside Phase 3 contractor-furnished borrow areas due to the proposed action. The proposed sites would not be used as contractor-furnished borrow areas. Any potential indirect impacts to upland areas would depend on what the landowners decide to do with the proposed contractor-furnished borrow areas.

Cumulative Impacts
Under the no action alternative, there would be no cumulative impacts to uplands from the proposed action at the proposed sites. The proposed Bocage, Citrus Lands, Conoco Phillips, Idlewild Stage 1, Nairn, Plaquemines Dirt & Clay and 3C Riverside Phase 3 sites would not be used as contractor-furnished borrow areas. Any potential direct impacts to upland areas would depend on what the landowners decide to do with the proposed contractor-furnished borrow areas. Under this alternative, the proposed HSDRRS projects would be built to authorized levels using potential government-furnished and/or contractor-furnished borrow areas described in IER #18, IER #19, IER #22, IER #23, IER #25, IER #26, IER #28, IER #29, IER #30, or other sources yet to be identified.

The proposed Bocage site is the only potential borrow area in Ascension Parish that has been approved or is being investigated for use in the HSDRRS (figure 16). Under the no action alternative, uplands would not be cumulatively impacted in Ascension Parish because of HSDRRS borrow activity or construction of the HSDRRS.

The proposed Citrus Lands, Conoco Phillips, Idlewild Stage 1, Nairn, and Plaquemines Dirt & Clay sites are located in Plaquemines Parish (figures 17 through 20). The Nairn site was previously approved for use as the Tac Carrere government-furnished site in IER #25, and could be excavated for use in construction of the HSDRRS as a government-furnished borrow area under the no action alternative. The approved Bazile, Belle Chasse, Brad Buras, Kimble 2, Meyer, Myrtle Grove, Tabony, Triumph, and Westbank N borrow areas are also located in Plaquemines Parish. In addition, the proposed Westbank L Phase 1, and Westbank L Phase 2 borrow areas are located in the parish. Most of the sites contain uplands. It is reasonably foreseeable that the approved sites could be used for construction of the HSDRRS, and their use would cumulatively impact upland areas in the parish.

The proposed 3C Riverside Phase 3 site is located on the west bank of the Mississippi River in St. Charles Parish (figure 21). The approved 3C Riverside Phase 1 and 3C Riverside Phase 2 contractor-furnished borrow areas are also located in St. Charles Parish. The sites contain upland areas. It is reasonably foreseeable that these sites could be used for construction of the HSDRRS, and their use would cumulatively impact uplands on the west bank of the Mississippi River in St. Charles Parish.

The approved Willow Bend Phase 1 and Willow Bend Phase 2 contractor-furnished borrow areas are located within 5 miles of the proposed 3C Riverside Phase 3 site. The sites contain upland areas. It is reasonably foreseeable that use

of the approved Willow Bend Phase 1 and Willow Bend Phase 2 sites could be used for construction of the HSDRRS, and their use would cumulatively impact uplands in the vicinity.

Cumulative impacts to upland areas would continue in the project area under the no action alternative. Other activities in southeastern Louisiana have and will continue to change land use patterns, contributing to the cumulative loss of uplands habitat in the project area. Upland areas in the region have historically been affected by residential, commercial, and industrial development. Land has been converted for residential, commercial, and industrial uses in a significant portion of leveed areas in the region. It is expected that this historical trend would continue to impact uplands in the region.

Proposed Action

- *All Sites*

Direct Impacts
Direct impacts to upland areas would occur at the proposed Bocage, Citrus Lands, Conoco Phillips, Idlewild Stage 1, Nairn, Plaquemines Dirt & Clay, and 3C Riverside Phase 3 contractor-furnished borrow areas due to the proposed action. The sites would be mechanically cleared, and borrow material would be excavated. Additional potential direct impacts to upland areas would depend on what the landowners decide to do with the sites following excavation.

Indirect Impacts
No indirect impacts to upland areas at the proposed Bocage, Citrus Lands, Conoco Phillips, Idlewild Stage 1, Nairn, Plaquemines Dirt & Clay, and 3C Riverside Phase 3 contractor-furnished borrow areas would occur due to the proposed action.

Cumulative Impacts
Use of the proposed Bocage, Citrus Lands, Conoco Phillips, Idlewild Stage 1, Nairn, Plaquemines Dirt & Clay, and 3C Riverside Phase 3 contractor-furnished borrow areas would contribute to the cumulative loss of uplands in the project area.

Additional cumulative impacts to uplands would continue in the project area and would be similar to those described for the No Action alternative.

3.2.4 Farmland & Farmland Soils

Existing Conditions
The National Resources Conservation Service (NRCS) uses a land evaluation and site assessment system to establish a farmland conversion impact rating score on proposed sites. This score is used by Federal agencies in assessing potential impacts to farmland and farmland soils in potential project areas. As identified by the NRCS, the proposed Bocage, Citrus Lands, Conoco Phillips, Idlewild Stage 1, Nairn, Plaquemines Dirt & Clay, and 3C Riverside Phase 3 contractor-furnished borrow areas contain prime farmland soils.

Discussion of Impacts

No Action

- *All Sites*

  Direct Impacts
  Under the no action alternative, no direct impacts to farmland and farmland soils at the proposed Bocage, Citrus Lands, Conoco Phillips, Idlewild Stage 1, Nairn, Plaquemines Dirt & Clay, and 3C Riverside Phase 3 contractor-furnished borrow areas would occur due to the proposed action. The proposed sites would not be used as contractor-furnished borrow areas. Any potential direct impacts to farmland soils would depend on what the landowners decide to do with the proposed contractor-furnished borrow areas.

  Indirect Impacts
  Under the no action alternative, no indirect impacts to farmland soils at the proposed Bocage, Citrus Lands, Conoco Phillips, Idlewild Stage 1, Nairn, Plaquemines Dirt & Clay, and 3C Riverside Phase 3 contractor-furnished borrow areas would occur due to the proposed action. The proposed sites would not be used as contractor-furnished borrow areas. Any potential indirect impacts to farmland and farmland soils would depend on what the landowners decide to do with the proposed contractor-furnished borrow areas.

  Cumulative Impacts
  Under the no action alternative, there would be no cumulative impacts to farmland soils at the proposed contractor-furnished borrow areas due to the proposed action. The proposed Bocage, Citrus Lands, Conoco Phillips, Idlewild Stage 1, Nairn, Plaquemines Dirt & Clay, and 3C Riverside Phase 3 sites would not be used as contractor-furnished borrow areas. Any potential cumulative impacts to farmland soils would depend on what the landowners decide to do with the proposed contractor-furnished borrow areas. Under this alternative, the proposed HSDRRS projects would be built to authorized levels using potential government-furnished and/or contractor-furnished borrow areas described in IER #18, IER #19, IER #22, IER #23, IER #25, IER #26, IER #28, IER #29, IER #30, or other sources yet to be identified.

  The proposed Bocage site is the only potential borrow area in Ascension Parish that has been approved or is being investigated for use on the HSDRRS (figure 16). Farmland soils would not be cumulatively impacted in Ascension Parish because of HSDRRS borrow activity or construction of the HSDRRS under the no action alternative.

  The proposed Citrus Lands, Conoco Phillips, Idlewild Stage 1, Nairn, and Plaquemines Dirt & Clay sites are located in Plaquemines Parish (figures 17 through 20). The Nairn site was previously approved for use as the Tac Carrere government-furnished site in IER #25, and could be excavated for use in construction of the HSDRRS as a government-furnished borrow area. The approved Bazile, Belle Chasse, Brad Buras, Kimble 2, Meyer, Myrtle Grove, Tabony, Triumph, and Westbank N borrow areas are also located in Plaquemines Parish. In addition, the proposed Citrus Lands, Conoco Phillips, Plaquemines Dirt & Clay, Westbank L Phase 1, and Westbank L Phase 2 borrow areas are located in the parish. Most of the sites contain farmland soils. It is reasonably foreseeable that these sites could be used for construction of the HSDRRS, and their use would cumulatively impact farmland soils in the parish.

The proposed 3C Riverside Phase 3 site is located on the west bank of the Mississippi River in St. Charles Parish (figure 21). The approved 3C Riverside Phase 1 and 3C Riverside Phase 2 borrow areas are also located in St. Charles Parish. These sites contain farmland soils. It is reasonably foreseeable that these sites could be used for construction of the HSDRRS, and their use would cumulatively impact farmland soils on the west bank of the Mississippi River in St. Charles Parish.

The approved Willow Bend Phase 1 and Willow Bend Phase 2 are located within 5 miles of the proposed 3C Riverside Phase 3 site. These sites contain farmland soils. It is reasonably foreseeable that use of the approved Willow Bend Phase 1 and Willow Bend Phase 2 contractor-furnished borrow areas could be used for construction of the HSDRRS, and their use would cumulatively impact farmland soils in the vicinity.

Farmland and farmland soils in the project area have historically been affected by residential, commercial, and industrial development. Land has been converted for residential, commercial, and industrial uses in a significant portion of leveed areas in the region. It is expected that this historical trend would continue to impact farmland in the region.

Proposed Action

- *All Sites*

  Direct Impacts
  Use of the proposed Bocage, Citrus Lands, Conoco Phillips, Idlewild Stage 1, Nairn, Plaquemines Dirt & Clay, and 3C Riverside Phase 3 contractor-furnished borrow areas would directly impact farmland soils. The proposed contractor-furnished borrow areas would be cleared and excavated, which would result in a direct permanent loss of farmland soils. Any additional potential direct impacts to farmland soils would depend on what the landowners decide to do with the proposed contractor-furnished borrow areas following excavation.

  Indirect Impacts
  No indirect impacts to farmland soils at the proposed Bocage, Citrus Lands, Conoco Phillips, Idlewild Stage 1, Nairn, Plaquemines Dirt & Clay, and 3C Riverside Phase 3 sites would occur due to the proposed action. Any potential indirect impacts to farmland soils would depend on what the landowners decide to do with the proposed contractor-furnished borrow areas following excavation.

  Cumulative Impacts
  Use of the proposed Bocage, Citrus Lands, Conoco Phillips, Idlewild Stage 1, Nairn, Plaquemines Dirt & Clay, and 3C Riverside Phase 3 contractor-furnished borrow areas would contribute to the cumulative loss of farmland soils in the region. Any additional potential cumulative impacts to farmland and farmland soils would depend on what the landowners decide to do with the proposed contractor-furnished borrow areas following excavation.

  Additional cumulative impacts to farmland soils would continue in the project area and would be similar to those described for the No Action alternative.

3.2.5 Wildlife

Existing Conditions
The study area contains a great variety of mammals, birds, reptiles, and amphibians. Species inhabiting the area include nutria, muskrat, mink, otter, raccoon, white-tailed deer, skunks, rabbits, squirrels, armadillos, and a variety of smaller mammals. Wood ducks and some migratory waterfowl may be present during winter.

Non-game wading birds, shore birds, and sea birds including egrets, ibis, herons, sandpipers, willets, black-necked stilts, gulls, terns, skimmers, grebes, loons, cormorants, and white and brown pelicans are found in the project vicinity. Various raptors such as barred owls, red-shouldered hawks, northern harriers (marsh hawks), American kestrel, and red-tailed hawks may be present. Passerine birds in the areas include sparrows, vireos, warblers, mockingbirds, grackles, red-winged blackbirds, wrens, blue jays, cardinals, and crows. Many of these birds are present primarily during periods of spring and fall migrations. Colonial nesting wading birds (including herons, egrets, and Ibis), seabirds/water-birds (including terns, gulls, black skimmers, and brown pelicans) and bald eagles have the potential to nest in the proposed project area. The areas may also provide habitat for the American alligator, salamanders, toads, frogs, turtles, and several species of poisonous and nonpoisonous snakes. The area currently provides suitable breeding habitat for various species of mosquitoes.

The bald eagle is a raptor that is found in various areas throughout the United States and Canada as well as throughout the study area. Bald eagles are Federally protected under the Bald Eagle Protection Act of 1940. The bald eagle feeds on fish, rabbits, waterfowl, seabirds, and carrion (Ehrlich et al., 1988). The main basis of the bald eagle diet is fish, but they will feed on other items such as birds and carrion depending upon availability of the various foods. Eagles require roosting and nesting habitat, which in Louisiana consists of large trees in fairly open stands (Anthony et al., 1982). Bald eagles nest in Louisiana from October through mid-May. Eagles typically nest in bald cypress trees near fresh to intermediate marshes or open water in the southeastern parishes.

Discussion of Impacts

No Action

- *Bocage, Citrus Lands, Conoco Phillips, Idlewild Stage 1, Nairn, & Plaquemines Dirt & Clay*

  Direct Impacts
  Under the no action alternative, no direct impacts to wildlife or wildlife habitat at the proposed Bocage, Citrus Lands, Conoco Phillips, Idlewild Stage 1, Nairn, and Plaquemines Dirt & Clay contractor-furnished borrow areas would occur due to the proposed action. The proposed sites would not be used as contractor-furnished borrow areas. Any potential direct impacts to wildlife and wildlife habitat would depend on what the landowners decide to do with the proposed contractor-furnished borrow areas.

  Indirect Impacts
  Under the no action alternative, no indirect impacts to wildlife or wildlife habitat at the proposed Bocage, Citrus Lands, Conoco Phillips, Idlewild Stage 1, Nairn and Plaquemines Dirt & Clay contractor-furnished borrow areas would occur due to the proposed action. The proposed sites would not be used as contractor-furnished borrow areas. Any potential indirect impacts to wildlife and wildlife habitat would depend on what the landowners decide to do with the proposed contractor-furnished borrow areas.

Cumulative Impacts
Under the no action alternative, there would be no cumulative impacts to wildlife or wildlife habitat from the proposed action. The proposed Bocage, Citrus Lands, Conoco Phillips, Idlewild Stage 1, Nairn and Plaquemines Dirt & Clay contractor-furnished borrow areas would not be used as contractor-furnished borrow areas. Any potential cumulative impacts to wildlife and wildlife habitat would depend on what the landowners decide to do with the proposed contractor-furnished borrow areas. Under the no action alternative, the proposed HSDRRS projects would be built to authorized levels using potential government-furnished and/or contractor-furnished borrow areas described in IER #18, IER #19, IER #22, IER #23, IER #25, IER #26, IER #28, IER #29, IER #30, or other sources yet to be identified.

The proposed Bocage site is the only potential borrow area in Ascension Parish that has been approved or is being investigated for use on the HSDRRS (figure 16). Wildlife and wildlife habitat would not be cumulatively impacted in Ascension Parish because of HSDRRS borrow activity or construction of the HSDRRS under the no action alternative.

The proposed Citrus Lands, Conoco Phillips, Idlewild Stage 1, Nairn, and Plaquemines Dirt & Clay sites are located in Plaquemines Parish (figures 17 through 20). The Nairn site was previously approved for use as the Tac Carrere government-furnished site in IER #25, and could be excavated for use in construction of the HSDRRS as a government-furnished borrow area under the no action alternative. The approved Bazile, Belle Chasse, Brad Buras, Kimble 2, Meyer, Myrtle Grove, Tabony, Triumph, and Westbank N borrow areas are also located in Plaquemines Parish. In addition, the proposed Citrus Lands, Conoco Phillips, Plaquemines Dirt & Clay, Westbank L Phase 1, and Westbank L Phase 2 borrow areas are located in the parish. All of the sites contain wildlife habitat. It is reasonably foreseeable that these sites could be used for construction of the HSDRRS, and their use would cumulatively impact wildlife habitat in the parish.

Cumulative impacts to wildlife and wildlife habitat would continue in the project area under the no action alternative. Other activities in the vicinity have and will continue to change land use patterns, contributing to the cumulative loss of wildlife and wildlife habitat in the project area. Recent residential and commercial developmental pressures may contribute to a decline in remaining wildlife habitat in the vicinity.

Wildlife habitat in the project area has historically been affected by residential, commercial, and industrial development. Land has been converted for residential, commercial, and industrial uses in a significant portion of leveed areas in the region. It is expected that this historical trend would continue to impact wildlife habitat in the region.

- *3C Riverside Phase 3*

Direct Impacts
The landowner recently cleared most of the proposed 3C Riverside Phase 3 contractor-furnished borrow area, which directly impacted wildlife and wildlife habitat at the site. Mobile wildlife would have been displaced, and non-mobile wildlife would have be destroyed. Habitat that wildlife would have used, including non-jurisdictional BLH that was found at the site, was destroyed.

Under the no action alternative, the proposed site would not be used as a contractor-furnished borrow area.

Indirect Impacts
Under the no action alternative, no indirect impacts to wildlife habitat would occur due to the proposed action. The proposed site would not be used as a contractor-furnished borrow area.

Cumulative Impacts
The landowner's recent clearing of the proposed 3C Riverside Phase 3 site contributed to the cumulative loss of wildlife habitat in the project area. Under the no action alternative, the proposed site would not be used as a contractor-furnished borrow area. Under this alternative, the proposed HSDRRS projects would be built to authorized levels using potential government-furnished and/or contractor-furnished borrow areas described in IER #18, IER #19, IER #22, IER #23, IER #25, IER #26, IER #28, IER #29, IER #30, or other sources yet to be identified.

The proposed 3C Riverside Phase 3 site is located on the west bank of the Mississippi River in St. Charles Parish (figure 21). The approved 3C Riverside Phase 1 and 3C Riverside Phase 2 borrow areas are also located in St. Charles Parish. All of the sites contain wildlife habitat. It is reasonably foreseeable that these sites could be used for construction of the HSDRRS, and their use would cumulatively impact wildlife habitat on the west bank of the Mississippi River in St. Charles Parish.

The approved Willow Bend Phase 1 and Willow Bend Phase 2 are located within 5 miles of the proposed 3C Riverside Phase 3 site. Both sites contain wildlife habitat. It is reasonably foreseeable that use of the approved Willow Bend Phase 1 and Willow Bend Phase 2 contractor-furnished borrow areas could be used for construction of the HSDRRS, and their use would cumulatively impact wildlife habitat wildlife habitat in the vicinity.

Wildlife habitat in the project area have historically been affected by residential, commercial, and industrial development. Land has been converted for residential, commercial, and industrial uses in a significant portion of leveed areas in the region. It is expected that this historical trend would continue to impact farmland in the region.

Proposed Action
Colonial nesting wading birds (including herons, egrets, and Ibis), seabirds/water-birds (including terns, gulls, black skimmers, and brown pelicans) and bald eagles have the potential to nest in the proposed project area. The nesting birds and their nests would not be disturbed or destroyed. The CEMVN can provide additional information on bird species and known nesting sites to construction contractors, and should be contacted if any area within 650 feet of the construction zone would be disturbed.

- *All Sites*

  Direct Impacts
  With implementation of the proposed action, direct impacts from wildlife displacement would occur when the proposed Bocage, Citrus Lands, Conoco

Phillips, Idlewild Stage 1, Nairn, Plaquemines Dirt & Clay, and 3C Riverside Phase 3 contractor-furnished borrow areas are cleared and excavated. Non-mobile wildlife would be destroyed. Trees, uplands, and other habitat that wildlife would be removed and the site would be excavated. The excavated site could fill with water and create an aquatic habitat. Any additional potential direct impacts to wildlife and wildlife habitat would depend on what the landowners decide to do with the proposed contractor-furnished borrow areas following excavation.

Indirect Impacts
The excavated borrow areas may be converted to ponds and small lakes, which could add to wildlife habitat in the vicinity. Aquatic vegetation may colonize the shallow littoral edge of the area, and wildlife (alligators, raccoons, wading birds, and ducks) adapted to an aquatic environment would be expected to expand their range into the new waterbodies. A variety of plant species may colonize adjacent to the water that could provide important wildlife habitat utilized for nesting, feeding, and cover. Any areas that remain dry would be expected to be colonized by vegetation and woody plants, which could provide habitat to wildlife. The dense vegetation could attract a variety of wildlife including birds, reptiles, amphibians, and small mammals. While the excavated borrow areas have the potential to become a mosquito breeding areas, the amount of surface acres of water is considered to be small compared to surrounding wetlands. However, local parish mosquito control programs, not the CEMVN, are responsible for mosquito control.

Any additional potential indirect impacts to wildlife and wildlife habitat would depend on what the landowners decide to do with the proposed contractor-furnished borrow areas following excavation.

Cumulative Impacts
Use of the proposed Bocage, Citrus Lands, Conoco Phillips, Idlewild Stage 1, Nairn, Plaquemines Dirt & Clay, and 3C Riverside Phase 3 contractor-furnished borrow areas would contribute to the cumulative loss of wildlife and wildlife habitat in the region. Because the excavated borrow sites may provide habitat for wildlife, the detrimental cumulative impact to wildlife may be reduced. Any additional potential cumulative impacts to wildlife and wildlife habitat would depend on what the landowners decide to do with the proposed contractor-furnished borrow areas following excavation.

Additional cumulative impacts to wildlife and wildlife habitat would continue in the project area and would be similar to those described for the No Action alternative.

3.2.6 Threatened and Endangered Species

Existing Conditions
Threatened and endangered species (T&E) are those recognized species that are legally protected in the United States through various conservation measures. The USFWS designates areas that have the physical and biological features that are essential to the conservation of T&E species or areas of habitat that are believed to be essential for a species' conservation as "critical habitat." Through this designation the USFWS is helping to manage the survival and proliferation of T&E species in the region. Although several Federal or state-listed T&E species are dependent on the habitat types present in the

study areas, no endangered, threatened, or candidate species under USFWS jurisdiction presently occur in the proposed Bocage, Citrus Lands, Conoco Phillips, Idlewild Stage 1, Nairn, Plaquemines Dirt & Clay, and 3C Riverside Phase 3 contractor-furnished borrow areas, as described below. No critical habitat for any T&E species was found in any of the proposed contractor-furnished borrow areas.

Discussion of Impacts

No Action

- *All Sites*

Direct Impacts
No direct impacts to T&E species or their critical habitat would occur under the no action alternative. The proposed Bocage, Citrus Lands, Conoco Phillips, Idlewild Stage 1, Nairn, Plaquemines Dirt & Clay, and 3C Riverside Phase 3 sites would not be used as contractor-furnished borrow areas.

Indirect Impacts
No indirect impacts to T&E species or their critical habitat would occur under the no action alternative. The proposed Bocage, Citrus Lands, Conoco Phillips, Idlewild Stage 1, Nairn, Plaquemines Dirt & Clay, and 3C Riverside Phase 3 sites would not be used as contractor-furnished borrow areas.

Cumulative Impacts
Under the no action alternative, there would be no cumulative impacts to T&E species or their critical habitat from the proposed action. The proposed Bocage, Citrus Lands, Conoco Phillips, Idlewild Stage 1, Nairn, Plaquemines Dirt & Clay, and 3C Riverside Phase 3 sites would not be used as contractor-furnished borrow areas. Under this alternative, the proposed HSDRRS projects would be built to authorized levels using potential government-furnished and/or contractor-furnished borrow areas described in IER #18, IER #19, IER #22, IER #23, IER #25, IER #26, IER #28, IER #29, IER #30, or other sources yet to be identified.

Approved government-furnished and contractor-furnished borrow areas could be used for construction of the HSDRRS. Use of these approved sites would not contribute to the loss of T&E species or their critical habitat in the project area because none of these approved sites contain any T&E species or critical habitat.

The region's T&E species depend on a variety of habitat that includes resources previously discussed in this IER, mainly jurisdictional wetlands and non-jurisdictional BLH. A discussion of the potential impacts to these resources can be found in, respectively, section 3.2.1 and section 3.2.2. Cumulative impacts to T&E species and wildlife habitat would continue in the project area under the no action alternative.

Proposed Action
No listed endangered, threatened, or candidate species are known to exist at the proposed sites. The USFWS concurred with the CEMVN that excavation of the proposed contractor-furnished borrow areas are not likely to adversely affect T&E species or their critical habitat, as described below (table 3).

Table 3: USFWS T&E Concurrence

Proposed Borrow Area	USFWS Concurrence
Bocage	18 June 2008
Citrus Lands	29 January 2009
Conoco Phillips	18 March 2009
Idlewild Stage 1	23 February 2009
Nairn	23 February 2009
Plaquemines Dirt & Clay	23 February 2009
3C Riverside Phase 3	01 April 2008

- *All Sites*

  Direct Impacts
  No direct impacts to T&E species or their critical habitat would occur with excavation of the proposed Bocage, Citrus Lands, Conoco Phillips, Idlewild Stage 1, Nairn, Plaquemines Dirt & Clay, and 3C Riverside Phase 3 contractor-furnished borrow areas. The USFWS concurred with determinations that implementation of the proposed action would not adversely affect any T&E species or their critical habitat in their letters (table 3).

  Indirect Impacts
  No indirect impacts to T&E species or their critical habitat would occur with excavation of the proposed Bocage, Citrus Lands, Conoco Phillips, Idlewild Stage 1, Nairn, Plaquemines Dirt & Clay, and 3C Riverside Phase 3 contractor-furnished borrow areas.

  Cumulative Impacts
  Use of the proposed Bocage, Citrus Lands, Conoco Phillips, Idlewild Stage 1, Nairn, Plaquemines Dirt & Clay, and 3C Riverside Phase 3 contractor-furnished borrow areas would not contribute to the loss of T&E species or their critical habitat in the project area because the proposed sites do not contain any T&E species or critical habitat.

  The region's T&E species depend on a variety of habitat that includes resources previously discussed in this IER, mainly jurisdictional wetlands and non-jurisdictional BLH. A discussion of the impacts to these resources can be found in, respectively, section 3.2.1 and section 3.2.2. Cumulative impacts to T&E species and wildlife habitat would continue in the project area.

3.2.7 Cultural Resources

Existing Conditions
The level of cultural resource investigations for each proposed contractor-furnished borrow area depends on factors such as current and past land use, geomorphology, presence of known sites, and the probability of unknown sites located within the areas of potential effect (APE). This information is used to assess the likelihood that archaeological sites or historic structures could be affected by excavation or visual impacts of a proposed project. When sites are present within the APE, the project area boundaries may be adjusted to avoid impacts to historic properties, or sites may be investigated further to determine if they are eligible for inclusion on the National Register of Historic Places (NRHP). Site identification (Phase I) cultural resource investigations were conducted for the nine proposed contractor-furnished borrow areas.

Section 106 of the National Historic Preservation Act of 1966, as amended, requires consideration of cultural resources prior to a federal undertaking and requires consultation with the State Historic Preservation Officer (SHPO) and Federally recognized Indian Tribes that have an interest in the region, and in some cases the Advisory Council on Historic Preservation and other consulting parties. Only sites, buildings, structures, or objects determined eligible for, or listed on, the NRHP are afforded the safeguards of the National Historic Preservation Act. Table 4 summarizes the consultation efforts of the CEMVN for the proposed contractor-furnished borrow areas and the dates the organizations concurred with the CEMVN's findings and recommendations. The results of these investigations and consultation reveal that with an APE adjustment to avoid two significant archaeological sites, no known sites eligible for, or listed on, the NRHP exist within the APE of each proposed contractor-furnished borrow area. No historic properties will be adversely affected by the proposed actions. Section 106 consultation for the proposed actions is concluded. However, if any unrecorded cultural resources are determined to exist within the proposed project boundaries, then no work will proceed in the area containing these cultural resources until a CEMVN archaeologist has been notified and supplemental coordination with the SHPO and Indian Tribes has been completed.

In its evaluation of potential contractor-furnished borrow areas, the CEMVN seeks to avoid adverse impacts to historic properties. Cultural resource investigations have revealed the presence of both prehistoric and historic sites in the vicinity of the proposed contractor-furnished borrow areas. These prehistoric and historic sites are located outside the APEs for the proposed contractor-furnished borrow areas. However, prehistoric archaeological sites, such as shell middens, hunting and gathering camps, habitation sites, villages, and mound sites tend to be located on active and abandoned distributary channel levee complexes, major beach ridges, and on older stable portions of the delta, and in association with freshwater marshes. Similarly, historic period sites, such as forts, plantations, and industrial features tend to be located on natural levees and waterways. The geologic processes associated with the Mississippi River including delta lobe formation, meander progressions, and alluvial sedimentation from floods greatly influence site location and preservation. For example, the geological progression of the Mississippi River delta lobes suggests that the earliest archaeological sites near the proposed contractor-furnished borrow areas under consideration would date to approximately 5,000 years ago. In addition, flood sedimentation buries and preserves some sites, while channel erosion and subsidence obliterate other sites.

- *Bocage*

  The proposed Bocage contractor-furnished borrow area primarily contains pasture land with small pockets of woodland and tree-lined fence rows. High probability areas for archaeological sites are located nearest to the Mississippi River along elevated natural levee deposits. Plantations flourished along the Mississippi River during the 19th century. Plantation organization generally included parcels with river frontage and deep extensions into the backswamps and marshes that were transformed into agricultural fields, particularly for sugar cane production. Plantation homes were established along the river's natural levee and outbuildings and slave or workers quarters tended to be located behind the big house. Sugar mills, another common plantation structure, tended to be constructed near or within the cane fields.

  Beginning in the early 19th century, much of the proposed Bocage contractor-furnished borrow area was owned by the Bringier family. The Bocage Plantation

House, presently located approximately 950 feet south of the proposed borrow area, was reportedly constructed in 1801 and later remodeled in the Greek Revival style in 1840. The house is listed on the National Register of Historic Places (HRHP) under Criterion C as an architecturally significant example of early 19th century residential structure. Bocage continued to be a working plantation for the production of sugar cane throughout the 19th century. Historic period maps of the plantation show associated structures including a sugar mill, row of slave or workers quarters, and various outbuildings. No historic structures remain in the proposed borrow area.

A Phase 1 cultural resources investigations within the proposed Bocage contractor-furnished borrow area identified two historic archaeological sites. These two sites, the Bocage Plantation Quarters Site (16AN82) and the structural remains of an historic period sugar mill, are considered by researchers to be eligible for listing on the NRHP. The Bocage Plantation Quarters Site (16AN82) exhibits intact subsurface deposits containing artifacts associated with 19th and early 20th century slave quarters/tenant houses and may possess those qualities of significance as defined by the NRHP under Criterion D. The remains of a historic period sugar mill, although not located directly in the proposed borrow area and not investigated as part of Shuman's 2008 study, is clearly associated with historic period sugar production at Bocage Plantation and could also possess those qualities of significance as defined by the NRHP criteria.

A 200 foot buffer zone that incorporates a 3:1 slope will be placed around site 16AN82 and the remains of the sugar mill as a precautionary measure to avoid impacts to these sites.

- *Citrus Lands*
  A Phase I cultural resources survey of the proposed Citrus Lands contractor-furnished borrow area was conducted of these lands and recorded three new cultural loci associated with Woodland Plantation (16PL157). Two of these cultural resources loci were determined not to be eligible for the National Register. One loci is potentially eligible for the National Register and requires more testing before it can be disturbed. However a 100 meter (328 feet) buffer will be established around this resource and it will not be affected by any excavations of the proposed borrow area. Previously recorded site 16PL153 exists near the border of the proposed borrow area, but will not be affected because a 100 meter (328 feet) buffer zone will be established around the site.

- *Conoco Phillips*
  The proposed Conoco Phillips borrow area includes approximately 658 acres in Plaquemines Parish, Louisiana. A Phase I cultural resources survey located no new cultural resources within the boundaries of the proposed borrow area, however previously recorded site 16PL165 was revisited. The current study confirmed the initial recommendations for 16PL165 that it warranted further study and that a protective buffer of no activity be established around the site so that no disturbance could occur during proposed borrow activities. The current Phase I study recommended a buffer of 100 meters (328 ft) around site 16PL165. This site will have a 100 meter (328 feet) buffer established around the site for protection.

- *Idlewild Stage 1*
  A Phase I cultural resources survey was undertaken on the proposed Idlewild Stage 1 contractor-furnished borrow area. The area includes three loci associated

with Sarah Plantation (16PL170) that are not eligible for inclusion on the National Register of Historic Places.

- *Nairn*
  A Phase I cultural resources investigation was conducted at the proposed Nairn contractor-furnished borrow area and no cultural resources were recorded.

- *Plaquemines Dirt & Clay*
  A Phase I cultural resources investigation was undertaken of the proposed Plaquemine Dirt & Clay contractor-furnished borrow area, and located three cultural resources loci associated with the Woodland Plantation (site 16PL157). These loci were determined to not be eligible for the National Register. Previously recorded site 16PL153 is located at the edge of this property and on the border of the proposed Citrus Lands borrow pit. This site will have a 100 meter (328 feet) buffer zone established to protect it from damages during excavation of the proposed borrow property.

- *3C Riverside Phase 3*
  During the time period when the proposed 3C Riverside Phase 3 contractor-furnished borrow area was investigated for cultural resources, the area primarily contained sugarcane fields, fallow agricultural fields, pasture, and wooded areas. Due to the proximity of the Mississippi River and the higher elevation of natural levee deposits, the northern portion of the site is considered to have a high potential for archaeological deposits. The remainder of the site becomes lower in elevation farther south from the river and exhibits poorly drained soils and less desirable locations for human habitation. Cultural resources investigations of the proposed 3C Riverside Phase 3 contractor-furnished borrow area identified one historic period archaeological site (16SC85) and one historic standing structure (3C-HSS-01). Researchers found that site 16SC85 and structure 3C-HSS-01 do not possess the qualities necessary for listing on the National Register of Historic Places (NRHP). No further investigations are recommended in the APE.

Discussion of Impacts

No Action

- *All Sites*

  Direct Impacts
  Under the no action alternative, no direct impacts to cultural resources at the proposed contractor-furnished borrow areas would be anticipated. Any undiscovered or unreported cultural resources or traditional cultural properties would remain intact and in their current state of preservation. The burial or subsidence of historic land surfaces would continue in the current pattern. All available information indicates that it is highly unlikely that under the no action alternative there would be any direct negative impacts to cultural resources.

  Indirect Impacts
  Under the no action alternative, no indirect impacts to cultural resources at the proposed contractor-furnished borrow areas are anticipated.

  Cumulative Impacts
  Under the no action alternative, the proposed contractor-furnished borrow areas would not be used. The proposed HSDRRS projects would be built to authorized

levels using potential government-furnished and/or contractor-furnished borrow areas described in IER #18, IER #19, IER #22, IER #23, IER #25, IER #26, IER #28, IER #29, and IER #30 or other sources yet to be identified.

Proposed Action
The results of recent cultural resources investigations revealed that historic properties (16PL153, 16AN82, 16PL165, a remote loci associated with 16PL157, and the structural remains of an historic period sugar mill) eligible for listing on the NRHP exist within the proposed contractor-furnished borrow areas and would be affected by the proposed actions. However, measures will be taken to avoid impacts to these historic properties by placing a "no work area" buffer zone around each historic property. Consequently, the proposed excavation of borrow material from these three proposed contractor-furnished borrow areas would have no adverse effect on historic properties.

- *Bocage, Citrus Lands, Conoco Phillips, & Plaquemines Dirt & Clay*

  Direct Impacts
  All available information indicates that it is highly unlikely that cultural resources would be impacted by excavation of the proposed Bocage, Citrus Lands, Conoco Phillips, and Plaquemines Dirt & Clay contractor-furnished borrow areas. Cultural resource surveys were completed for the proposed sites, and new or exiting cultural resource sites were discovered or re-examined. The proposed Bocage property survey revealed the existence of two historic properties within the proposed borrow site that are NRHP eligible (Site 16AN82 and the structural remains of an historic period sugar mill). However, impacts to these two historic properties would be avoided by placing a 200 foot-wide "no work zone" with 3:1 slope around each site. The proposed Citrus Lands and Plaquemines Dirt & Clay properties each border previously recorded site 16PL153, a historic pump foundation and associated remains. Site 16PL153 will have a 100 meter (328 feet) buffer zone established around it so that the cultural resource is undisturbed by excavation of the proposed borrow site. The proposed Conoco Phillips property includes previously recorded site 16PL165, and establishes a 100 meter (328 feet) buffer established around the site for protection. The proposed Citrus Lands property also contains 3 cultural resources loci associated with the Woodland Plantation (16PL157) and will also have a 100 meter (328 feet) buffer zone established around it. Consequently, the proposed excavation of borrow material from these proposed contractor-furnished borrow areas would have no adverse effect on these historic properties. SHPO and Indian Tribes have concurred with our "no adverse effect" finding (table 4).

  With implementation of the proposed action, any undiscovered cultural resources may be damaged during borrow excavation and construction operations. It is unlikely that such direct impacts would occur because cultural resource surveys have been completed in order to identify cultural resources within the proposed contractor-furnished borrow areas.

  Construction contractors are required to contact the CEMVN in the event that any apparent historical or archaeological properties are unearthed during excavation of the proposed site. The items shall be carefully preserved, and the contractor shall leave the find undisturbed. Excavation would be halted until the SHPO and Indian Tribes are notified.

  Indirect Impacts

With implementation of the proposed action, no indirect impacts to cultural resources would be anticipated.

Cumulative Impacts
If the proposed Bocage, Citrus Lands, Conoco Phillips, and Plaquemines Dirt & Clay sites are used as contractor-furnished borrow areas, it is highly unlikely that any cumulative negative impacts to cultural resources would occur from the sites' excavation. Cultural resource surveys were completed for the proposed sites and these surveys did reveal the existence of historic properties. However, measures will be taken to avoid impacts to these historic properties.

- *Idlewild Stage 1, Nairn, & 3C Riverside Phase 3*

Direct Impacts
All available information indicates that it is highly unlikely that cultural resources would be impacted by excavation of the proposed Idlewild Stage 1, Nairn, and 3C Riverside Phase 3 contractor-furnished borrow areas. With implementation of the proposed action, any undiscovered cultural resources may be damaged during borrow excavation and construction operations. It is unlikely that such direct impacts would occur because cultural resource surveys have been completed in order to identify cultural resources within the proposed Idlewild Stage 1, Nairn, and 3C Riverside Phase 3 contractor-furnished borrow areas and those surveys did not reveal the existence of any known historic properties that are eligible for the NRHP within the proposed borrow sites.

Construction contractors are required to contact the CEMVN in the event that any apparent historical or archaeological properties are unearthed during excavation of the proposed site. The items shall be carefully preserved, and the contractor shall leave the find undisturbed. Excavation would be halted until the SHPO and Indian Tribes are notified.

Indirect Impacts
With implementation of the proposed action, no indirect impacts to cultural resources would be anticipated.

Cumulative Impacts
If the proposed Idlewild Stage 1, Nairn, and 3C Riverside Phase 3 sites are used as contractor-furnished borrow areas, it is highly unlikely that any cumulative negative impacts to cultural resources would occur from the sites' excavation. Cultural resource surveys were completed for the proposed Idlewild Stage 1, Nairn, and 3C Riverside Phase 3 sites and those surveys did not reveal the existence of any known historic properties that are eligible for the NRHP within the proposed borrow sites.

Table 4. Summary of Section 106 of NHPA correspondence

Site	Date Consulting Party Provided Concurrence on the Project											
	SHPO	**Chitimacha Tribe of LA**	**MS Band of Choctaw Indians**	**Alabama Coushatta Tribe of TX**	**Caddo Nation of OK**	**Choctaw Nation of OK**	**Coushatta Tribe of LA**	**Jena Band of Choctaw Indians**	**Quapaw Tribe of OK**	**Seminole Nation of OK**	**Seminole Tribe of FL**	**Tunica-Biloxi Tribe of LA**
Bocage	6-30-09	NR	NR	07-02-09	06-10-09	07-13-09	NR	NR	NR	NR	05-27-09	NR
Citrus Lands	05-08-09	NR	NR	NR	NR	07-23-09	NR	NR	NR	NR	NR	NR
Conoco Phillips	11-09-09	NR	NR	11-21-09	NR	NR	NR	NR	NR	NR	NR	NR
Idlewild Stage 1	05-14-09	NR	NR	07-16-09	06-19-09	NR	NR	NR	NR	NR	07-24-09	NR
Nairn	04-23-08	04-09-08	NR	NR	NR	04-03-08	NR	NR	NR	NR	NR	NR
Plaquemines Dirt & Clay	04-23-08	04-09-08	NR	NR	NR	04-03-08	NR	NR	NR	NR	NR	NR
3C Riverside Phase 3	09-08-08	NR	NR	09-10-08	NR	NR	NR	NR	NR	NR	10-20-09	NR

* Response date reflects the end of the 30 day comment period. No response (NR) implies concurrence with the Corps finding of "no historic properties affected" as per 36 CFR 800.4(d).

3.2.8 Recreational Resources

Existing Conditions

- *Bocage*
  The proposed Bocage contractor-furnished borrow area's landscape is made up primarily of vast pasturelands, sparsely populated with trees along field edges and property lines. The terrain is relatively flat and characteristic of the farmlands present. Land uses in the area include agricultural and low density residential, possibly associated with the agricultural uses. Access to the site is through the use of Highway 942. Public recreational amenities include two boat launches (located across the Mississippi River from the project site, along Highway 18), and access to the Mississippi River levees (which presents opportunities for walking, hiking, biking and nature observation). The land around the project site is privately owned. These flat, open lands present excellent opportunities for hunting, while access to the Mississippi River provides suitable habitat for fishing.

- *Citrus Lands*
  The proposed Citrus Lands contractor-furnished borrow area's landscape is made up of pasturelands, sparsely populated with tree-like vegetation and grass lands. The terrain is relatively flat and has few topographical features other than well distinguished irrigation channels denoting agricultural lands. Access to the site is through the use of Highway 23. Land uses in the area include agricultural uses (in the immediate vicinity) and low density residential. Public recreational amenities include a boat launch (located just south of the project site at Grand Bayou), and access to both the Mississippi River Levees and the Plaquemines Parish Non-Federal Levees (which presents opportunities for walking, hiking, biking and nature observation). The land around the project site is most likely privately owned. These flat, open lands present excellent opportunities for hunting, while the abundant water features in the area provide suitable habitat for fishing.

- *Conoco Phillips*
  The proposed Conoco Phillips contractor-furnished borrow area's landscape is made up of agricultural lands, sparsely populated with tree-like vegetation and some grasslands. The terrain is relatively flat and has few topographical features other than well-distinguished irrigation channels and some small drainage ditches and canals. One feature, near the middle of the proposed site, is what appears to be a current private borrow operation already underway. Access to the proposed site is offered via Highway 23 (located to the east, though not immediately adjacent to the proposed site) and West Ravena Road (located to the north and along the border of the proposed site). Land uses in the area include agricultural uses (in the immediate vicinity) and low density residential. Public recreational amenities include access to both the Mississippi River Levees and the Plaquemines Parish Non-Federal Levees (which presents opportunities for walking, hiking, biking, and nature observation). The nearest boat launch is located approximately two miles away to the southeast (near Myrtle Grove). The land around the project site is most likely in private hands. These flat, open lands present excellent opportunities for hunting, while the abundant water features in the area provide suitable habitat for fishing.

- *Idlewild Stage 1*
  The proposed Idlewild Stage 1 contractor furnished borrow area's landscape is made up of a mixture of agricultural lands, wetlands and mixed forestation. The

terrain around the agricultural lands is relatively flat and characteristic of that type of use. The forestation and wet areas feature some minor terrain changes to the west of the site leading up to the existing levee. The site features what appears to be a previous borrow project near the center of its area. These sites have filled in with both water and native vegetation and have blended fairly well into their surrounding environment. From this thoroughfare, the viewer will most likely experience a vast view of open fields, sparsely populated with trees in the foreground, and densely populated with trees and forestation in the background. Land uses in the area include agricultural and low density residential, possibly associated with the agricultural uses present. Access to the site is granted through the use of Highway 23. Public recreational amenities include access to both the Mississippi River Levees and the Plaquemines Parish Non-Federal Levees (which presents opportunities for walking, hiking, and biking and nature observation). There are no public boat launches or marinas in or near the project vicinity. The land around the project site is most likely privately owned. These flat, open lands present excellent opportunities for hunting, while the abundant water features in the area provide suitable habitat for fishing, even with the limited access.

- *Nairn*
  The proposed Nairn contractor-furnished borrow area's landscape is made up primarily of thick forested lands, with a few small open/ green spaces. The terrain is relatively flat and free of any topographical features. Land uses in the area include medium and low density residential. Access to the site is through the use of both Highway 23 and Highway 11. Public recreational amenities include access to both the Mississippi River levees and the Plaquemines Parish Non-Federal levees (which presents opportunities for walking, hiking, and biking and nature observation). Across the Mississippi River, on the East Bank is the Bohemia Wildlife Management Area (which is very remote, and has limited access). There are no public boat launches/ marinas in the vicinity of the project site. The land around the project site is most likely privately owned. These flat, open lands present excellent opportunities for hunting, while the abundant water features in the area provide suitable habitat for fishing, even with limited access.

- *Plaquemines Dirt & Clay*
  The proposed Plaquemines Dirt & Clay contractor-furnished borrow area's landscape is made up of agricultural lands, sparsely populated with tree-like vegetation and some grassland. The terrain is relatively flat and has few topographical features other than well distinguished irrigation channels and some small drainage ditches and canals. One feature, near the southwest side of the proposed site, is what appears to be previously-constructed private borrow areas. Access to the site is granted through the use of Lacrosse Lane (from Highway 23). Land uses in the area include agricultural uses (in the immediate vicinity) and low density residential. Public recreational amenities include a boat launch (located just south of the project site at Grand Bayou), and access to both the Mississippi River Levees and the Plaquemines Parish Non-Federal Levees (which presents opportunities for walking, hiking, biking and nature observation). The land around the project site is most likely privately owned. These flat, open lands present excellent opportunities for hunting, while the abundant water features in the area provide suitable habitat for fishing.

- *3C Riverside Phase 3*
  The proposed 3C Riverside Phase 3 contractor furnished borrow area's landscape is made up primarily of some agricultural lands, with trees along field edges denoting property lines, and large heavily forested areas. The terrain is relatively

flat and characteristic of the typical terrains present in the region. There are adequate water resources to accommodate fish and wildlife both in the immediate area and the region. This along with excellent access routes into and out of the project area create a good platform for outdoor recreation opportunities. Land uses in the area include agricultural and low density residential. There are no major designated recreation areas located near the project site; however there is a public boat launch located across Highway 18 which gives users access to the Mississippi River for fishing and boating. The land around the project site is most likely privately owned. These flat, open lands present excellent opportunities for hunting, while the abundant water features in the area provide suitable habitat for fishing.

Discussion of Impacts

No Action

- *All Sites*

Direct Impacts
Under the no action alternative, no direct impacts to recreational resources would occur at the proposed Bocage, Citrus Lands, Conoco Phillips, Idlewild Stage 1, Nairn, Plaquemines Dirt & Clay, and 3C Riverside Phase 3 contractor-furnished borrow areas. Recreational resources would most likely evolve from existing conditions in a natural process, or change as dictated by future land use maintenance practices. The proposed sites would not be used as contractor-furnished borrow areas. The landowners could directly impact aesthetic quality at the sites; however, this would not be related to the proposed action.

Indirect Impacts
Under the no action alternative, no indirect impacts to recreational resources would occur at the proposed Bocage, Citrus Lands, Conoco Phillips, Idlewild Stage 1, Nairn, Plaquemines Dirt & Clay, and 3C Riverside Phase 3 contractor furnished borrow areas. The proposed sites would not be used as contractor-furnished borrow areas. However, it is important to note that whatever the landowner would choose to do with the property may have long lasting affects on the surrounding, adjacent areas.

Cumulative Impacts
Under the no action alternative, no foreseen cumulative impacts to recreational resources would occur at the proposed Bocage, Citrus Lands, Conoco Phillips, Idlewild Stage 1, Nairn, Plaquemines Dirt & Clay, and 3C Riverside Phase 3 contractor-furnished borrow areas. The proposed sites would not be used as contractor-furnished borrow areas. Under this alternative, the proposed HSDRRS projects would be built to authorized levels using potential government-furnished and/or contractor-furnished borrow areas described in IER #18, IER #19, IER #22, IER #23, IER #25, IER #26, IER #28, IER #29, IER #30, or other sources yet to be identified.

Cumulative impacts to recreational resources, in the project vicinity, depend on what the landowners would decide to do with the sites, and would not be associated with the proposed action. Any future changes or alterations to the site will evolve in a natural process over the course of time.

Proposed Action

- *All Sites*

  Direct Impacts
  The proposed action at the Bocage, Citrus Lands, Conoco Phillips, Idlewild Stage 1, Nairn, Plaquemines Dirt & Clay, and 3C Riverside Phase 3 contractor-furnished borrow areas would have impacts to recreational resources. In particular, excavation of the Nairn site would potentially remove heavily forested lands and good hunting habitat. Excavation at all of the proposed contractor-furnished borrow areas would disrupt any potential hunting in the area. However, this disruption may be temporary, and the sites could evolve and blend into their existing landscapes and become part of the habitat. The introduction of a water feature(s) could potentially create new habitat to accommodate fishing. Other recreational resources, such as, hiking and biking and nature observation would not be affected by the proposed action in the long term.

  Other impacts could be derived from the construction process itself, but these impacts would be temporary.

  Indirect Impacts
  The proposed action at the Bocage, Citrus Lands, Conoco Phillips, Idlewild Stage 1, Nairn, Plaquemines Dirt & Clay, and 3C Riverside Phase 3 contractor-furnished borrow areas would have no indirect impacts to recreational resources.

  Cumulative Impacts
  The proposed action at the Bocage, Citrus Lands, Conoco Phillips, Idlewild Stage 1, Nairn, Plaquemines Dirt & Clay, and 3C Riverside Phase 3 contractor furnished borrow area would have no foreseen cumulative impacts to recreational resources. Under the proposed action, the proposed HSDRRS projects would be built to authorized levels using potential government-furnished and/or contractor-furnished borrow areas described in IER #18, IER #19, IER #22, IER #23, IER #25, IER #26, IER #28, IER #29, IER #30, or other sources yet to be identified. This project would join the long list of previously designed and completed borrow areas throughout the region.

  Cumulative impacts to recreational resources in the vicinity of the proposed Bocage, Citrus Lands, Conoco Phillips, Idlewild Stage 1, Nairn, Plaquemines Dirt & Clay, and 3C Riverside Phase 3 would also depend on what the landowners would decide to do with the sites upon completion of excavation.

3.2.9 Noise Quality

Existing Conditions
Noise is generally described as unwanted sound, which can be based either on objective effects (hearing loss, damage to structures, etc.) or subjective judgments (such as community annoyance). Sound is usually represented on a logarithmic scale with a unit called the decibel (dBA). Sound on the decibel scale is referred to as the sound level. The threshold of discomfort or pain is around 120 dBA.

Noise levels are computed over a 24-hour period and adjusted for nighttime annoyances to produce the day-night average sound level (DNL). DNL is the community noise metric recommended by the USEPA and has been adopted by most Federal agencies (USEPA, 1974). A DNL of 65 weighted decibels is the level most commonly used for noise planning purposes and represents a compromise between community impact and the need

for activities like construction. Areas exposed to a DNL above 65 dBA are generally not considered suitable for residential use. A DNL of 55 dBA was identified by USEPA as a level below which there is no adverse impact (USEPA, 1974).

- *Bocage*
  Noise levels at and surrounding the proposed Bocage contractor-furnished borrow area are variable depending on the time of day and climatic conditions. In the vicinity of the site are farms, the Mississippi River, and some residential developments. The site is located north of LA-942 (River Road), which is traveled by car and truck traffic that contribute to noise level in the area. Most times of elevated noise levels associated with traffic would be expected to be during daylight hours. There are residential areas to the west and east of the site. Noise associated with residential areas would be expected to come mostly from vehicular traffic.

  Local farms and traffic on the Mississippi River are not expected to greatly contribute to noise levels in the vicinity.

- *Citrus Lands*
  Noise levels at and surrounding the proposed Citrus Lands contractor-furnished borrow area are variable depending on the time of day and climatic conditions. In the vicinity of the site are undeveloped forest, wetlands, farms, and a small number of homes. The site is located on LA-23, a roadway that is traveled by car and truck traffic that contribute to noise level in the area. Most times of elevated noise levels associated with traffic would be expected to be during daylight hours.

  Local farms, surrounding, wetlands, and forested areas are not expected to greatly contribute to noise levels in the vicinity.

- *Conoco Phillips*
  Noise levels at and surrounding the proposed Conoco Phillips contractor-furnished borrow area are variable depending on the time of day and climatic conditions. In the vicinity of the site are undeveloped forest, wetlands, farms, and a small number of homes. The site is located on LA-23, a roadway that is traveled by car and truck traffic that contribute to noise level in the area. Most times of elevated noise levels associated with traffic would be expected to be during daylight hours.

  Local farms, surrounding, wetlands, and forested areas are not expected to greatly contribute to noise levels in the vicinity.

- *Idlewild Stage 1*
  Noise levels at and surrounding the proposed Idlewild Stage 1 contractor-furnished borrow area are variable depending on the time of day and climatic conditions. In the vicinity of the site are undeveloped forest, farms, and residential developments. The site is located on LA-23, a roadway that is traveled by car and truck traffic that contribute to noise level in the area. Most times of elevated noise levels associated with traffic would be expected to be during daylight hours. There are residential areas to the north and south of the site. This includes homes on LA-23 that are approximately 200 feet from the proposed site, and various trailers approximately 1000 feet from the site. Noise associated with residential areas would be expected to come from vehicular traffic.

Local farms and forested areas are not expected to greatly contribute to noise levels in the vicinity.

- *Nairn*
  Noise levels at and surrounding the proposed Nairn contractor-furnished borrow area are variable depending on the time of day and climatic conditions. In the vicinity of the site are undeveloped forest, farms, and residential developments. The site is located on LA-23, a roadway that is traveled by car and truck traffic that contribute to noise level in the area. Most times of elevated noise levels associated with traffic would be expected to be during daylight hours. There is a residential area to the south of the site. This includes homes on Pelas Hyman Lane that are approximately 800 feet from the proposed site. Noise associated with residential areas would be expected to come from vehicular traffic.

  Local farms and forested areas are not expected to greatly contribute to noise levels in the vicinity.

- *Plaquemines Dirt & Clay*
  Noise levels at and surrounding the proposed Plaquemines Dirt & Clay contractor-furnished borrow area are variable depending on the time of day and climatic conditions. In the vicinity of the site are undeveloped forest, wetlands, farms, and a small number of homes. The site is located south of LA-23, a roadway that is traveled by car and truck traffic that contribute to noise level in the area. Most times of elevated noise levels associated with traffic would be expected to be during daylight hours.

  Local farms, surrounding, wetlands, and forested areas are not expected to greatly contribute to noise levels in the vicinity.

- *3C Riverside Phase 3*
  Noise levels at and surrounding the propose 3C Riverside Phase 3 contractor-furnished borrow area are variable depending on the time of day and climatic conditions. In the vicinity of the site are undeveloped forest, farms, and residential developments. The site is located on LA-18 (River Road), a roadway that is traveled by car and truck traffic that contribute to noise level in the area. Most times of elevated noise levels associated with traffic would be expected to be during daylight hours. There is a residential area to the south of the site, and a trailer park to the north. This includes trailers in the trailer park approximately 1500 feet north of the site, and homes approximately 2000 feet south of Mary Plantation Road. Noise associated with residential areas would be expected to come from vehicular traffic.

  Local farms and forested areas are not expected to greatly contribute to noise levels in the vicinity.

Discussion of Impacts

No Action

- *All Sites*

  Direct Impacts
  Under the no action alternative, there would be no direct impacts to noise quality due to the proposed actions. The proposed Bocage, Citrus Lands, Conoco

Phillips, Idlewild Stage 1, Nairn, Plaquemines Dirt & Clay, and 3C Riverside Phase 3 sites would not be used as contractor-furnished borrow areas. Any potential direct impacts to noise quality would depend on what the landowners decide to do with the proposed contractor-furnished borrow areas.

The Nairn site, which was approved for HSDRRS use as the Tac Carrere government-furnished borrow area, may be excavated. Direct impacts to noise quality if the Tac Carrere site were used as a government furnished borrow area were discussed in IER #25.

Indirect Impacts
No indirect impacts to noise quality would occur under the no action alternative. The proposed sites would not be used as contractor-furnished borrow areas. Any potential indirect impacts to noise quality would depend on what the landowners decide to do with the proposed contractor-furnished borrow areas.

Cumulative Impacts
No cumulative impacts to noise quality would occur under the no action alternative. The proposed sites would not be used as contractor-furnished borrow areas. Any potential cumulative impacts to noise quality would depend on what the landowners decide to do with the proposed contractor-furnished borrow areas. Under this alternative, the proposed HSDRRS projects would be built to authorized levels using potential government-furnished and/or contractor-furnished borrow areas described in IER #18, IER #19, IER #22, IER #23, IER #25, IER #26, IER #28, IER #29, IER #30, or other sources yet to be identified.

Noise levels would be cumulatively impacted by existing and reasonably foreseeable activity in the vicinity of the proposed sites. Private construction activities would also incrementally impact noise levels in the area. Additionally, construction of the HSDRRS levees and floodwalls would also cumulatively impact noise quality in the project areas. Cumulative noise impacts related to the construction of the HSDRRS will be discussed in the CED.

Proposed Action

- *All Sites*

Direct Impacts
Under the proposed action, temporary noise would occur during construction and hauling activities. The noise would affect wildlife during construction, causing them to avoid the area and return once construction ends. Residents of nearby residential areas may be impacted by noise associated with construction equipment such as bulldozers, excavators, and dump trucks. Noise would also directly impact employees excavating the contractor-furnished borrow areas.

Table 5 describes possible noise emission levels for construction equipment expected to be used during the proposed construction activities. Typical noise levels range from 80 dBA to 88 dBA at 50 foot range (FHWA, 2006). Noise levels would decrease as distance from the noise source increases.

Table 5: Possible Construction Equipment Noise Emission

Noise Source	Typical Noise Level (dBA) 50 feet from

	Source
Backhoe	80 dBA
Dozer	85 dBA
Dump Truck	84 dBA
Excavator	85 dBA
Truck	88 dBA

Source: *FHWA 2006. "Highway Construction Noise Handbook"*

It is assumed that excavation and hauling would be limited to daylight hours (10 hours to 14 hours per day) seven days a week. However, this may change due to construction schedules, weather conditions, and project borrow needs. Residents of nearby residential areas may be impacted by elevated noise elevations due to excavation and hauling. Actual noise impacts depend on construction schedules, which are dependant on weather conditions and project borrow needs, which are not known at this time.

Any additional potential direct impacts to noise quality would depend on what the landowners decide to do with the proposed contractor-furnished borrow areas following excavation.

Indirect Impacts

No indirect impacts to noise quality would occur because of excavation of the proposed Bocage, Citrus Lands, Conoco Phillips, Idlewild Stage 1, Nairn, Plaquemines Dirt & Clay, and 3C Riverside Phase 3 contractor-furnished borrow areas. Any potential indirect impacts to noise quality would depend on what the landowners decide to do with the proposed contractor-furnished borrow areas following excavation.

Cumulative Impacts

Excavation of the proposed Bocage, Citrus Lands, Conoco Phillips, Idlewild Stage 1, Nairn, Plaquemines Dirt & Clay, and 3C Riverside Phase 3 contractor-furnished borrow areas could temporarily contribute to cumulatively impacts on noise levels in the vicinity of the proposed sites. Hauling of borrow material would add to existing traffic and its related noise in the vicinity. Most times of elevated noise levels associated with traffic would be expected to be during construction hours. Any additional potential cumulative impacts to noise quality would depend on what the landowners decide to do with the proposed contractor-furnished borrow areas following excavation.

Cumulative noise impacts will be further discussed in the CED.

Previously approved government furnished and contractor furnished borrow areas could be used for construction of the HSDRRS. Use of these sites would also temporarily contribute to cumulative noise levels in the project areas.

Private construction activities would incrementally impact noise levels in the project area. Construction of the HSDRRS would also cumulatively impact noise quality in the project area. Cumulative noise impacts will be further discussed in the CED.

3.2.10 Air Quality

Existing Conditions

Under the Clean Air Act, National Ambient Air Quality Standards (NAAQS) have been established for seven pollutants: carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), lead (Pb), ozone (O_3), particulate matter less than 10 microns in diameter (PM_{10}) and particulate matter less than 2.5 microns in diameter ($PM_{2.5}$). The NAAQS standards include primary and secondary standards. The primary standards were established at levels sufficient to protect public health with an adequate margin of safety. The secondary standards were established to protect the public welfare from the adverse effects associated with pollutants in the ambient air. The primary and secondary standards are presented in table 6.

Table 6: National Ambient Air Quality Standards

Pollutant and Averaging Time	Primary Standard		Secondary Standard	
	µg/m³	**parts per million (ppm)**	**µg/m³**	**ppm**
CO				
8-hour concentration	10,000[1]	9[1]	N/A	N/A
1-hour concentration	40,000[1]	35[1]		
NO_2				
Annual arithmetic mean	100	0.053	same as primary standard	
SO_2				
Annual arithmetic mean	80	0.03	-	-
24-hour concentration	365[1]	0.14[1]	-	-
3-hour concentration	-	-	1300[1]	0.50[1]
Pb				
Quarterly arithmetic mean	1.5	-	same as primary standard	
O_3				
8-hour concentration	157	0.08[2]	same as primary standard	
PM_{10}				
24-hour maximum	150[1]	-	same as primary standard	
$PM_{2.5}$				
Annual arithmetic mean	15[3]	-	same as primary standard	
24-hour maximum	35[4]	-		

[1] Not to be exceeded more than once per year.
[2] 3-year average of the 4th highest daily maximum 8-hour concentration may not exceed 0.08 ppm.
[3] Based on 3-year average of annual averages.
[4] Based on 3-year average of annual 98th percentile values.
Source: *40 CFR 50*

Areas that meet the NAAQS for a criteria pollutant are designated as being "in attainment;" areas where a criteria pollutant level exceeds the NAAQS are designated as being "in non attainment." Plaquemines and St. Charles Parishes are currently in attainment of all NAAQS, while Ascension Parish is not (USEPA, 2009).

Discussion of Impacts

No Action

- *All Sites*

Direct Impacts
Under the no action alternative, no direct impacts to air quality at the proposed Bocage, Citrus Lands, Conoco Phillips, Idlewild Stage 1, Nairn, Plaquemines Dirt & Clay, and 3C Riverside Phase 3 contractor-furnished borrow areas would occur from the proposed action. The proposed sites would not be used as contractor-furnished borrow areas. Any potential direct impacts to air quality would depend on what the landowners decide to do with the proposed contractor-furnished borrow areas.

The Nairn site, which was approved for HSDRRS use as the Tac Carrere government-furnished borrow area in IER #25, may be excavated. Direct impacts to air quality if the Tac Carrere site is used as a government furnished borrow area were described in IER #25.

Indirect Impacts
Under the no action alternative, no indirect impacts to air quality at the proposed Bocage, Citrus Lands, Conoco Phillips, Idlewild Stage 1, Nairn, Plaquemines Dirt & Clay, and 3C Riverside Phase 3 contractor-furnished borrow areas would occur from the proposed action. The proposed sites would not be used as contractor-furnished borrow areas. Any potential indirect impacts to air quality would depend on what the landowners decide to do with the proposed contractor-furnished borrow areas.

Cumulative Impacts
Under the no action alternative, no cumulative impacts to air quality at the proposed Bocage, Citrus Lands, Conoco Phillips, Idlewild Stage 1, Nairn, Plaquemines Dirt & Clay, and 3C Riverside Phase 3 contractor-furnished borrow areas would occur from the proposed action. The proposed sites would not be used as contractor-furnished borrow areas. Any potential indirect impacts to air quality would depend on what the landowners decide to do with the proposed contractor-furnished borrow areas. Under this alternative, the proposed HSDRRS projects would be built to authorized levels using potential government-furnished and/or contractor-furnished borrow areas described in IER #18, IER #19, IER #22, IER #23, IER #25, IER #26, IER #28, IER #29, IER #30, or other sources yet to be identified.

Other activities in the vicinity have and will continue to affect air quality in the project area. Air quality in the project area has historically been affected by residential, commercial, and industrial development. Most of these actions would be associated with emissions from vehicular traffic on local roads and residential energy emissions. It is expected that this historical trend would continue to impact air quality in the region.

Ascension Parish would continue to not be attainment of NAAQS.

Cumulative impacts to air quality will be further discussed in the CED.

Proposed Action

- *All Sites*

Direct Impacts
During excavation at the proposed Bocage, Citrus Lands, Conoco Phillips, Idlewild Stage 1, Nairn, Plaquemines Dirt & Clay, and 3C Riverside Phase 3

contractor-furnished borrow areas, a temporary increase in air emissions would be expected in the project vicinities. Major emissions could include exhaust emissions from operations of diesel dump trucks, various types of construction equipment (e.g., loaders, excavators), and fugitive dust due to excavation and clearing.

The principal air quality concern associated with excavation of the proposed contractor-furnished borrow area would be emission of fugitive dust near demolition and construction areas. The on-road trucks and private vehicles used to access the work area would also contribute to construction phase air pollution in the project vicinity when traveling along local roads and highways. Most instances of diminished air quality associated with excavation and truck hauling would be expected to be limited to daylight hours (10 hours to 14 hours a day) seven days a week. It is expected that these impacts would be temporary and limited to construction hours. Additional potential direct impacts to air quality would depend on what the landowners decide to do with the sites following excavation.

The construction contractor(s) would be required to secure all applicable state and local permits required for potentially impacting air quality.

Indirect Impacts
Indirect impacts to air quality would not be expected due to excavation of the proposed Bocage, Citrus Lands, Conoco Phillips, Idlewild Stage 1, Nairn, Plaquemines Dirt & Clay, and 3C Riverside Phase 3 contractor-furnished borrow areas. Any potential indirect impacts to air quality would depend on what the landowners decide to do with the proposed contractor-furnished borrow areas following excavation.

Cumulative Impacts
Use of the proposed Bocage, Citrus Lands, Conoco Phillips, Idlewild Stage 1, Nairn, Plaquemines Dirt & Clay, and 3C Riverside Phase 3 contractor-furnished borrow areas would temporarily contribute to cumulative air quality impacts in the project area. However, these impacts would be temporary and would last through the excavation period. Additional potential cumulative impacts to air quality would depend on what the landowners decide to do with the sites following excavation.

Other activities in the vicinity have and will continue to affect air quality in the project area. Air quality in the project area has historically been affected by residential, commercial, and industrial development. Most of these actions would be associated with emissions from vehicular traffic on local roads and residential energy emissions. It is expected that this historical trend would continue to impact air quality in the region.

Ascension Parish would continue to not be attainment of NAAQS.

Cumulative impacts to air quality will be further discussed in the CED.

3.2.11 Water Quality
Existing Conditions
The Louisiana Department of Environmental Quality (LADEQ) regulates both point and nonpoint source pollution. The proposed contractor-furnished borrow areas are uplands, some with associated drainage features.

Discussion of Impacts

No Action

- *All Sites*

Direct Impacts
Under the no action alternative, no direct impacts to water quality at the Bocage, Citrus Lands, Conoco Phillips, Idlewild Stage 1, Nairn, Plaquemines Dirt & Clay, and 3C Riverside Phase 3 contractor-furnished borrow areas would occur from the proposed action. The proposed sites would not be used as contractor-furnished borrow areas. Any potential direct impacts to water quality would depend on what the landowners decide to do with the proposed contractor-furnished borrow areas.

The Nairn site, which was approved for HSDRRS use as the Tac Carrere government-furnished borrow area in IER #25, may be excavated as a government furnished borrow area under the no action alternative. Direct impacts to water quality from excavation of the approved Tac Carrere government furnished borrow area were discussed in IER #25.

Indirect Impacts
Under the no action alternative, no indirect impacts to water quality would occur from the proposed action. The proposed Bocage, Citrus Lands, Conoco Phillips, Idlewild Stage 1, Nairn, Plaquemines Dirt & Clay, and 3C Riverside Phase 3 sites would not be used as contractor-furnished borrow areas. Any potential indirect impacts to water quality would depend on what the landowners decide to do with the proposed contractor-furnished borrow areas.

Cumulative Impacts
Under the no action alternative, there would be no cumulative decreases in water quality from the proposed action. The proposed Bocage, Citrus Lands, Conoco Phillips, Idlewild Stage 1, Nairn, Plaquemines Dirt & Clay, and 3C Riverside Phase 3 sites would not be used as contractor-furnished borrow areas. Any potential cumulative impacts to water quality would depend on what the landowners decide to do with the proposed contractor-furnished borrow areas. Under this alternative, the proposed HSDRRS projects would be built to authorized levels using potential government-furnished and/or contractor-furnished borrow areas described in IER #18, IER #19, IER #22, IER #23, IER #25, IER #26, IER #28, IER #29, IER #30, or other sources yet to be identified.

Other activities in the vicinity have and will continue to affect water quality in the project area. Cumulative impacts to water quality would continue in the project area under this alternative. Water quality in the project area has historically been affected by residential, commercial, and industrial development. Major contributors to decreases in water quality in the region include urban stormwater runoff, pollutants, sediment loading/runoff, nutrient loading, and dry weather flows. It is expected that this historical trend would continue to impact water quality in the region.

Proposed Action

- *All Sites*

Direct Impacts
Excavation of the proposed Bocage, Citrus Lands, Conoco Phillips, Idlewild Stage 1, Nairn, Plaquemines Dirt & Clay, and 3C Riverside Phase 3 contractor-furnished borrow areas would result in some temporary direct water quality impacts from disturbances to water quality in the immediate vicinity of the construction areas. Most of these impacts would be associated with sediments getting around installed silt fencing during high rain events, which would cause surface water turbidity in the immediate vicinity. These impacts would be localized and temporary. If the contractor-furnished borrow areas are drained by use of a sump pump during construction water would be deposited outside of the borrow site, most likely into adjacent non-construction areas. Depending on where water is directed, temporary impacts to water quality in these areas may occur.

The construction contractor(s) would be required to secure all applicable Federal, state, and local permits required for potentially impacting water quality.

Any additional potential direct impacts to water quality would depend on what the landowners decide to do with the proposed contractor-furnished borrow areas following excavation.

Indirect Impacts
Indirect impacts to water quality in adjacent areas depend on where water is directed during construction. These impacts would mostly be associated with increased turbidity, and would likely be temporary and confined to adjacent areas. Without additional action by the landowner following excavation of the site, it is expected that there will be no indirect impacts to water quality following excavation.

Any additional potential indirect impacts to water quality would depend on what the landowners decide to do with the proposed contractor-furnished borrow areas following excavation.

Cumulative Impacts
Excavation of the proposed Bocage, Citrus Lands, Conoco Phillips, Idlewild Stage 1, Nairn, Plaquemines Dirt & Clay, and 3C Riverside Phase 3 contractor-furnished borrow areas would temporarily contribute to the cumulative decline of water quality within the region.

Additional potential cumulative impacts to water quality would depend on what the landowners decide to do with the sites following excavation.

Other activities in the vicinity have and will continue to affect water quality in the project area. Cumulative impacts to water quality would continue in the project area under this alternative. Water quality in the project area has historically been affected by residential, commercial, and industrial development. Major contributors to decreases in water quality in the region include urban stormwater runoff, pollutants, sediment loading/runoff, nutrient loading, and dry weather flows. It is expected that this historical trend would continue to impact water quality in the region.

3.2.12 Aesthetic (Visual) Resources

Existing Conditions

- *Bocage*
  The proposed Bocage contractor-furnished borrow area's landscape is made up primarily of vast pasturelands, sparsely populated with trees along field edges and property lines. The terrain is relatively flat and characteristic of the farmlands present. View sheds to the proposed site are offered via Highway 22, Highway 942 (both of which are primary thoroughfares in the area), Marchand School Road, and Walter Hill Road (which traverses near the middle of the site). Land uses in the area include agricultural and low density residential, possibly associated with the agricultural uses. The site is not remarkable, but does have its own intrinsic visual quality that adds to the scenic drive along the two highways traversing its northwestern and southeastern borders.

- *Citrus Lands*
  The proposed Citrus Lands contractor-furnished borrow area's landscape is made up of pasturelands, sparsely populated with tree-like vegetation, and grasslands. The terrain is relatively flat and has few topographical features other than well distinguished irrigation channels and some small drainage ditches and canals. View sheds to the proposed site are offered via Highway 23 (located to the north). Land uses in the area include agricultural uses (in the immediate vicinity) and low density residential

- *Conoco Phillips*
  The proposed Conoco Phillips contractor furnished borrow area's landscape is made up of agricultural lands, sparsely populated with tree-like vegetation and some grasslands. The terrain is relatively flat and has few topographical features other than well distinguished irrigation channels and some small drainage ditches and canals. One feature, near the middle of the proposed site, is what appears to be a private borrow area. View sheds to the proposed site are offered via Highway 23 (located to the northeast, though not immediately adjacent to the proposed site) and West Ravenna Road (located to the north and along the border of the proposed site). Land uses in the area include agricultural uses (in the immediate vicinity) and low density residential.

- *Idlewild Stage 1*
  The proposed Idlewild Stage 1 contractor furnished borrow area's landscape is made up of a mixture of agricultural lands, wetlands and mixed forestation. The terrain around the agricultural lands is relatively flat and characteristic of that type of use. The forestation and wet areas feature some minor terrain changes to the west of the site leading up to the existing levee. The site features what appears to be a previous borrow project near the center of its area. These sites have filled in with both water and native vegetation and have blended fairly well into their surrounding environment. View sheds to the proposed site are offered via Highway 23 (Belle Chasse Highway). From this thoroughfare, the viewer will most likely experience a vast view of open fields, sparsely populated with trees in the foreground, and densely populated with trees and forestation in the background. Land uses in the area include agricultural and low density residential, possibly associated with the agricultural uses present. The site is not remarkable, but does have its own intrinsic visual quality that adds to the scenic drive along Highway 23.

- *Nairn*

The proposed Nairn contractor-furnished borrow area's landscape is made up primarily of thick forested lands, with a few small open/ green spaces that appear to be former home sites. The terrain is relatively flat and free of any topographical features. View sheds to the proposed site are offered via Highway 23, Highway 11 (both of which are primary thoroughfares in the area), and Shirley B. Drive (which traverses near the middle of the site). Land uses in the area include medium and low density residential. The site is not remarkable, but does have its own intrinsic visual quality that adds to the scenic drive along Highway 23 (near the middle of the site) and Highway 11 (along the eastern boundary of the site).

- *Plaquemines Dirt & Clay*
  The proposed Plaquemines Dirt & Clay contractor-furnished borrow area's landscape is made up of pasturelands, sparsely populated with tree-like vegetation and some grassland. The terrain is relatively flat and has few topographical features other than well distinguished irrigation channels and some small drainage ditches and canals. One feature, near the southwest side of the proposed site, is what appears to be previous-excavated private borrow areas. These newly introduced borrow ponds are linear in their construction and create very distracting landscape features, lowering the scenic quality of the area.

  View sheds to the proposed site are offered via Lacrosse Lane (located not quite through the middle of the site); however, this is not a major thoroughfare and access from the public would most likely be minor.

- *3C Riverside Phase 3*
  The proposed 3C Riverside Phase 3 contractor furnished borrow area's landscape is made up primarily of some agricultural lands, with trees along field edges denoting property lines, and large heavily forested areas. The terrain is relatively flat and characteristic of the typical terrains present in the region. View sheds to the proposed site are offered via Highway (LA) 18, Mary Plantation Road/ Highway (LA) 3141 (which traverses outside of the boundaries of the project site, to the southeast), and Highway (LA) 3127 (which traverses outside of the boundaries of the project site, to the southwest). Land uses in the area include agricultural and low density residential. The site is not remarkable, but does have its own intrinsic visual quality that adds to the scenic drive along Highway 18.

Discussion of Impacts

No Action

- *All Sites*

  Direct Impacts
  Under the no action alternative, no direct impacts to aesthetic (visual) resources would occur at the proposed Bocage, Citrus Lands, Conoco Phillips, Idlewild Stage 1, Nairn, Plaquemines Dirt & Clay, and 3C Riverside Phase 3 contractor-furnished borrow areas. Aesthetic (visual) resources would most likely evolve from existing conditions in a natural process, or change as dictated by future land use maintenance practices. The proposed sites would not be used as contractor-furnished borrow areas. The landowners could directly impact aesthetic quality at the sites; however, this would not be related to the proposed action.

The Nairn site, which was approved for HSDRRS use as the Tac Carrere government-furnished borrow area, may be excavated as a government furnished borrow area under the no action alternative. Direct impacts to visual resources if the Tac Carrere site is excavated were discussed in IER #25.

Indirect Impacts
Under the no action alternative, no indirect impacts to aesthetic (visual) resources would occur at the proposed Bocage, Citrus Lands, Conoco Phillips, Idlewild Stage 1, Nairn, Plaquemines Dirt & Clay, and 3C Riverside Phase 3 contractor-furnished borrow areas. The proposed sites would not be used as contractor-furnished borrow areas. However, it is important to note that whatever the landowners would choose to do with the properties may have long lasting affects on the surrounding, adjacent areas.

Cumulative Impacts
Under the no action alternative, no foreseen cumulative impacts to aesthetic (visual) resources would occur at the proposed Bocage, Citrus Lands, Conoco Phillips, Idlewild Stage 1, Nairn, Plaquemines Dirt & Clay, and 3C Riverside Phase 3 contractor-furnished borrow areas. The proposed sites would not be used as contractor-furnished borrow areas. Under this alternative, the proposed HSDRRS projects would be built to authorized levels using potential government-furnished and/or contractor-furnished borrow areas described in IER #18, IER #19, IER #22, IER #23, IER #25, IER #26, IER #28, IER #29, IER #30, or other sources yet to be identified.

Cumulative impacts to aesthetic (visual) resources, in the project vicinity, depend on what the landowners would decide to do with the sites, and would not be associated with the proposed action. Any future changes or alterations to the site would evolve in a natural process over the course of time.

Proposed Action

- *Bocage, Citrus Lands, Conoco Phillips, Idlewild Stage 1, Nairn, & 3C Riverside Phase 3*

Direct Impacts
The proposed action at the proposed Bocage, Citrus Lands, Conoco Phillips, Idlewild Stage 1, and Nairn contractor-furnished borrow areas would have direct impacts to the scenic quality of the immediate area and view sheds nearby roads and highways. The introductions of manmade borrow supply areas would starkly contrast the natural landscapes and water features in the area. It should be noted that within the proposed Citrus Lands site there are already existing borrow ponds, built in the vicinity, that are constructed in a linear fashion. Depth of scenic quality loss would depend on the final design of the borrow areas. Squares, rectangles and other unnatural shapes would yield a higher degree of loss in scenic quality. Even curvilinear shapes could yield a certain degree of loss, but over time this could decrease with erosion and the introduction of natural landscape elements to create a frame for the water feature.

Other impacts would be derived from the construction process itself, but these impacts would be temporary.

Indirect Impacts

The proposed action at the proposed Bocage, Citrus Lands, Conoco Phillips, Idlewild Stage 1, Nairn, and 3C Riverside Phase 3 contractor-furnished borrow areas would have some indirect impacts to the scenic quality and view sheds from the surrounding area. The introductions of manmade borrow areas would starkly contrast the natural landscapes and water features already present beyond all four sides of the study area. As mentioned in the direct impacts, the final design of the borrow supply would determine the level of disturbance in scenic quality.

Cumulative Impacts
The proposed action at the proposed Bocage, Citrus Lands, Conoco Phillips, Idlewild Stage 1, Nairn, and 3C Riverside Phase 3 contractor-furnished borrow areas would have no foreseen cumulative impacts to aesthetic (visual) resources. Under the proposed action, the proposed HSDRRS projects would be built to authorized levels using potential government-furnished and/or contractor-furnished borrow areas described in IER #18, IER #19, IER #22, IER #23, IER #25, IER #26, IER #28, IER #29, IER #30, or other sources yet to be identified. This project would join the long list of previously designed and completed borrow areas throughout the region.

Cumulative impacts to aesthetic (visual) resources, in the project vicinity, would also depend on what the landowners would decide to do with the sites upon completion of the project, which would not be associated with the proposed action.

- *Plaquemines Dirt & Clay*

Direct Impacts
The proposed action at the proposed Plaquemines Dirt & Clay contractor-furnished borrow area would have no direct impacts to the scenic quality of the immediate area and view sheds from the major public corridors. The site has already been heavily disturbed from previous borrow supply projects. This and the remote nature of the site prevents it from being a visually significant component to the public view shed.

However, it is important to note the following: the introductions of manmade borrow supply areas would starkly contrast the natural landscapes and water features in the area. In addition, the depth of scenic quality loss will depend on the final design of the borrow supply areas. Squares, rectangles and other unnatural shapes would yield a higher degree of loss in scenic quality. Even curvilinear shapes could yield a certain degree of loss, but over time this could decrease with erosion and the introduction of natural landscape elements to create a frame for the water feature.

Other impacts will be derived from the construction process itself, but these impacts would be temporary.

Indirect Impacts
The proposed action at the proposed Plaquemines Dirt & Clay contractor-furnished borrow area would have no indirect impacts to the scenic quality and view sheds from the surrounding area. The remote nature of the site prevents it from being a visually significant component to the public view shed.

Cumulative Impacts

The proposed action at the proposed Plaquemines Dirt & Clay contractor-furnished borrow area would have no foreseen cumulative impacts to aesthetic (visual) resources. Under the proposed action, the proposed HSDRRS projects would be built to authorized levels using potential government-furnished and/or contractor-furnished borrow areas described in IER #18, IER #19, IER #22, IER #23, IER #25, IER #26, IER #28, IER #29, IER #30, or other sources yet to be identified. This project would join the long list of previously designed and completed borrow areas throughout the region.

Cumulative impacts to aesthetic (visual) resources, in the project vicinity, would also depend on what the landowner would decide to do with the site upon completion of the project, which would not be associated with the proposed action.

3.3 SOCIOECONOMIC RESOURCES

The focus of this section is to evaluate the relative socioeconomic impacts of construction activities associated with six proposed contractor-furnished borrow areas in the vicinity of the New Orleans metropolitan area. This borrow material could be used to construct proposed HSDRRS projects.

The No Action alternative in this case includes the potential use of government-furnished and/or contractor-furnished borrow areas described in IER #18, IER #19, IER #22, IER #23, IER #25, IER #26, IER #28, IER #29, IER #30, or other sources yet to be identified. The Proposed Action is to approve the potential use of the seven privately-owned sites discussed in this report as proposed contractor-furnished borrow areas.

As previously stated, the purpose of the NEPA Emergency Alternative Arrangements (40 CFR 1506.11) is to expeditiously complete environmental analyses of impacts arising from HSDRRS efforts by allowing decisions on smaller groups of proposed actions to move forward sooner than under the traditional NEPA process (72 F.R. 1137). Because of the exigency of the Emergency Alternative Arrangements and the need to complete the HSDRRS, each IER can identify areas where data is incomplete, unavailable, as well as areas of potential controversy (72 F.R. 11339). Therefore, it is expected that earlier IERs will not contain the same amount of information, data and analyses as later IERs. The analysis contained in each IER builds off of the analysis contained in previous IERs. As information becomes available, more detailed analysis is successively presented in the IERs. Ultimately, at the conclusion of the IER process, the full cumulative effects analysis will be presented in a CED (Emergency Alternative Arrangements, Page 10). This is why IER #32 may contain additional information, data or analyses not contained in earlier IERs.

3.3.1 Population and Housing

Existing Conditions

- *Bocage*
  The proposed Bocage contractor-furnished borrow area is located in Ascension Parish, in the town of Darrow, Louisiana. While the proposed borrow area is unpopulated, it is located about one half mile from rural residential property, but the site does not directly border the residential property. With the exception of several recently developed subdivisions, the housing structures tend to follow the major highways, reflecting the rural nature of the area. The proposed borrow area

is located in census tract 303, block group 3, block 3065. It was previously used for agriculture (sugar cane or pastureland) since at least 1800. Its current use is for cattle pasture with associated roads and drainage features, wooded areas mainly along former fence lines and drainage ditches. There are several subdivisions in the area, but no residential development exists in the immediate vicinity of the proposed borrow site. According to the U.S. Census, in 2000 this area (census block) had a population of 105 within 36 housing units. Preliminary 2010 Census data will be available in 2011 at the earliest.

- *Citrus Lands*
  The proposed Citrus Lands contractor-furnished borrow area is located in the town of West Point A La Hache, Plaquemines Parish, Louisiana. There are some residential structures in the area, but these tend to be low density, rural structures and no adverse impact to these properties would occur. The proposed borrow area is located in census tract 504, block group 1, block 1092. It was previously used for sugarcane and citrus until the early 1900s. Thereafter it remained vacant and undeveloped. Currently, it has been used as cattle pastureland since the 1960s. According to the U.S. Census, in 2000 this area (census block) had a population of 3 and 30 housing units. Preliminary 2010 Census data will be available in 2011 at the earliest.

- *Conoco Phillips*
  The proposed Conoco Phillips contractor-furnished borrow area is located in a rural area of Plaquemines Parish, Louisiana. There are some residential structures in the area, but these tend to be low density, rural structures and no adverse impact to these properties would occur. The proposed borrow area is located in census tract 504, block group 1. This tract is located in 12 census blocks. According to the U.S. Census, these census blocks had a population of 0 and 0 housing units in 2000. Preliminary 2010 Census data will be available in 2011 at the earliest.

- *Idlewild Stage 1*
  The proposed Idlewild Stage 1 contractor-furnished borrow area is located in the town of Oakville, Plaquemines Parish, Louisiana. There are some residential structures in the area, but these tend to be low density, rural structures and no adverse impact to these properties would occur. The proposed borrow area is located in census tract 504, block group 2, block 2003. It was previously used for agriculture since at least 1800s. Currently it is used for pastureland and orange groves, with portions of it undeveloped. According to the U.S. Census, in 2000 this area (census block) had a population of 123 and 41 housing units. Preliminary 2010 Census data will be available in 2011 at the earliest.

- *Nairn*
  The proposed Nairn contractor-furnished borrow area is located near the town of Nairn, Plaquemines Parish, Louisiana. There are some residential structures in the area, but these tend to be low density, rural structures and no adverse impact to these properties would occur. The proposed borrow area is located in census tract 506, block group 3, block 1022. It was previously undeveloped forest, vacant, and partially cleared. Currently it is still undeveloped. According to the U.S. Census, in 2000 this area (census block) had a population of 2 within 2 housing units. Preliminary 2010 Census data will be available in 2011 at the earliest.

- *Plaquemines Dirt & Clay*

The proposed Plaquemines Dirt & Clay contractor-furnished borrow area is located in the town of West Point A La Hache, Plaquemines Parish, Louisiana. There are some residential structures in the area, but these tend to be low density, rural structures and no adverse impact to these properties would occur. The proposed borrow area is located in census tract 504, block group 1, block 1092. It was previously used for sugarcane and citrus until early 1900s. Afterwards, it lay undeveloped. Since the 1960s, it has been used for cattle pastureland. According to the U.S. Census, in 2000 this area (census block) had a population of 3 and 30 housing units. Preliminary 2010 Census data will be available in 2011 at the earliest.

- *3C Riverside Phase 3*
  The proposed 3C Riverside Phase 3 contractor-furnished borrow area is located near the settlement of Killona, on the west bank of St. Charles Parish, Louisiana. There are some residential structures in the area, but these tend to be low density, rural structures and no adverse impact to these properties would occur. There is a mobile home park in the area on LA 18, about ¼ mile away from the northeast corner of the site, between the site and the Mississippi River. The proposed borrow area is located in census tract 627, block group 4, block 4095. According to the U.S. Census, in 2000 this area had a population of 48,072 within 17,430 housing units. Preliminary 2010 Census data will be available in 2011 at the earliest.

Discussion of Impacts

No Action

- *All Sites*

Direct Impacts
There would be no direct impacts to population and housing around the proposed Bocage, Citrus Lands, Conoco Phillips, Idlewild Stage 1, Nairn, Plaquemines Dirt & Clay, and 3C Riverside Phase 3 contractor-furnished borrow areas under the no action alternative.

Indirect Impacts
There would be no indirect impacts to population and housing around the proposed Bocage, Citrus Lands, Conoco Phillips, Idlewild Stage 1, Nairn, Plaquemines Dirt & Clay, and 3C Riverside Phase 3 contractor-furnished borrow areas under the no action alternative.

Cumulative Impacts
Under the no action alternative, the proposed HSDRRS projects would be built to authorized levels using potential government-furnished and/or contractor-furnished borrow areas described in IER #18, IER #19, IER #22, IER #23, IER #25, IER #26, IER #28, IER #29, IER #30, or other sources yet to be identified. Cumulative indirect impacts associated with the completion of the HSDRRS in its entirety may occur. The lower flood risk that accrues to the much of the New Orleans metropolitan area upon completion of the HSDRRS may enhance the desirability of living within the protected areas. As a result, a shift in the dispersion of population within the New Orleans Metropolitan Statistical Area, or beyond, may occur. Also, to the extent that the completion of the HSDRRS encourages regional economic growth, any additional jobs thus created may manifest itself in either in-migration to the area or an increase in commuting

activity. This impact is not specific to the proposed contractor-furnished borrow areas, since of they lie outside the HSDRRS.

Proposed Action

- *Bocage*

  Direct Impacts
  Under the proposed action, borrow material would be excavated from the proposed Bocage contractor-furnished borrow area for use within the HSDRRS. There may be temporary, construction-related impacts to residents in the immediate vicinity of the proposed borrow area, as well as on LA Highway 942 (River Road), LA Highway 22, and LA Highway 44, . These may include increased noise levels, degraded air quality, and increased congestion on neighborhood roadways. Congestion impacts will be discussed further in the transportation section. Crews would likely work between 10 and 14 hours a day, 7 days a week, given the urgency of the task of completing the HSDRRS. The duration of construction is dependent on work schedules, weather conditions, and borrow need, none of which are known at this time.

  No permanent impacts to population and housing are expected. Other impacts to population would last only through the excavation period, and there would be no displacement of any population.

  Indirect Impacts
  No indirect impacts related to displacement of population and housing are expected to occur under the proposed action.

  Cumulative Impacts
  Excavation of the proposed Bocage contractor-furnished borrow area could temporarily contribute to cumulative population and housing impacts in the project vicinity. Nearby residents may experience temporary, construction-related impacts such as degraded air quality, increased noise, and increased congestion on neighboring roadways. All impacts would only last through the construction period.

  Positive cumulative impacts to population and housing associated with completion of the HSDRRS in its entirety may also occur. The lower flood risk that accrues to the much of the New Orleans metropolitan area upon completion of the HSDRRS may enhance the desirability of living within the protected areas. As a result, a shift in the dispersion of population within the New Orleans Metropolitan Statistical Area, or beyond, may occur. Also, to the extent that the completion of the HSDRRS encourages regional economic growth, any additional jobs thus created may manifest itself in either in-migration to the area or an increase in commuting activity. This impact is not specific to the proposed project area itself, since it lies outside the HSDRRS.

- *Citrus Lands*

  Direct Impacts
  Under the proposed action, borrow material would be excavated from the proposed Citrus Lands contractor-furnished borrow area for use within the HSDRRS. There may be temporary, construction-related impacts to residents in the immediate vicinity of the proposed borrow area, as well as on Lacrosse Lane,

Reddick Street, Morris Street, and LA Highway 23. These may include increased noise levels, degraded air quality, and increased congestion on neighborhood roadways. Congestion impacts will be discussed further in the transportation section. Crews would likely work between 10 and 14 hours a day, 7 days a week, given the urgency of the task of completing the HSDRRS. The duration of construction is dependent on work schedules, weather conditions, and borrow need, none of which are known at this time.

No permanent impacts to population and housing are expected. Other impacts to population would last only through the excavation period, and there would be no displacement of any population.

Indirect Impacts
No indirect impacts related to displacement of population and housing are expected to occur under the proposed action.

Cumulative Impacts
Excavation of the proposed Citrus Lands contractor-furnished borrow area could temporarily contribute to cumulative population and housing impacts in the project vicinity. Nearby residents may experience temporary, construction-related impacts such as degraded air quality, increased noise, and increased congestion on neighboring roadways. All impacts would only last through the construction period

Positive cumulative impacts to population and housing associated with completion of the HSDRRS in its entirety may also occur. The lower flood risk that accrues to the much of the New Orleans metropolitan area upon completion of the HSDRRS may enhance the desirability of living within the protected areas. As a result, a shift in the dispersion of population within the New Orleans Metropolitan Statistical Area, or beyond, may occur. Also, to the extent that the completion of the HSDRRS encourages regional economic growth, any additional jobs thus created may manifest itself in either in-migration to the area or an increase in commuting activity. This impact is not specific to the proposed project area itself, since it lies outside the HSDRRS.

- *Conoco Phillips*

Direct Impacts
Under the proposed action, borrow material would be excavated from the proposed Conoco Phillips contractor-furnished borrow area for use within the HSDRRS. There may be temporary, construction-related impacts to residents in the immediate vicinity of the proposed borrow area, as well as on West Ravenna Road, Windmill Road and LA Highway 23. These may include increased noise levels, degraded air quality, and increased congestion on neighborhood roadways. Congestion impacts will be discussed further in the transportation section. Crews would likely work between 10 and 14 hours a day, 7 days a week, given the urgency of the task of completing the HSDRRS. The duration of construction is dependent on work schedules, weather conditions, and borrow need, none of which are known at this time.

No permanent impacts to population and housing are expected. Other impacts to population would last only through the excavation period, and there would be no displacement of any population.

Indirect Impacts
No indirect impacts related to displacement of population and housing are expected to occur under the proposed action.

Cumulative Impacts
Excavation of the proposed Conoco Phillips contractor-furnished borrow area could temporarily contribute to cumulative population and housing impacts in the project vicinity. Nearby residents may experience temporary, construction-related impacts such as degraded air quality, increased noise, and increased congestion on neighboring roadways. All impacts would only last through the construction period

Positive cumulative impacts to population and housing associated with completion of the HSDRRS in its entirety may also occur. The lower flood risk that accrues to the much of the New Orleans metropolitan area upon completion of the HSDRRS may enhance the desirability of living within the protected areas. As a result, a shift in the dispersion of population within the New Orleans Metropolitan Statistical Area, or beyond, may occur. Also, to the extent that the completion of the HSDRRS encourages regional economic growth, any additional jobs thus created may manifest itself in either in-migration to the area or an increase in commuting activity. This impact is not specific to the proposed project area itself, since it lies outside the HSDRRS.

- *Idlewild Stage 1*

Direct Impacts
Under the proposed action, borrow material will be excavated from the proposed Idlewild Stage 1 contractor-furnished borrow area for use within the HSDRRS. There may be temporary, construction-related impacts to residents in the immediate vicinity of the proposed borrow area, as well as on LA-23. These may include increased noise levels, degraded air quality, and increased congestion on neighborhood roadways. Congestion impacts will be discussed further in the transportation section. Crews would likely work between 10 and 14 hours a day, 7 days a week, given the urgency of the task of completing the HSDRRS. The duration of construction is dependent on work schedules, weather conditions, and borrow need, none of which are known at this time.

No permanent impacts to population and housing are expected. Other impacts to population would last only through the excavation period, and there would be no displacement of any population.

Indirect Impacts
No indirect impacts related to displacement of population and housing are expected to occur under the proposed action.

Cumulative Impacts
Excavation of the proposed Idlewild Stage 1 contractor-furnished borrow area could temporarily contribute to cumulative population and housing impacts in the project vicinity. Nearby residents may experience temporary, construction-related impacts such as degraded air quality, increased noise, and increased congestion on neighboring roadways. All impacts would only last through the construction period

Positive cumulative impacts to population and housing associated with completion of the HSDRRS in its entirety may also occur. The lower flood risk that accrues to the much of the New Orleans metropolitan area upon completion of the HSDRRS may enhance the desirability of living within the protected areas. As a result, a shift in the dispersion of population within the New Orleans Metropolitan Statistical Area, or beyond, may occur. Also, to the extent that the completion of the HSDRRS encourages regional economic growth, any additional jobs thus created may manifest itself in either in-migration to the area or an increase in commuting activity. This impact is not specific to the proposed project area itself, since it lies outside the HSDRRS.

- *Nairn*

Direct Impacts
Under the proposed action, borrow material would be excavated from the proposed Nairn contractor-furnished borrow area for use within the HSDRRS. There may be temporary, construction-related impacts to residents in the immediate vicinity of the proposed borrow area, as well as on LA Highway 23, LA Highway 11, and Shirley B. Drive. These may include increased noise levels, degraded air quality, and increased congestion on neighborhood roadways. Congestion impacts will be discussed further in the transportation section. Crews would likely work between 10 and 14 hours a day, 7 days a week, given the urgency of the task of completing the HSDRRS. The duration of construction is dependent on work schedules, weather conditions, and borrow need, none of which are known at this time.

No permanent impacts to population and housing are expected. Other impacts to population would last only through the excavation period, and there would be no displacement of any population.

Indirect Impacts
No indirect impacts related to displacement of population and housing are expected to occur under the proposed action.

Cumulative Impacts
Excavation of the proposed Nairn contractor-furnished borrow area could temporarily contribute to cumulative population and housing impacts in the project vicinity. Nearby residents may experience temporary, construction-related impacts such as degraded air quality, increased noise, and increased congestion on neighboring roadways. All impacts would only last through the construction period

Positive cumulative impacts to population and housing associated with completion of the HSDRRS in its entirety may also occur. The lower flood risk that accrues to the much of the New Orleans metropolitan area upon completion of the HSDRRS may enhance the desirability of living within the protected areas. As a result, a shift in the dispersion of population within the New Orleans Metropolitan Statistical Area, or beyond, may occur. Also, to the extent that the completion of the HSDRRS encourages regional economic growth, any additional jobs thus created may manifest itself in either in-migration to the area or an increase in commuting activity. This impact is not specific to the proposed project area itself, since it lies outside the HSDRRS.

- *Plaquemines Dirt & Clay*

Direct Impacts
Under the proposed action, borrow material would be excavated from the proposed Plaquemines Dirt & Clay contractor-furnished borrow area for use within the HSDRRS. There may be temporary, construction-related impacts to residents in the immediate vicinity of the proposed borrow area, as well as on LA Highway 23, Lacrosse Lane, Reddick Street, and Morris Street. These may include increased noise levels, degraded air quality, and increased congestion on neighborhood roadways. Congestion impacts will be discussed further in the transportation section. Crews would likely work between 10 and 14 hours a day, 7 days a week, given the urgency of the task of completing the HSDRRS. The duration of construction is dependent on work schedules, weather conditions, and borrow need, none of which are known at this time.

No permanent impacts to population and housing are expected. Other impacts to population would last only through the excavation period, and there would be no displacement of any population.

Indirect Impacts
No indirect impacts related to displacement of population and housing are expected to occur under the proposed action.

Cumulative Impacts
Excavation of the proposed Plaquemines Dirt & Clay contractor-furnished borrow area could temporarily contribute to cumulative population and housing impacts in the project vicinity. Nearby residents may experience temporary, construction-related impacts such as degraded air quality, increased noise, and increased congestion on neighboring roadways. All impacts would only last through the construction period

Positive cumulative impacts to population and housing associated with completion of the HSDRRS in its entirety may also occur. The lower flood risk that accrues to the much of the New Orleans metropolitan area upon completion of the HSDRRS may enhance the desirability of living within the protected areas. As a result, a shift in the dispersion of population within the New Orleans Metropolitan Statistical Area, or beyond, may occur. Also, to the extent that the completion of the HSDRRS encourages regional economic growth, any additional jobs thus created may manifest itself in either in-migration to the area or an increase in commuting activity. This impact is not specific to the proposed project area itself, since it lies outside the HSDRRS.

- *3C Riverside Phase 3*

Direct Impacts
Under the proposed action, borrow material will be excavated from the proposed 3C Riverside Phase 3 contractor-furnished borrow area for use within the HSDRRS. There may be temporary, construction-related impacts to residents in the immediate vicinity of the proposed borrow area, as well as on LA 18, LA 3141, and LA 3127. These may include increased noise levels, degraded air quality, and increased congestion on neighborhood roadways. Congestion impacts will be discussed further in the transportation section. Crews would likely work between 10 and 14 hours a day, 7 days a week, given the urgency of the task of completing the HSDRRS. The duration of construction is dependent on work

schedules, weather conditions, and borrow need, none of which are known at this time.

No permanent impacts to population and housing are expected. Other impacts to population would last only through the excavation period, and there would be no displacement of any population.

Indirect Impacts
No indirect impacts related to displacement of population and housing are expected to occur under the proposed action.

Cumulative Impacts
Excavation of the proposed 3C Riverside Phase 3 contractor-furnished borrow area could temporarily contribute to cumulative population and housing impacts in the project vicinity. Nearby residents may experience temporary, construction-related impacts such as degraded air quality, increased noise, and increased congestion on neighboring roadways. All impacts would only last through the construction period. Additional potential cumulative impacts to population and housing depend on what the landowner decides to do with the proposed 3C Riverside Phase 3 borrow area following excavation.

Positive cumulative impacts to population and housing associated with completion of the HSDRRS in its entirety may also occur. The lower flood risk that accrues to the much of the New Orleans metropolitan area upon completion of the HSDRRS may enhance the desirability of living within the protected areas. As a result, a shift in the dispersion of population within the New Orleans Metropolitan Statistical Area, or beyond, may occur. Also, to the extent that the completion of the HSDRRS encourages regional economic growth, any additional jobs thus created may manifest itself in either in-migration to the area or an increase in commuting activity. This impact is not specific to the proposed project area itself, since it lies outside the HSDRRS.

3.3.2 Impacts to Employment, Business, and Industry

Existing Conditions

- *Bocage*
  The proposed site is not currently used for business and industrial purposes generating employment. The site was once used as agricultural fields. The project site totals 57 acres not within proximity to urban developments of the New Orleans MSA.

- *Citrus Lands*
  The proposed site is currently used for pastureland in raising cattle. The project site totals 353 acres not within proximity to urban developments of the New Orleans MSA.

- *Conoco-Phillips*
  The proposed site is currently used for pastureland in raising cattle. The project site totals 517 acres not within proximity to urban developments of the New Orleans MSA.

- *Idlewild Stage 1*

The proposed site is currently used for a combination of pastureland, orange groves, and undeveloped land. The project site totals 129 acres not within close proximity to urban developments of the New Orleans MSA.

- *Nairn*
  The proposed site is undeveloped, vacant land. The project site totals 20 acres not within close proximity to urban developments of the New Orleans MSA.

- *Plaquemines Dirt & Clay*
  The proposed site is currently used as pastureland for raising cattle. The project site totals about 209 acres not within close proximity to urban developments of the New Orleans MSA.

- *3C Riverside Phase 3*
  The proposed 3C Riverside Phase 3 contractor-furnished borrow area is located in the settlement of Killona, St. Charles Parish, Louisiana. There are some residential structures in the area, but these tend to be low density, rural structures and no adverse impact to these properties would occur. The proposed borrow area is located in census tract 627, block group 4, block 4095 which, according to the 200 Census, had a population of 3,601 within 1368 housing units. Preliminary 2010 Census data will be available in 2011 at the earliest. There are no significant commercial or industrial facilities in the immediate vicinity of the borrow area west of Mary Plantation Home and south of River Road, the two major thoroughfares leading to the site. Farther from the proposed borrow area is the Waterford nuclear energy generating station which is located in Taft, Louisiana and separated from the proposed borrow area by the Killona residential development.

Discussion of Impacts

No Action

- *All Sites*

  Direct Impacts
  There would be no direct impacts to employment, business, and industry in the vicinity of the proposed Bocage, Citrus Lands, Conoco Phillips, Idlewild Stage 1, Plaquemines Dirt & Clay, and 3C Riverside Phase 3 contractor-furnished borrow areas under the no action alternative.

  Indirect Impacts
  There would be no indirect impacts to employment, business, and industry in the vicinity of the proposed contractor-furnished borrow areas under the no action alternative.

  Cumulative Impacts
  Under the no action alternative, the proposed contractor-furnished borrow areas would not be used as a contractor-furnished borrow area and would not contribute to cumulative impacts to employment, business and industry in the project area. The proposed HSDRRS projects would be built to authorized levels using potential government-furnished and/or pre-approved contractor-furnished borrow areas described in IER #18, IER #19, IER #22, IER #23, IER #25, IER #26, IER #28, IER #29, IER #30, or other sources yet to be identified.

Under the no action alternative, cumulative impacts associated with the completion of the HSDRRS in its entirety may occur. The lower flood risk that accrues to the much of the New Orleans metropolitan area upon completion of the HSDRRS may have the effect of spurring additional economic growth in the region than would otherwise occur. As a result, an increase in the number of firms and the output of business and industry would likely manifest itself in such growth. This impact is not specific to the proposed project area itself, since these proposed contractor-furnished borrow areas lie outside the HSDRRS.

Proposed Action

- *All Sites*

  Direct Impacts
  As a result of the proposed action, the proposed contractor-furnished borrow areas would no longer be available for alternative business-related uses, unless the landowners performs an appropriate amount of backfilling. If the owners perform the appropriate amount of backfilling, then the sites could again be used for business purposes.

  Temporary impacts may occur to area businesses due to delays caused by increased traffic congestion.

  Indirect Impacts
  Minimal indirect impacts to business are expected as a result of the proposed action. However, these impacts are expected to be temporary and negligible.

  Cumulative Impacts
  Under the proposed action alternative, the proposed contractor-furnished borrow area would not be used as a contractor-furnished borrow area and would not contribute to cumulative impacts to employment, business and industry in the project area. The proposed HSDRRS projects would be built to authorized levels using potential government-furnished and/or pre-approved contractor-furnished borrow areas described in IER #18, IER #19, IER #22, IER #23, IER #25, IER #26, IER #28, IER #29, IER #30, or other sources yet to be identified.

  Under the proposed action alternative, cumulative indirect impacts associated with the completion of the HSDRRS in its entirety may occur. The lower flood risk that accrues to the much of the New Orleans metropolitan area upon completion of the HSDRRS may have the effect of spurring additional economic growth in the region than would otherwise occur. As a result, an increase in the number of firms and the output of business and industry would likely manifest itself in such growth. This impact is not specific to some of the proposed project area itself, since it lies outside the HSDRRS.

3.3.3 Availability of Public Facilities and Services

Existing Conditions

- *All Sites*
  There are no public facilities in the vicinity of the proposed contractor-furnished borrow areas.

Discussion of Impacts

No Action

- *All Sites*

  Direct Impacts
  There would be no direct impacts to the availability of public facilities and services under the no action alternative.

  Indirect Impacts
  There would be no indirect impacts to the availability of public facilities and services under the no action alternative.

  Cumulative Impacts
  Under this alternative, the proposed HSDRRS projects would be built to authorized levels using potential government-furnished and/or contractor-furnished borrow areas described in IER #18, IER #19, IER #22, IER #23, IER #25, IER #26, IER #28, IER #29, IER #30, or other sources yet to be identified. Cumulative impacts associated with the completion of the HSDRRS in its entirety may occur. The lower flood risk that accrues to the much of the New Orleans metropolitan area upon completion of the HSDRRS may enhance the desirability of living within the protected areas. As a result, a shift in the dispersion of population within the New Orleans Metropolitan Statistical Area, or beyond, may occur. Also, to the extent that the completion of the HSDRRS encourages regional economic growth, any additional jobs thus created may manifest itself in either in-migration to the area or an increase in commuting activities. An increase in the demand for public facilities and services would follow the migration patterns of residents and workers in the region. This impact is not specific to the proposed project areas, because the proposed contractor-furnished borrow areas lie outside the HSDRRS.

Proposed Action

- *All Sites*

  Direct Impacts
  There would be no direct impacts to public facilities and services under the proposed action, since there are no public facilities or services in the immediate vicinity of the proposed Bocage, Citrus Lands, Conoco Phillips, Idlewild Stage 1, Nairn, Plaquemines Dirt & Clay, and 3C Riverside Phase 3 contractor-furnished borrow areas.

  Indirect Impacts
  There would be no indirect impacts to public facilities and services under the proposed action.

  Cumulative Impacts
  Under the no action alternative, cumulative impacts associated with the completion of the HSDRRS in its entirety may occur. The lower flood risk that accrues to the much of the New Orleans metropolitan area upon completion of the HSDRRS may enhance the desirability of living within the protected areas. As a result, a shift in the dispersion of population within the New Orleans Metropolitan Statistical Area, or beyond, may occur. Also, to the extent that the completion of the HSDRRS encourages regional economic growth, any additional jobs thus

created may manifest itself in either in-migration to the area or an increase in commuting activities. An increase in the demand for public facilities and services would follow the migration patterns of residents and workers in the region. This impact is not specific to the proposed project areas, because the proposed sites lie outside the HSDRRS.

3.3.4 Effects on Transportation

The CEMVN is currently developing information for an analysis of the transportation impacts associated with the HSDRRS project. A transportation report is being developed and will be released publicly once it is completed. Estimates on numbers of truckloads necessary to complete the HSDRRS borrow mission are provided in this section. These estimates were developed as a part of CEMVN's continuing analysis of the potential transportation impacts associated with the HSDRRS mission.

Existing Conditions

- *Bocage*
  The Bocage site is located on LA 942. Roads near the site that would also likely be used by truck using the proposed Bocage borrow area are LA 44, LA 22, and I-10. Access to the site would not be provided from any residential streets.

- *Citrus Lands*
  The Citrus Lands site is located on LA-23. Roads near the site that would also likely be used by truck using the proposed Citrus Lands borrow area are Lacrosse Lane and other farm roads connecting to LA-23. Access to the site would not be provided from any residential streets.

- *Conoco Phillips*
  The Conoco Phillips site is located on LA-23. Roads near the site that would also likely be used by truck using the proposed Conoco Phillips borrow area are West Ravenna Road, Windmill Road, and other farm roads connecting to LA-23. Access to the site would not be provided from any residential streets.

- *Idlewild Stage 1*
  The Idlewild Stage 1 site is located on LA-23. Access to the site will be from LA-23 and other farm roads that connect to LA-23. Access to the site would not be provided from any residential streets.

- *Nairn*
  The Nairn site is located on LA-23. Roads near the site that would also likely be used by truck using the proposed Nairn borrow area are Shirley B Lane and other farm roads connecting to LA-23. Access to the site would not be provided from any residential streets.

- *Plaquemines Dirt & Clay*
  The Plaquemines Dirt & Clay site is located on LA-23. Roads near the site that would also likely be used by truck using the proposed Plaquemines Dirt & Clay borrow area are Lacrosse Lane and other farm roads connecting to LA-23. Access to the site would not be provided from any residential streets.

- *3C Riverside Phase 3*

The 3C Riverside Phase 3 site is located between La highways 3127 and 18. Roads near the site that would also likely be used by truck using the proposed 3C Riverside Phase II borrow area are LA 3141, LA 3127, I-310, the Hale Boggs Bridge, and I-10. Access to the site would not be provided from any residential streets.

Discussion of Impacts

No Action

- *All Sites*

  Direct Impacts
  Under the no action alternative there would be no direct impacts to transportation in the vicinity of the proposed Bocage, Citrus Lands, Conoco Phillips, Idlewild Stage 1, Nairn, Plaquemines Dirt & Clay, and 3C Riverside Phase 3 contractor-furnished borrow areas.

  Indirect Impacts
  Under the no action alternative, there would be no indirect impacts to transportation.

  Cumulative Impacts
  Under the no action alternative, the proposed Bocage, Citrus Lands, Conoco Phillips, Idlewild Stage 1, Nairn, Plaquemines Dirt & Clay, and 3C Riverside Phase 3 sites would not be used as contractor-furnished borrow areas and would not contribute to cumulative transportation impacts in the project area. The proposed HSDRRS projects would be built to authorized levels using potential government-furnished and/or pre-approved contractor-furnished borrow areas described in IER #18, IER #19, IER #22, IER #23, IER #25, IER #26, IER #28, IER #29, IER #30, or other sources yet to be identified.

  Congestion impacts to the greater metropolitan area are likely to be moderate to severe as a result of HSDRRS construction. Decreases in levels of service on local roads are likely due to the high number of truck trips required to transport the required amounts of construction material. Additionally, there is a higher risk of traffic accidents and resulting damage to property as a result of the higher number of truck trips occurring on major transportation arteries within the metropolitan area.

  There is also likely to be moderate to severe degradation of infrastructure as a result of wear and tear from transporting HSDRRS construction materials. These impacts are likely to occur on local and feeder roads, as well as on local bridges. As a result of HSDRSS construction, rehabilitation to area infrastructure would likely be required sooner than would normally be expected.

  On the other hand, there may emerge cumulative indirect impacts associated with the completion of the HSDRRS in its entirety. The lower flood risk that accrues to the much of the New Orleans metropolitan area upon completion of the HSDRRS may have the effect of spurring additional economic growth in the region than would otherwise occur. An increase in the demand for transportation resources usually follows gains in economic activity and would thus be expected given any additional economic growth in the region. This impact is not specific to

the proposed borrow areas, since the proposed borrow areas lie outside the HSDRRS.

Proposed Action

- *Bocage*

  Direct Impacts
  Under the proposed action, there may be temporary, congestion-related impacts to LA 942, LA 44, and LA 22, as well as I-10 in the vicinity of the proposed Bocage borrow area. Congestion impacts and decreases in levels of service around the excavation area would likely be moderate to severe. To complete excavation of the proposed Bocage contractor-furnished borrow area, it is estimated that it would take approximately 120,000 truckloads. Due to the increased levels of truck traffic, and the movement of many truckloads of material, there would likely be increased wear and tear on these roads. Due to frequent heavy loads, local roadways around the project area would likely suffer degradation requiring rehabilitation that is sooner than would normally be expected. Lastly, because of increased levels of truck traffic, there could be a higher risk of accidents, with resulting injuries, fatalities, and damage to property.

  Indirect Impacts
  There would be increased congestion, decreased levels of service, accelerated wear and tear, and increased risk of traffic accidents on other major and local roads in the project area and throughout the Greater New Orleans area as borrow and other construction materials are transported to construction sites for use within the HSDRRS.

  Cumulative Impacts
  Approximately 120,000 truckloads could be required to complete excavation of the proposed Bocage contractor-furnished borrow area. The addition of approximately 120,000 truckloads contributes to the cumulative transportation impacts in the HSDRRS project area.

  It is estimated that it could require approximately 2,000,000 truckloads to complete excavation of the borrow areas needed for completion of the HSDRRS. If the proposed Bocage site is used as a contractor-furnished borrow area for completion of the HSDRRS it could account for approximately 6 percent of the total amount of truckloads required to complete the HSDRRS borrow mission.

  Additional cumulative transportation impacts associated with construction of the HSDRRS would be similar to those discussed under the no action alternative.

- *Citrus Lands*

  Direct Impacts
  Under the proposed action, there may be temporary, congestion-related impacts to LA-23 in the vicinity of the proposed Citrus Lands borrow area. Congestion impacts and decreases in levels of service around the excavation area would likely be moderate to severe. To complete excavation of the proposed Citrus Lands contractor-furnished borrow area, it is estimated that it would take approximately 735,000 truckloads. Due to the increased levels of truck traffic, and the movement of many truckloads of material, there would likely be increased wear and tear on these roads. Due to frequent heavy loads, local roadways around the

project area would likely suffer degradation requiring rehabilitation that is sooner than would normally be expected. Lastly, because of increased levels of truck traffic, there could be a higher risk of accidents, with resulting injuries, fatalities, and damage to property.

Indirect Impacts
There would be increased congestion, decreased levels of service, accelerated wear and tear, and increased risk of traffic accidents on other major and local roads in the project area and throughout the Greater New Orleans area as borrow and other construction materials are transported to construction sites for use within the HSDRRS.

Cumulative Impacts
Approximately 735,000 truckloads could be required to complete excavation of the proposed Citrus Lands contractor-furnished borrow area. The addition of approximately 735,000 truckloads contributes to the cumulative transportation impacts in the HSDRRS project area.

It is estimated that it could require approximately 2,000,000 truckloads to complete excavation of the borrow areas needed for completion of the HSDRRS. If the proposed Citrus Lands site is used as a contractor-furnished borrow area for completion of the HSDRRS it could account for approximately 37 percent of the total amount of truckloads required to complete the HSDRRS borrow mission.

Additional cumulative transportation impacts associated with construction of the HSDRRS would be similar to those discussed under the no action alternative.

- *Conoco Phillips*

Direct Impacts
Under the proposed action, there may be temporary, congestion-related impacts to LA-23 in the vicinity of the proposed Conoco Phillips borrow area. Congestion impacts and decreases in levels of service around the excavation area would likely be moderate to severe. To complete excavation of the proposed Conoco Phillips contractor-furnished borrow area, it is estimated that it would take approximately 1.1 million truckloads. Due to the increased levels of truck traffic, and the movement of many truckloads of material, there will likely be increased wear and tear on these roads. Due to frequent heavy loads, local roadways around the project area will likely suffer degradation requiring rehabilitation that is sooner than would normally be expected. Lastly, because of increased levels of truck traffic, there will be a higher risk of accidents, with resulting injuries, fatalities, and damage to property.

Indirect Impacts
There will be increased congestion, decreased levels of service, accelerated wear and tear, and increased risk of traffic accidents on other major and local roads in the project area and throughout the Greater New Orleans area as borrow and other construction materials are transported to construction sites for use within the HSDRRS.

Cumulative Impacts
Approximately 1.1 million truckloads could be required to complete excavation of the proposed Conoco Phillips contractor-furnished borrow area. The addition of approximately 1.1 million truckloads contributes to the cumulative

transportation impacts in the HSDRRS project area.

It is estimated that it could require approximately 2,000,000 truckloads to complete excavation of the borrow areas needed for completion of the HSDRRS. If the proposed Conoco Phillips site is used as a contractor-furnished borrow area for completion of the HSDRRS it could account for approximately 50 percent of the total amount of truckloads required to complete the HSDRRS borrow mission.

Additional cumulative transportation impacts associated with construction of the HSDRRS would be similar to those discussed under the no action alternative.

- *Idlewild Stage 1*

Direct Impacts
Under the proposed action, there may be temporary, congestion-related impacts to LA-23 in the vicinity of the proposed Idlewild Stage 1 borrow area. Congestion impacts and decreases in levels of service around the excavation area would likely be moderate to severe. To complete excavation of the proposed Idlewild Stage 1 contractor-furnished borrow area, it is estimated that it would take approximately 270,000 truckloads. Due to the increased levels of truck traffic, and the movement of many truckloads of material, there will likely be increased wear and tear on these roads. Due to frequent heavy loads, local roadways around the project area will likely suffer degradation requiring rehabilitation that is sooner than would normally be expected. Lastly, because of increased levels of truck traffic, there will be a higher risk of accidents, with resulting injuries, fatalities, and damage to property.

Indirect Impacts
There will be increased congestion, decreased levels of service, accelerated wear and tear, and increased risk of traffic accidents on other major and local roads in the project area and throughout the Greater New Orleans area as borrow and other construction materials are transported to construction sites for use within the HSDRRS.

Cumulative Impacts
Approximately 270,000 truckloads could be required to complete excavation of the proposed Idlewild Stage 1 contractor-furnished borrow area. The addition of approximately 270,000 truckloads contributes to the cumulative transportation impacts in the HSDRRS project area.

It is estimated that it could require approximately 2,000,000 truckloads to complete excavation of the borrow areas needed for completion of the HSDRRS. If the proposed Idlewild Stage 1 site is used as a contractor-furnished borrow area for completion of the HSDRRS it could account for approximately 13 percent of the total amount of truckloads required to complete the HSDRRS borrow mission.

Additional cumulative transportation impacts associated with construction of the HSDRRS would be similar to those discussed under the no action alternative.

- *Nairn*

Direct Impacts
Under the proposed action, there may be temporary, congestion-related impacts to LA-23, LA-11, and Shirley B Lane in the vicinity of the proposed Nairn borrow

area. Congestion impacts and decreases in levels of service around the excavation area would likely be moderate to severe. To complete excavation of the proposed Nairn contractor-furnished borrow area, it is estimated that it would take approximately 42,000 truckloads. Due to the increased levels of truck traffic, and the movement of many truckloads of material, there would likely be increased wear and tear on these roads. Due to frequent heavy loads, local roadways around the project area would likely suffer degradation requiring rehabilitation that is sooner than would normally be expected. Lastly, because of increased levels of truck traffic, there could be a higher risk of accidents, with resulting injuries, fatalities, and damage to property.

Indirect Impacts
There would be increased congestion, decreased levels of service, accelerated wear and tear, and increased risk of traffic accidents on other major and local roads in the project area and throughout the Greater New Orleans area as borrow and other construction materials are transported to construction sites for use within the HSDRRS.

Cumulative Impacts
Approximately 42,000 truckloads could be required to complete excavation of the proposed Nairn contractor-furnished borrow area. The addition of approximately 42,000 truckloads contributes to the cumulative transportation impacts in the HSDRRS project area.

It is estimated that it could require approximately 2,000,000 truckloads to complete excavation of the borrow areas needed for completion of the HSDRRS. If the proposed Nairn site is used as a contractor-furnished borrow area for completion of the HSDRRS it could account for approximately 2 percent of the total amount of truckloads required to complete the HSDRRS borrow mission.

Additional cumulative transportation impacts associated with construction of the HSDRRS would be similar to those discussed under the no action alternative.

- *Plaquemines Dirt & Clay*

Direct Impacts
Under the proposed action, there may be temporary, congestion-related impacts to LA-23, Lacrosse Lane, Reddick Street, and Morris Street in the vicinity of the proposed Plaquemines Dirt & Clay borrow area. Congestion impacts and decreases in levels of service around the excavation area would likely be moderate to severe. To complete excavation of the proposed Plaquemines Dirt & Clay contractor-furnished borrow area, it is estimated that it would take approximately 435,000 truckloads. Due to the increased levels of truck traffic, and the movement of many truckloads of material, there would likely be increased wear and tear on these roads. Due to frequent heavy loads, local roadways around the project area would likely suffer degradation requiring rehabilitation that is sooner than would normally be expected. Lastly, because of increased levels of truck traffic, there could be a higher risk of accidents, with resulting injuries, fatalities, and damage to property.

Indirect Impacts
There would be increased congestion, decreased levels of service, accelerated wear and tear, and increased risk of traffic accidents on other major and local roads in the project area and throughout the Greater New Orleans area as borrow

and other construction materials are transported to construction sites for use within the HSDRRS.

Cumulative Impacts
Approximately 435,000 truckloads could be required to complete excavation of the proposed Plaquemines Dirt & Clay contractor-furnished borrow area. The addition of approximately 435,000 truckloads contributes to the cumulative transportation impacts in the HSDRRS project area.

It is estimated that it could require approximately 2,000,000 truckloads to complete excavation of the borrow areas needed for completion of the HSDRRS. If the proposed Plaquemines Dirt & Clay site is used as a contractor-furnished borrow area for completion of the HSDRRS it could account for approximately 22 percent of the total amount of truckloads required to complete the HSDRRS borrow mission.

Additional cumulative transportation impacts associated with construction of the HSDRRS would be similar to those discussed under the no action alternative.

- *3C Riverside Phase 3*

Direct Impacts
Under the proposed action, there may be temporary, congestion-related impacts to LA 18, LA 3141, and LA 3127 in the vicinity of the proposed 3C Riverside Phase 3 borrow area. Congestion impacts and decreases in levels of service around the excavation area would likely be moderate to severe. To complete excavation of the proposed 3C Riverside Phase 3 contractor-furnished borrow area, it is estimated that it would take approximately 527,000 truckloads. Due to the increased levels of truck traffic, and the movement of many truckloads of material, there will likely be increased wear and tear on these roads. Due to frequent heavy loads, local roadways around the project area will likely suffer degradation requiring rehabilitation that is sooner than would normally be expected. Lastly, because of increased levels of truck traffic, there will be a higher risk of accidents, with resulting injuries, fatalities, and damage to property.

Indirect Impacts
There will be increased congestion, decreased levels of service, accelerated wear and tear, and increased risk of traffic accidents on other major and local roads in the project area and throughout the Greater New Orleans area as borrow and other construction materials are transported to construction sites for use within the HSDRRS.

Cumulative Impacts
Approximately 527,000 truckloads could be required to complete excavation of the proposed 3C Riverside Phase 3 contractor-furnished borrow area. The addition
of approximately 527,000 truckloads contributes to the cumulative transportation impacts in the HSDRRS project area.

It is estimated that it could require approximately 2,000,000 truckloads to complete excavation of the borrow areas needed for completion of the HSDRRS. If the proposed 3C Riverside Phase 3 site is used as a contractor-furnished borrow area for completion of the HSDRRS it could account for approximately 26 percent of the total amount of truckloads required to complete the HSDRRS

borrow mission.

Additional cumulative transportation impacts associated with construction of the HSDRRS would be similar to those discussed under the no action alternative.

3.3.5 Disruption of Community and Regional Growth

Existing Conditions
Community and regional growth are generally influenced by national trends, but otherwise depend significantly upon relatively local attributes that allow it to be evaluated apart from the national economy. For the purposes of socioeconomic impact analysis, the project area is first described in summary terms with respect to prevailing trends in the growth of population, housing, income, and employment. Against this baseline, the relative effects of the proposed and alternative actions are evaluated.

- *Bocage*
  According to U.S. Census data from 2000 and 2008 the following trends were observed in Ascension Parish: population grew from 76,627 to101,789, and median household income was $53,866 in 2007. Between 2003 and 2007, employment increased from 25,369 to 29,609.

- *Citrus Lands , Conoco Phillips, Idlewild Stage 1, Nairn, Plaquemines Dirt & Clay*
  According to U.S. Census data from 2000 and 2008 the following trends were observed in Plaquemines Parish: population decreased from 26,757 to 21,276, and median household income was $45,099 in 2007. Between 2003 and 2007, employment increased from 10,108 to 11,087.

- *3C Riverside Phase 3*
  According to U.S. Census data from 1990 and 2000 the following trends were observed in St Charles Parish: population grew from 20,879 to 48,072, and median household income grew from $23,105 to $45,139. In July 2008, the Greater New Orleans Community Data Center estimated that population grew to 51,547 in St. Charles Parish. Over approximately the same period, employment increased by from 7,173 in January 2001 to 7,938 in September 2008, according to the Bureau of Labor Statistics. Preliminary 2010 Census data will be available in 2011 at the earliest.

Discussion of Impacts

No Action

- *All Sites*

  Direct Impacts
  Under the no action alternative, there would be no direct impacts to community and regional growth in the vicinities of the proposed contractor-furnished borrow areas.

  Indirect Impacts
  Under the no action alternative, there would be no indirect impacts to community and regional growth in the vicinities of the proposed contractor-furnished borrow areas.

Cumulative Impacts
Under the no action alternative, borrow material in the required amount would be acquired from other locations in order that the HSDRRS is completed. Proposed HSDRRS projects would be built to authorized levels using potential government-furnished and/or contractor-furnished borrow areas described in IER #18, IER #19, IER #22, IER #23, IER #25, IER #26, IER #28, IER #29, IER #30, or other sources yet to be identified.

There would be cumulative impacts associated with the completion of the HSDRRS in its entirety. The lower flood risk that accrues to the much of the New Orleans metropolitan area upon completion of the HSDRRS may have the effect of spurring additional economic growth in the region than would otherwise occur. In addition, the lower incidence of flooding that the HSDRRS is designed to achieve would reduce the propensity for disruption of community life. This impact is not specific to the proposed project areas, since the proposed contractor-furnished borrow areas lie outside the HSDRRS.

Proposed Action

- *All Sites*

Direct Impacts
As a result of the proposed action, excavated land at the proposed furnished borrow areas would not be available for future alternative uses normally associated with economic development unless the landowners backfill the sites following excavation. This could have a negative impact on community growth. If the sites are backfilled, no negative impact on community growth is expected.

Indirect Impacts
Future community and regional growth may be negatively impacted by the proposed borrow areas being excavated as opposed to being used for other purposes.

Cumulative Impacts
Under the proposed action, the proposed sites could be used as contractor-furnished borrow areas and could contribute to cumulative impacts on community growth. The proposed borrow areas would be unavailable for further development unless the landowners backfill the sites.

There would be cumulative impacts associated with the completion of the HSDRRS in its entirety. The lower flood risk that accrues to the much of the New Orleans metropolitan area upon completion of the HSDRRS may have the effect of spurring additional economic growth in the region than would otherwise occur. In addition, the lower incidence of flooding that the HSDRRS is designed to achieve would reduce the propensity for disruption of community life. This impact is not specific to the proposed project area, since it lies outside the HSDRRS.

3.3.6 Impacts to Tax Revenues and Property Values

Existing Conditions

- *Bocage*

The proposed Bocage contractor-furnished borrow area is located in census tract 303, group 3, where the median value for specified owner-occupied housing units was $103,800 in 2000.

- *Citrus Lands*
  The proposed Citrus Lands contractor-furnished borrow area is located in census tract 504, group 1, where the median value for specified owner-occupied housing units was $110,100 in 2000.

- *Conoco Phillips*
  The proposed Conoco Phillips contractor-furnished borrow area is located in census tract 504, group 1, where the median value for specified owner-occupied housing units was $110,100 in 2000.

- *Idlewild Stage 1*
  The proposed Idlewild Stage 1 contractor-furnished borrow area is located in census tract 504, group 2, where the median value for specified owner-occupied housing units was $110,100 in 2000.

- *Nairn*
  The proposed Nairn contractor-furnished borrow area is located in census tract 506, group 3, where the median value for specified owner-occupied housing units was $110,100 in 2000.

- *Plaquemines Dirt & Clay*
  The proposed Plaquemines Dirt & Clay contractor-furnished borrow area is located in census tract 504, group 1, where the median value for specified owner-occupied housing units was $110,100 in 2000.

- *3C Riverside Phase 3*
  The proposed 3C Riverside Phase 3 contractor-furnished borrow area is located in census tract 627, group 4, where the median value for specified owner-occupied housing units was $55,100 in 2000; values ranged from $15,000 to $400,000. Preliminary 2010 Census data will be available in 2011 at the earliest.

Discussion of Impacts

No Action

- *All Sites*

  Direct Impacts
  Under the no action alternative, there would be no direct impacts to tax revenues and property values in the vicinity of the proposed contractor-furnished borrow areas.

  Indirect Impacts
  Under the no action alternative, there would be no indirect impacts to tax revenues and property values in the vicinity of the proposed contractor-furnished borrow areas.

  Cumulative Impacts
  The proposed sites would not be used as a contractor- furnished borrow area and

would not contribute to cumulative tax revenue and property value impacts in the project area. The proposed HSDRRS projects would be built to authorized levels using potential government-furnished and/or pre-approved contractor-furnished borrow areas described in IER #18, IER #19, IER #22, IER #23, IER #25, IER #26, IER #28, IER #29, IER #30, or other sources yet to be identified.

Under the no action alternative, cumulative impacts associated with the completion of the HSDRRS in its entirety may occur. The lower flood risk that accrues to the much of the New Orleans metropolitan area upon completion of the HSDRRS may have the effect of spurring additional economic growth in the region than would otherwise occur. It follows that increases in tax revenues would ensue given additional economic growth. In addition, the lower incidence of flooding that the HSDRRS is designed to achieve would have the effect of preserving, if not enhancing, property values within the protected areas. This impact is not specific to the proposed project areas, since the borrow areas lie outside the HSDRRS.

Proposed Action

- *All Sites*

  Direct Impacts
  Property values for the borrow sites may decrease as their potential for use for alternative purposes are diminished in the future if the landowners do not backfill the sites. For adjacent properties, the market response with respect to property values is undetermined, although there would appear to be no likelihood that property value could be enhanced due to this action.

  Indirect Impacts
  Tax revenues for Ascension, Plaquemines, and St. Charles Parishes may marginally decrease as a result of the proposed action. Property values for the sites would likely be lower due to excavation instead of the site being used for more productive purposes that would generate greater tax revenue.

  Cumulative Impacts
  Under the proposed action, it is possible that proposed sites could be used as contractor-furnished borrow areas. If the proposed sites are used as contractor-furnished borrow areas and the landowners do not backfill the sites, there may be decreases in property value for the borrow sites as a result of land being excavated as opposed to being used for alternative, more productive uses.

  For adjacent properties, the market response with respect to property values is undetermined, although there would appear to be no likelihood that property value could be enhanced due to this action.

  Cumulative impacts associated with the completion of the HSDRRS in its entirety may occur. The lower flood risk that accrues to the much of the New Orleans metropolitan area upon completion of the HSDRRS may have the effect of spurring additional economic growth in the region than would otherwise occur. It follows that increases in tax revenues would ensue given additional economic growth. In addition, the lower incidence of flooding that the HSDRRS is designed to achieve would have the effect of preserving, if not enhancing, property values within the protected areas. This impact is not specific to the proposed project areas, since they lie outside the HSDRRS

3.3.7 Changes in Community Cohesion

Community cohesion refers to the common vision and sense of belonging within a community that is created and sustained by the extensive development of individual relationships that are social, economic, cultural, and historical in nature. The degree to which these relationships are facilitated and made effective is contingent upon the physical and spatial configuration of the community itself: the functionality of the community owes much to the physical landscape within which it is set. The viability of community cohesion is compromised to the extent to which these physical features are exposed to interference from outside sources.

Discussion of Impacts

No Action

- *All Sites*

  Direct Impacts
  Under the no action alternative, there would be no direct impacts to community cohesion in the vicinity of the proposed contractor-furnished borrow areas.

  Indirect Impacts
  Under the no action alternative, there would be no indirect impacts to community cohesion in the vicinity of the proposed contractor-furnished borrow areas.

  Cumulative Impacts
  Under this alternative, the proposed HSDRRS projects would be built to authorized levels using potential government-furnished and/or contractor-furnished borrow areas described in IER #18, IER #19, IER #22, IER #23, IER #25, IER #26, IER #28, IER #29, IER #30, or other sources yet to be identified. Cumulative indirect impacts associated with the completion of the HSDRRS in its entirety may occur. The lower flood risk that accrues to much of the New Orleans metropolitan area upon completion of the HSDRRS may have the effect of enhancing community cohesion. The reason for this is that the lower incidence of flooding reduces the likelihood that patterns of social interaction and communication within the community are interrupted or permanently altered. This impact is not specific to the proposed project areas, since the proposed sites lie outside the HSDRRS.

Proposed Action

- *All Sites*

  Direct Impacts
  The impacts of excavation of the proposed contractor-furnished borrow areas would likely be adverse, such as noise and traffic congestion. But, some impacts have both negative and positive impacts. Yet, it is difficult to foresee any temporary construction-related impact that enhances community cohesion: such impacts are expected to be either adverse or, at a minimum, neutral.

  Impacts on community cohesion are contingent upon the degree to which project construction is expected to encroach upon the physical landscape that directly or indirectly affects the patterns of social interrelationships. In the current analysis, the borrow sites are sufficiently distant from areas of development such that no

spatial element of the community is impinged upon and the shared identity of the community materially threatened. This does not mean that adverse impacts, such as degraded aesthetic qualities or foregone economic opportunities, do not occur. Rather, the adverse impacts in other resource areas are not sufficiently large to affect community cohesion. The impact on community cohesion is first demonstrated by identifying a change in the pattern of social interaction, such as diminished contact due to physical separation, impediments to contact, interference in communication, dislocation, or voluntary migration. None of these conditions are present with the proposed action.

Indirect Impacts
There would be no indirect impacts to community cohesion under the proposed action.

Cumulative Impacts
Excavation of the proposed contractor-furnished borrow areas would not contribute to cumulative impacts on community cohesion.

Impacts on community cohesion are contingent upon the degree to which project construction is expected to encroach upon the physical landscape that directly or indirectly affects the patterns of social interrelationships. In the current analysis, the borrow sites are sufficiently distant from areas of development such that no spatial element of the community is impinged upon and the shared identity of the community materially threatened. This does not mean that adverse impacts, such as degraded aesthetic qualities or foregone economic opportunities, do not occur. Rather, the adverse impacts in other resource areas are not sufficiently large to affect community cohesion. The impact on community cohesion is first demonstrated by identifying a change in the pattern of social interaction, such as diminished contact due to physical separation, impediments to contact, interference in communication, dislocation, or voluntary migration. None of these conditions are present with the proposed action.

Construction-related impacts can be distinguished from project-related outputs, that is, the economic and social consequences that are specifically intended from the project design and that make it worthwhile to pursue. An increase in community cohesion can be seen as a specifically intended output from the project, as represented by the HSDRRS. This occurs since storm surge protection measures are designed to protect the community from the catastrophic effects of flooding, preserving the physical integrity of the developed landscape that promotes patterns of social interchange.

Additional cumulative impacts associated with the completion of the HSDRRS in its entirety may occur. The lower flood risk that accrues to the much of the New Orleans metropolitan area upon completion of the HSDRRS may have the effect of enhancing community cohesion. The reason for this is that the lower incidence of flooding reduces the likelihood that patterns of social interaction and communication within the community are interrupted or permanently altered. This impact is not specific to the proposed borrow areas, since they lie outside the HSDRRS.

3.4 ENVIRONMENTAL JUSTICE

Environmental Justice (EJ) is institutionally significant because of Executive Order 12898 of 1994 and the Department of Defense's Strategy on Environmental Justice of 1995, which direct Federal agencies to identify and address any disproportionately high adverse human health or environmental effects of Federal actions to minority and/or low-income populations. The Environmental Protection Agency (EPA) defines EJ as the fair and equitable treatment (fair treatment and meaningful involvement) of all people with respect to environmental and human health consequences of federal laws, regulations, policies, and actions.

The methodology to accomplish this includes identifying low-income and minority populations within the HSDRRS project area using up to date economic statistics, aerial photographs, the 2000 U.S. Census, Environmental Systems Research Institute, Inc. (ESRI) estimates, as well as conducting community outreach activities such as small neighborhood focus meetings.

The HSDRRS project, of which this IER study area is a subset, is considered the reference community of comparison, whose population is therefore considered the EJ reference population for comparison purposes. A potential disproportionate impact may occur when the percent minority and/or percent low-income population in an EJ study area are greater than those in the reference community. For purposes of this analysis, all Census Block Groups within a 1-mile radius of the project footprint are defined as the EJ study area.

The sources for the data used in the analysis include the 2000 U.S. Census and estimates from Environmental Systems Research Institute, Inc. (ESRI). Despite the 2000 U.S. Census being eight years old, it serves as a logical baseline of information for the following reasons:

- Census 2000 data is the most accurate source of data available due to the sample size of the Census decennial surveys. With one of every six households surveyed, the margin of error is negligible.

- The Census reports data at a much smaller geographic level than other survey sources, providing a more defined and versatile option for data reporting.

- Census information sheds light upon the demographic and economic framework of the area pre-Hurricane Katrina. By accounting for the absent population, the analysis does not exclude potentially low income and minority families that wish to return home.

Due to the considerable impact of Hurricane Katrina upon the New Orleans metropolitan area, and the likely shift in demographics and income, the 2000 Census data are supplemented with more current data, including 2008 estimates and 2013 projections provided by ESRI.

Existing Conditions

For purposes of this analysis, Parish figures were used for unincorporated areas or populated places that are Census-designated areas in addition to towns located within 1-mile of the contractor-furnished borrow area project footprint are defined as the EJ study area. Each parish is considered the reference community for disproportionate impact analysis. The 2000 U.S. Census data is utilized as the primary deciding variable per data accuracy and reliability as described above. The 2008 estimates are utilized for reference

purposes only. Since the borrow areas under this IER are located in multiple parishes and/or counties the EJ study areas are described separately as follows.

- *Bocage*
  According to the 2000 U.S. Census, the proposed Bocage contractor-furnished borrow area was a minority, non-low income area in 2000, with 65 percent of the population a minority and 19.4 percent of the population low income. The percentage of the population that is minority is significantly greater than parish and state figures, while the population that is low income is greater than parish figures but comparable to state figures. According to 2008 estimates, the minority and low income population increased slightly from 2000 to 2008. Due to the increase in low income and minority populations, the Bocage borrow site area is likely an environmental justice study area, however, based on satellite imagery of the site, the area is sparsely populated, with a few residential streets in proximity to the borrow site, including the residences along Haydel Road and Walter Hill.

- *Citrus Lands*
  According to the 2000 U.S. Census, the proposed Citrus Lands contractor-furnished borrow area falls within Port Sulfur, a designated place located in Plaquemines Parish. Census records in 2000 show that the area was not a minority, non-low income area, with 30 percent of the population a minority and 18 percent of the population low income. The percentage of the population that is minority is significantly lower than state figures, while the population that is low income is comparable to state figures.

- *Conoco Phillips*
  The proposed Conoco Phillips contractor-furnished borrow area is located in Plaquemines Parish, Louisiana. On the western boundary of the proposed borrow site is the uninhabited area of Cheniere Traverse Bayou and across the road from the open field is the Conoco Philips oil refinery. There are no minority and/or low-income communities in the immediate vicinity of the site. According to the 2000 U.S. Census the population Plaquemines Parish was 32 percent minority and 18 percent low-income. According to 2008 estimates, the minority and low-income population has not changed from 2000 to 2008. The percentage of the population that is minority and low-income is similar to that of state figures. It is unlikely the Conoco Philips borrow area is an environmental justice study area.

- *Idlewild Stage 1*
  According to the U.S. Census, the proposed Idlewild Stage 1 contractor-furnished borrow area was located near the Oakville community, a minority, low income area in 2000. The minority population percentage was 32.8 percent and the low income population was 20.1 percent. According to 2008 ESRI estimates, the minority and low income population decreased slightly from 2000 to 2008. Despite the slight decrease, the area remains a minority and/or low-income community, and thus the Idlewild Stage 1 borrow site is likely an environmental justice study area.

- *Nairn*
  According to the 2000 U.S. Census, the proposed the Nairn contractor-furnished borrow area is a Census-designated place located in Plaquemines Parish. U.S. Census records in 2000 show that Nairn's minority population was 29.4 percent and the low income population was 25.9 percent. The percentage of the population that is minority is significantly lower than state figures, while the population that is low income is slightly higher than state figures.

- *Plaquemines Dirt and Clay*
  According to the 2000 U.S. Census, the proposed Plaquemines Dirt and Clay contractor-furnished borrow area is located in West Point a La Hache, a community located in Plaquemines Parish which his not considered minority or low income. Census records in 2000 show that Plaquemines Parish was not a minority, non-low income area, with 30 percent of the population a minority and 18 percent of the population low income. The percentage of the population that is minority is significantly lower than state figures, while the population that is low income is comparable to state figures.

- *3C Riverside Phase 3*
  The 3C Riverside 3 borrow site is located within Block Group 627.04 within St. Charles Parish, which stretches from Highway 3127 to the Mississippi River. According to the 2000 Census, this area was a minority, low income community in 2000, with 92.7 percent of the population a minority and 40.8% of the population low income. This is substantially higher than state or parish figures. According to 2008 estimates, the minority and low income population increased from 2000 to 2008. Therefore, the 3C Riverside 3 project site is considered to be an environmental justice study area. Based on satellite imagery of the site, it appears the borrow footprint is less than a mile from the Hymelia Trailer Park, near River Road.

Discussion of Impacts

No Action

- *All Sites*
  Under the no action alternative, the proposed Bocage, Citrus Lands, Conoco Phillips, Idlewild Stage 1, Nairn, Plaquemines Dirt & Clay, and 3C Riverside Phase 3 contractor-furnished borrow areas would not be excavated and no minority or low-income populations would be adversely impacted by the proposed project.

Proposed Action

- *Bocage*
  Analysis of the proposed Bocage contractor-furnished borrow area shows that minority and/or low income communities are located within 1-mile of the proposed borrow location. With implementation of the proposed action, impacts from borrow site activities such as air quality, noise, traffic, safety, etc. would occur, but are usually limited to within 1-mile of the project area, are temporary in nature and will equally impact non-minority/non-low populations as well, when compared to the greater HSDRRS project.

  Additional impacts of the no action alternative would be the additive combination of impacts to minority and/or low-income communities by other Federal, state, local, and private efforts. Thus there would be no disproportionate direct impacts on any minority or low-income populations.

- *Citrus Lands*
  Analysis of the proposed Citrus Lands contractor-furnished borrow area shows that no minority and/or low income communities are located within 1-mile of the proposed borrow location. With implementation of the proposed action impacts

from borrow site activities such as air quality, noise, traffic, safety, etc. would occur, but are usually limited to within 1-mile of the project area, and are temporary in nature. Additional impacts of the no action alternative would be the additive combination of impacts to minority and/or low-income communities by other Federal, state, local, and private efforts. Thus there would be no disproportionate direct impacts on any minority or low-income populations.

- *Conoco Phillips*
  Analysis of the Conoco Phillips borrow area shows that no minority and/or low-income communities are within 1-mile of the proposed borrow location. With implementation of the proposed action impacts from borrow site activities such as air quality, noise, traffic, safety, etc. would occur, but are usually limited to within 1-mile of the project area, and are temporary in nature. Additional impacts of the proposed action alternative would be the additive combination of impacts to minority and/or low-income communities by other Federal, state, local, and private efforts. Thus there would be no disproportionate direct impacts on any minority or low-income populations.

- *Idlewild Stage 1*
  Analysis of the proposed Idlewild Stage 1 contractor-furnished borrow area shows that no minority and/or low income communities are located within 1-mile of the proposed borrow location. With implementation of the proposed action impacts from borrow site activities such as air quality, noise, traffic, safety, etc. would occur, but are usually limited to within 1-mile of the project area, and are temporary in nature. Additional impacts of the no action alternative would be the additive combination of impacts to minority and/or low-income communities by other Federal, state, local, and private efforts. Thus there would be no disproportionate direct impacts on any minority or low-income populations.

- *Nairn*
  Analysis of the proposed Nairn contractor-furnished borrow area shows that no minority communities would be impacted by the proposed borrow activities, however, according to ESRI estimates in 2008 show it is probable that the area currently has a low income population located near the proposed borrow location. With implementation of the proposed action impacts from borrow site activities such as air quality, noise, traffic, safety, etc. would occur, but are usually limited to within 1-mile of the project area, and are temporary in nature. Additional impacts of the no action alternative would be the additive combination of impacts to minority and/or low-income communities by other Federal, state, local, and private efforts. Thus there would be no disproportionate direct impacts on any minority or low-income populations.

- *Plaquemines Dirt & Clay*
  Analysis of the proposed Plaquemines Dirt & Clay contractor-furnished borrow area shows that no minority and/or low income communities are located within 1-mile of the proposed borrow location. With implementation of the proposed action impacts from borrow site activities such as air quality, noise, traffic, safety, etc. would occur, but are usually limited to within 1-mile of the project area, and are temporary in nature. Additional impacts of the no action alternative would be the additive combination of impacts to minority and/or low-income communities by other Federal, state, local, and private efforts. Thus there would be no disproportionate direct impacts on any minority or low-income populations.

- *3C Riverside Phase 3*
  Analysis of the proposed 3C Riverside Phase 3 contractor-furnished borrow area shows that minority and/or low income communities are located within 1-mile of the proposed borrow location. With implementation of the proposed action impacts from borrow site activities such as air quality, noise, traffic, safety, etc. would occur, but are usually limited to within 1-mile of the project area, and are temporary in nature and would impact non-minority and non-low income populations as well. Additional impacts of the no action alternative would be the additive combination of impacts to minority and/or low-income communities by other Federal, state, local, and private efforts. Thus there would be no disproportionate direct impacts on any minority or low-income populations.

3.5 HAZARDOUS, TOXIC, AND RADIOACTIVE WASTE

USACE is obligated under Engineer Regulation 1165-2-132 to assume responsibility for the reasonable identification and evaluation of all Hazardous, Toxic, and Radioactive Waste (HTRW) contamination within the vicinity of the proposed actions. ER 1165-2-132 identifies the CEMVN HTRW policy to avoid the use of project funds for HTRW removal and remediation activities. Costs for necessary special handling or remediation of wastes (e.g., Resource Conservation and Recovery Act [RCRA] regulated), pollutants, and other contaminants which are not regulated under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), will be treated as project costs if the requirement is the result of a validly promulgated Federal, state or local regulation.

An ASTM E 1527-05 Phase I Environmental Site Assessment (ESA) was completed for each proposed contractor-furnished borrow area. The Phase I ESA documented the Recognized Environmental Conditions (RECs) for each proposed project area. If a REC cannot be avoided, due to construction requirements, the CEMVN may further investigate the REC to confirm the presence or absence of contaminants and to recommend actions to avoid possible contaminants. Federal, state, or local coordination may be required. Because the CEMVN plans to avoid RECs, the probability is low for encountering HTRW in the project area.

Copies of the Phase I ESA studies cited below will be maintained on file at the CEMVN office, and the content of those reports are incorporated herein by reference. Copies of these reports are available by requesting them from the CEMVN, or accessing them at www.nolaenvironemtal.gov.

Phase I HTRW ESAs have been completed for the proposed contractor-furnished borrow areas:

- *Bocage*
  A Phase I ESA was prepared for the proposed Bocage contractor-furnished borrow area by Environmental Management Services, Inc. on 17 October 2007. No RECs were found on site or on neighboring properties. An additional Phase I ESA was prepared for the proposed Bocage contractor-furnished borrow area by Feliciana Environmental Engineers & Consultants, Inc., dated November 2008. No RECs were found on site or on neighboring properties. The probability of encountering HTRW during the course of this project is low, and no further study is recommended. If the project methods or location change, the HTRW probability may need to be re-evaluated.

- *Citrus Lands*

A Phase I ESA was prepared for the proposed Citrus Lands contractor-furnished borrow area by Bioengineering Group on 3 February 2009. No RECs were found on site or on neighboring properties. However, areas near an old building on Lacrosse Lane, where batteries, small gasoline containers, gas cylinder, drums, and other materials were found, should be avoided. An oil sheen in the drainage canal was determined not to be a REC.

- Conoco Phillips
  A Phase I ESA for this property was prepared by Gulf Engineers and Consultants, Inc. and dated 31 March 2009. Two RECs were found on the property:

  1. Leaking drums and containers, miscellaneous unlabelled drums and containers, stained soil, hydrocarbon odor, waste tires, and batteries observed within the equipment storage area at the northeast corner of the property constitute a REC. Releases from the leaking drums and containers may have impacted the subject property.

  2. The large number of dead and dying cattle present at the site constitutes a potential REC. While initial observations indicate that many of the cattle are malnourished, all cattle at the property do not exhibit similar physical condition, and some appear to be healthier than others. Without an expert opinion rendered by a veterinarian or livestock professional, it is impossible to eliminate the possibility that the mortalities are related to some unknown environmental condition at the property.

  GEC, Inc. conducted a follow-up site visit on 4 September 2009. The drums and containers in the equipment storage area had been removed, and no signs of soil staining or stressed vegetation were seen. Previously documented cattle carcasses had been removed. The deaths of cattle were due to Hurricane Gustav, during which numerous cattle became trapped in thick mud in some of the canals on the property. The remaining cattle appeared healthy and pasture at the site was of better quality than that seen during the previous site inspection (March 2009).

  Outstanding HTRW questions regarding this property appear to have been resolved, and there is a low probability of encountering HTRW during the course of this project. No further investigation of HTRW is recommended.

- *Idlewild Stage 1*
  A Phase I ESA was prepared for the proposed Idlewild Stage 1 contractor-furnished borrow area by Aerostar Environmental Services, Inc. on 29 October 2008. Two environmental concerns were found on site or on neighboring properties. The first concern is an old petroleum well located near the northwest corner of Stage 2 site, which is not part of the proposed State 1 site. Soil sampling should be conducted in the vicinity of the well if material near the well is to be used for borrow. Soil sampling for pesticides and high levels of metals within the Stage 1 site was recommended.

  Additional Phase II investigation and testing was done at the Idlewild Stage 1 Stage 1 site, which is being proposed as a borrow source. The report of this investigation, entitled "Stage I Phase II Environmental Site Assessment Update, Idlewild Stage 1 Subdivision Site, 11504 Highway 23, Oakville, Plaquemines Parish, Louisiana" dated 30 October 2009, was done by Aerostar Environmental Services, Inc. Laboratory analysis of thirty five shallow groundwater samples and seven soil samples collected on 27 October 2009 indicated tested parameters were

either below the laboratory Minimum Detection Limits (MDLs) or below the respective LDEQ Industrial Groundwater RECAP standards. The results indicate that there is a low probability of encountering HTRW during the course of borrow material excavation within the Stage I portion of the property. No further HTRW study is recommended.

- *Nairn*
  A Phase I ESA was prepared for the proposed Nairn contractor-furnished borrow area by Aerostar Environmental Services, Inc. on 12 November 2008. No Recognized Environmental Conditions (RECs) were found on site or on neighboring properties, except for unknown fill material on tract "D". It is recommended that either the area composed of unknown fill material be avoided for use as borrow, or that the material be sampled to determine if the material is suitable for borrow. The area will be avoided.

- *Plaquemines Dirt & Clay*
  A Phase I ESA was prepared for the proposed Plaquemines Dirt & Clay contractor-furnished borrow area by Professional Service Industries, Inc. on 13 February 2009. No Recognized Environmental Conditions (RECs) were found on site or on neighboring properties. An oil sheen in the drainage canal was determined not to be a REC. The probability of encountering HTRW during the course of this project is low, and no further study is recommended. If the project methods or location change, the HTRW probability may need to be re-evaluated.

- *3C Riverside Phase 3*
  A Phase I ESA for the 3C Riverside property, dated 26 January 1999, was prepared by United Agricultural Services, Inc. This investigation concluded that previous Recognized Environmental Conditions (RECs) on the property have been cleaned and removed. No current RECs were found.

  A second ESA for a portion of the property proposed as a borrow source was evaluated in an Environmental Site Assessment (ESA) dated 23 July 2007, prepared by United Environmental Services, Inc. No RECs)were found.

  A third Phase I ESA for the proposed 3C Riverside Phase III borrow area, entitled "Phase I Environmental Site Assessment - 3C Riverside Properties, LLC, Phase III, St. Charles Parish, Louisiana," was completed on 24 July 2008. No RECs were found.

  Three Environmental Site Assessments (ESAs) have been prepared for the proposed borrow site property. No RECs were found in any of these studies.

  There is a low probability of encountering HTRW during the course of the borrow pit excavation; however, because the most recent ESA is over fourteen months old, an addendum to the most recent Environmental Site Assessment (ESA) will need to be prepared, prior to excavation.

4. CUMULATIVE IMPACTS

NEPA requires a Federal agency to consider not only the direct and indirect impacts of a proposed action, but also the cumulative impacts of the action. A cumulative impact is defined as the “the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions

regardless of what agency (Federal or non-Federal) or person undertakes such other actions (40 §CFR 1508.7)." Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time. These actions include projects conducted by government agencies, businesses, or individuals that are within the spatial and temporal boundaries of the actions that are considered in this IER.

As indicated previously, in addition to this IER, the CEMVN is preparing a draft CED that will describe all HSDRRS work completed and the work remaining to be constructed, including borrow sources for the system. The purpose of the draft CED will be to document the work completed by the USACE on a system-wide scale. The draft CED will describe the integration of individual IERs into a systematic planning effort. Additionally, the draft CED will contain updated information for any IER that had incomplete or unavailable data at the time it was posted for public review. Overall cumulative impacts and future operations and maintenance requirements will also be included.

The discussion provided below describes an overview of Federal and non-Federal actions, projects, and occurrences that may contribute to the cumulative impacts previously discussed as it relates to matters of borrow source excavation. Projects that occur within the greater New Orleans area and southeastern Louisiana were considered collectively (as appropriate) for the evaluation of cumulative impacts. For a more in-depth discussion of cumulative impacts from structural HSDRRS projects (i.e., levee, floodwall, and pumping stations) please refer to IERs #1 through #17, and the CED.

Cumulative Impacts due to HSDRRS Projects

Borrow material has been obtained in the past by the CEMVN for HSDRRS and other projects in southeastern Louisiana and southwestern Mississippi. The CEMVN has been working at an accelerated schedule to rehabilitate and complete the HSDRRS system after Hurricanes Katrina and Rita, and has a goal of building the system to authorized levels by June 2011. Over 62,000,000 cubic yards of borrow material is estimated to be needed to complete authorized levels of protection for the HSDRRS and NOV projects. Borrow material will also be needed to perform levee lifts and maintenance for at least 50 years after construction is completed. The CEMVN is in the process of implementing construction projects to raise the hurricane protection levees associated with the LPV, WBV, and New Orleans to Venice (NOV) projects to authorized elevations. This includes modifications to risk reduction projects covered in IERs #1 through #17. Levee and floodwall improvements throughout the area would require substantial amounts of borrow material, and some of the borrow areas needed have been identified in this document to provide adequate material in proximity to proposed risk reduction projects. Other potential borrow areas were identified and approved for use in IER #18, IER #19, IER #22, IER #23, #25, IER #26, IER #28, IER #29, and IER #30 (figure 22). Depending on time, cost, and other factors, these and other potential borrow sources not yet identified may or may not be used for HSDRRS construction.

To date, there are 48 borrow sites approved for construction of the HSDRRS, and more than 20 sites under investigation in southeastern Louisiana and southwestern Mississippi (figure 22). HSDRRS borrow activity would cumulatively impact the significant resources discussed in this IER in the project area. Currently unidentified borrow sources may also incrementally impact the significant resources discussed in this IER in the project area.

Cumulative Impacts due to Borrow Needs for Other CEMVN Projects

Multiple current and upcoming CEMVN projects are expected to need suitable borrow material. Major civil works projects that may have a great requirement for borrow

material include the Morganza to the Gulf project, Donaldsonville to the Gulf project, Larose to Golden Meadow project, Alexandria to the Gulf project, construction necessary to raise levee heights and incorporate the Plaquemines Parish West Bank non-Federal levees into the NOV project, Grand Isle non-Federal levee construction, and Mississippi River levee maintenance. Additional projects authorized by the Water Resources Development Act (WRDA) of 2007 could also contribute to resource impacts, either adversely or with long-term positive impacts. It is expected that borrow material would be needed for a majority of these projects. However, needed quantities and location of potential borrow areas are not know at this time.

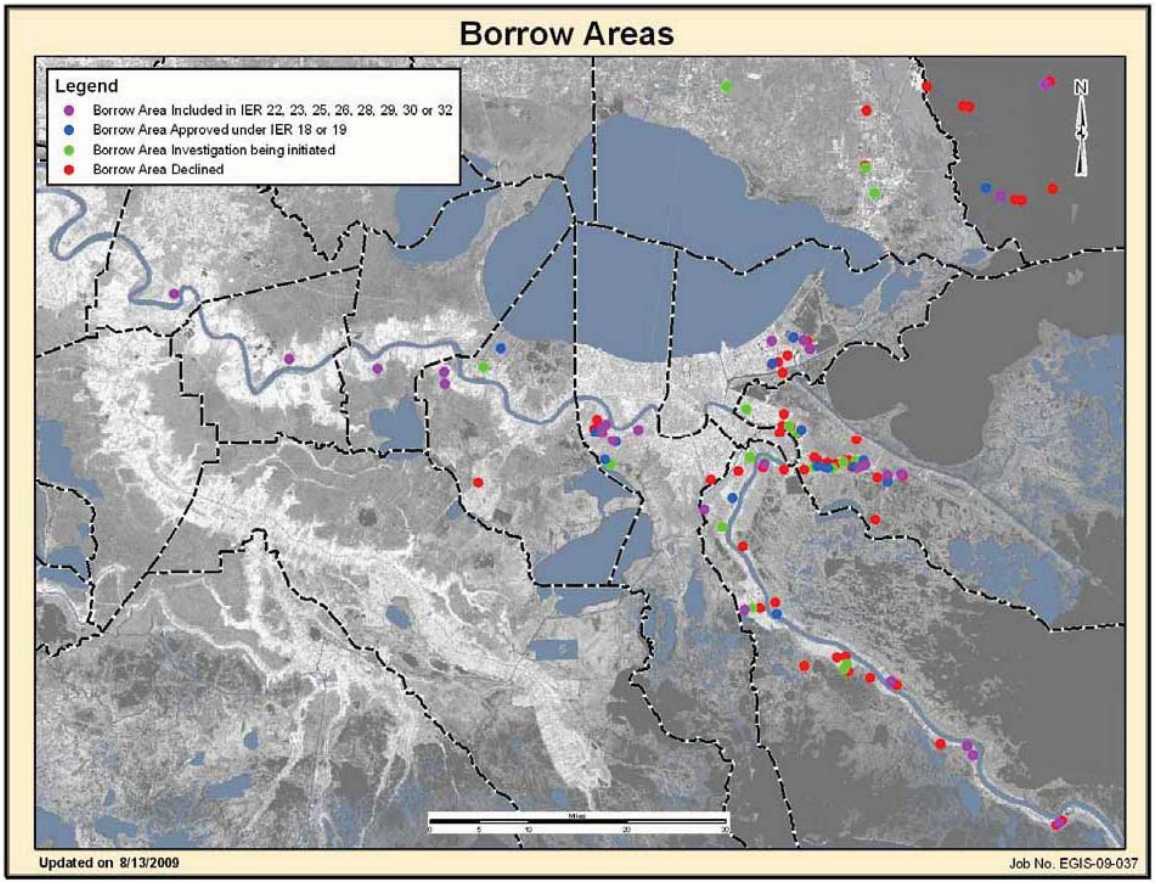

Figure 22: Potential HSDRRS Borrow Sources in the Project Area

Other CEMVN projects, including most coastal restoration and mitigation projects, should not require "levee grade" borrow material from terrestrial sources.

Cumulative Impacts due to Borrow Needs for Non-Federal Projects

State and local levee and floodwall construction efforts are continuously being repaired, maintained, and upgraded. These include most of the local levee systems found in southeast Louisiana. It is expected that borrow material would be needed for a majority of these projects. However, needed quantities and location of potential borrow areas are not know at this time.

4.1 SUMMARY OF CUMULATIVE IMPACTS

The magnitude and significance of cumulative impacts were evaluated in section 3 of this

IER by comparing the existing environment with the expected impacts of the proposed action when combined with the impacts of other proximate actions. As stated previously, various Federal, state, and local ongoing and proposed actions may increase the need for borrow excavation in the study area. The potential borrow areas approved for use in IER #18, IER #19, IER #22, IER #23, #25, IER #26, IER #28, IER #29, and IER #30, and proposed for use in this IER could cumulatively impact land use patterns and transportation resources in the project area. Use of these proposed contractor-furnished borrow areas should not cumulatively impact jurisdictional wetlands, cultural resources, or T&E species and their critical habitat, as the CEMVN is currently avoiding direct or indirect impacts to these resources. The extent of potential cumulative impacts to other resources due to HSDRRS construction are not known at this time, and may be discussed in the CED.

The extent of land directly and indirectly affected by previous development activities, in combination with the excavation and use of the proposed borrow material for HSDRRS construction, would contribute cumulatively to land alteration and loss in the project area. Most of the proposed borrow areas described in IER #18, IER #19, IER #22, IER #23, #25, IER #26, IER #28, IER #29, and IER #30 are upland areas. Over 1,600 acres of non-jurisdictional BLH, which provides habitat for a variety of wildlife, may be adversely impacted due to HSDRRS borrow activities.

After borrow area excavation, land may be converted to ponds and small lakes if not backfilled by the landowner. The landowner may be required to backfill per local ordinances in some areas. If the sites are not backfilled, the excavated sites would be unsuitable for farming, forestry, or urban development in the reasonably foreseeable future. Habitat would be changed to favor aquatic and semi-aquatic plant and animal species over the terrestrial ones that now occupy the areas. Borrow areas that do not retain water would be colonized by herbaceous vegetation and woody terrestrial plant species, which would favor terrestrial animal species. This would attract the same species that are currently found in the areas.

The construction of the proposed contractor-furnished borrow areas would have short-term cumulative effects on transportation. It is anticipated that over 62,000,000 cubic yards of material would be needed to raise levee elevations regionally to meet the needs of the HSDRRS and NOV projects. The total number of truck trips required or haul routes for the movement of this quantity of material is currently unknown, but cumulative short-term impacts to transportation are expected to occur. The CEMVN is currently developing information for an analysis of the transportation impacts associated with the HSDRRS project. A transportation report is being developed and will be released publicly once it is completed. Estimates on numbers of truckloads necessary to complete the HSDRRS borrow mission are provided in this IER. These estimates were developed as a part of CEMVN's continuing analysis of the potential transportation impacts associated with the HSDRRS mission. The current estimate for the total number of truckloads necessary to complete the HSDRRS borrow mission is approximately 2,000,000. Additional information related to transportation impacts is being collected and will be discussed in the CED.

Based on historical human activities and land use trends in the project area, it is reasonable to anticipate that future activities would further contribute to cumulative degradation of land resources. It is anticipated that through the efforts taken to avoid and minimize effects on the project area and the mandatory implementation of a mitigation plan that functionally compensates unavoidable remaining impacts, the proposed contractor-furnished borrow areas would not result in substantial direct, secondary or cumulative adverse impact on the environment. The mitigation plan is discussed in

section 7.

Quantitative cumulative impacts to recreational resources, noise quality, air quality, water quality, and aesthetic resources are not fully known at this time, and will be discussed in the CED. Details on cumulative environmental justice impacts will be analyzed at the conclusion of environmental justice small-group meetings and will be included in the CED.

5. SELECTION RATIONALE

The proposed action consists of excavating the proposed Bocage, Citrus Lands, Conoco Phillips, Idlewild Stage 1, Nairn, Plaquemines Dirt & Clay, and 3C Riverside Phase 3 contractor-furnished borrow areas. There is an identified need for over 31,000,000 cubic yards of borrow material to complete the HSDRRS projects, and the proposed action meets some of this demand. Because of this need, the CEMVN will continue to investigate all potentially viable borrow areas for the next few years. Government-furnished borrow is an option that was explored in IER #18, IER #22, IER #25, IER #28, and more potential areas may be discussed in future IERs. Contractor-furnished borrow areas were investigated in IER #19, IER #23, IER #26, IER #29, and IER #30, and more potential sites may be discussed in future IERs. All of this identified borrow material may be used to complete the HSDRRS, which would lower the risk of harm to citizens and damage to infrastructure during a storm event.

6. COORDINATION AND CONSULTATION

6.1 PUBLIC INVOLVEMENT

Extensive public involvement has been sought in preparing this IER. The HSDRRS projects, including the proposed contractor-furnished borrow areas analyzed in this IER, were publicly disclosed and described in the Federal Register on 13 March 2007, and on the website www.nolaenvironmental.gov. Scoping for the HSDRRS projects was initiated on 12 March 2007, through placing advertisements and public notices in *USA Today* and *The New Orleans Times-Picayune*. Nine public scoping meetings were held throughout the New Orleans metropolitan area to explain the scope and process of the Alternative Arrangements for implementing NEPA between 27 March and 12 April 2007, after which a 30-day scoping period was open for public comment submission. Additionally, the CEMVN has been hosting multiple monthly public meetings since March 2007 to keep the stakeholders advised of project status. Public input will be provided in appendix B.

Public meetings related to borrow started in July 2007, and will be continuing until the borrow quantities needed are fulfilled.

6.2 AGENCY COORDINATION

Preparation of this IER has been coordinated with appropriate Congressional, Federal, state, and local interests, as well as environmental groups and other interested parties. An interagency environmental team was established for this project in which Federal and state agency staff played an integral part in the project planning and alternative analysis phases of the project. Members of this team are listed in appendix C, and correspondence between governmental agencies and the CEMVN will be found in appendix D. This interagency environmental team was integrated with the CEMVN PDT to assist in the planning of this project and to complete a mitigation determination of the potential direct and indirect impacts of the proposed action. Monthly meetings with resource agencies

were also held concerning this and other proposed IER projects. The following agencies, as well as other interested parties, are receiving copies of this draft IER:

U.S. Department of the Interior, Fish and Wildlife Service
U.S. Department of the Interior, National Park Service
U.S. Environmental Protection Agency, Region VI
U.S. Department of Commerce, National Marine Fisheries Service
U.S. Natural Resources Conservation Service
Louisiana Advisory Council on Historic Preservation
Governor's Executive Assistant for Coastal Activities
Louisiana Department of Wildlife and Fisheries
Louisiana Department of Natural Resources, Coastal Management Division
Louisiana Department of Natural Resources, Coastal Restoration Division
Louisiana Department of Environmental Quality
Louisiana State Historic Preservation Officer

LADNR reviewed the proposed action for consistency with the states' Coastal Resource Program. All proposed borrow activities discussed in this document were found by LADNR or the local parish to be consistent with its program (table 7).

Table 7: Coastal Zone Consistency Determination Concurrence

Proposed Borrow Area	State Consistency Permit Number	Parish Consistency Permit Number
Bocage	P20080865	N/A
Citrus Lands	P20090080	CZM-2009-10
Conoco Phillips	P20090238	N/A
Idlewild Stage 1	P20090188	CZM-2009-8
Nairn	P20090185	CZM-2009-2
Plaquemines Dirt & Clay	P20090144	CZM-2009-9
3C Riverside Phase 3	P20090069	N/A

The CEMVN received a draft Coordination Act Report (CAR) from the USFWS on 23 November 2009 (appendix D). Recommendations of the USFWS, in accordance with the Fish and Wildlife Coordination Act, include:

Recommendation 1: "The private contractor for each borrow site shall provide the appropriate number of AAHUs as listed in Table 1 [of the CAR], for a total of 115.7 AAHUs to compensate for the unavoidable, project-related loss of forested lands included in IER 32. The [USFWS], National Marine Fisheries Service, Louisiana Department of Wildlife and Fisheries, and Louisiana Department of Natural Resources should be consulted regarding the adequacy of any proposed alternative mitigation sites."

CEMVN Response 1: Concur.

Recommendation 2: "The protocol to identify and prioritize borrow sources provided in our August 7, 2006, Planning-Aid letter should be utilized as a guide for locating future borrow-sites and expanding existing sites."

CEMVN Response 2: Concur.

Recommendation 3: Because of the potential for hydrologic modifications caused by borrow material excavation at the Citrus Lands, Conoco Phillips, Plaquemines Dirt and Clay, and 3C Riverside sites to impact nearby, jurisdictional wetlands outside of the planned excavation areas, the [USFWS] recommends that the [CEMVN] conduct an investigation to determine the extent of these potential impacts. The [USFWS] also recommends that a buffer zone of at least 100 feet be designated between those borrow sites and any jurisdictional wetlands in which no excavation would be allowed.

CEMVN Response 3: A buffer zone of at least 100 feet has been designated between the excavation areas on the borrow sites and any jurisdictional wetlands in which no excavation would be allowed. The CEMVN will consider investigation into the potential for hydrologic modifications caused by borrow material excavation.

Recommendation 4: "Any proposed change in borrow site features, locations or plans shall be coordinated in advance with [the USFWS], [the National Marine Fisheries Service], LAWLF, and LADNR."

CEMVN Response 4: The CEMVN will coordinate with these agencies.

Recommendation 5: "If a proposed borrow site is changed significantly or excavation is not implemented within one year, we recommend that [the CEMVN] notify the contractor to reinitiate coordination with… this office to ensure that the proposed project would not adversely affect any federally listed threatened or endangered species or their habitat."

CEMVN Response 5: Concur.

7. MITIGATION

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

All potential contractor-furnished borrow areas described in this IER were assessed by the USFWS and the CEMVN under NEPA, the Fish and Wildlife Coordination Act, and under Section 906(b) WRDA 1986 requirements. It has been determined that use of the proposed contractor-furnished borrow areas would not directly impact jurisdictional wetlands, and therefore no mitigation for this resource is necessary. Approximately 222.6 acres (109.0 AAHUs) of non-jurisdictional BLH would be impacted with use of the proposed Nairn and 3C Riverside Phase 3 contractor-furnished borrow areas, and would be mitigated for by the landowners if the proposed sites are selected by construction contractors for use in building the HSDRRS.

Table 8 shows the cumulative impacts of all IERs which have been completed as of the date of publication. Further information on mitigation efforts will be available in forthcoming IERs.

Table 8. HSDRRS Impacts and Compensatory Mitigation to be Completed

IER	Parish		Non-wet	Non-wet BLH	BLH	BLH	Swamp	Swamp	Marsh	Marsh	Water Bottoms
			acres	*AAHUs*	*acres*	*AAHUs*	*acres*	*AAHUs*	*acres*	*AAHUs*	*acres*
1 LPV, La Branch Wetlands Levee	St. Charles	Protected Side	-	-	-	-	73.23	39.53	-	-	-
		Flood Side	-	-	-	-	38.48	29.73	-	-	
1 Supplemental LPV, La Branch Wetlands Levee	St. Charles	Protected Side	-	-	-	-	-	-	-	-	-
		Flood Side	-	-	-	-	-	-	-	-	
2 LPV, West Return Floodwall	St. Charles, Jefferson	Protected Side	-	-	-	-	-	-	17.00	9.00	-
		Flood Side	-	-	-	-	-	-	17.00	9.00	
3 LPV, Jefferson Lakefront Levee	Jefferson	Protected Side	-	-	-	-	-	-	-	-	26.40
		Flood Side	-	-	-	-	-	-	-	-	
4 LPV, Orleans Lakefront Levee	Orleans	Protected Side	-	-	-	-	-	-	-	-	-
		Flood Side	-	-	-	-	-	-	-	-	
5 LPV, Lakefront Pump Stations	Jefferson, Orleans	Protected Side	-	-	-	-	-	-	-	-	3.29
		Flood Side	-	-	-	-	-	-	-	-	
6 LPV, Citrus Lands Levee	Orleans	Protected Side	-	-	-	-	-	-	-	-	6.90
		Flood Side	-	-	-	-	-	-	4.00	-	
7 LPV, Lakefront Levee	Orleans	Protected Side	-	-	151.70	79.30	-	-	100.40	36.80	106.00
		Flood Side	-	-	30.00	11.90	-	-	70.00	37.20	
8 LPV, Bayou Dupre Control Structure	St. Bernard	Protected Side	-	-	-	-	-	-	-	-	0.30
		Flood Side	-	-	-	-	-	-	-	-	
10 LPV, Chalmette Loop	St. Bernard	Protected Side	-	-	38.32	16.44	-	-	106.55	57.31	95.00
		Flood Side	-	-	35.31	15.22	-	-	323.04	209.94	
11 Tier 2 Borgne IHNC	Orleans, St. Bernard	Protected Side	-	-	-	-	-	-	-	-	-
		Flood Side	-	-	15.00	2.59	-	-	122.00	24.33	
12 GIWW, Harvey, Algiers	Jefferson, Orleans, Plaquemines	Protected Side	-	-	251.70	177.3	-	-	-	-	-
		Flood Side	-	-	2.30	1.90	74.90	38.50	-	-	
14 WBV, Westwego to Harvey Levee	Jefferson	Protected Side	-	-	45.00	30.00	-	-	-	-	-
		Flood Side	-	-	45.50	18.58	29.75	17.02	-	-	
15 WBV, Lake Cataouatche Levee	Jefferson	Protected Side	-	-	23.50	6.13	-	-	-	-	-
		Flood Side	-	-	3.60	1.35	-	-	-	-	
16 WBV, Western Tie-in	Jefferson, St. Charles	Protected Side	-	-	-	-	-	-	-	-	-
		Flood Side	-	-	-	-	-	-	137.80	66.30	
17 Company Canal Floodwall	Jefferson	Protected Side	-	-	5.50	2.69	-	-	-	-	-
		Flood Side	-	-	-	-	19.00	17.09	-	-	

IER	Parish		Non-wet	Non-wet BLH	BLH	BLH	Swamp	Swamp	Marsh	Marsh	Water Bottoms
			acres	*AAHUs*	*acres*	*AAHUs*	*acres*	*AAHUs*	*acres*	*AAHUs*	*acres*
18 GFBM	Jefferson, Orleans, Plaquemines, St. Bernard, St. Charles	Protected Side	379.30	152.32	-	-	-	-	-	-	-
		Flood Side	-	-	-	-	-	-	-	-	
19 CFBM	Hancock County, MS; Iberville, Jefferson, Orleans, Plaquemines, St. Bernard	Protected Side	-	-	-	-	-	-	-	-	-
		Flood Side	-	-	-	-	-	-	-	-	
22 GFBM	Jefferson, Plaquemines	Protected Side	244.69	118.54	-	-	-	-	-	-	-
		Flood Side	-	-	-	-	-	-	-	-	
23 CFBM	Hancock County, MS; Plaquemines, St. Bernard, St. Charles	Protected Side	-	-	-	-	-	-	-	-	-
		Flood Side	-	-	-	-	-	-	-	-	
25 GFBM	Jefferson, Orleans, Plaquemines	Protected Side	933.00	284.00	-	-	-	-	-	-	-
		Flood Side	-	-	-	-	-	-	-	-	
26 CFBM	Jefferson, Plaquemines, St. John the Baptist; Hancock County, MS	Protected Side	-	-	-	-	-	-	-	-	-
		Flood Side	-	-	-	-	-	-	-	-	
28 GFBM	Jefferson, Plaquemines, St. Bernard	Protected Side	19.94	8.45	-	-	-	-	-	-	-
		Flood Side	-	-	-	-	-	-	-	-	
29 CFBM	Orleans, St. Tammany, St. John the Baptist	Protected Side	107.30	48.60	-	-	-	-	-	-	-
		Flood Side	-	-	-	-	-	-	-	-	
30 CFBM	St. Bernard and St. James; Hancock, MS	Protected Side	225.00	189.40	-	-	-	-	-	-	-
		Flood Side	-	-	-	-	-	-	-	-	
32 CFBM	Ascension, Orleans, Plaquemines, St. Charles	Protected Side	202.1	97.43	-	-	-	-	-	-	-
		Flood Side	-	-	-	-	-	-	-	-	
Totals		Protected Side	2111.33	898.74	515.72	311.89	73.23	39.53	223.95	103.11	00.00
		Flood Side	-	-	131.71	51.54	162.13	102.34	673.84	346.77	230.99
		Both	2111.33	898.74	647.43	363.43	235.36	141.87	897.79	449.88	230.99

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

8. COMPLIANCE WITH ENVIRONMENTAL LAWS AND REGULATIONS

Use of the proposed Bocage, Citrus Lands, Conoco Phillips, Idlewild Stage 1, Nairn, Plaquemines Dirt & Clay, and 3C Riverside Phase 3 contractor-furnished borrow areas could not commence until the proposed action achieves environmental compliance with all applicable laws and regulations, as described below.

Environmental compliance for the proposed action will be achieved upon coordination of this IER with appropriate agencies, organizations, and individuals for their review and comments; USFWS and National Marine Fisheries Service confirmation that the proposed action would not adversely affect any T&E species or completion of Endangered Species Act Section 7 consultation (table 3); Louisiana Department of Natural Resources concurrence with the determination that the proposed action is consistent, to the maximum extent practicable, with the Louisiana and Mississippi Coastal Use Programs (table 7); coordination with the SHPO (table 4); receipt and acceptance or resolution of all Fish and Wildlife Coordination Act recommendations; and receipt and acceptance or resolution of all LADEQ comments on the air quality impact analysis documented in the IER. The USFWS has determined that no T&E species or their critical habitat would be adversely affected by the proposed action. The SHPO has determined that cultural resources would not be adversely impacted by the proposed action.

9. CONCLUSIONS

9.1 INTERIM DECISION

The proposed action consists of approving the Bocage, Citrus Lands, Conoco Phillips, Idlewild Stage 1, Nairn, Plaquemines Dirt & Clay, and 3C Riverside Phase 3 sites for use as potential sources of contractor-furnished borrow material for use by construction contractors in the construction of the HSDRRS. This office has assessed the environmental impacts of the proposed action on jurisdictional wetlands, non-jurisdictional BLH, non-wetland/upland resources, wildlife, T&E species, cultural resources, recreational resources, noise quality, air quality, water quality, aesthetic resources, farmland, and socioeconomic resources. The proposed action would have no significant effect on jurisdictional wetlands, cultural resources, or T&E species and their critical habitat. Any found RECs would be avoided. The interim decision is to approve the Bocage, Citrus Lands, Conoco Phillips, Idlewild Stage 1, Nairn, Plaquemines Dirt & Clay, and 3C Riverside Phase 3 sites as potential sources of contractor-furnished borrow material for use by construction contractors in the construction of the HSDRRS.

9.2 PREPARED BY

IER #32 was prepared by the following individuals. The address of the preparers is: U.S. Army Corps of Engineers, New Orleans District; Planning, Programs, and Project Management Division, CEMVN-PM; P.O. Box 60297; New Orleans, Louisiana 70160-0297.

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Jennifer Darville	Editor	Document review
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Michael Swanda	Archaeologist	Cultural Resources
Kelly McCaffrey	Landscape Architect	Aesthetic (Visual) Resources, Recreational Resources
Allan Hebert	Regional Economist	Socioeconomic Resources
Rita Trotter	Assistant District Counsel	Document review

Ph.D.: Doctor of Philosophy

9.3 LITERATURE CITED

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APPENDIX A: LIST OF ACRONYMS AND DEFINITIONS OF COMMON TERMS

AAHU	Average Annualized Habitat Unit
APE	Area of potential impact
ASTM	American Society of Testing and Materials
BLH	Bottomland Hardwood (Forest)
BMP	Best Management Practice
CAR	Coordination Act Report
CED	Comprehensive Environmental Document
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
Clay	CH: Fat clay
Classifications	CL: lean clay ML: Silt
dBA	Decibel
DNL	Day-night average sound level
EA	Environmental Assessment
EIS	Environmental Impact Statement
EJ	Environmental Justice
USEPA	U.S. Environmental Protection Agency
ER	Engineering Regulation
ESA	Environmental Site Assessment
ESRI	Environmental Systems Research Institute
FONSI	Finding of No Significant Impact
GIWW	Gulf Intracoastal Waterway
HSDRRS	Hurricane and Storm Damage Reduction System (formerly known as the Hurricane Protection System)
HPS	Hurricane Protection System (see HSDRRS)
HTRW	Hazardous, Toxic, and Radioactive Waste
HU	Habitat Unit
IER	Individual Environmental Report
IERS	Individual Environmental Report Supplemental
IPET	Interagency Performance Evaluation Team
LCA	Louisiana Coastal Area
LACRP	Louisiana Coastal Resource Program
LADEQ	Louisiana Department of Environmental Quality
LADNR	Louisiana Department of Natural Resources
LPV	Lake Pontchartrain and Vicinity Project
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NRCS	National Resources Conservation Service
NRHP	National Register of Historic Places
NO_x	Nitrogen oxides
NOV	New Orleans to Venice Project
O_3	Ozone
Pb	Lead
PDT	Project Delivery Team
PI	Plasticity index
PM	Particulate matter

PPM	Parts per million
P.L.	Public Law
RCRA	Resource Conservation and Recovery Act
REC	Recognized Environmental Condition
ROD	Record of Decision
ROE	Right of Entry
Section 404 (of the Clean Water Act)	The Section 404 program for the evaluation of permits for the discharge of dredged or fill material was originally enacted as part of the Federal Water Pollution Amendments of 1972. The Secretary of Army acting through the Chief of Engineers may issue permits, after notice and opportunity for public hearings for the discharge of dredged or fill material into the navigable waters at specified disposal sites.
SHPO	State Historic Preservation Officer
SIR	Supplemental Information Report
SPH	Standard Project Hurricane
SO_x	Sulfur oxides
T&E	Threatened or Endangered Species
USACE	U.S. Army Corps of Engineers CEMVN: Mississippi Valley Division, New Orleans District
USDA	U.S. Department of Agriculture NRCS: Natural Resources Conservation Service
USFWS	U.S. Fish and Wildlife Service
WBV	West Bank and Vicinity Project
WRDA	Water Resources Development Act

APPENDIX B: PUBLIC COMMENT AND RESPONSES SUMMARY

Public comments received during the public review and comment period will be released with the Final IER.

APPENDIX C: MEMBERS OF INTERAGENCY ENVIRONMENTAL TEAM

Kyle Balkum	Louisiana Dept. of Wildlife and Fisheries
Catherine Breaux	U.S. Fish and Wildlife Service
Mike Carloss	Louisiana Dept. of Wildlife and Fisheries
David Castellanos	U.S. Fish and Wildlife Service
Frank Cole	Louisiana Department of Natural Resources
Greg Ducote	Louisiana Department of Natural Resources
John Ettinger	U.S. Environmental Protection Agency
David Felder	U.S. Fish and Wildlife Service
Michelle Fischer	U.S. Geologic Survey
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Mandy Green	Louisiana Department of Natural Resources
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Angela Trahan	U.S. Fish and Wildlife Service
Nancy Walters	U.S. Fish and Wildlife Service
David Walther	U.S. Fish and Wildlife Service
Patrick Williams	NOAA National Marine Fisheries Service

APPENDIX D: INTERAGENCY CORRESPONDENCE

Agency correspondence received during the public review and comment period will be released with the Final IER.

United States Department of the Interior

FISH AND WILDLIFE SERVICE
646 Cajundome Blvd.
Suite 400
Lafayette, Louisiana 70506
August 7, 2006

Colonel Richard P. Wagenaar
District Commander
U.S. Army Corps of Engineers
Post Office Box 60267
New Orleans, Louisiana 70160-0267

Dear Colonel Wagenaar:

As you know, the U.S. Fish and Wildlife Service (Service) is assisting the U.S. Army Corps of Engineers (Corps) in assessing impacts of, and mitigation requirements for, borrow sites which are needed to complete authorized improvements, and to construct Federal and non-Federal hurricane/flood protection levees in southern Louisiana. Those improvements to hurricane and flood control projects are authorized by the Emergency Supplemental Appropriations to Address Hurricanes in the Gulf of Mexico (Public Laws 109-148, PL 84-99 and PL 109 234 (4th supplemental)). This letter is provided in accordance with the Endangered Species Act of 1973 (87 Stat. 884, as amended; 16 U.S.C. 1531 et seq.), Fish and Wildlife Coordination Act (FWCA, 48 Stat. 401, as amended; 16 U.S.C. 661 et seq.), and the Migratory Bird Treaty Act (40 Stat. 755, as amended; 16 U.S.C. 703 et seq.), but it does not constitute the final report of the Secretary of the Interior as required by Section 2(b) of the Fish and Wildlife Coordination Act.

Through the efforts of Task Force Guardian, the Corps has restored Hurricane Katrina-damaged hurricane/flood protection projects to their authorized or previously permitted/constructed protection levels. Identification of borrow areas needed to complete those repairs utilized a protocol that prioritized selection of those sites in the following order: existing commercial pits, upland sources, previously disturbed/manipulated wetlands within a levee system, and low-quality wetlands outside a levee system. The Service supports the use of such protocols to avoid and minimize impacts to wetlands and bottomland hardwoods within project areas. Avoidance and minimization of those impacts helps to provide consistency with restoration strategies and compliments the authorized hurricane protection efforts. Such consistency is also required by Section 303(d)(1) of the Coastal Wetlands Planning, Protection and Restoration Act (CWPPRA).

Accordingly, the Service recommends that prior to utilizing borrow sites every effort should be made to reduce impacts by using sheetpile and/or floodwalls to increase levee heights wherever feasible. In addition, the Service recommends that the following protocol be adopted and utilized to identify borrow sources in descending order of priority:

1. Permitted commercial sources, authorized borrow sources for which environmental clearance and mitigation have been completed, or non-functional levees after newly constructed adjacent levees are providing equal protection.

2. Areas under forced drainage that are protected from flooding by levees, and that are:

   a) non-forested (e.g., pastures, fallow fields, abandoned orchards, former urban areas) and non-wetlands;

   b) wetland forests dominated by exotic tree species (i.e., Chinese tallow-trees) or non-forested wetlands(e.g., wet pastures), excluding marshes;

   c) disturbed wetlands (e.g., hydrologically altered, artificially impounded).

3. Sites that are outside a forced drainage system and levees, and that are:

   a) non-forested (e.g., pastures fallow fields, abandoned orchards, former urban areas) and non-wetlands;

   b) wetland forests dominated by exotic tree species (i.e., Chinese tallow-trees) or non-forested wetlands(e.g., wet pastures), excluding marshes;

   c) disturbed wetlands (e.g., hydrologically altered, artificially impounded).

Notwithstanding this protocol, the location, size and configuration of borrow sites within the landscape is also critically important. Coastal ridges, natural levee flanks and other geographic features that provide forested/wetland habitats and/or potential barriers to hurricane surges should not be utilized as borrow sources, especially where such uses would diminish the natural functions and values of those landscape features.

To assist in expediting the identification of borrow sites, the Service recommends that immediately after the initial identification of a new borrow site the Corps should initiate informal consultation with the Service regarding potential impacts to federally listed threatened or endangered species. To aid you in complying with those proactive consultation responsibilities, the Service has enclosed a list of threatened and endangered species and their critical habitats within the coastal parishes of the New Orleans District.

The Service offers the following additional recommendations for reducing borrow site impacts on fish and wildlife resources and, where feasible, enhancing those resources. However, these additional recommendations should not be implemented if they would result in the expansion of existing borrow pits or construction of new borrow pits in wetlands or bottomland hardwoods.

1. A minimum of 30 percent of the borrow pits' edge should slope no greater than 5 horizontal (H):1 vertical (V), starting from the water line down to a depth of approximately 5 feet.

2. Most of the woody vegetation removed during clearing and grubbing should be placed into the deepest parts of the borrow pits and the remaining debris should be placed in the water along the borrow pit shorelines, excluding those areas where the 5H:1V slope, per recommendation 1, have been constructed.

3. Following construction, perimeter levees (if constructed) around each borrow pit should be gapped at 25-foot intervals with an 8-foot-wide breach, the bottom elevation of which should be level with the adjacent natural ground elevation.

When avoidance and minimization of bottomland hardwood and wetland impacts is not practicable, all unavoidable net losses of those habitats should be fully offset via compensatory mitigation. Such compensatory mitigation should sited within the watershed and/or hydrologic unit where the impact occurred, and should be completed concurrently with borrow operations, or as soon thereafter as possible.

The combined need for borrow necessary to complete authorized improvements to and construction of Federal and non-Federal hurricane/flood protection levees, and the potential construction of levees capable of withstanding a category 5 hurricane, will require substantial amounts of borrow. It is highly likely such amounts would exceed local availability. In the case of ongoing hurricane/flood protection projects (e.g., Morganza to the Gulf) the search for levee-building material has been conducted primarily on project-by-project basis. In the context of such project-by-project searches for borrow material, the least-expensive and easiest sources of borrow material are usually located within wetlands and/or bottomland hardwoods, adjacent to the proposed levee. Such on-site sources, however, often involve adverse impacts to wetlands, thus exacerbating the overall wetland loss problem in all coastal basins, especially those in the deltaic plain of southeast Louisiana. In short, while such on-site sources are relatively inexpensive, they will frequently be inconsistent with coastal restoration efforts and, to the extent that wetlands will be adversely impacted, use of those sites will be counterproductive with respect to minimizing wetland impacts and attaining the goal of increasing non-structural hurricane protection within a sustainable ecosystem.

Large-scale, off-site borrow sources could have the potential to reduce environmental impacts from levees and expedite project-by-project environmental review. Such potential "programmatic" borrow sources could include uplands along the Mississippi River, beneficial use of sediments dredged for navigation purposes (including the mining of disposal sites), the Mississippi River, and offshore deposits (e.g., Ship Shoal). As part of the planning process, we recommend that the Corps begin investigating the practicability of various large-scale, off-site borrow sources and actively involve all resource agencies with the Protection and Restoration Office's Borrow Team efforts.

Programmatic planning would be essential to identify borrow sites of acceptable quantity and quality, while avoiding and/or minimizing adverse environmental impacts. We therefore recommend that a plan be developed that integrates borrow resources, uses, and needs for various programs and activities. Guiding principles should be developed to identify borrow resources, borrow-site designs, and prioritize uses to avoid competing for resources, maximize benefits with those resources, and avoid adverse environmental impacts.

We appreciate the opportunity to provide this planning-aid letter and would be pleased to assist your agency in further identification of potential borrow sources. Should you or your staff have any questions regarding this letter, please contact David Walther (337/291-3122) of this office.

Sincerely,

Russell C. Watson
Supervisor
Louisiana Field Office

Enclosure

cc: National Marine Fisheries Service, Baton Rouge, LA
EPA, Dallas, TX
LA Dept. of Wildlife and Fisheries, Baton Rouge, LA
LA Dept. of Natural Resources, CMD, Baton Rouge, LA
LA Dept. of Natural Resources, CRD, Baton Rouge, LA

Threatened and Endangered Species in Coastal Louisiana – FWS Responsibility

MAMMALS		GENERAL DISTRIBUTION IN LOUISIANA
Bear, Louisiana* (*Ursus americanus luteolus*)	T	Entire state
Manatee, West Indian (*Trichechus manatus*)	E	Lake Pontchartrain & tributaries on North shore; rare along Gulf coast
BIRDS		
Eagle, bald (*Haliaeetus leucocephalus*)	T	Entire state
Pelican, brown (*Pelecanus occidentalis*)	E	Coast
Plover, piping** (*Charadrius melodus*)	T	Coast
Woodpecker, red-cockaded (*Campephilus principalis*)	E	Entire state except Delta
REPTILES		
Tortoise, gopher (*Gopherus polyphemus*)	T	Washington, St. Tammany, and Tangipahoa Parishes
Turtle, ringed map (=sawback) (*Graptemys oculifera*)	T	Pearl and Bogue Chitto Rivers
Turtle, loggerhead sea (*Caretta caretta*)	T	Potential Nesting on Chandeleuer Is.
FISH		
Sturgeon, Gulf** (*Acipenser oxyrhynchus desotoi*)	T	Pearl River & Lake Pontchartrain tributaries
Sturgeon, pallid (*Scaphirhynchus albus*)	E	Mississippi River & tributaries
INVERTEBRATES		
Mussel, inflated heelsplitter (*Potamilus inflatus*)	T	Amite River
PLANTS		
Louisiana quillwort (*Isoetes louisianensis*)	E	Washington and St. Tammany Parishes

*Indicates proposed critical habitat
**Indicates designated critical habitat

Enclosure

United States Department of the Interior

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

November 23, 2009

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

Dear Colonel Lee:

Please reference the Individual Environmental Report (IER) 32, entitled "Contractor Furnished Borrow Material #6, Ascension, Plaquemines, and St. Charles Parishes, Louisiana." That IER addresses impacts resulting from the excavation of contractor-supplied borrow sites which will be used to increase hurricane protection within the Greater New Orleans area located in southeast Louisiana. Work associated with that IER is being conducted in response to Public Law 109-234, Emergency Supplemental Appropriations Act for Defense, the Global War on Terror, and Hurricane Recovery, 2006 (Supplemental 4). That law authorized the Corps of Engineers (Corps) to upgrade the Westbank and Vicinity of New Orleans and Lake Pontchartrain and Vicinity hurricane protection projects in the Greater New Orleans area to provide protection against a 100-year hurricane event. This draft report contains an analysis of the impacts on fish and wildlife resources that would result from excavation of those borrow sites and provides recommendations to minimize and/or mitigate project impacts on those resources.

The proposed project was authorized by Supplemental 4 which directed the Corps to proceed with engineering, design, and modification (and construction where necessary) of the Lake Pontchartrain and Vicinity and the West Bank and Vicinity Hurricane Protection Projects so those projects would provide 100-year hurricane protection. Procedurally, project construction has been authorized in the absence of the report of the Secretary of the Interior that is required by Section 2(b) of the Fish and Wildlife Coordination Act (FWCA) (48 Stat. 401, as amended; 16 U.S.C. 661 et seq.). In this case, the authorization process has prevented our agencies from following the normal procedures for fully complying with the FWCA. The FWCA requires that our Section 2(b) report be made an integral part of any report supporting further project authorization or administrative approval. Therefore, to fulfill the coordination and reporting requirements of the FWCA, the U.S. Fish and Wildlife Service (Service) will be providing post-authorization 2(b) reports for individual IERs.

This draft report incorporates and supplements our FWCA Reports that addressed impacts and mitigation features for the Westbank and Vicinity of New Orleans (dated November 10, 1986, August 22, 1994, November 15, 1996, and June 20, 2005) and the Lake Pontchartrain and Vicinity Hurricane (dated July 25, 1984, and January 17, 1992) Protection projects. It also supplements our August 7,

2006, Planning-aid Letter to the Corps providing recommendations for minimizing impacts to fish and wildlife resources from borrow site selection and use. This report, however, does not constitute the report of the Secretary of the Interior as required by Section 2(b) of the FWCA. This report has been provided to the Louisiana Department of Wildlife and Fisheries and the National Marine Fisheries Service; their comments will be incorporated into our final report.

DESCRIPTION OF THE STUDY AREA

The study area is primarily located within the Mississippi River Deltaic Plain of the Lower Mississippi River Ecosystem. The higher elevations in Louisiana occur on the natural levees of the Mississippi River and its distributaries. Developed lands are primarily associated with natural levees, but extensive wetlands have been leveed and drained to accommodate residential, commercial, and agricultural development. Federal, State, and local levees have been installed for flood protection purposes, often with negative effects on adjacent wetlands. Navigation channels such as the Gulf Intracoastal Waterway and the Mississippi River Gulf Outlet are also prominent landscape features, as are extensive oil and gas industry access channels and pipeline canals. Extensive wetlands and associated shallow open waters dominate the landscape outside the flood control levees. Major water bodies include Lake Pontchartrain located north of the main study area, the Mississippi River which bisects the main study area, and Lake Borgne which is located on the eastern edge of the main study area.

FISH AND WILDLIFE HABITATS AND RESOURCES

Habitat types at and in the vicinity of the borrow sites include forested wetlands (i.e., bottomland hardwoods [BLH] and/or swamps), non-wet BLH, scrub-shrub, marsh, open water, active agriculture, and developed areas. Due to urban development and a forced-drainage system within the levee system, the hydrology of much of the forested habitat has been altered. The forced-drainage system has been in operation for many years, and subsidence is evident throughout the area.

Wetlands (forested, marsh, and scrub-shrub) within the study area provide plant detritus to adjacent coastal waters and thereby contribute to the production of commercially and recreationally important fishes and shellfishes. Wetlands in the study area also provide valuable water quality functions such as reduction of excessive dissolved nutrient levels, filtering of waterborne contaminants, and removal of suspended sediment. In addition, coastal wetlands buffer storm surges reducing their damaging effect to man-made infrastructure within the coastal area.

Factors that will strongly influence future fish and wildlife resource conditions include freshwater input and loss of coastal wetlands. Depending upon the deterioration rate of marshes, the frequency of occasional short-term saltwater events may increase. Under that scenario, tidal action in the project area may increase gradually as the buffering effect of marshes is lost, and use of that area by estuarine-dependent fishes and shellfish tolerant of saltwater conditions would likely increase. Regardless of which of the above factors ultimately has the greatest influence, freshwater wetlands within and adjacent to the project area will probably experience losses due to development, subsidence, and erosion.

Forested wetlands in the area are divided into two major types; BLH forests and cypress-tupelo swamps. Bottomland hardwood forests are found at higher elevations (Mississippi River and former distributary channel levees) in the project area, while cypress-tupelo swamps are located along the flanks of larger distributary ridges as a transition zone between BLH and lower-elevation marsh, scrub-shrub habitats, or open water.

Non-wet BLH within the project area also provide habitat for wildlife resources. Between 1932 and 1984, the acreage of BLH in Louisiana declined by 45 percent (Rudis and Birdsey 1986). By 1970, Jefferson Parish (located approximately between St. Charles and Plaquemine Parishes) was classified as entirely urban or nonforested in the U.S. Forest Service's forest inventory with most of this loss resulting from development within non-wet areas inside the hurricane protection levees. A large percentage of the original BLH within the Mississippi River floodplain acreage in the Deltaic Plain are located within a levee system, especially those at higher elevations. However, losses of that habitat type are not regulated or mitigated with the exception of impacts resulting from Corps projects as required by Section 906(b) of the Water Resources Development Act of 1986.

Dead-end canals and small bayous are typically shallow and their bottoms may be filled in to varying degrees with semi-fluid organic material. Drainage canals enclosed within the hurricane protection projects or within developed areas are stagnant except when pumps are operating to remove rain water. Runoff from developed areas has likely reduced the habitat value of drainage canals by introducing various urban pollutants, such as oil, grease, and excessive nutrients. Clearing and development has eliminated much of the riparian habitat that would normally provide shade and structure for many aquatic species.

Some of the waterbodies in the study area meet criteria for primary and secondary contact recreation and partially meet criteria for fish and wildlife propagation; while others do not meet the latter criteria. Causes for not fully meeting fish and wildlife propagation criteria include excessive nutrients, organic enrichment, low dissolved oxygen levels, flow and habitat alteration, pathogens and noxious aquatic plants. Sources of those problems include hydromodification, habitat modification, recreational activities, and unspecified upstream inputs. Municipal point sources, urban runoff, storm sewers, and onsite wastewater treatment systems are also known contributors to poor water quality in the area.

Developed habitats in the study area include residential and commercial areas, as well as roads and existing levees. Those habitats do not support significant wildlife use. Most of the development is located on higher elevations of the project area; however, vast acreages of swamp and marsh have been placed under forced drainage systems and developed. A smaller acreage of wetlands has been filled for development. Agricultural lands occur throughout the area; agriculture includes sugarcane farming, cattle production, and haying.

Endangered and Threatened Species

To aid the Corps in complying with their proactive consultation responsibilities under the Endangered Species Act (ESA), the Service provided a list of threatened and endangered species and their critical habitats within the coastal parishes of the New Orleans District. Private contractors have conducted ESA consultation on each borrow site as they were identified and determined that, at this time, no

threatened or endangered species or their critical habitat were located within any proposed borrow site. If a proposed borrow site is changed significantly or relocated, or excavation is not implemented within 1 year, we recommend that the Corps request that the contractor reinitiate coordination with this office to ensure that the proposed project would not adversely affect any Federally listed threatened or endangered species or their habitat.

Future Fish and Wildlife Resources

The combination of subsidence and sea level rise results in higher water levels, stressing most non-fresh marsh plants and forested wetlands leading to plant death and conversion to open water. Other major causes of wetland losses within the study area include altered hydrology, storms, saltwater intrusion (caused by marine processes invading fresher wetlands), shoreline erosion, herbivory, and development activities including the direct and indirect impacts of dredge and fill (Louisiana Coastal Wetlands Conservation and Restoration Task Force and the Wetlands Conservation and Restoration Authority 1998). The continued conversion of wetlands and forested habitats to open water or developed land represents the most serious fish and wildlife-related problem in the study area. Habitat losses could be expected to cause declines in the area's carrying capacity for migratory waterfowl, wading birds, other migratory birds, alligators, furbearers, and game mammals.

ALTERNATIVES UNDER CONSIDERATION

The only alternative to the proposed project was the "no action" alternative which would avoid impacts to fish and wildlife resources, but would prevent or impede the construction of flood protection measures for residents of the greater New Orleans area.

The proposed borrow sites have been located in areas that avoid direct impacts to wetlands and impacts to non-wet BLH have also been avoided to the extent practicable. Use of adjacent borrow, the typical construction method, has been limited because of soil conditions (i.e., insufficient clay content), thus impacts resulting from expansion of borrow sites into wetlands has been avoided in some areas.

PROJECT IMPACTS

Excavation of borrow sites will usually result in the conversion of terrestrial habitat into open-water areas. Because agricultural, pasture, and cleared land habitats have a reduced value to fish and wildlife resources and are not a declining or limited habitat type, impacts associated with conversion of those habitats to open-water were quantified only by acreage as part of the total site. The Bocage, Citrus Lands, Conoco Phillips, Plaquemines Dirt and Clay, and Idlewild Stage One sites are a mixture of agriculture and pasture lands, and contain no BLH habitat (Table 1). The Corps' regulatory program has determined that the excavation of material at the IER 32 borrow sites will not directly impact any jurisdictional wetlands. However, non-wet BLH at the Nairn and 3C Riverside Phase III sites would be impacted; therefore, mitigation would be required. The contractor for the Nairn site has indicated that this site may be backfilled following clay excavation; however, without other mitigative measures, such as an approved reforestation plan and non-development title restrictions, the Service cannot assume that the site will be reforested, and therefore cannot accept refilling as mitigation for impacts. We have provided the acreage and Average Annual Habitat Unit (AAHU) losses based on an analysis

that assumes the permanent loss of BLH habitat functions for all borrow sites (Table 1).

As indicated in the IER, there is a potential for hydrologic modifications caused by borrow material excavation to indirectly impact jurisdictional wetlands located within or adjacent to the Citrus Lands, Conoco Phillips, Plaquemines Dirt and Clay, and 3C Riverside Phase III site boundaries. A reduction or interception of rainfall runoff could result in a decrease in downstream jurisdictional wetlands by conversion into less hydric habitat types. These effects may be difficult to describe and quantify; however, potential impacts due to hydrology modifications caused by borrow material excavation should be discussed here and in future borrow IERs because of the close proximity of wetlands, and other fish and wildlife habitat, to some proposed borrow sites. Therefore, the Service recommends an investigation to determine the extent of potential hydrologic changes due to borrow excavation. The Service would be pleased to participate in the effort.

To further protect jurisdictional wetlands, the Service also recommends the designation of a 100 foot "no excavation" buffer zone between the jurisdictional wetlands and the borrow site to help preserve the water quality of the wetlands.

Table 1: Contractor borrow sites and direct impacts from excavation.

Site	Parish or County	Area of Site Impacted (acres)	BLH Habitat Impacted (acres)	AAHUs Lost
Bocage	Ascension	57	0/Agriculture	0
Citrus Lands	Plaquemines	353	0/Agriculture; cleared	0
Conoco Phillips	Plaquemines	517	0/Agriculture; cleared	0
Idlewild Stage 1	Plaquemines	129	0/Mowed pasture	0
Nairn	Plaquemines	20.5	20.5	11.6
Plaquemines Dirt and Clay	Plaquemines	209	0/Agriculture; cleared	0
3C Riverside Phase III	St. Charles	253	202.1	97.43
Total		1539	222.6	109.0

FISH AND WILDLIFE CONSERVATION MEASURES

To minimize wetland and non-wet BLH impacts, the Service recommends that prior to utilizing borrow sites, every effort should be made to reduce impacts by using sheetpile, floodwalls, geotextile, or some combination thereof, to increase levee heights wherever feasible. In addition, the Service recommends that the previous protocol to identify and prioritize borrow sources provided in our August 7, 2006, Planning-Aid letter should continue to be utilized as a guide in locating future borrow-sites.

MITIGATION MEASURES

The President's Council on Environmental Quality defined the term "mitigation" in the National Environmental Policy Act regulations to include:

(a) avoiding the impact altogether by not taking a certain action or parts of an action; (b) minimizing impacts by limiting the degree or magnitude of the action and its implementation; (c) rectifying the impact by repairing, rehabilitating, or restoring the affected environment; (d) reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action; and (e) compensating for the impact by replacing or providing substitute resources or environments.

The Service supports and adopts this definition of mitigation and considers its specific elements to represent the desirable sequence of steps in the mitigation planning process. Based on current and expected future without-project conditions, the planning goal of the Service is to develop a balanced project, i.e., one that is responsive to demonstrated hurricane protection needs while addressing the co-equal need for fish and wildlife resource conservation.

The Service's Mitigation Policy (Federal Register, Volume 46, No. 15, January 23, 1981) identifies four resource categories that are used to ensure that the level of mitigation recommended by Service biologists will be consistent with the fish and wildlife resource values involved. Considering the high value of forested areas (wet and non-wet) and marsh for fish and wildlife, and the relative scarcity of those habitat types, they are usually designated as Resource Category 2 habitats, the mitigation goal for which is no net loss of in-kind habitat value. Degraded BLH forest (e.g. dominated by exotic species) and any wet pastures that may be impacted, however, are placed in Resource Category 3 due to their reduced value to wildlife, fisheries and lost/degraded wetland functions. The mitigation goal for Resource Category 3 habitats is no net loss of habitat value. The 240.2 acres of BLH habitat impacted by utilization of the borrow sites in this IER is placed in Resource Category 2; therefore, the mitigation should be no net loss of in-kind habitat value.

The Service used the Habitat Assessment Methodology (HAM) to quantify the impacts to forested habitats. The habitat assessment model utilized in this evaluation is modified from those developed in the Service's Habitat Evaluation Procedures (HEP). However, this model is a community-level evaluation instead of the species-based approach used with HEP. For BLH, the model defines an assemblage of variables considered important to the suitability of an area to support a diversity of fish and wildlife species (Louisiana Department of Natural Resources 1994; U.S. Fish and Wildlife Service 1980). A Habitat Suitability Index (HIS) is calculated from all of the model variables to represent the overall value of the wetland habitat quality. The product of an HIS value and the acreage of available habitat for a given target year is known as the Habitat Unit (HU), and is the basic unit for measuring project effects on fish and wildlife habitat. HUs are annualized over the project life to determine the Average Annual Habitat Units (AAHUs) available for each habitat type. The change (increase or decrease) in AAHUs for the future with-project scenario, compared to the future without-project conditions, provides a measure of anticipated impacts. A net gain in AAHUs indicates that the project is beneficial to the fish and wildlife community within that habitat type; a net loss of AAHUs indicates that the project would adversely impact fish and wildlife resources. Further explanation of how impacts/benefits are assessed and an explanation of the assumptions affecting the HSI values for each target year are available for review at Service's Lafayette, Louisiana, field office.

SERVICE POSITION AND RECOMMENDATIONS

Excavation of borrow sites result in the loss of 240.2 acres of BLH forest for a loss of 115.7 AAHUs. The Service does not object to the use of the proposed borrow sites provided the following fish and wildlife recommendations are implemented concurrently with project implementation:

1. The private contractor for each borrow site shall provide the appropriate number of AAHUs as listed in Table 1, for a total of 115.7 AAHUs to compensate for the unavoidable, project-related loss of forested lands included in IER 32. The Service, National Marine Fisheries Service, Louisiana Department of Wildlife and Fisheries, and Louisiana Department of Natural Resources should be consulted regarding the adequacy of any proposed alternative mitigation sites.

2. The protocol to identify and prioritize borrow sources provided in our August 7, 2006, Planning-Aid letter should continue to be utilized as a guide for locating future borrow-sites and expanding existing sites.

3. Because of the potential for hydrologic modifications caused by borrow material excavation at the Citrus Lands, Conoco Phillips, Plaquemines Dirt and Clay, and 3C Riverside sites to impact adjacent jurisdictional wetlands outside of the planned excavation areas, the Service recommends that the Corps conduct an investigation to determine the extent of these potential impacts. The Service also recommends that a buffer zone of at least 100 feet be designated between those borrow sites and any jurisdictional wetlands in which no excavation would be allowed.

4. Any proposed change in borrow site features, locations or plans shall be coordinated in advance with the Service, NMFS, LDWF, and LDNR.

5. If a proposed borrow site is changed significantly or excavation is not implemented within one year, we recommend that the Corps notify the contractor to reinitiate coordination with David Castellanos (337/291-3112) of this office to ensure that the proposed project would not adversely affect any federally listed threatened or endangered species or their habitat.

Sincerely,

for

James F. Boggs
Supervisor
Louisiana Field Office

cc: Ms. Danielle Tommaso, CEMVN-PM-RS, New Orleans, LA
EPA, Dallas, TX
NMFS, Baton Rouge, LA
LA Dept. of Wildlife and Fisheries, Baton Rouge, LA
LA Dept. of Natural Resources (CMD), Baton Rouge, LA
OCPR, Baton Rouge, LA

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APPENDIX E: CEMVN BORROW AREA INDEX MAP