

**DRAFT INDIVIDUAL ENVIRONMENTAL REPORT**

**GOVERNMENT FURNISHED BORROW MATERIAL # 3**

**ORLEANS, JEFFERSON, AND PLAQUEMINES  
PARISHES, LOUISIANA**

**IER # 25**



**US Army Corps  
of Engineers®**

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# 1. INTRODUCTION

The U.S. Army Corps of Engineers (USACE) Mississippi Valley Division, New Orleans District (CEMVN), has prepared this Individual Environmental Report # 25 (IER # 25) to evaluate the potential impacts associated with the possible excavation of four Government Furnished borrow areas. The proposed action 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 CEMVN is proposing to use suitable borrow material for construction of the proposed Hurricane and Storm Damage Risk Reduction System (HSDRRS).

IER # 25 has been prepared in accordance with the National Environmental Policy Act (NEPA) of 1969 and the Council on Environmental Quality’s Regulations (40 CFR §1500-1508), as reflected in the USACE Engineering Regulation, ER 200-2-2. The execution of an IER, in lieu of a traditional Environmental Assessment (EA) or Environmental Impact Statement (EIS), is provided for in ER 200-2-2, Environmental Quality (33 CFR §230) Procedures for Implementing the NEPA and pursuant to the Council on Environmental Quality (CEQ) NEPA Implementation Regulations (40 CFR §1506.11). The Alternative Arrangements can be found at [www.nolaenvironmental.gov](http://www.nolaenvironmental.gov), and are herein incorporated by reference.

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). This process was 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 actions 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 will 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 make a determination 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.

Four potential Government Furnished borrow areas investigated by the CEMVN Borrow Project Delivery Team (PDT) are discussed in this IER. The goal of the PDT is to acquire suitable borrow material needed for HSDRRS improvements. The CEMVN’s engineers currently estimate that over 75,000,000 cubic yards of suitable material are required to improve Federal and non-Federal levee and floodwall projects. Borrow areas investigated in this IER could potentially provide approximately 14 million cubic yards of suitable material for levee and floodwall projects.

Due to the importance of providing safety to the citizens of southeastern Louisiana, and the amount of borrow needed to supply levee projects for the HSDRRS, multiple borrow IERs are being prepared as potential borrow site information becomes available.

## **1.1 PURPOSE AND NEED FOR THE PROPOSED ACTION**

The purpose of the proposed action is to consider and disclose the environmental impacts of four potential borrow sites. 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 resulted from the need to provide a total of over 75,000,000 cubic yards of suitable clay for HSDRRS projects that include the completion and improvement of hurricane protection levees in southeastern Louisiana. Raising levee elevations and the completion of levees requires the excavation of material from borrow areas necessary for project construction to ensure authorized levels of flood protection for local communities.

The term “100-year level of protection,” as it is used throughout this document, refers to a level of protection 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 a number of hurricane protection projects spanning southeastern Louisiana, including the Lake Pontchartrain and Vicinity (LPV) Hurricane Protection Project and the West Bank and Vicinity (WBV) Hurricane Protection Project. Congress and the Administration granted a series of supplemental appropriations acts following Hurricanes Katrina and Rita to repair and upgrade the project systems damaged by the storms. The supplemental appropriations acts gave additional authority to the USACE to construct HSDRRS projects.

The LPV project was authorized under the Flood Control Act of 1965 (Public Law [P.L.] 89-298, Title II, Sec. 204) which 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 VIII, 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 Energy and Water Development Appropriations Acts of 1992 (PL 102-104, Title I, Construction, General), 1993 (PL 102-377, Title I, Construction, General), and 1994 (PL 103-126, Title I, Construction, General).

The Westwego to Harvey Canal Hurricane Protection Project was authorized by the WRDA of 1986 (P.L. 99-662, Section 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, Section 101(a)(17) & P.L. 104-303, 101(b)(11)). The WRDA 1999 combined the three projects into one project under the West Bank and Vicinity Hurricane Protection Project (P.L. 106-53, Section 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) authorized accelerated completion of the project and restoration of project

features to design elevations at 100 percent Federal cost. 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) authorizes construction of a 100-year level of protection; the replacement or reinforcement of floodwalls; and the construction of levee armoring at critical locations. Additional Supplemental Appropriations include the U.S. Troop Readiness, Veterans' Care, Katrina Recovery, and Iraq Accountability Appropriations Act, 2007 H.R. 2206 (pg. 41-44) Title IV, Chapter 3, Flood Control and Coastal Emergencies, (5<sup>th</sup> Supplemental), General Provisions, Sec. 4302.

### **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 Hurricane Protection Project

- On 20 October 2008, the CEMVN 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 was prepared to evaluate the potential impacts associated with the actions taken by commercial contractors as a result of excavating borrow areas for use in construction of the GNOSDRRS.
- On 21 October 2008, the CEMVN 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 25 July 2008, the CEMVN 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 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 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 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 the actions taken by the USACE as a result of excavating borrow



areas for use in construction of the GNOSDRRS.

- On 6 May 2008, the CEMVN 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 the actions taken by commercial contractors as a result of excavating borrow areas for use in construction of the GNOSDRRS.
- On 14 March 2008, the CEMVN 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 was prepared to evaluate 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 document 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 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 the actions taken by the USACE as a result of excavating borrow areas for use in construction of the GNOSDRRS.
- On 14 February 2008, the CEMVN 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 the actions taken by commercial contractors as a result of excavating borrow areas for use in construction of the GNOSDRRS.
- In July 2006, the CEMVN signed a Finding of No Significant Impact (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 30 October 1998, the CEMVN 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 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 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 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 bank in front of the Bonnet Carré Spillway Forebay for LPV construction.
- On 30 August 1990, the CEMVN signed a FONSI on EA # 163 entitled “LPV Hurricane Protection – Alternate Borrow Area for Jefferson Parish Lakefront Levee, Reach III.” 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 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 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 signed a FONSI on EA # 102 entitled “LPV Hurricane Protection – 17th Street Canal Hurricane Protection.” The report addresses the use alternative methods of providing flood protection for the 17<sup>th</sup> Street Outfall Canal in association with LPV activity. Impacts to resources were found to be minimal.
- On 4 August 1989, the CEMVN 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 signed a FONSI on EA # 79 entitled “LPV Hurricane Protection – London Avenue Outfall Canal.” The report investigates the impacts of strengthening hurricane protection at an existing the London Avenue Outfall Canal.
- On 21 July 1988, the CEMVN signed a FONSI on EA # 76 entitled “LPV Hurricane Protection – Orleans Avenue Outfall Canal.” The report investigates the impacts of strengthening hurricane protection at the Orleans Avenue Outfall Canal.
- On 26 February 1986, the CEMVN 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 on 12 June 1987. The report addresses the use 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 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 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 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 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 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 17<sup>th</sup> Street Pumping Station Material for LPHP Levee” was signed by the CEMVN on 5 August 1986. The report investigates the impacts of moving suitable borrow material from a levee at the 17<sup>th</sup> 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 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 that “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 CEMVN on 7 February 1985. 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, 70<sup>th</sup> Congress, 1<sup>st</sup> 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.

#### West Bank and Vicinity Hurricane Protection Project

- On 20 October 2008, the CEMVN 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 was prepared to evaluate the potential impacts associated with the actions taken by commercial contractors as a result of excavating borrow areas for use in construction of the GNOSDRRS.
- On 26 August 2008, the CEMVN 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 protection along the WBV, Westwego to Harvey Levee project.
- On 12 June 2008, the CEMVN 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 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 the actions taken by the USACE as a result of excavating borrow areas for use in construction of the GNOSDRRS.
- On 6 May 2008, the CEMVN 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 the actions taken by commercial contractors as a result of excavating borrow areas for use in construction of the GNOSDRRS.
- On 21 February 2008, the CEMVN 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 the actions taken by the USACE as a result of excavating borrow areas for use in construction of the GNOSDRRS.
- On 14 February 2008, the CEMVN 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 the actions taken by commercial contractors as a result of excavating borrow areas for use in construction of the GNOSDRRS.
- In July 2006, the CEMVN 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 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 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 signed a FONSI on EA # 337 entitled “Algiers Canal Alternative Borrow Site.”
- On 19 June 2003, the CEMVN 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 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 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 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 in September 1998.
- The final EIS for the WBV, Lake Cataouatche, Hurricane Protection Project was completed. A ROD was signed by the CEMVN 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 signed a FONSI on an EA # 198 entitled, “West Bank of the Mississippi River in the Vicinity of New Orleans, LA, 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 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 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 signed a FONSI on EA # 136 entitled “West Bank Additional Borrow Site between Hwy 45 and Estelle PS.”
- On 15 March 1990, CEMVN 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 this IER, the CEMVN is preparing a draft Comprehensive Environmental Document (CED) that will describe the work completed and remaining to be constructed. The purpose of the draft CED will be 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. 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 posted 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](http://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.

## **1.5 PUBLIC CONCERNS**

The public has had the opportunity to give input about proposed HSDRRS work throughout the planning process through a number of outlets (i.e., public meetings, written comments, [www.nolaenvironmental.gov](http://www.nolaenvironmental.gov)). IER # 18, IER # 19, IER # 22, IER # 23, and IER # 26 are IERS that discuss the impacts of borrow excavation related to the HSDRRS. These documents contain public comments regarding borrow issues (appendix B – all documents). These documents are available at [www.nolaenvironmental.gov](http://www.nolaenvironmental.gov), or upon request.

According to the results of focus groups held by Unified New Orleans Plan (UNOP) the public places very high priority on storm protection. The public wants a 100-year or higher level of protection from storm events. Borrow excavation is an integral part of upgrading hurricane protection in the New Orleans Metropolitan Area. Some members of the public feel that the remaining land left in coastal parishes should not be excavated. Some members of the public feel that the borrow areas should be backfilled; the CEMVN has determined that backfilling utilized Government Furnished borrow areas is not feasible. The public is concerned about impacting wetlands; the CEMVN is currently avoiding all jurisdictional wetlands as other reasonable alternatives are being investigated (see section 2.1). The public is concerned about truck haulers causing traffic congestion. The public is concerned about safety issues during and after the borrow area is excavated. Landowners are concerned about the USACE using their privately-owned property as a source of borrow material.

## **1.6 DATA GAPS AND UNCERTAINTIES**

At the time of submission of this report, geotechnical evaluations have not been completed for all of the proposed borrow areas. Final selection and/or footprints of borrow areas could vary based on 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 determined, as it currently is uncertain to which HSDRRS construction sites each proposed borrow area would provide material. Large quantities of material would be delivered to HSDRRS construction sites, as well as to other ongoing flood protection projects in the area. This could have localized short-term impacts to transportation corridors that can not be quantified at this time. The CEMVN is completing a transportation study to determine any impacts associated with the transporting of material to construction sites. This analysis will be discussed in the CED once it is completed.

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

Noise impacts are not fully known at this time, since some of the sites may never be used. The effects of the proposed action on noise levels are discussed in section 3.3.1. Once noise impacts are fully determined the analysis will be discussed in the CED.

Air impacts from the excavation of proposed 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 proposed borrow areas are unknown at this time as the borrow area selection and excavation process is ongoing; the impacts will be discussed in the CED.

Some construction schedules are changing or not known at this time.

## **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 (PL 93-251) requires Federal agencies to give consideration to non-structural measures to reduce or prevent flood damage. Since this IER deals with Government Furnished borrow material there are no nonstructural alternatives. Non-structural alternatives will be evaluated in the IERs dealing directly with the construction of the HSDRRS.

The CEMVN is pursuing three avenues of obtaining the estimated amount of borrow material needed for HSDRRS construction. The three avenues that are 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 pre-approved 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 (Pre-Approved Contractor Furnished and Supply Contract) allow a private individual or corporation 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 and IER # 22 discussed Government Furnished borrow alternatives. Pre-Approved Contractor Furnished borrow areas were discussed in IER # 19, IER # 23, and IER # 26. This IER discusses potential Government Furnished borrow areas. An additional IER(s) will discuss potential Supply Contract alternatives. Additional borrow IERs will be prepared as future potential Government Furnished and Pre-Approved Contractor Furnished borrow areas are identified.

The U.S. Fish and Wildlife Service (USFWS) supports the CEMVN's prioritization selection of 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 (appendix D). USFWS recommended 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 recommended 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.

The HSDRRS includes the completion and raising of storm protection levees in southeastern Louisiana. Raising levee elevations and completion of levees requires the excavation of material from borrow areas for use in project construction. As part of construction the following methods shall be followed:

- Numerous utilities, including electrical services, gas lines, telephone poles and lines, storm drainpipes, subdrain lines, and storm drain catch basins, would be avoided or relocated.
- The access routes and land would be cleared using bulldozers and excavators. Woody debris would be stockpiled on-site and placed in the area once excavation

is completed or in some cases the material may be removed to an approved landfill.

- Silt fencing would be installed around the perimeter of the borrow area to control runoff, as per Best Management Practices (BMPs).
- Construction contractors would be responsible for obtaining National Pollutant Discharge Elimination System (NPDES) permits, if applicable, and implementing BMPs, including standard USACE storm water prevention requirements at all borrow area locations, as well as complying with all other Federal, state, and local laws, regulations, and ordinances.
- In most cases, excavation of the borrow areas would commence from the back of the areas to the access road to provide adequate space for staging haul trucks and stockpiled material.
- To make optimum use of available material, excavation should begin at one end of the borrow area and be made continuous across the width of the areas to the allowed borrow depths to provide surface drainage to the low side of the borrow area as excavation proceeds. During this process the overburden (topsoil that lays on top of suitable borrow material) would be stockpiled.
- The excavation activities shall be long enough to provide the required quantity of material, and shall be accomplished in such manner that all available material within the required width to full depth will be utilized when possible.
- Upon completion of excavation, site restoration will include placing the stockpiled overburden back into the area and grading the slopes to the specified cross-section figure shown in the borrow area management plan.
- If additional overburden is available at the areas, it would be used to create gradual side slopes, islands, and smooth out corners within the borrow area to enhance wildlife and fishery habitat. The Environmental Design Considerations for Main Stem Levee Borrow Areas Along the Lower Mississippi River Report 4: Part V, incorporated by reference, and the CEMVN operating procedures will be basic guidelines referred to when designing the borrow areas. However, the full depth of the borrow area should be excavated according to the borrow area management plan for the approved borrow area to minimize impacts to the human and natural environment.

## **2.2 DESCRIPTION OF THE ALTERNATIVES**

Four alternatives were considered. These included the no action, the proposed action, use of Pre-Approved Contractor Furnished Borrow Material, and use of borrow material from a Supply Contract.

No Action. Under the no action alternative the proposed borrow areas would not be used by the CEMVN. The borrow areas listed in the proposed action would not be excavated. HSDRRS levee and floodwall projects would be built to authorized levels using Government and Pre-Approved Contractor Furnished borrow sites described in IER # 18, IER # 19, IER # 22, IER # 23, IER # 26 or other sources as yet to be identified.

Proposed Action. The proposed action consists of excavating the four proposed borrow areas discussed in Section 2.3. For Government Furnished borrow material, the

Government acquires the rights to a property, from which suitable borrow material is used for construction of the HSDRRS.

Pre-Approved Contractor Furnished Borrow Material. Pre-Approved Contractor Furnished borrow alternatives area options that are discussed in IERs # 19, IER # 23, and IER # 26, as well as future borrow IERs. A CEMVN levee construction contractor would work in partnership with a landowner to provide suitable pre-approved borrow material from the landowner's property. Sources of Pre-Approved Contractor Furnished borrow material may come from anywhere in the United States.

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 where suitable borrow material could come from. The individual(s) or corporation(s) would deliver the borrow material to a designated location for use by a CEMVN construction contractor. Supply Contract borrow alternatives may be discussed in future IERs.

Without knowing the exact location(s) of this area(s) it is impossible to know the effects excavation of this borrow material would have on significant resources discussed in this document. IER(s) relating to Supply Contract-furnished material will be released independent of IER # 25, and as such no further discussion of Supply Contract Borrow Material will be done in this document.

### 2.3 PROPOSED ACTION

The proposed action (preferred alternative) consists of potentially excavating all suitable material from the proposed four borrow areas (figure 1). In order to meet the borrow needs of the HSDRRS, personnel from the CEMVN Project Management, Engineering, Real Estate, Office of Counsel, Relocations, and Environmental branches established a Borrow Project Delivery Team. This team worked closely with other CEMVN elements (Hurricane Protection Office, Protection and Restoration Office, and Regulatory Functions Branch) to accomplish its mission. The team's goal is to locate and procure high quality clay borrow sources suitable for levee and floodwall construction in such a way as to be least damaging to both the natural and human environments within the proposed borrow areas.

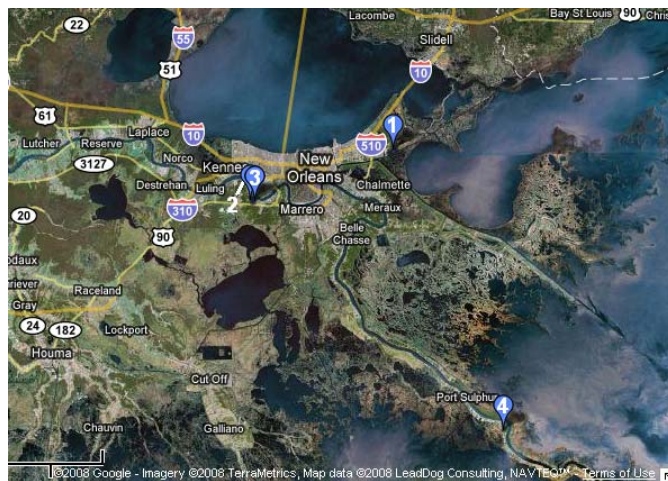


Figure 1: Proposed Borrow Areas

1: Stumpf Phase 1 & 2 / 2: Westbank D / 3: Westbank E Phase 1 & 2 / 4: Tac Carrere

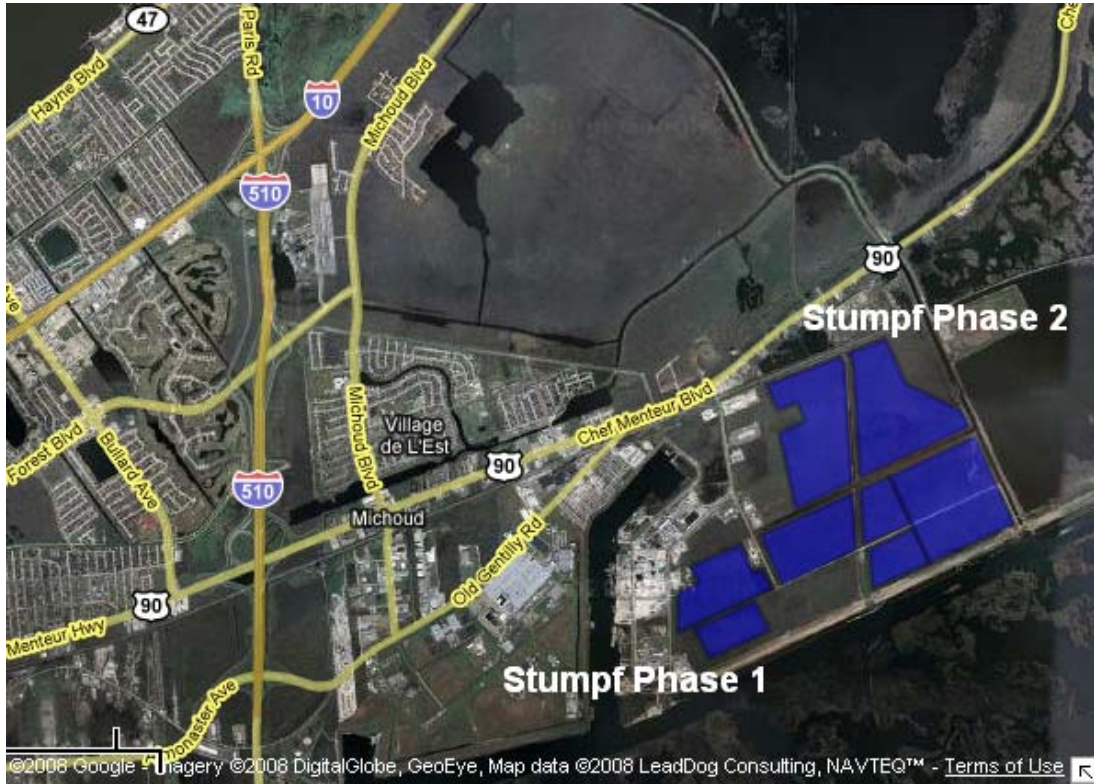


Figure 2: Stumpf Phase 1 and Phase 2



Figure 3: Westbank D, Westbank E Phase 1 and Phase 2





Figure 4: Tac Carrere

The team investigated and completed environmental coordination on the proposed borrow areas and is currently investigating others. When an area was proposed for CEMVN borrow procurement, Real Estate personnel acquired right-of-entry to investigate the property. A map of the site was forwarded to the Regulatory Functions Branch for a jurisdictional wetland determination. The proposed borrow area was revised as necessary to avoid jurisdictional wetlands. A CEMVN Archaeologist completed a preliminary, in-office survey of mapped cultural resource sites to detect any obvious cultural resources within the proposed borrow area. A CEMVN Biologist completed an in-office survey of aerial photos of the area to determine if the potential area raised Coastal Zone Management (CZM) issues based on location or if there were other obvious environmental issues that could be detected from aerial photography. The Biologist also coordinated with the USFWS to ensure the proposed area would not adversely affect threatened or endangered (T&E) species or their critical habitat.

Once the team completed a preliminary site approval, a site visit was conducted. The field team typically consisted of a Project Manager, Biologist, Geologist, Archeologist, and Hazardous, Toxic, and Radioactive Waste (HTRW) Investigator. The area was visually inspected for the presence of obvious HTRW issues and cultural resources. If no HTRW concerns or cultural resources were observed, the area was cleared to proceed with geotechnical borings to identify soil characteristics.

The proposed action consists of removing all suitable material from the following four borrow areas. Excavation would have no effect on cultural resources, threatened and endangered species or their critical habitat. All HTRW issues would be avoided.

- The Stumpf site is comprised of two areas (Phase 1 and 2) that are located on Industrial Parkway in Orleans Parish (figure 2). The Phase 1 proposed borrow area is 300 acres with two 3-acre access corridors. The proposed Phase 2 borrow area is 515 acres with a 2-acre and .9-acre access corridor (figure 2).
- The Westbank D area is located north of Highway 90 in Jefferson Parish (figure 3). The proposed borrow area is 56 acres.

- The Westbank E site is comprised of two areas (Phase 1 and 2) that are located on Live Oak Lane in Jefferson Parish (figure 3). The Phase 1 proposed borrow area is 103 acres with two 3-acre access corridors. The proposed Phase 2 borrow area is 69 acres with a 1.1-acre and .85-acre access corridor.
- The Tac Carrere area is located on Highway 23 in Plaquemines Parish, Louisiana (figure 4). The proposed borrow area is 27 acres with two 1.3-acre access corridors.

Some of the proposed borrow areas have a designated stockpile area delineated. If additional material is needed for levee construction the stockpile areas may be utilized as a borrow source rather than impacting new areas. If the proposed borrow areas or portions of them are not able to be used as a borrow source they may be used as stockpile sites.

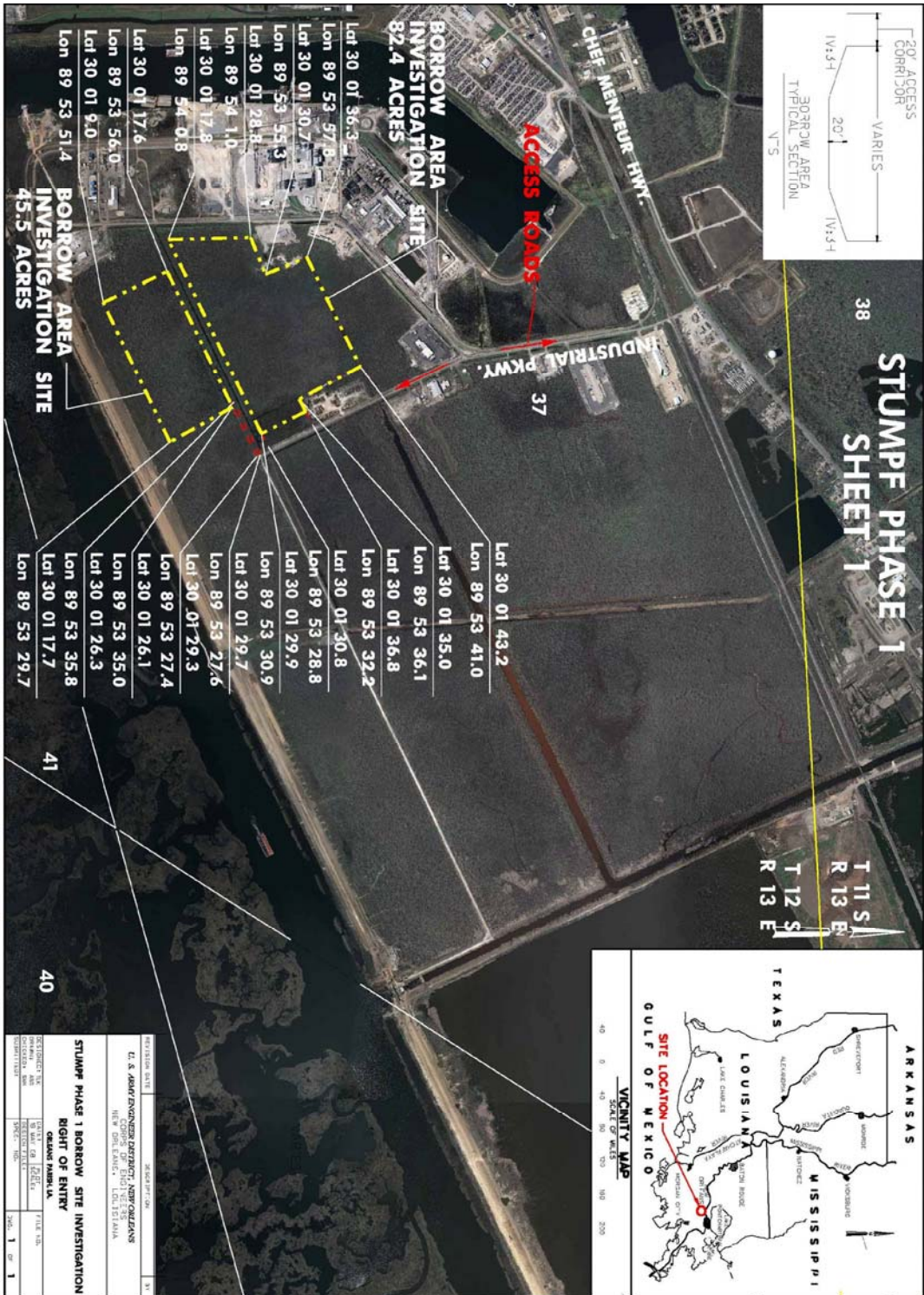


Figure 5: Stumpf Phase 1 Proposed Borrow Area (1 of 2)



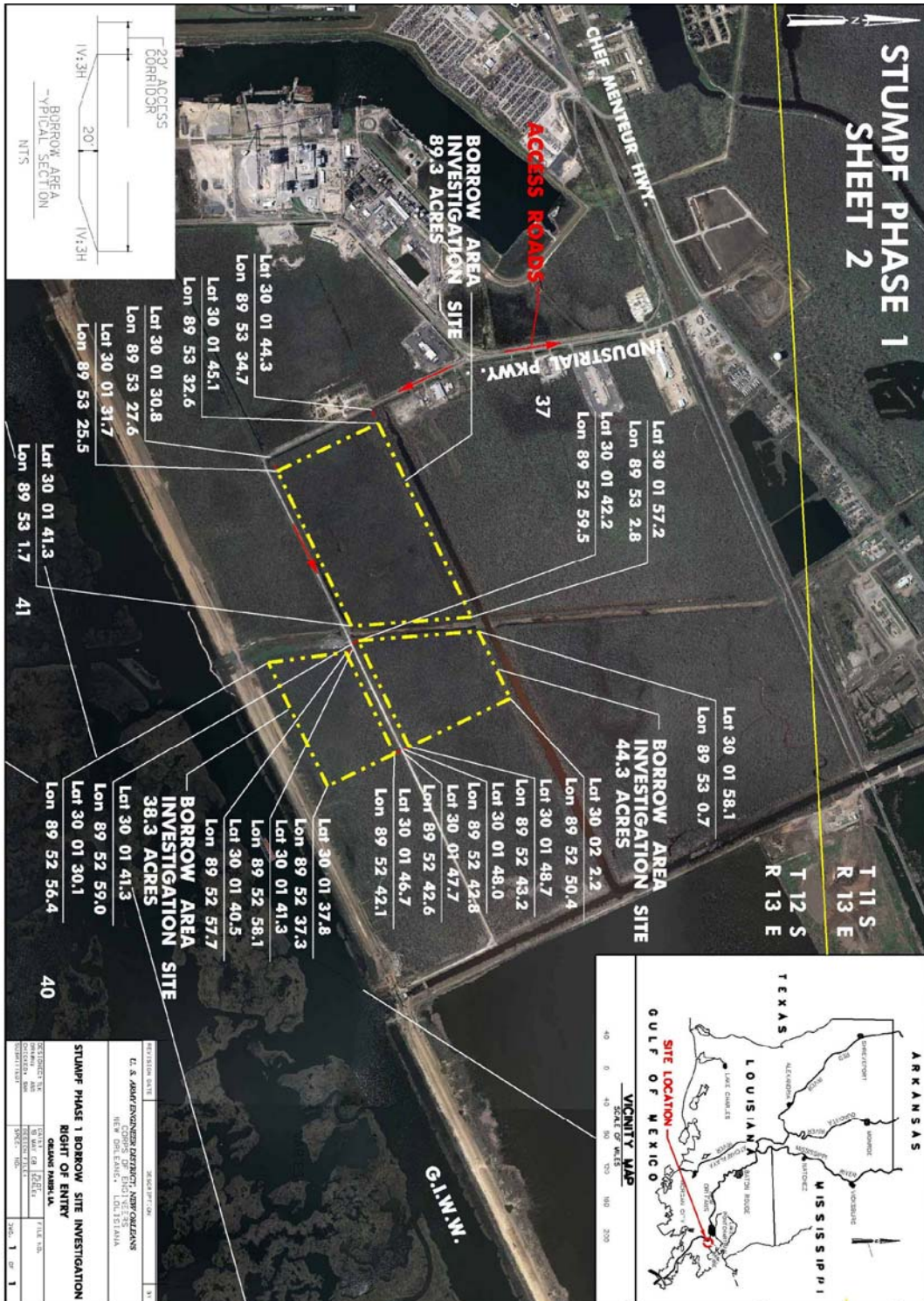


Figure 6: Stump Phase 1 Proposed Borrow Area (2 of 2)





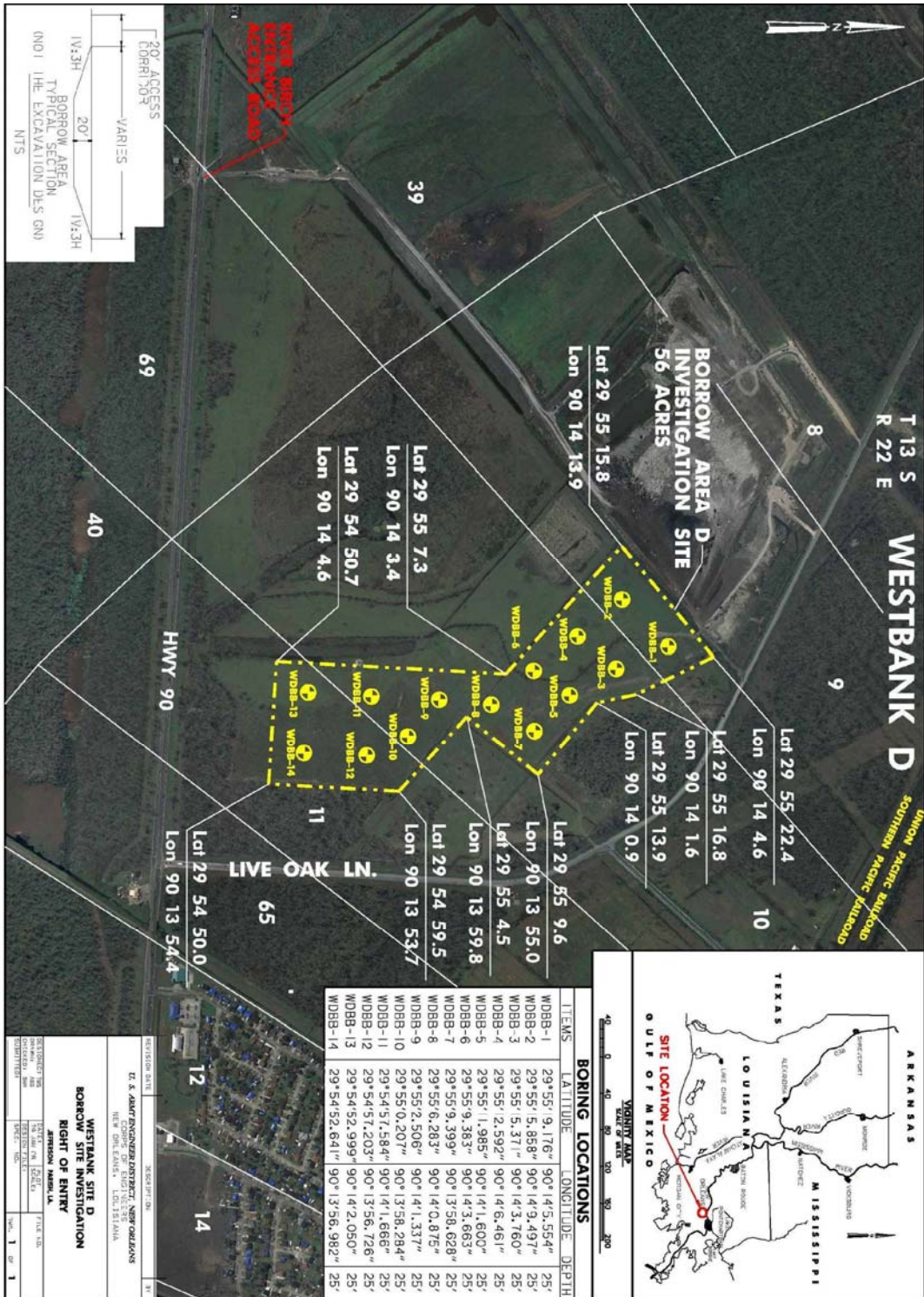


Figure 8: Westbank D Proposed Borrow Area



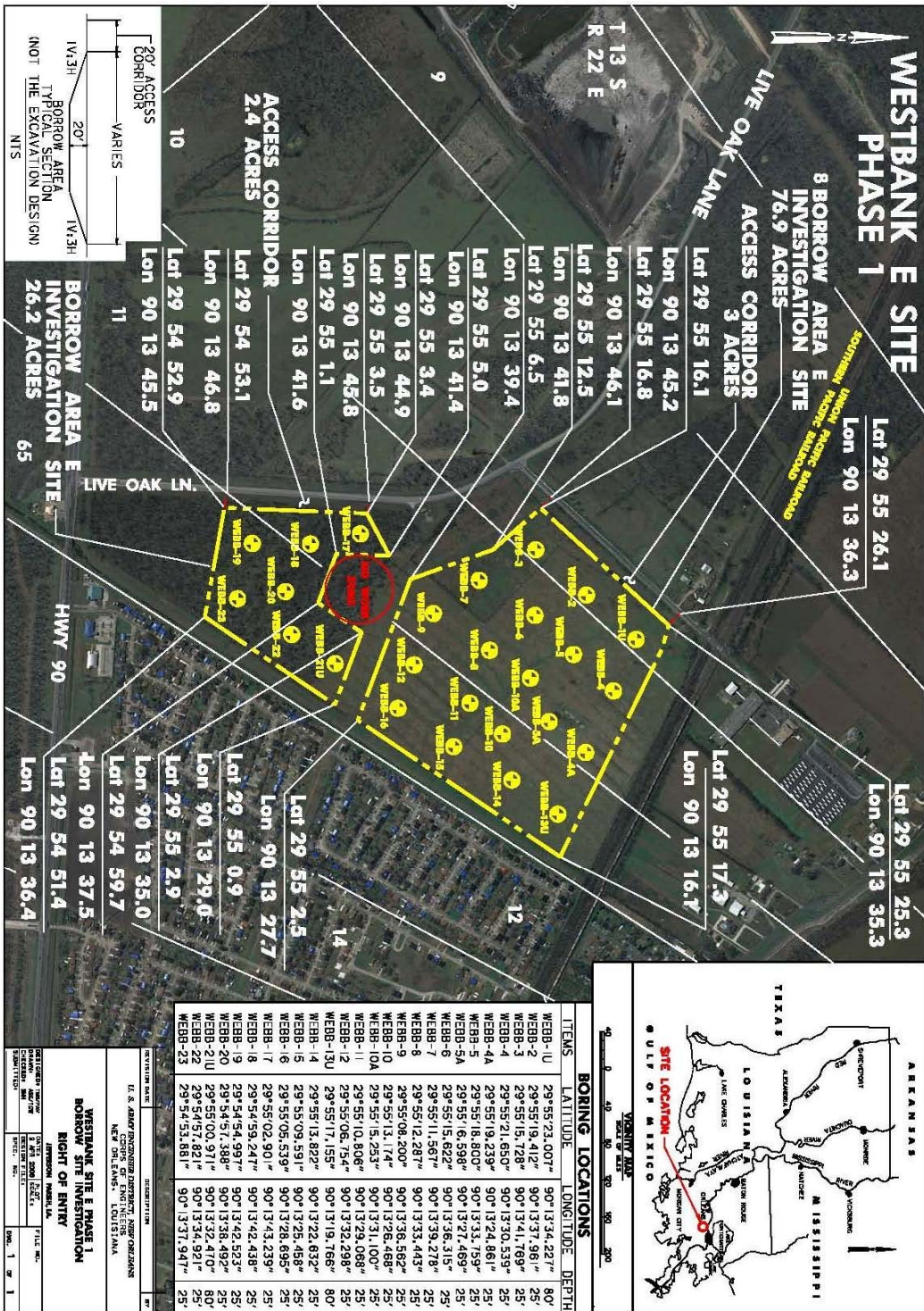


Figure 9: Westbank E Phase 1 Proposed Borrow Area



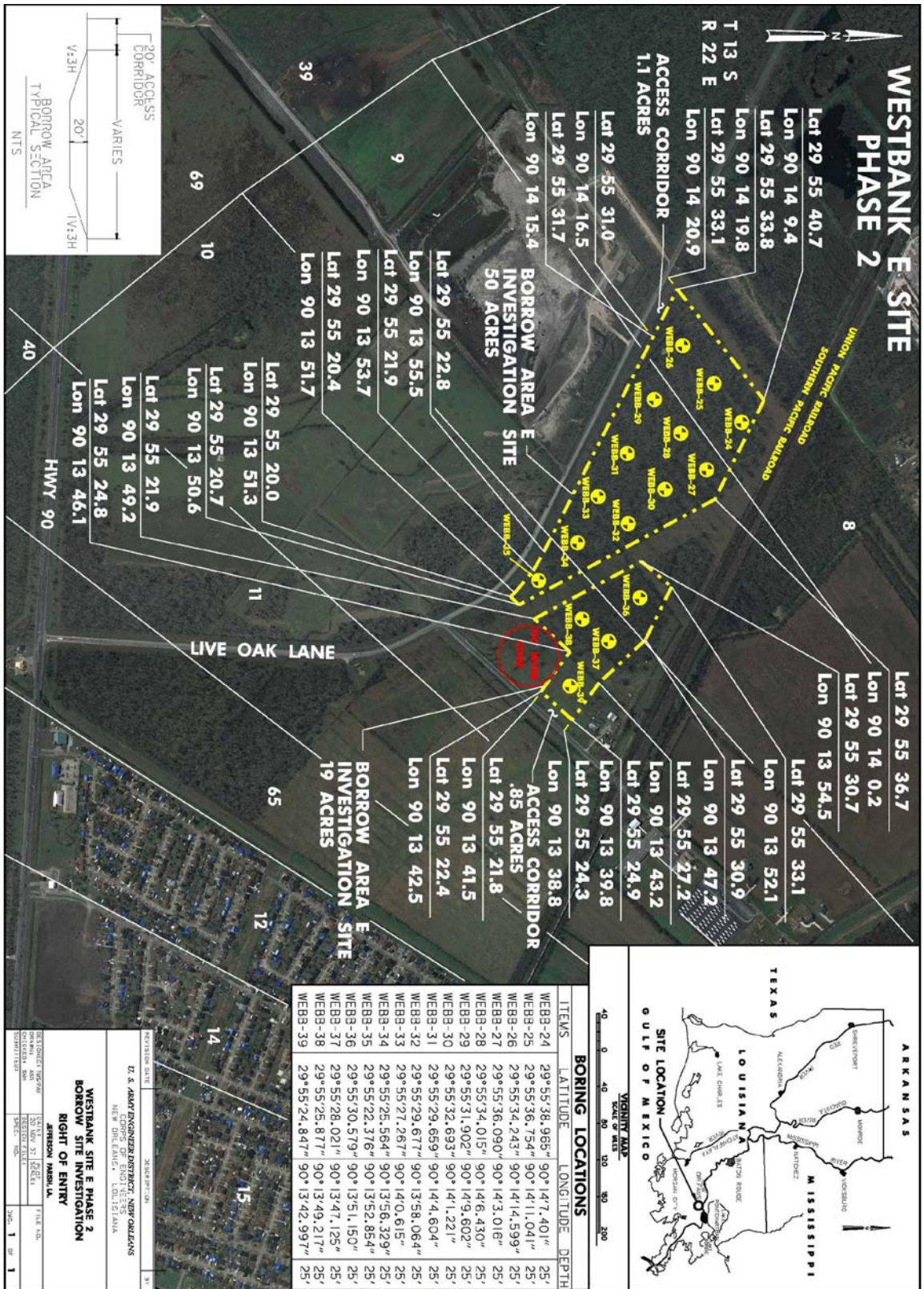


Figure 10: Westbank E Phase 2 Proposed Borrow Area



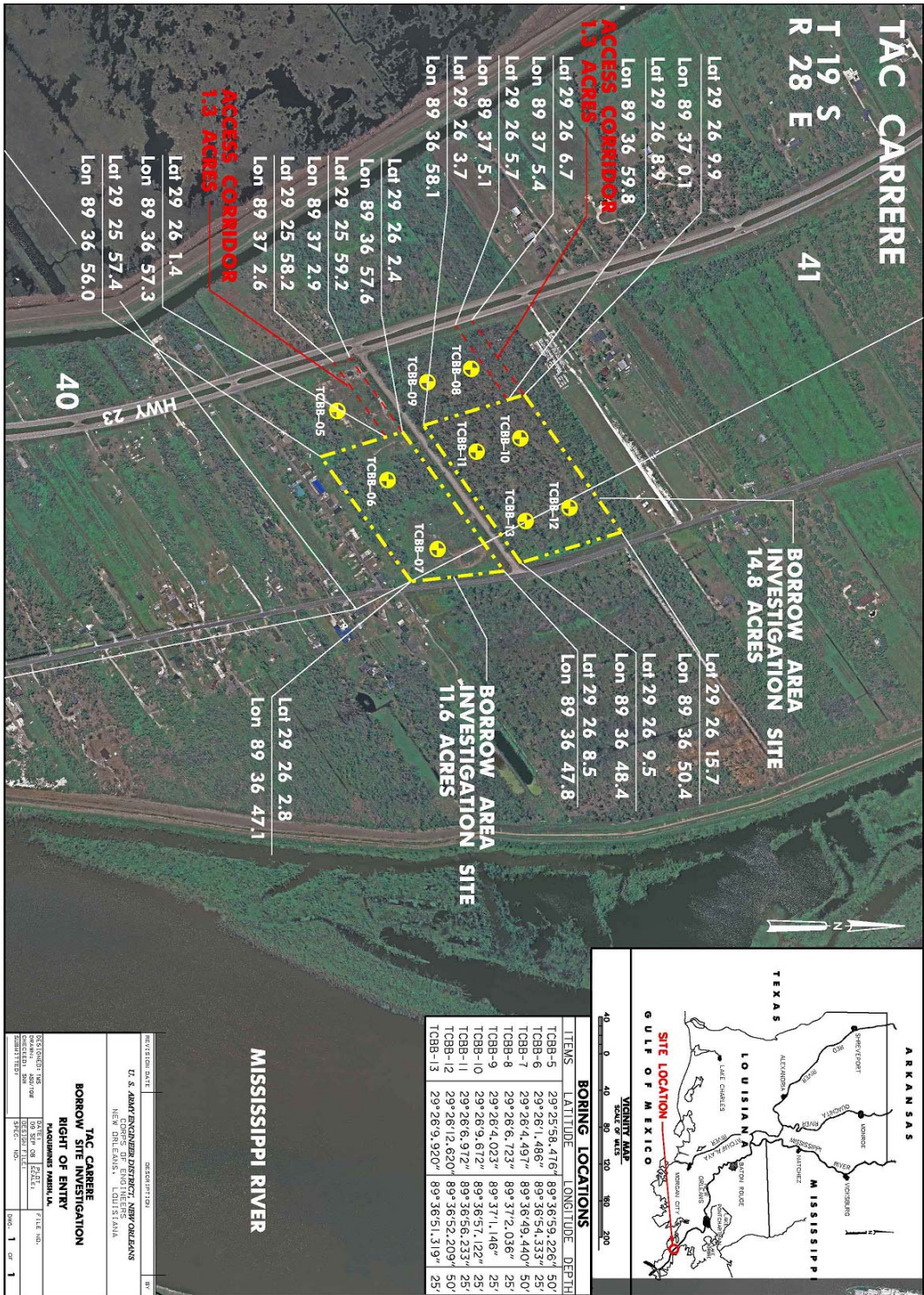


Figure 11: Tac Carrere Proposed Borrow Area

## 2.4 ALTERNATIVES ELIMINATED FROM FURTHER CONSIDERATION

The other alternatives to the proposed action that were considered were the no action, the proposed action, use of Contractor Furnished Borrow Material, and use of borrow material from a Supply Contract. These alternatives are described in Section 2.2.

The following investigated areas were deemed unsuitable by the CEMVN for HSDRRS activities:

- Hickey borrow area: The proposed borrow area is located on Lake Hermitage Rd. in Plaquemines Parish. This 400 acre area was investigated, but declined due to the entire site being wetlands with the exception of the road. The CEMVN may be forced to reconsider this area at some point in the future should there be an inadequate quantity of suitable borrow material for construction of the HSDRRS, after it has exhausted its search for reasonable and practicable non-wetland sites. Refer to CEMVN selection prioritization of potential borrow areas (Section 2.1), and USFWS guidance (appendix D).
- Westbank J: The proposed 281 acre borrow area is located on Peters Road in Jefferson Parish. The Phase 1 Environmental Site Assessment (ESA) indicated that a portion of the site was a former landfill. The ESA also discussed other recognized environmental conditions on the property so the site was not investigated any further.

Several 55 gallon drums (contents unknown) were observed at the commercial-industrial properties adjacent to the southwest corner of the subject site. The drums appeared to be in poor condition. There was also an above-ground storage tank (AST), of approximately 500-gallons capacity, containing diesel fuel. The AST appeared to be in poor condition and was not in secondary containment.

Two sheet metal buildings were observed along the interior of the site. One building, which appeared to be an abandoned machine or maintenance shop, contained several 55 gallon and 5 gallon containers. The drums were in poor condition and were located on a concrete slab inside the building. The other building was empty except for some small debris and an abandoned vehicle.

A pole mounted transformer (PMT) lay on the ground, just off the access road. The outer casing of the PMT was broken open, and the ballast was lying on the ground. PMTs typically contain poly-chlorinated biphenyls (PCBs), which are hazardous to human health. The soil around the transformer was stained and possessed a sweet, piney odor that is associated with PCBs.

A small drainage ditch was located in the central portion of the site. A sheen was observed on the water in the ditch and evidence of significant dumping was noted in the vicinity.

According to the SONRIS database, there are two plugged and abandoned wells on the site; however the wells were not accessible during the site visits.

The LDEQ-EDMS identified a former landfill (The Metroplex Landfill) that was located on Peters Road. According to documents obtained from LDEQ, the landfill was not lined and did not have any groundwater or surface water monitoring systems. The landfill is bordered to the west by Murphy Canal, which

would allow contaminants from the landfill to come into contact with the site. The information obtained from LDEQ did not include a map with the exact landfill location; however aerial photographs indicated that the landfill was located in the northern portion of the site

The following table shows the location of suspected RECs, in Degrees and Decimal Minutes:

|             |           |          |
|-------------|-----------|----------|
| Drum        | 29 50.837 | 90 3.309 |
| Transformer | 29 50.860 | 90 3.243 |
| Drum 2      | 29 50.974 | 90 3.100 |
| Building    | 29 51.038 | 90 3.138 |
| Ditch       | 29 51.034 | 90 2.991 |

- Wallick: The proposed area is located on Patterson Rd. in Orleans Parish. The area was investigated, but declined because the relatively small size of the property makes it infeasible to use the site as a source of Government Furnished borrow material.
- City Cathedral: The proposed area is located on Patterson Rd. in Orleans Parish. The area consists of approximately 5.8 acres. The area was investigated, but declined due to geotechnical analysis.
- Krentrel: The proposed borrow area is located on Judge Perez in St. Bernard Parish. This 34 acre area was investigated, but declined due to a gas pipeline right-of-way and mixed wetlands.

### **3. AFFECTED ENVIRONMENT & ENVIRONMENTAL CONSEQUENCES**

#### **3.1 ENVIRONMENTAL SETTING**

The proposed borrow areas described in this report are located in Jefferson, Orleans, and Plaquemines parishes, Louisiana. The study area is bounded to the north by Lake Pontchartrain, to the west by the town of Waggaman and to the east by Michoud, Louisiana. The area is bordered to the south by an extensive marsh system that provides a barrier between the cities within these parishes and county, and the Gulf of Mexico. Louisiana’s coastal plain remains the largest expanse of coastal wetlands in the contiguous United States.

The Stumpf Phase 1 area is located in an industrial area on Industrial Parkway in Orleans Parish. The Westbank D area is located adjacent to a construction and demolition (C&D) landfill and the Westbank E Phase 1 and 2 sites are located to the west by a C&D landfill and to the east by a residential subdivision across a drainage canal. The Tac Carrere area is located in rural area of Plaquemines Parish.

#### **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 pasture lands. The wetlands support various functions and values, including commercial fisheries, harvesting of furbearers, recreational fishing and hunting, ecotourism, critical wildlife habitat (including 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 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. Forests, wetlands, BLH, and pastures may be found in some of the proposed borrow areas. Agricultural crops grown in the vicinity of some of the proposed borrow areas include citrus fruits and truck crops.

### **Soils**

The USACE Hurricane and Storm Damage Reduction System Design Guidelines, of which the below-stated soil standards are a part, are reviewed and updated as necessary to ensure that the Corps is constructing the safest levees possible. Changes to the guidelines are reviewed and approved by USACE experts 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 discussed in this document 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 D2487 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 D2487. 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 will not be considered objectionable in the embankment provided their length does not exceed 1 foot, their cross-sectional area is less than four (4) square inches, and they are distributed throughout the fill. Not more than 1% (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% sands (by dry weight) or materials with a Plasticity Index (PI) of less than 10 will not be accepted as well as



material having an organic content exceeding 9% by weight. Under no circumstances shall frozen earth, snow, or ice in the material be considered acceptable.

The geotechnical analysis shall consist of the following:

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 our Soil Boring Factsheet.

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.

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.

All soil samples must be classified in accordance with the Unified Soil Classification system. See below for required soil testing. 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 shall 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 curves will be required for each resulting blend of material and will 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 shall 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% 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 will 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% coarse grain materials estimated by visual classification for 2 or more consecutive feet.
5. Sand content tests shall be limited to one test every 5 feet of sampling and shall conform to ASTM D1140-00 (#200 sieve required).
6. Sand content tests will 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 borrow 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 Government furnished borrow sites, the Corps of Engineers will conduct site visits, perform soil borings and testing, acquire all pertinent environmental clearances, and be responsible for borrow material excavations. Using this method, the landowner simply provides the New Orleans District with a signed right-of-entry (ROE) form and the district takes care of the rest.

#### Contractor Furnished Sites

For Contractor Furnished borrow sites, individual landowners are responsible for soil boring and testing and acquiring state and Federal environmental clearances. Upon completing all required tasks, the landowner will submit a complete package to New Orleans District for approval. After this approval, the borrow site will be placed on the Approved Government Contractor list. Agreements will solely be between private entities, and at no point in time will the landowner have an agreement with New Orleans District. Additionally, there are no guarantees that the landowner will ever sell borrow material for the HSDRRS levees.

#### 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 the construction contractor. For supply contracts, borrow sites, individual bidders are responsible for soil boring and testing and acquiring state and federal environmental clearances. Upon completing all required tasks, the landowner will submit a complete package to New Orleans District for approval when requested as per a contract Request form Proposal. Sites will be evaluated and if approved, the bidders will 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 action, and describes in detail those resources that would be impacted, directly or indirectly, by the alternatives. Direct impacts are those that are caused by the action taken and occur at the same time and place (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 discussed in section 4.

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 or scientific agencies, groups, or 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](http://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 any of the alternatives.

**Table 1: Significant Resources in Project Study Area**

| <b>Significant Resource</b>                      | <b>Impacted</b> | <b>Not Impacted</b> |
|--|-----------------|---------------------|
| Jurisdictional Wetlands                          |                 | X                   |
| Non-Jurisdictional Bottomland<br>Hardwood Forest | X               |                     |
| Non-Wetland Resources/Upland<br>Resources        | X               |                     |
| Prime and Unique Farmland                        | 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               |                     |
| Transportation                                   | X               |                     |

### **3.2.1 Jurisdictional Wetlands**

#### Existing Conditions

At this time, the CEMVN is working diligently to avoid impacts to jurisdictional wetlands (as defined by Section 404 of the Clean Water Act) associated with providing borrow material for authorized and 100-year HSDRRS construction. The CEMVN selection prioritization of potential borrow areas (section 2.1), as well as USFWS guidance (appendix D), relating to impacts to jurisdictional wetlands are and will continue to be followed. The CEMVN will coordinate with governmental agencies and the public if jurisdictional wetland may be impacted during future proposed borrow activities.

The CEMVN Regulatory Functions Branch delineated jurisdictional wetlands during initial investigations of potential borrow areas. Jurisdictional wetland areas will be avoided if the site is used as a source for suitable borrow material. Five of the areas described in this document contain wetland areas. Two areas (Hickey and Krentrel) were eliminated from further consideration due to their wetland habitats. The borrow area management plans for Tac Carrerre, Westbank D, and Stumpf Phase 1 and Phase 2 were revised to avoid jurisdictional wetland areas. Wetland acreages avoided are shown in Table 2.

**Table 2: Jurisdictional Wetland Acreage Avoided**

| Proposed Borrow Area | Parish      | Initial Area Investigated (acres) | Jurisdictional Wetlands Present (acres) | Jurisdictional Wetlands Avoided (acres) | Size After Jurisdictional Wetland Avoidance (acres) |
|----------------------|-------------|-----------------------------------|---|---|---|
| Hickey               | Plaquemines | 400                               | 400                                     | 400                                     | 0   |
| Krentrel             | St. Bernard | 34                                | Mixed 34                                | Mixed 34                                | 0   |
| Westbank D           | Jefferson   | 229                               | Mixed 173                               | Mixed 173                               | 56  |
| Stumpf Phase 1       | Orleans     | 402                               | Sec.404 waters 102.2                    | Sec. 404 waters 102.2                   | 300   |
| Stumpf Phase 2       | Orleans     | 693                               | Sec.404 wetlands and waters 178.4       | Sec. 404 wetlands and waters 178.4      | 515   |
| Tac Carrere          | Plaquemines | 112                               | Mixed 56.7                              | Mixed 56.7                              | 55.3  |

Mixed: Impractical to excavate without disturbing the wetlands

During initial investigations, a jurisdictional wetland determination from the CEMVN Regulatory Functions Branch was completed for each potential borrow area. The four potential areas described in this document do not contain jurisdictional wetlands.

- The CEMVN jurisdictional wetland determination MVN-2005-3661-53 dated 14 January 2008, at the proposed Westbank D borrow area indicated some jurisdictional wetlands are located on the site and the wetlands would be avoided.
- The CEMVN jurisdictional wetland determination (e-mail) dated 16 August 2007, at the proposed Westbank E borrow area indicated no jurisdictional wetlands are located on the site.
- The CEMVN jurisdictional wetland determination MVN-2001-1280 dated 29 March 2001, at the proposed Stumpf Phase 1 borrow area indicated some jurisdictional wetlands and Sec. 404 waters (canals) are located on the site. The jurisdictional wetland determinations MVN-2005-3661 dated 06 May 2008 and MVN-1998-2856 dated 03 June 1998 at the proposed Stumpf Phase 2 borrow area indicated some jurisdictional wetlands and Sec. 404 waters (canals) are located on the site. The jurisdictional wetlands and Sec. 404 waters would be avoided.
- The CEMVN jurisdictional wetland determination MVN-2005-3661-50 dated 15 January 2008, at the proposed Tac Carrere borrow area indicated some jurisdictional wetlands are located on the site and the wetlands would be avoided.

The jurisdictional wetland habitat types found near the proposed borrow areas may include pasture wetland, cypress swamps, and pine flatwoods. Jurisdictional wetlands contain hydrophytic vegetation, hydric soils, and hydrology indicators. Pasture wetlands are comprised of soft rushes, flat sedges, smartweed, alligator weed, and other wetland grasses. Cypress swamp areas are dominated by bald cypress and tupelo gum. A variety of birds utilize these areas for nesting, breeding, brooding, and as perches.

Discussion of Impacts

No Action

With implementation of this alternative, no direct, indirect, or cumulative impacts to jurisdictional wetlands through the CEMVN's actions would occur at the proposed

borrow areas. HSDRRS projects would be built to authorized levels using Government and/or Contractor Furnished borrow areas described in IER # 18, IER # 19, IER # 22, IER # 23, IER # 26 or other sources as yet to be identified (e.g., other potential Government Furnished or Pre-Approved Contractor borrow areas; Supply Contract).

#### Proposed Action

With implementation of the proposed action, no direct, indirect, or cumulative impacts to jurisdictional wetlands would occur since the borrow areas described in this document are non-wetland. Suitable material from the areas would be used on Federal HSDRRS projects. Any jurisdictional wetland areas outside of the areas would be avoided. The areas would be converted to ponds and small lakes if water is retained, or to vegetated areas if water is not retained. It is expected that either type of area would attract a variety of wildlife including birds, reptiles, amphibians, and small mammals.

The borrow area management plan of the proposed Stumpf Phase 1 and Phase 2 borrow areas would show a 100 foot vegetated buffer along the canals designated as Section 404 waters. Canal crossings shall be constructed in such a way to maintain the existing hydrology in the area. BMPs would be implemented to ensure no indirect impacts to the canal.

### **3.2.2 Non-Jurisdictional Bottomland Hardwood Forest**

#### Existing Conditions

Non-jurisdictional BLH forests are comprised of dominant species such as hackberry, Chinese tallow tree, pecan, American elm, live oak, water oak, green ash, bald cypress, black willow, box elder, and red maple. Some understory species include dewberry, elderberry, ragweed, Virginia creeper, and poison ivy. A variety of birds utilize these hardwoods for nesting, breeding, brooding, and as perches. Hard mast (nuts) and soft mast (samaras, berries) provide a valuable nutritional food source for birds, mammals, and other wildlife species. Non-jurisdictional BLH forests lack one or more of the following criteria to be considered a Clean Water Act Section 404 jurisdictional wetland: hydrophytic vegetation, hydric soils, and/or wetland hydrology (USACE 1987). Manmade ditches, canals, and/or pumping stations are present at some of the proposed borrow areas.

- The Stumpf Phase 1 area includes 300 acres of forested area, comprised of 1-2 inch diameter at breast height (dbh) Chinese tallow trees. The Stumpf Phase 2 area includes 515 acres of forested area, comprised of 1-2 inch dbh Chinese tallow trees.
- There are no non-jurisdictional BLH forests within the proposed Westbank D area.
- The Westbank E Phase 1 and Phase 2 areas includes 79.4 acres of forested area, comprised of red maple, box elder, pecan, Chinese tallow tree, hackberry, and live oaks.
- The Tac Carrere area contains 17.7 acres of injured live oaks.

#### Discussion of Impacts

##### No Action

With implementation of this alternative, there would be no direct, indirect, or cumulative impacts to BLH through the CEMVN actions at the proposed borrow areas. HSDRRS projects would be built to authorized levels using Government and/or Contractor Furnished borrow areas described in IER # 18, IER # 19, IER # 22, IER # 23, IER # 26 or other sources as yet to be identified (e.g., other potential Government Furnished or Pre-Approved Contractor borrow areas; Supply Contract).

#### Proposed Action

With implementation of the proposed action, there would be direct and indirect impacts to BLH forest. Mature trees would be cut down with the use of chainsaws or pushed down with bulldozers and excavators. Saw logs could be sold to a mill and younger trees could be processed into pulp wood for paper products. Woody debris leftover would be cleaned up and all berms would be leveled to eliminate hydrologic impacts. Once excavated, the area would no longer be viable for silviculture practices, and some wildlife habitat would be removed. The area would be converted to ponds and small lakes if water is retained, or by vegetation and woody plants if water is not retained. It is expected that either type of area would attract a variety of wildlife including birds, reptiles, amphibians, and small mammals.

This office has assessed the environmental impacts of the proposed action, and has determined that the proposed action would have unavoidable impacts to a total of 942.1 acres and 262 Average Annualized Habitat Units (AAHUs) of non-jurisdictional BLH. (Habitat Units represent a numerical combination of habitat quality [Habitat Suitability Index] and habitat quantity [acres] within a given area at a given point in time. Average Annual Habitat Units represent the average number of Habitat Units within any given year over the project life for a given area.) Mitigation for unavoidable impacts to non-jurisdictional BLH is discussed in section 6, and will be described under a separate IER.

The excavation of 942.1 acres of non-jurisdictional bottomland hardwoods would contribute to the cumulative loss of these bottomland hardwood resources within the HSDRRS.

### **3.2.3 Non-Wetland Resources/Upland Resources**

#### Existing Conditions

Some species identified in the non-wet pasture areas include Johnson grass, yellow bristle grass, annual sumpweed, arrow-leaf sida, vasey grass, and Brazilian vervain. The scrub/shrub areas are comprised of Chinese tallow tree, eastern false-willow, wax myrtle, giant ragweed, dew berry, elderberry, red mulberry, pepper vine, and dog-fennel.

The areas listed below show representative vegetation found in the pasture and scrub/shrub areas.

- The Stumpf Phase 1 and 2 sites do not contain any upland areas.
- The Westbank D site is 56 acres of maintained pasture land.
- The remainder non-forested land at the Westbank E Phase 1 and 2 site is 96.6 acres of maintained pasture land.
- The remainder non-forested land at the Tac Carrere site is 8.7 acres of maintained pasture land.

#### Discussion of Impacts

No Action

With implementation of this alternative, no direct, indirect, or cumulative impacts to non-wetland resources/upland resources through the CEMVN’s actions would occur at the proposed borrow areas. HSDRRS projects would be built to authorized levels using potential Government and/or Pre-Approved Contractor Furnished borrow areas described in IER # 18, IER # 19, IER # 22, IER # 23, IER # 26 or other sources as yet to be identified.

Proposed Action

With implementation of the proposed action, direct impacts to non-wetland resources/upland resources would occur from clearing and excavation. Some indirect effects are expected from water accumulating and creating ponds and small lakes. The pasture areas would no longer provide grasses for herbivores such as deer, rabbits, and cattle. Some scrub/shrub areas may develop around the borrow area perimeters in time. Borrow areas that remain dry would be expected to be colonized by vegetation and woody plants, which could offset some habitat loss.

**3.2.4 Prime and Unique Farmland**

Existing Conditions

Four borrow areas contain prime and unique soils according to the National Resources Conservation Service (NRCS) (table 3).

**Table 3: Prime and Unique Farmland Soils Present**

| Site Name                | Parish      | Soil map unit(s)          | Prime Farmland | Acres of Prime and Unique Farmland |
|--------------------------|-------------|---------------------------|----------------|------------------------------------|
| Stumpf Phase 1 and 2     | Orleans     | Schriever clay            | Yes            | 29.7                               |
| Westbank D               | Jefferson   | Schriever silty clay loam | Yes            | 52.6                               |
|                          |             | Vacherie silt loam        |                |                                    |
| Westbank E Phase 1 and 2 | Jefferson   | Vacherie silt loam        | Yes            | 110                                |
|                          |             | Cancienne silty loam clay |                |                                    |
|                          |             | Schriever silty clay loam |                |                                    |
|                          |             | Schriever clay            |                |                                    |
| Tac Carrere              | Plaquemines | Schriever clay            | Yes            | 29                                 |

Discussion of Impacts

No Action

With implementation of this alternative, no direct, indirect, or cumulative impacts to prime and unique farmland through the CEMVN’s actions would occur at the proposed borrow areas. HSDRRS projects would be built to authorized levels using Government and/or Contractor Furnished borrow areas described in IER # 18, IER # 19, IER # 22, IER # 23, IER # 26 or other sources as yet to be identified (e.g., other

potential Government Furnished or Pre-Approved Contractor borrow areas; Supply Contract).

#### Proposed Action

With implementation of the proposed action, the acreages of prime and unique farmlands shown in Table 3 would be directly impacted at Stumpf Phase 1 and Phase 2, Westbank D, Westbank E Phase 1 and Phase 2, and Tac Carrere. The proposed borrow areas would be cleared and excavated. Removing soils from these proposed borrow areas would result in a direct permanent loss of prime and unique farmlands, and the areas would no longer be available for farming. Indirect effects from construction would be from the proposed borrow areas filling with water and converting to ponds or small lakes. Borrow areas that do not retain water would probably not be able to produce food and fiber crops. The land would no longer provide grasses for herbivores such as deer, rabbits, or cattle.

The excavation of 221.3 acres of prime and unique farmland resources would contribute to the cumulative loss of these prime farmland resources within the HSDRRS.

### **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. 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

With implementation of this alternative, no direct, indirect, or cumulative impacts to wildlife through the CEMVN's actions would occur at the proposed borrow areas.



HSDRRS projects would be built to authorized levels using Government and/or Contractor Furnished borrow areas described in IER # 18, IER # 19, IER # 22, IER # 23, IER # 26 or other sources as yet to be identified (e.g., other potential Government Furnished or Pre-Approved Contractor borrow areas; Supply Contract).

#### Proposed Action

With implementation of the proposed action, direct impacts from wildlife displacement would occur when the Stumpf Phase 1 and Phase 2, Westbank D, Westbank E Phase 1 and Phase 2, and Tac Carrere areas are excavated. No bald eagle nests were recorded at these sites. The areas may be converted to ponds and small lakes. Aquatic vegetation may colonize the shallow littoral edge of the areas, and wildlife (otters, 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 offset some habitat loss. The dense vegetation could attract a variety of wildlife including birds, reptiles, amphibians, and small mammals. While the borrow areas have the potential to become 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.

Wildlife resources in the New Orleans Metropolitan Area are experiencing a cumulative loss due to a number of activities (e.g., residential and commercial development, wetland loss, borrow excavation, highway construction). Excavation of the proposed borrow areas would contribute to this loss.

### **3.2.6 Threatened and Endangered Species**

#### Existing Conditions

The brown pelican may be in the vicinity of the proposed borrow areas. It is a year-round resident that typically forages on fish throughout the study area. In winter, spring, and summer, nests are built in mangrove trees or other shrubby vegetation, although occasional ground nesting may occur. Small coastal islands and sand bars are typically used as loafing areas and nocturnal roosting areas.

There are no known T&E species, or critical habitats, located on any of the proposed borrow areas.

#### Discussion of Impacts

##### No Action

With implementation of this alternative, no direct, indirect, or cumulative impacts to T&E species through the CEMVN's actions would occur at the proposed borrow areas. HSDRRS projects would be built to authorized levels using Government and/or Contractor Furnished borrow areas described in IER # 18, IER # 19, IER # 22, IER # 23, IER # 26 or other sources as yet to be identified (e.g., other potential Government Furnished or Pre-Approved Contractor borrow areas; Supply Contract).

##### Proposed Action

Under the proposed actions, no listed endangered, threatened, or candidate species are known to exist in the potential borrow areas. Therefore, no direct, indirect, or cumulative effects would be predicted to protected species or their critical

habitat as a result of implementing the proposed actions. The USFWS concurred with the CEMVN that excavation of the proposed borrow areas are not likely to adversely affect T&E species or their critical habitat (table 4).

**Table 4: USFWS T&E Concurrence**

| <b>Proposed Borrow Area</b> | <b>USFWS Concurrence</b> |
|-----------------------------|--------------------------|
| Stumpf Phase 1              | 10 April 2008            |
| Stumpf Phase 2              | 21 May 2008              |
| Westbank D                  | 25 April 2008            |
| Westbank E Phase 1 & 2      | 25 April 2008            |
| Tac Carrere                 | 10 April 2008            |

### **3.2.7 Cultural Resources**

#### Existing Conditions

CEMVN’s selection of Government Furnished Borrow areas seeks to avoid adverse impacts to historic properties. Cultural resource investigations of the proposed borrow areas reveal the presence of both prehistoric and historic sites in the general vicinity of the proposed borrow areas. Prehistoric archaeological sites, such as shell middens, hunting and gathering camps, habitation sites, villages and mounds sites, tend to be located on active and abandoned distributary channel levee complexes, major beach ridges, on older stable portions of the delta, and in association with freshwater marshes. Similarly, historic period sites, such as forts, plantations, and industrial places tend to be located on 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 geologic progression of the Mississippi River delta lobes suggests that the earliest archaeological sites in the region date to the Poverty Point Phase (1700 – 500 B.C.) (Wiseman et al 1979). In addition, flood sedimentation buries and preserves some sites, while channel erosion and subsidence obliterate other sites.

Cultural resources investigations of the four proposed borrow areas include reconnaissance surveys and Phase I cultural resource surveys. Researcher’s geared their investigations toward identifying known and previously unrecorded historic properties within proposed borrow areas and the areas of potential effect (APE). Background research for each proposed borrow area involved reviewing known resources within the area, identifying soil and geomorphologic characteristics, and assessing the existing conditions. This information was used to assess the likelihood that archaeological sites could be present within a proposed borrow area. A reconnaissance survey of the proposed Stumpf borrow area (Harlan and Godzinski 2008) updates an earlier Phase I archaeological survey (Castille and Reeves 1982). Phase I archaeological surveys of the proposed Tac Carrere, Westbank D, and Westbank E borrow areas (Harlan and Smith 2008a, 2008b) investigate the likelihood and presence of unrecorded archaeological sites.

For the most part, the proposed borrow areas lie within drained backswamp (Westbank D, E, Tac Carrere, and Stumpf. While these environments were utilized for resource extraction during prehistoric and historic times, there is little evidence of occupation in these locations. Consequently, the likelihood for the presence of undiscovered cultural sites within these proposed borrow areas remains low. Portions of the Westbank E proposed borrow area include the natural levee of the Mississippi River. While natural levee soils present a high probability for the presence of prehistoric and historic sites, the

cultural resource survey of Westbank E confirms the absence of cultural sites from the proposed borrow area.

The effects of the proposed action to cultural resources in close vicinity to the proposed borrow areas were also taken into account. The remains of an historic sugar mill were identified within the area originally investigated for the Westbank E borrow area. In order to avoid impacts to the sugar mill remains, a protective buffer zone was placed around this archaeological site and the area was eliminated from further consideration for borrow. Therefore, this archaeological site will be preserved in place and the excavation of the proposed Westbank E will not affect this site.

Section 106 of the National Historic Preservation Act of 1966, as amended, consultation included correspondence with the State Historic Preservation Officer (SHPO) and Indian Tribes that have an interest in the region (table 5). Taken together, the results of these investigations revealed that no known sites eligible for listing on or listed on the National Register of Historic Places properties exist within the proposed borrow areas or will be affected by the proposed development.

### Discussion of Impacts

#### No Action

Without implementation of the proposed action, no direct, indirect, or cumulative impacts to cultural resources are anticipated. Any undiscovered or unreported cultural resources or traditional cultural properties will remain intact and in their current state of preservation. The burial or subsidence of historic land surfaces will continue in the current pattern. There is no reason to believe that no action will have any direct positive or negative impacts to cultural resources.

#### Proposed Action

No known archaeological sites, historic structures, or other cultural sites exist with the proposed Tac Carrere, Westbank D, Westbank E, or Stumpf borrow areas. Therefore, with implementation of the proposed action, any undiscovered cultural resources may be damaged during borrow excavation and construction operations. In the unlikely event that cultural resources are identified during borrow excavation then work in the vicinity would cease. The Corps would consult with the Louisiana SHPO and Indian Tribes pursuant to 36 CFR § 800.13 to resolve adverse affects to a cultural resource. However, 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 borrow area. In addition, no indirect or cumulative impacts are anticipated for cultural resources.

**Table 5: Summary of Section 106 of NHPA Correspondence and Date of Concurrence Letter with CEMVN’s “Finding of No Adverse Effect to Historic Properties”**

**Table 5. Summary of Section 106 of NHPA correspondence.**

| Borrow Pit Name        | Parish      | CEMVN letter date | SHPO    | Chitimacha Tribe of Louisiana | Mississippi Band of Choctaw Indians | Choctaw Nation of Oklahoma | Alabama Coushatta Tribe of TX | Caddo Nation of OK <sup>1</sup> | 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 |
|------------------------|-------------|-------------------|---------|-------------------------------|-------------------------------------|----------------------------|-------------------------------|---------------------------------|-----------------------|------------------------------|--------------------|-----------------------|----------------------|---------------------------|
| Tac Carrere            | Plaquemines | 3/25/08           | 4/23/08 | 4/9/08                        | 4/30/08*                            | 4/3/08                     | 4/30/08*                      | 4/30/08*                        | 4/30/08*              | 4/30/08*                     | 4/30/08*           | 4/30/08*              | 4/30/08*             | 4/30/08*                  |
| Westbank D             | Jefferson   | 4/18/08           | 5/7/08  | 5/23/08*                      | 5/23/08*                            | 5/23/08*                   | 5/23/08*                      | 5/23/08*                        | 5/23/08*              | 5/23/08*                     | 5/23/08*           | 5/23/08*              | 5/23/08*             | 5/23/08*                  |
| Westbank E Phase 1 & 2 | Jefferson   | 4/18/08           | 5/7/08  | 5/23/08*                      | 5/23/08*                            | 5/23/08*                   | 5/23/08*                      | 5/23/08*                        | 5/23/08*              | 5/23/08*                     | 5/23/08*           | 5/23/08*              | 5/23/08*             | 5/23/08*                  |
| Stumpf Phase 1 & 2     | Orleans     | 5/9/08            | 6/11/08 | 6/13/08*                      | 6/13/08*                            | 6/13/08*                   | 6/13/08*                      | 6/13/08*                        | 6/13/08*              | 6/13/08*                     | 6/13/08*           | 6/13/08*              | 6/13/08*             | 6/13/08*                  |

Tribe consults on projects in Louisiana only.

\* Response date reflects the end of the 30 day comment period. No response implies concurrence with a “Finding of no adverse effect” as per 36 CFR 800.5(c)(1).

\* Response date reflects the end of the 30 day comment period. No response implies concurrence with Federal effect determination as per 36 CFR 800.3(c)(4).

### **3.2.8 Recreational Resources**

#### Existing Conditions

This resource is institutionally significant because of the Federal Water Project Recreation Act of 1965, as amended, and the Land and Water Conservation Fund Act of 1965, as amended. Recreational resources are technically significant because of the high economic value of recreational activities and their contribution to local, state, and national economies. Recreational resources are publicly significant because of the high value that the public places on fishing, hunting, and boating, as measured by the large number of fishing and hunting licenses sold in Louisiana, and the large per-capita number of recreational boat registrations in Louisiana.

The region in which the proposed actions are to take place is rich with recreation resources. The four specific sites studied in this IER (Stumpf Phase 1 and 2, Westbank D, Westbank E Phase 1 and 2, and Tac Carrere) may have some recreational potential, but contain no existing recreational infrastructure or specific features and are not open to public access. The Stumpf Phase 1 site is located approximately one mile west of and 1,200 feet north of the eastern most boundary of the Bayou Sauvage National Wildlife Refuge. The Stumpf Phase 2 site shares a boundary line with the eastern most edge of the Bayou Sauvage National Wildlife Refuge. The areas south/southeast of Tac Carrere and east/southeast of Westbank E sites have residences within 250 feet across a drainage canal.

#### Discussion of Impacts

##### No Action

Without the proposed action, there should be no direct, indirect, or cumulative impacts to recreation resources at the proposed borrow areas. HSDRRS projects would be built to authorized levels using Government and/or Contractor Furnished borrow areas described in IER # 18, IER # 19, IER # 22, IER # 23, IER # 26 or other sources as yet to be identified (e.g., other potential Government Furnished or Pre-Approved Contractor borrow areas; Supply Contract).

##### Proposed Action

The excavation of the Stumpf Phase 1 and 2, Westbank D, Westbank E Phase 1 and 2, and Tac Carrere proposed borrow areas will not directly, indirectly or cumulatively impact recreation resources in the region. The Bayou Sauvage National Wildlife Refuge will not be impacted by the excavation of the Stumpf Phase 1 and 2 proposed borrow areas due to the distance between the refuge and the proposed borrow areas. In some cases, depending on how the end site is left, the habitat may be suitable to support some recreational activities, i.e. wildlife viewing and fishing. However, these sites are not open to public access.

### **3.2.9 Air Quality**

#### Existing Conditions

As of June 15, 2005, the 1-hour ozone standard for the New Orleans Metropolitan Area (Orleans, Jefferson, St. Bernard, St. Charles, and Plaquemines parishes) was revoked and replaced by an 8-hour standard. The New Orleans area is currently in attainment of the 8-hour ozone standard and all other critical pollutant National Ambient Air Quality Standards (NAAQS) as established by the Clean Air Act. The parishes listed above are currently in attainment of all NAAQS. This classification is the result of area-wide air quality modeling studies.

## Discussion of Impacts

### No Action

With implementation of this alternative no direct, indirect, or cumulative impacts to air quality through the CEMVN's actions would occur at the proposed borrow areas. HSDRRS projects would be built to authorized levels using Government and/or Contractor Furnished borrow areas described in IER # 18, IER # 19, IER # 22, IER # 23, IER # 26 or other sources as yet to be identified (e.g., other potential Government Furnished or Pre-Approved Contractor borrow areas; Supply Contract).

### Proposed Action

With implementation of the proposed action, there would be direct short-term impacts to air quality that would result from the excavation of the Stumpf Phase 1 and 2, Westbank D, Westbank E Phase 1 and 2, and Tac Carrere borrow areas controlled by proper BMPs. Air quality impacts would be limited to those produced by heavy equipment, and suspended dust particles generated by bulldozing, dumping, and grading. Operation of construction equipment and support vehicles would generate volatile organic compounds (VOCs), particulate matter (PM) 10, PM 2.5, nitrogen oxides (NO<sub>x</sub>), carbon monoxide (CO), ozone (O<sub>3</sub>) and sulfur oxides (SO<sub>x</sub>) emissions from diesel engine combustion. The construction equipment and haul trucks should have catalytic converters and mufflers to reduce exhaust emissions. During the construction of the proposed project, routine maintenance of all vehicles and other construction equipment would be implemented to ensure that emissions are within the appropriate design standards.

Dust suppression methods would be implemented to minimize dust emissions. Air emissions from the proposed action would be temporary and should not significantly impair air quality in the region. Emissions associated with the proposed actions would be temporary and should not significantly impair air quality in the region. Due to the short duration of excavation, any increases or impacts on ambient air quality are expected to be short-term and minor and are not expected to cause or contribute to a violation of Federal or state ambient air quality standards.

Cumulative air impacts from the excavation of Stumpf Phase 1 and 2, Westbank D, Westbank E Phase 1 and 2, and Tac Carrere proposed borrow areas are unknown at this time and the air impacts will be discussed in the CED.

## **3.2.10 Water Quality**

### Existing Conditions

The Louisiana Department of Environmental Quality (LDEQ) regulates both point and nonpoint source pollution. Many of the proposed borrow areas are uplands with associated drainage features.

## Discussion of Impacts

### No Action

With implementation of this alternative, no direct, indirect, or cumulative impacts to water quality through the CEMVN's actions would occur at the proposed borrow areas. HSDRRS projects would be built to authorized levels using Government and/or Contractor Furnished borrow areas described in IER # 18, IER # 19, IER # 22, IER # 23, IER # 26 or other sources as yet to be identified (e.g., other potential Government Furnished or Pre-Approved Contractor borrow areas; Supply Contract).

### Proposed Action

Despite the use of BMPs, with implementation of the proposed action there would be some direct impacts from disturbances to water quality in the immediate vicinity of Stumpf Phase 1 and 2, Westbank D, Westbank E Phase 1 and 2, and Tac Carrere proposed borrow areas from sediments getting around silt fencing during high rain events.

The construction contractor would be required to secure all proper Federal, State, and local permits required for potentially impacting water quality. The CEMVN requires that construction BMPs be implemented and followed during the construction phase. A sediment control plan including silt fencing and hay bales would be installed around the perimeter of the proposed borrow areas to control runoff. To make optimal use of available material, excavation would begin at one end of the borrow area and be made continuous across the width of the areas to the required borrow depths, to provide surface drainage to the low side of the borrow area as excavation proceeds. Excavation for semi-compacted fill would not be permitted in water nor shall excavated material be scraped, dragged, or otherwise moved through water. In some cases the borrow areas may need to be drained with the use of a sump pump. Upon abandonment, site restoration would include placing the stockpiled overburden back into the area and grading the slopes to the specified cross-section figures. Abrupt changes in grade should be avoided, and the bottom of the borrow area should be left relatively smooth and sloped from one end to the other. Abrupt changes in borrow area alignment shall be avoided. With the use of BMPs, direct and indirect disturbance of water quality would be temporary, confined, and short lived.

The excavation of Stumpf Phase 1 and 2, Westbank D, Westbank E Phase 1 and 2, and Tac Carrere would contribute to the cumulative losses of water quality within the region.

### **3.2.11 Transportation**

#### Existing Conditions

Additional information on the potential impacts associated with transporting borrow material is being developed by the CEMVN, and will be discussed in the CED. This is a known data gap (section 1.6).

The following is a listing of each proposed borrow area by parish and the sites' proximity to roads and highways.

- Orleans Parish: The proposed 300 acre Stumpf Phase 1 and 515 acre Phase 2 borrow areas are located on Industrial Parkway in Orleans Parish.
- Jefferson Parish: The proposed Westbank D borrow area is located in Avondale, Louisiana on Highway 90. The 56 acre site is located just west of Live Oak Lane. The proposed Westbank E Phase 1 and Phase 2 borrow areas are located on the east side of Live Oak Lane.
- Plaquemines Parish: The proposed Tac Carrere borrow area is located on Highway 23 near Nairn, Louisiana.

## Discussion of Impacts

### No Action

With implementation of this alternative, no direct, indirect, or cumulative impacts to transportation routes through the CEMVN's actions would occur at the proposed borrow areas. HSDRRS projects would be built to authorized levels using Government and/or Contractor Furnished borrow areas described in IER # 18, IER # 19, IER # 22, IER # 23, IER # 26 or other sources as yet to be identified (e.g., other potential Government Furnished or Pre-Approved Contractor borrow areas; Supply Contract).

### Proposed Action

With implementation of the proposed action, construction equipment such as bulldozers and excavators would need to be delivered to the sites, and haul trucks would be entering and exiting the areas on a daily basis during the period of excavation. Direct impacts from truck hauling would temporarily impede vehicle traffic and result in a reduction in the level of service (LOS, a metric describing traffic volume relative to capacity) on some local road segments. Flagmen, signage, cones, barricades, and detours would be used where required to facilitate the movement of heavy equipment and local traffic on affected road segments. The proposed design of all areas would require methods to avoid exposure of adjacent traffic routes and other urban developments. Appropriate measures to ensure safety and facilitate the movement of traffic would be implemented at all approved borrow areas.

- Orleans Parish: The proposed Stumpf Phase 1 and Phase 2 areas are located on Industrial Parkway which bisects Chef Menteur Highway which handles commercial truck fleets delivering goods to the area. If these proposed borrow areas are used, material would more than likely be used for HSDRRS construction sites closest to them, minimizing the disruption of transportation through highly developed areas. Efforts to rebuild the parish are ongoing, but the reduced population has led to reduced traffic volumes. Even with use of these borrow areas road congestion is not expected to be great. Canal crossings shall be constructed in a manner to maintain the natural flow of water. The sites may also be used as a stockpile area and the Intracoastal Waterway could potentially be used to transport borrow to and from the HSDRRS construction sites by barge. The use of these areas could temporarily increase waterway traffic in the Intracoastal Waterway.
- Jefferson Parish: The proposed Westbank D and Westbank E Phase 1 and 2 borrow area material would likely be used on HSDRRS construction sites within the area. Live Oak Boulevard and Willswood Lane are residential streets that may be traveled during excavation activities.
- Plaquemines Parish: The proposed Tac Carrere borrow area is in a rural area, and material excavated would likely be used on HSDRRS construction sites within Plaquemines Parish.

Appropriate measures to ensure safety and facilitate the movement of traffic would be implemented at all potential borrow areas. The current traffic volume at these areas is unknown.



Cumulative transportation impacts from the excavation of Stumpf Phase 1 and 2, Westbank D, Westbank E Phase 1 and 2, and Tac Carrere proposed borrow areas are unknown at this time and the transportation impacts will be discussed in the CED.

### **3.2.12 Aesthetic (Visual) Resources**

#### Existing Conditions

The Stumpf and Westbank D borrow areas contain similar land use patterns (i.e., maritime related industry or existing borrow areas) in the immediate and adjacent areas, and are remote and inaccessible. The Tac Carrere proposed borrow areas is in a rural residential area still recovering from the effects of Hurricane Katrina. Generally, they lack distinct qualities that make them visually significant. However, the Westbank E proposed borrow areas are within a quarter-mile of densely populated residential areas in an urban setting.

#### Discussion of Impacts

##### No Action

With implementation of this alternative, no direct, indirect, or cumulative impacts to visual resources through the CEMVN's actions would occur at the proposed borrow areas. These resources may be impacted by non-Federal actions if the landowner chooses to use the land as a borrow source. HSDRRS projects would be built to authorized levels using potential Government and/or Pre-Approved Contractor Furnished borrow areas described in IER # 18, IER # 19, IER # 22, IER # 23, IER # 26 or other sources as yet to be identified.

##### Proposed Action

With implementation of this alternative, no direct impacts to visual resources through the CEMVN's actions would occur at the proposed borrow areas. Upon completion of excavation, the Environmental Design Considerations for Main Stem Levee Borrow Areas Along the Lower Mississippi River Report 4: Part V, incorporated by reference, and the CEMVN operating procedures will be basic guidelines referred to when designing the borrow areas as positive visual environmental features. For example, during the borrow excavation process any overburden (topsoil that lays on top of suitable borrow material) would be stockpiled. Upon completion of excavation, site restoration may include placing the stockpiled overburden back into the borrow area to create islands and smooth out corners for visual enhancement.

Indirect impacts may occur based on the condition that the borrow areas are left after construction activity. The Westbank E Phase 1 proposed borrow area is adjacent to the Kennedy Heights neighborhood. Currently, borrow areas do not exist in the area and the neighborhood is screened from the proposed Westbank E Phase 1 borrow area by a tree line at the eastern edge of the project area. The viewsheds from the residences along the Capital Dr Area of the Kennedy Heights neighborhood may be exposed to the proposed borrow area if the tree line at the eastern edge of the project area is removed by construction activity; there is the possibility that proposed Westbank E Phase 1 borrow area existence may not be considered as a positive visual environmental feature.

Cumulatively, visual impacts from the excavation of Stumpf Phase 1 and 2, Westbank D, Westbank E Phase 1 and 2, and Tac Carrere proposed borrow areas are

unknown at this time as the borrow area selection and excavation process is ongoing; the impacts will be discussed in the CED.

### **3.3 SOCIOECONOMIC RESOURCES**

The focus of this section is to evaluate the relative socioeconomic impacts, if any, of construction activities associated with acquiring borrow material from the previously described areas in the vicinity of the New Orleans Metropolitan Area. This borrow material would be used to construct Federal HSDRRS projects.

#### **3.3.1 Noise**

##### Existing Conditions

The potential borrow areas are located in mostly rural areas, relatively far from the dense development of the New Orleans Metropolitan Area. Therefore, noise impacts on residential populations are largely absent under existing conditions. While the sites are not surrounded by dense development, there are still residential structures in the vicinity of the Westbank E Phase 1 site that may be affected by noise impacts due to construction.

##### Discussion of Impacts

###### No Action

With implementation of this alternative Federal HSDRRS projects would be built to authorized or 100-year levels using materials from Government or Contractor Furnished borrow areas. The future conditions with this alternative would likely require alternative methods reducing the risk from hurricane and storm damage using borrow material from other locations. Under this alternative, there would be no noise impacts at the sites discussed in this report.

###### Proposed Action

With implementation of the proposed alternative there would be adverse noise impacts, especially to residences in the vicinity of the Westbank E Phase 1 site, occurring as a result of the excavation of borrow material. Noise would be created from high-powered machinery and human activities within the project right of way and emanate various distances beyond the construction site until the noise energy dissipates. Because the Stumpf Phase 1 and 2, West bank D, Westbank E Phase 2, and Tac Carrere proposed borrow areas are located in relatively sparsely populated areas, the number of residences and commercial properties exposed to the adverse impacts of noise is minimal. There is greater potential, however, for noise impacts to be generated by construction vehicles and personal vehicles for contract laborers that may require the use of public roads and highways for access to construction sites. However, these impacts would only be present during the excavation period. No permanent impacts are expected.

#### **3.3.2 Population and Housing, Business and Industry, Property Values, Public Facilities and Services**

##### Existing Conditions

Located within the New Orleans Metropolitan Area, and within non-wetland areas, the proposed borrow areas have more property value than large tracts of adjacent wetlands. The areas indirectly, if not directly, contribute to the local tax base.

Of the three parishes in Louisiana discussed in this report, the specified median value of homes ranged from \$87,300 in Orleans Parish to \$110,100 in Plaquemines Parish. However, all of the sites are on vacant property.

The Westbank D and Westbank E Phase 1 and 2 sites in Jefferson Parish cover 56 and 165 acres, respectively. The sites are within the WBV Project. The Westbank D site is part of a landfill expansion used for construction and demolition debris. The Westbank D site is also used as pasture land, but has no cattle. The Westbank E site is also used as pasture land, and there are cattle present. All of the sites are located within census block group 275.02.6, with a median value for specified owner-occupied housing units of \$53,300.

The Stumpf Phase 1 and 2 areas in Orleans Parish cover 402 acres within the LPV Project. There are some industrial structures on the site, but these will be avoided during excavation. The site is located within census block group 17.33.2, with a median value for specified owner-occupied housing units of \$54,500.

The Tac Carrere site in Plaquemines Parish covers approximately 55 acres within the New Orleans to Venice Hurricane Protection Project. The site is forested and will be cleared for excavation. It is located within census block group 506.1, with a median value for specified owner-occupied housing units of \$195,300.

### Discussion of Impacts

#### No Action

With implementation of this alternative Federal HSDRRS projects would be built to authorized or 100-year levels using materials from Government or Contractor Furnished or other borrow areas. The future conditions with this alternative would likely require alternative methods for improving flood and hurricane protection using borrow material from other locations. No incremental effects on population and housing, business and industry, property values, or public facilities and services, relative to the proposed action, are expected.

#### Proposed Action

The use of the proposed borrow sites will not cause the displacement of any population or housing.

There may be temporary, construction-related impacts to population in the vicinity of the Westbank E Phase 1 and 2 site, due to its proximity to residences along Capitol Drive. There are approximately 300 residences within a one-block vicinity of the proposed site. Excavation and an increased presence of trucks in the vicinity may create noise impacts; in addition to potential minimal, temporary impacts to air quality.

There may be temporary, traffic-related impacts to the businesses on the proposed Stumpf site, in addition, potentially, to others in the area, as a result of excavation. There would be increased congestion as a result of trucks moving borrow material out of the proposed sites.

Property values for the sites themselves may tend to decrease as their potential uses for alternative purposes are diminished in the future. For adjacent properties, the market response with respect to property values is undetermined, though there would appear to be no likelihood that property value could be enhanced.

The impact for future growth opportunities for business and industry in the area is problematic. An open borrow site has fewer opportunities for future development than one that is backfilled. Also, an open borrow site does nothing to enhance the relative attractiveness of adjacent real estate as opportunities for commercial investment. However, from a market perspective, the competitive disadvantage that the borrow site, and adjacent properties, may be placed when compared to alternative real estate investment opportunities in other markets is measured simply by the cost to backfill. From a practical standpoint, private owners of adjacent properties cannot compel owners of open borrow sites to backfill for the purpose of enhancing property values within the market area in general. For Government furnished borrow the future owners of open borrow sites are likely to be the parishes themselves, serving as local sponsors for the project; therefore, the future disposition of open borrow sites may emerge as a higher priority public issue within the context of a comprehensive economic development master plan. As a result, an impediment, to an undefined degree, though potentially severe, may be introduced to further prospective commercial development.

### **3.3.3 Health and Safety, Flood Control and Hurricane Protection**

#### Existing Conditions

With the exception of the Tac Carrere site, the proposed borrow sites fall within existing hurricane and storm damage risk reduction areas of Orleans, and Jefferson parishes. All parishes in the vicinity have been highly sensitive to flood and hurricane damage, requiring an extensive network of structures, pumping systems, and evacuation routes. The rate in erosion in some areas appears to have declined since the 1960's, but the loss of barrier islands, erosion, and subsidence of wetlands have continued in many areas in close proximity to the project sites. Hurricanes Katrina and Rita, which occurred in August and September of 2005, respectively, created heavy damage that requires an immediate effort to restore existing conditions and reestablish protected areas of the community, whenever possible.

The immediate project sites do not include health and safety facilities providing related services.

#### Discussion of Impacts

##### No Action

With implementation of this alternative, Federal HSDRRS projects would be built to authorized or 100-year levels using materials from Government or Contractor Furnished or other borrow areas. The future conditions with this alternative would likely require alternative methods for improving flood and hurricane protection using borrow material from other locations. Under this alternative there would be no impact to health and safety at the sites discussed in this report.

##### Proposed Action

With implementation of the proposed action, suitable material would be excavated from the proposed borrow areas. This is the procedure used to create most of the storm damage risk reduction infrastructure for the New Orleans Metropolitan Area. Implementation of the sites would be subject to Federal, State, and local safety and health regulations. There would be temporary, construction-related risks to health and safety, but no permanent impacts are expected. However, if borrow sites are not fenced in, then there would be increased adverse effects to health and safety in the vicinity, especially that of young children.

Increased vehicular traffic near the borrow sites during the excavation period may increase the likelihood of accidents. Routine measures related to traffic management at construction sites are expected to reduce this risk and ensure safety.

With implementation of this alternative, there would be minimal impacts to air and water quality, due to construction. Heavy equipment and excavation of borrow material would cause dust particles to be suspended in the air. In addition, there might be temporary adverse impacts to water quality, though CEMVN will take action to minimize these impacts. Changes in water and air quality would, again, be minimal and only last through the period of excavation.

One potential adverse health impact due to the excavation of borrow material would be an increased mosquito problem. Should water collect in portions of the areas excavated for borrow material, the available area for potential mosquito breeding would be increased. However, mosquito control is part of the responsibility of local parishes, not CEMVN.

Borrow areas that are not backfilled have the potential to create a greater safety hazard to any proximate vehicular traffic compared to a borrow area that is backfilled. This increased hazard would exist for the indefinite future.

No long-term impacts to health and safety facilities are expected as a result of this alternative. However, there may be permanent impacts to health and safety if the borrow sites are not backfilled.

### **3.3.4 Employment, Income, and Local Tax Base**

#### Existing Conditions

All of the proposed sites except for Stumpf Phase 1 and 2 are comprised of pasture land. These sites are used for agricultural purposes to generate income. While the Westbank D site has no cattle present, there are cattle on the Westbank E Phase 1 and 2 sites.

There are some industrial structures on the Stumpf sites that will be avoided during construction. These include a pumping station; an oil and gas pipeline, and a connected oil and gas facility. Additionally, there is a private industrial or commercial business on the site whose property includes a storage yard.

The proposed sites are all within close proximity to urban developments of the New Orleans MSA.

#### Discussion of Impacts

##### No Action

With implementation of this alternative, Federal HSDRRS projects would be built to authorized or 100-year levels using materials from Government or Contractor Furnished or other borrow areas. The future conditions with this alternative would likely require alternative methods for improving flood and hurricane protection using borrow material from other locations. No incremental impacts on employment, income, and local tax base relative to the proposed action are expected.

##### Proposed Action

Most of the sites, except for Stumpf Phase 1 and 2, were previously used as pasture or farmland, and the owners of these businesses may not have returned post-Katrina. However, if borrow material is excavated from these areas with no backfill, then this

land will no longer be available for other uses, including farmland. The land will be taken out of commerce, and will no longer have any functional use for producing income. In addition, because the land will no longer be used to produce income, the size of the local tax base will be decreased.

There are no anticipated disruptions to commercial activities in the areas near the borrow sites. Besides the potential decrease in tax collections because of the loss in income-producing agricultural land, there should be no other disruptions to the local tax base. The exception to this is the possibility that tax collections based on the values of the sites themselves may decline if the values of the properties decline.

### **3.3.5 Community Growth**

#### Existing Conditions

Desirable community and regional growth is considered growth that provides a net increase in benefits to a local or regional economy, social conditions, and the human environment, including water resource development. Similar to other references to social and economic conditions, community and regional growth has been heavily dependent on the unique hurricane and storm damage risk reduction systems created by borrow areas. The proposed project sites are planned to improve flood and hurricane protection.

#### Discussion of Impacts

##### No Action

With implementation of this alternative, Federal HSDRRS projects would be built to authorized or 100-year levels using materials from Government or Contractor Furnished or other borrow areas. The future conditions with this alternative would likely require alternative methods for improving flood and hurricane protection using borrow material from other locations. No incremental impacts with respect to the proposed action are expected.

##### Proposed Action

The proposed project would advance the growth of communities within the GNOHSDRRS by making possible improvements to the hurricane and storm damage risk reduction system. Without strong storm and flood protection, a community's growth will be limited. By advancing the storm damage risk reduction system, confidence and investment in the Greater New Orleans community will increase.

However, since the Tac Carrere site is outside of the HSDRRS, the growth of the area around the site may not necessarily be enhanced by the improvement of the HSDRRS.

Additionally, construction activities will advance community growth by increasing traffic to the areas around the borrow sites. This increased activity will benefit regional businesses, though not necessarily those at the project site.

However, using land for borrow purposes would make that same land unavailable for other uses. This may place the communities around the borrow sites at a competitive disadvantage for increased development and growth. Adjacent property may also be less likely to be developed if land is used for borrow purposes.

### **3.3.6 Community Cohesion**

#### Existing Conditions

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 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.

While the proposed borrow areas are located on unpopulated tracts of land, there may be neighboring residents or businesses who disapprove of the sites being used as sources of borrow materials. However, the proposed project is designed to benefit areas beyond the immediate project sites, and also benefit community cohesion of the larger community of the New Orleans Metropolitan Area, and the nation at large.

Conditions brought about by water resource development can impact community cohesion in different ways. The basic objectives of water resource development have essentially been to provide additional protection through flood control and hurricane protection, improved navigation, environmental restoration, and recreation, through civil works as needed by the local region and the nation. Public involvement with the community is part of this process.

#### Discussion of Impacts

##### No Action

With implementation of this alternative, Federal HSDRRS projects would be built to authorized or 100-year levels using materials from Government or Contractor Furnished or other borrow areas. The no action alternative would likely require finding alternative borrow sites in different areas. No incremental impacts with respect to the proposed action are expected.

##### Proposed Action

The impacts of construction are typically adverse, such as noise and traffic congestion. Some effects, though, have both positive and negative impacts. Yet it is difficult to foresee any 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 current alternative.

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 storm damage risk reduction system. This occurs since storm surge protection measure 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. The alternative presented here increases the level of community cohesion in this instance.

However, since the Tac Carrere site is outside of the HSDRRS, the level of community cohesion in the area around the site may not necessarily be enhanced by the improvement of the HSDRRS.

### **3.4 ENVIRONMENTAL JUSTICE**

Census Block Group statistics from the 2000 Census and ESRI (Environmental Systems Research Institute) estimates were utilized for environmental justice data analysis. Detailed discussion of demographic and income data along with pertinent maps, tables and photographs are available and will be included in the CED.

This analysis is based on six maps for the four borrow areas received from the CEMVN. As the project planning process advances, environmental justice impacts will be analyzed further when additional project planning data become available. Aerial photos were utilized to confirm the presence of habitation in the various project areas, and to analyze potential environmental justice impacts.

#### Existing Conditions

- Stumpf Phase 1 and 2  
Based on a review of satellite imagery, there are no residential areas adjacent to the Stumpf Phase 1 and 2 proposed borrow areas. Approximately 2000 feet east of the site, north of Highway 90, lies the closest residential area, an apartment complex that is currently vacant. This area is located within Census-designated Block Group 17.332, which includes portions of Orleans Parish south of Highway 90 and east of the Industrial Canal. According to the U.S. Census, this Block Group was a low income, minority community in 2000, with 85.7% of the population a minority and 47.9% of the population low income. According to ESRI estimates, the minority and low income population decreased slightly from 2000 to 2007. Based on 2007 estimates, the Block Group likely remains a low income, minority community.
- Westbank D  
The Westbank Site D Borrow Pit is a 56 acre area located 0.2 miles northwest of Highway 90 and Live Oak Boulevard intersection. The West Bank Site D is located in close proximity to the West Bank Site E on the western side of Live Oak Boulevard, and as such, has identical figures for low income and minority populations, both for 2000 and 2007. However, the Westbank Site D is more removed from residential areas than Westbank Site E Phase 1 and 2.
- Westbank E Phase 1  
According to the U.S. Census, this area was a low income and minority community in 2000, with 92.2% of the population a minority and 36.2% of the population low income. According to ESRI estimates, the minority population



increased slightly and the low income population decreased from 2000 to 2007. Based on 2007 estimates, it is probable the area remains a low income, minority community.

- Westbank E Phase 2

According to the U.S. Census, this area was a low income and minority community in 2000, with 92.2% of the population a minority and 36.2% of the population low income. According to ESRI estimates, the minority population increased slightly and the low income population decreased from 2000 to 2007. Based on 2007 estimates, it is probable the area remains a low income, minority community.

- Tac Carrere

Based on a review of satellite imagery, the borrow site is located in a predominantly rural area with a small residential community immediately south near Pelas Hyman Lane. This area is located within the Census-designated Block Group 506.01, which extends from West Paula Drive to Rosemarie Road, encompassing an area much larger than that of the borrow site. According to the U.S. Census, this Block Group was a low income, non-minority community in 2000, with 29.4% of the population a minority and 25.9% of the population low income.

According to ESRI estimates, the minority population decreased slightly while the low income population increased from 2000 to 2007. Based on 2007 estimates, it is probable the area is currently a low income, non-minority community.

### Discussion of Impacts

The proposed borrow site areas were evaluated for potential disproportionately high, environmental impacts on minority and/or low-income populations. As the project planning process advances, environmental justice impacts will be analyzed further when additional project planning data become available. Aerial photos were utilized to confirm the presence of habitation in the various project areas, and are utilized in environmental justice analysis.

#### No Action

Under the No Action alternative, HSDRRS projects would be built to authorized levels using Government and/or Contractor Furnished borrow areas described in IER # 18, IER # 19, IER # 22, IER # 23, IER # 26 or other sources as yet to be identified (e.g., other potential Government Furnished or Pre-Approved Contractor borrow areas; Supply Contract). Not using the four proposed borrow areas would not cause disproportionate impacts on any minority or low-income population. Therefore, no environmental justice issues are anticipated for this alternative.

No disproportionate impacts borne by any minority or low-income population would be made by not using the four proposed borrow areas. Therefore, no direct, indirect, or cumulative environmental justice issues are anticipated for this alternative.

#### Proposed Action

The proposed action would benefit all residents of the New Orleans Metropolitan Area equally by providing the material necessary to construct the HSDRRS. Therefore there would be no adverse impacts for environmental justice within this community under the proposed action.

- Stumpf Phase 1 and 2

*Direct Impacts.*

Because the project is not within close proximity to residential areas, the Stumpf borrow project will not have direct environmental justice impacts to low income or minority communities.

*Indirect Impacts.*

There would be some minor indirect impacts associated with the borrow activities at the site. There could be temporary noise, air quality and traffic issues because of the construction equipment, material deliveries, and other construction activities. However, the conditions would become normal after the construction.

*Cumulative Impacts.*

Details on cumulative, environmental justice impacts will be analyzed when further project planning data become available at conclusion of environmental justice public meetings and will be included in the CED.

- Westbank D

*Direct Impacts.*

West Bank D is more removed from residential areas than West Bank E, and therefore will have no direct environmental justice impacts from the use of this site as a borrow pit.

*Indirect Impacts.*

West Bank D is more removed from residential areas than West Bank E, and therefore will have no indirect, environmental justice impacts from construction activities in developing this borrow site. There could be temporary noise, air quality and traffic issues because of the construction equipment, material deliveries, and other construction activities. However, the conditions would become normal after the construction.

*Cumulative Impacts.*

Details on cumulative, environmental justice impacts will be analyzed when further project planning data become available at conclusion of environmental justice public meetings and will be included in the CED.

- Westbank E Phase 1

*Direct Impacts.*

The community near the Westbank E Phase 1 site is a low income, minority community. Use of the Westbank E Phase 1 site as a borrow area could result in direct environmental justice impacts due to a possible drop in property values in the immediate vicinity of the proposed borrow area. This could negatively impact the housing market in that area.

*Indirect Impacts.*

There would be some minor indirect impacts associated with the borrow activities at the site. There could be temporary noise, air quality and traffic issues because of the construction equipment, material deliveries, and other construction activities. However, the conditions would become normal after the construction.

*Cumulative Impacts.*

Details on cumulative, environmental justice impacts will be analyzed when further project planning data become available at conclusion of environmental justice public meetings and will be included in the CED.

- Westbank E Phase 2

*Direct Impacts.*

Due to the low income and minority characteristics of the Block Group for this area, and due to presence of residential neighborhood within 2000 ft of the borrow site, Phase 2 will have some minor direct environmental justice impacts from the use of this site as a borrow pit. Those impacts could also include a negative impact on the housing market in that area from temporary landscaping disturbances due to construction activities.

*Indirect Impacts.*

There would be some minor indirect impacts associated with the borrow activities at the site. There could be temporary noise, air quality and traffic issues because of the construction equipment, material deliveries, and other construction activities. However, the conditions would become normal after the construction.

*Cumulative Impacts.*

Details on cumulative, environmental justice impacts will be analyzed when further project planning data become available at conclusion of environmental justice public meetings and will be included in the CED.

- Tac Carrere

*Direct Impacts.*

Due to the low income, non-minority characteristics of the adjacent community, the use of this borrow site will not exert direct environmental justice impacts due to the distance from the proposed project area.

*Indirect Impacts.* There would be some minor indirect impacts associated with the borrow activities at the site. There could be temporary noise, air quality and traffic issues because of the construction equipment, material deliveries, and other construction activities. However, the conditions would become normal after the construction.

*Cumulative Impacts.*

Details on cumulative, environmental justice impacts will be analyzed when further project planning data become available at conclusion of environmental justice public meetings and will be included in the CED.

Details on cumulative environmental justice impacts from the Stumpf Phase 1 and 2, Westbank D, Westbank E Phase 1 and 2, and Tac Carrere proposed borrow areas will be analyzed when further project planning data become available at conclusion of small group neighborhood focus meetings and will be included in the CED.

### **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 action. 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 ESA was completed for each proposed borrow area. The Phase I ESA documented the Recognized Environmental Conditions (REC) for the proposed project areas. If a REC cannot be avoided, due to the necessity of construction requirements, the CEMVN may further investigate the REC to confirm presence or absence of contaminants, actions to avoid possible contaminants. Federal, State, or local coordination may be required. Because the CEMVN plans to avoid RECs the probability of encountering HTRW in the project area is low.

A copy of the Phase I ESA referenced below will be maintained on file at the CEMVN office, and is incorporated herein by reference. Copies of these reports are available by requesting them from the CEMVN, or accessing them at [www.nolaenvironmental.gov](http://www.nolaenvironmental.gov).

HTRW Land Use Histories and Phase I HTRW ESAs have been completed for the proposed borrow areas:

- The Phase I ESA for Stumpf Phase 1 (incorporated herein by reference) was completed on 01 May 2008. The investigation revealed no Recognized Environmental Conditions (REC) and one historical REC.
- The Phase I ESA for Stumpf Phase 2 (incorporated herein by reference) was completed on 28 May 2008. This assessment has revealed an historical REC from the former Overnight Transport facility adjacent to the west and one REC from the Recovery One Landfill adjacent to the east. The locations of the RECs were mapped and the areas would be avoided.
- The Phase I ESA for Westbank D (incorporated herein by reference) was completed on 25 February 2008. The site is located adjacent to the River Birch C&D Landfill. The SONRIS database was searched to see the activity associated with oil and gas exploration in the vicinity of the subject site. One producing plugged-and-abandoned well on the southern border of the site was listed as operational between 1964 and 1970. No evidence of this well was observed at the subject site. One plugged-and-abandoned Gas and Condensate well in the central portion of the site, along the western border, was listed as operational between 1965 and 1970. Photographic evidence of this well is located in appendix C of the ESA. This historic site is suspected of potentially negatively impacting the subject site. Soil sampling is recommended at the well sites and also at the northwest corner of the site, where leachate from the landfill may have affected the site. Soil testing would be done before any excavation proceeds. The locations of the RECs were mapped and the areas would be avoided.
- The Phase I ESA for Westbank E (incorporated herein by reference) was completed on 30 January 2008. On-site concerns were noted at a residential site (ASTs and several drums near the barn), in addition to two plugged and abandoned wells, Serial ID 98294 and Serial ID121677. Off-site concerns were noted from the current and historical presence of a landfill located on the southwest adjoining property, and also two plugged and abandoned wells, Serial ID 171374 and 115771. The locations of the RECs were mapped and the areas would be avoided.

- The Phase I ESA for Tac Carrere (incorporated herein by reference) was completed on 03 March 2008. The Phase I ESA did not reveal evidence of RECs in connection with the proposed borrow area. Some trash, an abandoned vehicle, waste auto parts, tires, and building debris were identified. These waste materials can be easily removed and should not pose any impact to the intended use of the property by CEMVN. No further investigation is necessary.

At all these sites, any suspected REC would be avoided, if possible. If engineering considerations mandate that a REC be disturbed, then additional investigation would be made of the REC, including toxicological testing, if indicated, before any suspected REC would be disturbed. If undiscovered HTRW should be found during the course of the construction, a similar process would be followed: avoid if possible, but if avoidance is not possible then investigation of the situation would follow, including chemical testing of the material in question and evaluation of the test results by a Certified Industrial Hygienist.

#### **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. 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.

As indicated previously, in addition to this IER, the CEMVN is preparing a draft CED that will describe the work completed and the work remaining to be constructed. 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 other actions, projects, and occurrences that may contribute to the cumulative impacts previously discussed.

Borrow material has been obtained in the past by the CEMVN for HSDRRS and other projects in southeastern Louisiana. The CEMVN has been working at an accelerated schedule to rehabilitate the HSDRRS system after Hurricanes Katrina and Rita, and has a goal of building the system to authorized levels by June 2011. Over 75,000,000 cubic yards of borrow material are estimated to be needed to complete authorized levels of protection. 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 Federal LPV, WBV, and New Orleans to Venice (NOV) Hurricane Protection projects to authorized elevations. This includes modifications to flood protection projects not covered by this IER. Levee improvements throughout the LPV and WBV projects 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 flood protection projects. In addition to modifying and raising existing structures, three new outfall canal closure structures are proposed at the 17th Street, Orleans Avenue, and London Avenue Outfall Canals in the Orleans East Bank Basin, and a new closure structure is proposed for within the Inner Harbor Navigation Canal area.



All of these flood protection projects are currently in the planning and design stages, and impacts from these component projects will be addressed in separate IERs.

Other projects of the CEMVN, such as Morganza to the Gulf, Donaldsonville to the Gulf, Larose to Golden Meadows, Grand Isle non-Federal levees, Plaquemines West Bank non-Federal levees, maintenance of the Mississippi River levees and other ongoing civil works investigations will require suitable borrow material. State and local levee and floodwall construction efforts will require borrow material as well. The Mississippi River and Tributaries Projects will utilize borrow material for levee repairs, replacements, lifts, and berms. Government Furnished borrow areas are also being investigated and utilized to supply large quantities of material for levee and floodwall projects.

The construction of the proposed borrow areas would have short-term cumulative effects on transportation. It is anticipated that over 75,000,000 cubic yards of material would be needed to raise levee elevations regionally to meet the needs of the HSDRRS. 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. Additional information related to transportation impacts is being collected 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.

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 southeastern Louisiana (Proposed Action). After borrow area excavation, the land may be converted to ponds and small lakes. If not backfilled, the land would be made unsuitable for farming, forestry, or urban development in the reasonably foreseeable future. Habitat would be changed to favor aquatic and semi-aquatic species over the terrestrial ones that now occupy the areas. Borrow areas that do not retain water would be colonized by vegetation and woody plants, which would favor terrestrial species. This would attract the same species that are currently found in the areas.

Based on historical human activities and land use trends in southeastern Louisiana, it is reasonable to anticipate that future activities would further contribute to cumulative degradation of land resources. Levee designs are currently being finalized, and the need for borrow may decrease. In the past three years, the estimated need for borrow material has decreased from 100,000,000 cubic yards to 75,000,000.

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 mitigation plan is discussed in section 7.

## **5. SELECTION RATIONALE**

The proposed action consists of excavating the proposed Government Furnished borrow areas in the New Orleans Metropolitan Area that would have no impact on cultural resources and T&E species. This report investigated the potential impacts of this action these resources, and jurisdictional wetlands, BLH, upland resources, fisheries, wildlife, recreational resources, aesthetics, noise, air quality, prime and unique farmland, water quality, transportation, socioeconomics, and environmental justice. There is an identified need for over 75,000,000 cubic yards of borrow material to complete the HSDRRS, and

the proposed action meets approximately 10 percent of this demand. Because of this need, the CEMVN will need to investigate acquiring all potentially viable areas for the next few years. Other Government Furnished borrow is an option that was explored in IER # 18 and IER # 22, and more potential areas may be discussed in future IERs. Pre-Approved Contractor Furnished borrow areas were investigated in IER # 19 and IER # 23, IER # 26, and more potential sites may be discussed in future IERs. Supply Contract borrow options may also be discussed in future IERs. All of this borrow material would 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 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](http://www.nolaenvironmental.gov). Scoping for HSDRRS projects were 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 is hosting monthly public meetings 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

LDNR reviewed the proposed action for consistency with the Louisiana Coastal Resource Program (LCRP). All proposed borrow activities discussed in this document were found by LDNR to be consistent with the LCRP (table 6).

**Table 6: LDNR Coastal Zone Consistency Determination Concurrence**

| <b>Proposed Borrow Area</b> | <b>LDNR LCRP Consistency Permit Number</b> |
|-----------------------------|--|
| Stumpf Phase 1              | C20080076                                  |
| Stumpf Phase 2              | C20080336                                  |
| Westbank D                  | C20080076                                  |
| Westbank E Phase 1 and 2    | C20070509                                  |
| Tac Carrere                 | C20080076                                  |

The CEMVN received a draft Coordination Act Report (CAR) from the USFWS on 8 October 2008 (appendix D). Positions and recommendations of the USFWS, in accordance with the Fish and Wildlife Coordination Act, include:

Recommendation 1: “[The CEMVN] and local sponsor shall provide 262 AAHUs to compensate for the unavoidable, project-related loss of forested lands. [USFWS], National Marine Fisheries Service [NMFS], Louisiana Department of Wildlife and Fisheries [LDWF], and [LDNR] 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 contractors locating future borrow-sites.”

CEMVN Response 2: Concur.

Recommendation 3: “Any proposed change in borrow site features, locations or plans shall be coordinated in advance with [USFWS], NMFS, LDWF, and LDNR.”

CEMVN Response 3: The CEMVN will coordinate with these agencies.

Recommendation 4: “The projects’ first Project Cooperation Agreement (or similar document) shall include language that includes the responsibility of the local-cost sharer to provide operational, monitoring, and maintenance funds for mitigation features.”

CEMVN Response 4: USACE Project Partnering Agreements (PPAs) do not contain language mandating the availability of funds for specific project features, but require the non-Federal Sponsor to provide certification of sufficient funding for the entire project. Further mitigation components are considered a feature of the entire project. The non-Federal Sponsor is responsible for Operation, Maintenance, Repair, Replacement, and Rehabilitation (OMRR&R) of all project features in accordance with the OMRR&R manual that the Corps provides upon completion of the project.

Recommendation 5: “Forest clearing associated with borrow site preparation should be conducted during the fall or winter to minimize impacts to nesting migratory birds, when practicable.”

CEMVN Response 5: Concur.

Recommendation 6: “Whenever applicable, [USFWS] recommends that [CEMVN] consult the [USFWS]-developed National Bald Eagle Management (NDEM) Guidelines, utilize the interactive webpage at: <http://www.fws.gov/midwest/eagle/guidelines/index.html>, and implement any recommendations suggested. We also ask that [CEMVN] provide a copy of their disturbance determination to our office.”

CEMVN Response 6: Concur.

Recommendation 7: “If a proposed borrow site is changed significantly or excavation is not implemented within 1 year, we recommend that [the CEMVN] 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 7: 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 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 the proposed borrow areas contain, at most, 946 acres of non-jurisdictional BLH (table 7). The amount of BLH impacted is expected to decrease as geotechnical results are finalized. Compensatory mitigation for these impacts will be completed, as described in future mitigation IERs.

**Table 7: BLH Impacts from Proposed Action**

| <b>Proposed Borrow Area</b> | <b>Parish</b> | <b>BLH Impacted (acres)</b> | <b>AAHUs Lost</b> |
|-----------------------------|---------------|-----------------------------|-------------------|
| Stumpf Phase 1              | Orleans       | 318                         | 88                |
| Stumpf Phase 2              | Orleans       | 531                         | 146               |
| Tac Carrere                 | Plaquemines   | 17.7                        | 12.1              |
| Westbank E Phase 1          | Jefferson     | 26.2                        | 13.7              |
| Westbank E Phase 2          | Jefferson     | 53.2                        | 27.8              |
| Total                       |               | 942.1*                      | 262               |

\* Some areas have been reduced in size after USFWS determined this value.

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**

| <b>IER</b>                                | <b>Parish</b>  |                | <b>Non-wet<br/>BLH (acres)</b> | <b>Non-wet<br/>BLH AAHUs</b> | <b>BLH<br/>(acres)</b> | <b>BLH<br/>AAHUs</b> | <b>Swamp<br/>(Acres)</b> | <b>Swamp<br/>AAHUs</b> | <b>Marsh<br/>(Acres)</b> | <b>Marsh<br/>AAHUs</b> | <b>EFH<br/>(Acres)</b> |
|---|--|----------------|--------------------------------|------------------------------|------------------------|----------------------|--------------------------|------------------------|--------------------------|------------------------|------------------------|
| 1<br>LPV, La Branch<br>Wetlands Levee     | St. Charles  | Protected Side | -                              | -                            | -                      | -                    | 137.05                   | 73.99                  | -                        | -                      | -                      |
|   |  | Flood Side     | -                              | -                            | 11.33                  | 8.09                 | 143.57                   | 110.97                 | -                        | -                      | -                      |
| 2<br>LPV, West Return<br>Floodwall        | St. Charles, Jefferson   | Protected Side | -                              | -                            | -                      | -                    | -                        | -                      | -                        | -                      | -                      |
|   |  | Flood Side     | -                              | -                            | -                      | -                    | 33.40                    | 9.00                   | -                        | -                      | -                      |
| 3<br>LPV, Lakefront<br>Levee              | Jefferson  | Protected Side | -                              | -                            | -                      | -                    | -                        | -                      | -                        | -                      | -                      |
|   |  | Flood Side     | -                              | -                            | -                      | -                    | -                        | -                      | -                        | -                      | 26                     |
| 11<br>11 Tier 2 Borgne<br>IHNC Protection | Orleans, St. Bernard   | Protected Side | -                              | -                            | -                      | -                    | -                        | -                      | -                        | -                      | -                      |
|   |  | Flood Side     | -                              | -                            | 15.00                  | 2.59                 | -                        | -                      | 186.00                   | 24.33                  | -                      |
| 14<br>WBV,<br>Westwego to Harvey<br>Levee | Jefferson  | Protected Side | -                              | -                            | 45.00                  | 30.00                | -                        | -                      | -                        | -                      | -                      |
|   |  | Flood Side     | -                              | -                            | 45.50                  | 18.58                | 29.75                    | 17.02                  | -                        | -                      | -                      |
| 15<br>WBV,<br>Lake Cataouatche<br>Levee   | Jefferson  | Protected Side | -                              | -                            | 23.50                  | 6.13                 | -                        | -                      | -                        | -                      | -                      |
|   |  | Flood Side     | -                              | -                            | 3.60                   | 1.35                 | -                        | -                      | -                        | -                      | -                      |
| 18<br>GFBM                                | Jefferson  | Protected Side | 29.90                          | 10.62                        | -                      | -                    | -                        | -                      | -                        | -                      | -                      |
|   |  | Flood Side     | -                              | -                            | -                      | -                    | -                        | -                      | -                        | -                      | -                      |
| 18<br>GFBM                                | Plaquemines  | Protected Side | 8.00                           | 3.68                         | -                      | -                    | -                        | -                      | -                        | -                      | -                      |
|   |  | Flood Side     | -                              | -                            | -                      | -                    | -                        | -                      | -                        | -                      | -                      |
| 18<br>GFBM                                | St. Charles  | Protected Side | -                              | -                            | -                      | -                    | -                        | -                      | -                        | -                      | -                      |
|   |  | Flood Side     | -                              | -                            | -                      | -                    | -                        | -                      | -                        | -                      | -                      |
| 18<br>GFBM                                | Orleans  | Protected Side | 226.00                         | 68.79                        | -                      | -                    | -                        | -                      | -                        | -                      | -                      |
|   |  | Flood Side     | -                              | -                            | -                      | -                    | -                        | -                      | -                        | -                      | -                      |
| 18<br>GFBM                                | St. Bernard  | Protected Side | 74.30                          | 43.59                        | -                      | -                    | -                        | -                      | -                        | -                      | -                      |
|   |  | Flood Side     | -                              | -                            | -                      | -                    | -                        | -                      | -                        | -                      | -                      |
| 19<br>CFBM                                | Hancock County, MS;<br>Iberville; Orleans;<br>Plaquemines; St. Bernard | Protected Side | -                              | -                            | -                      | -                    | -                        | -                      | -                        | -                      | -                      |
|   |  | Flood Side     | -                              | -                            | -                      | -                    | -                        | -                      | -                        | -                      | -                      |
| 19<br>CFBM                                | Jefferson  | Protected Side | -                              | -                            | -                      | -                    | -                        | -                      | -                        | -                      | -                      |
|   |  | Flood Side     | -                              | -                            | -                      | -                    | -                        | -                      | -                        | -                      | -                      |
| 22<br>GFBM                                | Jefferson  | Protected Side | 157.76                         | 89.64                        | -                      | -                    | -                        | -                      | -                        | -                      | -                      |
|   |  | Flood Side     | -                              | -                            | -                      | -                    | -                        | -                      | -                        | -                      | -                      |
| 22<br>GFBM                                | Plaquemines  | Protected Side | 86.93                          | 28.90                        | -                      | -                    | -                        | -                      | -                        | -                      | -                      |
|   |  | Flood Side     | -                              | -                            | -                      | -                    | -                        | -                      | -                        | -                      | -                      |
| 23<br>CFBM                                | Hancock County, MS;<br>Plaquemines;<br>St. Bernard; St. Charles        | Protected Side | -                              | -                            | -                      | -                    | -                        | -                      | -                        | -                      | -                      |
|   |  | Flood Side     | -                              | -                            | -                      | -                    | -                        | -                      | -                        | -                      | -                      |



| <b>IER</b> | <b>Parish</b>  |                | <b>Non-wet<br/>BLH (acres)</b> | <b>Non-wet<br/>BLH AAHUs</b> | <b>BLH<br/>(acres)</b> | <b>BLH<br/>AAHUs</b> | <b>Swamp<br/>(Acres)</b> | <b>Swamp<br/>AAHUs</b> | <b>Marsh<br/>(Acres)</b> | <b>Marsh<br/>AAHUs</b> | <b>EFH<br/>(Acres)</b> |
|------------|--|----------------|--------------------------------|------------------------------|------------------------|----------------------|--------------------------|------------------------|--------------------------|------------------------|------------------------|
| 25<br>GFBM | Orleans, Jefferson, and<br>Plaquemines                                     | Protected Side | 946                            | 262                          | 0.00                   | 0.00                 | -                        | -                      | -                        | -                      | -                      |
|            |  | Flood Side     | -                              | -                            | -                      | -                    | -                        | -                      | -                        | -                      | -                      |
| 26<br>CFBM | Hancock County, MS;<br>Jefferson, Plaquemines,<br>and St. John the Baptist | Protected Side | -                              | -                            | -                      | -                    | -                        | -                      | -                        | -                      | -                      |
|            |  | Flood Side     | -                              | -                            | -                      | -                    | -                        | -                      | -                        | -                      | -                      |
| Totals     |  | Protected Side | 544.99                         | 230.92                       | 1014.50                | 298.13               | 137.05                   | 73.99                  | -                        | -                      | -                      |
|            |  | Flood Side     | -                              | -                            | 75.43                  | 30.61                | 206.72                   | 136.99                 | 186.00                   | 24.33                  | 26                     |
|            |  | Both           | 544.99                         | 230.92                       | 1089.93                | 328.74               | 343.77                   | 210.98                 | 186.00                   | 24.33                  | 26                     |

- 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**

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

Environmental compliance for the proposed action will be achieved upon coordination of this IER 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 4); Louisiana Department of Natural Resources concurrence with the determination that the proposed action is consistent, to the maximum extent practicable, with the LCRP (table 6); coordination with the SHPO (table 5); receipt and acceptance or resolution of all Fish and Wildlife Coordination Act recommendations; and receipt and acceptance or resolution of all Louisiana Department of Environmental Quality comments on the air quality impact analysis documented in the IER. USFWS has determined that no T&E species, or their habitat, would be adversely affected by the proposed action. The Louisiana 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 excavating four borrow areas located in non-jurisdictional wetland areas that would have no significant effect on cultural resources or threatened and endangered species. This office has assessed the environmental impacts of the proposed action upon jurisdictional wetlands, non-wetland/upland resources, fisheries, wildlife, recreational resources, aesthetics, noise, air quality, prime and unique farmland, water quality, environmental and socioeconomic resources. The interim decision is to potentially use the four sites discussed in this document as borrow sources or stockpile areas.

### **9.2 PREPARED BY**

IER # 25 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 60267; New Orleans, Louisiana 70160-0267.

| <b>Preparer</b>          | <b>Title</b>                                     | <b>Topic</b>              |
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| Gib Owen                 | Environmental Team Leader                        |                           |
| Christopher Brown, Ph.D. | Botanist   | HTRW                      |
| Thomas Keevin, Ph.D.     | Chief, Environmental Branch, St. Louis District, | Internal technical review |

|                             |                                    |                              |
|-----------------------------|------------------------------------|------------------------------|
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| Linda Labure                | Chief, Real Estate Division        | Real Estate Division         |
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| Laura Singer                | Regional Economist                 | Socioeconomic Resources      |
| Danielle Tommaso            | Environmental Resources Specialist | Document preparation         |
| Ph.D.: Doctor of Philosophy |                                    |                              |

In addition to the above list of preparers, the Borrow PDT consists of the following individuals:

| <b>Team Member</b>  | <b>Title</b>                        | <b>CEMVN Office</b>             |
|---|-------------------------------------|---------------------------------|
| Soheila Nazarian Holley, P.E.   | Senior Project Manager              | Protection & Restoration Office |
| Tutashinda Salaam   | Project Manager                     | Protection & Restoration Office |
| Teresa King   | Project Manager                     | Protection & Restoration Office |
| Michael Bourgeois   | Supervisory Civil Engineer          | Construction Division           |
| Louis Britsch, P.G.   | Supervisory Geologist               | Geotechnical Branch             |
| Amy Goodlett  | Technician                          | Protection & Restoration Office |
| Michael Grzegorzewski   | Project Engineer                    | Hurricane Protection Office     |
| Brett Herr  | Chief, Regional Projects Branch     | Protection & Restoration Office |
| Janet Keller  | Realty Specialist                   | Real Estate Division            |
| Maurya Kilroy   | Assistant District Council          | Office of Council               |
| John B. Petitbon, E.I.T.  | Civil/Cost Engineer                 | Cost Engineering Branch         |
| Danny Thurmond  | Engineer                            | Levees Branch                   |
| Kim Tullier   | Geotechnical Engineer               | Geotechnical Branch             |
| Thomas Waguespack   | Civil Engineering Senior Technician | Geotechnical Branch             |
| E.I.T.: Engineer in Training<br>P.E.: Professional Engineer<br>P.G.: Professional Geologist |                                     |                                 |

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## **APPENDIX A: LIST OF ACRONYMS AND DEFINITIONS OF COMMON TERMS**

APE: Areas of potential effect  
ASTM: American Society of Testing and Materials  
BLH: Bottomland Hardwood (Forest)  
BMP: Best Management Practices  
CAR: Coordination Act Report  
CED: Comprehensive Environmental Document  
CERCLA: Comprehensive Environmental Response, Compensation, and Liability Act  
CEQ: Council on Environmental Quality  
Clay Classifications  
    CH: Fat clay  
    CL: lean clay  
    ML: Silt  
CO: Carbon monoxide  
EA: Environmental Assessment  
EIS: Environmental Impact Statement  
ESA: Environmental Site Assessment  
ESRI: Environmental Systems Research Institute  
FONSI: Finding of No Significant Impact  
HSDRRS: Hurricane and Storm Damage Reduction System (aka, Hurricane Protection System)  
HPS: See HSDRRS  
HTRW: Hazardous, Toxic, and Radioactive Waste  
IER: Individual Environmental Report  
IHNC: Inner Harbor Navigation Canal  
IPET: Interagency Performance Evaluation Team  
LCRP: Louisiana Coastal Resource Program  
LDEQ: Louisiana Department of Environmental Quality  
LDNR: Louisiana Department of Natural Resources  
LDWF: Louisiana Department of Wildlife and Fisheries  
LOS: Level of service  
LPV: Lake Pontchartrain and Vicinity Hurricane Protection Project  
MSA: Metropolitan Statistical Area  
NAAQS: National Ambient Air Quality Standards  
NEPA: National Environmental Policy Act  
NO<sub>x</sub>: Nitrogen oxides  
NOV: New Orleans to Venice Hurricane Protection Project  
NPDES: National Pollutant Discharge Elimination System  
O<sub>3</sub>: ozone  
PDT: Project Delivery Team  
PI: Plasticity index  
PL: Public Law  
PM: Particulate matter  
P.L.: Public law  
RCRA: Resource Conservation and Recovery Act  
REC: Recognized environmental condition  
ROD: Record of Decision  
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<sub>x</sub>: Sulfur oxides

T&E: Threatened or Endangered Species

UNOP: Unified New Orleans Plan

USACE: U.S. Army Corps of Engineers

CEMVN: Mississippi Valley Division, New Orleans District

CEMVK: Mississippi Valley Division, Vicksburg District

USDA: U.S. Department of Agriculture

NRCS: Natural Resources Conservation Service

USFWS: U.S. Fish and Wildlife Service

VOC: Volatile organic compound

WBV: West Bank and Vicinity Hurricane Protection Project

WRDA: Water Resources Development Acts



## **APPENDIX B: PUBLIC COMMENT AND RESPONSES SUMMARY**

Comments received during the public review period will be added to the Final IER.

## **APPENDIX C: MEMBERS OF INTERAGENCY ENVIRONMENTAL TEAM**

|                     |   |
|---------------------|---|
| Kyle Balkum         | Louisiana Dept. of Wildlife and Fisheries |
| Catherine Breau     | 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                      |
| Deborah Fuller      | U.S. Fish and Wildlife Service            |
| Mandy Green         | Louisiana Department of Natural Resources |
| Jeffrey Harris      | Louisiana Department of Natural Resources |
| Richard Hartman     | NOAA National Marine Fisheries Service    |
| Brian Heimann       | Louisiana Dept. of Wildlife and Fisheries |
| Jeffrey Hill        | NOAA National Marine Fisheries Service    |
| Christina Hunnicutt | U.S. Geologic Survey                      |
| Barbara Keeler      | U.S. Environmental Protection Agency      |
| Kirk Kilgen         | Louisiana Department of Natural Resources |
| Tim Killeen         | Louisiana Department of Natural Resources |
| Brian Lezina        | Louisiana Dept. of Wildlife and Fisheries |
| Brian Marks         | Louisiana Dept. of Wildlife and Fisheries |
| Ismail Merhi        | Louisiana Department of Natural Resources |
| David Muth          | U.S. National Park Service                |
| Clint Padgett       | U.S. Geologic Survey                      |
| Jamie Phillippe     | Louisiana Dept. of Environmental Quality  |
| Kevin Roy           | U.S. Fish and Wildlife Service            |
| Manuel Ruiz         | Louisiana Dept. of Wildlife and Fisheries |
| Renee Sanders       | Louisiana Dept. of Wildlife and Fisheries |
| 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    |

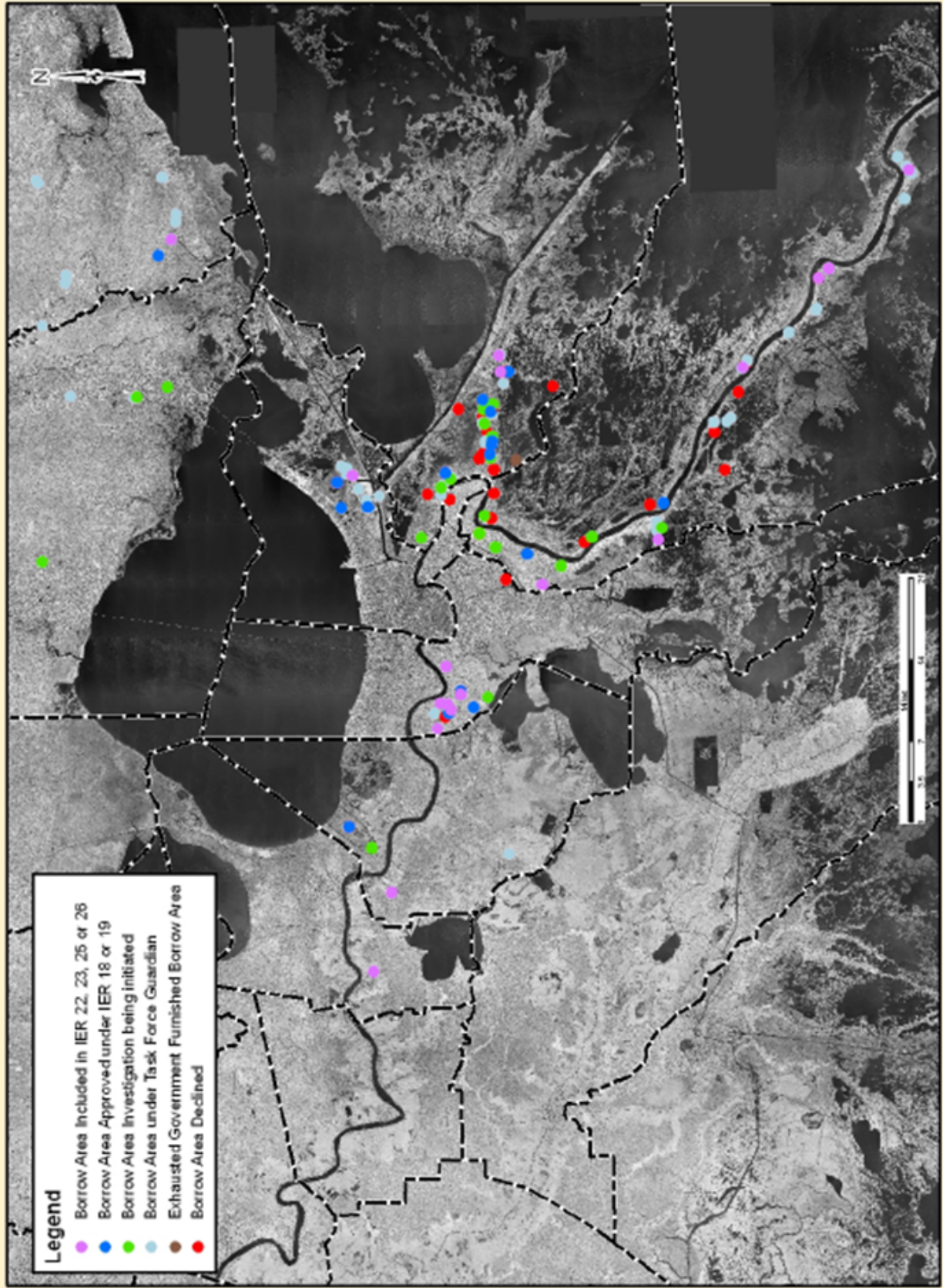
## **APPENDIX D: INTERAGENCY CORRESPONDENCE**

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

## **APPENDIX E: CEMVN BORROW AREA INDEX MAP**

The most up to date version of this and other borrow maps can be found at [www.nolaenvironmental.gov](http://www.nolaenvironmental.gov).

# Borrow Areas



Updated on 7/30/2008

Job No. EGIS-08-111