

**DRAFT INDIVIDUAL ENVIRONMENTAL REPORT
CONTRACTOR-FURNISHED BORROW MATERIAL #7**

**EAST BATON ROUGE, JEFFERSON, LAFOURCHE,
PLAQUEMINES, ST. BERNARD, AND ST. TAMMANY
PARISHES, LOUISIANA,
AND HANCOCK COUNTY, MISSISSIPPI**

IER #31



**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 #31 (IER #31) to evaluate the potential impacts associated with the possible excavation of the proposed Acosta 2, Idlewild Stage 2, King Mine, Levis, Lilly Bayou, Port Bienville, Raceland Raw Sugars, River Birch Landfill Expansion, Scarsdale, and Spoil Area contractor-furnished borrow areas. The proposed borrow areas are located in southeastern Louisiana and southwestern Mississippi (figure 1). The term “borrow” is used in the fields of construction and engineering to describe material that is dug in one location for use at another location. The proposed contractor-furnished borrow areas could be used for construction of the Hurricane and Storm Damage Risk Reduction System (HSDRRS).

IER #31 has been prepared in accordance with the National Environmental Policy Act (NEPA) of 1969 and the Council on Environmental Quality’s (CEQ) Regulations (40 CFR §1500-1508), and the USACE Engineering Regulation (ER) 200-2-2, Environmental Quality, Procedures for Implementing the NEPA. The preparation of an IER, in lieu of a traditional Environmental Assessment (EA) or Environmental Impact Statement (EIS), is provided for in ER 200-2-2 (33 CFR §230) and pursuant to the CEQ NEPA Implementation Regulations (40 CFR §1506.11).

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

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

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

Ten potential contractor-furnished borrow areas investigated by the CEMVN are discussed in this IER. The CEMVN’s engineers currently estimate that over 31,000,000 cubic yards of suitable material would be required to complete HSDRRS projects. Due to the importance of

providing safety to the citizens of the New Orleans metropolitan area, and the amount of borrow needed to supply levee projects for the HSDRRS, multiple borrow IERs are being prepared as additional potential borrow sites are evaluated.

1.1 PURPOSE AND NEED FOR THE PROPOSED ACTION

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

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

1.2 AUTHORITY FOR THE PROPOSED ACTION

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

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

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

The Department of Defense, Emergency Supplemental Appropriations to Address Hurricanes in the Gulf of Mexico, and Pandemic Influenza Act of 2006 (3rd Supplemental - P.L. 109-148, Chapter 3, Construction, and Flood Control and Coastal Emergencies) appropriated funds to accelerate the completion of the previously authorized projects and to restore and repair the projects at full Federal expense. The Emergency Supplemental Appropriations Act for Defense, the Global War on Terror, and Hurricane Recovery of 2006 (4th Supplemental - P.L. 109-234, Title II, Chapter 3, Construction, and Flood Control and Coastal Emergencies) appropriated

funds and added authority to raise levee heights where necessary, reinforce and replace floodwalls, and otherwise enhance the projects to provide the levels of risk reduction necessary to achieve the certification required for participation in the National Flood Insurance Program. Additional Supplemental Appropriations include the U.S. Troop Readiness, Veterans' Care, Katrina Recovery, and Iraq Accountability Appropriations Act of 2007 (P.L. 110-28, Title IV, Chapter 3, Flood Control and Coastal Emergencies, section 4302) (5th Supplemental), and the 6th Supplemental (P.L. 110-252, Title 3, Chapter 3, Construction).

1.3 PRIOR REPORTS

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

Lake Pontchartrain and Vicinity Project

- On 3 May 2010, the CEMVN Commander signed a Decision Record on IERS #7 entitled “Lake Pontchartrain and Vicinity, New Orleans East Lakefront to Michoud Canal, Orleans Parish, Louisiana.” The document was prepared to evaluate the potential impacts associated with construction changes to the IER #7 project area.
- On 1 April 2010, the CEMVN Commander signed a Decision Record on IER #11 Tier 2 Pontchartrain entitled “Improved Protection on the Inner Harbor Navigation Canal, Orleans and St. Bernard Parishes, Louisiana.” The document was prepared to evaluate the potential impacts associated with the construction of a storm surge barrier in the Inner Harbor Navigation Canal 540 feet south of Seabrook Bridge.
- On 8 February 2010, the CEMVN Commander signed a Decision Record on IER #9 entitled “Caernarvon Floodwall, St. Bernard Parish, Louisiana.” The document was prepared to evaluate the potential impacts associated with realignment of Caernarvon Floodwall to the west of the existing alignment.
- On 8 February 2010, the CEMVN Commander signed a Decision Record on IERS #6 entitled “East Citrus Lakefront Levee, Orleans Parish, Louisiana.” The document was prepared to evaluate the potential impacts associated with the addition of a floodwall in lieu of raising the existing levee, which was evaluated in IER #6.
- On 22 January 2010, the CEMVN Commander signed a Decision Record on IER #32 entitled, “Contractor-Furnished Borrow Material #6, Ascension, Plaquemines, and St. Charles Parishes, Louisiana.” 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 HSDRRS.
- On 18 December 2009, the CEMVN Commander signed a Decision Record on IERS #3a entitled, “Jefferson East Bank, Jefferson Parish, Louisiana.” The document was prepared to evaluate the impacts associated with construction of wave attenuation berms and foreshore protection along the Jefferson Parish lakefront and a T-wall, overpass bridge, and traffic detour lane bridge spans at the Causeway Bridge abutment.
- On 29 October 2009, the CEMVN Commander signed a Decision Record on IER Supplemental #2 entitled “Lake Pontchartrain and Vicinity, West Return Flood Wall, Jefferson and Orleans Parishes, Louisiana.” The document describes the impacts associated with replacing the existing floodwall with a new T-wall approximately 35 feet

to the west of the current alignment along the east embankment of the Parish Line Canal on the border of Jefferson and Orleans Parishes, Louisiana.

- On 28 September 2009, the CEMVN Commander signed a Decision Record on IER #30 entitled “Contractor-Furnished Borrow Material #5, St. Bernard and St. James Parishes, Louisiana, and Hancock County, Mississippi.” The document evaluates the potential impacts associated with the actions taken by commercial contractors as a result of excavating contractor-furnished borrow areas for use in construction of the HSDRRS.
- On 20 September 2009, the CEMVN Commander signed a Decision Record on IER #29 entitled “Pre-Approved Contractor-Furnished Borrow Material #4, Orleans, St. John the Baptist, and St. Tammany Parishes, Louisiana.” The document evaluates the potential impacts associated with the actions taken by commercial contractors as a result of excavating contractor-furnished borrow areas for use in construction of the HSDRRS.
- On 31 July 2009, the CEMVN Commander signed a Decision Record on IER #28 entitled “Government-Furnished Borrow Material #4, Plaquemines, St. Bernard, and Jefferson Parishes, Louisiana.” The document evaluates the potential impacts associated with approving government-furnished borrow areas and an access route for use in construction of the HSDRRS.
- On 30 June 2009, the CEMVN Commander signed a Decision Record for IER #5, entitled “Lake Pontchartrain and Vicinity, Permanent Protection System for the Outfall Canals Project on 17th Street, Orleans Avenue, and London Avenue Canals, Jefferson and Orleans Parishes, Louisiana.” The document evaluates the potential impacts related to constructing permanent pumps on the 17th Street, Orleans Avenue, and London Avenue Canals to provide for 100-year level of risk reduction.
- On 29 June 2009, the CEMVN Commander signed a Decision Record for IER Supplemental (IERS) #1, entitled “Lake Pontchartrain and Vicinity, LaBranche Wetlands Levee, St. Charles Parish, Louisiana.” The document evaluates the potential impacts related to modifications to actions approved in IER #1.
- On 25 June 2009, the CEMVN Commander signed a Decision Record for IER #6, entitled “Lake Pontchartrain and Vicinity, New Orleans East, Citrus Lakefront Levee, Orleans Parish, Louisiana.” The document evaluates the potential impacts associated with constructing improved levees on the south shore of Lake Pontchartrain in New Orleans East, Orleans Parish, Louisiana.
- On 23 June 2009, the CEMVN Commander signed a Decision Record for IER #8, entitled “Lake Pontchartrain and Vicinity, Bayou Dupre Control Structure, St. Bernard Parish, Louisiana.” The document evaluates the potential impacts associated with constructing a new flood control structure on Bayou Dupre.
- On 19 June 2009, the CEMVN Commander signed a Decision Record for IER #7, entitled “Lake Pontchartrain and Vicinity, New Orleans East Lakefront to Michoud Canal, Orleans Parish, Louisiana.” The document evaluates the potential impacts associated with reconstructing levees, floodwalls, and floodgates around the Bayou Sauvage National Wildlife Refuge.
- On 26 May 2009, the CEMVN Commander signed a Decision Record for IER #10, entitled “Lake Pontchartrain and Vicinity, Chalmette Loop Levee, St. Bernard Parish, Louisiana.” The document evaluates the impacts related to improving hurricane risk reduction structures in St. Bernard Parish, Louisiana.

- On 13 March 2009, the CEMVN Commander signed a Decision Record for IER #4, entitled “Lake Pontchartrain and Vicinity, Orleans East Bank, New Orleans Lakefront Levee, West of Inner Harbor Navigation Canal to Eastbank of 17th Street Canal, Orleans Parish, Louisiana.” The document evaluates the potential impacts associated with improving the Orleans lakefront hurricane risk reduction features.
- On 3 February 2009, the CEMVN Commander signed a Decision Record on IER #25 entitled “Government-Furnished Borrow Material, Orleans, Plaquemines and Jefferson Parishes, Louisiana.” The document evaluates the potential impacts associated with approving government-furnished borrow areas for use in construction of the HSDRRS.
- On 21 October 2008, the CEMVN Commander signed a Decision Record on IER #11 Tier 2 Borgne entitled “Improved Protection on the Inner Harbor Navigation Canal, Tier 2 Borgne Orleans and St. Bernard Parishes, Louisiana.” The document was prepared to evaluate the potential impacts associated with constructing a surge barrier on Lake Borgne.
- On 20 October 2008, the CEMVN Commander signed a Decision Record on IER #26 entitled “Pre-Approved Contractor-Furnished Borrow Material #3, Jefferson, Plaquemines, and St. John the Baptist Parishes, Louisiana, and Hancock County, Mississippi.” The document evaluates the potential impacts associated with the actions taken by commercial contractors as a result of excavating contractor-furnished borrow areas for use in construction of the HSDRRS.
- On 25 July 2008, the CEMVN Commander signed a Decision Record on IER #3, entitled “Lake Pontchartrain and Vicinity, Lakefront Levee, Jefferson Parish, Louisiana.” The proposed action includes raising approximately 9.5 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 Commander signed a Decision Record on IER #2, entitled “LPV, West Return Floodwall, Jefferson and St. Charles Parishes, Louisiana.” The proposed action includes replacing over 17,900 linear feet of floodwalls in Jefferson and St. Charles Parishes, Louisiana.
- On 9 June 2008, the CEMVN Commander signed a Decision Record on IER #1, entitled “Lake Pontchartrain and Vicinity, La Branche Wetlands Levee, St. Charles Parish, Louisiana.” The proposed action includes raising approximately 9 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 Commander signed a Decision Record on IER #22 entitled “Government-Furnished Borrow Material, Plaquemines and Jefferson Parishes, Louisiana.” The document evaluates the potential impacts associated with approving government-furnished borrow areas for use in construction of the HSDRRS.
- On 6 May 2008, the CEMVN Commander signed a Decision Record on IER #23 entitled “Pre-Approved Contractor-Furnished Borrow Material #2, St. Bernard, St. Charles, Plaquemines Parishes, Louisiana, and Hancock County, Mississippi.” The document evaluates the potential impacts associated with approving contractor-furnished borrow areas for use in construction of the HSDRRS.

- On 14 March 2008, the CEMVN Commander signed a Decision Record on IER #11 (Tier 1) entitled "Improved Protection on the Inner Harbor Navigation Canal, Orleans and St. Bernard Parishes, Louisiana." The document evaluates potential impacts associated with building navigable and structural barriers to prevent storm surge from entering the Inner Harbor Navigation Canal from Lake Pontchartrain and/or the Gulf Intracoastal Waterway-Mississippi River Gulf Outlet-Lake Borgne complex. Two Tier 2 documents discussing alignment alternatives and designs of the navigable and structural barriers, and the impacts associated with exact footprints, are being completed.
- On 21 February 2008, the CEMVN Commander signed a Decision Record on IER #18 entitled "Government-Furnished Borrow Material, Jefferson, Orleans, Plaquemines, St. Charles, and St. Bernard Parishes, Louisiana." The document evaluates the potential impacts associated with approving government-furnished borrow areas for use in construction of the HSDRRS.
- On 14 February 2008, the CEMVN Commander signed a Decision Record on IER #19 entitled "Pre-Approved Contractor-Furnished Borrow Material, Jefferson, Orleans, St. Bernard, Iberville, and Plaquemines Parishes, Louisiana, and Hancock County, Mississippi." The document evaluates the potential impacts associated with approving contractor-furnished borrow areas for use in construction of the HSDRRS.
- In July 2006, the CEMVN Commander signed a Finding of No Significant Impact (FONSI) on an EA #433 entitled, "USACE Response to Hurricanes Katrina & Rita in Louisiana." The document evaluates the potential impacts associated with the actions taken by the USACE because of Hurricanes Katrina and Rita.
- On 30 October 1998, the CEMVN Commander signed a FONSI on EA #279 entitled "Lake Pontchartrain Lakefront, Breakwaters, Pump Stations 2 and 3." The report evaluates the impacts associated with providing fronting protection for outfall canals and pump stations. It was determined that the action would not significantly impact resources in the immediate area.
- On 2 October 1998, the CEMVN Commander signed a FONSI on EA #282 entitled "LPV, Jefferson Parish Lakefront Levee, Landside Runoff Control: Alternate Borrow." The report investigates the impacts of obtaining borrow material from an urban area in Jefferson Parish. No significant impacts to resources in the immediate area were expected.
- On 2 July 1992, the CEMVN Commander signed a FONSI on EA #169 entitled "LPV, Hurricane Protection Project, East Jefferson Parish Levee System, Jefferson Parish, Louisiana, Gap Closure." The report addresses the construction of a floodwall in Jefferson Parish to close a "gap" in the levee system. The area was previously leveed and under forced drainage, and it was determined that the action would not significantly impact the already disturbed area.
- On 22 February 1991, the CEMVN Commander signed a FONSI on EA #164 entitled "LPV Hurricane Protection – Alternate Borrow Area for the St. Charles Parish Reach." The report addresses the impacts associated with the use of borrow material from the Mississippi River on the left descending back in front of the Bonnet Carré Spillway Forebay for LPV construction.
- On 30 August 1990, the CEMVN Commander signed a FONSI on EA #163 entitled "LPV Hurricane Protection – Alternate Borrow Area for Jefferson Parish Lakefront

Levee, Reach 3.” The report addresses the impacts associated with the use of a borrow area in Jefferson Parish for LPV construction.

- On 2 July 1991, the CEMVN Commander signed a FONSI on EA #133 entitled “LPV Hurricane Protection – Alternate Borrow at Highway 433, Slidell, Louisiana.” The report addresses the impacts associated with the excavation of a borrow area in Slidell, Louisiana for LPV project construction.
- On 12 September 1990, the CEMVN Commander signed a FONSI on EA #105 entitled “LPV Hurricane Protection – South Point to Gulf Intracoastal Waterway, A. V. Keeler and Company Alternative Borrow Site.” The report addresses the impacts associated with the excavation of a borrow area in Slidell, Louisiana for LPV project construction.
- On 12 March 1990, the CEMVN Commander signed a FONSI on EA #102 entitled “LPV Hurricane Protection – 17th Street Canal Hurricane Protection.” The report addresses the use of alternative methods of providing flood protection for the 17th Street Outfall Canal in association with LPV activity. Impacts to resources were found to be minimal.
- On 4 August 1989, the CEMVN Commander signed a FONSI on EA #89 entitled “LPV Hurricane Protection, High Level Plan - Alternate Borrow Site 1C-2B.” The report addresses the impacts associated with the excavation of a borrow area along Chef Menteur Highway, Orleans Parish for LPV construction. The material was used in the construction of a levee west of the Inner Harbor Navigation Canal.
- On 27 October 1988, the CEMVN Commander signed a FONSI on EA #79 entitled “LPV Hurricane Protection – London Avenue Outfall Canal.” The report investigates the impacts of strengthening hurricane risk reduction at the London Avenue Outfall Canal.
- On 21 July 1988, the CEMVN Commander signed a FONSI on EA #76 entitled “LPV Hurricane Protection – Orleans Avenue Outfall Canal.” The report investigates the impacts of strengthening hurricane risk reduction at the Orleans Avenue Outfall Canal.
- On 26 February 1986, the CEMVN Commander signed a FONSI on EA #52 entitled “LPV Hurricane Protection – Geohegan Canal.” The report addresses the impacts associated with the excavation of borrow material from an extension of the Geohegan Canal for LPV construction.
- On 12 June 1987, the CEMVN Commander signed Supplemental Information Report (SIR) #25 entitled “LPV Hurricane Protection – Chalmette Area Plan, Alternate Borrow Area 1C-2A”. The report addresses the use of an alternate contractor-furnished borrow area for LPV project construction.
- On 12 June 1987, the CEMVN signed SIR #27 entitled “LPV Hurricane Protection – Alternate Borrow Site for Chalmette Area Plan”. The report addresses the use of an alternate contractor-furnished borrow area for LPV project construction.
- On 12 June 1987, the CEMVN Commander signed SIR #28 entitled “LPV Hurricane Protection – Alternate Borrow Site, Mayfield Pit”. The report addresses the use of an alternate contractor-furnished borrow area for LPV project construction.
- On 12 June 1987, the CEMVN Commander signed SIR #29 entitled “LPV Hurricane Protection – South Point to GIWW Levee Enlargement”. The report discusses the impacts associated with the enlargement of the GIWW.

- On 7 October 1987, the CEMVN signed SIR #30 entitled “LPV Hurricane Protection Project, Jefferson Lakefront Levee”. The report investigates impacts associated with changes in Jefferson Parish LPV project levee design.
- On 30 April 1986, the CEMVN Commander signed SIR #17 entitled “LPV Hurricane Protection – New Orleans East Alternative Borrow, North of Chef Menteur Highway”. The report addresses the use of an alternate contractor-furnished borrow area for LPV project construction.
- On 5 August 1986, the CEMVN signed SIR #22 entitled “LPV Hurricane Protection – Use of 17th Street Pumping Station Material for LPHP Levee”. The report investigates the impacts of moving suitable borrow material from a levee at the 17th Street Canal in the construction of a stretch of levee from the Inner Harbor Navigation Canal to the London Avenue Canal.
- On 3 September 1985, the CEMVN Commander signed SIR #10 entitled “LPV Hurricane Protection, Bonnet Carré Spillway Borrow”. The report evaluates the impacts associated with using the Bonnet Carré Spillway as a borrow source for LPV project construction, and found “no significant adverse effect on the human environment.”
- In December 1984, an SIR to complement the Supplement to final EIS on the LPV project was filed with the U.S. Environmental Protection Agency (USEPA).
- The final EIS for the LPV project, dated August 1974. A Statement of Findings was signed by the CEMVN Commander on 2 December 1974. Final Supplement I to the EIS, dated July 1984, was followed by a Record of Decision (ROD), signed by the CEMVN Commander on 7 February 1985. Final Supplement II to the EIS, dated August 1994, was followed by a ROD signed by the CEMVN Commander on 3 November 1994.
- A report entitled “Flood Control, Mississippi River and Tributaries,” published as House Document No. 90, 70th Congress, 1st Session, submitted 18 December 1927, resulted in authorization of a project by the Flood Control Act of 1928. The project provided comprehensive flood control for the lower Mississippi Valley below Cairo, Illinois. The Flood Control Act of 1944 authorized the USACE to construct, operate, and maintain water resources development projects. The Flood Control Acts have had an important impact on water and land resources in the proposed project area.

West Bank and Vicinity Project

- On 9 February 2010, the CEMVN Commander signed a Decision Record on IER Supplemental #14.a entitled “Westwego to Harvey Levee, Jefferson Parish, Louisiana.” The document evaluates the potential impacts associated with constructing a larger levee footprint for the WBV-14.c.2 reach and revisions to fronting protection and floodwall construction at the Ames and Mt. Kennedy Pump Stations.
- On 22 January 2010, the CEMVN Commander signed a Decision Record on IER #32 entitled “Contractor-Furnished Borrow Material #6, Ascension, Plaquemines, and St. Charles Parishes, Louisiana.” The document evaluates the potential impacts associated with the actions taken by commercial contractors as a result of excavating contractor-furnished borrow areas for use in construction of the HSDRRS.
- On 4 December 2009, the CEMVN Commander signed a Decision Record on IER #13 entitled “Hero Canal Levee and Eastern Tie-In, Plaquemines Parish, Louisiana.” IER

#13 evaluates the potential impacts associated with raising and/or constructing levees, and other structures to meet the 100-year level of risk reduction.

- On 28 September 2009, the CEMVN Commander signed a Decision Record on IER #30 entitled “Contractor-Furnished Borrow Material #5, St. Bernard and St. James Parishes, Louisiana, and Hancock County, Mississippi.” The document evaluates the potential impacts associated with the actions taken by commercial contractors as a result of excavating contractor-furnished borrow areas for use in construction of the HSDRRS.
- On 20 September 2009, the CEMVN Commander signed a Decision Record on IER #29 entitled “Pre-Approved Contractor-Furnished Borrow Material #4, Orleans, St. John the Baptist, and St. Tammany Parishes, Louisiana.” The document evaluates the potential impacts associated with the actions taken by commercial contractors as a result of excavating contractor-furnished borrow areas for use in construction of the HSDRRS.
- On 31 July 2009, the CEMVN Commander signed a Decision Record on IER #28 entitled “Government-Furnished Borrow Material #4, Plaquemines, St. Bernard, and Jefferson Parishes, Louisiana.” The document evaluates the potential impacts associated with approving government-furnished borrow areas and an access route for use in construction of the HSDRRS.
- On 12 June 2009, the CEMVN Commander signed a Decision Record on IER #16, entitled “Western Tie-In, Jefferson and St. Charles Parishes, Louisiana.” The document describes the potential impacts associated with constructing a new levee to provide 100-year level of risk reduction for the project vicinity.
- On 18 February 2009, the CEMVN Commander signed a Decision Record on IER #12, entitled "Gulf Intracoastal Waterway (GIWW), Harvey, and Algiers Levees and Floodwalls, Jefferson, Orleans, and Plaquemines Parishes, Louisiana." The document describes the potential impacts associated with construction of approximately 3 miles of levee and floodwall in the project vicinity.
- On 3 February 2009, the CEMVN Commander signed a Decision Record on IER #25 entitled “Government-Furnished Borrow Material, Orleans, Plaquemines and Jefferson Parishes, Louisiana.” The document evaluates the potential impacts associated with approving government-furnished borrow areas for use in construction of the HSDRRS.
- On 21 January 2009, the CEMVN Commander signed a Decision Record on IER #17 entitled “Company Canal Floodwall, Jefferson Parish, Louisiana.” The document evaluates the proposed construction and maintenance of the 100-year level of hurricane and storm damage risk reduction along the Company Canal from the Bayou Segnette State Park to the New Westwego Pumping Station.
- On 20 October 2008, the CEMVN Commander signed a Decision Record on IER #26 entitled “Pre-Approved Contractor-Furnished Borrow Material #3, Jefferson, Plaquemines, and St. John the Baptist Parishes, Louisiana, and Hancock County, Mississippi.” The document evaluates the potential impacts associated with approving contractor-furnished borrow areas for use in construction of the HSDRRS.
- On 18 February 2009, the CEMVN Commander signed a Decision Record on IER #12, entitled "Gulf Intracoastal Waterway (GIWW), Harvey, and Algiers Levees and Floodwalls, Jefferson, Orleans, and Plaquemines Parishes, Louisiana." The document describes the potential impacts associated with construction of approximately 3 miles of levee and floodwall in the project vicinity.

- On 26 August 2008, the CEMVN Commander signed a Decision Record on IER #14, entitled “Westwego to Harvey, Levee Jefferson Parish, Louisiana.” The document was prepared to examine the potential environmental impacts associated with the proposed construction and maintenance of 100-year level of hurricane and storm damage risk reduction along the WBV, Westwego to Harvey Levee project area.
- On 12 June 2008, the CEMVN Commander signed a Decision Record on IER #15, entitled “Lake Cataouatche Levee, Jefferson Parish, Louisiana.” The proposed action includes constructing a 100-year level of risk reduction in the project area.
- On 30 May 2008, the CEMVN Commander signed a Decision Record on IER #22 entitled “Government-Furnished Borrow Material, Plaquemines and Jefferson Parishes, Louisiana.” The document was prepared to evaluate the potential impacts associated with approving government-furnished borrow areas for use in construction of the HSDRRS.
- On 6 May 2008, the CEMVN Commander signed a Decision Record on IER #23 entitled “Pre-Approved Contractor-Furnished Borrow Material #2, St. Bernard, St. Charles, Plaquemines Parishes, Louisiana, and Hancock County, Mississippi.” The document was prepared to evaluate the potential impacts associated with approving contractor-furnished borrow areas for use in construction of the HSDRRS.
- On 21 February 2008, the CEMVN Commander signed a Decision Record on IER #18 entitled “Government-Furnished Borrow Material, Jefferson, Orleans, Plaquemines, St. Charles, and St. Bernard Parishes, Louisiana.” The document was prepared to evaluate the potential impacts associated with approving government-furnished borrow areas for use in construction of the HSDRRS.
- On 14 February 2008, the CEMVN Commander signed a Decision Record on IER #19 entitled “Pre-Approved Contractor-Furnished Borrow Material, Jefferson, Orleans, St. Bernard, Iberville, and Plaquemines Parishes, Louisiana, and Hancock County, Mississippi.” The document was prepared to evaluate the potential impacts associated with approving contractor-furnished borrow areas for use in construction of the HSDRRS.
- In July 2006, the CEMVN Commander signed a FONSI on an EA #433 entitled, “USACE Response to Hurricanes Katrina & Rita in Louisiana.” The document was prepared to evaluate the potential impacts associated with the actions taken by the USACE because of Hurricanes Katrina and Rita.
- On 23 August 2005, the CEMVN Commander signed a FONSI on EA #422 entitled “Mississippi River Levees – West Bank Gaps, Concrete Slope Pavement Borrow Area Designation, St. Charles and Jefferson Parishes, Louisiana.” The report investigates the impacts of obtaining borrow material from various areas in Louisiana.
- On 22 February 2005, the CEMVN Commander signed a FONSI on EA #306A entitled “West Bank Hurricane Protection Project – East of the Harvey Canal, Floodwall Realignment and Change in Method of Sector Gate.” The report discusses the impacts related to the relocation of a proposed floodwall moved because of the aforementioned sector gate, as authorized by the LPV project.
- On 5 May 2003, the CEMVN Commander signed a FONSI on EA #337 entitled “Algiers Canal Alternative Borrow Site.”

- On 19 June-2003, the CEMVN Commander signed a FONSI on EA #373 entitled “Lake Cataouatche Levee Enlargement.” The report discusses the impacts related to improvements to a levee from Bayou Segnette State Park to Lake Cataouatche.
- On 16 May 2002, the CEMVN Commander signed a FONSI on EA #306 entitled “West Bank Hurricane Protection Project - Harvey Canal Sector Gate Site Relocation and Construction Method Change.” The report discusses the impacts related to the relocation of a proposed sector gate within the Harvey Canal, as authorized by the LPV project.
- On 30 August 2000, the CEMVN Commander signed a FONSI on EA #320 entitled “West Bank Hurricane Protection Features.” The report evaluates the impacts associated with borrow sources and construction options to complete the Westwego to Harvey Canal Hurricane Protection Project.
- On 18 August 1998, the CEMVN Commander signed a FONSI on EA #258 entitled “Mississippi River Levee Maintenance - Plaquemines West Bank Second Lift, Fort Jackson Borrow Site.”
- The final EIS for the WBV, East of Harvey Canal, Hurricane Protection Project was completed in August 1994. A ROD was signed by the CEMVN Commander in September 1998.
- The final EIS for the WBV, Lake Cataouatche, Hurricane Protection Project was completed. A ROD was signed by the CEMVN Commander in September 1998.
- In December 1996, the USACE completed a post-authorization change study entitled, “Westwego to Harvey Canal, Louisiana Hurricane Protection Project Lake Cataouatche Area, EIS.” The study investigates the feasibility of providing hurricane surge risk reduction 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 risk reduction 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 Commander signed a FONSI on an EA #198 entitled, “West Bank of the Mississippi River in the Vicinity of New Orleans, Louisiana, Hurricane Protection Project, Westwego to Harvey Canal, Jefferson Parish, Louisiana, Proposed Alternate Borrow Sources and Construction Options.” The report evaluates the impacts associated with borrow sources and construction options to complete the Westwego to Harvey Canal Hurricane Levee.
- In August 1994, the CEMVN Commander completed a feasibility report entitled “WBV (East of the Harvey Canal).” The study investigates the feasibility of providing hurricane surge risk reduction 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 risk reduction east of the Harvey Canal. The report also recommends that the level of risk reduction for the area east of the Algiers Canal deviate from the National Economic Development Plan’s level of risk reduction and provide risk reduction 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 Commander signed a FONSI on EA #165 entitled “Westwego to Harvey Canal Disposal Site.”
- In February 1992, the USACE completed a reconnaissance study entitled “West Bank Hurricane Protection, Lake Cataouatche, Louisiana.” The study investigated the feasibility of providing hurricane surge risk reduction 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 risk reduction 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 Commander signed a FONSI on EA #136 entitled “West Bank Additional Borrow Site between Hwy 45 and Estelle PS.”
- On 15 March 1990, the CEMVN Commander signed a FONSI on EA #121 entitled “West Bank Westwego to Harvey Changes to EIS.” The report addresses the impacts associated with the use of borrow material from Fort Jackson for LPV construction. The material was used for constructing the second lift 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 risk reduction 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 risk reduction to an area on the west bank between Westwego and the Harvey Canal north of Crown Point. The project was authorized by the WRDA of 1986 (P.L. 99-662). Construction of the project was initiated in early 1991.

1.4 INTEGRATION WITH OTHER IERS

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

The draft CED will be available for a 60-day public review period. The document will be posted on www.nolaenvironmental.gov, or can be requested by contacting the CEMVN. A notice of availability will be mailed/e-mailed to interested parties advising them of the availability of the draft CED for review. Additionally, a notice will be placed in national and local newspapers. Upon completion of the 60-day review period, all comments will be compiled and appropriately addressed. Upon resolution of any comments received, a final CED will be prepared, signed by the CEMVN Commander, and made available to any stakeholders requesting a copy.

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

1.5 PUBLIC CONCERNS

The CEMVN has provided numerous opportunities to the public to provide input and comments about the proposed HSDRRS work throughout the planning process through a number of outlets (i.e., public meetings; written and verbal comments; www.nolaenvironmental.gov). IER #18, IER #19, IER #22, IER #23, IER #25, IER #26, IER #28, IER #29, IER #30, and IER #32 discuss the impacts of borrow excavation related to the HSDRRS. These documents contain public comments regarding borrow issues (appendix B – all documents), and are available at www.nolaenvironmental.gov, or upon request.

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

Residents in the vicinity of proposed borrow areas have expressed concern over the potential or perceived impact on potential future development, land values, and public safety. Some members of the public have stated that they would prefer that remaining land in coastal parishes either not be excavated, or should be developed as residential, commercial, or industrial areas. Members of the public have also said that they feel that borrow areas should be backfilled. Non-governmental organizations have commented on the importance of avoiding impacts to jurisdictional wetlands when looking for borrow sources. The CEMVN is currently avoiding impacts to all jurisdictional wetlands, as other reasonable alternatives are available (see section 2.1). (If a Section 404 permit was previously issued for an unrelated activity, as outlined in Section 3.2.1 of this IER, the site was considered for CEMVN borrow activity.) Residents in the vicinity of proposed borrow areas are concerned about truck haulers causing traffic congestion and noise. The public is also concerned about safety issues during and after the borrow area is excavated.

1.6 DATA GAPS AND UNCERTAINTIES

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

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

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

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

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

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

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

2. ALTERNATIVES

2.1 ALTERNATIVES DEVELOPMENT AND PRELIMINARY SCREENING CRITERIA

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

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

IER #18, IER #22, IER #25, and IER #28 discuss the potential impacts related to using approved government-furnished borrow areas. The potential impacts related to using approved contractor-

furnished borrow areas are discussed in IER #19, IER #23, IER #26, IER #29, IER #30, and IER #32. This IER discusses potential contractor-furnished borrow alternatives. Additional borrow IERs will be prepared as future potential government-furnished and contractor-furnished borrow areas are identified.

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

1. "Permitted commercial sources, authorized borrow sources for which environmental clearance and mitigation have been completed, or non-functional levees after newly constructed adjacent levees are providing equal protection.
2. Areas under forced drainage that are protected from flooding by levees, and that are:
 - a) non-forested (e.g., pastures, fallow fields, abandoned orchards, former urban areas and non-wetlands);
 - b) wetland forests dominated by exotic tree species (i.e., Chinese tallow) or non-forested wetlands (e.g., wetland pastures), excluding marshes;
 - c) disturbed wetlands (e.g., hydrologically altered, artificially impounded).
3. Areas that are outside a forced drainage system and levees, and that are:
 - a) non-forested (e.g., pastures, fallow fields, abandoned orchards, former urban areas) and non-wetlands;
 - b) wetland forests dominated by exotic tree species (i.e., Chinese tallow) or non-forested wetlands (e.g., wetland pastures), excluding marshes;
 - c) disturbed wetlands (e.g., hydrologically altered, artificially impounded)."

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

2.2 DESCRIPTION OF THE ALTERNATIVES

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

No Action. Under the no action alternative, the proposed contractor-furnished borrow areas would not be used in connection with construction of the HSDRRS. The HSDRRS levee and floodwall projects would be built to authorized levels using government-furnished borrow areas and contractor-furnished borrow areas described in IER #18, IER #19, IER #22, IER #23, IER #25, IER #26, IER #28, IER #29, IER #30, and IER #32 or other sources yet to be identified.

Proposed Action. The proposed action consists of excavating the proposed Acosta 2, Idlewild Stage 2, King Mine, Levis, Lilly Bayou, Port Bienville, Raceland Raw Sugars, River Birch Landfill Expansion, Scarsdale, and Spoil Area contractor-furnished borrow areas, as discussed in section 2.3.

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

- Government-Furnished Borrow Material. The Government would acquire the rights to property, from which suitable borrow material could be used for construction of the HSDRRS. Government-furnished borrow alternatives are discussed in IER #18, IER #22, IER #25, and IER #28, and may be explored in future borrow IERs.
- Contractor-Furnished Borrow Material. A CEMVN levee contractor would work in partnership with a landowner to obtain suitable pre-approved contractor-furnished borrow material from the landowner's property. The 10 proposed sites discussed in this document are potential contractor-furnished borrow areas. If the proposed sites are approved, a CEMVN levee contractor could select any of these sites for use in a contract for construction of the HSDRRS. If a levee contractor selected one of these proposed contractor-furnished borrow areas, he would work in partnership with the borrow area landowner to provide suitable borrow material from the selected borrow area. Other contractor-furnished borrow alternatives are discussed in IER #19, IER #23, IER #26, IER #29, IER #30, and IER#32. Future proposed contractor-furnished borrow areas may be explored in future borrow IERs.
- Supply Contract Borrow Material. The supply contract would allow a private individual(s) or corporation(s) to deliver a pre-specified amount of suitable borrow material from an area(s) anywhere in the United States. The individual or corporation would deliver the borrow material to a designated location for use by a CEMVN construction contractor.

2.3 PROPOSED ACTION

The proposed action (preferred alternative) consists of potentially excavating all suitable material from the proposed Acosta 2, Idlewild Stage 2, King Mine, Levis, Lilly Bayou, Port Bienville, Raceland Raw Sugars, River Birch Landfill Expansion, Scarsdale, and Spoil Area contractor-furnished borrow areas (figure 1). Material would be excavated by a CEMVN contractor who has made a financial arrangement with the contractor-furnished borrow area landowner. Once excavated and processed, the material would be transported to a HSDRRS construction site.

The landowners of the Acosta 2, King Mine, Levis, Lilly Bayou, Port Bienville, Raceland Raw Sugars, River Birch Landfill Expansion, Scarsdale, and Spoil Area sites have stated they do not plan to backfill the sites. The landowners of the Idlewild Stage 2 site have expressed an intention to backfill the site with material from a commercial source.

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

Landowners or their agents of the proposed borrow areas discussed in this IER submitted the following information to the CEMVN for review: 1) a signed right of entry; 2) maps showing the property boundaries and areas being proposed for use as a contractor-furnished borrow area; 3) an approved Jurisdictional Determination from the CEMVN Regulatory Functions Branch indicating no jurisdictional wetland impacts; 4) a Coastal Use Permit or Letter of No Objection from the Louisiana Department of Natural Resources, Coastal Management Division (LADNR) (or state agency equivalent if the proposed site is in a state other than Louisiana), and a local parish/county Coastal Use Permit, when applicable; 5) a concurrence letter from the U.S. Department of the Interior, USFWS indicating that no threatened or endangered (T&E) species

or their critical habitat would be affected by the proposed action; 6) a cultural resources assessment; 7) a Phase I Environmental Site Assessment (ESA); and 8) geotechnical boring logs and soil analysis identifying the suitability of potential borrow material. These materials are incorporated by reference.

This IER details the potential impacts related to the potential excavation of the proposed Acosta 2, Idlewild Stage 2, King Mine, Levis, Lilly Bayou, Port Bienville, Raceland Raw Sugars, River Birch Landfill Expansion, Scarsdale, and Spoil Area contractor-furnished borrow areas.

- The 9-acre Acosta 2 site is located in St. Bernard Parish, Louisiana off LA-46 (figures 2 and 3). The site is currently dominated by bottomland hardwood forest habitat, and has been cleared along both sides of the drainage canal. The approved Acosta 1 site is located adjacent to the proposed Acosta 2 site. A 100-foot buffer was placed around most of the site to minimize impacts to jurisdictional wetlands that surround the site, thus reducing the area proposed for excavation to 4 acres.
- The 293-acre Idlewild Stage 2 site is located south of the town of Oakville in Plaquemines Parish, Louisiana (figures 4 and 5). The site is mostly forested with bottomland hardwood forest and wetlands. The approved Idlewild Stage 1 site is located adjacent to the proposed Stage 2 site. Access to the Stage 2 site would be via existing roads through the Stage 1 site. There are approximately 120 acres of jurisdictional wetlands on the site; the exclusion of the wetlands and a 100-foot buffer around them reduced the area proposed for excavation to 108 acres.
- The 244-acre King Mine site is located in Pearlinton, Mississippi (Hancock County) (figures 6 and 7). The site is mostly forested with bottomland hardwood forest and wetlands. There are approximately 152 acres of jurisdictional wetlands on the site; the exclusion of the wetlands and a 100-foot buffer around them reduced the area proposed for excavation to 158 acres.
- The 51-acre Levis site is located in Slidell, Louisiana (St. Tammany Parish) between US-190 and I-10 (figures 8 and 9). The site is forested and part of a large mixed-use development currently being constructed; construction of this development is immediately to the east of the proposed site, and is currently ongoing. The proposed Levis site will eventually be used as a retention area for the planned development.
- The 863-acre Lilly Bayou site is located in East Baton Rouge Parish, Louisiana near the intersection of US-61 and LA-64 (figures 10 and 11). The site is mostly forested with bottomland hardwood forest and wetlands. Lilly Bayou runs from north to south through the site. The site is currently being used for hunting crawfishing, and various industrial uses. There are approximately 366 acres of jurisdictional wetlands on the site; the exclusion of the wetlands and a 100-foot buffer around them reduced the area proposed for excavation to 437 acres.
- The 1,020-acre Port Bienville site is located in Hancock County, Mississippi (figures 12 and 13). The site was previously planted in pine for commercial harvesting, and is currently a mixture of overgrown pine habitat and cleared areas. There are approximately 196 acres of jurisdictional wetlands on the site; the exclusion of the wetlands and a 100-foot buffer around them reduced the area proposed for excavation to 677 acres.
- The Raceland Raw Sugars site in Raceland, Louisiana (Lafourche Parish) is comprised of three separate parcels measuring 104 acres, 48 acres, and 79 acres (total 231 acres) (figures 14 and 15). There are approximately 1.71 acres of bottomland hardwood forest

within the 104-acre parcel. Excluding the forested area, the site is used for sugarcane farming.

- The 196-acre River Birch Landfill Expansion site is located in Jefferson Parish, Louisiana (figures 16 and 17). The site is one of a number of tracks of land owned by River Birch Incorporated and Hwy. 90, LLC that will eventually be used as a landfill. The site was cleared for this purpose, and a portion is currently being used as a borrow pit for non-CEMVN work. In early 2010, a CEMVN contractor used a portion of the site to process borrow material from the approved River Birch Phase 2 contractor-furnished borrow area, which is located on the other side of an access road. The contractor removed the material at the non-approved site at the CEMVN's request. There are no CEMVN-related actions currently active at the site.
- The 216-acre Scarsdale site is located in on the east bank of Plaquemines Parish, Louisiana (figures 18 and 19). The site is mostly forested with bottomland hardwood forest and wetlands. The site is currently vacant, but hunting stands were observed during a recent site visit. There are approximately 116 acres of jurisdictional wetlands on the site; the exclusion of the wetlands and a 100-foot buffer around them reduced the area proposed for excavation to 56 acres.
- The 986-acre Spoil Area site is located adjacent to the Mississippi River Gulf Outlet in St. Bernard, Louisiana (figures 20 and 21). The site is mostly forested with bottomland hardwood forest and wetlands and is intersected by Bayou Dupre. It is currently vacant. There are approximately 422 acres of jurisdictional wetlands on the site; the exclusion of the wetlands and a 100-foot buffer around them reduced the area proposed for excavation to 435 acres.



Figure 1: Area map of the proposed contractor-furnished borrow areas
 1: Raceland Raw Sugars / 2: River Birch Landfill Expansion / 3: Idlewild Stage 2 / 4: Scarsdale
 5: Spoil Area / 6: Acosta 2 / 7: Levis / 8: Port Bienville / 9: King Mine / 10: Lilly Bayou

Acosta Borrow Pit - St. Bernard Parish

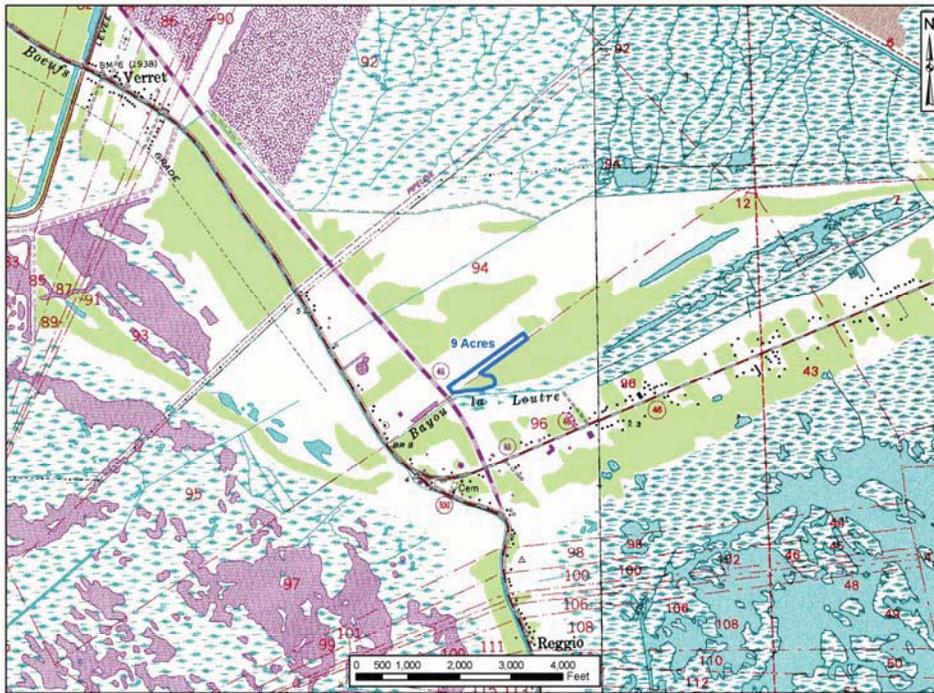


Figure 2: Area map of the proposed Acosta 2 contractor-furnished borrow area

Acosta2 Borrow Area - St. Bernard Parish



Figure 3: Site map of the proposed Acosta 2 contractor-furnished borrow area

Idlewild, Stage 2 Borrow Area - Plaquemines Parish

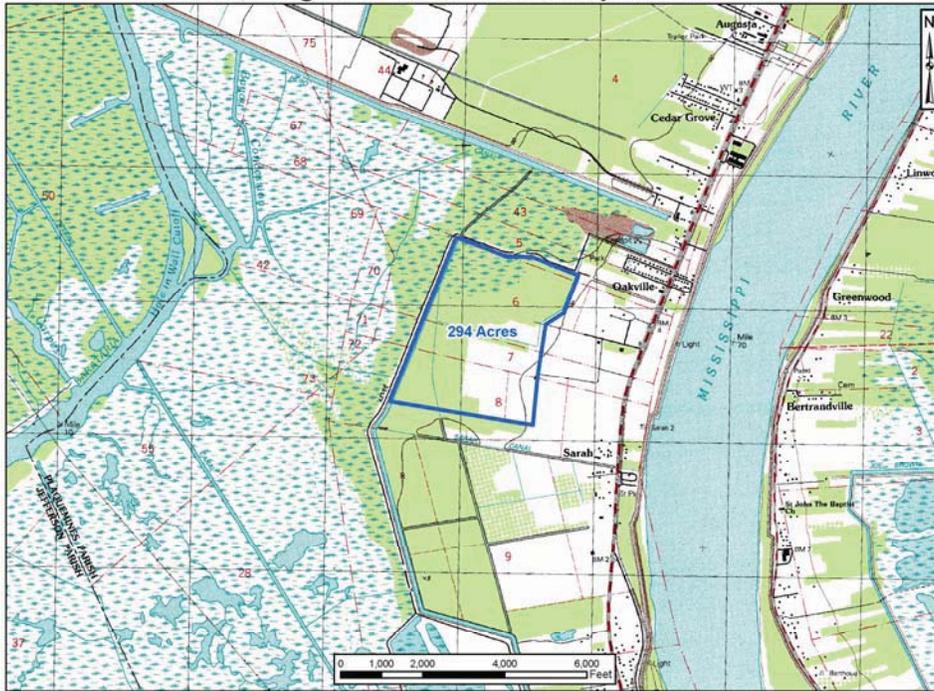


Figure 4: Area map of the proposed Idlewild Stage 2 contractor-furnished borrow area

Idlewild, Stage 2 Borrow Area - Plaquemines Parish



Figure 5: Site map of the proposed Idlewild Stage 2 contractor-furnished borrow area

King Mine Borrow Area - Hancock County, MS

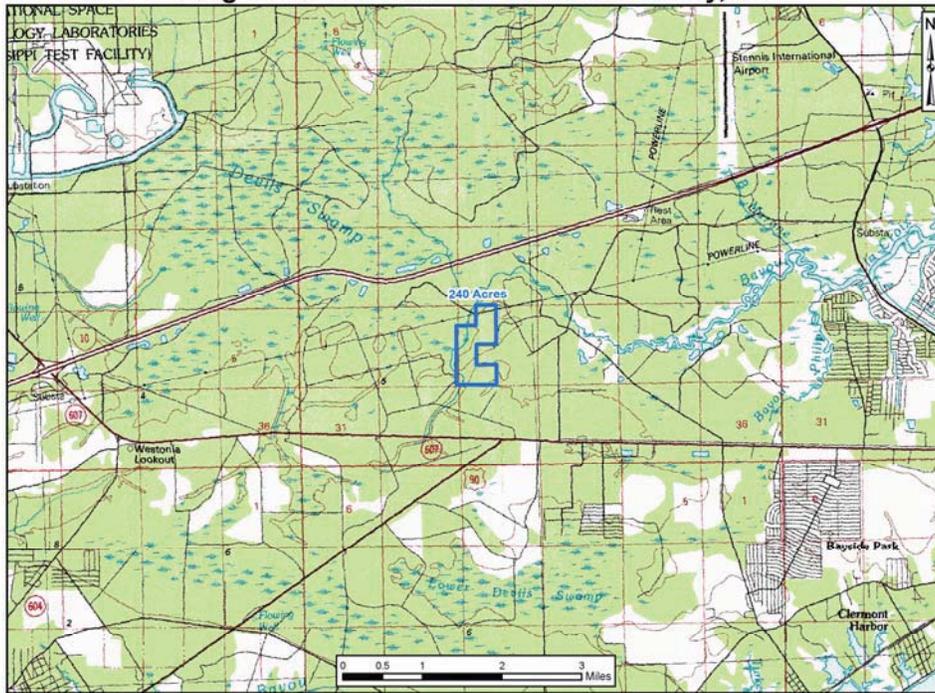


Figure 6: Area map of the proposed King Mine contractor-furnished borrow area

King Mine Borrow Area - Hancock County, MS

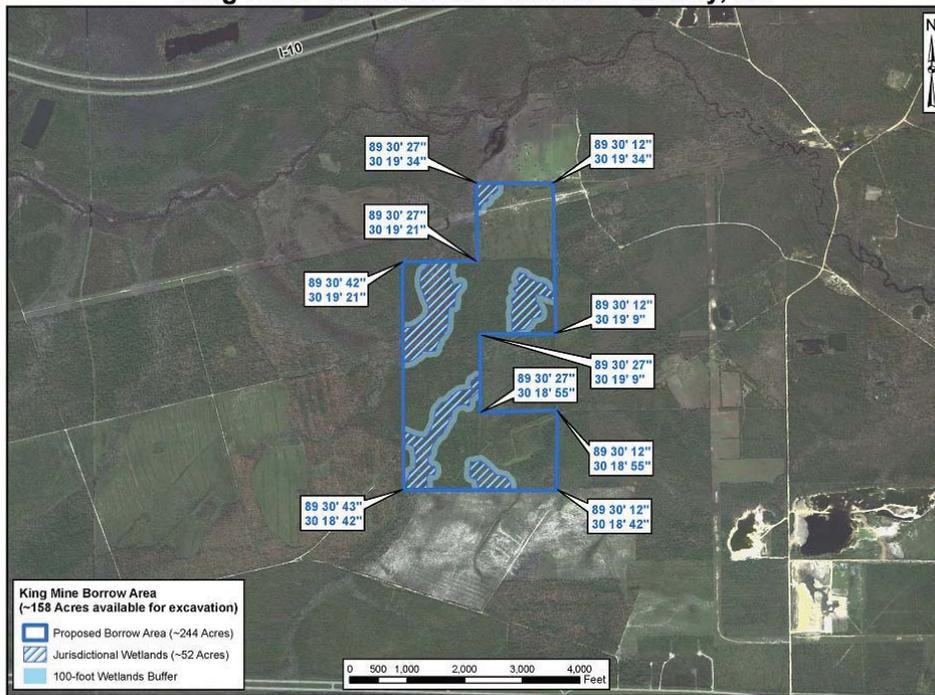


Figure 7: Site map of the proposed King Mine contractor-furnished borrow area

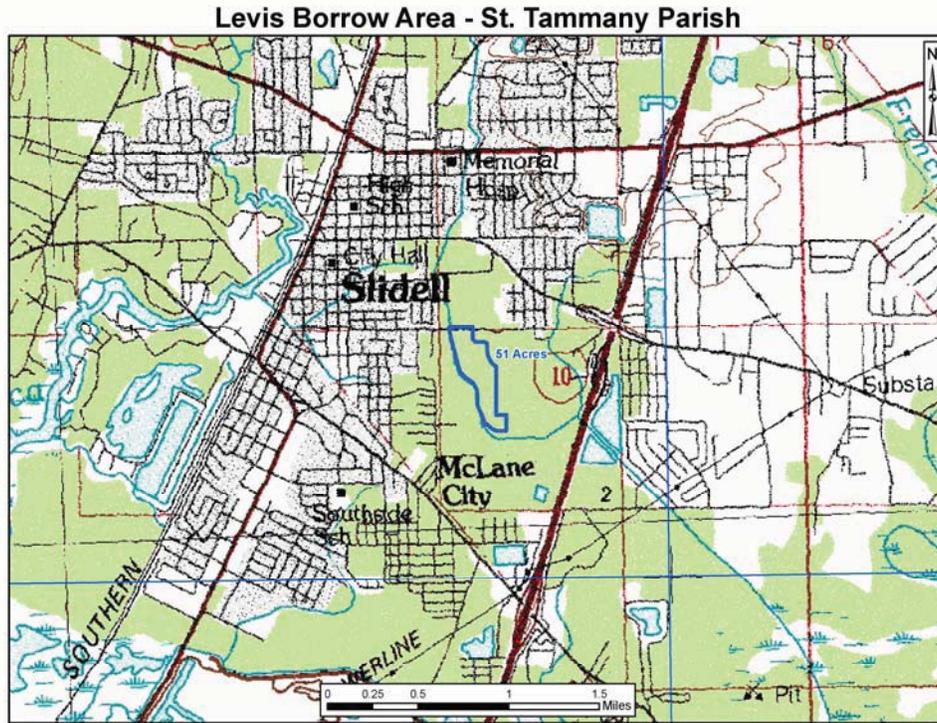


Figure 8: Area map of the proposed Levis contractor-furnished borrow area

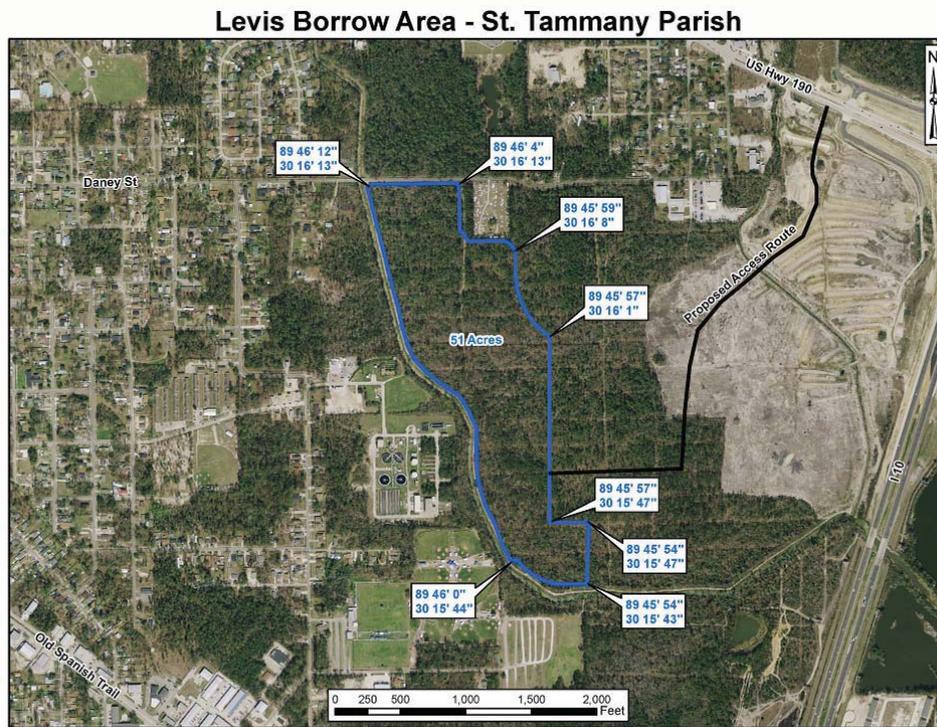


Figure 9: Site map of the proposed Levis contractor-furnished borrow area

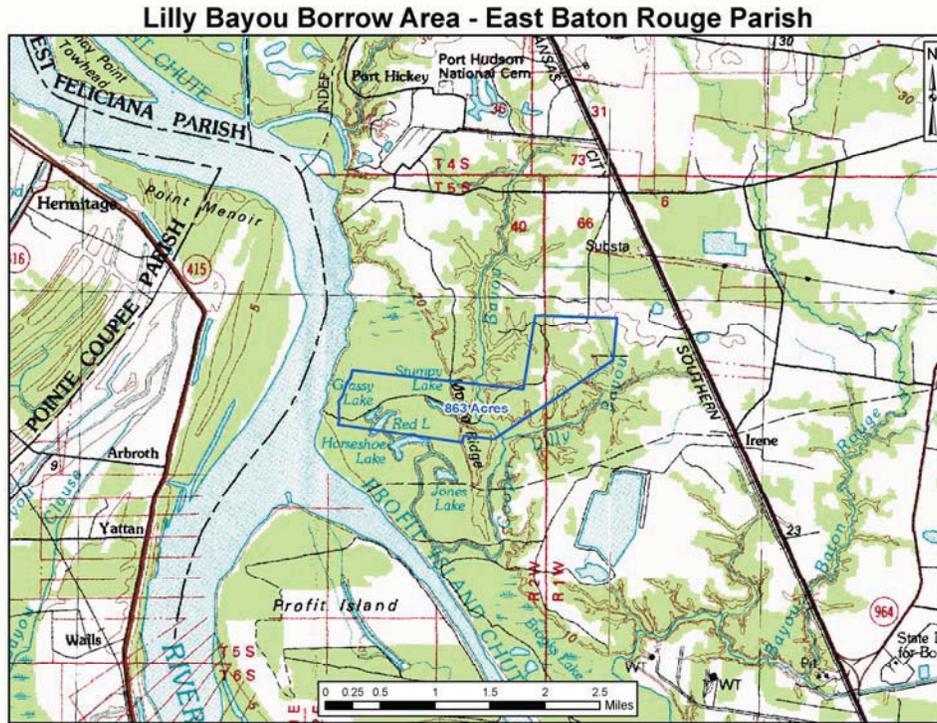


Figure 10: Area map of the proposed Lilly Bayou contractor-furnished borrow area

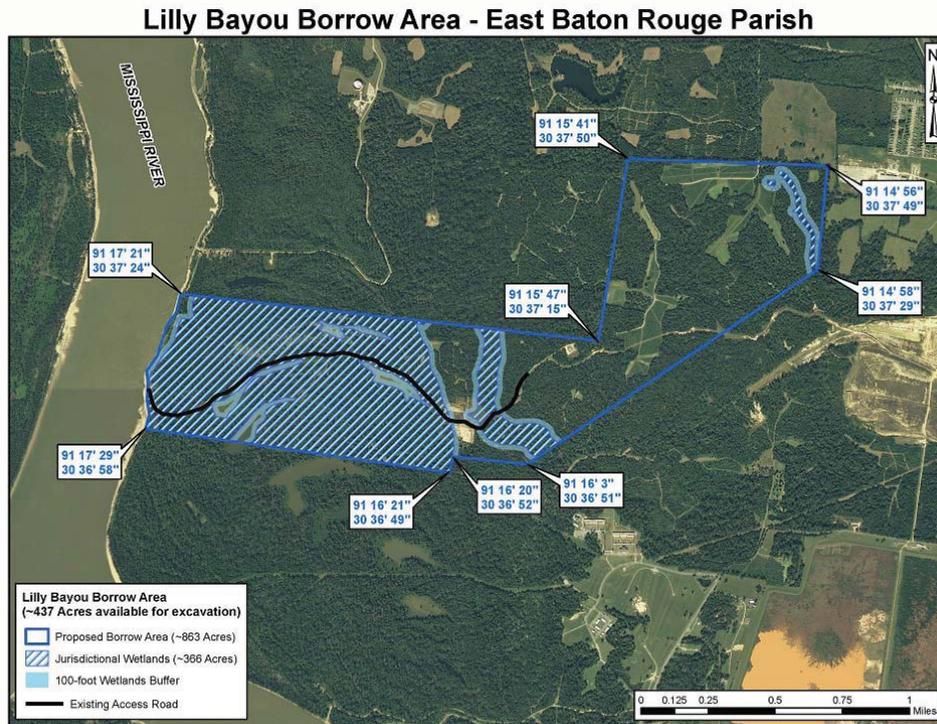


Figure 11: Site map of the proposed Lilly Bayou contractor-furnished borrow area

Port Bienville Borrow Area - Hancock County, MS

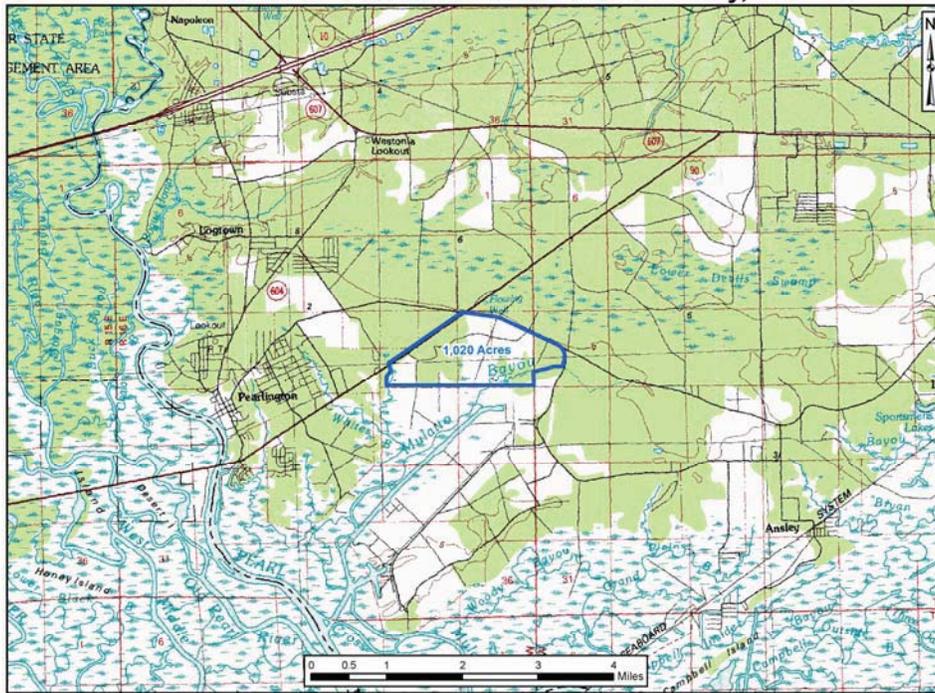


Figure 12: Area map of the proposed Port Bienville contractor-furnished borrow area

Port Bienville Borrow Area - Hancock County, MS

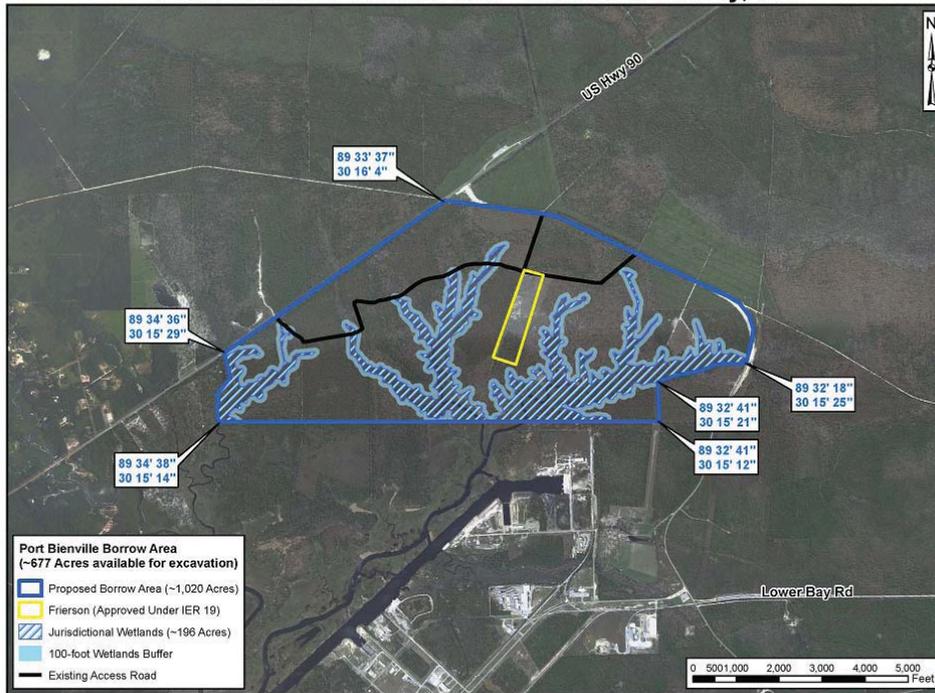


Figure 13: Site map of the proposed Port Bienville contractor-furnished borrow area

Raceland Raw Sugars Borrow Area - Lafourche Parish

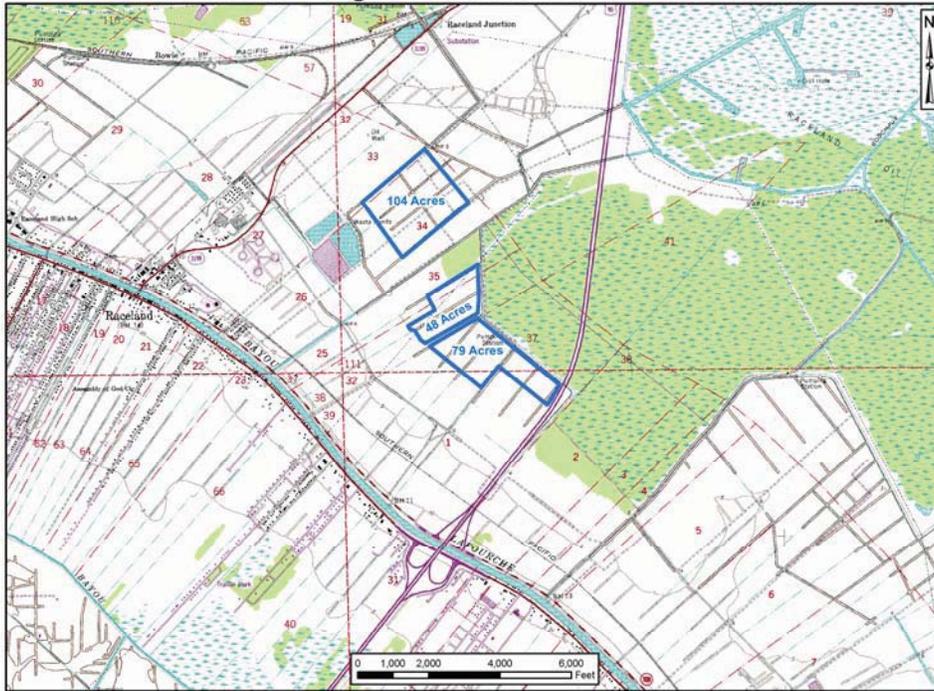


Figure 14: Area map of the proposed Raceland Raw Sugars contractor-furnished borrow area

Raceland Raw Sugars Borrow Area - Lafourche Parish

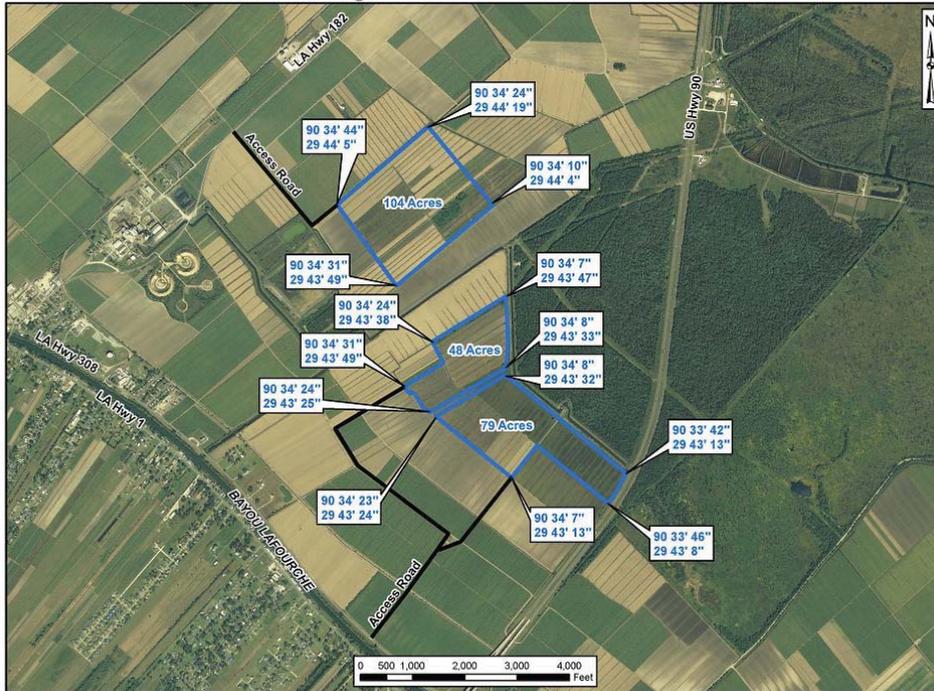


Figure 15: Site map of the proposed Raceland Raw Sugars contractor-furnished borrow area

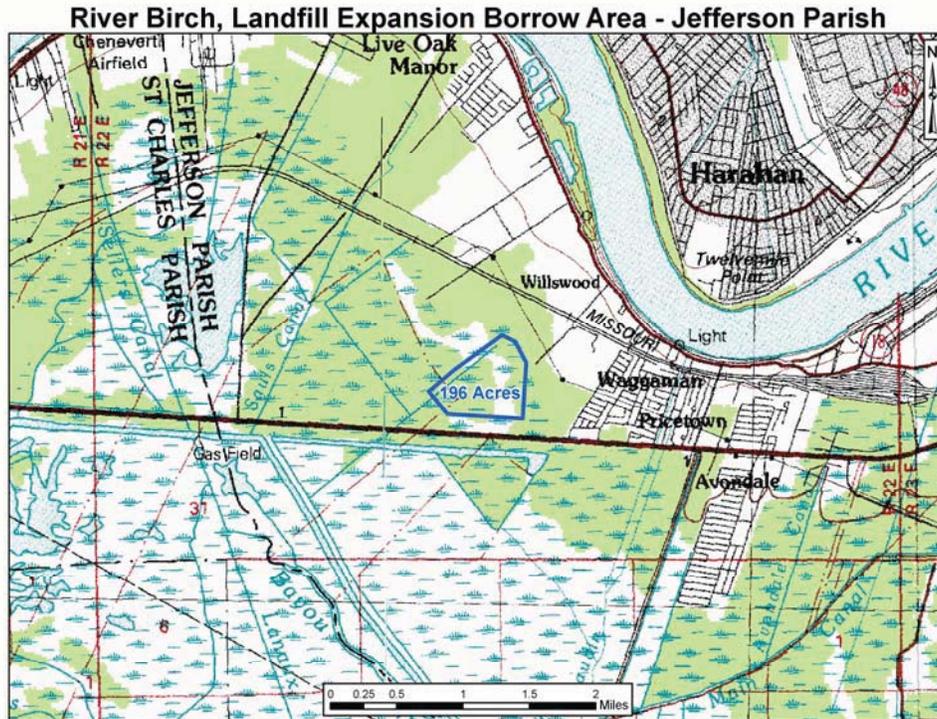


Figure 16: Area map of the proposed River Birch Landfill Expansion contractor-furnished borrow area

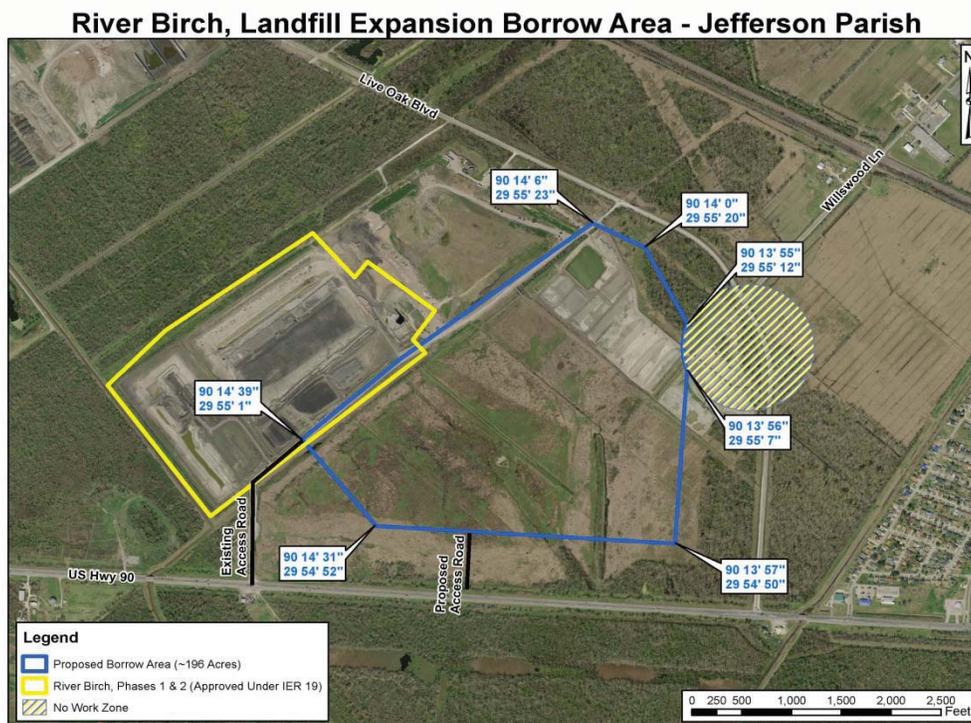


Figure 17: Site map of the proposed River Birch Landfill Expansion contractor-furnished borrow area

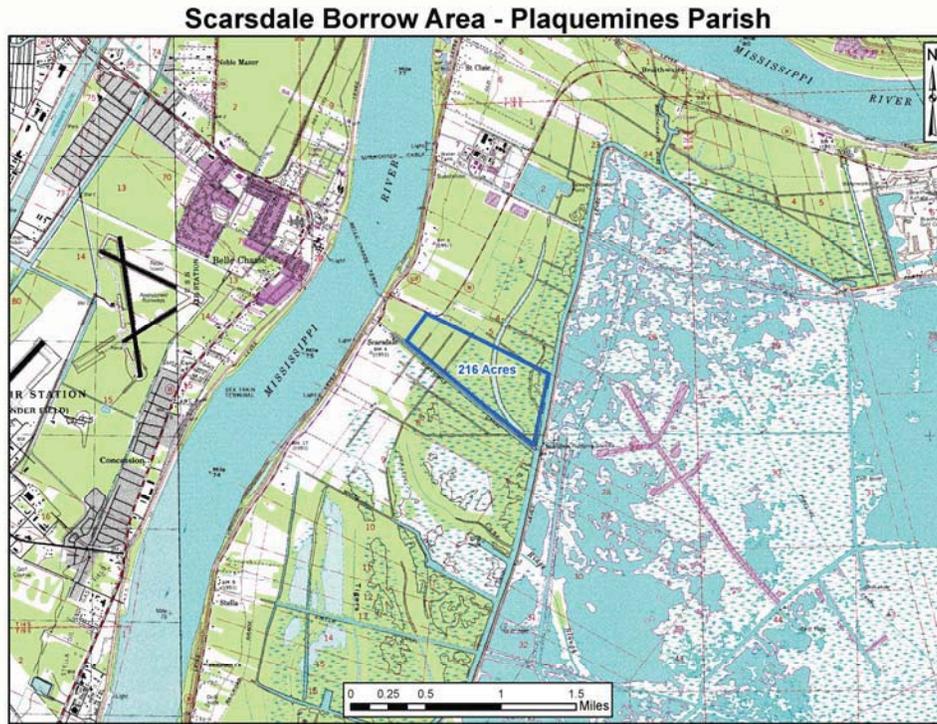


Figure 18: Area map of the proposed Scarsdale contractor-furnished borrow area

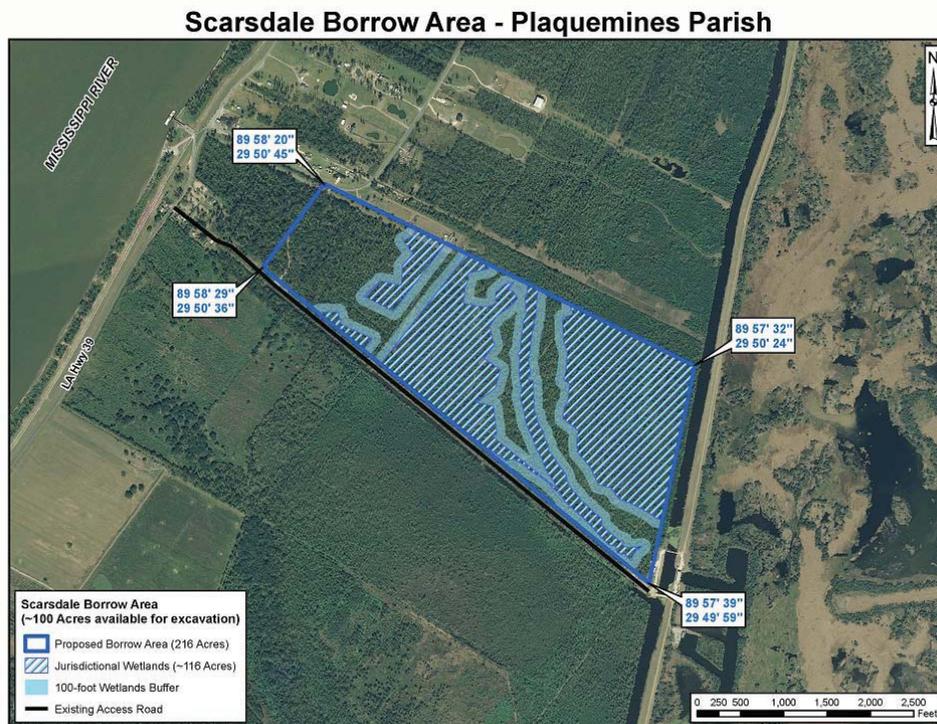


Figure 19: Site map of the proposed Scarsdale contractor-furnished borrow area

Spoil Area Borrow Area - St. Bernard Parish

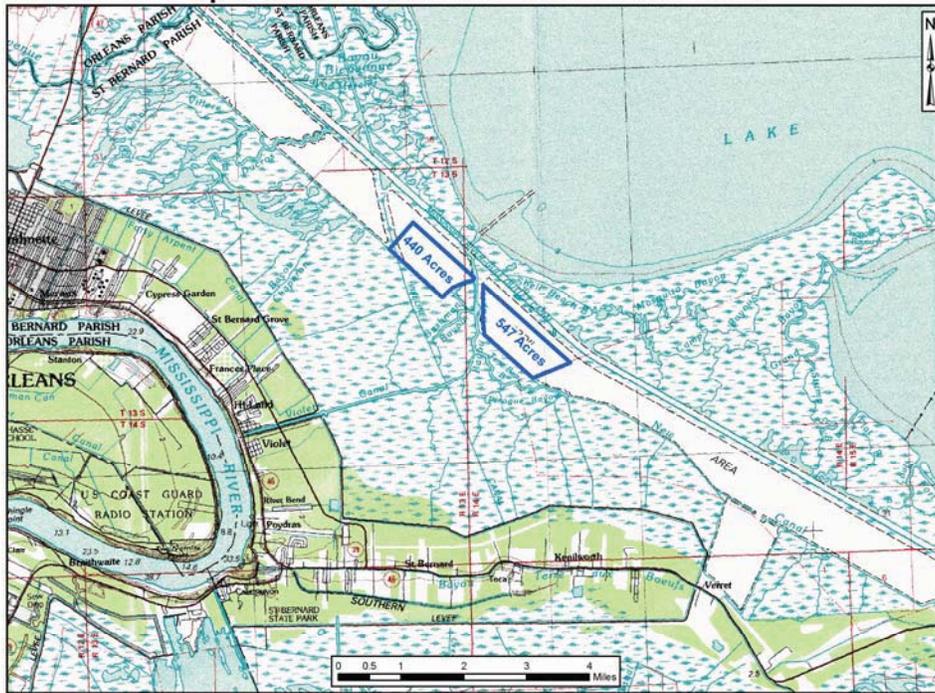


Figure 20: Area map of the proposed Spoil Area contractor-furnished borrow area

Spoil Area Borrow Area - St. Bernard Parish

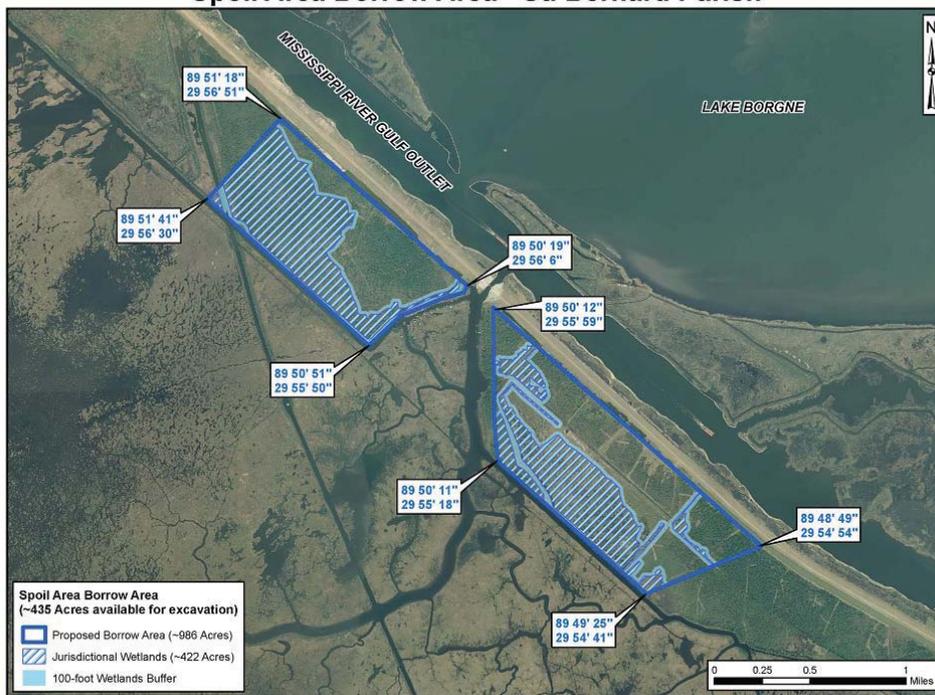


Figure 21: Site map of the proposed Spoil Area contractor-furnished borrow area

2.4 ALTERNATIVES TO THE PROPOSED ACTION

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

3. AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

3.1 ENVIRONMENTAL SETTING

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

Fauna and Flora

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

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

Soils

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

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

- Soils classified as clays (CH or CL) are allowed as per the Unified Soils Classification System;
- Soils with organic contents greater than 9 percent are not allowed;
- Soils with plasticity indices (PI) less than 10 are not allowed;
- Soils classified as silts (ML) are not allowed;
- Clays will not have more than 35 percent sand content.

Clay Specifications

The earthen clay material shall be naturally occurring or contractor blended. Addition of lime, cement, or other soil amendments for any reason is not permitted. Soil that is classified in accordance with ASTM D 2487 and the Unified Soil Classification System as CH and CL are suitable. Soil classified as ML shall be considered unsuitable; however, minor amounts of ML may be suitably blended with CH or CL to formulate a material that classifies as a CL as per ASTM D 2487. Soil must be free from masses of organic matter, sticks, branches, roots, and other debris, including hazardous and regulated solid wastes. Soil from a contractor-supplied earthen clay material source may not contain excessive amounts of wood. However, isolated pieces of wood would not be considered objectionable in the embankment provided their length does not exceed 1 foot, their cross-sectional area is less than 4 square inches, and they are distributed throughout the fill. Not more than 1 percent (by volume) of objectionable material shall be contained in clay material ordered by the Government. Pockets and/or zones of wood shall not be acceptable. Material consisting of greater than 35 percent sands (by dry weight) or materials with a PI of less than 10 will not be accepted, nor will material having an organic content exceeding 9 percent by weight. Under no circumstances shall frozen earth, snow, or ice in the material be considered acceptable.

The geotechnical analysis consists of the following:

1. A geotechnical report stamped and signed by a licensed civil engineer with a specialization in geotechnical engineering certifying that the proposed source contains suitable material meeting the specifications outlined in the CEMVN's Soil Boring Factsheet.
2. The geotechnical report must consist of a summary and conclusion section in the main body of the report with any supporting data attached separately. The licensed engineer shall determine the sub-surface investigations required. These investigations could include but are not limited to soil borings, test sites, or cone penetrometer tests.
3. Investigations shall be spaced according to the geotechnical engineer's sub-surface evaluation and be representative of the entire proposed source. The licensed engineer's test plan must provide a comprehensive sampling to at least 5 feet below the bottom of the proposed excavation.
4. All soil samples must be classified in accordance with the Unified Soil Classification system. The supporting data attached to the geotechnical report shall be comprehensive and include as a minimum all field logs, soil sampling and testing results and a detailed investigation location map with the location of the potential borrow source and all investigation locations superimposed. The soil investigation locations must include latitudes and longitudes for plotting purposes.

Laboratory tests include:

1. Soil classification shall be performed in accordance with the Unified Soil Classification System and ASTM D 2487.
2. Atterberg Limits Test shall be performed in accordance with ASTM D 4318.
3. Determination of moisture content shall be performed in accordance with ASTM D 2216 or ASTM D 4643.
4. Determination of organic content shall be performed in accordance with ASTM D 2974, Method C.

5. Control compaction curves shall be established in accordance with ASTM D 698 (Standard Proctor Compaction Tests). A control compaction curve is required for each soil type from each source. Where material is blended and stockpiled, a control compaction curve would be required for each resulting blend of material and would be utilized in lieu of those required for the "unblended materials."
6. Sand Content shall be determined by 200 wash in accordance with ASTM D 1140.

Test Procedures for borings include:

1. A moisture content determination shall be made and recorded on all samples classified as (CH), (CL), and (ML) at no less than 2 foot intervals.
2. For (CH), (CL), and (ML) soils, Atterberg Limits and Organic Content Testing (ASTM D 2974, Method C) is required every 5 feet (minimum).
3. Samples with moisture contents at 70 percent or higher or having a Liquid Limit of 70 or higher must be tested for organic content for that sample as well as for a sample 2 feet above and 2 feet below that sample.
4. Sand content tests would be required for samples that classify as CL (with a PI greater than 10) and for all clay samples (CH and CL) with greater than 10 percent coarse grain materials estimated by visual classification for 2 or more consecutive feet.
5. Sand content tests would be limited to one test every 5 feet of sampling and shall conform to ASTM D1140-00 (#200 sieve required).
6. Sand content tests would be required for samples that classify as a ML, but limited to one test every 5 feet of sampling.

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

Government-Furnished Sites

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

Contractor-Furnished Sites

For potential contractor-furnished borrow areas, individual landowners are responsible for soil boring and testing, and acquiring all applicable local, state, and Federal environmental clearances. Upon completing all required tasks, the landowner submits a complete package to the CEMVN for approval. The Government completes an analysis of the site and the material proposed for use based upon the information supplied to the Government by the landowner. Upon approval of the site by the Government, the potential borrow site would be placed on the complimentary list of potential pre-approved contractor-furnished borrow sources ("Clay Source List"). The CEMVN may opt to provide in construction contracts a complimentary list of contractor-furnished clay sources that have been deemed to have material that meets geotechnical standards and to be environmentally acceptable. However, the CEMVN does caution that it cannot vouch for the availability, suitability or quantity of borrow material from

such listed sources. Further, compliance with environmental laws will need to be current for each site, which may mean that the contractor or landowner will have to update previous compliance before a site can be used. Any bottomland hardwood forest impacts within a borrow area will need to be compensated for with the purchase of appropriate mitigation bank credits before that site can be used. Proof of current compliance with environmental laws and purchase of appropriate mitigation bank credits, when necessary, must be provided to CEMVN prior to use of any of these potential borrow sites.

The construction contractor is not obligated to select a site from the contractor-furnished clay source list. However, if the contractor chooses to obtain borrow material elsewhere, then it must demonstrate that its source has undergone environmental clearance conforming to the CEMVN's requirements and that the source meets the CEMVN's geotechnical standards. Agreements for use of a contractor-furnished site would solely be between a construction contractor and the landowner, and at no point in time would the landowner have an agreement with the CEMVN. Additionally, there are no guarantees that the landowner will sell borrow material for construction of the HSDRRS. For a construction contractor to use borrow from the contractor-furnished clay source list, the contractor must reach an agreement with the site owner(s) and compensate the owner for the material used from the site, based on that agreement. Reaching the agreement and compensating the landowner are the responsibility of the construction contractor.

Supply Contract

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

3.2 SIGNIFICANT RESOURCES

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

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

The impacts discussed in this report are those impacts specifically associated with utilizing the proposed Acosta 2, Idlewild Stage 2, King Mine, Levis, Lilly Bayou, Port Bienville, Raceland Raw

Sugars, River Birch Landfill Expansion, Scarsdale, and Spoil Area contractor-furnished borrow areas.

Table 1: Significant Resources in the Project Area

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

* Impacted at the Levis and River Birch Landfill Expansion sites, but not associated with the proposed action

3.2.1 Jurisdictional Wetlands

Existing Conditions

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

During initial investigations, a jurisdictional wetland determination from the CEMVN Regulatory Functions Branch was completed for the 10 potential contractor-furnished borrow areas discussed in this IER.

- *Acosta 2*
The CEMVN jurisdictional wetland determination MVN 2008-02242-SY dated 26 January 2009 indicates that jurisdictional wetlands and jurisdictional “404 other waters” (drainage canal) are located on the proposed Acosta 2 contractor-furnished borrow area (figure 3). The term "other waters" is meant to differentiate the manmade drainage canals found on the proposed contractor-furnished borrow area from Clean Water Act Section 404 jurisdictional wetlands, per 33 CFR 328.3. Jurisdictional wetlands on the site would be avoided with a 100-foot buffer between them and any proposed activity (figure 3). The drainage canal would be excavated during borrow site construction.

Additionally, the Jurisdictional Determination showed that the site is surrounded to the north and east with jurisdictional wetlands. These wetlands would also be avoided with a 100-foot buffer.

- *Idlewild Stage 2*
The CEMVN jurisdictional wetland determination MVN-2008-03510-SZ dated 10 February 2009 indicates that jurisdictional wetlands and jurisdictional “404 other waters” (drainage canals) are located on the proposed Idlewild Stage 2 contractor-furnished borrow area (figure 5). Jurisdictional wetlands on the site would be avoided with a 100-foot buffer between them and any proposed activity. The drainage canals would be excavated during borrow site construction.

Jurisdictional wetlands are likely located on the opposite side of the levee (flood side) to the proposed Idlewild site, and to the south of the site.

- *King Mine*
The CESAM jurisdictional wetland determination SAM-2006-1718-MFM dated 5 August 2008 indicates that jurisdictional wetlands are located on the propose King Mine contractor-furnished borrow area (figure 7). Jurisdictional wetlands on the site would be avoided with a 100-foot buffer between them and any proposed activity.

Jurisdictional wetlands are likely located outside of and adjacent to the proposed King Mine site.

- *Levis*
CEMVN Section 404 permit MVN-2006-1963-EFF was issued on 8 April 2008 for the construction of a mixed-use development at the proposed Levis contractor-furnished borrow area. Jurisdictional wetlands are on the site but have been partially cleared for this permitted activity, and not for borrow site construction. These impacts have been mitigated for via purchase of credits at a wetland mitigation bank.

It does not appear that there are jurisdictional wetlands in the vicinity of the proposed Levis site.

- *Lilly Bayou*
The CEMVN jurisdictional wetland determination MVN-2006-3143-SK dated 4 April 2008 indicates that jurisdictional wetlands and jurisdictional “404 other waters” (drainage canals) are located on the proposed Lilly Bayou contractor-furnished borrow area (figure 11). Jurisdictional wetlands on the site would be avoided with a 100-foot buffer between them and any proposed activity. The drainage canals would be excavated during borrow site construction.

Jurisdictional wetlands are likely located outside of and adjacent to the proposed Lilly Bayou site.

- *Port Bienville*
The CEMVK jurisdictional wetland determination MVK-2008-786 dated 13 August 2008 indicates that jurisdictional wetlands and jurisdictional “404 other waters” are located on the proposed Port Bienville contractor-furnished borrow area (figure 13). Jurisdictional wetlands on the site would be avoided with a 100-foot buffer between them and any proposed activity. The 404 other waters would be excavated during borrow site construction.

Jurisdictional wetlands are not likely located outside of and adjacent to the proposed Port Bienville site.

- *Raceland Raw Sugars*
The CEMVN jurisdictional wetland determination MVN-2008-01830-SQ dated 5 November 2008 indicates that there are no jurisdictional wetlands on the proposed Raceland Raw Sugars site. Additionally, jurisdictional wetlands are not likely located outside of and adjacent to the proposed site.
- *River Birch Landfill Expansion*
CEMVN Section 404 permit MVN-2004-2721-EKK was issued on 18 November 2009 for the construction of a landfill at the proposed River Birch Landfill Expansion contractor-furnished borrow area. Jurisdictional wetlands are on the site but have been partially cleared for this permitted activity, and not for borrow site construction. These impacts have been mitigated for via purchase of credits at a wetland mitigation bank.

It does not appear that there are jurisdictional wetlands in the vicinity of the proposed River Birch Landfill Expansion site.

- *Scarsdale*
The CEMVN jurisdictional wetland determination MVN-2009-0516-SQ dated 27 July 2009 indicates that jurisdictional wetlands are located on the proposed Scarsdale contractor-furnished borrow area (figure 19). Jurisdictional wetlands on the site would be avoided with a 100-foot buffer between them and any proposed activity.

Jurisdictional wetlands are likely located outside of and adjacent to the proposed Scarsdale site.

- *Spoil Area*
The CEMVN jurisdictional wetland determinations MVN-2009-01280-SQ dated 09 July 2009 and MVN-2009-01280-2-SQ dated 19 August 2009 indicates that jurisdictional wetlands are located on the proposed Spoil Area contractor-furnished borrow area (figure 21). Jurisdictional wetlands on the site would be avoided with a 100-foot buffer between them and any proposed activity.

Jurisdictional wetlands are likely located outside of and adjacent to the proposed Spoil Area site.

Discussion of Impacts

No Action

- *Acosta 2, Idlewild Stage 2, King Mine, Lilly Bayou, Port Bienville, Raceland Raw Sugars, Scarsdale, and Spoil Area*

Direct Impacts

Under the no action alternative, no direct impacts to jurisdictional wetlands would occur at the proposed Acosta 2, Idlewild Stage 2, King Mine, Lilly Bayou, Port Bienville, Raceland Raw Sugars, Scarsdale, and Spoil Area contractor-furnished borrow areas. The proposed sites would not be used as contractor-furnished borrow areas. Any potential direct impacts to jurisdictional wetlands at the sites with wetlands present would depend on what the landowners decide to do with the proposed sites.

Indirect Impacts

Under the no action alternative, there would be no indirect impacts to jurisdictional wetlands at the proposed Acosta 2, Idlewild Stage 2, King Mine, Lilly Bayou, Port Bienville, Raceland Raw Sugars, Scarsdale, and Spoil Area contractor-furnished borrow

areas. The proposed sites would not be used as contractor-furnished borrow areas. Any potential indirect impacts to jurisdictional wetlands would depend on what the landowners decide to do with the proposed sites.

Cumulative Impacts

Under the no action alternative, the proposed Acosta 2, Idlewild Stage 2, King Mine, Lilly Bayou, Port Bienville, Raceland Raw Sugars, Scarsdale, and Spoil Area sites would not be used as contractor-furnished borrow areas, and as such there would be no cumulative impacts to jurisdictional wetlands at the proposed sites or in the project areas due to the proposed action. Under this alternative, the proposed HSDRRS projects would be built to authorized levels using potential government-furnished and/or contractor-furnished borrow areas described in IER #18, IER #19, IER #22, IER #23, IER #25, IER #26, IER #28, IER #29, IER #30, IER #32, or other sources yet to be identified.

Cumulative impacts to jurisdictional wetlands would continue in the project area under the no action alternative. Historical and present wetland losses and gains in southeastern Louisiana have been caused by a multitude of natural and anthropogenic actions (Barras et al., 2003). Coastal wetland loss has occurred for thousands of years in Louisiana, and has until the 20th century been balanced by various natural wetland building processes (LACOAST, 1997). Multiple factors have been associated with coastal land loss, including the inhibition of sediment movement into coastal systems due to levee systems along the Mississippi River; man-made canals and their associated hydrologic changes (i.e., saltwater intrusion); a decline of suspended sediments coming from the Mississippi River due to upriver dams and other projects; erosion caused by wave action and boating activity; geologic compaction and faulting; storm events, including hurricanes; and relative sea level rise (Boesch et al., 1994). Public and private wetland creation and restoration projects have contributed to wetland gain in southeastern Louisiana. Major programs and initiatives include the Coastal Wetlands Planning, Protection and Restoration Act program; the Beneficial Use of Dredged Material program; WRDA restoration projects (e.g., Davis Pond Freshwater Diversion, Caernarvon Freshwater Diversion); vegetation restoration projects (e.g., National Resources Conservation Service Plant Materials Center); Louisiana state restoration projects; the Louisiana Parish Coastal Wetland Restoration Program; Federal Emergency Management Agency restoration projects; public and private parties' initiatives, including those of non-governmental organizations and corporations; and private mitigation banks. It is expected that the trend of wetland loss would continue, the rate of which would be slowed by the previously mentioned wetland creation and restoration initiatives.

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

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

Historical and projected losses of wetlands in southeastern Louisiana have been analyzed and discussed in *Coast 2050: Towards a Sustainable Coastal Louisiana* (LCWCRTF,

1998), the final Louisiana Coastal Area (LCA), Louisiana - Ecosystem Restoration Study (USACE, 2004), Louisiana's Comprehensive Master Plan for a Sustainable Coast (LACPRA, 2007), and the ongoing USACE Louisiana Coastal Protection and Restoration project.

- *Levis and River Birch Landfill Expansion*

Direct Impacts

Under the no action alternative, no direct impacts to jurisdictional wetlands would occur at the proposed Levis and River Birch Landfill expansion contractor-furnished borrow areas due to the proposed action. However, wetlands located on the sites have been removed as permitted under the respective CEMVN Section 404 permits for the sites' planned development uses, and the impacts were mitigated for by the landowners in accordance with the terms of the permits. These impacts are not related to the proposed action.

Indirect Impacts

Under the no action alternative, no indirect impacts to jurisdictional wetlands would occur at the proposed Levis and River Birch Landfill contractor-furnished borrow areas due to the proposed action. Indirect impacts to jurisdictional wetlands would likely not occur, as there are no known wetlands in the immediate vicinity of the sites.

Cumulative Impacts

Under the no action alternative, the proposed Levis and River Birch Landfill contractor-furnished sites would not be used in the construction of the HSDRRS. The proposed action would not contribute to the cumulative loss of jurisdictional wetlands in the project area.

The landowners' removal of jurisdictional wetlands at the proposed Levis and River Birch Landfill sites have contributed to the cumulative loss of this resource in the project area. These impacts were mitigated through CEMVN's CWA Section 404 regulatory program, and were not related to the proposed action.

Under the no action alternative, the proposed HSDRRS projects would be built to authorized levels using potential government-furnished and/or contractor-furnished borrow areas described in IER #18, IER #19, IER #22, IER #23, IER #25, IER #26, or IER #28, IER #29, IER #30, IER #32, or other sources yet to be identified. Cumulative impacts to jurisdictional wetlands would continue in the project area under the no action alternative, as described previously.

Proposed Action

- *Acosta 2, Idlewild Stage 2, King Mine, Lilly Bayou, Port Bienville, Raceland Raw Sugars, Scarsdale, and Spoil Area*

Direct Impacts

No direct impacts to jurisdictional wetlands would occur with use of the proposed Acosta 2, Idlewild Stage 2, King Mine, Lilly Bayou, Port Bienville, Raceland Raw Sugars, Scarsdale and Spoil Area contractor-furnished borrow areas. The wetlands found at the sites would be avoided by a 100-foot buffer, and would not be excavated. Any jurisdictional wetland areas outside of the sites would be avoided. The excavated areas would be converted to ponds and small lakes if water is retained, or to vegetated areas if water is not retained. Additional potential direct impacts to jurisdictional wetlands would depend on what the landowners decide to do with the sites following excavation.

The manmade drainage ditches and canals on the Acosta 2, Idlewild Stage 2, Lilly Bayou, and Port Bienville sites that are classified as jurisdictional “404 other waters” would be excavated. The term "other waters" is meant to differentiate the manmade ditches found at the site from Clean Water Act Section 404 jurisdictional wetlands, which are not found on the project site, per 33 CFR 328.3.

Indirect Impacts

Use of the proposed Acosta 2, Idlewild Stage 2, King Mine, Lilly Bayou, Port Bienville, Scarsdale, and Spoil Area contractor-furnished borrow areas may result in indirect wetland impacts. There are jurisdictional wetlands located close to the proposed excavation areas of these sites. Excavation of the sites may affect nearby jurisdictional wetlands by changing the hydrology and nutrient dynamics in their vicinities. These potential changes have not been quantified.

Similar impacts would not be anticipated at the proposed Raceland Raw Sugars site because there are no known wetlands in the immediate vicinity of the site.

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

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

Cumulative Impacts

Excavation of the proposed Acosta 2, Idlewild Stage 2, King Mine, Lilly Bayou, Port Bienville, Scarsdale, and Spoil Area contractor-furnished borrow areas would not contribute to cumulative wetland impacts if nearby wetlands are not indirectly adversely impacted. Any potential cumulative impacts to jurisdictional wetlands would depend on what the landowners decide to do with the sites following excavation.

Similar impacts would not be anticipated at the proposed Raceland Raw Sugars site because there are no known wetlands in the immediate vicinity of the site.

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

- *Levis and River Birch Landfill Expansion*

Direct Impacts

No direct impacts to jurisdictional wetlands would occur with use of the proposed Levis and River Birch Landfill Expansion contractor-furnished borrow areas due to the proposed action. The landowners have and continue to impact jurisdictional wetlands at the sites; however, the wetland impacts from the landowners' actions were permitted activities associated with previously-planned development activities. Those wetland impacts have been mitigated by the landowners in accordance with his Clean Water Act Section 404 permit and are unrelated to the construction of the HSDRRS.

If the proposed Levis site is excavated for borrow material, the resulting area would be converted to a large lake, which is consistent with the planned retention pond at the site. If the proposed River Birch Landfill Expansion is excavated for borrow material, the resulting area would be converted to a large lake unless kept under pump, which the landowners intend to do in accordance with constructing the previously-planned landfill. Additional potential direct impacts to jurisdictional wetlands depend on what the

landowners decides to do at the Levis and River Birch Landfill Expansion sites following excavation.

Indirect Impacts

Use of the proposed Levis and River Birch Landfill Expansion contractor-furnished borrow areas may result in indirect wetland impacts. Excavation of the proposed borrow areas may affect nearby jurisdictional wetlands by changing the hydrology and nutrient dynamics in the vicinity. These changes have not been quantified.

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

Additional potential indirect impacts to jurisdictional wetlands depend on what the landowners decide to do with the Levis and River Birch Landfill Expansion sites following excavation.

Cumulative Impacts

Excavation of the proposed Levis and River Birch Landfill Expansion sites would not contribute to cumulative wetland impacts because the sites no longer contain any jurisdictional wetlands (River Birch Landfill Expansion), or small amounts of wetlands that will be destroyed with or without the Proposed Action (Levis). The landowners have mitigated for wetland impacts at the proposed sites associated with their permitted developments. Additional potential cumulative impacts to jurisdictional wetlands depend on what the landowners decides to do at the Levis and River Birch Landfill Expansion sites following excavation.

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

3.2.2 Non-Jurisdictional Bottomland Hardwood Forest

Existing Conditions

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

The USACE has regulatory authority over jurisdictional Waters of the United States, including wetlands, pursuant to Section 404 of the Clean Water Act (CWA), as discussed in section 3.2.1. Non-jurisdictional BLH are those habitats that do not meet all three wetland criteria (hydrophytic vegetation, hydric soils, and wetland hydrology), and thus are out of the USACE's jurisdiction (USACE, 1987). Section 906(b) of WRDA 1986 requires mitigation for impacts to BLH caused by an USACE project.

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

- *Acosta 2*
The proposed Acosta 2 site is forested with 1.1 acres of BLH habitat. Species found at the site include tallow, live oak, and locust. Some of this habitat along the drainage canal has been recently been cleared by the landowner.
- *Idlewild Stage 2*
The proposed Idlewild 2 site is mostly forested with BLH habitat. Forested wetlands and cleared areas are also found on the site.
- *King Mine*
At the date of this Draft IER, the King Mine site has been inaccessible due to weather conditions and the resulting poor conditions of the unimproved access roads. Because of this, CEMVN and USFWS staff has been unable to identify and assess the type and quality of habitat at the site. A previous site visit by CEMVN staff documented possible BLH habitat at the site. The CEMVN and USFWS have planned a joint field investigation to the site to document habitat characteristics, the findings from which will be detailed in the Final IER. Since it is assumed that BLH habitat is found at the site, a discussion of probable impacts due to use of the site is included in this Draft IER.
- *Levis*
The proposed Levis site is mostly forested with BLH habitat. Since the anticipated clearing of the habitat is associated with construction of the planned mixed-use development and not the proposed contractor-furnished borrow area the CEMVN would not require compensatory mitigation for impacts to this habitat due to the proposed action.
- *Lilly Bayou*
The proposed Lilly Bayou site is mostly forested with BLH habitat. Species found at the site include sweetgum, tallow, elm, box elder, hickory, sugarberry, hornbeam, water oak, Hercules' Club, dogwood, cottonwood, beech, and sycamore.
- *Port Bienville*
The Port Bienville site was previously planted in pine for commercial harvesting, and is currently a mixture of overgrown pine habitat, cleared areas, BLH habitat, and active borrow area (Frierson). Species found within the site's BLH habitat include sweetgum, tallow, wax myrtle, magnolia, red maple, various oaks, and scattered pine.
- *Raceland Raw Sugars*
There are approximately 1.71 acres of BLH forest within the 104-acre parcel of the proposed Raceland Raw Sugars site. Species found in this area include tallow, sugarberry, wax myrtle, black willow, and dogwood. Most of the site is used for sugarcane farming.
- *River Birch Landfill Expansion*
The proposed River Birch Landfill Expansion is one of a number of tracks of land owned by River Birch Incorporated and Hwy. 90, LLC that will eventually be used as a landfill. The site was cleared for this purpose, and is currently being used as a borrow pit for non-CEMVN work. No BLH is currently found at the site.
- *Scarsdale*
The proposed Scarsdale site is thought to be forested with BLH habitat. Species found at the site include red maple, live oak, water oak, elm, box elder, dogwood, tallow, wax myrtle, and mulberry.

- *Spoil Area*
The proposed Spoil Area site is mostly forested with BLH habitat. Species found at the site include tallow, mulberry, wax myrtle, live oak, chinaberry, box elder, and red maple.

No Action

- *All Sites*

Direct Impacts

Under the no action alternative, no direct impacts to non-jurisdictional BLH would occur at the proposed Acosta 2, Idlewild Stage 2, King Mine, Levis, Lilly Bayou, Port Bienville, Raceland Raw Sugars, River Birch Landfill Expansion, Scarsdale, and Spoil Area contractor-furnished borrow areas due to the proposed action. The proposed sites would not be used as contractor-furnished borrow areas.

Recent clearing at the proposed Acosta 2 site removed some BLH habitat along the drainage canal separating the Acosta 1 and Acosta 2 sites. Mature trees seem to have been pushed down with bulldozers and excavators. Mobile fauna likely vacated the area during construction, most likely to similar habitat within the vicinity. All non-mobile fauna and flora is thought to be destroyed.

BLH habitat at the proposed Levis site would be removed in accordance with the construction of the planned mixed-use development. Mature trees would be cut down with the use of chainsaws or pushed down with bulldozers and excavators. Woody debris would be cleaned up and all berms would be leveled to eliminate hydrologic impacts. Mobile fauna would be expected to vacate the area during construction, most likely to similar habitat within the vicinity. All non-mobile fauna and flora would be destroyed.

Indirect Impacts

Under the no action alternative, no indirect impacts to non-jurisdictional BLH would occur at the proposed Acosta 2, Idlewild Stage 2, King Mine, Levis, Lilly Bayou, Port Bienville, Raceland Raw Sugars, River Birch Landfill Expansion, Scarsdale, and Spoil Area contractor-furnished borrow areas due to the proposed action. The proposed sites would not be used as contractor-furnished borrow areas.

Clearing at the proposed Acosta 2 site removed some BLH habitat along the drainage canal separating the Acosta 1 and Acosta 2 sites. This action was part of the contractor's work in preparing the site for a non-CEMVN borrow area. The landowner's recent clearing of a portion of the proposed Acosta 2 borrow area may indirectly affect nearby non-jurisdictional BLH on the site by changing the hydrology and nutrient dynamics in the vicinity. These changes have not been quantified. Additionally, use of the approved Acosta 1 contractor-furnished borrow area may result in indirect impacts to non-jurisdictional BLH. The excavation of borrow material and the excavated borrow area may affect nearby non-jurisdictional BLH by changing the hydrology and nutrient dynamics in the vicinity. These changes have not been quantified.

BLH habitat at the proposed Levis site will be removed in accordance with the construction of the planned mixed-use development. Clearing of BLH habitat and construction of the development may indirectly affect nearby non-jurisdictional BLH on the site by changing the hydrology and nutrient dynamics in the vicinity. These changes have not been quantified.

Cumulative Impacts

Under the no action alternative, no cumulative impacts to non-jurisdictional BLH at the proposed Acosta 2, Idlewild Stage 2, King Mine, Levis, Lilly Bayou, Port Bienville, Raceland Raw Sugars, River Birch Landfill Expansion, Scarsdale, and Spoil Area contractor-furnished borrow areas would occur due to the proposed action. The proposed sites would not be used as contractor-furnished borrow areas. Under this alternative, the proposed HSDRRS projects would be built to authorized levels using potential government-furnished and/or contractor-furnished borrow areas described in IER #18, IER #19, IER #22, IER #23, IER #25, IER #26, IER #28, IER #29, IER #30, IER #32, or other sources yet to be identified. Sites in these IERs encompass more than 1,700 acres of BLH that may be impacted for use on HSDRRS work.

The landowner's recent clearing of portions of the Acosta 2 site, and the anticipated clearing of the Levis site, contribute to the cumulative loss of non-jurisdictional BLH in the project area.

Cumulative impacts to non-jurisdictional BLH would continue in the project area under the no action alternative. There are over 60 approved potential borrow areas in southeastern Louisiana and southwestern Mississippi that may be utilized for construction of the HSDRRS, some of which have BLH present.

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

Proposed Action

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

Use of the proposed Levis, Port Bienville, and River Birch Landfill Expansion contractor-furnished borrow areas would not cause impacts to non-jurisdictional BLH. BLH habitat is not found at the Port Bienville and River Birch Landfill Expansion sites, and thus would not be impacted by the proposed action. BLH habitat is found at the Levis site, but would be impacted primarily for the construction of the planned mixed-use development and not the proposed action; compensatory mitigation for impacts to BLH habitat is not required for this action.

Use of the proposed Acosta 2, Idlewild Stage 2, Lilly Bayou, Raceland Raw Sugars, Scarsdale, and Spoil Area contractor-furnished borrow areas would cause unavoidable impacts to 965.30 acres (572.20 AAHUs) of non-jurisdictional BLH on the site (table 2). Use of the proposed King Mine contractor-furnished borrow area would likely cause impacts to BLH habitat, which will be detailed in the Final IER after habitat analysis is finished.

Compensatory mitigation for impacts to BLH is required to be completed prior to impacts. The landowner or contractors will accomplish compensatory mitigation through the purchase of mitigation bank credits at an appropriate mitigation bank within the same

watershed as the impacts. Mitigation for unavoidable impacts to non-jurisdictional BLH is further discussed in section 7.

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

Proposed Borrow Area	Acres Proposed for Excavation	Acres Non-jurisdictional BLH	AAHUs
Acosta 2	4	1.1	0.45
Idlewild Stage 2	108	83.3	56.49
King Mine	158	N/A	N/A
Levis	51	0	0
Lilly Bayou	437	356.1	242.72
Port Bienville	677	89.0	55.72
Raceland Raw Sugars	231	1.71	0.56
River Birch Landfill Expansion	196	0	0
Scarsdale	56	51.23	41.04
Spoil Area	435	382.8	175.19
Total	2358	965.3	5722

N/A: At the date of this Draft IER, the King Mine site has been inaccessible due to weather conditions and the resulting poor conditions of the unimproved access roads. The CEMVN and USFWS have planned a joint field investigation to the site to document habitat characteristics, the findings from which will be detailed in the Final IER.

- *Levis and River Birch Landfill Expansion*

Direct Impacts

No direct impacts to non-jurisdictional BLH would occur with use of the proposed Levis and River Birch Landfill Expansion contractor-furnished borrow areas because the sites do not contain any non-jurisdictional BLH.

Indirect Impacts

Use of the proposed Levis and River Birch Landfill Expansion contractor-furnished borrow areas would not likely result in indirect impacts to non-jurisdictional BLH because the habitat type is not near these sites.

Cumulative Impacts

Use of the proposed Levis and River Birch Landfill Expansion contractor-furnished borrow areas would not contribute to the cumulative loss of non-jurisdictional BLH in the project area because the sites do not contain any BLH habitat.

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

- *Acosta 2, Idlewild Stage 2, King Mine, Levis, Lilly Bayou, Raceland Raw Sugars, Scarsdale, and Spoil Area*

Direct Impacts

Excavation of the proposed Acosta 2, Idlewild Stage 2, Lilly Bayou, Port Bienville, Raceland Raw Sugars, Scarsdale, and Spoil Area contractor-furnished borrow areas would directly impact 965.30 acres of non-jurisdictional BLH (table 2). Use of the proposed King Mine contractor-furnished borrow area would likely cause impacts to BLH habitat, which will be detailed in the Final IER after habitat analysis is finished.

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

The landowner's recent clearing of portions of the proposed Acosta 2 site directly impacted non-jurisdictional BLH in the project area, as described in the no action. Further clearing at the site would also contribute to the direct impact to non-jurisdictional BLH in the project area.

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

The landowners of the proposed Acosta 2, Idlewild Stage 2, King Mine, Lilly Bayou, Port Bienville, Raceland Raw Sugars, Scarsdale, and Spoil Area contractor-furnished borrow areas will complete mitigation for the loss of non-jurisdictional BLH if their proposed sites are used for construction of the HSDRRS. Proof of mitigation for non-jurisdictional BLH impacts would be supplied to the CEMVN prior to excavation.

Indirect Impacts

Use of the proposed Acosta 2, Idlewild Stage 2, King Mine, Lilly Bayou, Port Bienville, Raceland Raw Sugars, Scarsdale, and Spoil Area contractor-furnished borrow areas may result in indirect impacts to non-jurisdictional BLH. The excavation of borrow material and the excavated borrow areas may affect nearby non-jurisdictional BLH by changing the hydrology and nutrient dynamics in the vicinity. These changes have not been quantified.

The landowner's recent clearing of portions of the proposed Acosta 2 site directly impacted non-jurisdictional BLH in the project area, as described for the no action alternative. Further clearing at the site would also contribute to the indirect impact to non-jurisdictional BLH in the project area.

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

Cumulative Impacts

Use of the proposed Acosta 2, Idlewild Stage 2, King Mine, Lilly Bayou, Port Bienville, Raceland Raw Sugars, Scarsdale, and Spoil Area contractor-furnished borrow areas would contribute to the cumulative loss of non-jurisdictional BLH in the project area. Additional potential cumulative impacts to non-jurisdictional BLH would depend on what the landowners decide to do with the sites following excavation.

The recent clearing of portions of the proposed Acosta 2 contractor-furnished borrow area contributed to the cumulative loss of non-jurisdictional BLH in the project area. Additional potential cumulative impacts to non-jurisdictional BLH would depend on what the landowner decides to do with the site following excavation.

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

3.2.3 Upland Resources

For the purposes of this IER, upland resources are any non-wetland areas. Non-jurisdictional BLH habitat, although part of this definition, are discussed separately in section 3.2.2. Impacts to farmland and farmland soils, which may be located in upland areas, are discussed in section 3.2.4. Upland areas include maintained and unmaintained pasture, overgrown/vacant areas, and forested areas that are neither wetland nor non-jurisdictional BLH. Following this definition, there are no upland resources at the proposed Acosta 2, Idlewild Stage 2, King Mine, Levis, Lilly Bayou, Port Bienville, Raceland Raw Sugars, River Birch Landfill Expansion, Scarsdale, and Spoil Area contractor-furnished borrow areas.

3.2.4 Farmland and Farmland Soils

Existing Conditions

The National Resources Conservation Service (NRCS) uses a land evaluation and site assessment system to establish a farmland conversion impact rating score on proposed sites. This score is used by Federal agencies in assessing potential impacts to farmland and farmland soils in potential project areas. As identified by the NRCS, the proposed Acosta 2, Idlewild Stage 2, King Mine, Levis, Lilly Bayou, Port Bienville, Raceland Raw Sugars, River Birch Landfill Expansion, Scarsdale, and Spoil Area contractor-furnished borrow areas contain prime farmland soils.

Discussion of Impacts

No Action

- *All Sites*

Direct Impacts

Under the no action alternative, no direct impacts to farmland and farmland soils at the proposed Acosta 2, Idlewild Stage 2, King Mine, Levis, Lilly Bayou, Port Bienville, Raceland Raw Sugars, River Birch Landfill Expansion, Scarsdale, and Spoil Area contractor-furnished borrow areas would occur. The proposed sites would not be used as contractor-furnished borrow areas. Any potential direct impacts to farmland soils would depend on what the landowners decide to do with the sites.

Some land has been cleared at the Acosta 2 and Port Bienville sites. This action has directly, permanently removed farmland soils at the sites.

Indirect Impacts

Under the no action alternative, no indirect impacts to farmland soils at the proposed Acosta 2, Idlewild Stage 2, King Mine, Levis, Lilly Bayou, Port Bienville, Raceland Raw Sugars, River Birch Landfill Expansion, Scarsdale, and Spoil Area contractor-furnished borrow areas would occur. The proposed sites would not be used as contractor-furnished borrow areas. Any potential indirect impacts to farmland and farmland soils would depend on what the landowners decide to do with the sites.

Cumulative Impacts

Under the no action alternative, there would be no cumulative impacts to farmland soils at the sites due to the proposed action. The proposed Acosta 2, Idlewild Stage 2, King Mine, Levis, Lilly Bayou, Port Bienville, Raceland Raw Sugars, River Birch Landfill Expansion, Scarsdale, and Spoil Area sites would not be used as contractor-furnished borrow areas. Any potential cumulative impacts to farmland soils would depend on what the landowners decide to do with the sites. Under this alternative, the proposed HSDRRS projects would be built to authorized levels using potential government-furnished and/or

contractor-furnished borrow areas described in IER #18, IER #19, IER #22, IER #23, IER #25, IER #26, IER #28, IER #29, IER #30, IER #32, or other sources yet to be identified.

Some land has been cleared at the Acosta 2 and Port Bienville sites. This action has permanently removed farmland soils at the sites, adding to the cumulative loss of this resource in the project area.

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

Proposed Action

- *All Sites*

Direct Impacts

Use of the proposed Acosta 2, Idlewild Stage 2, King Mine, Levis, Lilly Bayou, Port Bienville, Raceland Raw Sugars, River Birch Landfill Expansion, Scarsdale, and Spoil Area contractor-furnished borrow areas would directly impact farmland soils. The sites would be cleared and excavated, which would result in a direct permanent loss of farmland soils. Any additional potential direct impacts to farmland soils would depend on what the landowners decide to do with the sites following excavation.

Indirect Impacts

No indirect impacts to farmland soils at the proposed Acosta 2, Idlewild Stage 2, King Mine, Levis, Lilly Bayou, Port Bienville, Raceland Raw Sugars, River Birch Landfill Expansion, Scarsdale, and Spoil Area sites would occur due to the proposed action. Any potential indirect impacts to farmland soils would depend on what the landowners decide to do with the sites following excavation.

Cumulative Impacts

Use of the proposed Acosta 2, Idlewild Stage 2, King Mine, Levis, Lilly Bayou, Port Bienville, Raceland Raw Sugars, River Birch Landfill Expansion, Scarsdale, and Spoil Area contractor-furnished borrow areas would contribute to the cumulative loss of farmland soils in the region. Any additional potential cumulative impacts to farmland and farmland soils would depend on what the landowners decide to do with the sites following excavation.

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

3.2.5 Wildlife

Existing Conditions

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

Non-game wading birds, shore birds, and sea birds including egrets, ibis, herons, sandpipers, willets, black-necked stilts, gulls, terns, skimmers, grebes, loons, cormorants, and white and

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

The bald eagle is a raptor that is found in various areas throughout the United States and Canada as well as throughout the study area. Bald eagles are Federally protected under the Bald Eagle Protection Act of 1940. The bald eagle feeds on fish, rabbits, waterfowl, seabirds, and carrion (Ehrlich et al., 1988). The main basis of the bald eagle diet is fish, but they will feed on other items such as birds and carrion depending upon availability of the various foods. Eagles require roosting and nesting habitat, which in Louisiana consists of large trees in fairly open stands (Anthony et al., 1982). Bald eagles nest in Louisiana from October through mid-May. Eagles typically nest in bald cypress trees near fresh to intermediate marshes or open water in the southeastern parishes. There is a bald eagle nest located within 660 feet of the boundary of the proposed River Birch Landfill Expansion site. The boundaries of the site were modified to ensure that a USFWS-recommended 660-foot buffer around the nest was established to avoid detrimental impacts to nesting eagles.

Discussion of Impacts

No Action

- *All Sites*

Direct Impacts

Under the no action alternative, no direct impacts to wildlife or wildlife habitat at the proposed Acosta 2, Idlewild Stage 2, King Mine, Levis, Lilly Bayou, Port Bienville, Raceland Raw Sugars, River Birch Landfill Expansion, Scarsdale, and Spoil Area contractor-furnished borrow areas would occur due to the proposed action. The proposed sites would not be used as contractor-furnished borrow areas. Any potential direct impacts to wildlife and wildlife habitat would depend on what the landowners decide to do with the sites.

The eagle nest near the River Birch Landfill Expansion may be disturbed due to previously-planned construction at that site not related to the proposed action, if construction takes place within the nesting season.

Clearing at the proposed Acosta 2 site described in section 3.2.2 removed some BLH habitat along the drainage canal separating the Acosta 1 and Acosta 2 sites, destroying wildlife habitat and non-mobile species. This action was part of the contractor's work in preparing the site for a non-CEMVN borrow area.

BLH habitat at the proposed Levis site will be removed in accordance with the construction of the planned mixed-use development, as described in section 3.2.2. Mobile fauna would be expected to vacate the area during construction, most likely to similar habitat within the vicinity. All non-mobile wildlife would be destroyed.

Indirect Impacts

Under the no action alternative, no indirect impacts to wildlife or wildlife habitat at the proposed Acosta 2, Idlewild Stage 2, King Mine, Levis, Lilly Bayou, Port Bienville, Raceland Raw Sugars, River Birch Landfill Expansion, Scarsdale, and Spoil Area contractor-furnished borrow areas would occur due to the proposed action. The proposed sites would not be used as contractor-furnished borrow areas. Any potential indirect impacts to wildlife and wildlife habitat would depend on what the landowners decide to do with the sites.

Recent land clearing at the Acosta 2 site, and anticipated clearing at the Levis site, decreased the amount of wildlife habitat in the project area. Mobile wildlife would be expected to migrate to nearby similar habitat, increasing populations in these areas.

Cumulative Impacts

Under the no action alternative, there would be no cumulative impacts to wildlife or wildlife habitat from the proposed action. The proposed Acosta 2, Idlewild Stage 2, King Mine, Levis, Lilly Bayou, Port Bienville, Raceland Raw Sugars, River Birch Landfill Expansion, Scarsdale, and Spoil Area contractor-furnished borrow areas would not be used as contractor-furnished borrow areas. Any potential cumulative impacts to wildlife and wildlife habitat would depend on what the landowners decide to do with the sites. Under the no action alternative, the proposed HSDRRS projects would be built to authorized levels using potential government-furnished and/or contractor-furnished borrow areas described in IER #18, IER #19, IER #22, IER #23, IER #25, IER #26, IER #28, IER #29, IER #30, IER #32, or other sources yet to be identified.

Recent land clearing at the Acosta 2 site, and anticipated clearing at the Levis site, added to the cumulative loss of wildlife habitat in the project area.

Current borrow material excavation, stockpiling, processing, and transport activities at the Frierson and River Birch Phase I and Phase II sites has detrimentally impacted wildlife and wildlife habitat at the Port Bienville and River Birch Landfill Expansion sites, respectively.

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

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

Proposed Action

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

- *All Sites*

Direct Impacts

Direct impacts from wildlife displacement would occur when the proposed Acosta 2, Idlewild Stage 2, King Mine, Levis, Lilly Bayou, Port Bienville, Raceland Raw Sugars, River Birch Landfill Expansion, Scarsdale, and Spoil Area contractor-furnished borrow areas are cleared and excavated. Non-mobile wildlife would be destroyed. Trees, uplands, and other habitat would be removed and the sites would be excavated. The excavated sites could fill with water and create aquatic habitats. Any additional potential direct impacts to wildlife and wildlife habitat would depend on what the landowners decide to do with the sites following excavation.

Construction contractors would be prohibited from conducting any activity within 660 feet from the eagle nest near the River Birch Landfill Expansion site so as to avoid impacting nesting activity.

Indirect Impacts

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

Any additional potential indirect impacts to wildlife and wildlife habitat would depend on what the landowners decide to do with the sites following excavation.

Cumulative Impacts

Use of the proposed Acosta 2, Idlewild Stage 2, King Mine, Levis, Lilly Bayou, Port Bienville, Raceland Raw Sugars, River Birch Landfill Expansion, Scarsdale, and Spoil Area contractor-furnished borrow areas would contribute to the cumulative loss of wildlife and wildlife habitat in the region. Because the excavated borrow sites may provide habitat for wildlife, the detrimental cumulative impact to wildlife may be reduced. Any additional potential cumulative impacts to wildlife and wildlife habitat would depend on what the landowners decide to do with the sites following excavation.

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

3.2.6 Threatened and Endangered Species

Existing Conditions

Threatened and endangered species (T&E) are those recognized species that are legally protected in the United States through various conservation measures. The USFWS designates areas that have the physical and biological features that are essential to the conservation of T&E species or

areas of habitat that are believed to be essential for a species' conservation as "critical habitat." Through this designation the USFWS is helping to manage the survival and proliferation of T&E species in the region. Although several Federal or state-listed T&E species are dependent on the habitat types present in the study areas, no endangered, threatened, or candidate species under USFWS jurisdiction presently occur in the proposed Acosta 2, Idlewild Stage 2, King Mine, Levis, Lilly Bayou, Port Bienville, Raceland Raw Sugars, River Birch Landfill Expansion, Scarsdale, and Spoil Area contractor-furnished borrow areas, as described below. No critical habitat for any T&E species was found at any of the proposed contractor-furnished borrow areas. The USFWS concurrence of "No Effect on T&E Species" is valid for twelve months from date of issuance. Proof of valid, current USFWS concurrence will need to be submitted to CEMVN before a site is used.

Discussion of Impacts

No Action

- *All Sites*

Direct Impacts

No direct impacts to T&E species or their critical habitat would occur under the no action alternative. The proposed Acosta 2, Idlewild Stage 2, King Mine, Levis, Lilly Bayou, Port Bienville, Raceland Raw Sugars, River Birch Landfill Expansion, Scarsdale, and Spoil Area sites would not be used as contractor-furnished borrow areas.

Indirect Impacts

No indirect impacts to T&E species or their critical habitat would occur under the no action alternative. The proposed Acosta 2, Idlewild Stage 2, King Mine, Levis, Lilly Bayou, Port Bienville, Raceland Raw Sugars, River Birch Landfill Expansion, Scarsdale, and Spoil Area sites would not be used as contractor-furnished borrow areas.

Cumulative Impacts

Under the no action alternative, there would be no cumulative impacts to T&E species or their critical habitat from the proposed action. The proposed Acosta 2, Idlewild Stage 2, King Mine, Levis, Lilly Bayou, Port Bienville, Raceland Raw Sugars, River Birch Landfill Expansion, Scarsdale, and Spoil Area sites would not be used as contractor-furnished borrow areas. Under this alternative, the proposed HSDRRS projects would be built to authorized levels using potential government-furnished and/or contractor-furnished borrow areas described in IER #18, IER #19, IER #22, IER #23, IER #25, IER #26, IER #28, IER #29, IER #30, IER #32, or other sources yet to be identified.

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

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

Proposed Action

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

Table 3: USFWS T&E Concurrence

Proposed Borrow Area	USFWS Concurrence
Acosta 2	06 July 2009
Idlewild Stage 2	23 February 2009
King Mine	06 August 2008
Levis	30 July 2008
Lilly Bayou	25 April 2008
Port Bienville	21 September 2009
Raceland Raw Sugars	18 April 2008
River Birch Landfill Expansion	27 February 2009
Scarsdale	18 April 2008
Spoil Area	27 February 2009

- *All Sites*

Direct Impacts

No direct impacts to T&E species or their critical habitat would occur with excavation of the proposed Acosta 2, Idlewild Stage 2, King Mine, Levis, Lilly Bayou, Port Bienville, Raceland Raw Sugars, River Birch Landfill Expansion, Scarsdale, and Spoil Area contractor-furnished borrow areas. The USFWS concurred with determinations that implementation of the proposed action would not adversely affect any T&E species or their critical habitat in their letters (table 3).

Indirect Impacts

No indirect impacts to T&E species or their critical habitat would occur with excavation of the proposed Acosta 2, Idlewild Stage 2, King Mine, Levis, Lilly Bayou, Port Bienville, Raceland Raw Sugars, River Birch Landfill Expansion, Scarsdale, and Spoil Area contractor-furnished borrow areas.

Cumulative Impacts

Use of the proposed Acosta 2, Idlewild Stage 2, King Mine, Levis, Lilly Bayou, Port Bienville, Raceland Raw Sugars, River Birch Landfill Expansion, Scarsdale, and Spoil Area contractor-furnished borrow areas would not contribute to the loss of T&E species or their critical habitat in the project area because the proposed sites do not contain any T&E species or critical habitat.

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

3.2.7 Cultural Resources

Existing Conditions

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

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

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

- *Acosta 2*
A Phase I cultural resources survey of the proposed Acosta contractor-furnished borrow area was conducted and located no cultural resources.
- *Idlewild Stage 2*
A Phase I cultural resources survey was undertaken of the proposed Idlewild Stage 2 contractor-furnished borrow area. The proposed area includes three loci associated with

the Sarah Plantation (16PL170) that are not eligible for inclusion on the National Register of Historic Places. These non-eligible locations require no further actions of avoidance or investigation.

- *King Mine*
Phase I cultural resources survey of the proposed King Mine contractor-furnished borrow area located no cultural resources.
- *Levis*
A Phase I cultural resources investigation of the proposed Levis contractor-furnished borrow area was undertaken and located no cultural resources.
- *Lilly Bayou*
A Phase I cultural resources survey located three archaeological sites (16EBR201, 16EBR202 and 16EBR203) and eight isolated finds at the proposed Lilly Bayou contractor-furnished borrow area. None of these resources were considered eligible for the National Register of Historic Places and therefore require no further actions of avoidance or investigation.
- *Port Bienville*
A Phase I cultural resources assessment was performed of the proposed Port Bienville contractor-furnished borrow area and no National Register eligible cultural resources were identified. Concerns were raised by the Jena Band of Choctaws and the Mississippi Band of Choctaws, about the possibility of unrecorded burials within the proposed borrow area. A Memorandum of Agreement was signed between the Jena Band and the Mississippi Band of the Choctaw Indians as well as by M. Matt Durand, L.L.C. of Port Bienville Clay Mine, L.L.C. outlining procedures to allow use of the borrow area and to care for unexpected discoveries should these occur.
- *Raceland Raw Sugars*
A Phase I cultural resources survey was conducted on the proposed Raceland Raw Sugars contractor-furnished borrow area and no cultural resources were located.
- *River Birch Landfill Expansion*
A Phase I cultural resources study was completed on the proposed River Birch Landfill Expansion contractor-furnished borrow area, and no cultural resources were located.
- *Scarsdale*
A Phase I cultural resources study was completed of the proposed Scarsdale contractor-furnished borrow area, and no cultural resources were located.
- *Spoil Area*
A Phase I cultural resources study was completed of the proposed Spoil Area contractor-furnished borrow area, and no cultural resources were located.

Discussion of Impacts

No Action

- *All Sites*

Direct Impacts

Under the no action alternative, no direct impacts to cultural resources at the proposed Acosta 2, Idlewild Stage 2, King Mine, Levis, Lilly Bayou, Port Bienville, Raceland Raw

Sugars, River Birch Landfill Expansion, Scarsdale, and Spoil Area contractor-furnished borrow areas would be anticipated. Any undiscovered or unreported cultural resources or traditional cultural properties would remain intact and in their current state of preservation. The burial or subsidence of historic land surfaces would continue in the current pattern. All available information indicates that it is highly unlikely that under the no action alternative there would be any direct negative impacts to cultural resources unless resulting from independent choices made by a landowner.

Indirect Impacts

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

Cumulative Impacts

Under the no action alternative, the proposed contractor-furnished borrow areas would not be used. The proposed HSDRRS projects would be built to authorized levels using potential government-furnished and/or contractor-furnished borrow areas described in IER #18, IER #19, IER #22, IER #23, IER #25, IER #26, IER #28, IER #29, IER #30, IER #32 or other sources yet to be identified.

Proposed Action

- *All Sites*

Direct Impacts

All available information indicates that it is highly unlikely that cultural resources would be impacted by excavation of the proposed Acosta 2, Idlewild Stage 2, King Mine, Levis, Lilly Bayou, Port Bienville, Raceland Raw Sugars, River Birch Landfill Expansion, Scarsdale, and Spoil Area contractor-furnished borrow areas. Although with implementation of the proposed action, any undiscovered cultural resources may be damaged during borrow excavation and construction operations, it is unlikely that such direct impacts would occur because cultural resource surveys have been completed and those surveys did not reveal the existence of any known historic properties that are eligible for the NRHP within the proposed borrow sites.

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

Indirect Impacts

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

Cumulative Impacts

If the proposed Acosta 2, Idlewild Stage 2, King Mine, Levis, Lilly Bayou, Port Bienville, Raceland Raw Sugars, River Birch Landfill Expansion, Scarsdale, and Spoil Area sites are used as contractor-furnished borrow areas, it is highly unlikely that any cumulative negative impacts to cultural resources would occur from the sites' excavation. Cultural resource surveys were completed for the sites and those surveys did not reveal the existence of any known historic properties that are eligible for the NRHP within them (table 4).

Table 4. Summary of Section 106 of NHPA correspondence

Site	Date Consulting Party Provided Concurrence on the Project											
	SHPO	Chitimacha Tribe of LA	MS Band of Choctaw Indians	Alabama Coushatta Tribe of TX	Caddo Nation of OK	Choctaw Nation of OK	Coushatta Tribe of LA	Jena Band of Choctaw Indians	Quapaw Tribe of OK	Seminole Nation of OK	Seminole Tribe of FL	B
	6/24/2010	NR	NR	5/28/2010	NR	NR	NR	NR	NR	NR	NR	NR
Stage 2	5/14/2009	NR	NR	7/16/2009	6/19/2009	NR	NR	NR	NR	NR	6/24/2009	NR
	3/9/2009	NR	NR	NR	NR	3/9/2009	NR	NR	NR	NR	NR	NR
	6/28/2010	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1	6/28/2010	NR	NR	NR	NR	6/10/2010	NR	NR	NR	NR	NR	NR
lle	6/1/2010	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
law Sugars	8/1/2008	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
h Landfill Expansion	6/25/2010	NR	NR	5/28/2010	NR	NR	NR	NR	NR	NR	NR	NR
	6/25/2010	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
	6/25/2010	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR

onse (NR) implies concurrence with the CEMV/N finding of “no historic properties affected” as per 36 CFR 800.4(d).

3.2.8 Recreational Resources

Existing Conditions

- *Acosta 2*
There is no recreational use of the project area or the adjacent land which include, the Acosta 1 contractor-furnished borrow area that has been cleared by the landowner.
- *Idlewild Stage 2*
There is no recreational use of the project area. The site is surrounded by private land including the approved Idlewild Stage 1 contractor-furnished borrow area that is currently cleared, fruit orchid, residential area, and undeveloped residential site. No recreation use is occurring adjacent to the project area.
- *King Mine*
The project area is a wooded area with the potential for hunting provided permission or lease is obtained from the private landowner.
- *Levis*
The project area is a wooded area with evidence of a hunting stand. There is the potential for hunting provided permission is obtained from the private landowner. Approximately 100 feet west of the project area is an athletic complex. Recreation facilities include three soccer/football fields, five little league baseball fields, three softball fields, three youth baseball fields, and one high school baseball field. The complex is buffered from the site by forest and a major drainage canal.
- *Lilly Bayou*
There are hunting leases on the site. The Mississippi River is adjacent to the project area. Fishing, crawfishing, and boating are recreational uses of the river.
- *Port Bienville*
There is no recreational use of the project area or the adjacent land which includes an existing borrow site.
- *Raceland Raw Sugars*
There is no recreational use of the project area or the adjacent land. The project area is a privately owned sugar cane field.
- *River Birch Landfill Expansion*
There is no recreational use of the project area. There is no recreation use adjacent to the project area which includes a landfill and existing borrow area. One mile east of the project area is Avondale Community Center. The multi-purpose center includes a park with a paved walking path and park benches.
- *Scarsdale*
The site is a wooded area with evidence of a hunting stand and a dirt trail. Potential uses of the project area include walking or hunting provided permission is obtained from the private land owner. Surrounded by a residential area, there is no recreation use adjacent to the site.
- *Spoil Area*
The project area is separated by a levee from Lake Borgne and the Mississippi River Gulf Outlet (MRGO). Adjacent to the project are bayous including Bashman and Dupre. These

bayous connect with the MRGO and Lake Borgne. Lake Borgne provides access to the Gulf of Mexico. Recreational use of these water bodies includes fishing and boating.

Approximately 5 miles from the project area is a boat launch near Violet. The marina is closed; however, the public may use a ramp on the west side.

There are approximately five active camps adjacent to the project area. Several camps were destroyed during Hurricane Katrina and people have not returned to them. People hunt hogs, deer, rabbit and duck within the project area.

Immediately east of Lake Borgne is Biloxi State Wildlife Management Area (WMA). Recreation use of the WMA includes hunting, fishing, boating, crabbing, shrimping, and bird watching. Approximately 6 miles north of the project area is Bayou Sauvage National Wildlife Refuge (NWR). The NWR is the nation's largest urban refuge. Public use opportunities include interpretive trails and boardwalks, fishing, bird watching, canoeing, photography, crawfishing and crabbing, wildlife observation, and boating. The WMA has identified an area for expansion. The location is approximately 0.5 mile from the project area.

Approximately 5 miles south of the project area is St. Bernard State Park. Recreation facilities include a campground, playground, covered pavilion, picnic tables, swimming pool, boat launch, man-made lagoon and trails.

Discussion of Impacts

No Action

- *All Sites*

Direct Impacts

Under the no action alternative, no direct impacts to recreational resources would occur at the proposed Acosta 2, Idlewild Stage 2, King Mine, Levis, Lilly Bayou, Port Bienville, Raceland Raw Sugars, River Birch Landfill Expansion, Scarsdale, and Spoil Area contractor-furnished borrow areas. Without implementation of the proposed action, the conditions within the recreational environment would continue as they have in the past and would be dictated by the natural land use patterns and processes that have dominated the area in the past. The landowners could directly impact recreational resources at the sites; however, this would not be related to the proposed action.

Indirect Impacts

Under the no action alternative, no indirect impacts to recreational resources would occur at the proposed Acosta 2, Idlewild Stage 2, King Mine, Levis, Lilly Bayou, Port Bienville, Raceland Raw Sugars, River Birch Landfill Expansion, Scarsdale, and Spoil Area contractor-furnished borrow areas.

Cumulative Impacts

Under the no action alternative, no cumulative impacts to recreational resources would occur at the proposed Acosta 2, Idlewild Stage 2, King Mine, Levis, Lilly Bayou, Port Bienville, Raceland Raw Sugars, River Birch Landfill Expansion, Scarsdale, and Spoil Area contractor-furnished borrow areas.

Under this alternative, the proposed HSDRRS projects would be built to authorized levels using potential government-furnished and/or contractor-furnished borrow areas described in IER #18, IER #19, IER #22, IER #23, IER #25, IER #26, IER #28, IER #29, IER #30, IER #32, or other sources yet to be identified.

Proposed Action

- *Acosta 2, Port Bienville, Idlewild Stage 2, and Raceland Raw Sugars*

Direct Impacts

There is no recreation occurring within or adjacent to the proposed Acosta 2, Port Bienville, Idlewild Stage 2, or Raceland Raw Sugars sites. As a result, there would be no direct impact to recreation at these sites.

Indirect Impacts

There is no recreation occurring within or adjacent to the proposed Acosta 2, Port Bienville, Idlewild Stage 2, or Raceland Raw Sugars sites. As a result, there would be no indirect impact to recreation.

Cumulative Impacts

There is no recreation occurring within or adjacent to the proposed Acosta 2, Port Bienville, Idlewild Stage 2, or Raceland Raw Sugars sites. As a result, there would be no cumulative impact to recreation.

- *King Mine, Lilly Bayou, and Scarsdale*

Direct Impacts

The proposed King Mine, Lilly Bayou, and Scarsdale sites are located on private land. People with hunting leases could be displaced during borrow pit activities (excavating, stockpiling, processing, transporting material, etc.). People using the Lilly Bayou project site to access the Mississippi River for bank fishing and crabbing may also be impacted by the hauling of material. The direct impact would be minimal because of the opportunity to use other land to hunt and fish. Public land including state wildlife management areas and wildlife refuges managed by the USFWS offer hunting and fishing opportunities.

Indirect Impacts

The indirect impact would be minimal because of the opportunity to use other land to hunt and fish. Public land including state wildlife management areas and wildlife refuges managed by the USFWS offer hunting and fishing opportunities.

Cumulative Impacts

The cumulative impact would be minimal because of the opportunity to use other land to hunt and fish. Public land including state wildlife management areas and wildlife refuges managed by the USFWS offer hunting and fishing opportunities.

- *Levis*

Direct Impacts

Depending on the direction of wind and soil moisture, there is a potential for dust within and in the vicinity of the proposed Levis site during construction. There is also the potential for elevated noise from equipment experienced by users of the nearby athletic complex. There are trees separating the athletic complex from the proposed Levis site, which may reduce these direct impacts.

Indirect Impacts

There would be no indirect impacts to recreation as a result of the Proposed Action.

Cumulative Impacts

There would be no cumulative impacts to recreation as a result of the Proposed Action.

- *River Birch Landfill Expansion*

Direct Impacts

Depending on the direction of wind and soil moisture, there is a potential for dust within and in the vicinity of the proposed River Birch Landfill Expansion site during construction. The community center is approximately 1 mile from the River Birch Landfill Expansion site, and the direct impact to recreationists as a result of dust is low given the distance and other structures separating the recreation area from the project area.

Indirect Impacts

There would be no indirect or cumulative impacts to recreation as a result of the proposed action.

Cumulative Impacts

There would be no indirect or cumulative impacts to recreation as a result of the proposed action.

- *Spoil Area*

Direct Impacts

Equipment would access the proposed Spoil Area site via roads; therefore water ways would not be affected. The camps may be impacted by dust and noise from equipment, but this impact would be expected to be minimal because of the buffer of trees between the project area and camps.

Indirect Impacts

Hunters in the area would be displaced, causing an indirect impact to hunting in the project vicinity.

Cumulative Impacts

Currently there is construction along the MRGO that is creating noise and dust in the area and will continue to do so until construction is complete in 2011. Additional negative noise and dust impacts would result in a cumulative impact if there is not an adequate buffer of trees between borrow pit activities and hunters.

3.2.9 Noise Quality

Existing Conditions

Noise is generally described as unwanted sound, which can be based either on objective effects (hearing loss, damage to structures, etc.) or subjective judgments (such as community annoyance). Sound is usually represented on a logarithmic scale with a unit called the decibel (dBA). Sound on the decibel scale is referred to as the sound level. The threshold of discomfort or pain is around 120 dBA. Noise levels at and surrounding the proposed contractor-furnished borrow areas are variable depending on the time of day and climatic conditions.

Noise levels are computed over a 24-hour period and adjusted for nighttime annoyances to produce the day-night average sound level (DNL). DNL is the community noise metric recommended by the USEPA and has been adopted by most Federal agencies (USEPA, 1974). A DNL of 65 weighted decibels is the level most commonly used for noise planning purposes and represents a compromise between community impact and the need for activities like construction. Areas exposed to a DNL above 65 dBA are generally not considered suitable for

residential use. A DNL of 55 dBA was identified by USEPA as a level below which there is no adverse impact (USEPA, 1974).

- *Acosta 2*

The proposed Acosta 2 contractor-furnished borrow area was recently partially cleared and is currently vacant. The site is located on LA-46, a roadway that is traveled by car and truck traffic that contribute to noise level in the area. Most times of elevated noise levels associated with traffic would be expected to be during daylight hours. In the vicinity of the site are undeveloped forest and wetlands. The site is located adjacent to the approved Acosta 1 contractor-furnished borrow area; if and when this site is used noise levels would be expected to be impacted by construction activities.

Wetlands and forested areas would not be expected to greatly contribute to noise levels in the vicinity.

- *Idlewild Stage 2*

The proposed Idlewild Stage 2 contractor-furnished borrow area is currently vacant. In the vicinity of the site are undeveloped forest, farms, and residential developments. The site is located on LA-23, a roadway that is traveled by car and truck traffic that contribute to noise level in the area. Most times of elevated noise levels associated with traffic would be expected to be during daylight hours.

The site is located adjacent to the approved Idlewild Stage 1 contractor-furnished borrow area; if and when this site is used noise levels would be expected to be impacted by construction activities. There are residential areas to the north and south of the site. This includes homes on LA-23 that are approximately 200 feet and various trailers approximately 1000 feet from the Idlewild Stage 1 site, which would be used to access the Idlewild Stage 2 site. Noise associated with residential areas would be expected to come from vehicular traffic.

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

- *King Mine*

The proposed King Mine contractor-furnished borrow area is currently vacant and used for hunting by leaseholders. In the vicinity of the site is undeveloped forest. The site is not located near any major roadways. Nearby unforested land is not expected to greatly contribute to noise levels in the vicinity.

- *Levis*

The proposed Levis contractor-furnished borrow area is currently vacant. In the vicinity of the site are residential developments and some commercial properties. Immediately to the east of the proposed site is the current ongoing construction of a multi-use development; use of trucks, bulldozers, excavator, and other construction equipment continue to add to the ambient noise level in the immediate vicinity.

The site is located near various local roads, and the intersection of I-10 and US-190; these roads are traveled by car and truck traffic that contribute to noise level in the area. Most times of elevated noise levels associated with traffic would be expected to be during daylight hours. There are residential areas to the north, south, and east of the site. Noise associated with residential areas would be expected to come mostly from vehicular traffic.

- *Lilly Bayou*
The proposed Lilly Bayou contractor-furnished borrow area is currently vacant and used for hunting, fishing, and commercial uses. In the vicinity of the site is undeveloped forest. The site is not located near any major roadways. Minor access roads crisscross the site, and are used by hunters, fishers, and commercial users. Noise levels on the site are not significantly impacted by intermittent vehicle traffic.

Nearby forested land would not be expected to greatly contribute to noise levels in the vicinity.

- *Port Bienville*
The proposed Port Bienville contractor-furnished borrow area was recently partially cleared and is currently vacant. The approved Frierson contractor-furnished borrow area, the boundaries of which are within the proposed Port Bienville site, is currently being used as a source of borrow material for HSDRRS construction (figure 13). Use of construction equipment (e.g., trucks, bulldozers) to excavate, stockpile, process, and transport borrow material significantly increases noise levels at the site.

In the vicinity of the site are undeveloped forest and the nearby Port Bienville Industrial Park, both of which do not greatly contribute to noise levels in the vicinity.

The site is located near US-90 and Lower Bay Road; these roads are traveled by car and truck traffic that contribute to noise levels in the area. Most times of elevated noise levels associated with traffic would be expected to be during daylight hours.

- *Raceland Raw Sugars*
Most of the proposed Raceland Raw Sugars contractor-furnished borrow area and surrounding land is currently used for sugar cane farming. Use of farming equipment would temporarily increase noise levels at the site and in the vicinity when in use; at other times, this farmland does not greatly contribute to noise levels.

The site is located near LA-308, which is traveled by car and truck traffic that contribute to noise level in the area. Most times of elevated noise levels associated with traffic would be expected to be during daylight hours. Traffic on nearby Bayou Lafourche would not be expected to greatly contribute to noise levels in the vicinity.

- *River Birch Landfill Expansion*
The proposed River Birch Landfill Expansion contractor-furnished borrow area is currently cleared and vacant. The approved River Birch Phase I and River Birch Phase II contractor-furnished borrow areas are currently being used as a source of borrow material for HSDRRS construction (figure 17). Use of construction equipment (e.g., trucks, bulldozers) to excavate, stockpile, process, and transport borrow material significantly increases noise levels at both the approved and proposed sites.

The site is located near various local roads, and US-90; these roads are traveled by car and truck traffic that contribute to noise level in the area. Most times of elevated noise levels associated with traffic would be expected to be during daylight hours. There are residential areas to east of the site. Noise associated with residential areas would be expected to come mostly from vehicular traffic. Nearby forested areas and the boat traffic Mississippi River is not expected to greatly contribute to noise levels in the vicinity.

- *Scarsdale*
The proposed Scarsdale contractor-furnished borrow area is currently vacant and used for hunting. In the vicinity of the site are undeveloped forest, residential areas on Scarsdale

Road and LA-39, and the Mississippi River. The site is located near LA-39, which is traveled by car and truck traffic that contribute to noise level in the area. Most times of elevated noise levels associated with traffic would be expected to be during daylight hours. Noise associated with the residential areas would be expected to come mostly from vehicular traffic.

Traffic on the Mississippi River and nearby forested land would not be expected to greatly contribute to noise levels in the vicinity.

- *Spoil Area*

The proposed Spoil Area contractor-furnished borrow area is currently vacant and used for hunting. In the vicinity of the site are undeveloped wetlands, the Mississippi River Gulf Outlet (MRGO), and Bayou Dupre. Construction of HSDRRS floodwalls along the MRGO and a water control structure on Bayou Dupre significantly increase noise levels during construction hours.

The site is not located near any major roadways. Minor access roads crisscross the site, and are used by hunters. Noise levels on the site are not significantly impacted by intermittent vehicle traffic. Nearby wetlands would not be expected to greatly contribute to noise levels in the vicinity.

Discussion of Impacts

No Action

- *All Sites*

Direct Impacts

Under the no action alternative, there would be no direct impacts to noise quality due to the proposed actions. The proposed Acosta 2, Idlewild Stage 2, King Mine, Levis, Lilly Bayou, Port Bienville, Raceland Raw Sugars, River Birch Landfill Expansion, Scarsdale, and Spoil Area sites would not be used as contractor-furnished borrow areas. Any potential direct impacts to noise quality would depend on what the landowners decide to do with the sites.

Indirect Impacts

No indirect impacts to noise quality would occur under the no action alternative at the proposed Acosta 2, Idlewild Stage 2, King Mine, Levis, Lilly Bayou, Port Bienville, Raceland Raw Sugars, River Birch Landfill Expansion, Scarsdale, and Spoil Area contractor-furnished borrow areas due to the proposed action. Any potential indirect impacts to noise quality would depend on what the landowners decide to do with the sites.

Minor, temporary indirect impacts to noise levels at the King Mine, Lilly Bayou, Scarsdale, and Spoil Area sites due to hunting activities, and from farming activities at the Raceland Raw Sugars site, would continue.

Cumulative Impacts

No cumulative impacts to noise quality would occur under the no action alternative. The proposed sites would not be used as contractor-furnished borrow areas. Any potential cumulative impacts to noise quality would depend on what the landowners decide to do with the sites. Under this alternative, the proposed HSDRRS projects would be built to authorized levels using potential government-furnished and/or contractor-furnished

borrow areas described in IER #18, IER #19, IER #22, IER #23, IER #25, IER #26, IER #28, IER #29, IER #30, IER #32, or other sources yet to be identified.

Construction of a multi-use development near the Levis site would cumulatively impact noise quality in the vicinity. In addition, construction of HSDRRS projects along the MRGO and Bayou Dupre would cumulatively impact noise quality in the vicinity throughout construction.

Current borrow material excavation, stockpiling, processing, and transport activities at the Frierson and River Birch Phase I and Phase II sites would cumulatively impact noise quality at the Port Bienville and River Birch Landfill Expansion sites, respectively.

Noise levels would be cumulatively impacted by existing and reasonably foreseeable activity in the vicinity of the proposed sites.

Private construction activities would also incrementally impact noise levels in the area. Additionally, construction of the HSDRRS levees and floodwalls would also cumulatively impact noise quality in the project areas. Cumulative noise impacts related to the construction of the HSDRRS will be discussed in the CED.

Proposed Action

- *All Sites*

Direct Impacts

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

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

Table 5: Possible Construction Equipment Noise Emission

Noise Source	Typical Noise Level (dBA) 50 feet from Source
Backhoe	80 dBA
Dozer	85 dBA
Dump Truck	84 dBA
Excavator	85 dBA
Truck	88 dBA

Source: FHWA 2006. "Highway Construction Noise Handbook"

It is assumed that excavation and hauling would be limited to daylight hours (10 hours to 14 hours per day) seven days a week. However, this may change due to construction schedules, weather conditions, and project borrow needs. Residents of nearby residential areas may be impacted by elevated noise elevations due to excavation and hauling.

Actual noise impacts depend on construction schedules, which are dependent on weather conditions and project borrow needs, which are not known at this time.

Any additional potential direct impacts to noise quality would depend on what the landowners decide to do with the sites following excavation.

Indirect Impacts

Minimal indirect impacts to noise quality would occur because of excavation of the proposed Acosta 2, Idlewild Stage 2, King Mine, Levis, Lilly Bayou, Port Bienville, Raceland Raw Sugars, River Birch Landfill Expansion, Scarsdale, and Spoil Area contractor-furnished borrow areas. Hauling of borrow material would add to existing traffic and its related noise in the vicinity. Any potential indirect impacts to noise quality would depend on what the landowners decide to do with the sites following excavation.

Construction of a multi-use development near the Levis site would continue to indirectly impact noise quality in the vicinity. In addition, construction of HSDRRS projects along the MRGO and Bayou Dupre would continue to indirectly impact noise quality in the vicinity throughout construction.

Current borrow material excavation, stockpiling, processing, and transport activities at the Frierson and River Birch Phase I and Phase II sites would continue to indirectly impact noise quality at the Port Bienville and River Birch Landfill Expansion sites, respectively.

Cumulative Impacts

Excavation of the proposed Acosta 2, Idlewild Stage 2, King Mine, Levis, Lilly Bayou, Port Bienville, Raceland Raw Sugars, River Birch Landfill Expansion, Scarsdale, and Spoil Area contractor-furnished borrow areas could temporarily contribute to cumulatively impacts on noise levels in the vicinity of the proposed sites. Hauling of borrow material would add to existing traffic and its related noise in the vicinity. Most times of elevated noise levels associated with traffic would be expected to be during construction hours. Any additional potential cumulative impacts to noise quality would depend on what the landowners decide to do with the sites following excavation.

Construction of a multi-use development near the Levis site would cumulatively impact noise quality in the vicinity. In addition, construction of HSDRRS projects along the MRGO and Bayou Dupre would cumulatively impact noise quality in the vicinity throughout construction.

Current borrow material excavation, stockpiling, processing, and transport activities at the Frierson and River Birch Phase I and Phase II sites would cumulatively impact noise quality at the Port Bienville and River Birch Landfill Expansion sites, respectively.

Noise levels would be cumulatively impacted by existing and reasonably foreseeable activity in the vicinity of the proposed sites.

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

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

3.2.10 Air Quality

Existing Conditions

Under the Clean Air Act, National Ambient Air Quality Standards (NAAQS) have been established for seven pollutants: carbon monoxide (CO), nitrogen dioxide (NO₂), sulfur dioxide (SO₂), lead (Pb), ozone (O₃), particulate matter less than 10 microns in diameter (PM₁₀) and particulate matter less than 2.5 microns in diameter (PM_{2.5}). The NAAQS standards include primary and secondary standards. The primary standards were established at levels sufficient to protect public health with an adequate margin of safety. The secondary standards were established to protect the public welfare from the adverse effects associated with pollutants in the ambient air. The primary and secondary standards are presented in table 6.

Table 6: National Ambient Air Quality Standards

Pollutant and Averaging Time	Primary Standard		Secondary Standard	
	µg/m ³	parts per million (ppm)	µg/m ³	ppm
CO <i>8-hour concentration</i>	10,000 ¹	9 ¹	N/A	N/A
<i>1-hour concentration</i>	40,000 ¹	35 ¹		
NO₂ <i>Annual arithmetic mean</i>	100	0.053	same as primary standard	
SO₂ <i>Annual arithmetic mean</i>	80	0.03	-	-
<i>24-hour concentration</i>	365 ¹	0.14 ¹	-	-
<i>3-hour concentration</i>	-	-	1300 ¹	0.50 ¹
Pb <i>Quarterly arithmetic mean</i>	1.5	-	same as primary standard	
O₃ <i>8-hour concentration</i>	157	0.08 ²	same as primary standard	
PM₁₀ <i>24-hour maximum</i>	150 ¹	-	same as primary standard	
PM_{2.5} <i>Annual arithmetic mean</i>	15 ³	-	same as primary standard	
<i>24-hour maximum</i>	35 ⁴	-		

¹ Not to be exceeded more than once per year.

² 3-year average of the 4th highest daily maximum 8-hour concentration may not exceed 0.08 ppm.

³ Based on 3-year average of annual averages.

⁴ Based on 3-year average of annual 98th percentile values.

Source: 40 CFR 50

Areas that meet the NAAQS for a criteria pollutant are designated as being “in attainment;” areas where a criteria pollutant level exceeds the NAAQS are designated as being “in non attainment.” The parishes and county the proposed contractor-furnished borrow areas are located in are currently in attainment of all NAAQS (USEPA, 2009).

Discussion of Impacts

No Action

- *All Sites*

Direct Impacts

Under the no action alternative, no direct impacts to air quality at the proposed Acosta 2, Idlewild Stage 2, King Mine, Levis, Lilly Bayou, Port Bienville, Raceland Raw Sugars, River Birch Landfill Expansion, Scarsdale, and Spoil Area contractor-furnished borrow areas would occur from the proposed action. The proposed sites would not be used as contractor-furnished borrow areas. Any potential direct impacts to air quality would depend on what the landowners decide to do with the sites.

Indirect Impacts

Under the no action alternative, no indirect impacts to air quality at the proposed Acosta 2, Idlewild Stage 2, King Mine, Levis, Lilly Bayou, Port Bienville, Raceland Raw Sugars, River Birch Landfill Expansion, Scarsdale, and Spoil Area contractor-furnished borrow areas would occur from the proposed action. The proposed sites would not be used as contractor-furnished borrow areas. Any potential indirect impacts to air quality would depend on what the landowners decide to do with the sites.

Cumulative Impacts

Under the no action alternative, no cumulative impacts to air quality at the proposed Acosta 2, Idlewild Stage 2, King Mine, Levis, Lilly Bayou, Port Bienville, Raceland Raw Sugars, River Birch Landfill Expansion, Scarsdale, and Spoil Area contractor-furnished borrow areas would occur from the proposed action. The proposed sites would not be used as contractor-furnished borrow areas. Any potential indirect impacts to air quality would depend on what the landowners decide to do with the sites. Under this alternative, the proposed HSDRRS projects would be built to authorized levels using potential government-furnished and/or contractor-furnished borrow areas described in IER #18, IER #19, IER #22, IER #23, IER #25, IER #26, IER #28, IER #29, IER #30, IER #32, or other sources yet to be identified.

Construction of a multi-use development near the Levis site would cumulatively impact air quality in the vicinity. In addition, construction of HSDRRS projects along the MRGO and Bayou Dupre would cumulatively impact air quality in the vicinity throughout construction.

Current borrow material excavation, stockpiling, processing, and transport activities at the Frierson and River Birch Phase I and Phase II sites would cumulatively impact air quality at the Port Bienville and River Birch Landfill Expansion sites, respectively.

Air levels would be cumulatively impacted by existing and reasonably foreseeable activity in the vicinity of these proposed sites.

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

Proposed Action

- *All Sites*

Direct Impacts

During excavation at the proposed Acosta 2, Idlewild Stage 2, King Mine, Levis, Lilly Bayou, Port Bienville, Raceland Raw Sugars, River Birch Landfill Expansion, Scarsdale, and Spoil Area contractor-furnished borrow areas, a temporary increase in air emissions would be expected in the project vicinities. Major emissions could include exhaust emissions from operations of diesel dump trucks, various types of construction equipment (e.g., loaders, excavators), and fugitive dust due to excavation and clearing.

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

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

Indirect Impacts

Indirect impacts to air quality would not be expected due to excavation of the proposed Acosta 2, Idlewild Stage 2, King Mine, Levis, Lilly Bayou, Port Bienville, Raceland Raw Sugars, River Birch Landfill Expansion, Scarsdale, and Spoil Area contractor-furnished borrow areas. Any potential indirect impacts to air quality would depend on what the landowners decide to do with the sites following excavation.

Cumulative Impacts

Use of the proposed Acosta 2, Idlewild Stage 2, King Mine, Levis, Lilly Bayou, Port Bienville, Raceland Raw Sugars, River Birch Landfill Expansion, Scarsdale, and Spoil Area contractor-furnished borrow areas would temporarily contribute to cumulative air quality impacts in the project area. However, these impacts would be temporary and would last through the excavation period. Additional potential cumulative impacts to air quality would depend on what the landowners decide to do with the sites following excavation. Construction of a multi-use development near the Levis site would cumulatively impact air quality in the vicinity. In addition, construction of HSDRRS projects along the MRGO and Bayou Dupre would cumulatively impact air quality in the vicinity throughout construction.

Current borrow material excavation, stockpiling, processing, and transport activities at the Frierson and River Birch Phase I and Phase II sites would cumulatively impact air quality at the Port Bienville and River Birch Landfill Expansion sites, respectively.

Air levels would be cumulatively impacted by existing and reasonably foreseeable activity in the vicinity of the proposed sites.

Other activities in the vicinity have and will continue to affect air quality in the project area. Air quality in the project area has historically been affected by residential,

commercial, and industrial development. Most of these actions would be associated with emissions from vehicular traffic on local roads and residential energy emissions. It is expected that this historical trend would continue to impact air quality in the region.

3.2.11 Water Quality

Existing Conditions

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

Discussion of Impacts

No Action

- *All Sites*

Direct Impacts

Under the no action alternative, no direct impacts to water quality at the Acosta 2, Idlewild Stage 2, King Mine, Levis, Lilly Bayou, Port Bienville, Raceland Raw Sugars, River Birch Landfill Expansion, Scarsdale, and Spoil Area contractor-furnished borrow areas would occur from the proposed action. The proposed sites would not be used as contractor-furnished borrow areas. Any potential direct impacts to water quality would depend on what the landowners decide to do with the sites.

Indirect Impacts

Under the no action alternative, no indirect impacts to water quality would occur from the proposed action. The proposed Acosta 2, Idlewild Stage 2, King Mine, Levis, Lilly Bayou, Port Bienville, Raceland Raw Sugars, River Birch Landfill Expansion, Scarsdale, and Spoil Area sites would not be used as contractor-furnished borrow areas. Any potential indirect impacts to water quality would depend on what the landowners decide to do with the sites.

Cumulative Impacts

Under the no action alternative, there would be no cumulative decreases in water quality from the proposed action. The proposed Acosta 2, Idlewild Stage 2, King Mine, Levis, Lilly Bayou, Port Bienville, Raceland Raw Sugars, River Birch Landfill Expansion, Scarsdale, and Spoil Area sites would not be used as contractor-furnished borrow areas. Any potential cumulative impacts to water quality would depend on what the landowners decide to do with the sites. Under this alternative, the proposed HSDRRS projects would be built to authorized levels using potential government-furnished and/or contractor-furnished borrow areas described in IER #18, IER #19, IER #22, IER #23, IER #25, IER #26, IER #28, IER #29, IER #30, IER #32, or other sources yet to be identified.

Construction of a multi-use development near the Levis site would cumulatively impact water quality in the vicinity, increasing turbidity into drainageways due to runoff. In addition, construction of HSDRRS projects along the MRGO and Bayou Dupre would cumulatively impact water quality in the vicinity throughout construction.

Current borrow material excavation, stockpiling, and processing at the Frierson and River Birch Phase I and Phase II sites would cumulatively impact water quality at the Port Bienville and River Birch Landfill Expansion sites, respectively because of construction methods.

Water levels would be cumulatively impacted by existing and reasonably foreseeable activity in the vicinity of these proposed sites.

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

Proposed Action

- *All Sites*

Direct Impacts

Excavation of the proposed Acosta 2, Idlewild Stage 2, King Mine, Levis, Lilly Bayou, Port Bienville, Raceland Raw Sugars, River Birch Landfill Expansion, Scarsdale, and Spoil Area contractor-furnished borrow areas would result in some temporary direct water quality impacts from disturbances to water quality in the immediate vicinity of the construction areas. Most of these impacts would be associated with sediments getting around installed silt fencing during high rain events, which would cause surface water turbidity in the immediate vicinity. These impacts would be localized and temporary. If the contractor-furnished borrow areas are drained by use of a sump pump during construction water would be deposited outside of the borrow site, most likely into adjacent non-construction areas. Depending on where water is directed, temporary impacts to water quality in these areas may occur.

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

Any additional potential direct impacts to water quality would depend on what the landowners decide to do with the sites following excavation.

Indirect Impacts

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

Any additional potential indirect impacts to water quality would depend on what the landowners decide to do with the sites following excavation.

Cumulative Impacts

Excavation of the proposed Acosta 2, Idlewild Stage 2, King Mine, Levis, Lilly Bayou, Port Bienville, Raceland Raw Sugars, River Birch Landfill Expansion, Scarsdale, and Spoil Area contractor-furnished borrow areas would temporarily contribute to the cumulative decline of water quality within the region.

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

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

3.2.12 Aesthetic (Visual) Resources

Existing Conditions

- *Acosta 2*

Water: Water resources in and around the project area are abundant and include a variety of canals, natural bayous/ streams and several small ponds. There are no identified scenic streams in or near the project. Other, nearby water resources include marsh and wetlands that surround the area.

Landform: Land in the area is flat with occasional natural ridges interspersed throughout the project area giving some minimal elevation changes. View sheds are offered from atop the existing levee system and the local highway system, which offer near 360 degree, panoramic views of the surrounding area. The only limitation to view shed quality is the relatively dense vegetation that permeates the area around the project site.

Vegetation: Vegetation in the project area is a mixture of thick hardwood forest, native grasses, and other water tolerant plant materials. Lower growing vegetation is dense and fills the dense forest floors. The marshes feature scrub-shrub and other lower growing plant materials, along with many dead or dying Bald Cypress which, with their dark contrasting colors to the surrounding vegetation, add framing elements for view sheds across the project area vicinity.

Land Use: The dominant eco-region (according to the State of Louisiana Eco-Region Map, ref. "Louisiana Speaks") is equally balanced between "Coastal Marshes" and "Southern Holocene Meander Belts," both of which are a part of the Mississippi Alluvial Plain. The immediate project area is characteristic of the Coastal Marshes with relatively flat terrain mixed with a variety of water resources. Land use in the area is made up of developed, rural lands that feature some commercial and residential uses. The immediate project area itself appears to be (or was) cultivated agricultural land.

Access: Access to the site is offered via LA-46, which features a drive with high visual interest and quality. View sheds are abundant along this thoroughfare, but, as mentioned earlier, can become blocked by dense vegetation. Other nearby thoroughfares include LA-300 and several smaller, local roads, all of which have limited to no visual access to the project site.

Other Factors that Affect Visual Resources: User activity is relatively steady throughout the project vicinity, most likely due to the outdoor recreational opportunities available. On a recent field trip other factors such as litter and foul odors persisted throughout the area. It is important to note that the smells were not of an unnatural variety, and have been observed in other similar marsh and wetland areas. Other pollution and noise did not seem to be a negative factor.

- *Idlewild Stage 2*

Water: Water resources in the vicinity of the project area are abundant and include the Mississippi River, several canals, small ponds and lakes, and wetland areas. There are no identified scenic streams in or near the project area. These water resources, especially the canals, provide the opportunity for water recreation (including boating and fishing). View sheds of the project site from these canals are minimal based on distance, terrain (most notably, the existing levees) and vegetation.

Landform: Land in the area is relatively flat with the moderate (though minimal) elevation changes stemming from low lying ridges. There are minimal view sheds offered to the site from the local highway and road system, which also provide possibilities in elevation change.

Vegetation: Vegetation in the vicinity of the project area is dense with a variety of trees and undergrowth, mixed with wetland plant materials and open fields.

Land Use: The dominant eco-region (according to the State of Louisiana Eco-Region Map, ref. “Louisiana Speaks”) is equally balanced between “Coastal Marshes” and “Southern Holocene Meander Belts,” both of which are a part of the Mississippi Alluvial Plain. The immediate project area is characteristic of the Coastal Marshes with relatively flat terrain mixed with a variety of water resources. Land use in the area is made up of a semi-developed, sub-urban environment that features agricultural, residential, commercial, and industrial uses.

Access: Access to the site is offered via LA-23 and a few small local streets (unpaved) that connect with the project site through Idlewild Stage 1. While the local highway features a drive with high visual interest and quality; views to the actual project site are minimal, based on distance and vegetation density.

Other Factors that Affect Visual Resources: User activity along LA-23 is relatively high. Residential, commercial and industrial development along this thoroughfare also contributes to the traffic count. Litter did not seem to be a major problem throughout the project vicinity and there were no foul odors present during each of several field trips made to the area. Noise was typical of a major highway corridor. The majority of residential development was far enough off of the highway corridor that noise should not be much of a factor.

- *King Mine*

Water: Water resources in the vicinity of the project area include several small ponds, some streams and small rivers, and what appears to be previous borrow efforts. There are no identified scenic streams in or near the project area.

Landform: Land in the area has moderately rolling hills and low lying ridges. From the tops of the hills and small ridges areas open up into large square patches of open fields and grasslands. Roadways do not play a factor in terrain changes for the proposed site.

Vegetation: Vegetation in the vicinity of the project area is dense with a variety of trees and associated undergrowth. Vegetation density makes view sheds to the site difficult to impossible either from I-10, MS-607/ US-90 or the few small local roads that crisscross the area.

Land Use: There was no eco-region data available for Mississippi, but the site is typical for coastal Mississippi with finger ridges extending out onto the flat coastal plain. The

immediate project area is characteristic of the Coastal Marshes with relatively flat terrain mixed with a variety of water resources. Land use in the immediate project area is primarily undeveloped, rural lands.

Access: Access to the site is offered via local roads only which seem to finger off of MS-607/ US-90 (to the south). View sheds from any one of these thoroughfares is minimal to nonexistent.

Other Factors that Affect Visual Resources: User activity along I-10 and US-90 is relatively high. However, access to the actual project site is minimal and user activity is very low. Litter, foul odors, noise and other factors that affect visual resources could not be determined because no field trip was made to the site.

- *Levis*

Water: Water resources in the vicinity of the project area include small ponds and lakes, drainage canals and small lagoons. There are no identified scenic streams in or near the project area.

Landform: Land in the area is relatively flat with the moderate (though minimal) elevation changes stemming from low lying ridges. View sheds are offered from the local highway and road system which are abundant. These views offer near 360 degree, panoramas of the surrounding area, though some screening is offered from dense vegetation.

Vegetation: Vegetation in the vicinity of the project area is primarily thick hardwood forest and undergrowth, with few open fields and native grass areas.

Land Use: The dominant eco-region (according to the State of Louisiana Eco-Region Map, ref. "Louisiana Speaks") is equally balanced between "Coastal Marshes" and "Southern Holocene Meander Belts," both of which are apart of the Mississippi Alluvial Plain. The immediate project area is characteristic of the Coastal Marshes with relatively flat terrain mixed with a variety of water resources. Land use in the area is made up of a well developed, urban environment that features residential, commercial, and industrial uses.

Access: Access to the site is offered via I-10, US-190, and LA- 433, which make up the primary thoroughfares, and a plethora of other local streets and roads that connect with or traverse through the project site. The local interstate and highways feature a drive with high visual interest and quality. View sheds are abundant along these thoroughfares, but can become blocked by dense vegetation in some locations. Views to the actual project site are minimal due to the dense vegetation.

Other Factors that Affect Visual Resources: User activity is relatively high, with the massive traffic that traverses I-10, US-190 and LA-433 everyday. Residential development to the east and west also contributes to the traffic count.

- *Lilly Bayou*

Water: Water resources in the vicinity of the project area are abundant and include the Mississippi River, previous borrow efforts, and other small ponds and lakes. There are no identified scenic streams in or near the project area. The Mississippi River provides opportunities for water recreation (including boating and fishing) and offers the direct view sheds into the project site.

Landform: Land in the area is relatively flat with moderate (though minimal) elevation change stemming from low lying ridges and natural elevation rises near the river. There are minimal view sheds offered to the site from the local highway and road system, which also provide minimal possibilities in elevation change.

Vegetation: Vegetation in the vicinity of the project area is dense with a variety of trees (most likely bottom land hardwood) and associated undergrowth. Wetland areas can be found here with abundant water tolerant vegetation. Vegetation density makes view sheds to the site difficult to impossible either from the Mississippi River or US-61

Land Use: The dominant eco-region (according to the State of Louisiana Eco-Region Map, ref. "Louisiana Speaks") is "Southern Holocene Meander Belts," which is a part of the Mississippi Alluvial Plain. Land use in the area is made up of a semi-developed, suburban environment that features agricultural and residential uses.

Access: Access to the site is offered via US-61 and a few small local streets that connect with the project site. While the local highway features a drive with high visual interest and quality; views to the actual project site are minimal, based on distance and vegetation density.

Other Factors that Affect Visual Resources: User activity along US-61 is relatively high. Residential, commercial and industrial development along this thoroughfare also contributes to the traffic count along with its connection as a major gateway into Baton Rouge. Access to the actual project site is minimal and user activity is very low.

- *Port Bienville*

Water: Water resources are abundant in the area and include a variety of unidentified streams or small rivers, and an industrial channel (located to the south of the project site). There are no identified scenic streams in the area.

Landform: Land in the area is made up of low bottomlands that feature wetland and marsh, all of which is surrounded by "finger ridges." The low ridges offer variety in terrain giving the scenic quality of the area some additional interest. View sheds are near non-existent due to the remote nature of the project site which features almost no public access.

Vegetation: Vegetation in the project area is a mixture of thick forestation (on the ridges), native grasses and other water tolerant plant materials. Ridge vegetation is dense, but opens out onto the flat lowlands of the wetlands and streams below giving the area a high scenic quality.

Land Use: There was no eco-region data available for Mississippi, but the site is typical for coastal Mississippi with finger ridges extending out onto the flat coastal plain. The immediate project area is characteristic of the Coastal Marshes with relatively flat terrain mixed with a variety of water resources. Land use in the immediate project area is primarily undeveloped, rural lands. Industrial uses can be found to the south of the project area along the industrial channel.

Access: There is no public access directly to the site. Access can only be gained by way of private roads and/ or other maintenance access roads from either Lower Bay Road or Dillard Road. There are no identified State or National Scenic Byways in or near the project vicinity.

Other Factors that Affect Visual Resources: User activity is most likely low, due to the fact that this is a very remote area. A field trip was not made to the site, so other factors such as litter, pollution, noise, and smells could not be determined.

- *Raceland Raw Sugars*

Water: Water resources are minimal in the project area, and the only significant one is an unidentified bayou which parallels L.A-1 and LA-308. There are no identifiable scenic streams located near the project area.

Landform: Land in the area is flat, and relatively featureless. There are a few ridges interspersed throughout the project area giving some minimal elevation changes.

Vegetation: Vegetation in the project area is a mixture of extremes. The immediate, proposed borrow sites are located on agricultural and cultivated lands with no trees or forestation. To the northeast of, and bordering against, three of the proposed four borrow sites is a dense forested area that features a wide variety of tree types. Native grasses and some scrub shrub make up the rest of the local plant life on the forest floor.

Land Use: The dominant eco-region (according to the State of Louisiana Eco-Region Map, ref. "Louisiana Speaks") is "Coastal Marshes." However, it is important to note that the study area intersects with portions of the "Southern Holocene Meander Belts," both of which are a part of the Mississippi Alluvial Plain.

Land use in the area is primarily developed, rural and agricultural lands. Rural, undeveloped lands reside to the northeast and northwest of the proposed project areas. Densely developed, urban lands make up the area around Raceland proper, featuring both medium intensity commercial and residential development spanning the full spectrum of typical associated uses.

Access: There is a variety of public access in and around the site which include US-90, LA-308, LA-182, and other local roadways. It is important to note that portions of LA-182, LA-1, and LA-308 are a part of the Wetlands Cultural Trail, which is a state designated scenic byway.

Other Factors that Affect Visual Resources: User activity is low in the immediate project area; however, consideration of the Wetlands Cultural Trail is important to note because it does bring added tourist traffic to the area. These are most likely private lands used for agricultural purposes and not open to the public. The terrain is unremarkable and view sheds that could be considered aesthetically pleasing are minimal. A field trip indicated that litter was a major problem along the highways and byways that traverse the project area. Noise, other pollutions and smells did not appear to be in the extreme one way or the other.

- *River Birch Landfill Expansion*

Water: Water resources in the vicinity of the project area are not overly abundant. There are no identified scenic streams in or near the project. Other, nearby water resources include the Mississippi River, to the northeast, and several ponds and canals to the south and southwest, beyond US-90.

Landform: Land in the area is relatively flat with the moderate (though minimal) elevation changes stemming from low lying ridges. View sheds are offered from the local highway and road system, with near 360 degree, panoramic views of the surrounding area, though some screening is offered from dense vegetation.

Vegetation: Vegetation in the vicinity of the project area is a mixture of thick hardwood forest, open fields with native grasses, and scrub-shrub. Within the immediate vicinity of the project area can be found thick hardwood forestation and associated undergrowth filling the forest floor. Surrounding the forest is open, flat fields.

Land Use: The dominant eco-region (according to the State of Louisiana Eco-Region Map, ref. "Louisiana Speaks") is equally balanced between "Coastal Marshes" and "Southern Holocene Meander Belts," both of which are apart of the Mississippi Alluvial Plain. The immediate project area is characteristic of the Coastal Marshes with relatively flat terrain mixed with a variety of water resources. Land use in the area is made up of developed, rural lands that feature residential, industrial, and agricultural uses. Industrial uses make up the actual, existing landfill, located just to the northwest, and adjacent to, the project site.

Access: Access to the site is offered via US-90, which features a drive with high visual interest and quality. View sheds are abundant along this thoroughfare, but can become blocked by dense vegetation in some locations. Other nearby thoroughfares include Live Oak Road, Willswood Lane and an unidentified service road.

Other Factors that Affect Visual Resources: User activity is relatively high, with the massive traffic that traverses US-90 everyday (especially traffic going to and from the existing landfill). Residential development to the east also contributes to the traffic count. Outdoor recreation opportunities are available which also add to user activity levels, and include fishing opportunities in the canals and ponds located south and southwest of the project site. On a recent field trip, other factors such as litter and foul odors were not abundant in the project vicinity. Highway litter (along US-90) could be found in abundance, but, it is important to note that the smells were not of an unnatural variety, and have been observed in other similar marsh and wetland areas. Garbage and other odors from the landfill were negligible in the field. Noise from traveling cars was abundant along US-90, but not within the immediate project area.

- *Scarsdale*

Water: Water resources in the vicinity of the project area are fairly abundant and include the Mississippi River Main Channel and several small ponds. There are no identified scenic streams in or near the project. Other, nearby water resources include marsh and wetlands to the east, beyond the existing levee and to the south along LA-39.

Landform: Land in the area is flat with the elevation changes coming from the existing Main Line Levees and other levees to the east. Upon inspection in the field, natural ridges did not appear to play a significant role in the landscape. View sheds are offered from atop the existing levee system and the local highway system, which offer near 360 degree, panoramic views of the surrounding area, including the Mississippi River.

Vegetation: Vegetation in the vicinity of the project area is a mixture of thick hardwood forest, native grasses, and other water tolerant plant materials. Within the immediate vicinity of the project area can be found thick hardwood forestation and associated undergrowth filling the forest floor. The marshes feature scrub-shrub and other lower growing plant materials with occasional dead and living cypress which add framing elements for view sheds across the project area vicinity from atop the levees and LA-39.

Land Use: The dominant eco-region (according to the State of Louisiana Eco-Region Map, ref. "Louisiana Speaks") is equally balanced between "Coastal Marshes" and "Southern Holocene Meander Belts," both of which are apart of the Mississippi Alluvial Plain. The immediate project area is characteristic of the Coastal Marshes with relatively

flat terrain mixed with a variety of water resources. Land use in the area is made up of developed, rural lands that feature residential uses almost exclusively, with occasional, associated citrus farming (though on a small scale).

Access: Access to the site is offered via LA-39, which features a drive with high visual interest and quality. View sheds are abundant along this thoroughfare, but can become blocked by dense vegetation in some locations. Other nearby thoroughfares include Scarsdale Road, L.A. Highway 3137 (a.k.a. English Turn Road) and several smaller, local and private roads.

Other Factors that Affect Visual Resources: User activity is relatively steady throughout the project vicinity; this could be attributed to the number of residences in the area, and along LA-39. Outdoor recreation opportunities are available which also add to user activity levels. On a recent field trip other factors such as litter and foul odors persisted throughout the area. Highway litter could be found in abundance, but, it is important to note that the smells were not of an unnatural variety, and have been observed in other similar marsh and wetland areas. Other pollution and noise did not seem to be a negative factor.

- *Spoil Area*

Water: There are six identified Scenic Streams located adjacent to or otherwise near the proposed borrow sites at the Spoil Area. These scenic streams include the following: Bayou Dupre is protected as a scenic stream from the Violet Canal to Terre Beau Bayou; Violet Canal is protected from the Forty Arpent Canal to Bayou Dupre; Bashman Bayou is protected from its origin to Bayou Dupre; Terre Beau Bayou is protected from Bayou Dupre to the New Canal; and Pirogue Bayou is protected from Bayou Dupre to the New Canal. The Louisiana Scenic Rivers Act of 1988 was established to preserve, protect, and enhance the wilderness qualities, scenic beauties, and ecological regimes of rivers and streams in the state.

Other water resources are abundant in the area and include the MRGO, access to Lake Borgne, and the open water areas of the Central Wetlands.

Landform: Land in the area is flat, and relatively featureless aside from existing levees and thick vegetation which provide some minimal form and texture. There are a few ridges interspersed throughout the project area giving some minimal elevation changes. The best view sheds are offered from atop the existing levee system, which offer 360 degree, panoramic views of the surrounding area. The only limitation to view sheds is the remote nature of the project area which features no public access.

Vegetation: Vegetation in the project area is a mixture of native grasses, water tolerant trees (including Bald Cypress), and other water tolerant plant materials (that include a variety of scrub shrubs such as Southern Wax Myrtle). Lower growing vegetation is dense, and there are many dead or dying Bald Cypress which, with their dark contrasting colors to the surrounding vegetation, add framing elements for the multiple water features scattered across the Central Wetlands or in the opposite direction, looking toward Lake Borgne. The few ridges that stretch across the landscape offer places for different and more abundant species of large trees to grow which may include a variety of oaks and the Common Bald Cypress.

Land Use: The dominant eco-region (according to the State of Louisiana Eco-Region Map, ref. "Louisiana Speaks") is "Coastal Marshes" which is apart of the Mississippi Alluvial Plain. The immediate project area is characteristic of the Coastal Marshes with

relatively flat terrain mixed with a variety of water resources. Land use in the area is primarily undeveloped, rural lands.

Access: There is no public access to the site. Access can only be gained by way of private roads or other maintenance access roads and the abundant water resources in the area.

Other Factors that Affect Visual Resources: With few roadways and limited access, user activity is low. However, it is important to note that this is a prime outdoor recreation location with much in the way of boating and other water sports that could add to the local activity level. A field trip was not made to the site, so other factors such as litter, pollution, noise, and smells could not be determined.

Discussion of Impacts

No Action

- *All Sites*

Direct Impacts

Under the no action alternative, no direct impacts to aesthetic (visual) resources would occur at the proposed Acosta 2, Idlewild Stage 2, King Mine, Levis, Lilly Bayou, Port Bienville, Raceland Raw Sugars, River Birch Landfill Expansion, Scarsdale, and Spoil Area contractor-furnished borrow areas. Aesthetic (visual) resources would most likely evolve from existing conditions in a natural process, or change as dictated by future land use maintenance practices. The landowners could directly impact aesthetic quality at the sites, with potential future, planned development; however, this would not be related to the proposed action.

Indirect Impacts

Under the no action alternative, no indirect impacts to aesthetic (visual) resources would occur at the proposed contractor furnished borrow areas. The proposed sites would not be used as contractor furnished borrow areas. However, it is important to note that whatever the land owner would choose to do with the property may have long lasting effects on the surrounding, adjacent areas.

Cumulative Impacts

Under the no action alternative, no foreseen cumulative impacts to aesthetic (visual) resources would occur at the proposed borrow areas. The proposed sites would not be used as contractor furnished borrow areas. Under this alternative, the proposed HSDRRS projects would be built to authorized levels using potential government furnished and/ or contractor furnished borrow areas described in IER #18, IER #19, IER #22, IER #23, IER #25, IER #26, IER #28, IER #29, IER #30, IER #32, or other sources yet to be identified.

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

Proposed Action

- *Acosta 2*

Direct Impacts

The proposed action at the Acosta 2 contractor furnished borrow site would have direct impacts to the scenic quality of the area and view sheds from LA-46. The openness of the area offers a near limitless view from a particular stretch of road along LA-46. However, due to the drastically changed nature of the project site, from years of land development, these impacts would not be substantial. The introductions of manmade borrow supply areas would only minimally contrast the vast developed lands. The depth of scenic quality loss would depend on the final design of the borrow supply areas. Squares, rectangles and other unnatural shapes would yield a higher degree of loss in scenic quality. Even curvilinear shapes could yield a certain degree of loss, but over time this could decrease with erosion and the introduction of natural landscape elements to create a frame for the water feature.

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

Indirect Impacts

The proposed action at the Acosta 2 contractor furnished borrow site would have indirect impacts similar to that discussed in Spoil Area contractor furnished borrow site. The surrounding area does not have significant development in terms of residential and commercial land use and view sheds to the site from these types of locations are minimal to non-existent. With the abundant water resources in the area, it is unlikely that additional water bodies would attract different varieties of wildlife.

After borrow area excavation, land may be converted to ponds and small lakes colonized by aquatic and semi-aquatic plant species, if not backfilled by the landowner. The landowner may be required to backfill per local ordinances in some areas. Borrow areas that do not retain water would be colonized by herbaceous vegetation and woody terrestrial plant species.

Cumulative Impacts

The proposed action at the Acosta site would have no foreseen cumulative impacts to aesthetic (visual) resources. Other previous and continuing projects that have involved government-furnished and/or contractor-furnished borrow areas are described in IER #18, IER #19, IER #22, IER #23, IER #25, IER #26, IER #28, IER #30, and IER #32, just to name a few. Other, future sources have yet to be identified. This project would join the long list of previously designed and completed borrow sites throughout the region. Cumulative impacts to aesthetic (visual) resources, in the project vicinity, would also depend on what the landowners would decide to do with the sites upon completion of the project, which would not be associated with the proposed action.

- *Idlewild Stage 2*

Direct Impacts

The proposed action at the Idlewild Stage 2 contractor furnished borrow area would have direct impacts to the scenic quality of the immediate area and view sheds from the LA-23 corridor. The introductions of manmade borrow supply areas would starkly contrast the natural landscapes and water features in the area. It should be noted that in this particular borrow supply study area, there is a borrow pond that has been constructed in a linear fashion. It is still important to note that the depth of scenic quality loss would still

depend on the final design of the borrow supply areas. Squares, rectangles and other unnatural shapes would yield a higher degree of loss in scenic quality. Even curvilinear shapes could yield a certain degree of loss, but over time this could decrease with erosion and the introduction of natural landscape elements to create a frame for the water feature. The addition of more “square” shaped borrow supply areas would increase the number of these man-made elements further degrading the overall scenery of the region.

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

Indirect Impacts

The proposed action at the Idlewild Stage 2 contractor furnished borrow site would have minimal indirect impacts to the scenic quality and view sheds from the surrounding area. View sheds from nearby residential development are minimal to non-existent.

After borrow area excavation, land may be converted to ponds and small lakes colonized by aquatic and semi-aquatic plant species, if not backfilled by the landowner. The landowner may be required to backfill per local ordinances in some areas. The introduction of borrow ponds may serve to attract different forms of wildlife, thereby increasing the scenic quality of the area. Borrow areas that do not retain water would be colonized by herbaceous vegetation and woody terrestrial plant species.

Cumulative Impacts

The proposed action at the Idlewild site would have no foreseen cumulative impacts to aesthetic (visual) resources. Other previous and continuing projects that have involved government-furnished and/or contractor-furnished borrow areas are described in IER #18, IER #19, IER #22, IER #23, IER #25, IER #26, IER #28, IER #30, and IER #32, just to name a few. Other, future sources have yet to be identified. This project would join the long list of previously designed and completed borrow sites throughout the region.

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

- *King Mine*

Direct Impacts

The proposed action at the King Mine contractor furnished borrow area would have no direct impacts to the scenic quality of the immediate area and view sheds from the major public corridors. The remote nature of the site prevents it from being a visually stunning component to the public view shed. The introductions of manmade borrow supply areas would starkly contrast the natural landscapes and water features in the area. In addition, the depth of scenic quality loss would depend on the final design of the borrow supply areas. Squares, rectangles and other unnatural shapes would yield a higher degree of loss in scenic quality. Even curvilinear shapes could yield a certain degree of loss, but over time this could decrease with erosion and the introduction of natural landscape elements to create a frame for the water feature.

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

Indirect Impacts

The proposed action at the King Mine contractor furnished borrow area would have no indirect impacts to the scenic quality and view sheds from the surrounding area. The

remote nature of the site prevents it from being a visually stunning component to the public view shed.

After borrow area excavation, land may be converted to ponds and small lakes colonized by aquatic and semi-aquatic plant species, if not backfilled by the landowner. The landowner may be required to backfill per local ordinances in some areas. Borrow areas that do not retain water would be colonized by herbaceous vegetation and woody terrestrial plant species.

Cumulative Impacts

The proposed action at the King Mine site would have no foreseen cumulative impacts to aesthetic (visual) resources. Other previous and continuing projects that have involved government-furnished and/or contractor-furnished borrow areas are described in IER #18, IER #19, IER #22, IER #23, IER #25, IER #26, IER #28, IER #30, and IER #32, just to name a few. Other, future sources have yet to be identified. This project would join the long list of previously designed and completed borrow sites throughout the region.

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

Levis

Direct Impacts

The proposed action at the Levis contractor furnished borrow site would have direct impacts to the scenic quality of the area and view sheds from I-10, US-190, LA-433 and some residential development to the north and west of the site. Though there would undoubtedly be trees left behind for screening, the dense vegetation and trees that now grace the site would give way to open areas with borrow ponds. The introductions of manmade borrow supply areas would starkly contrast the undeveloped lands in the immediate project area. The depth of scenic quality loss would depend on the final design of the borrow supply areas. Squares, rectangles and other unnatural shapes would yield a higher degree of loss in scenic quality. Even curvilinear shapes could yield a certain degree of loss, but over time this could decrease with erosion and the introduction of natural landscape elements to create a frame for the water feature. Other impacts would depend on the potential future planned development of the site.

It is important to note that an athletic complex and park is located adjacent to the project area along its southwestern border, across the drainage canal. It is recommended that a future outdoor recreation study could merge the elements of the athletic complex with that of the borrow sites to create an overall outdoor recreation center that would take into consideration both the functionality and aesthetics of such a facility, and its effects on quality of life to the residents of the community.

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

Indirect Impacts

The proposed action at the Levis contractor furnished borrow site would have minimal indirect impacts to the scenic quality and view sheds from the surrounding area. View sheds from nearby residential development would be minimal, due to thick vegetation.

If the proposed Levis site is excavated for borrow material, the resulting area would be converted to a large lake, which is consistent with the planned retention pond at the site.

The excavated site would be unsuitable for farming, forestry, or urban development in the reasonably foreseeable future. Habitat would be changed to favor aquatic and semi-aquatic plant and animal species over the terrestrial ones that now occupy the area. The introduction of a lake may serve to attract different forms of wildlife and/ or provide alternative forms of outdoor recreation thereby increasing both the functional and scenic quality of the area.

Cumulative Impacts

The proposed action at the Levis site would have no foreseen cumulative impacts to aesthetic (visual) resources. Other previous and continuing projects that have involved government-furnished and/or contractor-furnished borrow areas are described in IER #18, IER #19, IER #22, IER #23, IER #25, IER #26, IER #28, IER #30, and IER #32, just to name a few. Other, future sources have yet to be identified. This project would join the long list of previously designed and completed borrow sites throughout the region.

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

- *Lilly Bayou*

Direct Impacts

The proposed action at the Lilly Bayou contractor furnished borrow area would have no direct impacts to the scenic quality of the immediate area and view sheds from the major public corridors. The remote nature of the site prevents it from being a visually stunning component to the public view shed. The introductions of manmade borrow supply areas would starkly contrast the natural landscapes and water features in the area. In addition, the depth of scenic quality loss would depend on the final design of the borrow supply areas. Squares, rectangles and other unnatural shapes would yield a higher degree of loss in scenic quality. Even curvilinear shapes could yield a certain degree of loss, but over time this could decrease with erosion and the introduction of natural landscape elements to create a frame for the water feature.

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

Indirect Impacts

The proposed action at the Lilly Bayou contractor furnished borrow area would have no indirect impacts to the scenic quality and view sheds from the surrounding area. The remote nature of the site prevents it from being a visually stunning component to the public view shed.

After borrow area excavation, land may be converted to ponds and small lakes colonized by aquatic and semi-aquatic plant species, if not backfilled by the landowner. The landowner may be required to backfill per local ordinances in some areas. Borrow areas that do not retain water would be colonized by herbaceous vegetation and woody terrestrial plant species.

Cumulative Impacts

The proposed action at the Lilly Bayou site would have no foreseen cumulative impacts to aesthetic (visual) resources. Other previous and continuing projects that have involved government-furnished and/or contractor-furnished borrow areas are described in IER #18, IER #19, IER #22, IER #23, IER #25, IER #26, IER #28, IER #30, and IER #32, just to

name a few. Other, future sources have yet to be identified. This project would join the long list of previously designed and completed borrow sites throughout the region.

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

- *Port Bienville*

- Direct Impacts

- The proposed action at the Port Bienville contractor furnished borrow site would have direct impacts similar to that discussed in Spoil Area contractor furnished borrow site. Differences between the two include access to the site. Port Bienville has a local road system, but limited traffic, and it is in close proximity to US-90. However, view sheds from US-90 to the project site are non-existent. This is due to sheer distance, vegetation and terrain.

- Indirect Impacts

- The proposed action at the Port Bienville contractor furnished borrow site would have indirect impacts similar to that discussed in Spoil Area contractor furnished borrow site. The industrial uses, located to the southeast, provide no substantial view shed to the project site and would not be impacted by the work.

After borrow area excavation, land may be converted to ponds and small lakes colonized by aquatic and semi-aquatic plant species, if not backfilled by the landowner. The landowner may be required to backfill per local ordinances in some areas. Borrow areas that do not retain water would be colonized by herbaceous vegetation and woody terrestrial plant species.

- Cumulative Impacts

- The proposed action at the Port Bienville site would have no foreseen cumulative impacts to aesthetic (visual) resources. Other previous and continuing projects that have involved government-furnished and/or contractor-furnished borrow areas are described in IER #18, IER #19, IER #22, IER #23, IER #25, IER #26, IER #28, IER #30, and IER #32, just to name a few. Other, future sources have yet to be identified. This project would join the long list of previously designed and completed borrow sites throughout the region.

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

- *Raceland Raw Sugars*

- Direct Impacts

- The proposed action at the Raceland Raw Sugars contractor furnished borrow site would have direct impacts to the scenic quality of the area and view sheds from the Wetlands Cultural Trail, US-90 and, potentially, LA-308. The existing open fields, in the area, offer a near limitless view shed, except in the vicinity of US-90, where a forested area disrupts views. The introductions of manmade borrow supply areas would only minimally contrast the vast agricultural lands and impacts would not be substantial. The depth of scenic quality loss would depend on the final design of the borrow supply areas. Squares, rectangles and other unnatural shapes would yield a higher degree of loss in scenic quality. Even curvilinear shapes could yield a certain degree of loss, but over time this could decrease with erosion and the introduction of natural landscape elements to create a frame for the water feature.

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

Indirect Impacts

The proposed action at the Raceland Raw Sugars contractor furnished borrow site would have minimal indirect impacts to the scenic quality and view sheds from the surrounding area. After borrow area excavation, land may be converted to ponds and small lakes colonized by aquatic and semi-aquatic plant species, if not backfilled by the landowner. The landowner may be required to backfill per local ordinances in some areas. The introduction of borrow ponds may serve to attract different forms of wildlife, thereby increasing the scenic quality of the area. Borrow areas that do not retain water would be colonized by herbaceous vegetation and woody terrestrial plant species.

Cumulative Impacts

The proposed action at the Raceland Raw Sugars site would have no foreseen cumulative impacts to aesthetic (visual) resources. Other previous and continuing projects that have involved government-furnished and/or contractor-furnished borrow areas are described in IER #18, IER #19, IER #22, IER #23, IER #25, IER #26, IER #28, IER #30, and IER #32, just to name a few. Other, future sources have yet to be identified. This project would join the long list of previously designed and completed borrow sites throughout the region.

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

- *River Birch Landfill Expansion*

Direct Impacts

The proposed action at the River Birch Landfill Expansion contractor furnished borrow site would have minimal to no direct impacts to the scenic quality of the area and view sheds from the surrounding areas and thoroughfares. The alterations to the landscape in the vicinity of the landfill have already disrupted the natural, scenic qualities that make the area special. Relatively dense vegetative screening works to buffer the view sheds from major thoroughfares and surrounding areas.

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

Indirect Impacts

The proposed action at the River Birch Landfill Expansion contractor furnished borrow site would have minimal to no indirect impacts to the scenic quality and view sheds from the surrounding area. View sheds from nearby residential development (to the east) are minimal to non-existent

Cumulative Impacts

The proposed action at the River Birch site would have no foreseen cumulative impacts to aesthetic (visual) resources. Other previous and continuing projects that have involved government-furnished and/or contractor-furnished borrow areas are described in IER #18, IER #19, IER #22, IER #23, IER #25, IER #26, IER #28, IER #30, and IER #32, just to name a few. Other, future sources have yet to be identified. This project would join the long list of previously designed and completed borrow sites throughout the region.

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

- *Scarsdale*

- Direct Impacts

- The proposed action at the Scarsdale contractor furnished borrow site would have direct impacts to the scenic quality of the area and view sheds from LA-39. The dense vegetation and trees that now grace the site would give way to open areas with borrow ponds near the sharp turn before the intersection of LA-39 and English Turn Road. The introductions of manmade borrow supply areas would starkly contrast the undeveloped lands in the area. The depth of scenic quality loss would depend on the final design of the borrow supply areas. Squares, rectangles and other unnatural shapes would yield a higher degree of loss in scenic quality. Even curvilinear shapes could yield a certain degree of loss, but over time this could decrease with erosion and the introduction of natural landscape elements to create a frame for the water feature.

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

- Indirect Impacts

- The proposed action at the Scarsdale contractor furnished borrow site would have minimal indirect impacts to the scenic quality and view sheds from the surrounding area. View sheds from nearby residential development are minimal to non-existent.

- After borrow area excavation, land may be converted to ponds and small lakes colonized by aquatic and semi-aquatic plant species, if not backfilled by the landowner. The landowner may be required to backfill per local ordinances in some areas. The introduction of borrow ponds may serve to attract different forms of wildlife, thereby increasing the scenic quality of the area. Borrow areas that do not retain water would be colonized by herbaceous vegetation and woody terrestrial plant species.

- Cumulative Impacts

- The proposed action at the Scarsdale site would have no foreseen cumulative impacts to aesthetic (visual) resources. Other previous and continuing projects that have involved government-furnished and/or contractor-furnished borrow areas are described in IER #18, IER #19, IER #22, IER #23, IER #25, IER #26, IER #28, IER #30, and IER #32, just to name a few. Other, future sources have yet to be identified. This project would join the long list of previously designed and completed borrow sites throughout the region.

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

- *Spoil Area*

- Direct Impacts

- The proposed action at the Spoil Area contractor furnished borrow site would have direct impacts to the scenic quality of the area and view sheds from scenic streams. While access to the site, via roadway, is severely limited, boaters and other participants in outdoor water recreation would see a dramatic change in the landscape that could negatively affect the scenic quality of the area, especially those areas near the numerous state designated scenic streams. The introductions of manmade borrow supply areas

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

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

Indirect Impacts

The proposed action at the Spoil Area contractor furnished borrow site would have minimal indirect impacts to the scenic quality and view sheds from the surrounding area. The surrounding area is remote, with no development of any kind. View sheds, for the most part, cannot be had from the land or surrounding area. As mentioned in the direct impacts, the final design of the borrow supply would determine the level of disturbance in scenic quality, especially from the outside looking in.

After borrow area excavation, land may be converted to ponds and small lakes colonized by aquatic and semi-aquatic plant species, if not backfilled by the landowner. The landowner may be required to backfill per local ordinances in some areas. Borrow areas that do not retain water would be colonized by herbaceous vegetation and woody terrestrial plant species.

Cumulative Impacts

The proposed action at the Spoil Area site would have no foreseen cumulative impacts to aesthetic (visual) resources. Other previous and continuing projects that have involved government-furnished and/or contractor-furnished borrow areas are described in IER #18, IER #19, IER #22, IER #23, IER #25, IER #26, IER #28, IER #30, and IER #32, just to name a few. Other, future sources have yet to be identified. This project would join the long list of previously designed and completed borrow sites throughout the region.

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

3.3 SOCIOECONOMIC RESOURCES

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

The no action alternative in this case includes the potential use of government-furnished and/or contractor-furnished borrow areas described in IER #18, IER #19, IER #22, IER #23, IER #25, IER #26, IER #28, IER #29, IER #30, IER #32, or other sources yet to be identified. The proposed action is to approve the potential use of the ten privately-owned sites discussed in this report as proposed contractor-furnished borrow areas.

As previously stated, the purpose of the NEPA Emergency Alternative Arrangements (40 CFR 1506.11) is to expeditiously complete environmental analyses of impacts arising from HSDRRS efforts by allowing decisions on smaller groups of proposed actions to move forward sooner than under the traditional NEPA process (72 F.R. 1137). Because of the exigency of the Emergency

Alternative Arrangements and the need to complete the HSDRRS, each IER can identify areas where data is incomplete, unavailable, as well as areas of potential controversy (72 F.R. 11339). Therefore, it is expected that earlier IERs will not contain the same amount of information, data and analyses as later IERs. The analysis contained in each IER builds off the analysis contained in previous IERs. As information becomes available, more detailed analysis is successively presented in the IERs. Ultimately, at the conclusion of the IER process, the full cumulative effects analysis will be presented in a CED (Emergency Alternative Arrangements, Page 10). This is why IER #31 may contain additional information, data or analyses not contained in earlier IERs.

3.3.1 Population and Housing

Existing Conditions

- *Acosta 2*
The proposed Acosta 2 contractor-furnished borrow area is located in St. Bernard Parish, Louisiana. While the proposed borrow area is unpopulated, it is located about 1,000 feet from the nearest residential property. The housing structures tend to follow the major highways, reflecting the rural nature of the area. The proposed borrow area is located in census tract 301.01, block group 1, block 1023. It was previously used for agriculture. Its current use is vacant land. According to the US Census, in 2000 this census block had no population or housing units. Preliminary 2010 Census data will be available in 2011 at the earliest.
- *Idlewild Stage 2*
The proposed Idlewild Stage 2 contractor-furnished borrow area is located near the town of Oakville, Plaquemines Parish, Louisiana. There are some residential structures in the area, but these tend to be low density, rural structures and no adverse impact to these properties would occur. The proposed borrow area is located in census tract 504, block group 2, block 2003. It was previously used for agriculture since at least 1800s. Currently it is used for pastureland and orange groves, with portions of it undeveloped. According to the US Census, in 2000 this census block had a population of 123 within 41 housing units. Preliminary 2010 Census data will be available in 2011 at the earliest.
- *King Mine*
The proposed King Mine contractor-furnished borrow area is located in the town of Pearlinton, Hancock County, Mississippi. The King Mine area in Hancock County, Mississippi is in a rural area that was previously undeveloped. There is one residential development in the vicinity, but no adverse impact to this property would occur. The proposed borrow area is located in census tract 304, block group 1, block 1106. It was previously used for logging and pasture. Currently it is undeveloped forest and wetlands. According to the US Census, in 2000 this area (census block) had a population of 0 within 0 housing units. Preliminary 2010 Census data will be available in 2011 at the earliest.
- *Levis*
The proposed Levis contractor-furnished borrow area is located in St. Tammany Parish, Louisiana. The site is located in a future residential subdivision that is just being developed. There are no residential structures in the area yet. The proposed borrow area is located in census tract 504, block group 1, block 1092. It was previously undeveloped land. According to the US Census, in 2000 this census block had no population or housing units. Preliminary 2010 Census data will be available in 2011 at the earliest.
- *Lilly Bayou*
The proposed Lilly Bayou contractor-furnished borrow area is located in the northern

portion of East Baton Rouge Parish, Louisiana. There are no residential and commercial structures in the area. The proposed borrow area is located in census tract 46.03, block group 1, blocks 1007 and 1008. It is undeveloped, partially forested, and partial wetland. According to the US Census, in 2000 this census block had no population or housing units. Preliminary 2010 Census data will be available in 2011 at the earliest.

- *Port Bienville*

The proposed Port Bienville contractor-furnished borrow area is located in Hancock County, Mississippi. The Port Bienville area in Hancock County, Mississippi is in a rural area that was previously undeveloped. There is an industrial port complex in the vicinity, but no adverse impact to this property would occur. The proposed borrow area is located in census tract 304, block group 3, blocks 3020, 3021, 3022, 3023, 3070, 3071, and 3072. It was previously used for timber. Currently it is undeveloped forest and wetlands. According to the US Census, in 2000 these census blocks had no population or housing units. Preliminary 2010 Census data will be available in 2011 at the earliest.

- *Raceland Raw Sugars*

The proposed Raceland Raw Sugars contractor-furnished borrow area is located near the town of Raceland, Lafourche Parish, Louisiana. There are no residential structures in the area, the closest over 3,000 feet away. These tend to be low density, rural structures and no adverse impact to these properties would occur. The proposed borrow area is located in census tract 201, block group 1, blocks 1041, 1042, 1043, 1052, 1053, 1054, 1064, 1088, and 1089. It is currently used for agriculture, planted in sugar cane. According to the US Census, in 2000 these census blocks had no population or housing units. Preliminary 2010 Census data will be available in 2011 at the earliest.

- *River Birch Landfill Expansion*

The proposed River Birch Landfill Expansion contractor-furnished borrow area is located on the west bank of Jefferson Parish, Louisiana, adjacent to an existing landfill. There are some residential structures in the area in a subdivision, about 2,000 feet away, and no adverse impact to these properties would occur. The proposed borrow area is located in census tract 275.02, block group 6, blocks 6012, 6013, and 63999. It was previously vacant land. Currently, it lays undeveloped. According to the US Census, in 2000 these census blocks had no population or housing units. Preliminary 2010 Census data will be available in 2011 at the earliest.

- *Scarsdale*

The proposed Scarsdale contractor-furnished borrow area is located in Plaquemines Parish, Louisiana. There are some residential structures in the area, about 300 feet away, but these tend to be low density, rural structures and no adverse impact to these properties would occur. The proposed borrow area is located in census tract 501, block group 1, block 1009. It is currently forested. According to the US Census, in 2000 this census block had a population of 13 within 4 housing units. Preliminary 2010 Census data will be available in 2011 at the earliest.

- *Spoil Area*

The proposed Spoil Area contractor-furnished borrow area is located in Plaquemines Parish, Louisiana. There are no residential structures in the area. The proposed borrow area is located in census tracts 301.01 and 302.04, block groups 1 and 5, blocks 1007, 5001, and 5034. It was previously vacant land and it remains so. According to the US Census, in 2000 this census block had no population or housing units. Preliminary 2010 Census data will be available in 2011 at the earliest.

Discussion of Impacts

No Action

- *All Sites*

Direct Impacts

There would be no direct impacts to population and housing around the proposed contractor-furnished borrow areas under the no action alternative.

Indirect Impacts

There would be no indirect impacts to population and housing around the proposed contractor-furnished borrow areas under the no action alternative.

Cumulative Impacts

Under this alternative, the proposed HSDRRS projects would be built to authorized levels using potential government-furnished and/or contractor-furnished borrow areas described in IER #18, IER #19, IER #22, IER #23, IER #25, IER #26, IER #28, IER #29, IER #30, IER #32, or other sources yet to be identified. Cumulative indirect impacts associated with the completion of the HSDRRS in its entirety may occur. The lower flood risk that accrues to much of the New Orleans metropolitan area upon completion of the HSDRRS may enhance the desirability of living within the protected areas. As a result, a shift in the dispersion of population within the New Orleans Metropolitan Statistical Area (MSA), or beyond, may occur. Also, to the extent that the completion of the HSDRRS encourages regional economic growth, any additional jobs thus created may manifest itself in either immigration to the area or an increase in commuting activity. This impact is applicable for only the proposed contractor-furnished borrow areas that lie inside the HSDRRS.

Proposed Action

- *Acosta 2*

Direct Impacts

Under the proposed action, borrow material would be excavated from the proposed Acosta 2 contractor-furnished borrow area for use within the HSDRRS. There may be temporary, construction-related impacts in the immediate vicinity of the proposed borrow area, as well as on LA-39 and LA-46. These may include increased noise levels, degraded air quality, and increased congestion on area roadways. Congestion impacts would be discussed further in the transportation section. Crews would likely work between 10 hours and 14 hours a day, 7 days a week, given the urgency of the task of completing the HSDRRS. The duration of construction is dependent on work schedules, weather conditions, and borrow need, none of which are known at this time.

Because the area immediately surrounding the site is unpopulated, use of the site would not present any problems to neighboring residents. Nevertheless, an open borrow area may pose a safety hazard to neighboring population if no barrier is erected around it. There is a potential danger to children if a barrier is not erected. While the decision to fence off the proposed borrow area is that of the landowner and his contractor, not the CEMVN, neighboring residents should use caution around these areas. No permanent impacts to population and housing in the census tract would be expected. Other impacts to population would last only through the excavation period, and there would be no displacement of any population.

Indirect Impacts

No indirect impacts related to displacement of population and housing would be expected to occur under the proposed action.

Cumulative Impacts

Positive cumulative impacts to population and housing associated with completion of the HSDRRS in its entirety may also occur. The lower flood risk that accrues to much of the New Orleans metropolitan area upon completion of the HSDRRS may enhance the desirability of living within the protected areas. As a result, a shift in the dispersion of population within the New Orleans MSA, or beyond, may occur. In addition, to the extent that the completion of the HSDRRS encourages regional economic growth, any additional jobs thus created may manifest itself in either in-migration to the area or an increase in commuting activity. This impact is applicable for only the proposed contractor-furnished borrow areas that lie inside the HSDRRS.

- *Idlewild Stage 2*

Direct Impacts

Under the proposed action, borrow material would be excavated from the proposed Idlewild Stage 2 contractor-furnished borrow area for use within the HSDRRS. There may be temporary, construction-related impacts to residents in the immediate vicinity of the proposed borrow area, as well as on LA-23. These may include increased noise levels, degraded air quality, and increased congestion on neighborhood roadways. Congestion impacts will be discussed further in the transportation section. Crews would likely work between 10 hours and 14 hours a day, 7 days a week, given the urgency of the task of completing the HSDRRS. The duration of construction is dependent on work schedules, weather conditions, and borrow need, none of which are known at this time.

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

An open borrow area may also pose a safety hazard to neighboring population if no barrier is erected around it. There is a potential danger to children if a barrier is not erected. While the decision to fence off the proposed borrow area is that of the landowner and his contractor, not the CEMVN, neighboring residents should use caution around these areas.

Indirect Impacts

No indirect impacts related to displacement of population and housing would be expected to occur under the proposed action.

Cumulative Impacts

Excavation of the proposed Idlewild Stage 2 contractor-furnished borrow area could temporarily contribute to cumulative population and housing impacts in the project vicinity. Nearby residents may experience temporary, construction-related impacts such as degraded air quality, increased noise, and increased congestion on neighboring roadways. All impacts would only last through the construction period.

Positive cumulative impacts to population and housing associated with completion of the HSDRRS in its entirety may also occur. The lower flood risk that accrues to much of the New Orleans metropolitan area upon completion of the HSDRRS may enhance the desirability of living within the protected areas. As a result, a shift in the dispersion of population within the New Orleans MSA, or beyond, may occur. In addition, to the extent that the completion of the HSDRRS encourages regional economic growth, any additional

jobs thus created may manifest itself in either in-migration to the area or an increase in commuting activity. This impact is applicable for only the proposed contractor-furnished borrow areas that lie inside the HSDRRS.

- *King Mine*

Direct Impacts

Under the proposed action, borrow material would be excavated from the proposed King Mine contractor-furnished borrow area for use within the HSDRRS. There may be temporary, construction-related impacts to residents in the immediate vicinity of the proposed borrow area, as well as on US-90, MS-607, MS-604, US-190, and I-10. These impacts may include increased noise levels, degraded air quality, and increased congestion on neighborhood roadways. Congestion impacts will be discussed further in the transportation section. Crews would likely work between 10 hours and 14 hours a day, 7 days a week, given the urgency of the task of completing the HSDRRS. The duration of construction is dependent on work schedules, weather conditions, and borrow needs, none of which are known at this time.

An open borrow area may also pose a safety hazard to neighboring population if no barrier is erected around it. There is a potential danger to children if a barrier is not erected. While the decision to fence off the proposed borrow area is that of the landowner and his contractor, not the CEMVN, neighboring residents should use caution around these areas.

Indirect Impacts

No indirect impacts related to displacement of population and housing would be expected to occur under the proposed action.

Cumulative Impacts

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

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

- *Levis*

Direct Impacts

Under the proposed action, borrow material would be excavated from the proposed Levis contractor-furnished borrow area for use within the HSDRRS. There may be temporary, construction-related impacts to residents in the immediate vicinity of the proposed borrow area, as well as on Daney Street, US-190, and -10. These may include increased noise levels, degraded air quality, and increased congestion on neighborhood roadways. Congestion impacts will be discussed further in the transportation section. Crews would likely work between 10 hours and 14 hours a day, 7 days a week, given the urgency of the

task of completing the HSDRRS. The duration of construction is dependent on work schedules, weather conditions, and borrow need, none of which are known at this time.

An open borrow area may also pose a safety hazard to neighboring population if no barrier is erected around it. There is a potential danger to children if a barrier is not erected. While the decision to fence off the proposed borrow area is that of the landowner and his contractor, not the CEMVN, neighboring residents should use caution around these areas.

Indirect Impacts

No indirect impacts related to displacement of population and housing would be expected to occur under the proposed action.

Cumulative Impacts

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

Positive cumulative impacts to population and housing associated with completion of the HSDRRS in its entirety may also occur. The lower flood risk that accrues to much of the New Orleans metropolitan area upon completion of the HSDRRS may enhance the desirability of living within the protected areas. As a result, a shift in the dispersion of population within the New Orleans MSA, or beyond, may occur. In addition, to the extent that the completion of the HSDRRS encourages regional economic growth, any additional jobs thus created may manifest itself in either in-migration to the area or an increase in commuting activity. This impact is applicable for only the proposed contractor-furnished borrow areas that lie inside the HSDRRS.

- *Lilly Bayou*

Direct Impacts

Under the proposed action, borrow material will be excavated from the proposed Lilly Bayou contractor-furnished borrow area for use within the HSDRRS. There may be temporary, construction-related impacts in the immediate vicinity of the proposed borrow area, as well as on US-61. These may include increased noise levels, degraded air quality, and increased congestion on neighborhood roadways. Congestion impacts will be discussed further in the transportation section. Crews would likely work between 10 hours and 14 hours a day, 7 days a week, given the urgency of the task of completing the HSDRRS. The duration of construction is dependent on work schedules, weather conditions, and borrow need, none of which are known at this time.

Because the area immediately surrounding the site is unpopulated, use of the site would not present any problems to neighboring residents. Nevertheless, an open borrow area may pose a safety hazard to neighboring population if no barrier is erected around it. There is a potential danger to children if a barrier is not erected. While the decision to fence off the proposed borrow area is that of the landowner and his contractor, not the CEMVN, neighboring residents should use caution around these areas.

Indirect Impacts

No indirect impacts related to displacement of population and housing would be expected to occur under the proposed action.

Cumulative Impacts

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

Positive cumulative impacts to population and housing associated with completion of the HSDRRS in its entirety may also occur. The lower flood risk that accrues to much of the New Orleans metropolitan area upon completion of the HSDRRS may enhance the desirability of living within the protected areas. As a result, a shift in the dispersion of population within the New Orleans MSA, or beyond, may occur. In addition, to the extent that the completion of the HSDRRS encourages regional economic growth, any additional jobs thus created may manifest itself in either in-migration to the area or an increase in commuting activity. This impact is applicable for only the proposed contractor-furnished borrow areas that lie inside the HSDRRS.

- *Port Bienville*

Direct Impacts

Under the proposed action, borrow material would be excavated from the proposed Port Bienville contractor-furnished borrow area for use within the HSDRRS. There may be temporary, construction-related impacts to residents in the immediate vicinity of the proposed borrow area, as well as on US-90, Lower Bay Road, US-190, and I-10. These may include increased noise levels, degraded air quality, and increased congestion on neighborhood roadways. Congestion impacts will be discussed further in the transportation section. Crews would likely work between 10 hours and 14 hours a day, 7 days a week, given the urgency of the task of completing the HSDRRS. The duration of construction is dependent on work schedules, weather conditions, and borrow need, none of which are known at this time.

Because the area immediately surrounding the site is unpopulated, use of the site would not present any problems to neighboring residents. Nevertheless, an open borrow area may pose a safety hazard to neighboring population if no barrier is erected around it. There is a potential danger to children if a barrier is not erected. While the decision to fence off the proposed borrow area is that of the landowner and his contractor, not the CEMVN, neighboring residents should use caution around these areas.

Indirect Impacts

No indirect impacts related to displacement of population and housing would be expected to occur under the proposed action.

Cumulative Impacts

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

Positive cumulative impacts to population and housing associated with completion of the HSDRRS in its entirety may also occur. The lower flood risk that accrues to much of the New Orleans metropolitan area upon completion of the HSDRRS may enhance the desirability of living within the protected areas. As a result, a shift in the dispersion of population within the New Orleans MSA, or beyond, may occur. In addition, to the extent

that the completion of the HSDRRS encourages regional economic growth, any additional jobs thus created may manifest itself in either in-migration to the area or an increase in commuting activity. This impact is applicable for only the proposed contractor-furnished borrow areas that lie inside the HSDRRS.

- *Raceland Raw Sugars*

Direct Impacts

Under the proposed action, borrow material would be excavated from the proposed Raceland Raw Sugars contractor-furnished borrow area for use within the HSDRRS. There may be temporary, construction-related impacts to residents in the immediate vicinity of the proposed borrow area, as well as on LA-308 and US-90. These may include increased noise levels, degraded air quality, and increased congestion on neighborhood roadways. Congestion impacts will be discussed further in the transportation section. Crews would likely work between 10 hours and 14 hours a day, 7 days a week, given the urgency of the task of completing the HSDRRS. The duration of construction is dependent on work schedules, weather conditions, and borrow need, none of which are known at this time.

Because the area immediately surrounding the site is unpopulated, use of the site would not present any problems to neighboring residents. Nevertheless, an open borrow area may pose a safety hazard to neighboring population if no barrier is erected around it. There is a potential danger to children if a barrier is not erected. While the decision to fence off the proposed borrow area is that of the landowner and his contractor, not the CEMVN, neighboring residents should use caution around these areas.

Indirect Impacts

No indirect impacts related to displacement of population and housing would be expected to occur under the proposed action.

Cumulative Impacts

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

Positive cumulative impacts to population and housing associated with completion of the HSDRRS in its entirety may also occur. The lower flood risk that accrues to much of the New Orleans metropolitan area upon completion of the HSDRRS may enhance the desirability of living within the protected areas. As a result, a shift in the dispersion of population within the New Orleans MSA, or beyond, may occur. In addition, to the extent that the completion of the HSDRRS encourages regional economic growth, any additional jobs thus created may manifest itself in either in-migration to the area or an increase in commuting activity. This impact is applicable for only the proposed contractor-furnished borrow areas that lie inside the HSDRRS.

- *River Birch Landfill Expansion*

Direct Impacts

Under the proposed action, borrow material would be excavated from the proposed River Birch Landfill Expansion contractor-furnished borrow area for use within the HSDRRS. There may be temporary, construction-related impacts to residents in the immediate vicinity of the proposed borrow area, as well as on US-90 and Live Oak Boulevard. These may include increased noise levels, degraded air quality, and increased congestion on

neighborhood roadways. Congestion impacts will be discussed further in the transportation section. Crews would likely work between 10 hours and 14 hours a day, 7 days a week, given the urgency of the task of completing the HSDRRS. The duration of construction is dependent on work schedules, weather conditions, and borrow need, none of which are known at this time.

Because the area immediately surrounding the site is unpopulated, use of the site would not present any problems to neighboring residents. Nevertheless, an open borrow area may pose a safety hazard to neighboring population if no barrier is erected around it. There is a potential danger to children if a barrier is not erected. While the decision to fence off the proposed borrow area is that of the landowner and his contractor, not the CEMVN, neighboring residents should use caution around these areas.

Indirect Impacts

No indirect impacts related to displacement of population and housing would be expected to occur under the proposed action.

Cumulative Impacts

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

Positive cumulative impacts to population and housing associated with completion of the HSDRRS in its entirety may also occur. The lower flood risk that accrues to much of the New Orleans metropolitan area upon completion of the HSDRRS may enhance the desirability of living within the protected areas. As a result, a shift in the dispersion of population within the New Orleans MSA, or beyond, may occur. In addition, to the extent that the completion of the HSDRRS encourages regional economic growth, any additional jobs thus created may manifest itself in either in-migration to the area or an increase in commuting activity. This impact is applicable for only the proposed contractor-furnished borrow areas that lie inside the HSDRRS.

- *Scarsdale*

Direct Impacts

Under the proposed action, borrow material would be excavated from the proposed Scarsdale contractor-furnished borrow area for use within the HSDRRS. There may be temporary, construction-related impacts to residents in the immediate vicinity of the proposed borrow area, as well as on LA-39 and LA-46, and Scarsdale Road. These may include increased noise levels, degraded air quality, and increased congestion on neighborhood roadways. Congestion impacts will be discussed further in the transportation section. Crews would likely work between 10 hours and 14 hours a day, 7 days a week, given the urgency of the task of completing the HSDRRS. The duration of construction is dependent on work schedules, weather conditions, and borrow need, none of which are known at this time.

The proposed Scarsdale contractor-furnished borrow area could be designed to not directly or indirectly damage nearby structures, encourage borrow site sidewall erosion, or increase flood risk in the immediate area. However, the landowner and his contractor, not the CEMVN, are responsible for borrow site design. Although, if the borrow area is not designed by the landowner and his contractor in such a fashion, it could potentially cause damage to neighboring homes. Otherwise, no permanent impacts to population and

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

An open borrow area may also pose a safety hazard to neighboring population if no barrier is erected around it. There is a potential danger to children if a barrier is not erected. While the decision to fence off the proposed borrow area is that of the landowner and his contractor, not the CEMVN, neighboring residents should use caution around these areas.

Indirect Impacts

No indirect impacts related to displacement of population and housing would be expected to occur under the proposed action.

Cumulative Impacts

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

Positive cumulative impacts to population and housing associated with completion of the HSDRRS in its entirety may also occur. The lower flood risk that accrues to much of the New Orleans metropolitan area upon completion of the HSDRRS may enhance the desirability of living within the protected areas. As a result, a shift in the dispersion of population within the New Orleans MSA, or beyond, may occur. In addition, to the extent that the completion of the HSDRRS encourages regional economic growth, any additional jobs thus created may manifest itself in either in-migration to the area or an increase in commuting activity. This impact is applicable for only the proposed contractor-furnished borrow areas that lie inside the HSDRRS.

- *Spoil Area*

Direct Impacts

Under the proposed action, borrow material would be excavated from the proposed Scarsdale contractor-furnished borrow area for use within the HSDRRS. The area around this site is unpopulated and no permanent impacts to population and housing are expected. Temporary impacts to population, if any, would last only through the excavation period, and there would be no displacement of any population.

Because the area immediately surrounding the site is unpopulated, use of the site would not present any problems to neighboring residents. Nevertheless, an open borrow area may pose a safety hazard to neighboring population if no barrier is erected around it. There is a potential danger to children if a barrier is not erected. While the decision to fence off the proposed borrow area is that of the landowner and his contractor, not the CEMVN, neighboring residents should use caution around these areas.

Indirect Impacts

No indirect impacts related to displacement of population and housing would be expected to occur under the proposed action.

Cumulative Impacts

Excavation of the proposed Spoil Area contractor-furnished borrow area could temporarily contribute to cumulative population and housing impacts in the project vicinity. Nearby residents may experience temporary, construction-related impacts such as degraded air

quality, increased noise, and increased congestion on neighboring roadways. All impacts would only last through the construction period

Positive cumulative impacts to population and housing associated with completion of the HSDRRS in its entirety may also occur. The lower flood risk that accrues to much of the New Orleans metropolitan area upon completion of the HSDRRS may enhance the desirability of living within the protected areas. As a result, a shift in the dispersion of population within the New Orleans MSA, or beyond, may occur. In addition, to the extent that the completion of the HSDRRS encourages regional economic growth, any additional jobs thus created may manifest itself in either in-migration to the area or an increase in commuting activity. This impact is applicable for only the proposed contractor-furnished borrow areas that lie inside the HSDRRS.

3.3.2 Impacts to Employment, Business, and Industry

Existing Conditions

- *Acosta 2*
The proposed site is not currently used for business and industrial purposes generating employment. The project site is currently vacant land and totals approximately 9 acres not within proximity to urban developments of the New Orleans MSA.
- *Idlewild Stage 2*
The proposed site is currently used for a combination of pastureland, orange groves, and undeveloped land. The project site totals about 293 acres not within close proximity to urban developments of the New Orleans MSA.
- *King Mine*
The proposed site is currently used for timberland. The project site totals about 240 acres not within close proximity to urban developments of the New Orleans MSA
- *Levis*
The proposed site is currently forested. It is adjacent to a new residential subdivision that is currently being developed. The project site totals 51 acres not within proximity to urban developments of the New Orleans MSA.
- *Lilly Bayou*
The proposed site is not currently used for business and industrial purposes generating employment. It currently exists as heavily vegetated, undeveloped wetlands and forest. The project site totals about 437 acres not within close proximity to urban developments of the New Orleans MSA.
- *Port Bienville*
The proposed site is currently forested vacant land. The project site totals about 824 acres not within close proximity to urban developments of the New Orleans MSA.
- *Raceland Raw Sugars*
The proposed site is agricultural land planted in sugar cane. The project site totals about 231 acres not within close proximity to urban developments of the New Orleans MSA.
- *River Birch Landfill Expansion*
The proposed site is currently vacant, laying ready to be used as an expansion to the adjacent landfill. The project site totals about 196 acres not within close proximity to urban developments of the New Orleans MSA.

- *Scarsdale*
The proposed site is currently forested vacant land. The project site totals about 100 acres not within close proximity to urban developments of the New Orleans MSA.
- *Spoil Area*
The proposed site is currently vacant land. The project site totals about 564 acres not within close proximity to urban developments of the New Orleans MSA.

Discussion of Impacts

No Action

- *All Sites*

Direct Impacts

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

Indirect Impacts

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

Cumulative Impacts

Under the no action alternative, the proposed contractor-furnished borrow areas would not be used as a contractor-furnished borrow area and would not contribute to cumulative impacts to employment, business and industry in the project area. The proposed HSDRRS projects would be built to authorized levels using potential government-furnished and/or pre-approved contractor-furnished borrow areas described in IER #18, IER #19, IER #22, IER #23, IER #25, IER #26, IER #28, IER #29, IER #30, IER #32, or other sources yet to be identified.

Under the no action alternative, cumulative indirect impacts associated with the completion of the HSDRRS in its entirety may occur. The lower flood risk that accrues to much of the New Orleans metropolitan area upon completion of the HSDRRS may have the effect of spurring additional economic growth in the region than would otherwise occur. As a result, an increase in the number of firms and the output of business and industry would likely manifest itself in such growth. This impact is applicable for only the proposed contractor-furnished borrow areas that lie inside the HSDRRS.

Proposed Action

- *Acosta 2, Idlewild Stage 2, King Mine, Levis, Lilly Bayou, Port Bienville, Raceland Raw Sugars, Scarsdale, and Spoil Area*

Direct Impacts

As a result of the proposed action, the proposed contractor-furnished borrow areas would no longer be available for alternative business-related uses, unless the landowner performs an appropriate amount of backfilling. If the owner performs the appropriate amount of backfilling, the site could again be used for business purposes.

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

Indirect Impacts

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

Cumulative Impacts

Under the proposed action alternative, cumulative indirect impacts associated with the completion of the HSDRRS in its entirety may occur. The lower flood risk that accrues to much of the New Orleans metropolitan area upon completion of the HSDRRS may have the effect of spurring additional economic growth in the region than would otherwise occur. As a result, an increase in the number of firms and the output of business and industry would likely manifest itself in such growth. This impact is applicable for only the proposed contractor-furnished borrow areas that lie inside the HSDRRS.

- *River Birch Landfill Expansion*

Direct Impacts

As a result of the proposed action, there would be no direct impacts to employment, business, and industry by the proposed River Birch Landfill Expansion contractor-furnished borrow area. The area would still be available for alternative business-related uses, such as expansion of the landfill without the landowner performing an appropriate amount of backfilling

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

Indirect Impacts

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

Cumulative Impacts

Under the proposed action alternative, cumulative indirect impacts associated with the completion of the HSDRRS in its entirety may occur. The lower flood risk that accrues to much of the New Orleans metropolitan area upon completion of the HSDRRS may have the effect of spurring additional economic growth in the region than would otherwise occur. As a result, an increase in the number of firms and the output of business and industry would likely manifest itself in such growth. This impact is applicable for only the proposed contractor-furnished borrow areas that lie inside the HSDRRS.

3.3.3 Availability of Public Facilities and Services

Existing Conditions

- *All Sites*

There are no public facilities in the vicinity of the proposed Acosta 2, Idlewild Stage 2, King Mine, Levis, Lilly Bayou, Port Bienville, Raceland Raw Sugars, River Birch Landfill Expansion, Scarsdale, and Spoil Area contractor-furnished borrow areas.

Discussion of Impacts

No Action

- *All Sites*

Direct Impacts

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

Indirect Impacts

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

Cumulative Impacts

Under this alternative, the proposed HSDRRS projects would be built to authorized levels using potential government-furnished and/or contractor-furnished borrow areas described in IER #18, IER #19, IER #22, IER #23, IER #25, IER #26, IER #28, IER #29, IER #30, IER #32, or other sources yet to be identified. Cumulative impacts associated with the completion of the HSDRRS in its entirety may occur. The lower flood risk that accrues to much of the New Orleans metropolitan area upon completion of the HSDRRS may enhance the desirability of living within the protected areas. As a result, a shift in the dispersion of population within the New Orleans MSA, or beyond, may occur. In addition, to the extent that the completion of the HSDRRS encourages regional economic growth, any additional jobs thus created may manifest itself in either in-migration to the area or an increase in commuting activities. An increase in the demand for public facilities and services would follow the migration patterns of residents and workers in the region. This impact is applicable for only the proposed contractor-furnished borrow areas that lie inside the HSDRRS.

Proposed Action

- *All Sites*

Direct Impacts

There would be no direct impacts to public facilities and services under the proposed action, since there are no public facilities or services in the immediate vicinity of the proposed borrow area, except for Raceland Raw Sugars borrow area. In the case of Raceland Raw Sugars, the sheriff's substation is located far enough away to not be directly impacted.

Indirect Impacts

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

Cumulative Impacts

Under the proposed action alternative, cumulative indirect impacts associated with the completion of the HSDRRS in its entirety may occur. The lower flood risk that accrues to much of the New Orleans metropolitan area upon completion of the HSDRRS may have the effect of spurring additional economic growth in the region than would otherwise occur. As a result, an increase in the number of firms and the output of business and industry would likely manifest itself in such growth. This impact is applicable for only the proposed contractor-furnished borrow areas that lie inside the HSDRRS.

3.3.4 Effects on Transportation

The CEMVN has developed information for an analysis of the transportation impacts associated with the HSDRRS project in the report, "Transportation Report For The Construction Of The 100-Year Hurricane And Storm Damage Risk Reduction System", released in March 2010 and accessible at www.nolaenvironmental.gov. Estimates on numbers of

truckloads necessary to complete the HSDRRS borrow mission and their impacts are provided in this report.

Existing Conditions

- *Acosta 2*
The Acosta 2 site is located on LA-46. Roads near the site that would also likely be used by truck using the proposed Acosta 2 borrow area are LA-46, LA-39, LA-47, I-510, and I-10. Access to the site would not be provided from any residential streets. Access to the site would be provided from LA-46.
- *Idlewild Stage 2*
The Idlewild Stage 2 site is located on LA-23. Access to the site would be from LA-23 and other farm roads that connect to LA-23. Access to the site would not be provided from any residential streets.
- *King Mine*
The King Mine site is located on US-90. Roads near the site that would also likely be used by truck using the proposed King Mine borrow area are MS-607, MS-43, MS-603, US-190, and I-10. Access to the site would not be provided from any residential streets.
- *Levis*
The Levis site is located just off of US-190. Another road near the site that would also likely be used by truck using the proposed Levis borrow area is Daney Street. Access to the site would not be provided from any residential streets. Access to the site would be from US-190 via streets serving the new development.
- *Lilly Bayou*
The Lilly Bayou site is located on US-61. Access to the site would not be provided from any residential streets. There would be two access roads to the site, both are on US-61.
- *Port Bienville*
The Port Bienville site is located on US-90. Roads near the site that would also likely be used by truck using the proposed Port Bienville borrow area are Lower Bay Road, MS-607, MS-43, MS-603, US-190, and I-10. Access to the site would not be provided from any residential streets. There could be 3 access roads to the site. One would be from US-90 and two would be from Lower Bay Road.
- *Raceland Raw Sugars*
The Raceland Raw Sugars site is located on US-90 and LA-308. Roads near the site that would also likely be used by truck using the proposed Raceland Raw Sugars borrow area are LA-182 and other farm roads connecting to LA-308 and LA-182. Access to the site would not be provided from any residential streets.
- *River Birch Landfill Expansion*
The River Birch Landfill Expansion site is located on US -90. Roads near the site that would also likely be used by truck using the proposed River Birch Landfill Expansion borrow area may include Live Oak Boulevard. Access to the site would not be provided from any residential streets. There would be two access roads to the site, an existing road from US-90 and a proposed road from US-90.
- *Scarsdale*
The Scarsdale site is located on LA-39 and Scarsdale Road. Roads near the site that

would also likely be used by truck using the proposed Scarsdale borrow area include LA-46. Access to the site would be provided from a residential street, Scarsdale Road.

- *Spoil Area*

The Spoil Area site is located in St Bernard Parish with no existing public road access.

Discussion of Impacts

No Action

- *All Sites*

Direct Impacts

Under the no action alternative there would be no direct impacts to transportation in the vicinity of the proposed contractor-furnished borrow areas.

Indirect Impacts

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

Cumulative Impacts

Under the no action alternative, the proposed contractor-furnished borrow areas would not be used as a contractor-furnished borrow area and would not contribute to cumulative transportation impacts in the project area. The proposed HSDRRS projects would be built to authorized levels using potential government-furnished and/or pre-approved contractor-furnished borrow areas described in IER #18, IER #19, IER #22, IER #23, IER #25, IER #26, IER #28, IER #29, IER #30, IER #32, or other sources yet to be identified.

Congestion impacts to the greater metropolitan area would likely be moderate to severe as a result of HSDRRS construction. Heavy vehicles adversely affect traffic in two ways: First, they are larger than passenger cars and occupy more road space, and secondly, they have poorer operating capabilities than passenger cars, particularly with respect to acceleration, deceleration, and the ability to maintain speed on upgrades. Heavy vehicles cannot keep pace with passenger vehicles in many situations creating large gaps in the traffic stream that are difficult to fill by passing maneuvers. The CEMVN estimates 29,616,300 cubic yards of borrow will be required for completion of HSDRRS. This would result in 2,042,500 truck trips traveling 57,270,000 miles in total. Decreases in levels of service on local roads would occur due to the high number of truck trips required to transport the required amounts of construction material. Additionally, there is a higher risk of traffic accidents and resulting damage to property as a result of the higher number of truck trips occurring on major transportation arteries within the metropolitan area. Given the expected accident rates reported in the CEMVN report "Transportation Report For The Construction Of The 100-Year Hurricane And Storm Damage Risk Reduction System", page 144, from a U.S. Department of Transportation (USDOT) study, large truck accident rates are 2.34 fatalities per 100 million miles. Statistically, this rate calculates to 0.77 deaths, rounded to 1 fatality. Similarly, the injury and damage rates calculate to 29 persons injured, and 91 vehicles damaged that can be expected to occur as a result of the over 57 million miles driven.

There would also likely be moderate to severe degradation of infrastructure as a result of wear and tear from transporting HSDRRS construction materials. These impacts would likely be greatest on local and feeder roads, as well as on local bridges. Higher design characteristics for high capacity roads such as Interstate Highways are able to withstand wear much better than for lesser roads. The pavement degradation cost of a 3-axle loaded

truck on a local road is more than 60 times the pavement degradation cost for that same vehicle on an interstate highway. Because of HSDRRS construction, rehabilitation to area infrastructure would likely be required sooner than would normally be expected.

The large number of truck miles would also increase pollutants in the air of the New Orleans metro area caused by the burning of diesel fuel. All of the parishes in the New Orleans metro area are currently designated as “in attainment” of all criteria pollutants covered by the Clean Air Act.

On the other hand, there may emerge cumulative indirect impacts associated with the completion of the HSDRRS in its entirety. The lower flood risk that accrues to much of the New Orleans metropolitan area upon completion of the HSDRRS may have the effect of spurring additional economic growth in the region than would otherwise occur. An increase in the demand for transportation resources usually follows gains in economic activity and would thus be expected given any additional economic growth in the region. This impact is applicable for only the proposed contractor-furnished borrow areas that lie inside the HSDRRS.

Proposed Action

- *Acosta 2*

Direct Impacts

Under the proposed action, there may be temporary, congestion-related impacts to LA-46, LA-39, LA-300, Paris Road, as well as I-510 and I-10 in the vicinity of the proposed Acosta 2 borrow area. Congestion impacts and decreases in levels of service around the excavation area would likely be moderate to severe. To complete excavation of the proposed Acosta 2 contractor-furnished borrow area, it is estimated that it would take approximately 19,000 truckloads. Due to the increased levels of truck traffic, and the movement of many truckloads of material, there would likely be increased wear and tear on these roads. Due to frequent heavy loads, local roadways around the project area would likely suffer degradation requiring rehabilitation that is sooner than would normally be expected. Lastly, because of increased levels of truck traffic, there would be a higher risk of accidents, with resulting injuries, fatalities, and damage to property.

Indirect Impacts

There would also be increased congestion, decreased levels of service, accelerated wear and tear, and increased risk of traffic accidents on major and local roads outside of the immediate vicinity of the proposed borrow area as borrow is transported from the borrow site to construction sites for use within HSDRRS.

Cumulative Impacts

Approximately 19,000 truckloads could be required to complete excavation of the proposed Acosta 2 contractor-furnished borrow area. The addition of approximately 19,000 truckloads contributes to the cumulative transportation impacts in the HSDRRS project area.

It is estimated that it could require over 2,000,000 truckloads to complete excavation of the borrow areas needed for completion of the HSDRRS. If the proposed Acosta 2 site is used as a contractor-furnished borrow area for completion of the HSDRRS it could account for less than 1 percent of the total number of truckloads required to complete the HSDRRS borrow mission.

Congestion impacts to the greater metropolitan area would likely be moderate to severe

as a result of HSDRRS construction. Heavy vehicles adversely affect traffic in two ways. First, they are larger than passenger cars and occupy more road space, and second, they have poorer operating capabilities than passenger cars, particularly with respect to acceleration, deceleration, and the ability to maintain speed on upgrades. Heavy vehicles cannot keep pace with passenger vehicles in many situations creating large gaps in the traffic stream that are difficult to fill by passing maneuvers. The CEMVN estimates 29,616,300 cubic yards of borrow will be required for completion of HSDRRS. This would result in 2,042,500 truck trips traveling 57,270,000 miles in total. Decreases in levels of service on local roads would occur due to the high number of truck trips required to transport the required amounts of construction material. Additionally, there is a higher risk of traffic accidents and resulting damage to property as a result of the higher number of truck trips occurring on major transportation arteries within the metropolitan area. Given the expected accident rates reported in the CEMVN report "Transportation Report For The Construction Of the 100-Year Hurricane And Storm Damage Risk Reduction System", approximately 1 fatality, 29 persons injured, and 91 vehicles damaged can be expected to occur as a result of the over 57 million miles driven.

There would also likely be moderate to severe degradation of infrastructure as a result of wear and tear from transporting HSDRRS construction materials. These impacts are likely to be greatest on local and feeder roads, as well as on local bridges. Higher design characteristics for high capacity roads such as Interstate Highways are able to withstand wear much better than for lesser roads. The pavement degradation cost of a 3-axle loaded truck on a local road is more than 60 times the pavement degradation cost for that same vehicle on an interstate highway. Because of HSDRSS construction, rehabilitation to area infrastructure would likely be required sooner than would normally be expected.

The large number of truck miles would also increase pollutants in the air of the New Orleans metro area caused by the burning of diesel fuel. All of the parishes in the New Orleans metro area are currently designated as "in attainment" of all criteria pollutants covered by the Clean Air Act.

On the other hand, there may emerge cumulative indirect impacts associated with the completion of the HSDRRS in its entirety. The lower flood risk that accrues to much of the New Orleans metropolitan area upon completion of the HSDRRS may have the effect of spurring additional economic growth in the region than would otherwise occur. An increase in the demand for transportation resources usually follows gains in economic activity and would thus be expected given any additional economic growth in the region. This impact is applicable for only the proposed contractor-furnished borrow areas that lie inside the HSDRRS.

- *Idlewild Stage 2*

Direct Impacts

Under the proposed action, there may be temporary, congestion-related impacts to LA-23 in the vicinity of the proposed Idlewild Stage 2 borrow area. Congestion impacts and decreases in levels of service around the excavation area would likely be moderate to severe. To complete excavation of the proposed Idlewild Stage 2 contractor-furnished borrow area, it is estimated that it would take approximately 225,000 truckloads. Due to the increased levels of truck traffic, and the movement of many truckloads of material, there would likely be increased wear and tear on these roads. Due to frequent heavy loads, local roadways around the project area would likely suffer degradation requiring rehabilitation that is sooner than would normally be expected. Lastly, because of increased levels of truck traffic, there would be a higher risk of accidents, with resulting injuries, fatalities, and damage to property.

Indirect Impacts

There would also be increased congestion, decreased levels of service, accelerated wear and tear, and increased risk of traffic accidents on major and local roads outside of the immediate vicinity of the proposed borrow area as borrow is transported from the borrow site to construction sites for use within HSDRRS.

Cumulative Impacts

Approximately 225,000 truckloads could be required to complete excavation of the proposed Idlewild Stage 2 contractor-furnished borrow area. The addition of approximately 225,000 truckloads contributes to the cumulative transportation impacts in the HSDRRS project area.

It is estimated that it could require over 2,000,000 truckloads to complete excavation of the borrow areas needed for completion of the HSDRRS. If the proposed Idlewild Stage 2 site is used as a contractor-furnished borrow area for completion of the HSDRRS it could account for approximately 11 percent of the total number of truckloads required to complete the HSDRRS borrow mission.

Congestion impacts to the greater metropolitan area would likely be moderate to severe as a result of HSDRRS construction. Heavy vehicles adversely affect traffic in two ways. First, they are larger than passenger cars and occupy more road space, and secondly, they have poorer operating capabilities than passenger cars, particularly with respect to acceleration, deceleration, and the ability to maintain speed on upgrades. Heavy vehicles cannot keep pace with passenger vehicles in many situations creating large gaps in the traffic stream that are difficult to fill by passing maneuvers. The CEMVN estimates 29,616,300 cubic yards of borrow will be required for completion of HSDRRS. This would result in 2,042,500 truck trips traveling 57,270,000 miles in total. Decreases in levels of service on local roads would occur due to the high number of truck trips required to transport the required amounts of construction material. Additionally, there would be a higher risk of traffic accidents and resulting damage to property as a result of the higher number of truck trips occurring on major transportation arteries within the metropolitan area. Given the expected accident rates reported in the CEMVN report "Transportation Report For The Construction Of the 100-Year Hurricane And Storm Damage Risk Reduction System", approximately 1 fatality, 29 persons injured, and 91 vehicles damaged can be expected to occur as a result of the over 57 million miles driven.

There would also likely be moderate to severe degradation of infrastructure as a result of wear and tear from transporting HSDRRS construction materials. These impacts would likely be greatest on local and feeder roads, as well as on local bridges. Higher design characteristics for high capacity roads such as Interstate Highways are able to withstand wear much better than for lesser roads. The pavement degradation cost of a 3-axle loaded truck on a local road is more than 60 times the pavement degradation cost for that same vehicle on an interstate highway. Because of HSDRRS construction, rehabilitation to area infrastructure will likely be required sooner than would normally be expected.

The large number of truck miles would also increase pollutants in the air of the New Orleans metro area caused by the burning of diesel fuel. All of the parishes in the New Orleans metro area are currently designated as "in attainment" of all criteria pollutants covered by the Clean Air Act.

On the other hand, there may emerge cumulative indirect impacts associated with the completion of the HSDRRS in its entirety. The lower flood risk that accrues to much of the New Orleans metropolitan area upon completion of the HSDRRS may have the effect

of spurring additional economic growth in the region than would otherwise occur. An increase in the demand for transportation resources usually follows gains in economic activity and would thus be expected given any additional economic growth in the region. This impact is applicable for only the proposed contractor-furnished borrow areas that lie inside the HSDRRS.

- *King Mine*

Direct Impacts

Under the proposed action, there may be temporary, congestion-related impacts to US-90, MS-607, MS-604, US-190, and I-10 in the vicinity of the proposed King Mine borrow area. Congestion impacts and decreases in levels of service around the excavation area would likely be moderate to severe. To complete excavation of the proposed King Mine contractor-furnished borrow area, it is estimated that it would take approximately 288,000 truckloads. Due to the increased levels of truck traffic, and the movement of many truckloads of material, there would likely be increased wear and tear on these roads. Due to frequent heavy loads, local roadways around the project area would likely suffer degradation requiring rehabilitation that is sooner than would normally be expected. Lastly, because of increased levels of truck traffic, there would be a higher risk of accidents, with resulting injuries, fatalities, and damage to property.

Indirect Impacts

There would also be increased congestion, decreased levels of service, accelerated wear and tear, and increased risk of traffic accidents on major and local roads outside of the immediate vicinity of the proposed borrow area as borrow is transported from the borrow site to construction sites for use within HSDRRS.

Cumulative Impacts

Approximately 288,000 truckloads could be required to complete excavation of the proposed King Mine contractor-furnished borrow area. The addition of approximately 288,000 truckloads would contribute to the cumulative transportation impacts in the HSDRRS project area.

It is estimated that it could require approximately 2,000,000 truckloads to complete excavation of the borrow areas needed for completion of the HSDRRS.

If the proposed King Mine site is used as a contractor-furnished borrow area for completion of the HSDRRS it could account for approximately 14 percent of the total number of truckloads required to complete the HSDRRS borrow mission.

Congestion impacts to the greater metropolitan area would likely be moderate to severe as a result of HSDRRS construction. Heavy vehicles adversely affect traffic in two ways. First, they are larger than passenger cars and occupy more road space, and secondly, they have poorer operating capabilities than passenger cars, particularly with respect to acceleration, deceleration, and the ability to maintain speed on upgrades. Heavy vehicles cannot keep pace with passenger vehicles in many situations creating large gaps in the traffic stream that are difficult to fill by passing maneuvers. The CEMVN estimates 29,616,300 cubic yards of borrow will be required for completion of the HSDRRS. This would result in 2,042,500 truck trips traveling 57,270,000 miles in total. Decreases in levels of service on local roads would occur due to the high number of truck trips required to transport the required amounts of construction material. Additionally, there would be a higher risk of traffic accidents and resulting damage to property as a result of the higher number of truck trips occurring on major transportation arteries within the metropolitan area. Given the expected accident rates reported in the CEMVN report "Transportation Report For The Construction Of the 100-Year Hurricane And Storm

Damage Risk Reduction System”, approximately 1 fatality, 29 persons injured, and 91 vehicles damaged can be expected to occur as a result of the over 57 million miles driven.

There would also likely be moderate to severe degradation of infrastructure as a result of wear and tear from transporting HSDRRS construction materials. These impacts would likely be greatest on local and feeder roads, as well as on local bridges. Higher design characteristics for high capacity roads such as Interstate Highways are able to withstand wear much better than for lesser roads. The pavement degradation cost of a 3-axle loaded truck on a local road is more than 60 times the pavement degradation cost for that same vehicle on an interstate highway. Because of HSDRSS construction, rehabilitation to area infrastructure would likely be required sooner than would normally be expected.

The large number of truck miles would also increase pollutants in the air of the New Orleans metro area caused by the burning of diesel fuel. All of the parishes in the New Orleans metro area are currently designated as “in attainment” of all criteria pollutants covered by the Clean Air Act.

On the other hand, there may emerge cumulative indirect impacts associated with the completion of the HSDRRS in its entirety. The lower flood risk that accrues to much of the New Orleans metropolitan area upon completion of the HSDRRS may have the effect of spurring additional economic growth in the region than would otherwise occur. An increase in the demand for transportation resources usually follows gains in economic activity and would thus be expected given any additional economic growth in the region. This impact is applicable for only the proposed contractor-furnished borrow areas that lie inside the HSDRRS.

- *Levis*

Direct Impacts

Under the proposed action, there may be temporary, congestion-related impacts to Daney Street, US-190 and I-10 in the vicinity of the proposed Levis borrow area. Congestion impacts and decreases in levels of service around the excavation area would likely be moderate to severe. To complete excavation of the proposed Levis contractor-furnished borrow area, it is estimated that it would take approximately 106,000 truckloads. Due to the increased levels of truck traffic, and the movement of many truckloads of material, there would likely be increased wear and tear on these roads. Due to frequent heavy loads, local roadways around the project area would likely suffer degradation requiring rehabilitation that is sooner than would normally be expected. Lastly, because of increased levels of truck traffic, there would be a higher risk of accidents, with resulting injuries, fatalities, and damage to property.

Indirect Impacts

There would also be increased congestion, decreased levels of service, accelerated wear and tear, and increased risk of traffic accidents on major and local roads outside of the immediate vicinity of the proposed borrow area as borrow is transported from the borrow site to construction sites for use within HSDRRS.

Cumulative Impacts

Approximately 106,000 truckloads could be required to complete excavation of the proposed Levis contractor-furnished borrow area. The addition of approximately 106,000 truckloads would contribute to the cumulative transportation impacts in the HSDRRS project area.

It is estimated that it could require over 2,000,000 truckloads to complete excavation of

the borrow areas needed for completion of the HSDRRS. If the proposed Levis site is used as a contractor-furnished borrow area for completion of the HSDRRS it could account for approximately 5 percent of the total number of truckloads required to complete the HSDRRS borrow mission.

Congestion impacts to the greater metropolitan area would likely be moderate to severe as a result of HSDRRS construction. Heavy vehicles adversely affect traffic in two ways. First, they are larger than passenger cars and occupy more road space, and secondly, they have poorer operating capabilities than passenger cars, particularly with respect to acceleration, deceleration, and the ability to maintain speed on upgrades. Heavy vehicles cannot keep pace with passenger vehicles in many situations creating large gaps in the traffic stream that are difficult to fill by passing maneuvers. The CEMVN estimates 29,616,300 cubic yards of borrow will be required for completion of HSDRRS. This would result in 2,042,500 truck trips traveling 57,270,000 miles in total. Decreases in levels of service on local roads would occur due to the high number of truck trips required to transport the required amounts of construction material. Additionally, there would be a higher risk of traffic accidents and resulting damage to property as a result of the higher number of truck trips occurring on major transportation arteries within the metropolitan area. Given the expected accident rates reported in the CEMVN report "Transportation Report For The Construction Of the 100-Year Hurricane And Storm Damage Risk Reduction System", approximately 1 fatality, 29 persons injured, and 91 vehicles damaged can be expected to occur as a result of the over 57 million miles driven.

There would also likely be moderate to severe degradation of infrastructure as a result of wear and tear from transporting HSDRRS construction materials. These impacts would likely be greatest on local and feeder roads, as well as on local bridges. Higher design characteristics for high capacity roads such as Interstate Highways are able to withstand wear much better than for lesser roads. The pavement degradation cost of a 3-axle loaded truck on a local road is more than 60 times the pavement degradation cost for that same vehicle on an interstate highway. Because of HSDRRS construction, rehabilitation to area infrastructure would likely be required sooner than would normally be expected.

The large number of truck miles would also increase pollutants in the air of the New Orleans metro area caused by the burning of diesel fuel. All of the parishes in the New Orleans metro area are currently designated as "in attainment" of all criteria pollutants covered by the Clean Air Act.

On the other hand, there may emerge cumulative indirect impacts associated with the completion of the HSDRRS in its entirety. The lower flood risk that accrues to much of the New Orleans metropolitan area upon completion of the HSDRRS may have the effect of spurring additional economic growth in the region than would otherwise occur. An increase in the demand for transportation resources usually follows gains in economic activity and would thus be expected given any additional economic growth in the region. This impact is applicable for only the proposed contractor-furnished borrow areas that lie inside the HSDRRS.

- *Lilly Bayou*

Direct Impacts

Under the proposed action, there may be temporary, congestion-related impacts to Salvant Road and US-61 in the vicinity of the proposed Lilly Bayou borrow area. Congestion impacts and decreases in levels of service around the excavation area would likely be moderate to severe. To complete excavation of the proposed Lilly Bayou contractor-furnished borrow area, it is estimated that it would take approximately

910,000 truckloads. Due to the increased levels of truck traffic, and the movement of many truckloads of material, there would likely be increased wear and tear on these roads. Due to frequent heavy loads, local roadways around the project area would likely suffer degradation requiring rehabilitation that is sooner than would normally be expected. Lastly, because of increased levels of truck traffic, there would be a higher risk of accidents, with resulting injuries, fatalities, and damage to property.

Indirect Impacts

There would also be increased congestion, decreased levels of service, accelerated wear and tear, and increased risk of traffic accidents on major and local roads outside of the immediate vicinity of the proposed borrow area as borrow is transported from the borrow site to construction sites for use within HSDRRS.

Cumulative Impacts

Approximately 910,000 truckloads could be required to complete excavation of the proposed Lilly Bayou contractor-furnished borrow area. The addition of approximately 910,000 truckloads would contribute to the cumulative transportation impacts in the HSDRRS project area.

It is estimated that it could require over 2,000,000 truckloads to complete excavation of the borrow areas needed for completion of the HSDRRS. If the proposed Lilly Bayou site is used as a contractor-furnished borrow area for completion of the HSDRRS it could account for approximately 46 percent of the total number of truckloads required to complete the HSDRRS borrow mission.

Congestion impacts to the greater metropolitan area would likely be moderate to severe as a result of HSDRRS construction. Heavy vehicles adversely affect traffic in two ways. First, they are larger than passenger cars and occupy more road space, and secondly, they have poorer operating capabilities than passenger cars, particularly with respect to acceleration, deceleration, and the ability to maintain speed on upgrades. Heavy vehicles cannot keep pace with passenger vehicles in many situations creating large gaps in the traffic stream that are difficult to fill by passing maneuvers. The CEMVN estimates 29,616,300 cubic yards of borrow will be required for completion of HSDRRS. This would result in 2,042,500 truck trips traveling 57,270,000 miles in total. Decreases in levels of service on local roads would occur due to the high number of truck trips required to transport the required amounts of construction material. Additionally, there would be a higher risk of traffic accidents and resulting damage to property as a result of the higher number of truck trips occurring on major transportation arteries within the metropolitan area. Given the expected accident rates reported in the CEMVN report "Transportation Report For The Construction Of the 100-Year Hurricane And Storm Damage Risk Reduction System", approximately 1 fatality, 29 persons injured, and 91 vehicles damaged can be expected to occur as a result of the over 57 million miles driven.

There would also likely be moderate to severe degradation of infrastructure as a result of wear and tear from transporting HSDRRS construction materials. These impacts would likely be greatest on local and feeder roads, as well as on local bridges. Higher design characteristics for high capacity roads such as Interstate Highways are able to withstand wear much better than for lesser roads. The pavement degradation cost of a 3-axle loaded truck on a local road is more than 60 times the pavement degradation cost for that same vehicle on an interstate highway. Because of HSDRRS construction, rehabilitation to area infrastructure would likely be required sooner than would normally be expected.

The large number of truck miles would also increase pollutants in the air of the New Orleans metro area caused by the burning of diesel fuel. All of the parishes in the New

Orleans metro area are currently designated as “in attainment” of all criteria pollutants covered by the Clean Air Act.

On the other hand, there may emerge cumulative indirect impacts associated with the completion of the HSDRRS in its entirety. The lower flood risk that accrues to much of the New Orleans metropolitan area upon completion of the HSDRRS may have the effect of spurring additional economic growth in the region than would otherwise occur. An increase in the demand for transportation resources usually follows gains in economic activity and would thus be expected given any additional economic growth in the region. This impact is applicable for only the proposed contractor-furnished borrow areas that lie inside the HSDRRS.

- *Port Bienville*

Direct Impacts

Under the proposed action, there may be temporary, congestion-related impacts to Lower Bay Road, US-90, US-190, and I-10 in the vicinity of the proposed Port Bienville borrow area. Congestion impacts and decreases in levels of service around the excavation area would likely be moderate to severe. To complete excavation of the proposed Port Bienville contractor-furnished borrow area, it is estimated that it would take approximately 1,410,000 truckloads. Due to the increased levels of truck traffic, and the movement of many truckloads of material, there would likely be increased wear and tear on these roads. Due to frequent heavy loads, local roadways around the project area would likely suffer degradation requiring rehabilitation that is sooner than would normally be expected. Lastly, because of increased levels of truck traffic, there would be a higher risk of accidents, with resulting injuries, fatalities, and damage to property.

Indirect Impacts

There would also be increased congestion, decreased levels of service, accelerated wear and tear, and increased risk of traffic accidents on major and local roads outside of the immediate vicinity of the proposed borrow area as borrow is transported from the borrow site to construction sites for use within HSDRRS.

Cumulative Impacts

Approximately 1,410,000 truckloads could be required to complete excavation of the proposed Port Bienville contractor-furnished borrow area. The addition of approximately 1,410,000 truckloads would contribute to the cumulative transportation impacts in the HSDRRS project area.

It is estimated that it could require over 2,000,000 truckloads to complete excavation of the borrow areas needed for completion of the HSDRRS. If the proposed Port Bienville site is used as a contractor-furnished borrow area for completion of the HSDRRS it could account for approximately 71 percent of the total number of truckloads required to complete the HSDRRS borrow mission.

Congestion impacts to the greater metropolitan area would likely be moderate to severe as a result of HSDRRS construction. Heavy vehicles adversely affect traffic in two ways. First, they are larger than passenger cars and occupy more road space, and secondly, they have poorer operating capabilities than passenger cars, particularly with respect to acceleration, deceleration, and the ability to maintain speed on upgrades. Heavy vehicles cannot keep pace with passenger vehicles in many situations creating large gaps in the traffic stream that are difficult to fill by passing maneuvers. The CEMVN estimates 29,616,300 cubic yards of borrow would be required for completion of HSDRRS. This will result in 2,042,500 truck trips traveling 57,270,000 miles in total. Decreases in

levels of service on local roads would occur due to the high number of truck trips required to transport the required amounts of construction material. Additionally, there would be a higher risk of traffic accidents and resulting damage to property as a result of the higher number of truck trips occurring on major transportation arteries within the metropolitan area. Given the expected accident rates reported in the CEMVN report “Transportation Report For The Construction Of the 100-Year Hurricane And Storm Damage Risk Reduction System”, approximately 1 fatality, 29 persons injured, and 91 vehicles damaged can be expected to occur as a result of the over 57 million miles driven.

There would also likely be moderate to severe degradation of infrastructure as a result of wear and tear from transporting HSDRRS construction materials. These impacts would likely be greatest on local and feeder roads, as well as on local bridges. Higher design characteristics for high capacity roads such as Interstate Highways are able to withstand wear much better than for lesser roads. The pavement degradation cost of a 3-axle loaded truck on a local road is more than 60 times the pavement degradation cost for that same vehicle on an interstate highway. Because of HSDRSS construction, rehabilitation to area infrastructure would likely be required sooner than would normally be expected.

The large number of truck miles would also increase pollutants in the air of the New Orleans metro area caused by the burning of diesel fuel. All of the parishes in the New Orleans metro area are currently designated as “in attainment” of all criteria pollutants covered by the Clean Air Act.

On the other hand, there may emerge cumulative indirect impacts associated with the completion of the HSDRRS in its entirety. The lower flood risk that accrues to much of the New Orleans metropolitan area upon completion of the HSDRRS may have the effect of spurring additional economic growth in the region than would otherwise occur. An increase in the demand for transportation resources usually follows gains in economic activity and would thus be expected given any additional economic growth in the region. This impact is applicable for only the proposed contractor-furnished borrow areas that lie inside the HSDRRS.

- *Raceland Raw Sugars*

Direct Impacts

Under the proposed action, there may be temporary, congestion-related impacts to LA-308 and US-90 in the vicinity of the proposed Raceland Raw Sugars borrow area. Congestion impacts and decreases in levels of service around the excavation area would likely be moderate to severe. To complete excavation of the proposed Raceland Raw Sugars contractor-furnished borrow area, it is estimated that it would take approximately 481,000 truckloads. Due to the increased levels of truck traffic, and the movement of many truckloads of material, there would likely be increased wear and tear on these roads. Due to frequent heavy loads, local roadways around the project area would likely suffer degradation requiring rehabilitation that is sooner than would normally be expected. Lastly, because of increased levels of truck traffic, there would be a higher risk of accidents, with resulting injuries, fatalities, and damage to property.

Indirect Impacts

There would also be increased congestion, decreased levels of service, accelerated wear and tear, and increased risk of traffic accidents on major and local roads outside of the immediate vicinity of the proposed borrow area as borrow is transported from the borrow site to construction sites for use within HSDRRS.

Cumulative Impacts

Approximately 481,000 truckloads could be required to complete excavation of the proposed Raceland Raw Sugars contractor-furnished borrow area. The addition of approximately 481,000 truckloads would contribute to the cumulative transportation impacts in the HSDRRS project area.

It is estimated that it could require over 2,000,000 truckloads to complete excavation of the borrow areas needed for completion of the HSDRRS. If the proposed Raceland Raw Sugars site is used as a contractor-furnished borrow area for completion of the HSDRRS it could account for approximately 24 percent of the total number of truckloads required to complete the HSDRRS borrow mission.

Congestion impacts to the greater metropolitan area would likely be moderate to severe as a result of HSDRRS construction. Heavy vehicles adversely affect traffic in two ways. First, they are larger than passenger cars and occupy more road space, and secondly, they have poorer operating capabilities than passenger cars, particularly with respect to acceleration, deceleration, and the ability to maintain speed on upgrades. Heavy vehicles cannot keep pace with passenger vehicles in many situations creating large gaps in the traffic stream that are difficult to fill by passing maneuvers. The CEMVN estimates 29,616,300 cubic yards of borrow will be required for completion of HSDRRS. This would result in 2,042,500 truck trips traveling 57,270,000 miles in total. Decreases in levels of service on local roads would occur due to the high number of truck trips required to transport the required amounts of construction material. Additionally, there would be higher risk of traffic accidents and resulting damage to property as a result of the higher number of truck trips occurring on major transportation arteries within the metropolitan area. Given the expected accident rates reported in the CEMVN report "Transportation Report For The Construction Of the 100-Year Hurricane And Storm Damage Risk Reduction System", approximately 1 fatality, 29 persons injured, and 91 vehicles damaged can be expected to occur as a result of the over 57 million miles driven.

There would also likely be moderate to severe degradation of infrastructure as a result of wear and tear from transporting HSDRRS construction materials. These impacts would likely be greatest on local and feeder roads, as well as on local bridges. Higher design characteristics for high capacity roads such as Interstate Highways are able to withstand wear much better than for lesser roads. The pavement degradation cost of a 3-axle loaded truck on a local road is more than 60 times the pavement degradation cost for that same vehicle on an interstate highway. Because of HSDRRS construction, rehabilitation to area infrastructure would likely be required sooner than would normally be expected.

The large number of truck miles would also increase pollutants in the air of the New Orleans metro area caused by the burning of diesel fuel. All of the parishes in the New Orleans metro area are currently designated as "in attainment" of all criteria pollutants covered by the Clean Air Act.

On the other hand, there may emerge cumulative indirect impacts associated with the completion of the HSDRRS in its entirety. The lower flood risk that accrues to much of the New Orleans metropolitan area upon completion of the HSDRRS may have the effect of spurring additional economic growth in the region than would otherwise occur. An increase in the demand for transportation resources usually follows gains in economic activity and would thus be expected given any additional economic growth in the region. This impact is applicable for only the proposed contractor-furnished borrow areas that lie inside the HSDRRS.

- *River Birch Landfill Expansion*

Direct Impacts

Under the proposed action, there may be temporary, congestion-related impacts to US-90 and Live Oak Boulevard in the vicinity of the proposed River Birch Landfill Expansion borrow area. Congestion impacts and decreases in levels of service around the excavation area would likely be moderate to severe. To complete excavation of the proposed River Birch Landfill Expansion contractor-furnished borrow area, it is estimated that it would take approximately 408,000 truckloads. Due to the increased levels of truck traffic, and the movement of many truckloads of material, there would likely be increased wear and tear on these roads. Due to frequent heavy loads, local roadways around the project area would likely suffer degradation requiring rehabilitation that is sooner than would normally be expected. Lastly, because of increased levels of truck traffic, there would be a higher risk of accidents, with resulting injuries, fatalities, and damage to property.

Indirect Impacts

There would also be increased congestion, decreased levels of service, accelerated wear and tear, and increased risk of traffic accidents on major and local roads outside of the immediate vicinity of the proposed borrow area as borrow is transported from the borrow site to construction sites for use within HSDRRS.

Cumulative Impacts

Approximately 408,000 truckloads could be required to complete excavation of the proposed River Birch Landfill Expansion contractor-furnished borrow area. The addition of approximately 408,000 truckloads would contribute to the cumulative transportation impacts in the HSDRRS project area.

It is estimated that it could require over 2,000,000 truckloads to complete excavation of the borrow areas needed for completion of the HSDRRS. If the proposed River Birch Landfill Expansion site is used as a contractor-furnished borrow area for completion of the HSDRRS it could account for approximately 20 percent of the total number of truckloads required to complete the HSDRRS borrow mission.

Congestion impacts to the greater metropolitan area would likely be moderate to severe as a result of HSDRRS construction. Heavy vehicles adversely affect traffic in two ways. First, they are larger than passenger cars and occupy more road space, and secondly, they have poorer operating capabilities than passenger cars, particularly with respect to acceleration, deceleration, and the ability to maintain speed on upgrades. Heavy vehicles cannot keep pace with passenger vehicles in many situations creating large gaps in the traffic stream that are difficult to fill by passing maneuvers. The CEMVN estimates 29,616,300 cubic yards of borrow will be required for completion of HSDRRS. This would result in 2,042,500 truck trips traveling 57,270,000 miles in total. Decreases in levels of service on local roads would occur due to the high number of truck trips required to transport the required amounts of construction material. Additionally, there would be a higher risk of traffic accidents and resulting damage to property as a result of the higher number of truck trips occurring on major transportation arteries within the metropolitan area. Given the expected accident rates reported in the CEMVN report "Transportation Report For The Construction Of the 100-Year Hurricane And Storm Damage Risk Reduction System", approximately 1 fatality, 29 persons injured, and 91 vehicles damaged can be expected to occur as a result of the over 57 million miles driven.

There would also likely be moderate to severe degradation of infrastructure as a result of wear and tear from transporting HSDRRS construction materials. These impacts would likely be greatest on local and feeder roads, as well as on local bridges. Higher design

characteristics for high capacity roads such as Interstate Highways are able to withstand wear much better than for lesser roads. The pavement degradation cost of a 3-axle loaded truck on a local road is more than 60 times the pavement degradation cost for that same vehicle on an interstate highway. Because of HSDRRS construction, rehabilitation to area infrastructure would likely be required sooner than would normally be expected.

The large number of truck miles would also increase pollutants in the air of the New Orleans metro area caused by the burning of diesel fuel. All of the parishes in the New Orleans metro area are currently designated as “in attainment” of all criteria pollutants covered by the Clean Air Act.

On the other hand, there may emerge cumulative indirect impacts associated with the completion of the HSDRRS in its entirety. The lower flood risk that accrues to much of the New Orleans metropolitan area upon completion of the HSDRRS may have the effect of spurring additional economic growth in the region than would otherwise occur. An increase in the demand for transportation resources usually follows gains in economic activity and would thus be expected given any additional economic growth in the region. This impact is applicable for only the proposed contractor-furnished borrow areas that lie inside the HSDRRS.

- *Scarsdale*

Direct Impacts

Under the proposed action, there may be temporary, congestion-related impacts to LA-39 and LA-46 in the vicinity of the proposed Scarsdale borrow area. Congestion impacts and decreases in levels of service around the excavation area would likely be moderate to severe. To complete excavation of the proposed Acosta 2 contractor-furnished borrow area, it is estimated that it would take approximately 208,000 truckloads. Due to the increased levels of truck traffic, and the movement of many truckloads of material, there will likely be increased wear and tear on these roads. Due to frequent heavy loads, local roadways around the project area, especially Scarsdale Road, would likely suffer degradation requiring rehabilitation that is sooner than would normally be expected. Lastly, because of increased levels of truck traffic, there would be a higher risk of accidents, with resulting injuries, fatalities, and damage to property.

Indirect Impacts

There would also be increased congestion, decreased levels of service, accelerated wear and tear, and increased risk of traffic accidents on major and local roads outside of the immediate vicinity of the proposed borrow area as borrow is transported from the borrow site to construction sites for use within HSDRRS.

Cumulative Impacts

Approximately 208,000 truckloads could be required to complete excavation of the proposed Scarsdale contractor-furnished borrow area. The addition of approximately 208,000 truckloads would contribute to the cumulative transportation impacts in the HSDRRS project area.

It is estimated that it could require over 2,000,000 truckloads to complete excavation of the borrow areas needed for completion of the HSDRRS. If the proposed Scarsdale site is used as a contractor-furnished borrow area for completion of the HSDRRS it could account for approximately 10 percent of the total number of truckloads required to complete the HSDRRS borrow mission.

Congestion impacts to the greater metropolitan area would likely be moderate to severe as a result of HSDRRS construction. Heavy vehicles adversely affect traffic in two ways. First, they are larger than passenger cars and occupy more road space, and secondly, they have poorer operating capabilities than passenger cars, particularly with respect to acceleration, deceleration, and the ability to maintain speed on upgrades. Heavy vehicles cannot keep pace with passenger vehicles in many situations creating large gaps in the traffic stream that are difficult to fill by passing maneuvers. The CEMVN estimates 29,616,300 cubic yards of borrow will be required for completion of HSDRRS. This would result in 2,042,500 truck trips traveling 57,270,000 miles in total. Decreases in levels of service on local roads would occur due to the high number of truck trips required to transport the required amounts of construction material. Additionally, there would be a higher risk of traffic accidents and resulting damage to property as a result of the higher number of truck trips occurring on major transportation arteries within the metropolitan area. Given the expected accident rates reported in the CEMVN report "Transportation Report For The Construction Of the 100-Year Hurricane And Storm Damage Risk Reduction System", approximately 1 fatality, 29 persons injured, and 91 vehicles damaged can be expected to occur as a result of the over 57 million miles driven.

There would also likely be moderate to severe degradation of infrastructure as a result of wear and tear from transporting HSDRRS construction materials. These impacts would likely be greatest on local and feeder roads, as well as on local bridges. Higher design characteristics for high capacity roads such as Interstate Highways are able to withstand wear much better than for lesser roads. The pavement degradation cost of a 3-axle loaded truck on a local road is more than 60 times the pavement degradation cost for that same vehicle on an interstate highway. Because of HSDRRS construction, rehabilitation to area infrastructure would likely be required sooner than would normally be expected.

The large number of truck miles would also increase pollutants in the air of the New Orleans metro area caused by the burning of diesel fuel. All of the parishes in the New Orleans metro area are currently designated as "in attainment" of all criteria pollutants covered by the Clean Air Act.

On the other hand, there may emerge cumulative indirect impacts associated with the completion of the HSDRRS in its entirety. The lower flood risk that accrues to much of the New Orleans metropolitan area upon completion of the HSDRRS may have the effect of spurring additional economic growth in the region than would otherwise occur. An increase in the demand for transportation resources usually follows gains in economic activity and would thus be expected given any additional economic growth in the region. This impact is applicable for only the proposed contractor-furnished borrow areas that lie inside the HSDRRS.

- *Spoil Area*

Direct Impacts

There is no highway access to the proposed Spoil Areasite. Under the proposed action, borrow material would be transported from the site by barge. There could be negative impacts on highway transportation from the barge unloading site to the point of borrow use.

Indirect Impacts

There would also be increased congestion, decreased levels of service, accelerated wear and tear, and increased risk of traffic accidents on major and local roads outside of the immediate vicinity of the proposed borrow area as borrow is transported from the borrow site to construction sites for use within HSDRRS.

Cumulative Impacts

The equivalent of approximately 906,250 truckloads could be required to complete excavation of the proposed Spoil Area contractor-furnished borrow area. The addition of approximately 906,250 truckloads would not contribute to the cumulative transportation impacts in the HSDRRS project area except at the unloading site.

It is estimated that it could require over 2,000,000 truckloads to complete excavation of the borrow areas needed for completion of the HSDRRS. If the proposed Spoil Area site is used as a contractor-furnished borrow area for completion of the HSDRRS it could account for approximately 45 percent of the total number of truckloads required to complete the HSDRRS borrow mission.

Congestion impacts to the greater metropolitan area would likely be moderate to severe as a result of HSDRRS construction. Heavy vehicles adversely affect traffic in two ways. First, they are larger than passenger cars and occupy more road space, and secondly, they have poorer operating capabilities than passenger cars, particularly with respect to acceleration, deceleration, and the ability to maintain speed on upgrades. Heavy vehicles cannot keep pace with passenger vehicles in many situations creating large gaps in the traffic stream that are difficult to fill by passing maneuvers. The CEMVN estimates 29,616,300 cubic yards of borrow would be required for completion of HSDRRS. This would result in 2,042,500 truck trips traveling 57,270,000 miles in total. Decreases in levels of service on local roads would occur due to the high number of truck trips required to transport the required amounts of construction material. Additionally, there would be a higher risk of traffic accidents and resulting damage to property as a result of the higher number of truck trips occurring on major transportation arteries within the metropolitan area. Given the expected accident rates reported in the CEMVN report "Transportation Report For The Construction Of the 100-Year Hurricane And Storm Damage Risk Reduction System", approximately one fatality, 29 persons injured, and 91 vehicles damaged can be expected to occur as a result of the over 57 million miles driven.

There would also likely be moderate to severe degradation of infrastructure as a result of wear and tear from transporting HSDRRS construction materials. These impacts would likely be greatest on local and feeder roads, as well as on local bridges. Higher design characteristics for high capacity roads such as Interstate Highways are able to withstand wear much better than for lesser roads. The pavement degradation cost of a 3-axle loaded truck on a local road is more than 60 times the pavement degradation cost for that same vehicle on an interstate highway. Because of HSDRRS construction, rehabilitation to area infrastructure would likely be required sooner than would normally be expected.

The large number of truck miles would also increase pollutants in the air of the New Orleans metro area caused by the burning of diesel fuel. All of the parishes in the New Orleans metro area are currently designated as "in attainment" of all criteria pollutants covered by the Clean Air Act.

On the other hand, there may emerge cumulative indirect impacts associated with the completion of the HSDRRS in its entirety. The lower flood risk that accrues to much of the New Orleans metropolitan area upon completion of the HSDRRS may have the effect of spurring additional economic growth in the region than would otherwise occur. An increase in the demand for transportation resources usually follows gains in economic activity and would thus be expected given any additional economic growth in the region. This impact is applicable for only the proposed contractor-furnished borrow areas that lie inside the HSDRRS.

3.3.5 Disruption of Community and Regional Growth

Existing Conditions

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

- *Acosta 2*
According to U.S. Census data from 2000 and 2008, the following trends were observed in St. Bernard Parish: population declined from 67,229 to 37,722 reflecting the population loss after Hurricane Katrina, and median household income was \$33,093 in 2007. Between 2001 and 2007, employment declined from 15,738 to 9,608.
- *Idlewild Stage 2*
According to U.S. Census data from 2000 and 2008, the following trends were observed in Plaquemines Parish: population decreased from 26,757 to 21,276, and median household income was \$45,099 in 2007. Between 2001 and 2007, employment decreased from 16,983 to 14,489.
- *King Mine*
According to U.S. Census data from 2000 and 2008, the following trends were observed in Hancock County: population decreased from 42,967 to 40,140, and median household income was \$41,182 in 2007. Between 2001 and 2007, employment increased from 13,169 to 13,661.
- *Levis*
According to U.S. Census data from 2000 and 2008, the following trends were observed in St. Tammany Parish: population increased from 191,268 to 228,456, and median household income was \$58,891 in 2007. Between 2001 and 2007, employment increased from 58,741 to 74,727.
- *Lilly Bayou*
According to U.S. Census data from 2000 and 2008, the following trends were observed in East Baton Rouge Parish: population increased from 412,852 to 428,360, and median household income was \$42,143 in 2007. Between 2001 and 2007, employment increased from 243,392 to 261,823.
- *Port Bienville*
According to U.S. Census data from 2000 and 2008, the following trends were observed in Hancock County: population decreased from 42,967 to 40,140, and median household income was \$41,182 in 2007. Between 2001 and 2007, employment increased from 13,169 to 13,661.
- *Raceland Raw Sugars*
According to U.S. Census data from 2000 and 2008, the following trends were observed in Lafourche Parish: population increased from 89,974 to 92,572, and median household income was \$41,706 in 2007. Between 2001 and 2007, employment increased from 30,969 to 38,335.
- *River Birch Landfill Expansion*
According to U.S. Census data from 2000 and 2008, the following trends were observed

in Jefferson Parish: population decreased from 455,466 to 436,181, and median household income was \$47,366 in 2007. Between 2001 and 2007, employment decreased from 213,911 to 199,044.

- *Scarsdale*
According to U.S. Census data from 2000 and 2008, the following trends were observed in Plaquemines Parish: population decreased from 26,757 to 21,276, and median household income was \$44,896 in 2007. Between 2001 and 2007, employment decreased from 16,983 to 14,489.
- *Spoil Area*
According to U.S. Census data from 2000 and 2008, the following trends were observed in St. Bernard Parish: population decreased from 67,229 to 37,722, and median household income was \$33,093 in 2007. Between 2001 and 2007, employment decreased from 15,738 to 9,608.

Discussion of Impacts

No Action

- *All Sites*

Direct Impacts

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

Indirect Impacts

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

Cumulative Impacts

Under the no action alternative, borrow material in the required amount would be acquired from other locations in order that the HSDRRS is completed. Proposed HSDRRS projects would be built to authorized levels using potential government-furnished and/or contractor-furnished borrow areas described in IER #18, IER #19, IER #22, IER #23, IER #25, IER #26, IER #28, IER #29, IER #30, IER #32, or other sources yet to be identified.

There would be cumulative impacts associated with the completion of the HSDRRS in its entirety. The lower flood risk that accrues to much of the New Orleans metropolitan area upon completion of the HSDRRS may have the effect of spurring additional economic growth in the region than would otherwise occur. In addition, the lower incidence of flooding that the HSDRRS is designed to achieve would reduce the propensity for disruption of community life. This impact is applicable for only the proposed contractor-furnished borrow areas that lie inside the HSDRRS.

Proposed Action

- *All Sites*

Direct Impacts

As a result of the proposed action, excavated land at the proposed contractor furnished borrow areas would not be available for future alternative uses normally associated with

economic development unless the landowner backfills the site following excavation. This could have a negative impact on community growth. If the site is backfilled, no negative impact on community growth would be expected. There are no known imminent uses for the borrow areas that would preclude community and regional growth.

Indirect Impacts

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

Cumulative Impacts

Under the proposed action, the proposed contractor furnished sites could be used as a contractor-furnished borrow area and could contribute to cumulative impacts on community growth. The proposed borrow area would be unavailable for further development unless the landowner backfills the site. Using land for borrow purposes prevents it from being used for alternative, more productive purposes, unless the owner performs an appropriate amount of backfilling.

There would be cumulative impacts associated with the completion of the HSDRRS in its entirety. The lower flood risk that accrues to much of the New Orleans metropolitan area upon completion of the HSDRRS may have the effect of spurring additional economic growth in the region than would otherwise occur. In addition, the lower incidence of flooding that the HSDRRS is designed to achieve would reduce the propensity for disruption of community life. This impact is applicable for only the proposed contractor-furnished borrow areas that lie inside the HSDRRS.

3.3.6 Impacts to Tax Revenues and Property Values

Existing Conditions

- *Acosta 2*
Although the census block in which the site is located contains no housing units, the larger census tract encompassing that census block does have housing units. The proposed Acosta 2 contractor-furnished borrow area is located in census tract 301.01, group 1, where the median value for specified owner-occupied housing units was \$59,600 in 2000.
- *Idlewild Stage 2*
The proposed Idlewild Stage 2 contractor-furnished borrow area is located in census tract 504, group 2, where the median value for specified owner-occupied housing units was \$110,100 in 2000.
- *King Mine*
Although the census block in which the site is located contains no or few housing units, the larger census tract encompassing that census block does have housing units. The proposed King Mine contractor-furnished borrow area is located in census tract 304, group 1, where the median value for specified owner-occupied housing units was \$92,000 in 2000.
- *Levis*
Although the census block in which the site is located contains no housing units, the larger census tract encompassing that census block does have housing units. The

proposed Levis contractor-furnished borrow area is located in census tract 409, group 2, where the median value for specified owner-occupied housing units was \$57,600 in 2000.

- *Lilly Bayou*
Although the census block in which the site is located contains no housing units, the larger census tract encompassing that census block does have housing units. The proposed Lilly Bayou contractor-furnished borrow area is located in census tract 46.03, group 1, where the median value for specified owner-occupied housing units was \$91,800 in 2000.
- *Port Bienville*
Although the census block in which the site is located contains no housing units, the larger census tract encompassing that census block does have housing units. The proposed Port Bienville contractor-furnished borrow area is located in census tract 304, group 3, where the median value for specified owner-occupied housing units was \$54,900 in 2000.
- *Raceland Raw Sugars*
Although the census block in which the site is located contains no housing units, the larger census tract encompassing that census block does have housing units. The proposed Raceland Raw Sugars contractor-furnished borrow area is located in census tract 210, group 1, where the median value for specified owner-occupied housing units was \$57,500 in 2000.
- *River Birch Landfill Expansion*
Although the census block in which the site is located contains no housing units, the larger census tract encompassing that census block does have housing units. The proposed River Birch Landfill Expansion contractor-furnished borrow area is located in census tract 275.02, group 6, where the median value for specified owner-occupied housing units was \$57,100 in 2000.
- *Scarsdale*
The proposed Scarsdale contractor-furnished borrow area is located in census tract 501, group 1, where the median value for specified owner-occupied housing units was \$68,200 in 2000.
- *Spoil Area*
Although the census block in which the site is located contains no housing units, the larger census tract encompassing that census block does have housing units. The proposed Spoil Area contractor-furnished borrow area is located in census tract 301.01, group 1 and tract 302.04, group 5, where the median values for specified owner-occupied housing units were \$59,600 and \$72,700, respectively, in 2000.

Discussion of Impacts

No Action

- *All Sites*

Direct Impacts

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

Indirect Impacts

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

Cumulative Impacts

The proposed sites would not be used as a contractor- furnished borrow area and would not contribute to cumulative tax revenue and property value impacts in the project area. The proposed HSDRRS projects would be built to authorized levels using potential government-furnished and/or pre-approved contractor-furnished borrow areas described in IER #18, IER #19, IER #22, IER #23, IER #25, IER #26, IER #28, IER #29, IER #30, IER #32, or other sources yet to be identified.

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

Proposed Action

- *All Sites*

Direct Impacts

Property values for the borrow site itself may decrease as its potential for use for alternative purposes are diminished in the future if the landowner does not backfill the site. For adjacent properties, the market response with respect to property values is undetermined; although, there would appear to be no likelihood that property value could be enhanced due to this action.

The borrow area could be designed to not directly or indirectly encourage borrow site sidewall erosion, or increase flood risk in the immediate area. However, the landowner and his contractor, not the CEMVN, are responsible for borrow site design. However, at present there is no information about what engineering practices would be followed, or their impacts on nearby residences.

Indirect Impacts

Tax revenues for the parishes the sites are located in may marginally decrease as a result of the proposed action. Property value for the sites would likely be lower due to excavation instead of the site being used for more productive purposes that would generate greater tax revenue.

Cumulative Impacts

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

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

Cumulative impacts associated with the completion of the HSDRRS in its entirety may occur. The lower flood risk that accrues to much of the New Orleans metropolitan area upon completion of the HSDRRS may have the effect of spurring additional economic growth in the region than would otherwise occur. It follows that increases in tax revenues would ensue given additional economic growth. In addition, the lower incidence of flooding that the HSDRRS is designed to achieve would have the effect of preserving, if not enhancing, property values within the protected areas. This impact is applicable for only the proposed contractor-furnished borrow areas that lie inside the HSDRRS. This impact is not specific to the proposed Acosta 2, Idlewild Stage 2, King Mine, Levis, Lilly Bayou, Port Bienville, Raceland Raw Sugars, and Scarsdale sites, since they lie outside the HSDRRS.

3.3.7 Changes in Community Cohesion

Existing Conditions

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

The areas of the proposed actions are currently settled communities with stable complements of churches, schools, businesses, and community interaction.

Discussion of Impacts

No Action

- *All Sites*
While there are some homes in the vicinity of the proposed borrow areas, the area to be excavated is outside the community and would not be expected to encroach upon them.

Direct Impacts

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

Indirect Impacts

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

Cumulative Impacts

Under this alternative, the proposed HSDRRS projects would be built to authorized levels using potential government-furnished and/or contractor-furnished borrow areas described in IER #18, IER #19, IER #22, IER #23, IER #25, IER #26, IER #28, IER #29, IER #30, IER #32, or other sources yet to be identified. Cumulative indirect impacts associated with the completion of the HSDRRS in its entirety may occur. The lower flood risk that accrues to much of the New Orleans metropolitan area upon completion of the HSDRRS

may have the effect of enhancing community cohesion. The reason for this is that the lower incidence of flooding reduces the likelihood that patterns of social interaction and communication within the community are interrupted or permanently altered. This impact is applicable for only the proposed contractor-furnished borrow areas that lie inside the HSDRRS.

Proposed Action

- *All Sites*

Direct Impacts

Impacts on community cohesion are contingent upon the degree to which project construction would be 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 would not be 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 would be present with the proposed actions

Indirect Impacts

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

Cumulative Impacts

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

3.4 ENVIRONMENTAL JUSTICE

Environmental Justice (EJ) is institutionally significant because of Executive Order 12898 of 1994 (E.O. 12898) and the Department of Defense's Strategy on Environmental Justice of 1995, which direct Federal agencies to identify and address any disproportionately high adverse human health or environmental effects of Federal actions to minority and/or low-income populations. Minority populations are those persons who identify themselves as Black, Hispanic, Asian American, American Indian/Alaskan Native, and Pacific Islander. A minority population exists where the percentage of minorities in an affected area either exceeds 50 percent or is meaningfully greater than in the general population. Low-income populations as of 2000 are those whose income is \$22,050.00 for a family of four and are identified using the Census Bureau's statistical poverty threshold. The Census Bureau defines a "poverty area" as a Census tract with 20 percent or more of its residents below the poverty threshold and an "extreme poverty area" as one with 40 percent or more below the poverty level. This is updated annually at <http://aspe.hhs.gov/poverty/09poverty.shtml>.

This resource is technically significant because the social and economic welfare of minority and low-income populations may be positively or disproportionately impacted by the proposed actions. This resource is publicly significant because of public concerns about the fair and equitable treatment (fair treatment and meaningful involvement) of all people with respect to environmental and human health consequences of federal laws, regulations, policies, and actions.

A potential disproportionate impact may occur when the percent minority (50 percent) and/or percent low-income (20 percent) population in an EJ study area are greater than those in the reference community. For purposes of this analysis, all Census Block Groups within a 1-mile radius of the project footprint are defined as the EJ study area.

The HSDRRS project, of which this IER study area is a subset, is considered the reference community of comparison, whose population is therefore considered the EJ reference population for comparison purposes. Parish figures were used for unincorporated areas located within 1-mile of the proposed project footprint.

The methodology, consistent with E.O. 12898, to accomplish this EJ analysis includes, identifying low-income and minority populations within the proposed borrow project area using up-to-date economic statistics, aerial photographs, 2000 U.S. Census records, Environmental Systems Research Institute, Inc. (ESRI) estimates, as well as conducting community outreach activities such as public meetings. Despite the 2000 U.S. Census being nine years old, it serves as a logical baseline of information and is the primary deciding variable per data accuracy and reliability for the following reasons:

- Census 2000 data is the most accurate source of data available due to the sample size of the Census decennial surveys. With one of every six households surveyed, the margin of error is negligible.
- The Census reports data at a much smaller geographic level than other survey sources, providing a more defined and versatile option for data reporting.
- Census information sheds light upon the demographic and economic framework of the area pre-Hurricane Katrina. By accounting for the absent population, the analysis does not exclude potentially low income and minority families that wish to return home.

Due to the considerable impact of Hurricane Katrina upon the New Orleans metropolitan area, and the likely shift in demographics and income, the 2000 Census data are supplemented with more current data, including 2007 and 2008 estimates provided by ESRI. The 2007 and 2008 estimates are utilized for reference purposes only to show changing trends in population since 2000.

Existing Conditions

For purposes of this analysis, parish figures were used for unincorporated areas in addition to towns located within 1-mile of the contractor-furnished borrow area project footprint are defined as the EJ study area. Each parish or county is considered the reference community for disproportionate impact analysis. The 2000 census data is utilized as the primary deciding variable per data accuracy and reliability as described previously. The 2008 estimates are utilized for reference purposes only. Since the borrow areas under this IER are located in multiple parishes and/or counties the EJ study areas are described separately as follows.

- *Acosta 2*
According to the 2000 U.S. Census, and per requirements of Executive Order 12898 (E.O. 12898), it has been determined that St. Bernard Parish is not a minority community at 23.4 percent, however the parish is considered a low-income area with its 20.3 percent of its population below the poverty level. It is likely that the Acosta 2 proposed borrow area is an EJ area, however, based on satellite imagery of the site, the area around the proposed borrow area has few residential streets in proximity to the borrow site, including the residences along Highway 45 and Florissant Highway.

- Idlewild Stage 2*

According to 2000 U.S. Census, and per requirements of E.O. 12898, it has been determined that the Oakville community is a minority community, comprising 32.8 percent of the population and is also considered a low-income area, with 20.1 percent of its population below the poverty level. The minority population percentage for Plaquemines Parish was 32.1 percent and the low income population was 18 percent. The area remains a minority and/or low-income community, and thus the Idlewild Stage 2 borrow area is likely an EJ area as per E.O. 12898.
- King Mine*

According to the 2000 U.S. Census, and per requirements of Executive Order 12898 (E.O. 12898), it has been determined that the King Mine borrow area is not a minority community at 23.6 percent and not a low-income area with 17.6 percent of its population below the poverty level. It is unlikely that the King Mine proposed borrow area is an EJ area.
- Levis*

According to the 2000 U.S. Census, and per requirements of Executive Order 12898 (E.O. 12898), it has been determined that Slidell is not a minority community at 19 percent and not a low-income area with 11.8 percent of its population below the poverty level. It is unlikely that the Levis proposed borrow area is an EJ area, however, based on satellite imagery of the site, the area around the proposed borrow area has residential streets in proximity to the borrow area.
- Lilly Bayou*

According to the 2000 U.S. Census, and per requirements of Executive Order 12898 (E.O. 12898), it has been determined that East Baton Rouge Parish is a minority community at 50 percent but not a low-income area with 17.2 percent of its population below the poverty level. While the Lilly Bayou proposed borrow area is an EJ area, the site itself is in an area that is considered industrial and not located near any residential areas based on satellite imagery of the site and thus is not considered an EJ area
- Port Bienville*

According to the 2000 U.S. Census, and per requirements of Executive Order 12898 (E.O. 12898), it has been determined that the Port Bienville borrow area is not a minority community at 10.2 percent and not a low-income area with 14.4 percent of its population below the poverty level. It is unlikely that the Port Bienville proposed borrow area is an EJ area.
- Raceland Raw Sugars*

According to the 2000 U.S. Census, and per requirements of Executive Order 12898 (E.O. 12898), it has been determined that the Raceland Raw Sugars borrow area is not a minority community at 30.6 percent and not a low-income area with 18 percent of its population below the poverty level. It is unlikely that the Raceland Raw Sugars proposed borrow area is an EJ area.
- River Birch Landfill Expansion*

BoulevardAccording to the 2000 U.S. Census, and per requirements of Executive Order 12898 (E.O. 12898), it has been determined that the River Birch Landfill Expansion borrow area is located near a minority community at 42.1 percent but not a low-income area with 12.9 percent of its population below the poverty level. It is likely that the River Birch Landfill Expansion proposed borrow area is an EJ area because of it's proximity to a minority residential area.

- *Scarsdale*
According to the 2000 U.S. Census, and per requirements of Executive Order 12898 (E.O. 12898), it has been determined that the Scarsdale borrow area is not a minority community at 32.1 percent and not a low-income area with 15.1 percent of its population below the poverty level. It is unlikely that the Scarsdale proposed borrow area is an EJ area.
- *Spoil Area*
According to the 2000 U.S. Census, and per requirements of Executive Order 12898 (E.O. 12898), it has been determined that the Spoil Area borrow area is not a minority community at 23.4 percent and could be considered a low-income area with 20.3 percent of its population below the poverty level. It is, however, unlikely that the Spoil Area proposed borrow area is an EJ area based on satellite imagery and its location in an unpopulated area.

Discussion of Impacts

No Action

- *All Sites*
Direct Impacts
Minority and/or low-income communities have been identified in the study area but would not be adversely impacted by the no action alternative. Therefore, no disproportionately high or adverse human health or environmental effects on minority or low-income populations would occur.

Indirect Impacts

No disproportionately high or adverse human health or environmental indirect impacts on minority or low-income populations would occur.

Cumulative Impacts

There would be no cumulative impacts on minority and/or low-income communities within the study area per 2000 U.S. Census information and requirements of E.O. 12898 with no project action. The no action alternative would not contribute to any additional EJ issues when combined with other Federal, state, local, and private restoration efforts.

Proposed Action

- *Acosta 2, King Mine, Levis, Lilly Bayou, Port Bienville, Raceland Raw Sugars, Scarsdale, and Spoil Area*
Analysis of the proposed Acosta 2, King Mine, Levis, Lilly Bayou, Port Bienville, Raceland Raw Sugars, Scarsdale, and Spoil Area contractor-furnished borrow areas show that no minority and/or low income communities are located within 1-mile of the proposed borrow location. With implementation of the proposed action impacts from borrow site activities such as air quality, noise, traffic, safety, etc. would occur, but are usually limited to within 1-mile of the project area, and are temporary in nature. Additional impacts of the proposed action alternative would be the additive combination of impacts to minority and/or low-income communities by other Federal, state, local, and private efforts. Thus there would be no disproportionate direct impacts on any minority or low-income populations.
- *Idlewild Stage 2*
Analysis of the proposed Idlewild Stage 2 area show that minority and/or low income communities are located within 1-mile of the proposed borrow location. With implementation of the proposed action impacts from borrow site activities such as air quality, noise, traffic, safety, etc. would occur, but are usually limited to within 1-mile of the project

area, are temporary in nature and would equally impact non-minority/non-low populations as well, when compared to the greater HSDRR project. Additional impacts of the proposed action alternative would be the additive combination of impacts to minority and/or low-income communities by other Federal, state, local, and private efforts. Thus there would be no disproportionate direct impacts on any minority or low-income populations.

- *River Birch Landfill Expansion*

Analysis of the proposed River Birch Landfill Expansion borrow area show that minority and/or low income communities are located within 1-mile of the proposed borrow location. With implementation of the proposed action impacts from borrow site activities such as air quality, noise, traffic, safety, etc. would occur, but are usually limited to within 1-mile of the project area, and are temporary in nature. Additional impacts of the proposed action alternative would be the additive combination of impacts to minority and/or low-income communities by other Federal, state, local, and private efforts. When compared with other IER 31 proposed borrow areas for this project, no disproportionate direct impacts on any minority or low-income populations would be expected.

3.5 HAZARDOUS, TOXIC, AND RADIOACTIVE WASTE

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

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

Copies of the Phase I ESA studies cited below will be maintained on file at the CEMVN office, and the content of those reports are incorporated herein by reference. Copies of these reports are available by requesting them from the CEMVN, or accessing them at www.nolaenvironmental.gov. These reports will need to be current and therefore may need to be updated by the landowner or contractor before a site is used.

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

- *Acosta 2*

The Phase I ESA is dated 29 July 2009, and was prepared by Earth Search, Inc. for Great Southern Dredging, Inc. The methods used in the report are adequate and standard. No RECs were found on the property in question. There is a very low probability of encountering HTRW during the course of excavating the proposed borrow site and using the material in levee construction.

- *Idlewild Stage 2*
A Phase II ESA for this site was submitted on 07 April 2010 by JDT Corporation of Mobile, Alabama. Laboratory analytical results of all soil samples collected in the Stage II area indicated that all tested parameters, with the exception of arsenic were either below the laboratory method detection limits (MDLs) or the respective LDEQ Industrial Soil Standard established in the LDEQ Risk Evaluation Corrective Action Program (RECAP) Manual, dated January 2003.

If the arsenic in the area of interest does not meet the qualifications to be considered as background and does not meet RECAP Corrective Action Approval, then based on results of Environmental Site Investigation it is recommended that the soil in the area surrounding the former oil well located in the area of temporary monitoring well W-9 be remediated to meet Louisiana RECAP before being used for borrow material. If remediation is needed, it is the responsibility of the landowner to complete prior to use on any CEMVN contract. A CEMVN HTRW specialist will coordinate with the landowner as needed to ensure compliance with contamination standards. If the soil cannot be remediated it will not be used on any CEMVN project.

The soil located in the immediate area (former SB-9/W-9) is proposed to be excavated and treated based on the results of the assessments and a former potential source area. The impacted area is approximately 500 feet by 500 feet by 5 feet deep. The outline of the proposed excavation area is graphically illustrated with yellow borders on figure 2 of the report. Soil excavation would be completed to the groundwater table which is located at approximately 5 feet. Approximately 46,300 yds³ of soil could be treated onsite.

The approximately 46,300 yds³ of impacted soil would be tilled in place. Initially, the clean soil would be spread in the excavation. Treatment would consist of placing the impacted soils on the clean soils at a 5/1 ratio and implementing Land Farming and Dilution. The soil impacted area is detailed on figure 2 of the report. The Dilution Process includes tilling the top five feet of impacted soil and mixing the impacted soil with clean soil in a ratio of 5 to 1 and spreading the mixed soils within the original excavation into as thin a layer (approximately 2 feet to 4 feet) as practical to achieve dilution, aeration and natural bioremediation. The process would be completed in stages to achieve maximum effectiveness.

To enhance the natural bioremediation, the land farmed soils would be tilled and mixed on a regular schedule, to achieve the maximum aeration and maximum removal of contaminants.

Disking, plowing and bulldozing the soils would be implemented after the addition of the clean soil to increase the dilution, oxygen content of the soils and enhance remediation.

- *King Mine*
A Phase I Environmental Site Assessment (ESA) was prepared for the property in question proposed for use as a borrow source. The report, entitled "Hazardous, Toxic, and Radioactive Waste (HTRW) Phase I Environmental Site Assessment, 240 Acre Parcel, Hancock County, Mississippi" was prepared by Thompson Engineering and dated 20 December 2006. No RECs were found. An Update Addendum for the property was prepared on 30 July 2008 by Thompson Engineering. No RECs were found.
- *Levis*
A Phase I ESA entitled "Phase I Environmental Site Assessment Report of Levis Tract – 115 Acres, US-190 and I-10, Slidell, Louisiana" was prepared by Professional Service Industries, Inc. and dated 27 January 2010. No Recognized Environmental Conditions were found. No

additional investigation of HTRW is recommended at this site, unless the project location changes.

- *Lilly Bayou*
A Phase I ESA was submitted in October 2006 by Shaw Environmental, Inc. No RECs were identified, except for one active oil well and another well that had been plugged and abandoned. An addendum to bring the 2006 Environmental Site Assessment current was submitted on 28 January 2009 by Providence Engineering and Environmental Group, LLC. The addendum confirmed the findings of the 2006 report, and no additional RECs were found. No additional investigation of HTRW is recommended at this site, unless the project location changes. The areas around the two oil wells should be No-Work zones.
- *Port Bienville*
The proposed borrow site was studied in a Phase I ESA written by Pickering Environmental Consultants and dated March 2008. No RECs were found. An addendum to update the original Phase I was done by Pickering Firm, Inc., and dated September 2009. Conditions were essentially unchanged from the 2008 report; no RECs were found.
- *Raceland Raw Sugars*
The proposed borrow site was studied in a Phase I ESA written by T. Baker Smith, Inc.. The property has been a sugarcane field for as long as anyone can remember, and historic aerial photographs support this assertion. No RECs were found.
- *River Birch Landfill Expansion*
The proposed borrow site was studied in a Phase I ESA written by Environmental Auditors of America and dated 18 March 2009. No RECs were found.
- *Scarsdale*
A Phase I Environmental Site Assessment (ESA) entitled “Scarsdale Site: +/- 220 Acres Unimproved Property Section 6, Township 14S, Range 12E, Plaquemines Parish, Louisiana” was prepared in March 2009. No RECs were found.
- *Spoil Area*
A Phase I ESA entitled “Spoil Area/Violet Canal Site +/- 1,000 acres Unimproved Property, Section 78, Township 13 S, Range 14 E; Section 24 and 26, Township 13 S, Range 13 E, St. Bernard, Louisiana” was prepared by Royal Engineers and Consultants and dated March 2009. No RECs were found. The maps of the project area do not include Latitude and Longitude, but otherwise the report is acceptable.

4. CUMULATIVE IMPACTS

NEPA requires a Federal agency to consider not only the direct and indirect impacts of a proposed action, but also the cumulative impacts of the action. A cumulative impact is defined as the “the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions (40 §CFR 1508.7).”

Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time. These actions include projects conducted by government agencies, businesses, or individuals that are within the spatial and temporal boundaries of the actions that are considered in this IER.

As indicated previously, in addition to this IER, the CEMVN is preparing a draft CED that will describe all HSDRRS work completed and the work remaining to be constructed, including borrow sources for the system. The purpose of the draft CED will be to document the work

completed by the USACE on a system-wide scale. The draft CED will describe the integration of individual IERs into a systematic planning effort. Additionally, the draft CED will contain updated information for any IER that had incomplete or unavailable data at the time it was posted for public review. Overall cumulative impacts and future operations and maintenance requirements will also be included.

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

Cumulative Impacts due to HSDRRS Projects

Borrow material has been obtained in the past by the CEMVN for HSDRRS and other projects in southeastern Louisiana and southwestern Mississippi. The CEMVN has been working at an accelerated schedule to rehabilitate and complete the HSDRRS system after Hurricanes Katrina and Rita, and has a goal of building the system to authorized levels by June 2011. Over 62,000,000 cubic yards of borrow material is estimated to be needed to complete authorized levels of protection for the HSDRRS and NOV projects. Borrow material will also be needed to perform levee lifts and maintenance for at least 50 years after construction is completed. The CEMVN is in the process of implementing construction projects to raise the hurricane protection levees associated with the LPV, WBV, and New Orleans to Venice (NOV) projects to authorized elevations. This includes modifications to risk reduction projects covered in IERs #1 through #17. Levee and floodwall improvements throughout the area would require substantial amounts of borrow material, and some of the borrow areas needed have been identified in this document to provide adequate material in proximity to proposed risk reduction projects. Other potential borrow areas were identified and approved for use in IER #18, IER #19, IER #22, IER #23, #25, IER #26, IER #28, IER #29, IER #30, and IER #32 (figure 22). Depending on time, cost, and other factors, these and other potential borrow sources not yet identified may or may not be used for HSDRRS construction.

To date, there are over 60 borrow sites approved for construction of the HSDRRS, and more than 5 sites under investigation in southeastern Louisiana and southwestern Mississippi (figure 22). HSDRRS borrow activity would cumulatively impact the significant resources discussed in this IER in the project area. Currently unidentified borrow sources may also incrementally impact the significant resources discussed in this IER in the project area.

Cumulative Impacts due to Borrow Needs for Other CEMVN Projects

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

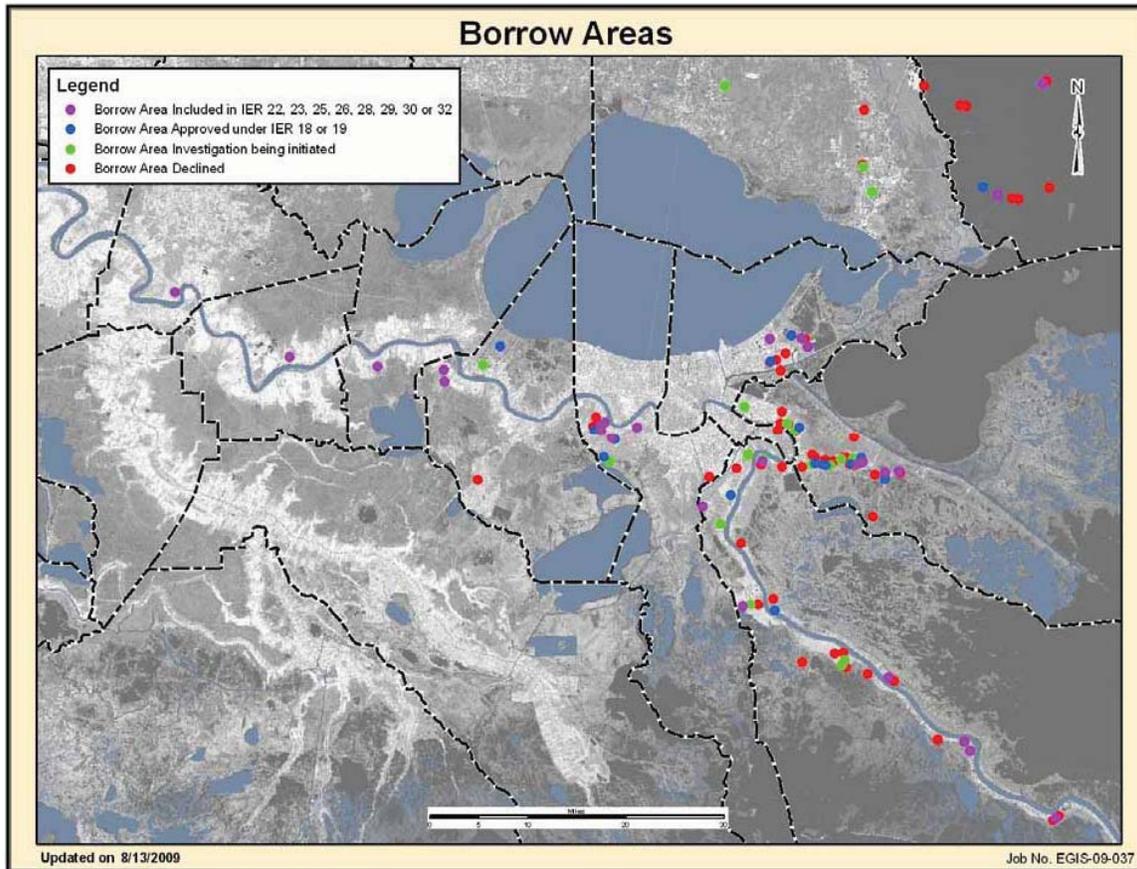


Figure 22: Potential HSDRRS Borrow Sources in the Project Area

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

Cumulative Impacts due to Borrow Needs for Non-Federal Projects

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

4.1 SUMMARY OF CUMULATIVE IMPACTS

The magnitude and significance of cumulative impacts were evaluated in section 3 of this IER by comparing the existing environment with the expected impacts of the proposed action when combined with the impacts of other proximate actions. As stated previously, various Federal, state, and local ongoing and proposed actions may increase the need for borrow excavation in the study area. The potential borrow areas approved for use in IER #18, IER #19, IER #22, IER #23, #25, IER #26, IER #28, IER #29, IER #30, and IER #32, and proposed for use in this IER could cumulatively impact land use patterns and transportation resources in the project area. Use of these proposed contractor-furnished borrow areas should not cumulatively impact jurisdictional wetlands, cultural resources, or T&E species and their critical habitat, as the CEMVN is currently avoiding impacts to these resources. The extent of potential cumulative impacts to other resources due to HSDRRS construction are not known at this time, and may be discussed in the CED.

The extent of land directly and indirectly affected by previous development activities, in combination with the excavation and use of the proposed borrow material for HSDRRS construction, would contribute cumulatively to land alteration and loss in the project area. Most of the proposed borrow areas described in IER #18, IER #19, IER #22, IER #23, #25, IER #26, IER #28, IER #29, IER #30, IER #31, and IER #32 are upland areas. Over 4,000 acres of non-jurisdictional BLH (including habitat described in IER #31), which provides habitat for a variety of wildlife, may be destroyed due to HSDRRS borrow activities.

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

The construction of the proposed contractor-furnished borrow areas would have short-term cumulative effects on transportation, as detailed in Section 3.3.4 of this IER and “Transportation Report For The Construction Of the 100-Year Hurricane And Storm Damage Risk Reduction System” report dated March 2010 (available at nolaenvironmental.gov). It is anticipated that over 37,000,000 cubic yards of material would be needed to raise levee elevations regionally to meet the needs of the HSDRRS and NOV projects. The total number of truck trips required or haul routes for the movement of this quantity of material is currently unknown, but cumulative short-term impacts to transportation would be expected to occur. The CEMVN is currently developing information for an analysis of the transportation impacts associated with the HSDRRS project. A transportation report is being developed and will be released publicly once it is completed. Estimates on numbers of truckloads necessary to complete the HSDRRS borrow mission are provided in this IER. These estimates were developed as a part of CEMVN’s continuing analysis of the potential transportation impacts associated with the HSDRRS mission. The current estimate for the total number of truckloads necessary to complete the HSDRRS borrow mission is approximately 2,000,000. Additional information related to transportation impacts is being collected and will be discussed in the CED.

Based on historical human activities and land use trends in the project area, it is reasonable to anticipate that future activities would further contribute to cumulative degradation of land resources. It is anticipated that through the efforts taken to avoid and minimize effects on the project area and the mandatory implementation of a mitigation plan that functionally compensates unavoidable remaining impacts, the proposed contractor-furnished borrow areas would not result in substantial direct, secondary or cumulative adverse impact on the environment. The mitigation plan is discussed in section 7.

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

5. SELECTION RATIONALE

The proposed action consists of excavating the proposed Acosta 2, Idlewild Stage 2, King Mine, Levis, Lilly Bayou, Port Bienville, Raceland Raw Sugars, River Birch Landfill Expansion, Scarsdale, and Spoil Area contractor-furnished borrow areas. There is an identified need for over 31,000,000 cubic yards of borrow material to complete the HSDRRS projects, and the proposed action meets some of this demand. Because of this need, the CEMVN will continue to

investigate all potentially viable borrow areas for the next few years. Government-furnished borrow is an option that was explored in IER #18, IER #22, IER #25, IER #28, and more potential areas may be discussed in future IERs. Contractor-furnished borrow areas were investigated in IER #19, IER #23, IER #26, IER #29, IER #30, and IER #32 and more potential sites may be discussed in future IERs. All of this identified borrow material may be used to complete the HSDRRS, which would lower the risk of harm to citizens and damage to infrastructure during a storm event.

6. COORDINATION AND CONSULTATION

6.1 PUBLIC INVOLVEMENT

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

Public meetings related to borrow started in July 2007, and will continue 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
- Mississippi Department of Marine Resources

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

Table 7: Coastal Zone Consistency Determination Concurrence

Proposed Borrow Area	State Consistency Permit Number	Parish Consistency Permit Number
Acosta 2	P20070851	P20070851
Idlewild Stage 2	P20090517	CZM-2009-16
King Mine	DMR-070269	N/A
Levis	P2006-0363	ST06-023
Lilly Bayou	P20070631	N/A
Port Bienville	DMR-080030	N/A
Raceland Raw Sugars	P20080485	P20080485
River Birch Landfill Expansion	P20090224	P20090224
Scarsdale	P20091162	CZM-2009-29
Spoil Area	P20090799	N/A

The CEMVN received a draft Coordination Act Report (CAR) from the USFWS on 30 August 2010 (appendix D). Recommendations of the USFWS, in accordance with the Fish and Wildlife Coordination Act, include:

Recommendation 1: The private contractor for each borrow site shall provide the appropriate number of AAHUs as listed in Table 1 [of the CAR], for a total of 572.2 AAHUs to compensate for the unavoidable, project-related loss of forested lands included in IER 31. Such compensation can be obtained from any approved mitigation bank. Verification of purchased credits should be provided to the Service by the mitigation banker. The [USFWS], National Marine Fisheries Service, Louisiana Department of Wildlife and Fisheries, and Louisiana Department of Natural Resources should be consulted regarding the adequacy of any proposed alternative mitigation sites.

CEMVN Response 1: Concur. The CEMVN will provide to the USFWS proof of payment to mitigation banks by landowners.

Recommendation 2: The landowners or private contractors for the River Birch Landfill Expansion and Levis sites must provide documentation of the purchase of credits in an approved mitigation bank for habitat impacts prior to the sale of excavated material from these sites to contractors engaged in the construction of the [HSDRRS].

CEMVN Response 2: Concur. The landowners or contractors will be required to purchase appropriate mitigation bank credits from an approved mitigation bank within the same watershed as the impacts. The CEMVN will provide to the USFWS proof of payment to mitigation banks by landowners.

Recommendation 3: Whenever applicable, the Service recommends that the [CEMVN] consult the [USFWS]-developed National Bald Eagle Management (NBEM) Guidelines, utilize the interactive webpage at: <http://www.fws.gov/midwest/eagle/guidelines/index.html>, and implement any recommendations suggested. We also ask that the [CEMVN] provide a copy of their disturbance determination to our office.

CEMVN Response 3: Concur.

Recommendation 4: The protocol to identify and prioritize borrow sources provided in our August 7, 2006, Planning-Aid letter should be utilized as a guide for locating future borrow-sites and expanding existing sites.

CEMVN Response 4: Concur.

Recommendation 5: Because of the potential for hydrologic modifications caused by borrow material excavation at the Acosta 2, Lilly Bayou, King Mine, Port Bienville, Scarsdale, and Spoil Area sites to impact nearby, jurisdictional wetlands outside of the planned excavation areas, the [USFWS] recommends that the [CEMVN] conduct an investigation to determine the extent of these potential impacts. The [USFWS] also recommends that a buffer zone of at least 100 feet be designated between those borrow sites and any jurisdictional wetlands in which no excavation would be allowed, unless the hydrologic investigation suggests the need for a greater buffer zone size.

CEMVN Response 5: A buffer zone of at least 100 feet has been designated between the excavation areas on the borrow sites and any jurisdictional wetlands in which no excavation would be allowed. The CEMVN will consider investigation into the potential for hydrologic modifications caused by borrow material excavation.

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

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

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

CEMVN Response 5: Concur.

7. MITIGATION

All potential contractor-furnished borrow areas described in this IER were assessed by the USFWS and the CEMVN under NEPA, the Fish and Wildlife Coordination Act, and Section 906(b) WRDA 1986 requirements. It has been determined that use of the proposed contractor-furnished borrow areas would not directly impact jurisdictional wetlands, and therefore no mitigation for this resource is necessary. Approximately 965.3 acres (572.2 AAHUs) of non-jurisdictional BLH would be impacted with use of the proposed Acosta 2, Idlewild Stage 2, King Mine, Lilly Bayou, Raceland Raw Sugars, River Birch Landfill Expansion, Scarsdale, and Spoil Area contractor-furnished borrow areas, and would be mitigated for by the landowners if the proposed sites are selected by construction contractors for use in building the HSDRRS. Table 8 shows the cumulative impacts of all IERs which have been completed as of the date of publication. Further information on mitigation efforts for HSDRRS projects will be available in forthcoming IERs.

Table 8. HSDRRS Impacts and Compensatory Mitigation to be Completed

IER	Parish		Non-wet BLH		Non-wet BLH AAHUs	BLH (acres)		BLH AAHUs		Swamp (Acres)		Swamp AAHUs		Marsh (Acres)		Marsh AAHUs		Water Bottoms (Acres)	
			acres	AAHUs		acres	AAHUs	acres	AAHUs	acres	AAHUs	acres	AAHUs	acres	AAHUs	acres	AAHUs	acres	AAHUs
1 LPV, La Branch Wetlands Levee	St. Charles	Protected Side	-	-	-	-	-	-	-	137.50	73.97	-	-	-	-	-	-	-	-
		Flood Side	-	-	11.33	8.09	-	-	-	-	143.57	110.97	-	-	-	-	-	-	-
1 Supplemental LPV, La Branch Wetlands Levee	St. Charles	Protected Side	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		Flood Side	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2 LPV, West Return Floodwall	St. Charles, Jefferson	Protected Side	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		Flood Side	-	-	-	-	-	-	-	-	-	-	-	-	17.00	9.00	-	-	75.00
2.a Supplemental LPV, Jefferson East Bank	Jefferson, St. Charles	Protected Side	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		Flood Side	-	-	-	-	-	-	-	2.00	1.55	16.50	11.45	-	-	-	-	-	-
3 LPV, Jefferson Lakefront Levee	Jefferson	Protected Side	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		Flood Side	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	26.40
3.a Supplemental LPV, Jefferson East Bank	Jefferson	Protected Side	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		Flood Side	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	277
4 LPV, Orleans Lakefront Levee	Orleans	Protected Side	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		Flood Side	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5 LPV, Lakefront Pump Stations	Jefferson, Orleans	Protected Side	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		Flood Side	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3.29
6 LPV, Citrus Lands Levee	Orleans	Protected Side	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		Flood Side	-	-	-	-	-	-	-	-	-	-	-	-	4.00	-	-	-	6.90
7 LPV, Lakefront Levee	Orleans	Protected Side	-	-	151.70	79.30	-	-	-	-	-	-	-	100.40	36.80	-	-	-	-
		Flood Side	-	-	30.00	11.90	-	-	-	-	-	-	-	70.00	37.20	-	-	-	-
7 Supplemental LPV, Lakefront Levee	Orleans	Protected Side	-	-	17.00	9.90	-	-	-	-	-	-	-	-	18.60	6.10	-	-	-
		Flood Side	-	-	2.80	0.30	-	-	-	-	-	-	-	-	56.00	29.80	-	-	12.49
8 LPV, Bayou Dupre Control Structure	St. Bernard	Protected Side	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		Flood Side	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.30
9 LPV, Caernarvon Floodwall	Orleans, St. Bernard	Protected Side	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		Flood Side	10.00	4.65	1.16	0.66	-	-	-	-	-	-	-	-	1.90	1.20	-	-	-

Table 8. HSDRRS Impacts and Compensatory Mitigation to be Completed

IER	Parish		Non-wet BLH		Non-wet BLH AAHUs	BLH (acres)		BLH AAHUs		Swamp (Acres)		Swamp AAHUs		Marsh (Acres)		Marsh AAHUs		Water Bottoms (Acres)	
			acres	AAHUs		acres	AAHUs	acres	AAHUs	acres	AAHUs	acres	AAHUs	acres	AAHUs	acres	AAHUs	acres	AAHUs
10 LPV, Chalmette Loop	St. Bernard	Protected Side	-	-	38.32	16.44	-	-	106.55	57.31	-	-	106.55	57.31	-	-	-	-	95.00
		Flood Side	-	-	35.31	15.22	-	-	323.04	209.94	-	-	323.04	209.94	-	-	-	-	-
11 Tier 2 Borgne IHNC	Orleans, St. Bernard	Protected Side	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		Flood Side	-	-	15.00	2.59	-	-	122.00	24.33	-	-	122.00	24.33	-	-	-	-	-
11 Tier 2 Pontchartrain IHNC	Orleans	Protected Side	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		Flood Side	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7.00
12 GIWW, Harvey, Algiers	Jefferson, Orleans, Plaquemines	Protected Side	-	-	251.70	177.3	-	-	-	-	-	-	-	-	-	-	-	-	-
		Flood Side	-	-	2.30	1.90	74.90	38.50	-	-	-	-	-	-	-	-	-	-	-
13 Hero Canal and Eastern Tie-In	Plaquemines	Protected Side	-	-	13.00	7.80	-	-	-	-	-	-	-	-	-	-	-	-	-
		Flood Side	-	-	19.00	10.59	39.00	28.27	-	-	-	-	-	-	-	-	-	-	-
14 WBV, Westwego to Harvey Levee	Jefferson	Protected Side	-	-	45.00	30.00	-	-	-	-	-	-	-	-	-	-	-	-	-
		Flood Side	-	-	45.50	37.17	29.75	17.02	-	-	-	-	-	-	-	-	-	-	-
14 Supplemental WBV, Westwego to Harvey Levee	Jefferson	Protected Side	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		Flood Side	-	-	-	-	42.00	24.00	-	-	-	-	-	-	-	-	-	-	-
15 WBV, Lake Cataouatche Levee	Jefferson	Protected Side	-	-	23.50	6.00	-	-	-	-	-	-	-	-	-	-	-	-	-
		Flood Side	-	-	3.60	1.35	-	-	-	-	-	-	-	-	-	-	-	-	-
16 WBV, Western Tie-in	Jefferson	Protected Side	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		Flood Side	-	-	78.60	36.20	-	-	137.80	66.30	-	-	-	-	-	-	-	-	-
16 Supplemental WBV, Western Tie-in	Jefferson	Protected Side	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		Flood Side	-	-	79.10	34.18	-	-	-	-	-	-	-	-	-	-	-	-	-
17 Company Canal Floodwall	Jefferson	Protected Side	-	-	5.50	2.69	-	-	-	-	-	-	-	-	-	-	-	-	-
		Flood Side	-	-	-	-	19.00	17.09	-	-	-	-	-	-	-	-	-	-	-
18 GFBM	Jefferson, Orleans, Plaquemines, St. Bernard, St. Charles	Protected Side	276.90	89.29	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		Flood Side	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19 CFBM	Hancock County, MS; Iberville, Jefferson, Orleans, Plaquemines, St. Bernard	Protected Side	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		Flood Side	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table 8. HSDRRS Impacts and Compensatory Mitigation to be Completed

IER	Parish		Non-wet BLH		Non-wet BLH AAHUs	BLH		Swamp		Swamp AAHUs	Marsh		Water Bottoms (Acres)
			acres	AAHUs		(acres)	AAHUs	(acres)	AAHUs		(acres)	AAHUs	
22 GFBM	Jefferson, Plaquemines	Protected Side	86.93		28.90	-	-	-	-	-	-	-	-
		Flood Side	-		-	-	-	-	-	-	-	-	-
23 CFBM	Hancock County, MS; Plaquemines, St. Bernard, St. Charles	Protected Side	-		-	-	-	-	-	-	-	-	-
		Flood Side	-		-	-	-	-	-	-	-	-	-
25 GFBM	Jefferson, Orleans, Plaquemines	Protected Side	854.70		243.10	-	-	-	-	-	-	-	-
		Flood Side	-		-	-	-	-	-	-	-	-	-
26 CFBM	Jefferson, Plaquemines, St. John the Baptist; Hancock County, MS	Protected Side	-		-	-	-	-	-	-	-	-	-
		Flood Side	-		-	-	-	-	-	-	-	-	-
28 GFBM	Jefferson, Plaquemines, St. Bernard	Protected Side	19.10		11.60	-	-	-	-	-	-	-	-
		Flood Side	-		-	-	-	-	-	-	-	-	-
29 CFBM	Orleans, St. Tammany, St. John the Baptist	Protected Side	107.30		48.60	-	-	-	-	-	-	-	-
		Flood Side	-		-	-	-	-	-	-	-	-	-
30 CFBM	St. Bernard and St. James; Hancock, MS	Protected Side	225.00		189.40	-	-	-	-	-	-	-	-
		Flood Side	-		-	-	-	-	-	-	-	-	-
30 CFBM	E. Baton Rouge, Jefferson, Lafourche, Plaquemines, St. Bernard, and St. Tammany; Hancock, MS	Protected Side	2358.0		572.20	-	-	-	-	-	-	-	-
		Flood Side	-		-	-	-	-	-	-	-	-	-
32 CFBM	Ascension, Orleans, Plaquemines, St. Charles	Protected Side	195.00		96.20	-	-	-	-	-	-	-	-
		Flood Side	-		-	-	-	-	-	-	-	-	-
Totals		Protected Side	4122.93		1279.29	545.72	329.43	137.5	73.97	225.55	100.21	609.38	
		Flood Side	10.00		4.65	323.7	160.15	350.22	237.4	748.24	389.22	609.38	
		Both	4132.93		1283.94	869.42	489.58	487.72	311.37	973.79	489.43	609.38	

- = Not applicable to the IER or number of acres of habitat impacted is 0
GFBM: Government Furnished Borrow Material
CFBM: Contractor Furnished Borrow Material

8. COMPLIANCE WITH ENVIRONMENTAL LAWS AND REGULATIONS

Use of the proposed Acosta 2, Idlewild Stage 2, King Mine, Levis, Lilly Bayou, Port Bienville, Raceland Raw Sugars, River Birch Landfill Expansion, Scarsdale, and Spoil Area contractor-furnished borrow areas could not commence until the proposed action achieves environmental compliance with all applicable laws and regulations, as described below. Compliance with environmental laws will need to be valid and current at the time any site is used. The landowner or contractor will need to submit proof of current compliance to the CEMVN prior to use of a site. Because many of the agency concurrences are valid for only a limited time, the landowner or contractor may have to update environmental compliance before use of a site.

Environmental compliance for the proposed action will be achieved upon coordination of this IER with appropriate agencies, organizations, and individuals for their review and comments; USFWS and National Marine Fisheries Service confirmation that the proposed action would not adversely affect any T&E species or completion of Endangered Species Act Section 7 consultation (table 3) (valid for 1 year from date of issuance); Louisiana Department of Natural Resources or Mississippi Department of Marine Resources concurrence with the determination that the proposed action is consistent, to the maximum extent practicable, with the Louisiana and Mississippi Coastal Use Programs (table 7) (duration of validity varies from parish to parish); coordination with the SHPO (table 4); receipt and acceptance or resolution of all Fish and Wildlife Coordination Act recommendations; and receipt and acceptance or resolution of all LADEQ comments on the air quality impact analysis documented in the IER. The USFWS has determined that no T&E species or their critical habitat would be adversely affected by the proposed action. The SHPO has determined that cultural resources would not be adversely impacted by the proposed action.

9. CONCLUSIONS

9.1 INTERIM DECISION

The proposed action consists of approving the Acosta 2, Idlewild Stage 2, King Mine, Levis, Lilly Bayou, Port Bienville, Raceland Raw Sugars, River Birch Landfill Expansion, Scarsdale, and Spoil Area sites for use as potential sources of contractor-furnished borrow material for use by construction contractors in the construction of the HSDRRS. This office has assessed the environmental impacts of the proposed action on jurisdictional wetlands, non-jurisdictional BLH, non-wetland/upland resources, wildlife, T&E species, cultural resources, recreational resources, noise quality, air quality, water quality, aesthetic resources, farmland, and socioeconomic resources. The proposed action would have no significant effect on jurisdictional wetlands, cultural resources, or T&E species and their critical habitat. Any found RECs would be avoided.

9.2 PREPARED BY

IER #31 was prepared by the following individuals. The address of the preparers is: U.S. Army Corps of Engineers, New Orleans District; Regional Planning and Environmental Division, South; New Orleans Environmental Branch; CEMVN-PDR-RS; P.O. Box 60267; New Orleans, Louisiana 70160-0267

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APPENDIX A: LIST OF ACRONYMS AND DEFINITIONS OF COMMON TERMS

AAHU	Average Annualized Habitat Unit
APE	Area of potential impact
ASTM	American Society of Testing and Materials
BLH	Bottomland Hardwood (Forest)
BMP	Best Management Practice
CAR	Coordination Act Report
CED	Comprehensive Environmental Document
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
Clay	CH: Fat clay
Classifications	CL: lean clay ML: Silt
dBA	Decibel
DNL	Day-night average sound level
EA	Environmental Assessment
EIS	Environmental Impact Statement
EJ	Environmental Justice
USEPA	U.S. Environmental Protection Agency
ER	Engineering Regulation
ESA	Environmental Site Assessment
ESRI	Environmental Systems Research Institute
FONSI	Finding of No Significant Impact
GIWW	Gulf Intracoastal Waterway
HSDRRS	Hurricane and Storm Damage Reduction System (formerly known as the Hurricane Protection System)
HPS	Hurricane Protection System (see HSDRRS)
HTRW	Hazardous, Toxic, and Radioactive Waste
HU	Habitat Unit
IER	Individual Environmental Report
IERS	Individual Environmental Report Supplemental
IPET	Interagency Performance Evaluation Team
LCA	Louisiana Coastal Area
LACRP	Louisiana Coastal Resource Program
LADEQ	Louisiana Department of Environmental Quality
LADNR	Louisiana Department of Natural Resources
LPV	Lake Pontchartrain and Vicinity Project
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NRCS	National Resources Conservation Service
NRHP	National Register of Historic Places
NO _x	Nitrogen oxides
NOV	New Orleans to Venice Project
O ₃	Ozone
Pb	Lead
PDT	Project Delivery Team
PI	Plasticity index
PM	Particulate matter
PPM	Parts per million

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

APPENDIX B: PUBLIC COMMENT AND RESPONSES SUMMARY

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



United States Department of the Interior

FISH AND WILDLIFE SERVICE

646 Cajundome Blvd.
Suite 400
Lafayette, Louisiana 70506
August 7, 2006

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

Dear Colonel Wagenaar:

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

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

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

1. Permitted commercial sources, authorized borrow sources for which environmental clearance and mitigation have been completed, or non-functional levees after newly constructed adjacent levees are providing equal protection.
2. Areas under forced drainage that are protected from flooding by levees, and that are:
 - a) non-forested (e.g., pastures, fallow fields, abandoned orchards, former urban areas) and non-wetlands;
 - b) wetland forests dominated by exotic tree species (i.e., Chinese tallow-trees) or non-forested wetlands(e.g., wet pastures), excluding marshes;
 - c) disturbed wetlands (e.g., hydrologically altered, artificially impounded).
3. Sites that are outside a forced drainage system and levees, and that are:
 - a) non-forested (e.g., pastures fallow fields, abandoned orchards, former urban areas) and non-wetlands;
 - b) wetland forests dominated by exotic tree species (i.e., Chinese tallow-trees) or non-forested wetlands(e.g., wet pastures), excluding marshes;
 - c) disturbed wetlands (e.g., hydrologically altered, artificially impounded).

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

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

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

1. A minimum of 30 percent of the borrow pits' edge should slope no greater than 5 horizontal (H):1 vertical (V), starting from the water line down to a depth of approximately 5 feet.

2. Most of the woody vegetation removed during clearing and grubbing should be placed into the deepest parts of the borrow pits and the remaining debris should be placed in the water along the borrow pit shorelines, excluding those areas where the 5H:1V slope, per recommendation 1, have been constructed.
3. Following construction, perimeter levees (if constructed) around each borrow pit should be gapped at 25-foot intervals with an 8-foot-wide breach, the bottom elevation of which should be level with the adjacent natural ground elevation.

When avoidance and minimization of bottomland hardwood and wetland impacts is not practicable, all unavoidable net losses of those habitats should be fully offset via compensatory mitigation. Such compensatory mitigation should be sited within the watershed and/or hydrologic unit where the impact occurred, and should be completed concurrently with borrow operations, or as soon thereafter as possible.

The combined need for borrow necessary to complete authorized improvements to and construction of Federal and non-Federal hurricane/flood protection levees, and the potential construction of levees capable of withstanding a category 5 hurricane, will require substantial amounts of borrow. It is highly likely such amounts would exceed local availability. In the case of ongoing hurricane/flood protection projects (e.g., Morganza to the Gulf) the search for levee-building material has been conducted primarily on project-by-project basis. In the context of such project-by-project searches for borrow material, the least-expensive and easiest sources of borrow material are usually located within wetlands and/or bottomland hardwoods, adjacent to the proposed levee. Such on-site sources, however, often involve adverse impacts to wetlands, thus exacerbating the overall wetland loss problem in all coastal basins, especially those in the deltaic plain of southeast Louisiana. In short, while such on-site sources are relatively inexpensive, they will frequently be inconsistent with coastal restoration efforts and, to the extent that wetlands will be adversely impacted, use of those sites will be counterproductive with respect to minimizing wetland impacts and attaining the goal of increasing non-structural hurricane protection within a sustainable ecosystem.

Large-scale, off-site borrow sources could have the potential to reduce environmental impacts from levees and expedite project-by-project environmental review. Such potential "programmatic" borrow sources could include uplands along the Mississippi River, beneficial use of sediments dredged for navigation purposes (including the mining of disposal sites), the Mississippi River, and offshore deposits (e.g., Ship Shoal). As part of the planning process, we recommend that the Corps begin investigating the practicability of various large-scale, off-site borrow sources and actively involve all resource agencies with the Protection and Restoration Office's Borrow Team efforts.

Programmatic planning would be essential to identify borrow sites of acceptable quantity and quality, while avoiding and/or minimizing adverse environmental impacts. We therefore recommend that a plan be developed that integrates borrow resources, uses, and needs for various programs and activities. Guiding principles should be developed to identify borrow resources, borrow-site designs, and prioritize uses to avoid competing for resources, maximize benefits with those resources, and avoid adverse environmental impacts.

We appreciate the opportunity to provide this planning-aid letter and would be pleased to assist your agency in further identification of potential borrow sources. Should you or your staff have any questions regarding this letter, please contact David Walther (337/291-3122) of this office.

Sincerely,

A handwritten signature in black ink, appearing to read "Russell C. Watson". The signature is written in a cursive style with a large initial "R" and a long horizontal flourish extending to the right.

Russell C. Watson
Supervisor
Louisiana Field Office

Enclosure

cc: National Marine Fisheries Service, Baton Rouge, LA
EPA, Dallas, TX
LA Dept. of Wildlife and Fisheries, Baton Rouge, LA
LA Dept. of Natural Resources, CMD, Baton Rouge, LA
LA Dept. of Natural Resources, CRD, Baton Rouge, LA

Threatened and Endangered Species in Coastal Louisiana – FWS Responsibility

MAMMALS

Bear, Louisiana*
(*Ursus americanus luteolus*)
Manatee, West Indian
(*Trichechus manatus*)

GENERAL DISTRIBUTION IN LOUISIANA

T Entire state
E Lake Pontchartrain & tributaries on North shore;
rare along Gulf coast

BIRDS

Eagle, bald
(*Haliaeetus leucocephalus*)
Pelican, brown
(*Pelecanus occidentalis*)
Plover, piping**
(*Charadrius melodus*)

Woodpecker, red-cockaded
(*Campephilus principalis*)

T Entire state
E Coast
T Coast

E Entire state except Delta

REPTILES

Tortoise, gopher
(*Gopherus polyphemus*)
Turtle, ringed map (=sawback)
(*Graptemys oculifera*)
Turtle, loggerhead sea
(*Caretta caretta*)

T Washington, St. Tammany, and Tangipahoa
Parishes
T Pearl and Bogue Chitto Rivers
T Potential Nesting on Chandeleuer Is.

FISH

Sturgeon, Gulf**
(*Acipenser oxyrinchus desotoi*)
Sturgeon, pallid
(*Scaphirhynchus albus*)

T Pearl River & Lake Pontchartrain tributaries
E Mississippi River & tributaries

INVERTEBRATES

Mussel, inflated heelsplitter
(*Potamilus inflatus*)

T Amite River

PLANTS

Louisiana quillwort
(*Isoetes louisianensis*)

E Washington and St. Tammany Parishes

*Indicates proposed critical habitat

**Indicates designated critical habitat

Enclosure



United States Department of the Interior



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

August 30, 2010

Colonel Edward R. Fleming
District Commander
U.S. Army Corps of Engineers
Post Office Box 60267
New Orleans, Louisiana 70160-0267

Dear Colonel Fleming:

Please reference the Individual Environmental Report (IER) 31, entitled "Contractor Furnished Borrow Material #7, East Baton Rouge, Jefferson, Lafourche, Plaquemines, St. Bernard, and St. Tammany Parishes, Louisiana, and Hancock County, Mississippi." That IER addresses impacts resulting from the excavation of contractor-supplied borrow sites which will be used to increase hurricane protection within the Greater New Orleans area located in southeast Louisiana. Work associated with that IER is being conducted in response to Public Law 109-234, Emergency Supplemental Appropriations Act for Defense, the Global War on Terror, and Hurricane Recovery, 2006 (Supplemental 4). That law authorized the Corps of Engineers (Corps) to upgrade the Westbank and Vicinity of New Orleans and Lake Pontchartrain and Vicinity hurricane protection projects in the Greater New Orleans area to provide protection against a 100-year hurricane event. This draft report contains an analysis of the impacts on fish and wildlife resources that would result from excavation of those borrow sites and provides recommendations to minimize and/or mitigate project impacts on those resources.

The proposed project was authorized by Supplemental 4 which directed the Corps to proceed with engineering, design, and modification (and construction where necessary) of the Lake Pontchartrain and Vicinity and the West Bank and Vicinity Hurricane Protection Projects so those projects would provide 100-year hurricane protection. Procedurally, project construction has been authorized in the absence of the report of the Secretary of the Interior that is required by Section 2(b) of the Fish and Wildlife Coordination Act (FWCA) (48 Stat. 401, as amended; 16 U.S.C. 661 et seq.). In this case, the authorization process has prevented our agencies from following the normal procedures for fully complying with the FWCA. The FWCA requires that our Section 2(b) report be made an integral part of any report supporting further project authorization or administrative approval. Therefore, to fulfill the coordination and reporting requirements of the FWCA, the U.S. Fish and Wildlife Service (Service) will be providing post-authorization 2(b) reports for individual IERs.

This report incorporates and supplements our FWCA Reports that addressed impacts and mitigation features for the Westbank and Vicinity of New Orleans (dated November 10, 1986, August 22, 1994, November 15, 1996, and June 20, 2005) and the Lake Pontchartrain and Vicinity Hurricane (dated July 25, 1984, and January 17, 1992) Protection projects. It also supplements our August 7, 2006,

Planning-aid Letter to the Corps providing recommendations for minimizing impacts to fish and wildlife resources from borrow site selection and use. This report does not constitute the report of the Secretary of the Interior as required by Section 2(b) of the FWCA. This report has been provided to the Louisiana Department of Wildlife and Fisheries and the National Marine Fisheries Service, and their comments will be incorporated into the final report.

DESCRIPTION OF THE STUDY AREA

The study area is primarily located within the Mississippi River Deltaic Plain of the Lower Mississippi River Ecosystem. The higher elevations in Louisiana occur on the natural levees of the Mississippi River and its distributaries. Developed lands are primarily associated with natural levees, but extensive wetlands have been leveed and drained to accommodate residential, commercial, and agricultural development. Federal, State, and local levees have been installed for flood protection purposes, often with negative effects on adjacent wetlands. Navigation channels such as the Gulf Intracoastal Waterway and the Mississippi River Gulf Outlet are also prominent landscape features, as are extensive oil and gas industry access channels and pipeline canals. Extensive wetlands and associated shallow open waters dominate the landscape outside the flood control levees. Major water bodies include Lake Pontchartrain located north of the main study area, the Mississippi River which bisects the main study area.

FISH AND WILDLIFE HABITATS AND RESOURCES

Habitat types at and in the vicinity of the borrow sites include forested wetlands (i.e., bottomland hardwoods [BLH] and/or swamps), non-wet BLH, scrub-shrub, marsh, open water, active agriculture, and developed areas. Due to urban development and a forced-drainage system within the levee system, the hydrology of much of the forested habitat has been altered. The forced-drainage system has been in operation for many years, and subsidence is evident throughout the area.

Wetlands (forested, marsh, and scrub-shrub) within the study area provide plant detritus to adjacent coastal waters and thereby contribute to the production of commercially and recreationally important fishes and shellfishes. Wetlands in the study area also provide valuable water quality functions such as reduction of excessive dissolved nutrient levels, filtering of waterborne contaminants, and removal of suspended sediment. In addition, coastal wetlands buffer storm surges reducing their damaging effect to man-made infrastructure within the coastal area.

Factors that will strongly influence future fish and wildlife resource conditions include freshwater input and loss of coastal wetlands. Depending upon the deterioration rate of marshes, the frequency of occasional short-term saltwater events may increase. Under that scenario, tidal action in the project area may increase gradually as the buffering effect of marshes is lost, and use of that area by estuarine-dependent fishes and shellfish tolerant of saltwater conditions would likely increase. Regardless of which of the above factors ultimately has the greatest influence, freshwater wetlands within and adjacent to the project area will probably experience losses due to development, subsidence, and erosion.

Forested wetlands in the area are divided into two major types; BLH forests and cypress-tupelo swamps. Bottomland hardwood forests are found at higher elevations (Mississippi River and former distributary channel levees) in the project area, while cypress-tupelo swamps are located along the flanks of larger distributary ridges as a transition zone between BLH and lower-elevation marsh, scrub-shrub habitats, or open water.

Non-wet BLH within the project area also provide habitat for wildlife resources. Between 1932 and 1984, the acreage of BLH in Louisiana declined by 45 percent (Rudis and Birdsey 1986). By 1970, Jefferson Parish (located approximately between St. Charles and Plaquemine Parishes) was classified as entirely urban or nonforested in the U.S. Forest Service's forest inventory with most of this loss resulting from development within non-wet areas inside the hurricane protection levees. A large percentage of the original BLH within the Mississippi River floodplain acreage in the Deltaic Plain are located within a levee system, especially those at higher elevations. However, losses of that habitat type are not regulated or mitigated with the exception of impacts resulting from Corps projects as required by Section 906(b) of the Water Resources Development Act of 1986.

Dead-end canals and small bayous are typically shallow and their bottoms may be filled in to varying degrees with semi-fluid organic material. Drainage canals enclosed within the hurricane protection projects or within developed areas are stagnant except when pumps are operating to remove rain water. Runoff from developed areas has likely reduced the habitat value of drainage canals by introducing various urban pollutants, such as oil, grease, and excessive nutrients. Clearing and development has eliminated much of the riparian habitat that would normally provide shade and structure for many aquatic species.

Some of the waterbodies in the study area meet criteria for primary and secondary contact recreation and partially meet criteria for fish and wildlife propagation; while others do not meet the latter criteria. Causes for not fully meeting fish and wildlife propagation criteria include excessive nutrients, organic enrichment, low dissolved oxygen levels, flow and habitat alteration, pathogens and noxious aquatic plants. Sources of those problems include hydromodification, habitat modification, recreational activities, and unspecified upstream inputs. Municipal point sources, urban runoff, storm sewers, and onsite wastewater treatment systems are also known contributors to poor water quality in the area.

Developed habitats in the study area include residential and commercial areas, as well as roads and existing levees. Those habitats do not support significant wildlife use. Most of the development is located on higher elevations of the project area; however, vast acreages of swamp and marsh have been placed under forced drainage systems and developed. A smaller acreage of wetlands has been filled for development. Agricultural lands occur throughout the area; agriculture includes sugarcane farming, cattle production, and haying.

Endangered and Threatened Species

To aid the Corps in complying with their proactive consultation responsibilities under the Endangered Species Act (ESA), the Service provided a list of threatened and endangered species and their critical habitats within the coastal parishes of the New Orleans District. Private contractors have conducted ESA consultation on each borrow site as they were identified and determined that, at this time, no

threatened or endangered species or their critical habitat were located within any proposed borrow site; however, there is a bald eagle nest located within 660 feet of the northeastern boundary of the River Birch Landfill Expansion borrow site. Bald eagles were removed from the List of Endangered and Threatened Species as of August 8, 2007, but are protected by the Bald and Golden Eagle Protection Act (BGEPA) (54 Stat. 250, as amended, 16 U.S.C. 668a-d) and the Migratory Bird Treaty Act (MBTA) (40 Stat. 755, as amended; 16 U.S.C. 703 et seq.). The Service recommends that the Corps consult the Service-developed National Bald Eagle Management (NBEM) Guidelines regarding potential impacts to the eagle at

<http://www.fws.gov/migratorybirds/issues/BaldEagle/NationalBaldEagleManagementGuidelines.pdf>.

In addition, a website designed to help determine whether an activity may disturb nesting bald eagles is available at: <http://www.fws.gov/midwest/eagle/guidelines/index.html>. Those guidelines and the website provide landowners, land managers, and others with information and recommendations regarding how to minimize potential project impacts to bald eagles, particularly where such impacts may constitute “disturbance,” which is prohibited by the BGEPA.

The BGEPA guidelines recommend maintaining: (1) a specified distance between the activity and the nest (buffer area); (2) natural areas (preferably forested) between the activity and nest trees (landscape buffers); and (3) avoiding certain activities during the breeding season. The buffer areas serve to minimize visual and auditory impacts associated with human activities near nest sites. Ideally, buffers would be large enough to protect existing nest trees and provide for alternative or replacement nest trees. On-site personnel should be informed of the possible presence of nesting bald eagles within the project boundary, and should identify, avoid, and immediately report any such nests to this office. If after consulting those guidelines and the above website you need further assistance in determining the appropriate size and configuration of buffers or the timing of activities in the vicinity of a bald eagle nest, please contact this office. A copy of your final determination should be provided to our office.

If a proposed borrow site is changed significantly or relocated, or excavation is not implemented within one year, we recommend that the Corps request that the contractor reinitiate coordination with this office to ensure that the proposed project would not adversely affect any Federally listed threatened or endangered species or their habitat.

Future Fish and Wildlife Resources

The combination of subsidence and sea level rise results in higher water levels, stressing most non-fresh marsh plants and forested wetlands leading to plant death and conversion to open water. Other major causes of wetland losses within the study area include altered hydrology, storms, saltwater intrusion (caused by marine processes invading fresher wetlands), shoreline erosion, herbivory, and development activities including the direct and indirect impacts of dredge and fill (Louisiana Coastal Wetlands Conservation and Restoration Task Force and the Wetlands Conservation and Restoration Authority 1998). The continued conversion of wetlands and forested habitats to open water or developed land represents the most serious fish and wildlife-related problem in the study area. Habitat losses could be expected to cause declines in the area’s carrying capacity for migratory waterfowl, wading birds, other migratory birds, alligators, furbearers, and game mammals.

ALTERNATIVES UNDER CONSIDERATION

The only alternative to the proposed project was the “no action” alternative which would avoid impacts to fish and wildlife resources, but would prevent or impede the construction of flood protection measures for residents of the greater New Orleans area.

The proposed borrow sites have been located in areas that avoid direct impacts to wetlands and impacts to non-wet BLH have also been avoided to the extent practicable. Use of adjacent borrow, the typical construction method, has been limited because of soil conditions (i.e., insufficient clay content), thus impacts resulting from expansion of borrow sites into wetlands has been avoided in some areas.

PROJECT IMPACTS

Excavation of the borrow sites will usually result in the conversion of terrestrial habitat into open-water areas. There would be direct impacts to non-wet BLH at seven (potentially eight; see King Mine) of the ten proposed borrow areas; therefore, mitigation would be required (Table 1). Because agricultural, pasture, and cleared land habitats have a reduced value to fish and wildlife resources and are not a declining or limited habitat type, impacts associated with conversion of those habitats to open-water were quantified only by acreage as part of the total site (Table 1).

The River Birch, Landfill Expansion site is comprised of jurisdictional wetlands, deforested land, and approximately 3 acres of non-wet BLH habitat; however, the property was previously permitted (Clean Water Act – Section 404 Permit MVN-2004-2721-EGG, issued on August 9, 2007) for landfill use, and is a subunit of a complex of properties currently operating as landfills. The impacts to the River Birch, Landfill Expansion site would not be due to a federal water resources development project (i.e., Hurricane & Storm Damage Risk Reduction System [HSDRRS]) and have been mitigated by the landowner through the Corps’ regulatory program. Therefore, habitat impacts to the River Birch, Landfill Expansion site would not be subject to the mitigation requirements required by Section 906(b) of the Water Resources Development Act of 1986.

The Levis site is comprised of jurisdictional wetlands (mostly wet pine savannah) and some BLH habitat; however, the site was previously permitted for residential development (ponds). Construction of the ponds will be conducted by Slidell Development Company (Clean Water Act – Section 404 Permit MVN-2006-1963-EFF, issued on April 8, 2008). The use of excavated material for sale to the Corps would be considered a secondary use. The habitat impacts from the pond construction would not be due to a Federal water resources development project (i.e., HSDRRS) and have been mitigated by the landowner through the Corps’ regulatory program. Therefore, habitat impacts to Levis site would not be subject to mitigation requirements as required by Section 906(b) of the Water Resources Development Act of 1986.

The Corps’ regulatory program has determined that jurisdictional wetlands occur within or adjacent to the boundaries of the Acosta 2, Lilly Bayou, King Mine, Port Bienville, Scarsdale, and Spoil Area borrow sites. The excavation of material at these sites will not directly impact any jurisdictional wetlands; however, as indicated in the IER, there is a potential for hydrologic modifications caused by borrow material excavation to indirectly impact jurisdictional wetlands. A reduction or interception of

rainfall runoff could result in a decrease in downstream jurisdictional wetlands by conversion of the soils into non-hydric types. These effects may be difficult to describe and quantify; however, potential impacts due to hydrology modifications caused by borrow material excavation should be discussed here and in future borrow IERs because of the close proximity of wetlands, and other fish and wildlife habitat, to some proposed borrow sites. Therefore, the Service recommends an investigation to determine the extent of potential hydrologic changes due to borrow excavation so that protective measures may be recommended as necessary. The Service would be pleased to participate in the effort.

To further protect jurisdictional wetlands, the Service also recommends the designation of a 100 foot “no excavation” buffer zone between the jurisdictional wetlands and the borrow site to help preserve the water quality of the wetlands.

The King Mine site has been inaccessible due to weather and the resulting poor conditions of the unimproved access roads. A wetlands delineation performed by the Corps documented pine forest and some BLH species. The Service and the Corps have planned a joint field investigation to the site to document the habitat types. If BLH habitat is found within the proposed excavation area, the acreage and impact amount that will require mitigation will be calculated and reported. These results will be transmitted to the land owner and their agent(s) and included in our final FWCA report.

Table 1: Contractor borrow sites and direct impacts to BLH.

Site	Parish or County	Area of Site Proposed for Excavation (acres)	Maximum BLH Habitat Impacted (acres)	Maximum AAHUs Lost
Acosta 2	St. Bernard	9	1.1	0.45
Idlewild Stage 2	Plaquemines	108	83.3	56.49
King Mine	Hancock, Miss.	158	Unknown at time of this draft document	Unknown at time of this draft document
Levis	St. Tammany	51	Jurisdictional Wetlands /Previously permitted for private development	N/A
Lilly Bayou	East Baton Rouge	437	356.1	242.72
Port Bienville	Hancock, Miss.	677	89.0	55.72
Raceland Raw Sugars	Lafourche	231	1.71	0.56
River Birch, Landfill Expansion	Jefferson	196	Some Jurisdictional Wetlands /Previously permitted for private development	N/A
Scarsdale	Plaquemines	56	51.23	41.04
Spoil Area	St. Bernard	435	382.8	175.19
Total		2358	965.3	572.2

FISH AND WILDLIFE CONSERVATION MEASURES

To minimize wetland and non-wet BLH impacts, the Service recommends that prior to utilizing borrow sites, every effort should be made to reduce impacts by using sheetpile, floodwalls, geotextile, or some combination thereof, to increase levee heights wherever feasible. In addition, the Service recommends that the previous protocol to identify and prioritize borrow sources provided in our August 7, 2006, Planning-Aid letter should continue to be utilized as a guide in locating future borrow-sites.

MITIGATION MEASURES

The President's Council on Environmental Quality defined the term "mitigation" in the National Environmental Policy Act regulations to include:

(a) avoiding the impact altogether by not taking a certain action or parts of an action; (b) minimizing impacts by limiting the degree or magnitude of the action and its implementation; (c) rectifying the impact by repairing, rehabilitating, or restoring the affected environment; (d) reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action; and (e) compensating for the impact by replacing or providing substitute resources or environments.

The Service supports and adopts this definition of mitigation and considers its specific elements to represent the desirable sequence of steps in the mitigation planning process. Based on current and expected future without-project conditions, the planning goal of the Service is to develop a balanced project, i.e., one that is responsive to demonstrated hurricane protection needs while addressing the co-equal need for fish and wildlife resource conservation.

The Service's Mitigation Policy (Federal Register, Volume 46, No. 15, January 23, 1981) identifies four resource categories that are used to ensure that the level of mitigation recommended by Service biologists will be consistent with the fish and wildlife resource values involved. Considering the high value of forested areas (wet and non-wet) and marsh for fish and wildlife, and the relative scarcity of those habitat types, they are usually designated as Resource Category 2 habitats, the mitigation goal for which is no net loss of in-kind habitat value. Degraded BLH forest (e.g. dominated by exotic species) and any wet pastures that may be impacted, however, are placed in Resource Category 3 due to their reduced value to wildlife, fisheries and lost/degraded wetland functions. The mitigation goal for Resource Category 3 habitats is no net loss of habitat value. The 965.3 acres of BLH habitat impacted by utilization of the borrow sites in this IER are placed in Resource Category 2; therefore, the mitigation should be no net loss of in-kind habitat value.

Several contractors, working on various parts of the HSDRRS, may use different portions of the borrow sites. Each excavation and associated impacts (i.e. forest clearing) to BLH will be assessed separately by the Service. The mitigation for impacts incurred by each contractor will be charged separately. The maximum mitigation amount cited in this report may not be required depending on the actual BLH area that is ultimately impacted by utilization for the HSDRRS.

The Service used the Habitat Assessment Methodology (HAM) to quantify the impacts to forested habitats. The habitat assessment model utilized in this evaluation is modified from those developed in

the Service's Habitat Evaluation Procedures (HEP). However, this model is a community-level evaluation instead of the species-based approach used with HEP. For BLH, the model defines an assemblage of variables considered important to the suitability of an area to support a diversity of fish and wildlife species (Louisiana Department of Natural Resources 1994; U.S. Fish and Wildlife Service 1980). A Habitat Suitability Index (HSI) is calculated from all of the model variables to represent the overall value of the wetland habitat quality. The product of an HSI value and the acreage of available habitat for a given target year is known as the Habitat Unit (HU), and is the basic unit for measuring project effects on fish and wildlife habitat. HUs are annualized over the project life to determine the Average Annual Habitat Units (AAHUs) available for each habitat type. The change (increase or decrease) in AAHUs for the future with-project scenario, compared to the future without-project conditions, provides a measure of anticipated impacts. A net gain in AAHUs indicates that the project is beneficial to the fish and wildlife community within that habitat type; a net loss of AAHUs indicates that the project would adversely impact fish and wildlife resources. Further explanation of how impacts/benefits are assessed and an explanation of the assumptions affecting the HSI values for each target year are available for review at Service's Louisiana, Ecological Services Field Office.

SERVICE POSITION AND RECOMMENDATIONS

Excavation of the entire approved area of the proposed borrow sites would result in a permanent loss of 965.3 acres of BLH forest for a loss of 572.2 AAHUs. The Service does not object to the use of the proposed borrow sites provided the following fish and wildlife recommendations are implemented concurrently with project implementation:

1. The private contractor for each borrow site shall provide compensation for the appropriate number of lost AAHUs as listed in Table 1, for a total of 572.2 AAHUs for the unavoidable, project-related loss of forested lands included in IER 31. Such compensation can be obtained from any approved mitigation bank. Verification of purchased mitigation credits should be provided to the Service by the mitigation banker. The Service, National Marine Fisheries Service, Louisiana Department of Wildlife and Fisheries, and Louisiana Department of Natural Resources should be consulted regarding the adequacy of any proposed alternative mitigation sites, including reforestation plans.
2. The landowners or private contractors for the River Birch Landfill Expansion and Levis sites must provide documentation of the purchase of credits in an approved mitigation bank for habitat impacts prior to the sale of excavated material from these sites to contractors engaged in the construction of the Hurricane & Storm Damage Risk Reduction System.
3. Whenever applicable, the Service recommends that the Corps consult the Service-developed National Bald Eagle Management (NBEM) Guidelines, utilize the interactive webpage at: <http://www.fws.gov/midwest/eagle/guidelines/index.html>, and implement any recommendations suggested. We also ask that the Corps provide a copy of their disturbance determination to our office.
4. The protocol to identify and prioritize borrow sources provided in our August 7, 2006, Planning-Aid letter should continue to be utilized as a guide for locating future borrow-sites and

expanding existing sites.

5. Because of the potential hydrologic modifications to jurisdictional wetlands within and adjacent to the planned excavation areas caused by borrow material removal at the Acosta 2, Lilly Bayou, King Mine, Port Bienville, Scarsdale, and Spoil Area sites, the Service recommends that the Corps conduct an investigation to determine the extent of these potential impacts. The Service recommends that a buffer zone of at least 100 feet be designated between those borrow sites and any jurisdictional wetlands, within which no excavation would be allowed, unless the hydrologic investigation suggests the need for a greater buffer zone size.
6. Any proposed change in borrow site features, locations or plans shall be coordinated in advance with the Service, NMFS, LDWF, and LDNR.
7. If a proposed borrow site is changed significantly or excavation is not implemented within one year, we recommend that the Corps notify the contractor to reinstate coordination with David Castellanos (337/291-3112) of this office to ensure that the proposed project would not adversely affect any federally listed threatened or endangered species or their habitat.

Sincerely,



James F. Boggs

Supervisor

Louisiana Field Office

cc: Ms. Danielle Tommaso, Corps, NOD, New Orleans, LA
EPA, Dallas, TX
NMFS, Baton Rouge, LA
LA Dept. of Wildlife and Fisheries, Baton Rouge, LA
LA Dept. of Natural Resources (CMD), Baton Rouge, LA
OCPR, Baton Rouge, LA

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APPENDIX C: MEMBERS OF INTERAGENCY ENVIRONMENTAL TEAM

Kyle Balkum	Louisiana Dept. of Wildlife and Fisheries
Catherine Breaux	U.S. Fish and Wildlife Service
Mike Carloss	Louisiana Dept. of Wildlife and Fisheries
David Castellanos	U.S. Fish and Wildlife Service
Frank Cole	Louisiana Department of Natural Resources
Greg Ducote	Louisiana Department of Natural Resources
John Ettinger	U.S. Environmental Protection Agency
David Felder	U.S. Fish and Wildlife Service
Michelle Fischer	U.S. Geologic Survey
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
Molly Reif	U.S. Geologic Survey
Kevin Roy	U.S. Fish and Wildlife Service
Manuel Ruiz	Louisiana Dept. of Wildlife and Fisheries
Reneé Sanders	Louisiana Department of Natural Resources
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

