

**WETLAND CREATION IN  
THE PASS A LOUTRE WILDLIFE MANAGEMENT AREA  
USING DREDGE MATERIAL FROM SOUTH PASS  
OF THE MISSISSIPPI RIVER**

**Prepared by the New Orleans District  
Submitted to MVD as Proposed**

**DEPARTMENT OF THE ARMY  
PROPOSAL  
FOR COMPREHENSIVE PLAN FUNDED PRIORITIES  
LIST OF PROJECTS AND PROGRAMS**

**For Consideration to be Submitted to  
Gulf Coast Ecosystem Restoration (RESTORE) Council**

**22 October 2014**

# 1. COUNCIL MEMBER APPLICANT AND PROPOSAL INFORMATION SUMMARY SHEET

<b>Council Member:</b> Department of Army (New Orleans District)	Point of Contact: Mark Wingate <hr/> Phone: 504-862-2512 <hr/> Email: Mark.R.Wingate@usace.army.mil								
<b>Project Identification</b>									
Project Title: Wetland Creation in the Pass a Loutre WMA Using Dredge Material From South Pass of the Mississippi River   Project									
State(s): Louisiana	County/City/Region: Plaquemines Parish – Lower Mississippi River								
General Location: <i>Projects <u>must</u> be located within the Gulf Coast Region as defined in RESTORE Act. (attach map or photos, if applicable)</i> Bird's foot delta of Lower Mississippi River at the Gulf of Mexico									
<b>Project Description</b>									
<b>RESTORE Goals:</b> <i>Identify all RESTORE Act goals this project supports. Place a P for Primary Goal, and S for secondary goals.</i>  <table style="width: 100%; border: none;"> <tr> <td style="width: 50%; border: none;"><u>  </u> P Restore and Conserve Habitat</td> <td style="width: 50%; border: none;"><u>  </u> S Replenish and Protect Living Coastal and Marine Resources</td> </tr> <tr> <td style="border: none;"><u>  </u> S Restore Water Quality</td> <td style="border: none;"><u>  </u> S Enhance Community Resilience</td> </tr> <tr> <td style="border: none;"><u>  </u> S Restore and Revitalize the Gulf Economy</td> <td style="border: none;"></td> </tr> </table>		<u>  </u> P Restore and Conserve Habitat	<u>  </u> S Replenish and Protect Living Coastal and Marine Resources	<u>  </u> S Restore Water Quality	<u>  </u> S Enhance Community Resilience	<u>  </u> S Restore and Revitalize the Gulf Economy			
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<b>RESTORE Priorities:</b> <i>Identify all RESTORE Act priorities that this project supports.</i>  <u>  </u> X Priority 1: Projects that are projected to make the greatest contribution <u>  </u> X Priority 2: Large-scale projects and programs that are projected to substantially contribute to restoring <u>  </u> X Priority 3: Projects contained in existing Gulf Coast State comprehensive plans for the restoration .... <u>  </u> X Priority 4: Projects that restore long-term resiliency of the natural resources, ecosystems, fisheries ...									
<b>RESTORE Commitments:</b> <i>Identify all RESTORE Comprehensive Plan commitments that this project supports.</i>  <u>  </u> X Commitment to Science-based Decision Making <u>  </u> X Commitment to Regional Ecosystem-based Approach to Restoration <u>  </u> X Commitment to Engagement, Inclusion, and Transparency <u>  </u> X Commitment to Leverage Resources and Partnerships <u>  </u> X Commitment to Delivering Results and Measuring Impacts									
<b>RESTORE Proposal Type and Phases:</b> <i>Please identify which type and phase best suits this proposal.</i>  <u>  </u> X Project <u>  </u> Planning <u>  </u> X Technical Assistance <u>  </u> X Implementation <u>  </u> Program									
<b>Project Cost and Duration</b>									
<b>Project Cost Estimate:</b> Total :\$36,000,000	<b>\$36,000,000</b>	<b>Project Timing Estimate:</b> Date Anticipated to Start: <u>  </u> Jan/2015 Time to Completion: <u>  </u> 20 months Anticipated Project Lifespan: <u>  </u> 50 years							

## 2. EXECUTIVE SUMMARY

**The proposed project will create/restore approximately 640 acres of emergent wetlands in the bird's foot delta of the Lower Mississippi River by placing an estimated 8.5 million cubic yards (mcy) of sediment at an estimated total cost of \$36 million, for an average cost of nearly \$56,750 per acre restored, at an estimated unit price \$4.27 per cubic yard of material placed.**

The United States Army Corps of Engineers (USACE), New Orleans District (MVN) has a robust history of project-specific placement of dredge material to create wetlands in coastal Louisiana. Since 1976, MVN has created over 31,000 acres of coastal habitat through the placement of dredge material, including nearly 15,600 acres in the Lower Mississippi River delta, and 990 acres using material from South Pass. MVN has the largest Federal channel maintenance dredging program in the nation, and historically has used approximately 40 percent of available and suitable dredge material via existing MVN beneficial use efforts. RESTORE Council funding could be used to further MVN beneficial use efforts, to implement a comprehensive beneficial use program to restore additional coastal wetlands.

The proposed project consists of restoring coastal ridge and wetland habitat in the bird's foot delta of the Lower Mississippi River through the placement of dredged material from South Pass of the Mississippi River. Approximately 8.5 million cubic yards (mcy) of material would be dredged from South Pass using a cutterhead dredge and hydraulically pumped to environmentally cleared placement site(s) within the Pass a Loutre Wildlife Management Area (WMA), creating approximately 640 acres of marine ridges and emergent wetlands, at an estimated cost of \$36 million, or an average of \$56,750 per acre. The bird's foot delta area experienced extensive damage from Hurricane Katrina and experienced oiling during the Deep Water Horizon Oil Spill. In addition, coastal Louisiana wetlands are eroding at a rapid rate and the proposed action would mitigate the on-going loss of wetland habitat by converting open shallow water habitat into more desirable coastal ridges and wetlands, providing productive bird and fisheries habitat.

### A. Comprehensive Plan Goals and Objectives

Comprehensive Plan Goals - The primary goal of this project is to Restore Habitat – specifically, to rapidly restore 640 acres of ridges and emergent wetlands through the placement of readily available dredge material. The project will enable USACE to improve its utilization of Mississippi River sediment and will contribute to maximizing the use of dredge material for effective and sustainable habitat restoration.

The ridges and emergent wetlands to be created by the project will, amongst other things, provide a barrier to the progression of saltwater intrusion into freshwater marsh, provide habitat for wildlife and waterfowl, provide higher quality essential fish habitat for recreation and commercially important fish and shellfish species, and support storm surge risk reduction to the Mississippi River and nearby infrastructure and communities. In doing so, in addition to supporting the primary goal of restoring habitat, the project will also support several other Comprehensive Plan goals, including: Restore Water Quality; Replenish and Protect Living Coastal and Marine Resources; Enhance Community Resilience; and Restore and Revitalize the Gulf Economy.

Comprehensive Plan Objectives - The primary Comprehensive Plan Objective supported by the proposed project is to “Restore, Enhance, and Protect Habitats” by restoring approximately 640 acres of coastal ridge and wetland habitat through the placement of dredged material.

In addition to supporting the primary objective, the project will support most of the remaining Comprehensive Plan objectives. The project supports the restoration of water resources by abating saltwater intrusion into the historically freshwater and brackish wetlands. The project would replenish and protect healthy, diverse, and sustainable living coastal habitat essential for juvenile fish species and that benefits terrestrial, semi-aquatic, and avian wildlife species. The project would support maintenance of the existing shorelines of the Mississippi River and its distributaries and restore a portion of the estuary to its historical ridge-marsh- open water configuration. The project would promote community resilience by supporting the multiple lines of defense strategy and the ongoing battle against coastal retreat, dampening storm surge, and reducing storm damages to lower Plaquemines Parish oil and gas, marine transportation and fishing industries, and communities. Finally, using lessons learned, the project will build upon well-established science and practices to improve the science-based decision-making processes used by the Council.

B. Project Implementation - Sediment will be dredged from South Pass using a cutter head dredge and hydraulically pumped, via temporary pipeline, to designated placement sites within the Pass a Loutre WMA. The placement of the material will be unconfined, to a maximum height of 8.0 feet MLG (mean low Gulf) in a manner to create marine ridges and emergent wetlands in accordance with the existing environmental compliance documentation. Project design would be finalized upon receipt of funding. Project planning, design, right-of-entry acquisition, and construction contract award is anticipated to take approximately 6 to 9 months from receipt of funding. The construction duration is estimated at 11 months from construction contract award.

C. Monitoring and Measures of Success - The placement sites restored by this project will be monitored similar to all USACE beneficial use projects, including: 1) post-construction survey to document the quantity of wetlands created; and 2) annual infrared aerial photography to identify changes in land area. The success of the project will be measured by the acres of ridges and emergent wetland habitat restored (640 acres), the cost of delivering the sediment to the deposition sites (\$36 million), the average cost per acre created (\$56,750), and the length of time required to build the ridges and wetlands (20 months for planning/design/construction from receipt of funding).

D. Risk and Uncertainty - The science and practice of coastal ecosystem restoration through the placement of dredge material are well tested as illustrated by over 31,000 acres of coastal habitat MVN has restored/created since 1976. As such, risk and uncertainty associated with the proposed project is anticipated to be minimal and should be confined to uncertainty associated with costs, availability of needed equipment, previously unencountered obstacles in obtaining right-of-entry, and unforeseen events and circumstances, such as tropical events or other events that may impact operations on the river.

### 3. PROPOSAL NARRATIVE

#### A. Project Overview

##### 1) Description of Project

The proposed project will create/restore approximately 640 acres of emergent wetlands in the bird's foot delta of the Lower Mississippi River by placing an estimated 8.5 million cubic yards (mcy) of sediment at a total estimated cost of \$36 million, for an average cost of nearly \$56,750 per acre restored, at an estimated unit price of \$4.27 per cubic yard of material placed. The proposed project consists of the placement of material from the South Pass of the Mississippi River into the Pass a Loutre Wildlife Management Area (WMA) to develop ridges and emergent wetlands in currently shallow open water habitat. The proposed project would affect open water areas of the Mississippi River delta between Pass a Loutre and Southwest Pass, in Plaquemines Parish, Louisiana, and includes technical assistance (planning and design) and implementation (construction and monitoring) activities. The South Pass

navigation channel, is an important access channel from the Gulf which is maintained at -17 feet MLG and provides a more easterly entrance to the Mississippi River that Southwest Pass (see Figure 1). Maintenance dredging of South Pass is usually performed by hydraulic cutterhead dredges. Material is hydraulically placed in shallow water bottoms adjacent to the navigation

#### Summary

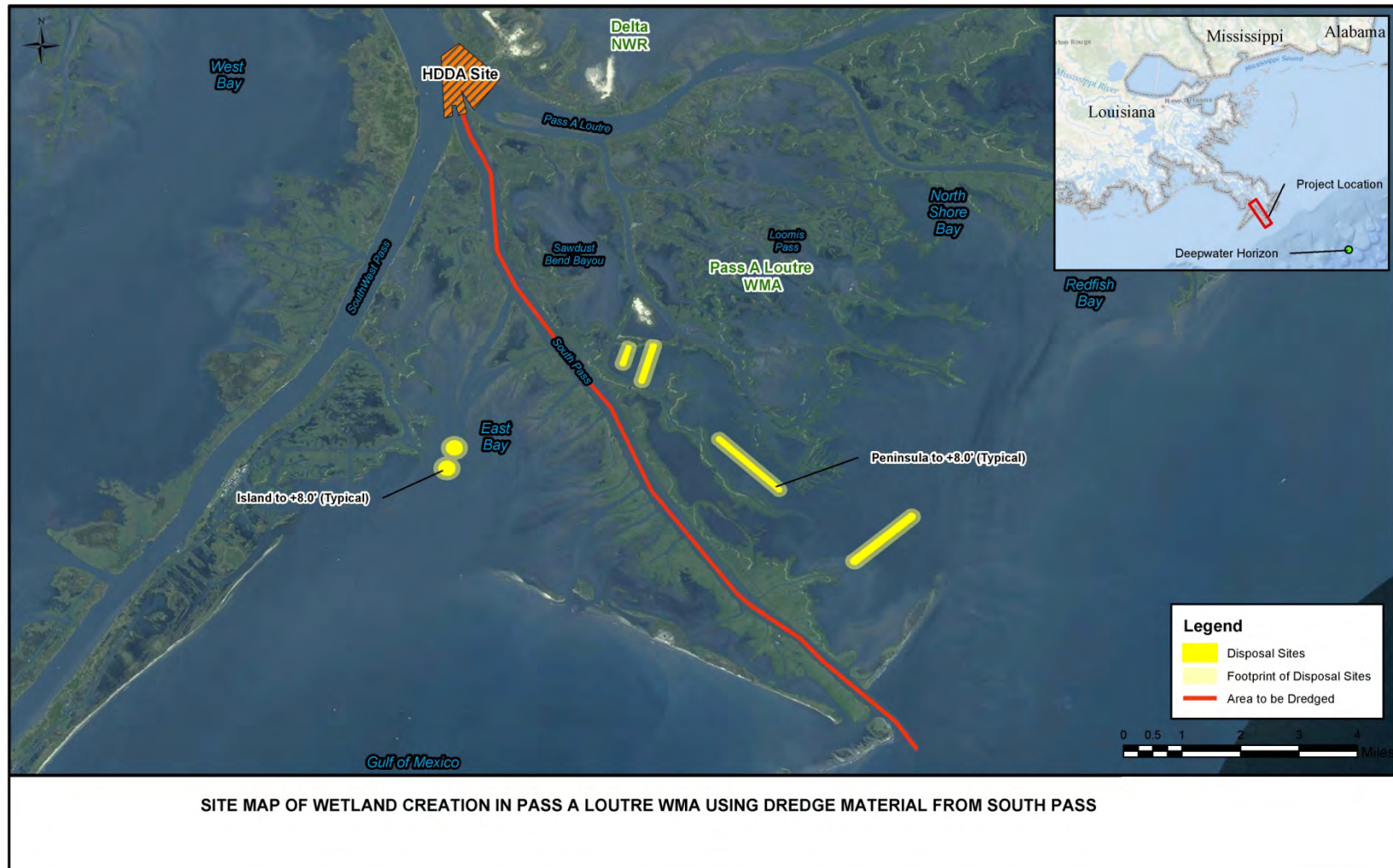
- \$36 Million Total Cost
- 640 Acres of Ridges and Wetlands Created
- \$56,750 Average Cost Per Acre
- 8.5 Million Cubic Yards of Material Placed
- \$4.27 Average Cost per Cubic Yard Placed
- Location – Pass a Loutre WMA, Louisiana
- Material Source – South Pass of Mississippi River
- RODs/FONSI Signed Various Dates
- Preliminary Planning/Design Completed

channel for ridge and wetland creation. Based on sampling and analyses performed in August 2010, the dredge material from South Pass appears suitable for open water disposal.

The coastal marshes in the Pass a Loutre WMA are susceptible to degradation through submergence, mainly as a result of subsidence, sea-level rise, and lack of sediment input. Future marsh development at these submerged sites is dependent upon basin-filling processes, either through placement of dredge material or through crevasse channels that delivers sediment-laden waters to the area, would result in the creation of tidal flats that are intermittently flooded and suitable for marsh development. In addition, being located at the mouth of the Mississippi River, the bird's foot delta experienced extensive damage from Hurricane Katrina and experienced oiling during the Deep Water Horizon Oil Spill, as the project site is located approximately 50 miles north of the spill site.

The proposed placement sites are located entirely within the boundaries of the Pass a Loutre WMA, a 115,000-acre publicly-owned wildlife area managed by the Louisiana Department of Wildlife and Fisheries (LDWF). The Pass a Loutre WMA is on the edge of coastal Louisiana between Pass a Loutre and Southwest Pass and encompasses the open water areas of Blind Bay, Redfish Bay, Garden Island Bay, and East Bay. The Pass a Loutre WMA is

**Figure 1. Site Map of Wetland Creation in Pass a Loutre WMA Using Dredge Material From South Pass**



characterized by Deltaic splays, mud flats, sand flats, estuarine bays, fresh to intermediate marshes, and small areas of natural levee forest and scrub/shrub uplands. Based on aerial photography and field observation, the WMA is estimated to be composed of approximately 15 percent marsh and 85 percent open water.

Approximately 8.5 mcy of material would be dredged from the South Pass and placed in environmentally cleared site(s) within the Pass a Lourte WMA, creating approximately 640 acres of marine ridges and emergent wetlands at an estimated cost of \$36 million, or an average cost of \$56,750 per acre (see Figure 1). The material would be placed unconfined within existing shallow open water habitat to a height not to exceed 8 feet Mean Low Gulf (MLG), with the expectation that the material would settle to a varying height of about 4.5 to 5 feet MLG. The material would be placed to ensure the development of ridges and wetlands at varying elevations thereby providing substrate for the establishment of a variety of wetland plant species. Consistent with experience at other dredge material use projects in the area, it is anticipated that the placement site will naturally vegetate within one year of placement activities through colonization of species from adjacent vegetated areas, ranging from willow/scrub/shrub vegetation, emergent aquatic vegetation, and submerged aquatic vegetation. These wetland plants will further aid in sediment trapping in the sediment-starved system. Preliminary engineering plans and specifications and corresponding cost estimates have been developed. However, the exact extent of emergent wetlands to be restored will be dependent on the amount of material placed, the type of material dredged, and the depth of open water at the specific placement site. It should be noted that ridge habitat could potentially benefit from the introduction of woody vegetation by planting species that would not be able to colonize on their own; however, this proposal was based on the ridges naturally vegetating.

It should be noted that the 640 acres of ridges and wetlands stated as being create/restored by the proposed project is the amount of wetlands above/at MLG, or the mean elevation of the water surface. Since material will be placed unconfined, the material at the fringe of the placement site will gently slope down to the existing water bottoms, resulting in portions of the slide slope being below MLG. The portion of the slide slope below MLG is not included in the 640 acres of restored wetlands. Including the entire side slope of the placed material, the total project footprint to benefit from the project is approximately 825 acres. (See Figure 3 in Section 4 of this proposal.)

Although this proposal recommends the placement of 8.5 mcy at a cost of \$36 million, the quantity of material placed and the resulting acres of ridges and wetlands created/restored could be adjusted to reflect funding provided. Alternative funding scenarios ranging from placing between a minimum of 3 mcy to create 220 acres of wetlands at a cost of \$15 million (\$69,000 per acre), to placing 10 mcy to create 700 acres at a cost of nearly \$48 million (\$68,000 per acre) were considered.

The Pass a Loutre WMA environmentally cleared placement sites are located in the immediate vicinity of, and on the east and west banks, of South Pass. National Environmental Policy Act (NEPA) compliance for the dredging of South Pass is provided by an Environmental Impact Statement (EIS) prepared in 1973, and two supplemental EISs prepared in 1976, and 1984. Two environmental assessments (EA) completed in 2003, and 2011, combined with the NEPA documents cited above addressed the disposal of dredged material into the Pass a Loutre WMA. In addition, the WMA's fresh and brackish marsh, which are classified as emergent wetlands, are an important nursery for fresh and saltwater fish species. The WMA consists of marsh and shallow open water habitat. The proposed project would further build upon past

beneficial use efforts and benefit the area by immediately constructing 640 acres of coastal ridges and wetlands.

### **Framework for a Gulf Coast Sediment Management Program**

The perception of dredged material has evolved in recent decades from a material that needed to be disposed of, to a valuable resource in the ecosystem restoration tool box for combating coastal erosion, nourishing beaches, building habitat, and returning subsided wetlands to an elevation within the tidal range. However, challenges to fully utilize available sediment still exist, including the variation in types of available material, the location of available material in relation to placement sites, the timing of O&M dredging activities compared to the availability of placement sites, and availability of beneficial placement funding.

While the function or value of individual beneficial use projects may be local in scope. Cumulatively, multiple beneficial use projects across a wide geographic area could: 1) significantly offset coastal wetland loss; 2) provide nursery areas or other habitats for important commercial species or species of concern; and 3) minimize salt water intrusion by reestablishing estuarine boundaries through construction of spits, barrier islands and wetlands.

The Gulf ecosystems and the resources they support are vulnerable to man-made and natural events such as development, tropical storm and hurricane events, ongoing subsidence and erosion exacerbated by sea-level rise, disintegration of wetlands and barrier island chains, and high rates of wetland loss. Improving the resiliency of these ecosystems is a critical component of restoring the Gulf of Mexico as a whole, and illustrates a need for a programmatic beneficial use program in the northern coast of the Gulf of Mexico to augment existing beneficial use efforts that are currently based only on individual projects, and elevate them to a programmatic effort. (See Section 9.A of this proposal for a detailed discussion on the USACE's Gulf-wide sediment placement program.)

A recent assessment identified the most pressing challenges facing the Gulf of Mexico ecosystem as: the loss of wetland habitats; erosion of barrier islands; loss and degradation of coastal estuarine habitat; imperiled fisheries; hypoxia (low oxygen) in the Gulf of Mexico; and climate change (Mabus 2010). Sediment, delivered by the Gulf river systems, built much of the Gulf Coast and continues to be essential to the health of the Gulf ecosystem. The utilization of river sediment can offset some of the challenges listed above. Accordingly, the Gulf Coast Ecosystem Restoration Task Force proposed a sediment management approach to address land loss through sustainable resource management, and land building and restoration. The approach recommended two actions related to dredged material: maximize beneficial use, and increase dedicated dredging of river sediments (GCERTF 2011). Beneficial use is defined as the productive use of material produced during the authorized maintenance dredging of navigation channels. Dedicated dredging, while having the same purpose, does not have the same required link with authorized O&M navigation dredging.

USACE has an established track record of beneficially placed dredge material. Combined, the four Gulf Coast USACE Districts (Galveston, New Orleans, Mobile, and Jacksonville) annually dredge approximately 123 mcy from coastal Federal navigation projects, of which 22 mcy is beneficially placed. Beneficial use of dredged material uses science and engineering to produce operational efficiencies supporting sustainable infrastructure; uses natural processes to the maximum benefit; broadens and extends the base of benefits provided by projects to include substantiated economic, social, and environmental benefits ("triple-win" benefits); and uses



science-based collaborative processes to organize and focus interests (Gerhardt-Smith, et al. 2014).

Navigation in the Gulf Coast region will continue to require dredging, and the implementation of projects that use dredge material to restore coastal habitats should form the cornerstone, or certainly be a well utilized tool, for coastal ecosystem restoration in the Gulf. Sediment delivered by the many rivers draining into the Gulf is essential to the health of the Gulf Coast ecosystem. One component of a strategic approach to sediment management is maximizing the use of dredge material for effective and sustainable habitat restoration. Some sediment that is currently available is not being fully utilized for effective ecosystem restoration. As such, the Gulf Coast is an ideal location to augment existing beneficial use and for that matter, dedicated dredging, and elevate them to a programmatic effort. The project described in this proposal, along with potentially others submitted separately for inclusion in the RESTORE Funded Priority List, is intended as a foundational element toward restoring the value of the Gulf of Mexico to the Nation and the World, through the establishment of a Gulf Coast Sediment Placement Program.

A component of the USACE Gulf Coast Sediment Placement Program would be the Lower Mississippi River (LMR) Sediment Placement Program. The LMR Sediment Placement Program would advance planning, technical assistance, and implementation of LMR sediment placement studies, projects, and pilot projects using sediment from the Lower Mississippi River, to restore/create coastal habitats, including barrier islands, wetlands, and maritime forested ridges on both the east (Breton Sound) and west (Barataria Basin) banks of the LMR. Studies to be conducted under this program could include evaluating alternate delivery methods and outcomes from sediment delivery via barge, hopper dredge, pipeline, methods for stockpiling dredge material for future restoration use, and evaluating innovative sediment placement techniques, to name a few. Projects that could potentially be recommended for funding include, but are not limited to, placement of materials within and outside the bird's foot delta, on barrier islands, and along Mississippi River's east and west banks to create emergent wetlands, ridges and other coastal features. Pilot projects could evaluate: the cost-effectiveness of moving sediment to placement sites currently considered as long distance and cost prohibitive; the use of sediment traps on the Mississippi River; and the use of thin layer placement of dredged material to restore coastal marshes, just to name a few.

Since 1976, MVN has used dredged material to create over 48 square miles (31,693 acres) of coastal habitat, including nearly 15,600 acres using material from the LMR, and 990 acres using material from South Pass. (See Section 9.B of this proposal for graphics depicting MVN's beneficial use efforts.) These projects not only benefit the ecosystem by restoring habitat diversity to its historical marsh-open water configuration, which benefits commercial and recreational finfish, wildlife and water fowl species, but also abates saltwater intrusion into historically freshwater/brackish wetlands. This proposal would provide similar benefits while promoting community resilience by supporting the multiple lines of defense strategy. As a result, the project would support the battle against coastal retreat, dampening storm surges, and reducing storm damages to lower Plaquemines Parish oil and gas, marine transportation and fishing industries, and communities, thereby providing economic and social benefits to the region.

MVN is responsible for the largest Federal channel maintenance dredging program in the nation. On average, MVN annually dredges approximately 78 mcy of material during routine maintenance of federally authorized navigation channels, of which approximately 37 mcy are

dredged from remote locations that are too distant from placement sites to be economically used, or the material is physically unsuitable for use. Of the remaining 41 mcy of material, approximately 16 mcy, or nearly 40 percent, is used by existing MVN programs to create/restore wetlands. RESTORE Council funding could be used in concert with MVN Mississippi River O&M efforts to implement a comprehensive sediment use program to restore/create additional coastal wetlands using currently underutilized sediment. Two projects that restore emergent wetland habitat in currently degraded shallow open water that could be components of a LMR Sediment Placement Program for near term implementation are: 1) wetland creation in West Bay, Louisiana, using dredge material from the HDDA; and 2) wetland creation in the Pass a Loutre WMA using dredge material from South Pass of the Mississippi River. The project described in this proposal addresses placement of dredge material from South Pass to the Pass a Loutre WMA.

## 2) Focus Areas and Emphasis Areas

The RESTORE Council identified Focus Areas and Emphasis Areas to help ensure Council-selected projects represent a focused, integrated, and efficient use of available funds.

### a. Focus Areas

The RESTORE Council identified two focus areas: Habitat and Water Quality. The primary Focus Area of this project is Habitat restoration. The rate of wetland loss in coastal Louisiana is well documented, with the bird's foot delta experiencing the greatest subsidence rates. Through the placement of readily available sediment material into the Pass a Loutre WMA, the project will rapidly and efficiently restore approximately 640 acres of marine ridges and emergent wetlands, in areas of rapidly eroding wetlands that has degraded to shallow open water habitat, thereby helping mitigate land loss in the Mississippi River bird's foot delta, in general, and in West Bay, specifically.

**Focus Area:**  
*Habitat*

The project also supports the second focus area of improving water quality by: 1) retarding saltwater intrusion into the historically fresh/brackish water estuary, thereby reducing the rate of conversion of freshwater/brackish wetlands to open water; and 2) restoring wetlands that filter chemicals and sediment from water restricting such constituents from entering the Gulf of Mexico.

### b. Emphasis Areas

The RESTORE Council identified four emphasis areas that address the significance, sustainability, potential for success, and benefits to the human community of proposed projects. The following describes how the proposed project addresses the Council's Emphasis Areas.

**Emphasis Areas:**

- *Addresses Significant Ecosystem Issue*
- *Sustainable Over Time*
- *Likely to Succeed*
- *Benefits the Human Community*

i. Project is an Initial Core Step in Addressing a Significant Ecosystem Issue: By restoring coastal wetlands, the proposed project addresses a significant ecosystem

issue, the loss of coastal wetlands in the Mississippi River bird's foot delta. Louisiana wetlands, which account for 40% of the continental US coastal wetlands, are unique and vital ecological assets worth saving. The Louisiana coastal area has lost 1,900 square miles of land since 1932 due to multiple causes, including oil and gas development, navigation canals, land subsidence, river management, and sea level rise. (See Section 9.C of this proposal for Louisiana Coastal Land Loss Map.) The bird's foot delta is ground zero for coastal wetland loss (experiencing the greatest subsidence rates in the state) and oiling from the Deep Water Horizon Oil Spill. The wetlands support the multiple lines of defense strategy by serving as storm buffers against hurricanes and as flood risk management features by storing excess floodwaters during high rainfall. They replenish aquifers, purify waters, and provide a habitat for various wildlife and fish species. Louisiana's wetlands benefit humans by way of fisheries industries, fur harvesting, oyster production, recreation resources/ecotourism – providing billions of dollars in revenues for our nation.

A primary method for combating coastal land loss in Louisiana is to reintroduce sediment into the basin via beneficial placement of dredge material, which results in the creation of tidal flats that are intermittently flooded and suitable for marsh development. The proposed project will make positive contributions to coastal land building through the use of sediment material that is currently being underutilized and is readily available for use. The proposed project will build upon existing, separate, but related MVN beneficial use programs including the MVN's Mississippi River Operation and Maintenance (O&M) Program, the CWPPRA Program, and the Louisiana Coastal Area (LCA) BUDMAT Program, all of which are authorized to beneficially use dredge material to restore Louisiana coastal habitat.

Material dredged under MVN's O&M program is disposed of in the least costly alternative that is consistent with sound engineering practices and meets all applicable Federal environmental standards. This least cost disposal alternative is called the Federal standard. Beneficial use projects provide funds for disposal activities associated with separate, cost-shared, individual ecosystem restoration beneficial use projects that are above and beyond the disposal activities that are covered under the Federal standard. Beneficial use projects typically cover the costs for pumping and placing the dredge material beyond the Federal standard, and must be timed/sequenced to coincide with O&M dredging activities. The proposed project excavates readily available sediment materials from the Mississippi River that have been deposited as a result of prior MVN O&M dredging activities and by natural river dynamics including shoaling, in order to create wetlands to achieve the goals of the RESTORE Council to Restore Habitat, at very effective costs.

ii. The Project Will be Sustainable Over Time: Sustainability of the ridges and wetlands to be restored by the project will be enhanced through existing crevasses developed under the CWPPRA Program and other beneficial use projects (the Mississippi River O&M Program, CWPPRA, and the LCA BUDMAT Program) in the bird's foot delta. The CWPPRA Delta Wide Crevasse Project promotes sediment accretion and marsh creation by delivering sediment and fresh water into the Pass a Loutre WMA, and through crevasses constructed as mitigation for activities authorized under the US Environmental Protection Agency (EPA)/USACE Clean Water Act regulatory program, in addition to crevasses constructed by the Louisiana Department of Natural Resources (LDNR). Crevasses allow sediment-laden water to flow into the bay to create splays, which are land formations resulting from sediment accretion near the mouth of the crevasse. Splays consist of mud flats, channels, and sediment that are

capable of building land in open water areas over time (Boyer et al.). The Pass a Loutre WMA crevasses and the proposed project are synergistic. Coastal ridges and wetlands created through the placement of material provide a substrate for the establishment of a variety of upland and wetland plant species that aid in sediment trapping, thereby enhancing the sediment-trapping capabilities of the diversion. This in turn helps to sustain the wetlands created by the proposed project. The project life is estimated at not less than 50 years.

iii. The Project is Likely to Succeed: The project has a high probability of success based on the MVN's record of creating/restoring coastal ridges and wetland habitat with dredge material in the Pas a Loutre WMA thru practices as proposed under this project. The placement sites are conveniently located in the immediate vicinity of South Pass, and is replenished annually through naturally occurring shoaling. In addition, the material is readily available and use of the material is not contingent upon current and/or future O&M activities.

iv. The Project Benefits the Human Community: The project both directly and indirectly benefits the Gulf Coast human community. USACE dredging contracts awarded for over \$1.5 million include a requirement to establish and meet small business subcontracting goals. For prior dredging contracts, contractors have met their small business contracting requirements by relying on local small businesses for vessel and crew support activities. These subcontracts benefit the local community through the direct and/or indirect purchase of goods and services associated with these activities.

Ongoing shoreline retreat threatens communities by making community infrastructure, including roads, utilities, and commercial and industrial establishments more susceptible to wave damage. The proposed project provides key features (ridges and wetlands) in the multiple lines and defense strategy and enhances community resilience by reducing the vulnerability of lower Plaquemines Parish communities, as well as oil and gas, marine transportation and fishing industries, to shoreline retreat and storm surge. By restoring the freshwater/brackish wetlands of the bird's foot delta (and other beneficial use sites), coastal erosion will be abated, and storm surges will be reduced.

Finally, the project will generate significant benefits to natural resources and natural resource dependent activities and industries, specifically those critical to the fishing and tourism industries. The project restores ridges and freshwater and brackish wetlands that are among the most highly productive ecosystems and have historically been important to fisheries, migratory birds, and terrestrial animals.

### **3) Comprehensive Plan Goals**

The RESTORE Council identified five goals that proposed projects should support. The goals address the restoration of habitat and water quality, protecting living coastal resources, enhancing community resilience, and revitalizing the Gulf economy.

a. **Restore and Conserve Habitat**

The primary goal of this project is to Restore Habitat by rapidly restoring an estimated 640 acres of coastal ridges and wetlands through the placement of readily available sediment material into the Pass a Loutre WMA. This project is a significant step toward restoring the ecosystem diversity to a region containing salt marsh, open water estuaries, and fresh and salt riverine environments. The project will enhance utilization of

**Primary Goal:**  
*Restore Habitat*

Mississippi River sediment and contribute to maximizing use of dredge material for effective and sustainable coastal restoration.

In addition to the primary goal of restoring habitat, the project will support most of the remaining Comprehensive Plan goals, as identified below.

#### Secondary Goals:

- *Restore Water Quality*
- *Replenish and Protect Living Coastal and Marine Resources*
- *Enhance Community Resilience*
- *Restore and Revitalize the Gulf Economy*

#### b. Restore Water Quality

The project will improve water quality in the project area by retarding saltwater intrusion into the historically fresh/brackish water estuary, thereby reducing the rate of conversion of freshwater and brackish wetlands to open water. In addition, the wetlands restored by the project will improve water quality by acting as “living filters” that serve as the “final filter” to trap chemicals and sediment (Carter 1997) prior to waters entering the Gulf of Mexico.

#### c. Replenish and Protect Living Coastal and Marine Resources

Through the placement of sediment material, existing open shallow water will be converted to marine ridges and emergent wetlands. The project will replace less productive fish habitat with higher quality essential fish habitat by replenishing and protecting healthy, diverse, and sustainable living coastal resources in marsh fringe, interspersed shallow ponds, and emergent and submerged vegetation that juvenile fish species depend upon for nursery habitat. Fresh and intertidal intermediate water supporting plant species provide nursery and foraging grounds for a variety of economically important marine species including red drum, black drum, sand trout, spotted seatrout, southern flounder, Atlantic croaker, striped mullet, menhaden, white shrimp, brown shrimp, and blue crab. The project is also expected to benefit terrestrial, semi-aquatic, and avian wildlife species in the proposed project area.

#### d. Enhance Community Resilience

As outlined in the discussion on the Council’s Emphasis Areas, the proposed project will promote community resilience by reducing the vulnerability of lower Plaquemines Parish infrastructure.

#### e. Restore and Revitalize the Gulf Economy

The proposed project will serve to restore and revitalize the Gulf economy by: (1) supporting actions to reduce risk to the fishing and oil service areas in lower Plaquemines Parish; (2) complimenting the Federal navigation actions to maintain the viability of the Mississippi River; and (3) providing the habitat necessary for growing and sustaining fish species critical to recreational and commercial fishing industries. Recreational and commercial fishing is a multi-billion dollar industry critical to the economies of the Gulf States. Revenues from fishing, hunting and wildlife viewing in the Gulf region reached nearly \$22 billion in 2010 (U.S. DOI FWS 2011). Over 90 percent of the total U.S. brown and white shrimp landings between 2008 and 2012 were from the Gulf of Mexico (NMFS 2014a). Both shrimp species depend heavily on estuaries and coastal wetlands. Wetlands within the estuary offer both a concentrated food source and a refuge from predators (U.S. DOI FWS 1983). In 2013, 44 percent of all marine fish caught

by recreational anglers in the U.S. were from the Gulf of Mexico (NMFS 2014b). Restoring coastal wetland habitat for those fish and wildlife species dependent upon such habitat for nursery, shelter, food, nesting, cover, and other life requirements will benefit the Gulf economy.

#### **4) Comprehensive Plan Objectives**

The RESTORE Council identified seven objectives that proposed projects should support. The following describes how the proposed project supports the Council’s objectives.

a. Restore, Enhance, and Protect Habitats

The proposed project will primarily address the Council’s Comprehensive Plan Objective to “Restore, Enhance, and Protect Habitats” by restoring approximately 640 acres of coastal ridge and wetland habitat through the placement of dredge material at a cost of \$56,750 per acre restored.

**Primary Objective:**  
*Restore Habitat*

In addition to the primary objective of restoring habitats, the project will support most of the remaining Comprehensive Plan Objectives.

b. Restore, Improve, and Protect Water Resources

The project supports a secondary objective of restoring water resources by preventing further conversion of freshwater and brackish wetlands to open shallow saltwater habitat, and retarding saltwater intrusion into the historically freshwater and brackish wetlands

**Secondary Objectives:**

- *Restore, Improve and Protect Water Resources*
- *Protect and Restore Living Coastal and Marine Resources*
- *Restore and Enhance Natural Processes and Shorelines*
- *Promote Community Resilience*
- *Improve Science-Based Decision-Making Processes*

c. Protect and Restore Living Coastal and Marine Resources

As outlined in the discussion on Comprehensive Plan Goals, restoration of marine ridge and emergent wetland habitat will replenish and protect healthy, diverse, and sustainable living coastal habitat essential for juvenile fish, terrestrial, semi-aquatic, and avian wildlife species.

d. Restore and Enhance Natural Processes and Shorelines

In addition to helping maintain the existing shorelines of the Mississippi River and its distributaries by facilitating navigation maintenance dredging, the project would support the return of the historical ridge-marsh-open water configuration of the bird’s foot delta. In doing so, the project will restore and enhance ecosystem resilience, sustainability, and natural defenses through the restoration of natural processes and shorelines. In addition, coastal wetland vegetation stabilizes the shoreline by holding sediments in place with roots, absorbing wave energy, and breaking up the flow of stream or river currents.

e. Promote Community Resilience

Restoring coastal ridges and wetlands, and stemming the conversion of freshwater and brackish wetlands to shallow open water will promote community resilience by supporting the multiple lines of defense strategy and reducing the vulnerability of lower Plaquemines Parish infrastructure as outlined in the discussion on the Council’s Emphasis Areas.

f. Improve Science-Based Decision Making Processes

The science associated with the use of dredge material is well established, as illustrated by the MVN past efforts that have restored over 31,000 acres of coastal habitat since 1976. The success of the MVN’s efforts is due in part to the use of lessons learned to refine beneficial use design and implementation efforts. It would be expected that the proposed project could result in additional contributions and refinements to the science and practice of land building through lessons learned and adaptive management, and its effectiveness of creating wetlands in concert with the existing crevasses.

**5) Comprehensive Plan Priority Criteria**

The proposed project directly supports three of the four RESTORE Council-identified priorities and supports the intent of the fourth priority criteria. The project: (1) is projected to make significant contributions to the Gulf Coast ecosystem; (2) is part of a large-scale Gulf Coast ecosystem restoration program; and (3) restores the long-term resiliency of the natural resources most impacted by the Deepwater Horizon oil spill. Beneficial use projects are included in the Louisiana Coastal Master Plan and this project is supported by the Louisiana Department of Wildlife and Fisheries and the Plaquemines Parish Government (see letters of support presented in Section 9.D.), illustrating support for the fourth priority.

**Priority Criteria:**

- *Projects Projected to Make the Greatest Contribution*
- *Part of Large-scale Program for Gulf Coast Ecosystem Restoration*
- *Restores Natural Resources Impacted by Deepwater Horizon Oil Spill*
- *Consistent with State Master Plan*

a. Projects that are Projected to Make the Greatest Contribution

The proposed project not only offers the potential for the greatest contribution to the restoration and protection of the natural resources, ecosystems, fisheries, marine and wildlife habitats, and coastal wetlands of the Gulf Coast ecosystem, but also offers the capability to accomplish these goals rapidly and extremely cost effectively. This project has the capacity to rapidly restore existing open shallow water habitat to habitat that is more consistent with the historical diverse ecosystem in the region.

b. Large Scale Projects and Programs to Restore the Gulf Coast Ecosystem

As outlined at the beginning of this proposal, this project is a component of a larger USACE beneficial use effort to restore the Gulf Coast coastal ecosystem. This project has the capacity to create approximately 640 acres of ridge and emergent wetland habitat, at an estimated cost of \$36 million, or an average of say, \$56,750 per acre.

c. Project Contained in Existing Gulf Coast State Comprehensive Plan

The proposed project is believed to be consistent with the State of Louisiana’s Coastal Master Plan and is consistent with the Plaquemines Parish Comprehensive Coastal Restoration Plan, and is supported by the Louisiana Department of Wildlife and Fisheries and the Plaquemines Parish Government (as illustrated in Section 9.D, letters of support). In addition, the project may increase alignment between the MVN’s Mississippi River maintenance dredging and the State’s Coastal Zone Management Plan.

d. Projects that Restore Long-Term Resiliency of the Natural Resources Most Impacted by the Deepwater Horizon Oil Spill

The area to be restored by the proposed project is located at the mouth of the Mississippi River (near river mile 0) in the immediate vicinity of the Deep Water Horizon Oil Spill, and as such was impacted by the oil spill.

**6) Comprehensive Plan Commitments**

The RESTORE Council identified five commitments that proposed projects should achieve. The commitments address the use of science-based decision making, regional approach to restoration engagement, leveraging resources, and delivering results. The following describes how the proposed project supports the Council’s commitments.

**Comprehensive Plan Commitments:**

- *Science-based Decision-Making*
- *Regional Ecosystem-based Approach to Restoration*
- *Leveraging Resources and Partnerships*
- *Delivering Results and Measuring Impacts*

a. Commitment to Science-Based Decision Making

This project is being proposed in part because, as presented in the discussion on Comprehensive Plan Objectives, the science and practice of coastal restoration through the use of dredge material is proven and well established. This ecosystem restoration tool can provide immediate results, build upon past and recent wetland creation projects, in the most cost-effective manner available in the current coastal restoration toolbox.

b. Commitment to a Regional Ecosystem-Based Approach to Restoration

As outlined in the discussion on Comprehensive Plan Objectives, this project is a component of a larger USACE beneficial use of dredge material effort to restore the Gulf Coast coastal ecosystem. Beneficial use of sediment is a key tool for regional ecosystem restoration. The Gulf of Mexico Regional Ecosystem Restoration Strategy describes the need “to maximize to the extent practicable and ecologically acceptable the quantity and effective use of sediments” (Gulf Coast Ecosystem Restoration Task Force 2011, 24). USACE has been committed to the restoration of the Nation’s largest expanse of coastal wetlands for more than 30 years, and the proposed project will continue this commitment.

c. Commitment to Leveraging Resources and Partnerships

A major benefit of the proposed project is that it leverages several existing separate, but related programs including the USACE’s Mississippi River O&M Program, the CWPPRA



Program, and the Louisiana Department of Wildlife and Fisheries, which have made significant investment in ecosystem restoration in Pass a Loutre WMA

As stated throughout this proposal, the MVN O&M Program has an extensive history of creating/restoring coastal habitat in the LMR. However, beneficial use under MVN's Mississippi River O&M Program has historically been restricted by available funding.

The Coastal Wetlands Planning, Protection and Restoration Act (CWPPRA) was passed in 1990 to address Louisiana's need for a restoration program. CWPPRA is authorized to plan, design, construct, maintain, and monitor coastal wetland restoration projects that provide for the long-term conservation of wetlands and their dependent fish and wildlife populations in coastal Louisiana. The five Federal agencies partner with the state to cost share in the design and construction of coastal restoration projects. The CWPPRA Program receives approximately \$80 million in Federal funds annually. CWPPRA has constructed several ecosystem restoration projects that will be built upon by the proposed project, namely the Delta Wide Crevasse Project, which is designed to introduce sediment-laden waters into the WMA to promote the formation of emergent freshwater and intermediate wetlands.

#### d. Commitment to Delivering Results and Measuring Impacts

The use of dredge material is a well-established ecosystem and land restoration tool. Over 31,000 acres of marsh have been restored by MVN through placement of dredge material since 1976. These values illustrate that the results and impacts of sediment use are easily documented.

### **B. Implementation Methodology and Timeline**

Sediment will be dredged from South Pass using a cutter head dredge. The material will be hydraulically pumped via temporary pipeline to the designated placement sites within the Pass a Loutre WMA in the immediate vicinity of South Pass. The placement of the material will be unconfined, to a maximum height of 8.0 feet MLG to create marine ridges and emergent wetlands. Project design would be finalized upon receipt of funding. Project planning, design, right-of-entry acquisition, and construction contract award is anticipated to take approximately 6 to 9 months from receipt of funding. The construction scheduled is estimated at 11 months from construction contract award.

### **C. Best Available Science**

As outlined in the discussion on Plan Objectives, the science and practice of using dredge materials for coastal restoration is a proven and well established process.

#### 1) Risks and Uncertainty

MVN has developed a proven record of using dredge material on the Lower Mississippi River in general, and specifically from the South Pass to the Pass a Loutre WMA. Risk and uncertainty associated with this project will be minimal, and will primarily be associated with uncertainty associated with costs (specifically fuel costs), scheduling of needed equipment (dredges), unforeseen events and circumstances and previously unencountered obstacles in obtaining right-of-entry. Right of entry at the placement site has been obtained numerous times in the past in support of MVN activities; however, unforeseen events could impact MVN's ability to obtain right-of-entry from the State of Louisiana, which could impact the proposed project schedule.

## 2) Monitoring and Adaptive Management

Upon completion of construction activities, placement sites will be surveyed to determine the quantity of emergent wetlands restored by the project. The costs for these efforts are included in the overall construction cost of the project. In addition, the placement sites will be monitored annually as part of USACE's Beneficial Use Monitoring Program (BUMP) aerial photography effort. The BUMP Program consists of using color infrared digital aerial photography that are produced as Orthophotos for use in the USACE's GIS programs, which are used to identify any change in land area at USACE beneficial use placement sites. The BUMP Program is funded as part of the MVN's O&M activities. Adaptive management efforts should not be warranted and are not planned under this proposal.

### **D. Environmental Compliance**

As illustrated in the Environmental Compliance Checklist presented at Section 6 of this proposal, all necessary environmental compliance for the dredging of material from South Pass and the placement of dredge material into the Pass a Loutre WMA have been obtained. Specifically, National Environmental Policy Act compliance for the dredging of South Pass is provided by the Environmental Impact Statement (EIS) prepared in 1973 titled, "Mississippi River, Baton Rouge to the Gulf of Mexico, Louisiana", with associated statement of findings dated April 27, 1974. A supplemental EIS was prepared in 1976 to address omissions in the original EIS and unanticipated dredging requirements. The statement of findings for the supplemental EIS was signed on March 8, 1976. A second supplemental EIS was prepared in 1984 that addressed features to reduce the amount of maintenance dredging required in the navigation channels. The record of decision for the second supplemental EIS was signed on May 15, 1985. The original EIS and the two supplemental EISs also addressed the disposal of dredged material into some of the disposal areas along South Pass. The following environmental assessments (EAs) further addressed disposal of dredged material into the proposed disposal areas: EA #382, titled "Freshwater Reservoir Additional Disposal Area, South Pass of the Mississippi River, Plaquemines Parish, Louisiana," and EA #491 titled, "Mississippi River, Baton Rouge to the Gulf of Mexico, Louisiana, Designation of Additional Disposal Areas, Plaquemines Parish, Louisiana," with associated FONSI signed on August 20, 2003, and November 11, 2011, respectively. See Section 9.E of this proposal the cited FONSIs.

### **E. Leveraging of Resources and Partnerships**

As presented in the discussion on Comprehensive Plan Commitments, the proposed project will build upon several existing beneficial use efforts within the MVN, namely USACE Mississippi River O&M Program, and the CWPPRA Program. In addition, the project will leverage the use of readily available and replenishable Mississippi River sediment to build marine ridges and emergent wetlands. This project is consistent with, and supports the implementation of, PPG restoration plans.

### **F. Project Success**

The placement of dredge material is a known process with a significant record of proven success; it is the "low hanging fruit" in the ecosystem restoration toolbox, and maximum use of dredge material should be utilized for ecosystem restoration efforts prior to considering more problematic, expensive and unproven approaches.

### 1) Metrics for Success

The metrics for project success is the number of acres of emergent wetland habitat restored (approximately 640 acres), the cost of delivering the sediment to the deposition sites (estimated at \$36 million), the average cost per acre (\$56,750), and the length of time required to build the marsh/ridge sites (estimated 20 months from receipt of funding).

### 2) Reasons to Expect Success

The reasons for an expectation of project success are: (1) the proven success of building emergent ridge and wetland habitat with dredge material in the Pass a Loutre WMA; and (2) the readily available high quality source of material conveniently located in South Pass, which will be replenished by the naturally occurring shoaling of sediment; (3) readily available environmental compliance; and (4) the readily obtainable real estate right-of-entry which, while not in hand, has been obtained numerous times in the past in support of MVN activities.

### 3) Sustainability

As presented in the discussion on the Council's Emphasis Areas, sustainability of the habitat to be restored by the project will be enhanced by the crevasses that deliver sediment-laden Mississippi River waters to the area, and the leveraging of other beneficial use efforts (the Mississippi River O&M Program, and CWPPRA Program) that could fund additional beneficial use.

### 4) Comprehensive Plan Commitment Progress

As illustrated in this proposal, USACE is committed to achieving the Comprehensive Plan Commitments of: (1) Science-Based Decision Making; (2) a Regional Ecosystem Based Approach to Restoration; (3) the Engagement, Inclusion, and Transparency of the project; (4) Leveraging Resources and Partnership; and (5) Delivering Results and Measuring Impacts.

The proposed project relies upon the proven science of using river sediment to restore wetland habitat in degraded open shallow coastal waters. With the availability of millions of cubic yards of sediment from dredging navigation channels from Texas to Florida, the project, coupled with other beneficial use projects, offers the opportunity for significant regional impacts by restoring essential habitat for diverse fish and wildlife species throughout the Gulf Coast. USACE's Mississippi River O&M Program will be leveraged by the proposed project to produce even greater results. As with the existing ongoing efforts, the proposed project will produce measureable coastal restoration results that will be monitored and documented.

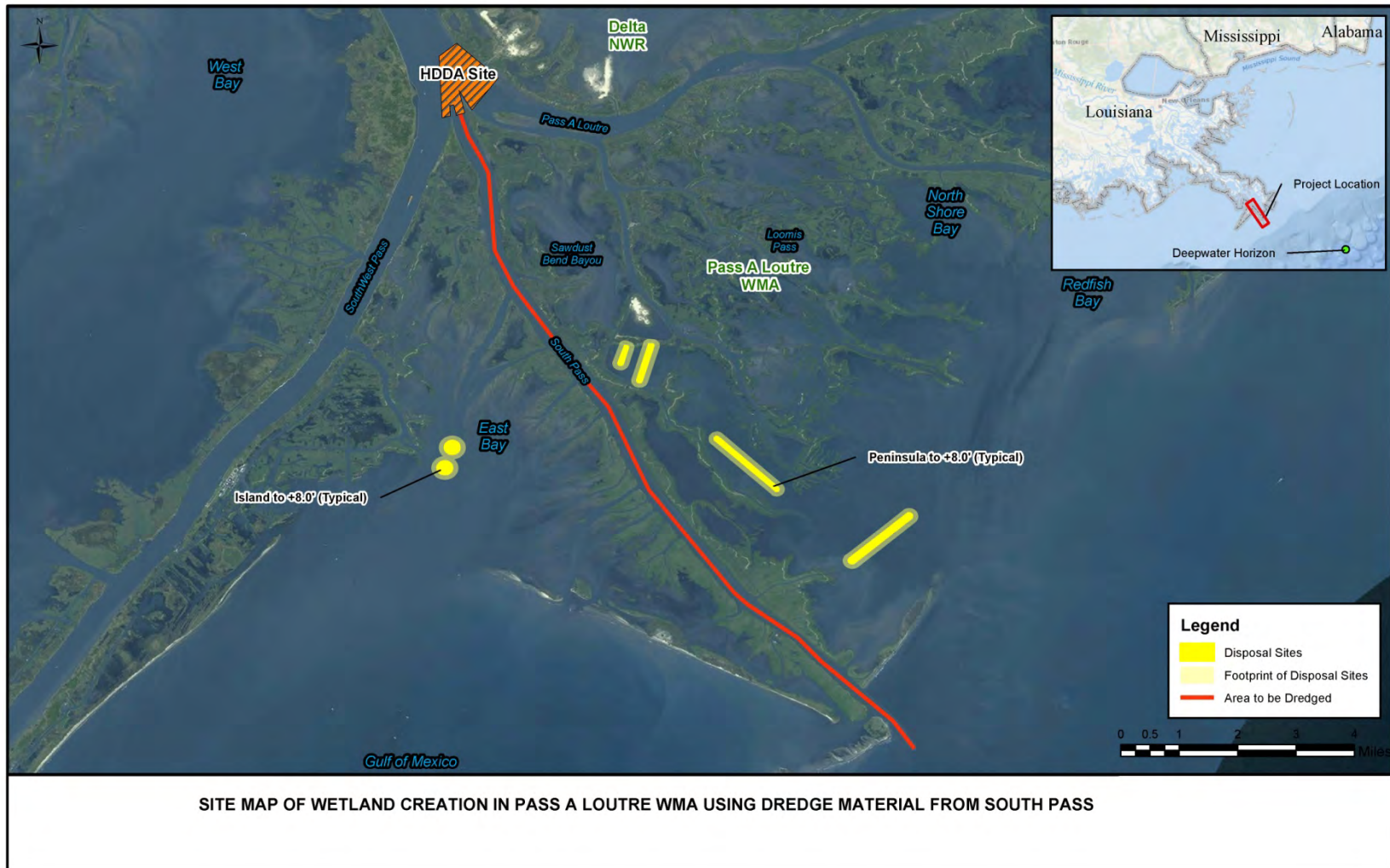
### 5) Benefits to the Human Community

The bird's foot delta is one of, if not the most productive fish and wildlife habitats in Louisiana, if not the nation, and has been of historical importance because of its diversity and abundance of wildlife, waterfowl, and freshwater/saltwater fish species. In recent years, the area has experienced degradation of its fresh and brackish wetlands to open shallow water as a result of sediment starvation. Restoring ridges and wetlands within the area would benefit not only local sportsmen, but sportsmen from across Louisiana and beyond that are drawn to this extremely fertile habitat. The human community will also benefit from the project's contribution to multiple lines of defense and combating coastal retreat and its attendant threat to community infrastructure, as well as the benefit of the restored lands in reducing storm surges.

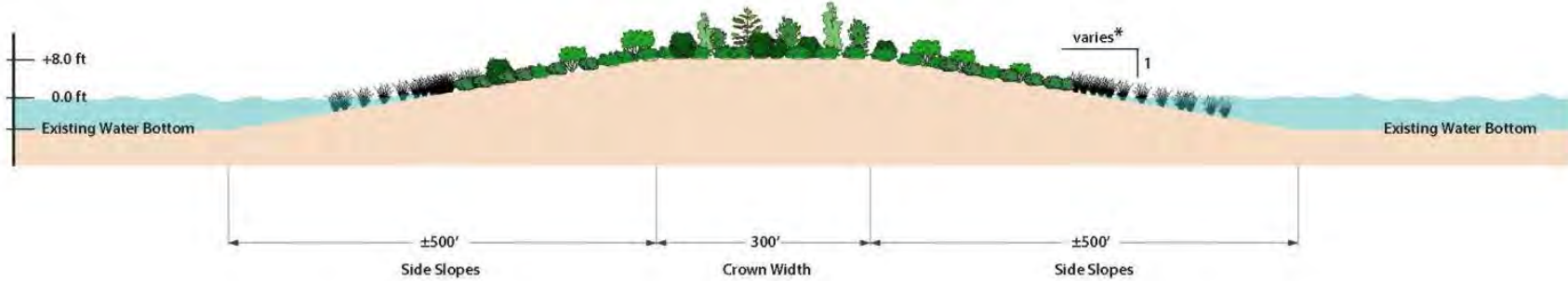
#### **4. LOCATION INFORMATION**

South Pass is located at the mouth of the Mississippi River, between Southwest Pass and Pass a Loutre, approximately 70 miles south of New Orleans, Louisiana. The proposed placement sites are located entirely within the boundaries of the Pass a Loutre WMA, dispersed along the east and west banks of South Pass. The Pass a Loutre WMA is located between Pass a Loutre and Southwest Pass and encompasses the open water areas of Blind Bay, Redfish Bay, Garden Island Bay, and East Bay. Dredge material to be used in this project will be obtained from South Pass, extending from the Head of Passes (29.154°N and 89.249°W) to the Gulf of Mexico (28.992°N and 89.139°W). Dredge material is proposed to be placed at six locations within the Pass a Loutre WMA ranging from the northernmost site at 29.085°N and 89.209°W, to the southernmost site at 29.033°N and 89.146°W. The South Pass and Pass a Loutre WMA proposed placement sites are shown on Figure 2, a theoretical placement peninsula cross-section is shown in Figure 3, and engineering drawings of the proposed project are shown in Figure 4.

**Figure 2. Site Map of Wetland Creation in Pass a Loutre WMA Using Dredge Material From South Pass**



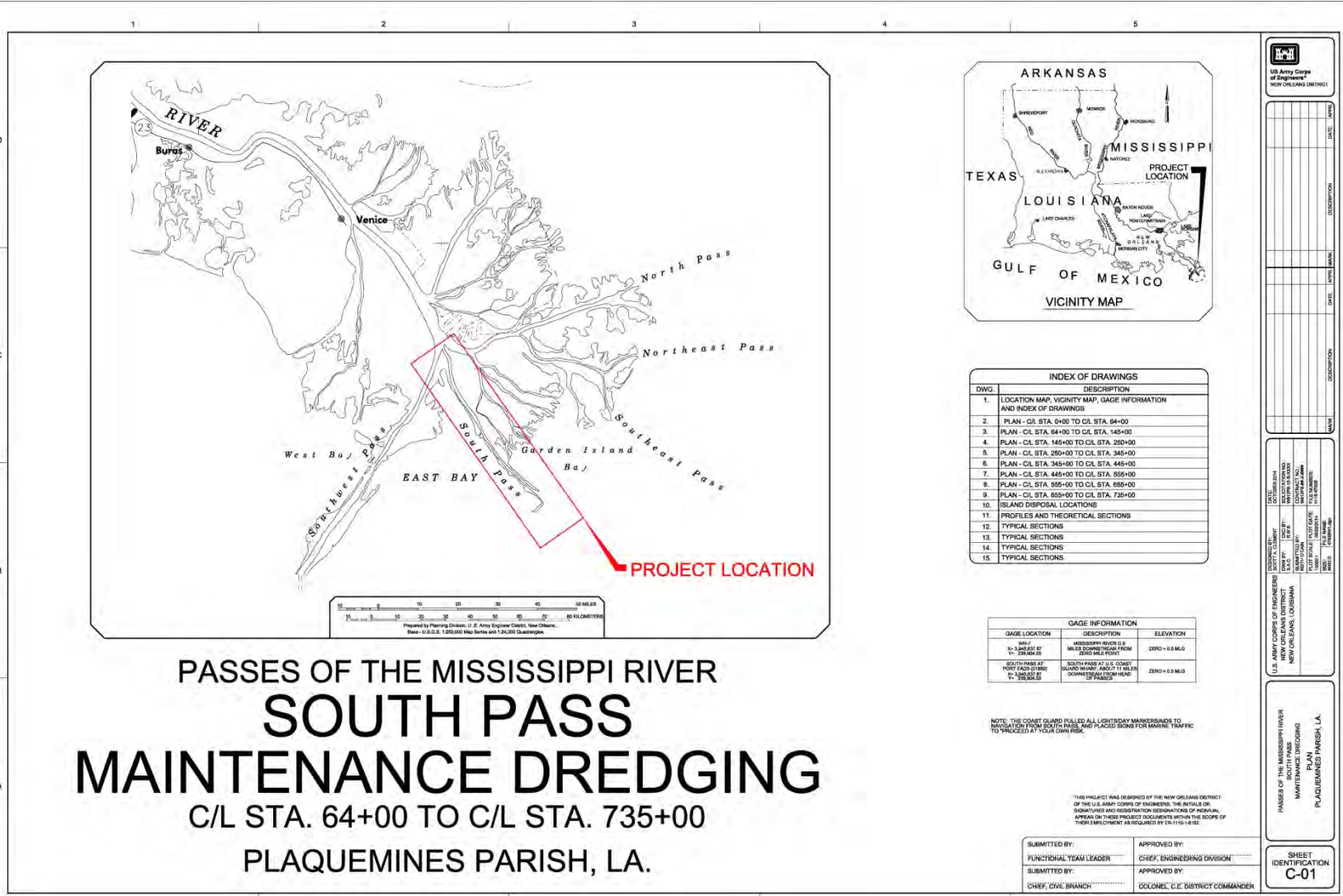
**Figure 3. Theoretical Peninsula Cross-section of Wetland Creation in Pass a Loutre WMA Using Dredge Material From South Pass**

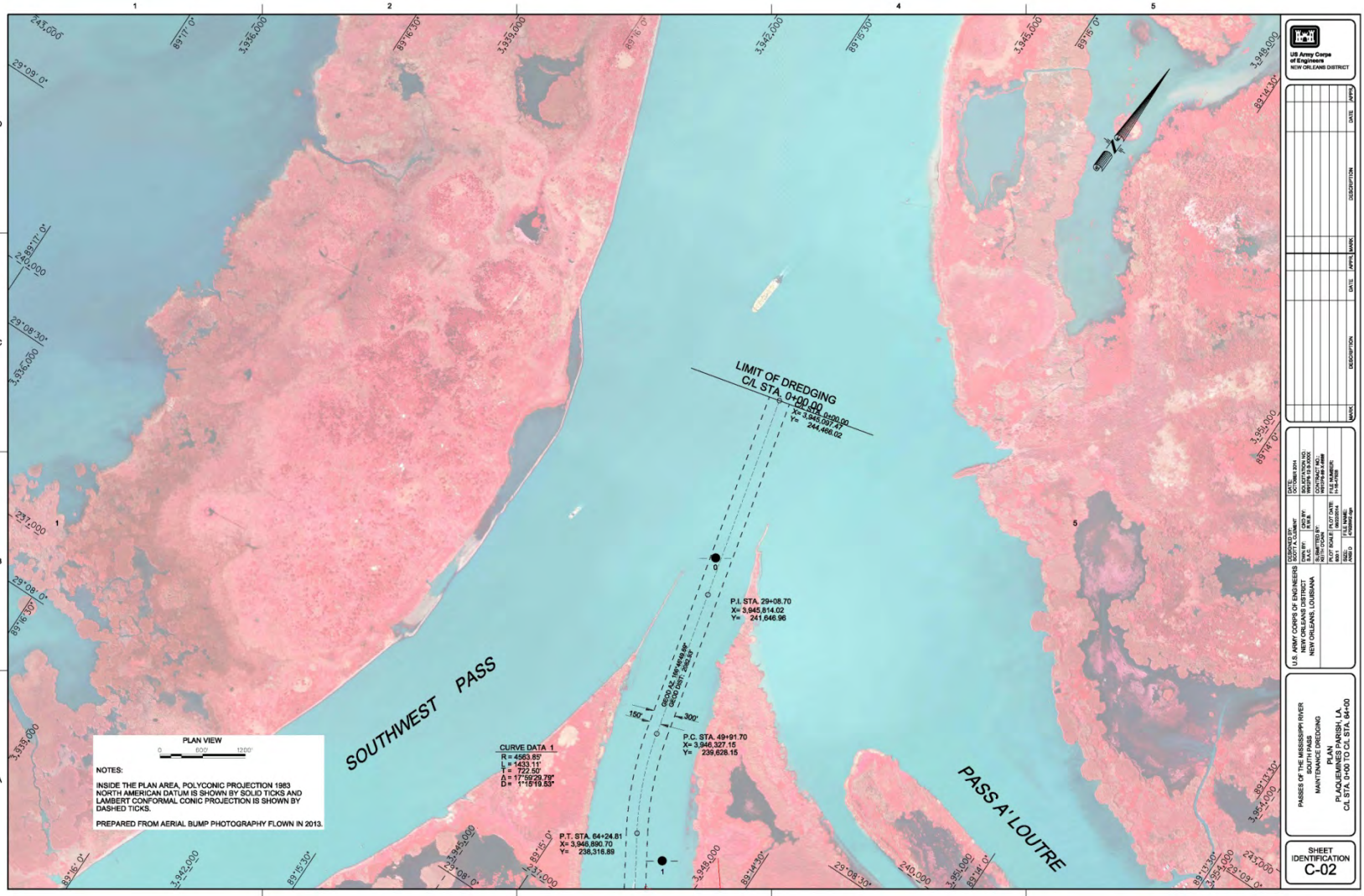


**Theoretical Peninsula Cross-section**  
*Not To Scale*

\*1V : 30H to 1V : 50H typical side slope, depending on material encountered

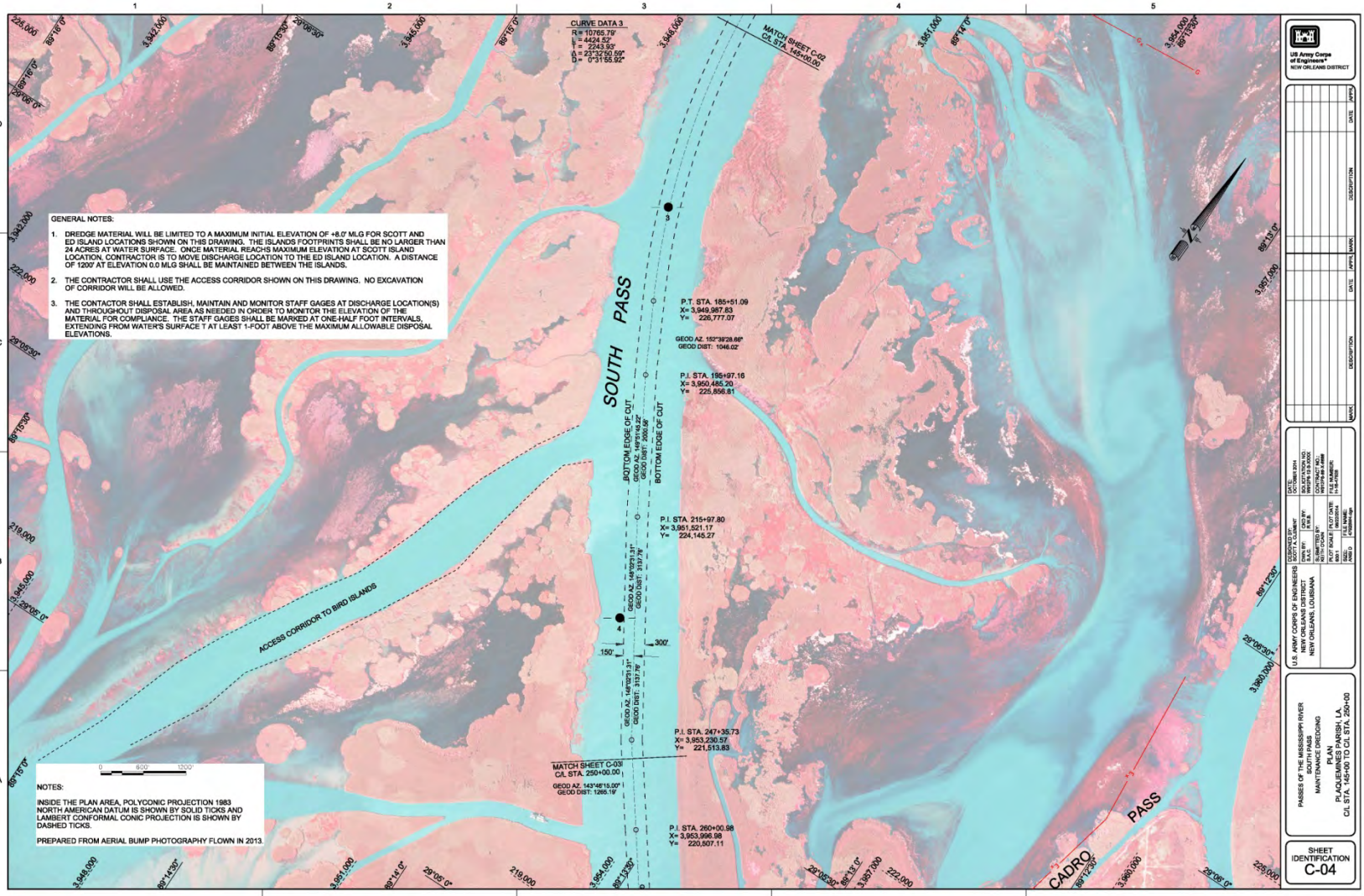
**Figure 4. Engineering Drawings of Wetland Creation in Pass a Loutre WMA Using Dredge Material From South Pass**











**GENERAL NOTES:**

1. DREDGE MATERIAL WILL BE LIMITED TO A MAXIMUM INITIAL ELEVATION OF +8.0' MLG FOR SCOTT AND ED ISLAND LOCATIONS SHOWN ON THIS DRAWING. THE ISLANDS FOOTPRINTS SHALL BE NO LARGER THAN 24 ACRES AT WATER SURFACE. ONCE MATERIAL REACHES MAXIMUM ELEVATION AT SCOTT ISLAND LOCATION, CONTRACTOR IS TO MOVE DISCHARGE LOCATION TO THE ED ISLAND LOCATION. A DISTANCE OF 1200' AT ELEVATION 0.0 MLG SHALL BE MAINTAINED BETWEEN THE ISLANDS.
2. THE CONTRACTOR SHALL USE THE ACCESS CORRIDOR SHOWN ON THIS DRAWING. NO EXCAVATION OF CORRIDOR WILL BE ALLOWED.
3. THE CONTRACTOR SHALL ESTABLISH, MAINTAIN AND MONITOR STAFF GAGES AT DISCHARGE LOCATION(S) AND THROUGHOUT DISPOSAL AREA AS NEEDED IN ORDER TO MONITOR THE ELEVATION OF THE MATERIAL FOR COMPLIANCE. THE STAFF GAGES SHALL BE MARKED AT ONE-HALF FOOT INTERVALS, EXTENDING FROM WATER'S SURFACE AT LEAST 1-FOOT ABOVE THE MAXIMUM ALLOWABLE DISPOSAL ELEVATIONS.

**NOTES:**

INSIDE THE PLAN AREA, POLYCONIC PROJECTION 1983 NORTH AMERICAN DATUM IS SHOWN BY SOLID TICKS AND LAMBERT CONFORMAL CONIC PROJECTION IS SHOWN BY DASHED TICKS.

PREPARED FROM AERIAL BUMP PHOTOGRAPHY FLOWN IN 2013.

**CURVE DATA 3**  
 R= 10765.79'  
 L= 4424.52'  
 I= 2243.35°  
 Δ= 23°32'50.50"  
 P= 1156.22'

**US Army Corps of Engineers**  
 NEW ORLEANS DISTRICT

NO.	DESCRIPTION	DATE	APP'D	DATE	APP'D

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**PROJECT INFORMATION**

PROJECT NO.: 14374613.001  
 DRAWING NO.: 14374613.001-001  
 SHEET NO.: C-04  
 PROJECT NAME: MAINTENANCE DREDGING OF SOUTH PASS  
 PROJECT LOCATION: SOUTH PASS, MISSISSIPPI RIVER, NEW ORLEANS DISTRICT, NEW ORLEANS, LOUISIANA

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**DESIGNER INFORMATION**

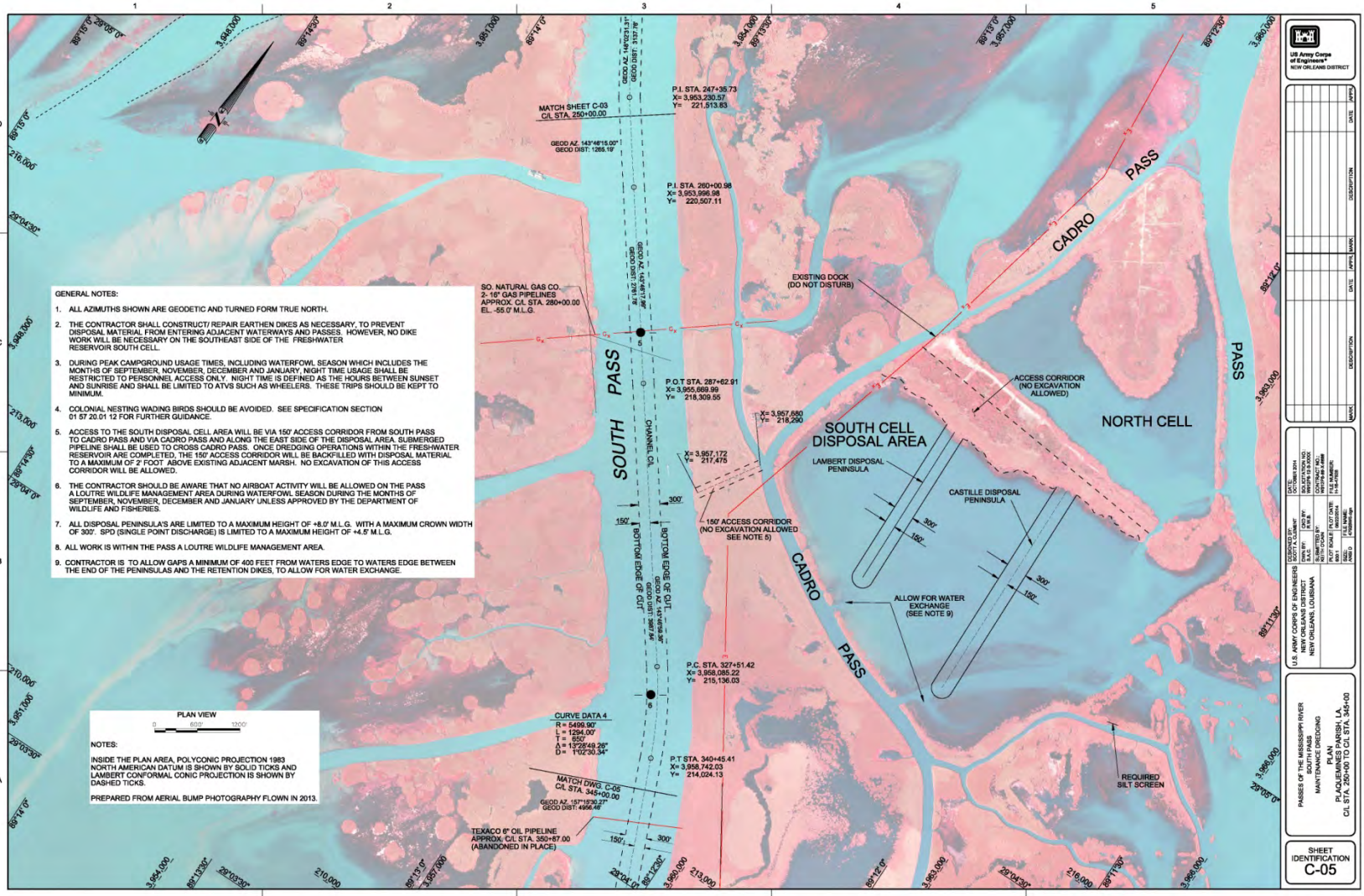
DESIGNER: US ARMY CORPS OF ENGINEERS  
 PROJECT MANAGER: [Name]  
 PROJECT ENGINEER: [Name]  
 PROJECT SUPERVISOR: [Name]  
 PROJECT ASSISTANT SUPERVISOR: [Name]  
 PROJECT CHECKER: [Name]  
 PROJECT APPROVER: [Name]

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**PROJECT IDENTIFICATION**

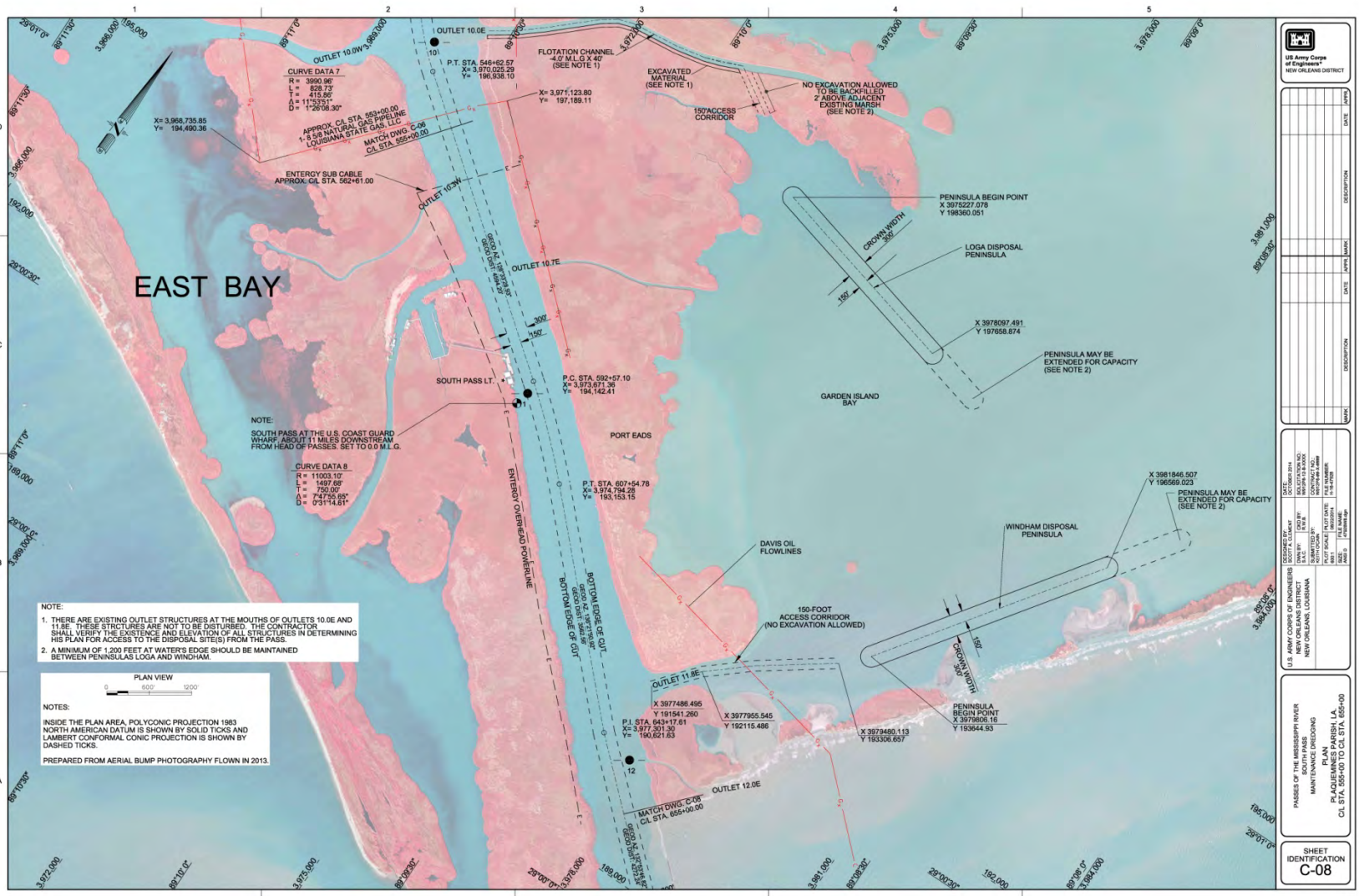
PHASE OF THE MISSISSIPPI RIVER MAINTENANCE DREDGING PLAN FOR THE SOUTH PASS, LA  
 CUL STA: 14374613.001 TO CUL STA: 14374613.000

**SHEET IDENTIFICATION**  
**C-04**





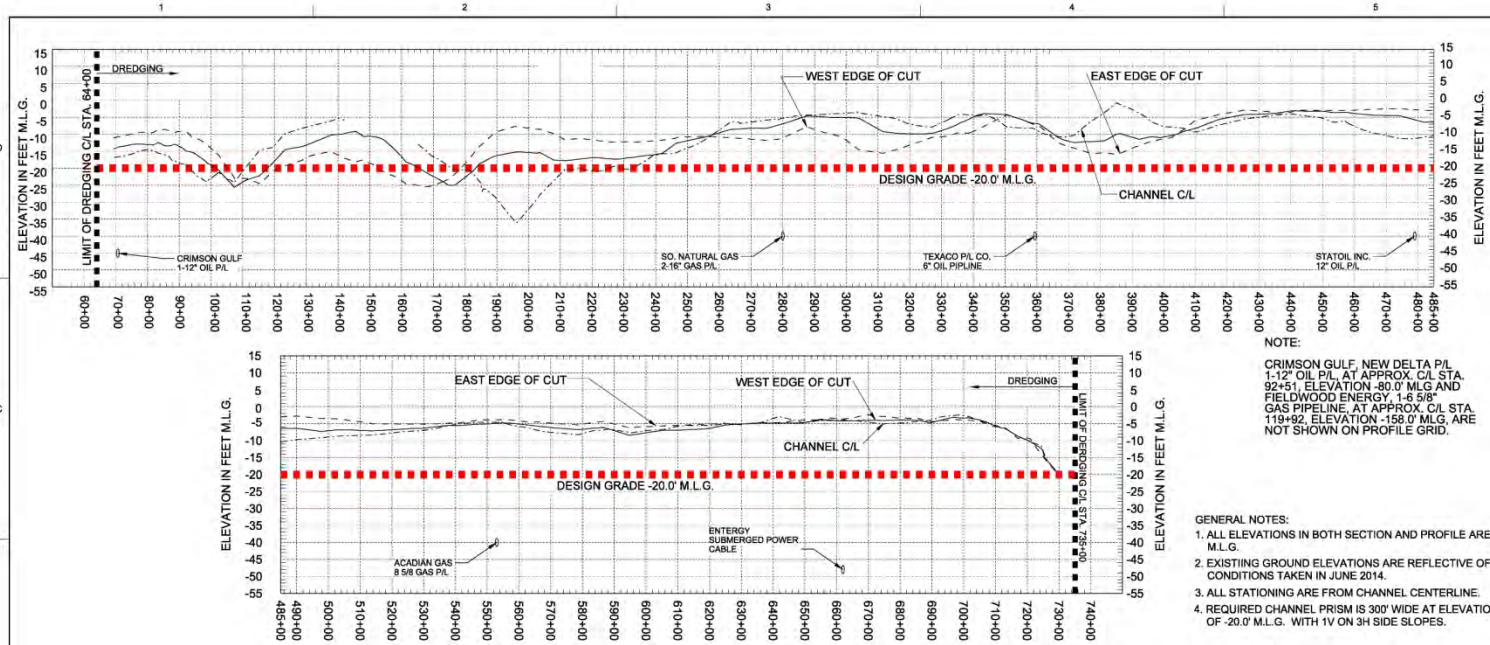








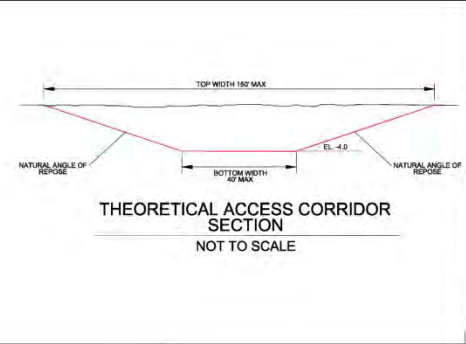
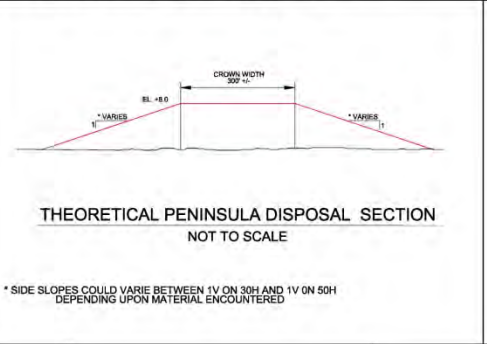
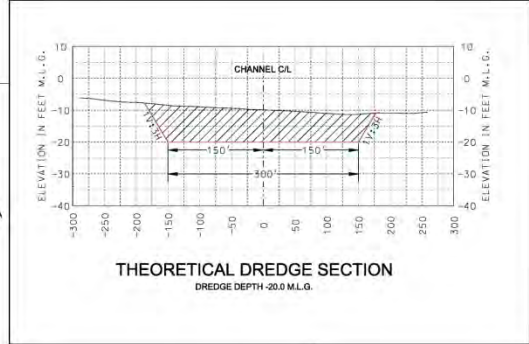




NOTE:  
 CRIMSON GULF, NEW DELTA P/L 1-12" OIL P/L AT APPROX. C/L STA. 92+51, ELEVATION -80.0' M/LG AND FIELDWOOD ENERGY 1.5 5/8" GAS PIPELINE AT APPROX. C/L STA. 119+92, ELEVATION -158.0' M/LG, ARE NOT SHOWN ON PROFILE GRID.

GENERAL NOTES:  
 1. ALL ELEVATIONS IN BOTH SECTION AND PROFILE ARE IN M.L.G.  
 2. EXISTING GROUND ELEVATIONS ARE REFLECTIVE OF CONDITIONS TAKEN IN JUNE 2014.  
 3. ALL STATIONING ARE FROM CHANNEL CENTERLINE.  
 4. REQUIRED CHANNEL PRISM IS 300' WIDE AT ELEVATION OF -20.0' M.L.G. WITH 1V ON 3H SIDE SLOPES.

### CHANNEL PROFILE



US Army Corps of Engineers  
 NEW ORLEANS DISTRICT

DATE	DATE
DESCRIPTION	DESCRIPTION
DATE	DATE
DESCRIPTION	DESCRIPTION
DATE	DATE
DESCRIPTION	DESCRIPTION

PROJECT NO. 14-00000000  
 DRAWING NO. 14-00000000  
 SHEET NO. C-11

U.S. ARMY CORPS OF ENGINEERS  
 NEW ORLEANS DISTRICT  
 NEW ORLEANS, LOUISIANA

DESIGNED BY: [Name]  
 CHECKED BY: [Name]  
 DRAWN BY: [Name]  
 DATE: [Date]

PROJECT TITLE: [Title]  
 SHEET TITLE: [Title]  
 SHEET NO.: [Number]

PARISH OF THE MISSISSIPPI RIVER  
 MAINTENANCE DREDGING  
 PROFILE AND THEORETICAL SECTIONS  
 PLaquemines PARISH, LA

SHEET IDENTIFICATION  
**C-11**

## 5. HIGH LEVEL BUDGET NARRATIVE

The estimated cost of the project is \$36 million, including finalizing planning and design, mobilization and demobilization (mob and demob), dredging the material from South Pass, hydraulically pumping the material to the placement sites, placing the material within the designated disposal areas, and supervision and administration. This cost estimate assumes the placement of approximately 8.5 mcy, resulting in the restoration/creation of approximately 640 acres of ridges and wetlands, at an average cost of \$56,750 per acre (see Table 1). It should be noted that the quantity of material placed and the resulting acres of wetlands created/restored could be altered to reflect available funding. For instance, the overall costs could be reduced to as low as \$15 million if the quantity of material placed was reduced to 3 mcy; however, under this scenario only 220 acres of ridges and wetlands would be created, at an average cost of nearly \$69,000 per acre. Table 2 presents the quantity of ridges and wetlands restored, total cost, cost per acre restored, quantity of material placed, and average cost per cubic yard to place the material for four alternative placement scenarios, ranging from placing 3 mcy to 10 mcy. Past MVN experiences of creating wetlands in the bird's foot delta and the Pass a Loutre WMA, under the same implementation techniques, has resulted in the areas naturally vegetating within one year of placement activities through colonization of species from adjacent vegetated areas. Natural vegetation is expected to occur at the proposed placement sites. The species expected to naturally vegetate at the sites include common reed, rattlebox, black willow, eastern baccharis, and wax myrtle on somewhat higher elevations. (It should be noted that higher elevation habitat could potentially benefit from the introduction of woody vegetation by planting species that would not be able to colonize on their own; however, this cost estimate was based on the sites, including higher elevations, naturally vegetating.) The most common species to colonize the lower elevations are cattail, bulltongue, maidencane, common threesquare bulrush, alligatorweed, elephant ear, giant cutgrass, California bulrush, marsh hay cordgrass, delta duck potato, and various sedges. Submerged aquatic vegetation naturally colonizes the shallow water areas around the disposal areas. Common species include coontail, parrotfeather, and water milfoil. As a result, no vegetative planting efforts and/or costs are included in this cost estimate.

**Table 1. Preliminary Cost Estimate for Wetland Creation in Pass a Loutre WMA  
Using Dredge Material From South Pass  
(Placement of Approximately 8.5 mcy of Material)**

Item No.	Description	Estimated Quantity	Unit	Unit Price	Estimated Cost
0001	Planning, Engineering and Design	1	Job	\$3,185,688.00	\$3,185,688.00
0002	Mobilization and Demobilization	1	Job	\$2,980,000.00	\$2,980,000.00
0003	Dredging South Pass and Placement in Pass a Loutre WMA	8,500,000	CYS	\$3.38	\$28,730,000.00
0004	Bird Nesting Avoidance	90	Days	\$1,632.00	\$146,880.00
0005	Supervision and Administration	1	Job	\$1,274,275.20	\$1,274,275.20
	<b>TOTAL PROJECT COST</b>				<b>\$36,316,843.20</b>

**Table 2. Summary of Costs and Benefits Placing Alternative Quantities of Material for Wetland Creation in Pass a Loutre WMA Using Dredge Material From South Pass**

Alternative No.	Emergent Wetlands/Ridges Created (Acres)	Total Cost (\$ Million)	Average Cost Per Acre (\$)	Dredge Material Placed (Cubic Yards)	Cost Per Cubic Yard of Material Placed (\$)
1	220	\$15,192,643	\$69,057	3,000,000	\$5.06
2	360	\$22,944,643	\$63,735	5,000,000	\$4.59
3	640	\$36,316,843	\$56,745	8,500,000	\$4.27
4	700	\$47,682,643	\$68,118	10,000,000	\$4.77

**6. GULF COAST ECOSYSTEM RESTORATION COUNCIL ENVIRONMENTAL COMPLIANCE CHECKLIST**

<b>Environmental Compliance Type</b>	<b>Yes</b>	<b>No</b>	<b>Applied For</b>	<b>N/A</b>
<b>Federal</b>				
National Marine Sanctuaries Act (NMSA)				X
Coastal Zone Management Act (CZMA)	X			
Fish and Wildlife Coordination Act	X			
Farmland Protection Policy Act (FPPA)	X			
NEPA – Categorical Exclusion				X
NEPA – Environmental Assessment	X			
NEPA – Environmental Impact Statement	X			
Clean Water Act – 404 – Individual Permit (USACOE)				X
Clean Water Act – 404 – General Permit(USACOE)				X
Clean Water Act – 404 – Letters of Permission(USACOE)				X
Clean Water Act – 401 – WQ certification	X			
Clean Water Act – 402 – NPDES				X
Rivers and Harbors Act – Section 10 (USACOE)	X			
Endangered Species Act – Section 7 – Informal and Formal Consultation (NMFS, USFWS)	X			
Endangered Species Act – Section 7 - Biological Assessment (BOEM,USACOE)	X			
Endangered Species Act – Section 7 – Biological Opinion (NMFS, USFWS)	X			
Endangered Species Act – Section 7 – Permit for Take (NMFS, USFWS)	X			
Magnuson-Stevens Fishery Conservation and Management Act Essential Fish Habitat (EFH) – Consultation (NMFS)	X			
Marine Mammal Protection Act – Incidental Take Permit (106) (NMFS, USFWS)				X
Migratory Bird Treaty Act (USFWS)	X			
Bald and Golden Eagle Protection Act – Consultation and Planning (USFWS)	X			
Marine Protection, Research and Sanctuaries Act – Section 103 permit (NMFS)				X
BOEM Outer Continental Shelf Lands Act – Section 8 OCS Lands Sand Permit				X
NHPA Section 106 – Consultation and Planning ACHP, SHPO(s), and/or THPO(s)	X			
NHPA Section 106 – Memorandum of Agreement/Programmatic Agreement				X
Tribal Consultation (Government to Government)	X			
Coastal Barriers Resource Act – CBRS (Consultation)				X
<b>State</b>				
As Applicable per State	X			

## 7. DATA/INFORMATION SHARING PLAN

Upon completion of construction activities, placement sites will be surveyed, and as-built engineering drawings will be developed, to determine the quantity of emergent wetlands restored by the project. In addition, the placement sites will be monitored annually as part of the USACE's Beneficial Use Monitoring Program (BUMP) aerial photography effort. The BUMP Program consists of using color infrared digital aerial photography that are produced as Orthophotos for use in the USACE's GIS programs, which are used to identify any change in land area at USACE beneficial use placement sites. All as-built drawings and BUMP aerial photography will be made available to the public.

## 8. REFERENCE LIST OF LITERATURE CITED IN THE PROPOSAL

- Boyer, Mark E., James O. Harris, and R. Eugene Turner. 1997. "Constructed Crevasses and Land Gain in the Mississippi River Delta." *Restoration Ecology* 5(1): 85-92.
- Carter, Virginia. 1997. *Technical Aspects of Wetlands: Wetland Hydrology, Water Quality, and Associated Functions*. U.S. Geological Survey Water Supply Paper 2425. <http://water.usgs.gov/nwsum/WSP2425/hydrology.html> (accessed September 26, 2014).
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- National Marine Fisheries Service. 2014a. Annual commercial landings statistics. Years queried: 2008-2012. <http://www.st.nmfs.noaa.gov/commercial-fisheries/commercial-landings/annual-landings/index> (accessed September 26, 2014).
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- U.S. Army Corps of Engineers. 2003. EA 382: "Freshwater Reservoir Additional Disposal Area, South Pass of the Mississippi River, Plaquemines Parish, Louisiana."
- U.S. Army Corps of Engineers. 2004. *Louisiana Coastal Area (LCA), Louisiana: Ecosystem Restoration Study*. <http://www.lca.gov/Library/ProductList.aspx?ProdType=0&folder=1125> (accessed September 29, 2014).
- U.S. Army Corps of Engineers. 2011. EA 491: "Mississippi River, Baton Rouge to the Gulf of Mexico, Louisiana Designation of Additional Disposal Areas."
- U.S. Army Corps of Engineers. 2013. EA 517: Mississippi River, Baton Rouge to the Gulf of Mexico, Louisiana, Designation of Additional Disposal Areas for Head of Passes, Southwest Pass, and South Pass."
- U.S. Department of the Interior, U.S. Fish and Wildlife Service. 1983. *Habitat Suitability Index Models: Northern Gulf of Mexico Brown Shrimp and White Shrimp*. Report FWS/OBS-82/10.54. September 1983.

U.S. Department of the Interior , U.S. Fish and Wildlife Service. 2011. *2011 National Survey of Fishing, Hunting, and Wildlife-Associated Recreation*. With U.S. Department of Commerce, Bureau of the Census. FHW/11-NAT (RV) Revised February 2014.

## 9. OTHER

### A. Gulfwide Beneficial Use of Dredge Material - Overview

### B. New Orleans District Beneficial Use Program Slides

### C. USGS Louisiana Coastal Land Loss Map

### D. Letters of Support

### E. Environmental Compliance (Applicable SOFs, ROD and FONSI)

## A. GULFWIDE BENEFICIAL USE OF DREDGED MATERIAL

### Overview

During the last three decades of the 20th century, the standard perception was that dredged material was "spoil" or waste material that had no value or needed to be handled as a pollutant. However, as we move into the beginning of the 21st century, issues such as sea level rise, subsidence, loss of habitat, development, and pervasive storm damage in coastal areas has changed that perception. Most coastal managers now recognize that dredged material is frequently uncontaminated, and should be used as a resource to compensate for coastal erosion, to nourish beaches, to build habitat, and to return areas that have subsided below sea level back to an elevation within the tidal range. Even with this change in the way dredged material is valued, challenges remain. For example:

- Dredged material comes in various types from rock to fine grained silts and clays to 'fluff' or 'fluid mud'. Beneficial use of each requires different engineering approaches resulting in wide differences in cost;
- The location of the dredging or dredged material stockpile may not be in a location where there is a need for beneficial use;
- The timing of the dredging requirement is out of sync with the availability of a beneficial use site; or
- Project specific funding and/or overall funding may limit the range and/or extent of beneficial use.

While the function or value of individual beneficial use projects may be only local in scope, for instance, a new wetland area may help protect a particular stretch of levee around a small community, restore a section of critically eroded beach, or provide habitat for a specific population of estuarine organisms, cumulatively, multiple beneficial use projects across a wide geographic area could significantly offset coastal wetland loss, provide nursery areas or other habitats for important commercial species or species of concern such as sea turtles and neotropical migrants and minimize salt water intrusion by reestablishing estuarine boundaries through construction of spits and barrier islands.

**The northern coast of the Gulf of Mexico is an ideal location to augment existing beneficial use efforts that are based only on individual projects and elevate them to a programmatic effort.** The need and feasibility of a programmatic beneficial use program in the northern Gulf is due to the natural and man-made stresses on the coastal environment experienced in the recent decade, resulting in considerable habitat and wetland loss with subsequent impact on marine and coastal resources, and increase in water quality issues, which may be offset by the proximity of many authorized Federal navigation channels that are dredged on a regular basis as well as local or privately maintained channels, thus providing substantial quantities of materials for use.

## Current Conditions in the Gulf of Mexico

The coastal region of the northern Gulf of Mexico owes its current landscape structure to an array of tectonic, erosional and depositional, climatic, geochemical, hydrological, ecological, and human processes that have resulted in some of the world's most complex, dynamic, productive, and threatened ecosystems (Brock et al. 2013). These ecosystems and the resources they support are vulnerable to man-made and natural events such as development, catastrophic hurricane landfalls, ongoing subsidence and erosion exacerbated by sea-level rise, disintegration of barrier island chains, and high rates of wetland loss. Improving the resiliency of these ecosystems is a critical component of restoring the Gulf of Mexico as a whole.

Following the Deepwater Horizon oil spill, an assessment of the most pressing challenges facing the Gulf of Mexico ecosystem described the following (Mabus 2010):

- *Loss of wetland habitats, including coastal marshes, forested wetlands, barrier islands, and coastal shorelines that form the Mississippi River Delta and Chenier Plains.* While an issue in every Gulf state, the loss of coastal habitat has been most dramatically illustrated in Louisiana and highlights the need to maintain freshwater and sediment flows to the Gulf of Mexico. Since the 1930s, the coast of Louisiana has lost nearly 2,000 square miles (approximately 25 square miles per year) of wetlands. Causes of this loss include a combination of erosion, storm damage, land subsidence, alterations to natural freshwater and sediment flow from the Mississippi River, dredging of canals for oil and gas exploration and pipeline installation activity. Climate change (including the impacts of inundation and sea-level rise) threatens to accelerate the loss of these habitats.
- *Erosion of barrier islands and shorelines throughout the Gulf Coast.* From Florida to Texas, continued erosion of the coastal barrier island system undermines storm protection for coastal communities, threatens the beaches that support the local tourism economy, and affects numerous species that rely on these barrier islands for habitat (e.g., Kemp's Ridley and loggerhead sea turtles, numerous shorebirds and the Alabama beach mouse).
- *Loss and degradation of coastal estuarine habitat.* The estuaries and coastal systems of the Gulf Coast—such as Mobile Bay, Apalachicola Bay, Galveston Bay, Tampa Bay, Florida Bay, the Mississippi Sound, Barataria Bay and others—provide the nursery habitat for most of the fishery resources in the Gulf and support a nationally important oyster industry. These estuaries are impacted by a variety of stressors, including pollution, coastal development, energy development, erosion, hydrological alteration, changes in freshwater inflow, structural marsh management and overfishing.
- *Imperiled fisheries.* Several of the major commercially and recreationally important finfish species are currently experiencing pressures from overfishing or have been overfished. In some cases, these conditions have persisted for many years. Additionally, contaminants such as methylmercury in fishes, and red tide organisms and human pathogens in shellfish, reduce fishery values and endanger human health.



- *Hypoxia (low oxygen) in the Gulf of Mexico.* Hypoxia occurs where the concentration of dissolved oxygen in the water column decreases to a level that reduces the quality of habitat, resulting in death or migration away from the hypoxic zone. The northern Gulf of Mexico adjacent to the Mississippi River is the site of the largest hypoxic zone in the United States and the second largest hypoxic zone worldwide. This Gulf of Mexico “Dead Zone” is caused by input of excess nutrient pollution to the Gulf most of which comes from upstream through Mississippi River drainage.
- *Climate change.* Our changing climate is already altering, perhaps irreversibly, the physical, chemical and biological characteristics of our oceans, coasts and adjacent watersheds. Increasing air and water temperatures, changing precipitation patterns, rising sea level, and ocean acidification will increasingly confound efforts to restore or sustain system states.

Sediment, delivered by the Gulf river systems, built much of the Gulf Coast and continues to be essential to the health of the Gulf ecosystem. The utilization of dredged materials can offset some of the challenges listed in the Mabus report above, specifically those associated with erosion of barrier islands, loss of habitat and relative sea level rise mitigation. Accordingly, the Gulf Coast Ecosystem Restoration Task Force proposed a sediment management approach to address land loss through sustainable resource management and land building and restoration. The 2011 Gulf of Mexico Regional Ecosystem Restoration Strategy (GCERTF 2011) recommended 3 actions, two of which are related to dredged material:

- Maximize beneficial use of navigational dredged material, where practicable and ecologically acceptable, for effective and sustainable habitat restoration.
- Increase dedicated dredging of river and other sediment sources, such as permitted offshore sediment shoals, for use in habitat restoration projects.

### **Beneficial Use**

Beneficial use is defined as the productive use of material produced during the authorized maintenance dredging of navigation channels. Dedicated dredging on the other hand while having the same purpose does not have the same required link with authorized navigation dredging. Selection of a beneficial use methodology is governed by the Federal Standard which is defined as the disposal alternative(s) identified by the USACE and its partners which represents the least costly alternative consistent with and meeting the environmental standards established by the 404(b)(1) evaluation process or ocean dumping criteria. Many states believe that the Federal Standard impede the beneficial use of dredged material, however, opportunity exists for a non-federal sponsor to pay the incremental cost between the Federal Standard established for the project and the actual cost of the beneficial use project.

Estimating cubic yards required to create BU acreage depends, among other things, on the placement site conditions (i.e., substrate, water depth, etc.), dredged material characteristics, and the use/non-use of containment. Applying one site's results to another site for predictive purposes is difficult and not entirely reliable. However, a reasonable estimate in a location such as coastal Louisiana is that 1 million cubic yards of material can create approximately 100 acres of wetland when using unconfined placement and between 150 and 200 acres for confined placement.

## USACE activities in the Gulf of Mexico

Combined, the four USACE Districts covering the Gulf of Mexico (Galveston, New Orleans, Mobile, and Jacksonville) dredge approximately 123 million cubic yards from coastal Federal navigation projects on an annual basis<sup>1</sup>. Approximately 22 million cubic yards of this material is used beneficially as the least cost placement option or when a local sponsor is able to contribute funds to cover the incremental of the more costly beneficial use option. Details of the USACE dredging program are provided in the table below.

District	State	Annual Quantity	% Sand	% Fines	Current BU
Galveston	Texas	20 – 30 mcy	2.8%	97.2%	15 – 20% (3-4.5) mcy
New Orleans	Louisiana	41 mcy*			39% (16 mcy)
Mobile	Mississippi	8.5 mcy	2.9%	97.1%	3.2% <sup>2</sup> (270 kcy)
Mobile	Alabama	6.5 mcy	3.8%	96.2%	19% <sup>2</sup> (1.25 mcy)
Mobile	Florida panhandle	700,000 cy	70%	30%	50% (350 kcy)
Jacksonville	Florida	875,000 cy	28.1%	62.9%	37% <sup>2</sup> (325 kcy)

<sup>1</sup>Louisiana dredging totals approximately 78 mcy annually, however 37mcy is determined unsuitable for coastal restoration because it is fluff or the dredging location is remote from the coast.

<sup>2</sup>All sandy material is beneficially used

In addition, several Federal inland river navigation systems dredge sediments that could be suitable material for coastal restoration and place this material on ‘upland’ disposal areas. For example, approximately 18 million cubic yards is present in existing disposal areas along the Black Warrior – Tombigbee Waterway below the first dam. This material is predominately coarse grained sand and some of the areas have a high percentage of gravel which would make excellent containment features or be suitable to establish substrate suitable for oyster reef establishment.

The USACE has an established track record in the area of beneficial use. For instance, MVN is responsible for the largest Federal channel maintenance dredging program in the nation. On average, MVN annually dredges approximately 78 million cubic yards (mcy) of material during routine maintenance of federally authorized navigation channels, of which approximately 41 mcy is currently suitable for beneficial use. The remainder of material is either dredged from remote locations that are too distant from beneficial placement sites to be economically used, or the material is physically unsuitable for beneficial use.

Of the 41 mcy of material available for beneficial placement, approximately 16 mcy, or nearly 40 percent, is used beneficially by existing MVN programs. Since 1976, MVN has beneficially used dredged material to create over 48 square miles (31,693 acres) of coastal habitat, including nearly 15,600 acres using material from the LMR. These beneficial use projects not only benefit the ecosystem by restoring habitat diversity to its historical marsh-ridge-open water configuration, which benefits commercial and recreational significant finfish, wildlife and water fowl species, but also abates saltwater intrusion into historically freshwater and brackish wetlands. Beneficial use projects may also promote community resilience by preventing further coastal retreat, dampen storm surges, and reduce storm damages providing economic and social benefits to the region.

Within the boundaries of the Mobile District, use of dredged material as a resource began in 1979 with the creation of Gaillard Island in Mobile Bay. Today this 1300 acre island serves as an active disposal area while at the same time serving as a nesting haven for shore and seabirds. In 1983 four brown pelicans were noted nesting on the island which was the first sighting in Alabama since their decline due to hunting and use of DDR. Recent surveys have estimated over 80,000 nesting pairs of birds utilizing the island. More recently dredge material was used beneficially in the restoration of Deer Island off the coast of Biloxi, MS and will be used over the next 20 years to establish a 400 acre wetland adjacent to Singing River Island in Pascagoula, MS.

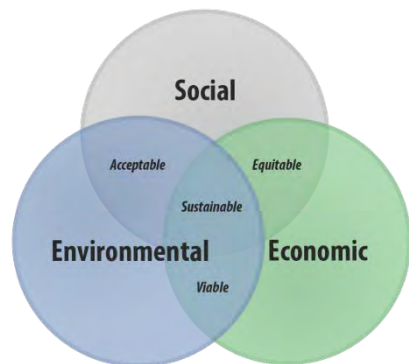
Beneficial use of dredged material builds on the foundation of Working with Nature and Engineering with Nature principles as discussed in the Deer Island Aquatic Ecosystem Restoration Project report (Gerhardt-Smith, et al. 2014).

- Use science and engineering to produce operational efficiencies supporting sustainable infrastructure.
- Use natural processes to maximum benefit, thereby reducing demands on limited resources and enhancing the quality of project benefits.
- Broaden and extend the base of benefits provided by projects to include substantiated economic, social, and environmental benefits (“triple-win” benefits).
- Use science-based collaborative processes to organize and focus interests, stakeholders, and partners to reduce social friction, resistance, and project delays while producing more broadly acceptable projects.

Navigation in the Gulf Coast region will continue to require dredging, and the implementation of projects that use dredge material to restore coastal habitats will provide a cornerstone for coastal ecosystem restoration in the Gulf region. Sediment delivered by the many rivers draining into the Gulf is essential to the health of the Gulf Coast ecosystem. One component of a strategic approach to sediment management is maximizing the beneficial use of dredge material, where ecologically acceptable, for effective and sustainable habitat restoration.

While not all dredge material may be the right consistency or composition to be used beneficially for ecosystem restoration, some sediment that is available is currently being underutilized for effective beneficial use in ecosystem restoration. By beneficially utilizing dredge material to create coastal wetlands, the project will restore habitat.

**As mentioned earlier in this Introductory Summary, The northern coast of the Gulf of Mexico is an ideal location to augment existing beneficial use efforts that are based only on individual projects and elevate them to a programmatic effort. The project described below, along with others submitted separately for inclusion in the RESTORE Funded Priority List is intended as a first step and a foundational element toward restoring the value of the Gulf of Mexico to the Nation and the World.**



## References

Brock,,J.C., J.A. Barras, and S.J.Williams. 2013. Introduction to the Special Issue on Understanding and Predicting Change in the Coastal Ecosystems of the Northern Gulf of Mexico. *Journal of Coastal Research*, SI 63, pp. 1-5.

Gerhardt-Smith, J., J. MacDonald, S. Rees, and N. Lovelace. 2014. Deer Island Aquatic Ecosystem Restoration Project. ERDC-TN-EWN-TBD. Engineering Research Development Center, Vicksburg, MS

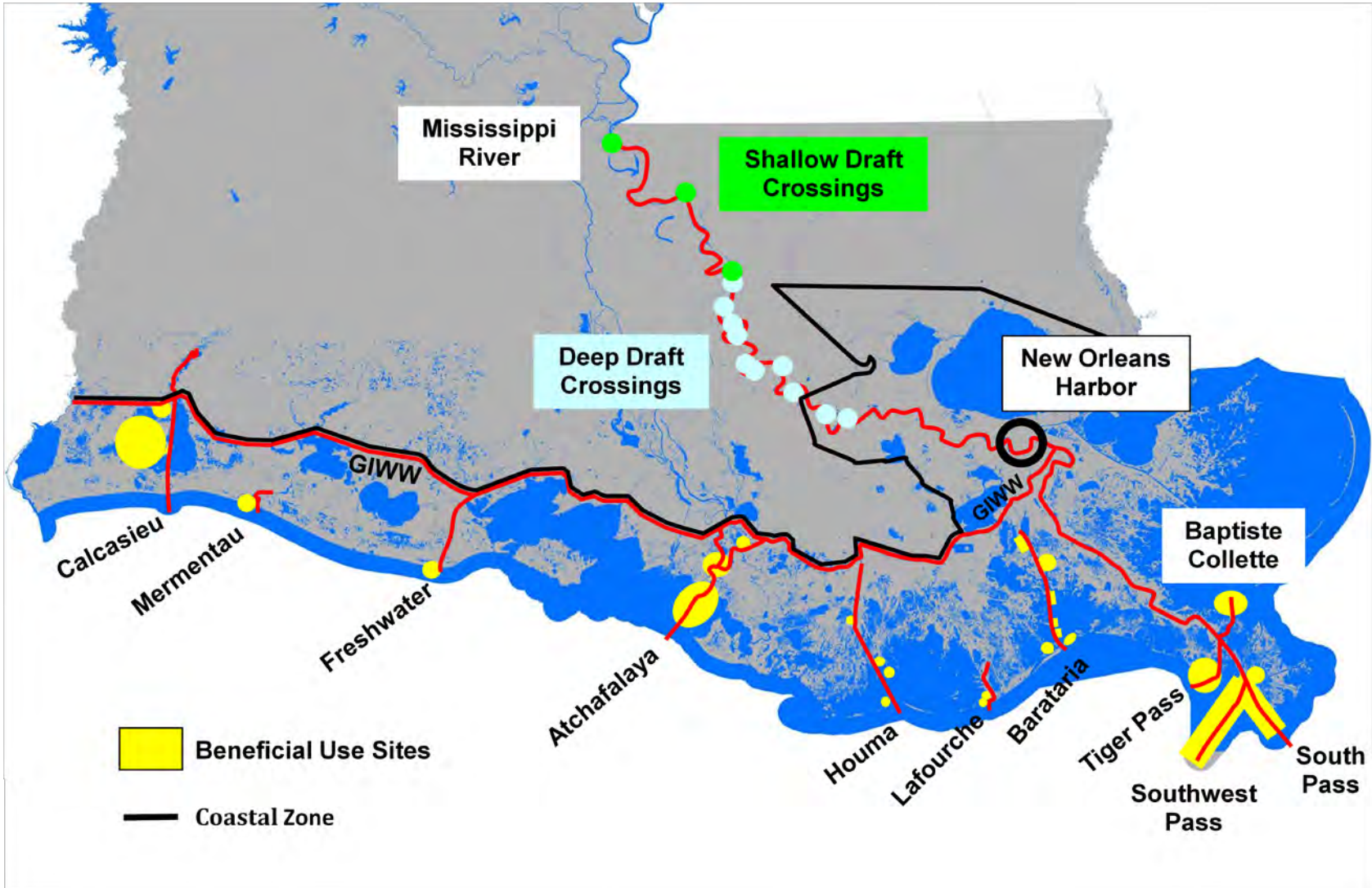
Gulf Coast Ecosystem Restoration Task Force (GCERTF). 2011. Gulf of Mexico Regional Ecosystem Restoration Strategy. [www.epa.gov/gcertf/pdfs/GulfCoastRespor\\_Full\\_12-04\\_508-1.pdf](http://www.epa.gov/gcertf/pdfs/GulfCoastRespor_Full_12-04_508-1.pdf).

Mabus, R. 2010. America's Gulf Coast: A long term recovery plan after the Deepwater Horizon Oil Spill. <http://www.epa.gov/indian/pdf/mabus-report.pdf>

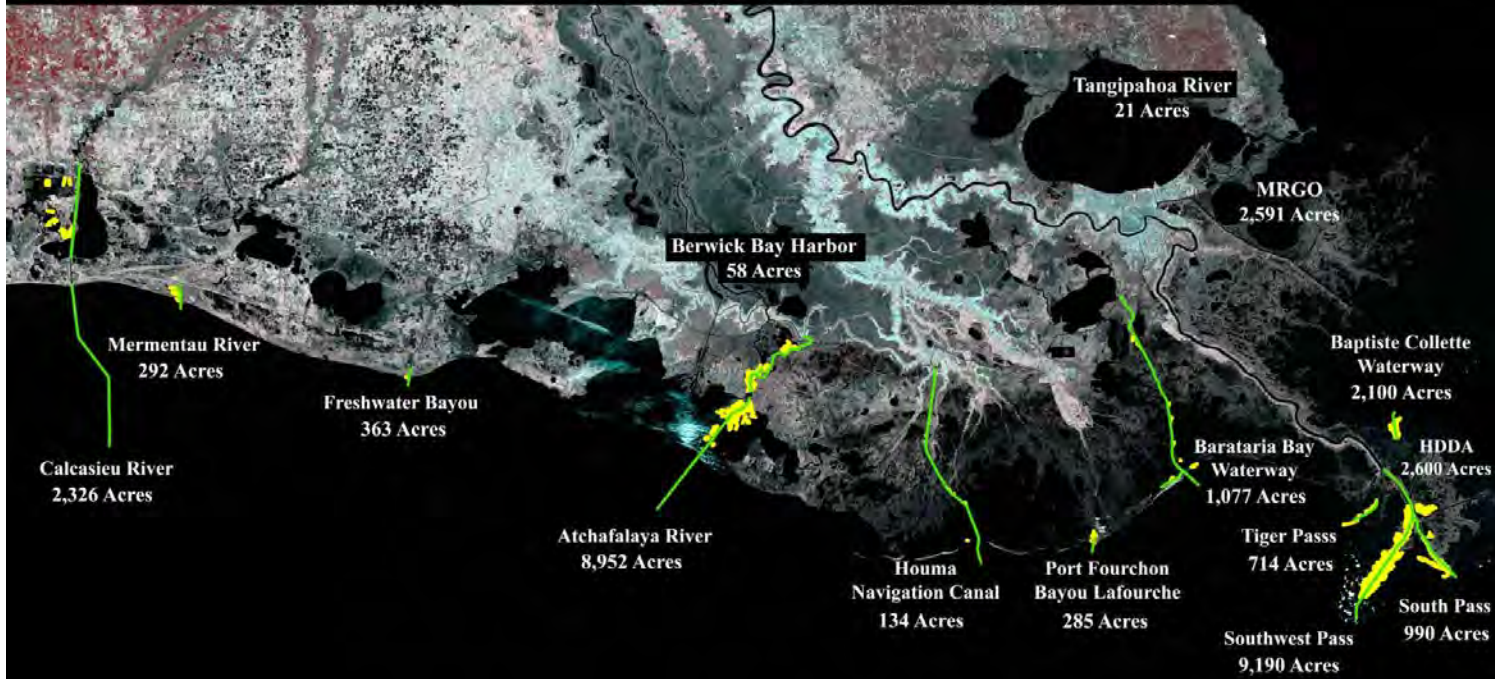
Morton, R.A. and J.A. Barras. 2011. Hurricane Impacts on Coastal Wetlands: A Half-Century Record of Storm-Generated Features from Southern Louisiana. *Journal of Coastal Research*, Vol. 27, pp 27-43.

Yuill, B., Lavoie, D. and Reed, D. 2009. Understanding subsidence processes in coastal Louisiana. *Journal of Coastal Research*, SI(54), 23-36.

**B. NEW ORLEANS DISTRICT BENEFICIAL USE PROGRAM SLIDES**



# Louisiana Coast Beneficial Use Placement



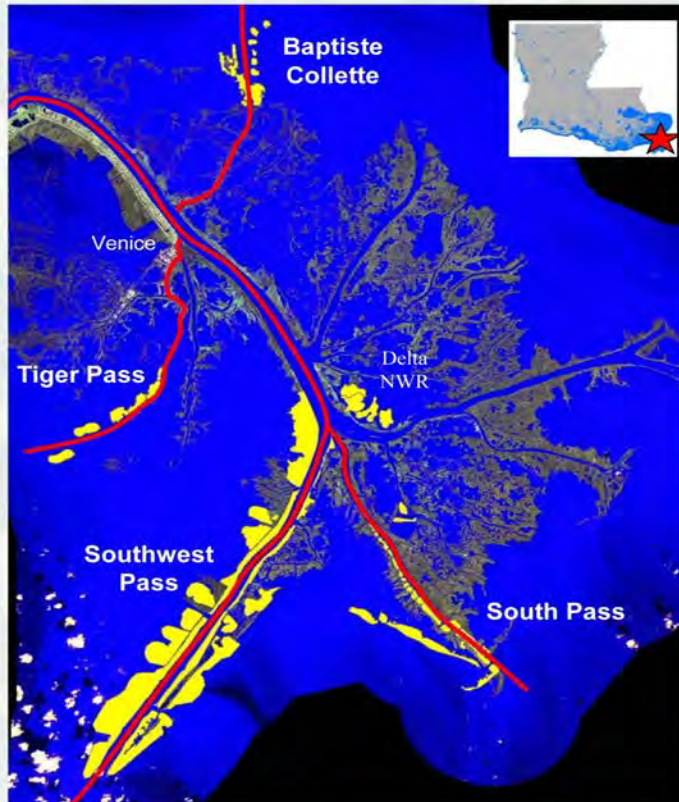
**Total Cumulative Acres Created (1976-2013)**  
**31,693 Acres**

**(~ 48 Square Miles of land)**

- Beneficial Use Placement
- Federal Authorized Navigation Channels

**Jacob 5-2-14**

# ***Beneficial Use of Dredged Material***



## **Lower Mississippi River**

Coastal Habitat Acres Created


**Southwest Pass – 13,370 Acres**

**South Pass – 990 Acres**

**Tiger Pass – 588 Acres**

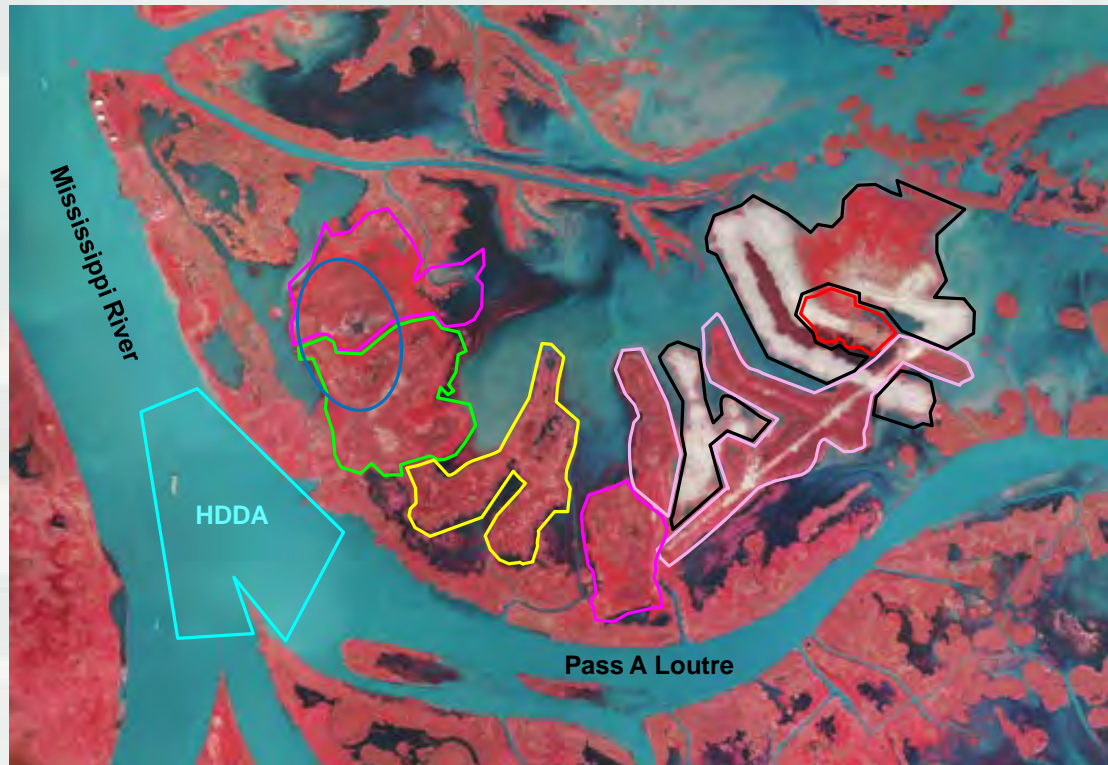
**Baptiste Collette – 1318 Acres**

 **Navigation Channels**

 **Beneficial Use Sites**



## Beneficial Use of Dredged Material HDDA Dredging - Delta National Wildlife Refuge Placement



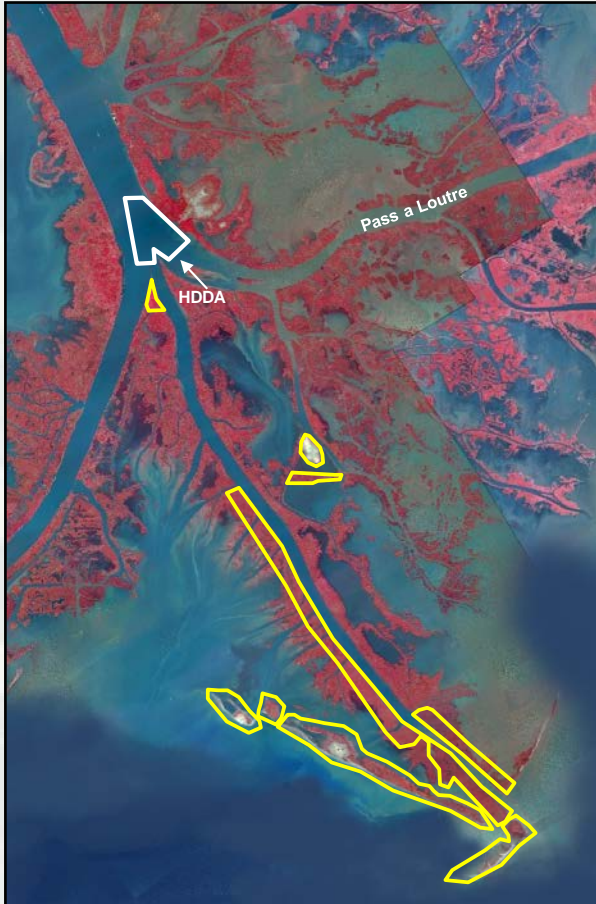
FY 98 – 197 Acres
FY 04 – 274 Acres
FY 07 – 340 Acres
FY 08 – 388 Acres
FY 10 – 466 Acres
FY 11 – 70 Acres
FY 13 – 865 Acres

**Total Acres  
Created 2,600**



**BUILDING STRONG®**





Beneficial Use of Dredged Material

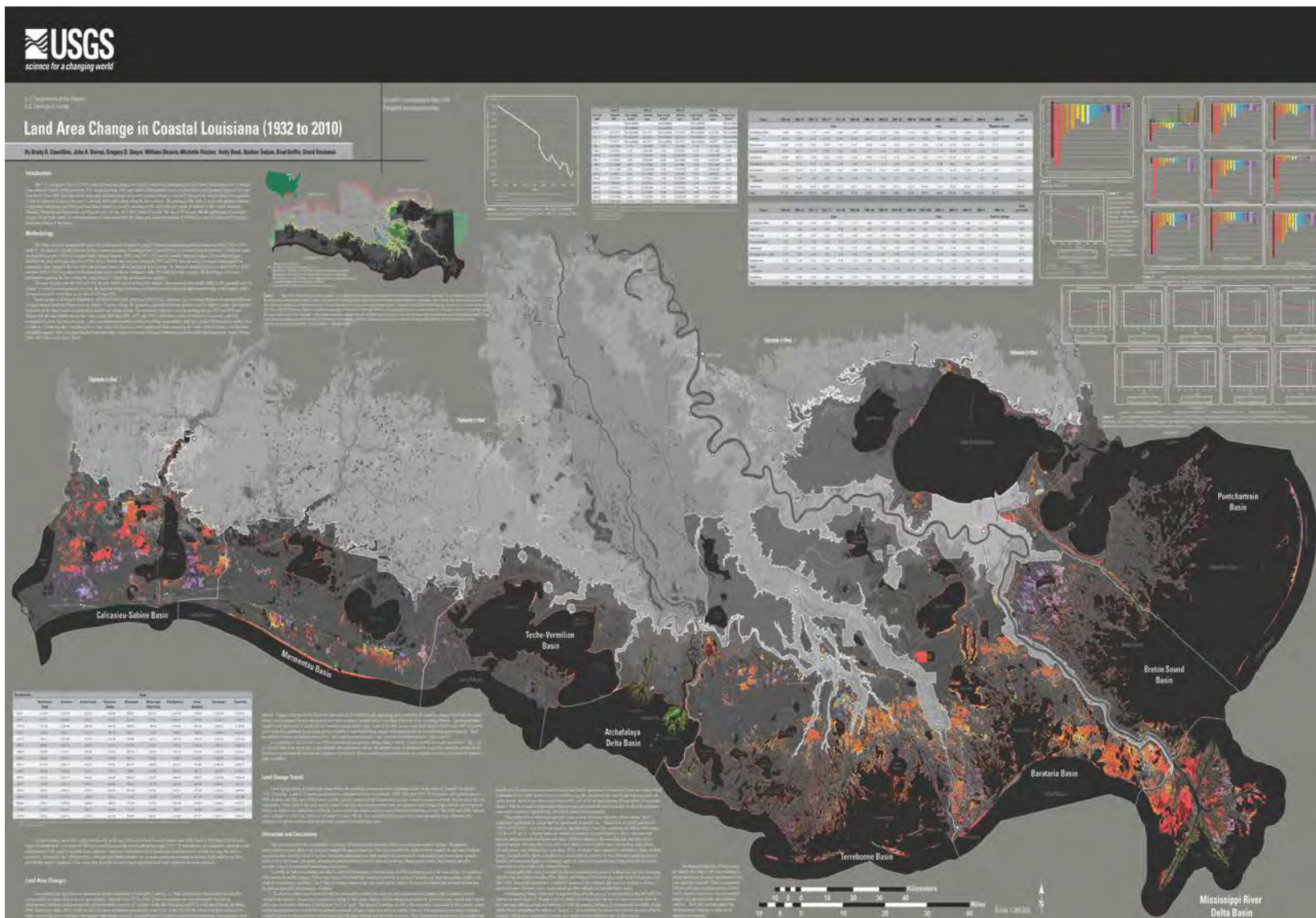
## Mississippi River South Pass

**990 Acres**



**BUILDING STRONG®**

# C. USGS LOUISIANA COASTAL LAND LOSS MAP



## **D. LETTERS OF SUPPORT**



BOBBY JINDAL  
GOVERNOR

State of Louisiana  
DEPARTMENT OF WILDLIFE AND FISHERIES  
OFFICE OF SECRETARY

ROBERT J. BARHAM  
SECRETARY

October 17, 2014

Colonel Richard L. Hansen  
District Commander  
US ARMY Corps of Engineers  
New Orleans District  
P.O. Box 60267  
New Orleans, LA 70160

Subject: Wetland Creation on Pass-a-Loutre WMA utilizing South Pass Dredge Materials

Dear Colonel Hansen,

As the landowner of the proposed project, the Department supports the "Wetland Creation in the Pass-a-Loutre Wildlife Management Area using Dredge Material from South Pass of the Mississippi River" project currently proposed to the RESTORE Council. This project is synergistic with management objectives of the Wildlife Management Area (WMA), which will create high quality wildlife habitat, and will enhance public recreational opportunity.

The current project design is expected to produce nesting habitat for secretive marsh birds, mottled ducks, terns, plovers, and gulls which is limited on the Mississippi River Delta. Many of the species that will benefit from the project include Louisiana species of concern including Wilson's Plover, clapper rail and various tern species. This project will also produce quality migratory habitat for various waterfowl and create critical habitat for wintering piping plover.

The removal of sediment from South Pass is synergistic with many other restoration projects in the area. The increased conveyance of South Pass will increase the sediment carrying capacity of South Pass and enhance the natural land building and marsh growth processes of many existing crevasses projects. These projects create high quality habitat for migratory birds each fall and winter.

The project proposal will also greatly enhance recreational opportunity for over 25,000 recreational hunters, fishermen, and outdoor enthusiasts which visit the WMA each year. The WMA is open to the public for hunting, fishing, bird watching, camping, etc. Most of the visitors are perusing wildlife oriented opportunities which the proposed project is designed to complement and enhance.

Sincerely,

Robert J Barham  
Secretary

# Plaquemines Parish Government

**BILLY NUNGESSER**  
Parish President

8056 Hwy. 23, Suite 200  
Belle Chasse, LA 70037

(504) 392-6690  
(504) 274-2462  
1-888-784-5387  
Fax: (504) 274-2463

September 24, 2014

Colonel Richard L. Hansen  
District Commander  
P. O. Box 60267  
New Orleans, la 70160

Colonel Hansen:

Plaquemines Parish has lost about 25 percent of its land area due to unrelenting subsidence and erosion caused by numerous natural processes and man-made interventions. The Parish has developed a Comprehensive Coastal Restoration Plan to reduce land loss and reduce storm surge and waves. Our plan complements the state of Louisiana 2012 Coastal Master Plan.

I understand that the New Orleans District is preparing proposals for consideration by the Assistant Secretary of the Army (Civil Works) to be submitted to the RESTORE Council for funding as Council-selected restoration component projects. I further understand that the proposals address the need for comprehensive beneficial use of dredge material on the Lower Mississippi River. Plaquemines Parish fully supports these proposals and any future Corps of Engineers efforts secure RESTORE Council funding for the beneficial use of dredge material on the Lower Mississippi River. Using dredged material from the Mississippi River to build wetlands and vegetative ridges is an integral part of our Plan and the state of Louisiana Master Plan. The proposals if funded would make a significant contribution to combating land loss in Plaquemines Parish and South Louisiana and advancing the implementation of the Plaquemines Parish Coastal Restoration Plan. I strongly encourage the Corps of Engineers to advance these proposals for RESTORE Council consideration.

If you need any assistance with facilitating the proposals acceptance, please let me know.

Respectfully,



William "Billy" Nungesser  
Plaquemines Parish President

## **PORT EADS FISHING REFUGE**

A Nonprofit Corporation  
481 F. Edward Hebert Blvd.  
Belle Chasse, LA 70037

October 21, 2014

Colonel Richard L. Hansen  
District Commander  
US ARMY Corps of Engineers  
New Orleans District  
P. O. Box 60267  
New Orleans, LA 70160

SUBJECT: Wetland Creation on Pass-a-Loutre WMA utilizing South Pass Dredge Materials

Dear Colonel Hansen,

As the public-private cooperative endeavor management group for the new Federally rebuilt Port Eads Marina Complex near the mouth of South Pass and located within the WMA, The Port Eads Fishing Refuge Nonprofit Corporation supports the "Wetland Creation in the Pass-a-Loutre Wildlife Management Area using Dredge Material from South Pass of the Mississippi River" project currently proposed to the RESTORE Council. Not only will this project create high quality wildlife habitat per the objectives of the WMA, it will greatly enhance public recreational opportunity and make *safe* passage to the most fertile fishing grounds in the Gulf of Mexico.

Beyond the synergies that removal of South Pass sediment provides to build habitat for marsh birds, waterfowl, gulls, terns, and other migratory species, the land and marsh building is simply critical to this portion of the La. coast. The team at Pass-a-Loutre WMA has demonstrated to our group this spring that some 36 land building projects were underway at that time, all with 100% success. This is the oldest WMA in La. and one of the oldest in the country, and the LDWLF "caretakers" have been excellent stewards of this resource since 1926. Give them an "inch", and I envision they will "make a mile". Increase the conveyance of South Pass and you have instantly increased the probability of success of many South Pass restoration projects.

Recreational fishing represents 98% of every tourism dollar spent in Plaquemines Parish, and Port Eads is rapidly becoming a national calling card in the Venice/South Pass/Port Eads fishing "triangle". Inadequate water depth in South Pass has deterred not only local boats from using this new public Port Eads Marina, restaurant and lodge, but many boats coming from Mississippi, Alabama, Florida, and Texas come into the River via Tiger Pass to Venice and also through Baptiste Collette, then wish to run the protected waters of the River and on to South Pass, and many have been turned away due to shallow water. The proximity to the 100 fathom curve, and the migratory species "bite" going on right now with yellow fin tuna is in the national

press daily. Also, closer to shore, redfish, speckled trout, and tarpon are an outstanding October phenomenon, and this is just one month of twelve, and a clear example of a public recreational benefit of a deeper South Pass.

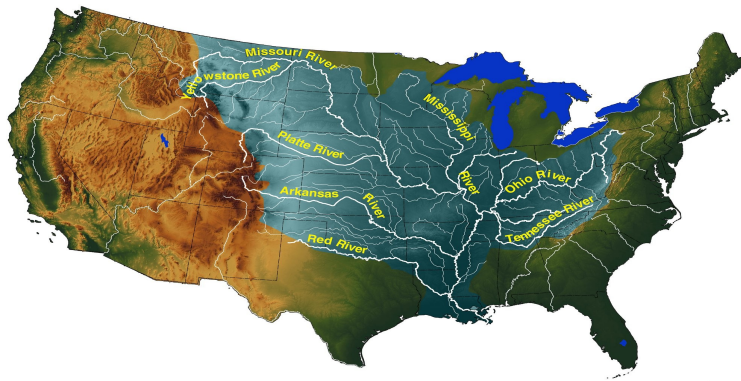
Critical habitat improvement, marsh and land building, coastal improvements and storm protection, exponential public recreational value added, safe passage for fishermen and commercial interests, and a "safety valve" for Southwest Pass in the event of a river traffic incident – all clear beneficiaries of this project's success.

Sincerely,

A handwritten signature in black ink, appearing to read "Jacques P. Kuchta". The signature is fluid and cursive, with a large initial "J" and "K".

Jacque P. Kuchta  
President

# BIG RIVER COALITION



Sean M. Duffy, Sr.  
Executive Director  
4741 Utica Street, Suite 200  
Metairie, LA 70006

Office (504) 833-4190 x 805  
Cellular (504) 338-3165  
[sean.duffy@bigrivercoalition.org](mailto:sean.duffy@bigrivercoalition.org)

November 6, 2014

Colonel Richard L. Hansen  
District Commander  
United States Army Corps of Engineers  
New Orleans, District  
P.O. Box 60267  
New Orleans, LA 70160

## **RE: RESTORE Council South Pass Dredging Project**

Dear Colonel Hansen,

The purpose of this letter is to indicate our support for wetland creation in the Pass a Loutre Wildlife Management Area using dredge material from South Pass of the Mississippi River, as proposed for consideration for funding by the RESTORE Council. The Big River Coalition (BRC) was created in Fiscal Year 2011 in response to the announcement by the Commander of the United States Army Corps of Engineers' (USACE) Mississippi Valley Division (MVD) confirming the discontinuation of reprogramming funds to maintain the Lower Mississippi River (LMR) navigation channel. This position change immediately meant the Mississippi River's navigation channel would no longer receive preferential treatment. Shortly after the 1989 grounding of the M/V MARSHAL KONYEV (Pilottown) that, in essence, closed the navigation channel to all ship traffic, the USACE's Headquarters announced in a position statement that it would maintain the nation's most critical navigation channel. The BRC's original focus was to obtain additional funding to supplement the shortfall in the Corps' Mississippi River Operations and Maintenance budget, to strive to establish a legislative firewall around the Harbor Maintenance Trust Fund (HMTF), and to represent members of the Mississippi River navigation industry in matters related to coastal restoration. As the Coalition grew and continued to make effective progress on these initiatives, members requested that the Coalition lead the charge to deepen the LMR navigation channel to 50 feet.



# BIG RIVER COALITION

The BRC enthusiastically offers our support for the proposed RESTORE Act project titled:

“Wetlands Creation in the Pass a Loutre Wildlife Management Area Using Dredge Material From South Pass of the Mississippi River”

The BRC partnered with the MVN to begin creating wetlands by utilizing the beneficial use of dredged material in the area of Southwest Pass (SWP) as a pilot project in 2009. The Coalition has coined the term “sediment recycling” to describe these beneficial use projects and programs. This effort required a fundamental change that reintroduced cutterhead dredges as a viable option for the channel maintenance of Southwest Pass. The substitution of a cutterhead dredge(s) for a hopper dredge required increased coordination between the navigation and dredging industries with the MVN. In the inaugural year the sediment recycling along the immediate area of SWP represented the creation of the equivalent of 280 acres of land. In 2014 two cutterhead dredge contracts were used to maintain the SWP navigation channel while increasing the amount of acreage created. History indicates that it has been over 30 years since two cutterhead dredges were used to maintain the channel in Southwest Pass. The projections for the acreage created in 2014, when including a third cutterhead contract to mine the Hopper Dredge Disposal Area at Pass a Loutre, is estimated to be 1,500 acres.

The advantages of the additional acreage in this environmentally sensitive area of South Louisiana offers multiple system improvements, these include many direct benefits to wildlife and nesting birds, exemplary advantages for increased recreational pursuits through critical habitat improvement – including conversion from open-water to wetlands. The project also demonstrates that land can be built through proper sediment recycling of dredged material. Although, perhaps the predominant advantage to the navigation industry is the buffer the additional landmass provides to protect the Mississippi River deep-draft channel from the impacts of storm surge and coastal land loss.

The Coalition believes that the proposed beneficial use of dredged material from South Pass into the Pass-a-Loutre Wildlife Management Area offers ancillary protection to the most economically important navigation channel in the United States. The dredging project proposes to develop emergent wetlands and insert ridges in areas that are currently shallow open-water. Recent studies indicate that ridges are more effective in reducing storm surge than low lying (flat) marsh areas, and obviously increased elevation in the Lower Mississippi River Delta environment must be a top priority for Louisiana as it receives funding from the RESTORE Act.

The dredging of South Pass offers subsequent relief that would reduce the volume of vessel traffic on the Mississippi River deep-draft navigation channel. The last time South Pass was dredged was in 2007 and for the last several years the channel in South

# BIG RIVER COALITION

Pass was deficient or partially closed as a navigation channel. As the channel at South Pass became deficient or unreliable vessels could no longer risk this transit. Therefore, increasing the use of SWP by offshore supply vessels and fishing boats that were forced to use the main shipping channel (SWP). The channel at South Pass is supposed to be routinely maintained at 17 feet, but over the past few years several surveys have shown the channel to have a controlling depth of 2-3 feet. The state of Louisiana's Berm Project in an attempt to protect areas of the coastline from the oil released by the Deepwater Horizon spill, demonstrated that material from South Pass was good or sufficiently coarse for land building projects.

The BRC believes strongly that the proposed project will serve to protect and enhance the most important and financially significant navigation channel in the United States. The proposed dredging project would serve to promote the 500 million tons of cargoes that move between the Gulf of Mexico and the 31 states connected by the Mississippi River and Tributaries.

The Big River Coalition is committed to protecting maritime commerce across the Mississippi River and Tributaries (MRT). The Coalition focuses on maximizing transportation efficiencies on the deep-draft ship channel from Baton Rouge to the Gulf of Mexico. As concerns grow about the future management of the Mississippi River system, and efforts are increased to help reduce or prevent adverse impacts related to flood protection, protecting water supplies, recreational boating, fishing, invasive species, coastal restoration, and minimizing the negative impacts of runoff and pollutants, it is critical to the nation's economy that navigation be properly protected. The best economic estimates available indicate that the MRT has over a \$200 billion annual impact on the economy of the United States. Therefore, as visions of the future of the MRT are shaped, it is imperative that navigation representatives strive to ensure that systematic approaches protect maritime trade by maintaining fully authorized channel dimensions while also updating and maintaining our navigation infrastructure.

Sincerely,

*Sean M. Duffy, Sr.*

Sean M. Duffy, Sr.  
Executive Director  
Big River Coalition

CC: Mr. Jerome Zeringue  
Mr. Mark Wingate

**C. ENVIRONMENTAL COMPLIANCE (Applicable SOFs, ROD and FONSI)**

STATEMENT OF FINDINGS

MISSISSIPPI RIVER  
BATON ROUGE TO THE GULF OF MEXICO  
(MAINTENANCE)

1. I have reviewed and evaluated, in light of the overall public interest, all pertinent data concerning the maintenance of the subject project, which provides deep draft access via the Mississippi River to the ports of New Orleans and Baton Rouge and the expressed views of Federal, state, and local agencies and the concerned public.
2. The possible consequences of all alternatives have been studied for environmental, social well-being, and economic effects, including regional and national economic development and engineering feasibility. Other factors bearing importantly on my review include national security considerations and world trade.
3. Alternatives to the proposed action are, for all practicable purposes, limited to alternative procedures for the disposal of dredged material and to "no action." The apparent alternative of maintaining the project to lesser than authorized dimensions is, in my opinion, not acceptable because of its serious implications with respect to marine safety, national security, and world trade. Most significantly, no practicable procedures exist for disposal of dredged materials which involve lesser overall adverse impact on the natural environment than the proposed action, which places dredged material on land only when disposal within the channel cross section or in deep open waters of the Gulf of Mexico is patently impracticable.
4. The following alternative procedures for disposal of dredged materials were considered:
  - a. Baton Rouge to New Orleans. The dredged material could be disposed of in the deep waters of the Gulf of Mexico, utilizing either seagoing hopper dredges or the use of barges to transport the material to deepwater dumping sites. To accomplish the dredging by hopper dredge would require a flotilla of hopper dredges so large as to impact normal navigational usage of the river. Similar problems would be involved in the use of barge tows for deepwater disposal, and the use of barge tows in the open sea would be hazardous. Finally, insofar as environmental impact is concerned, there is little to choose between the current method and deepwater disposal.

b. New Orleans Harbor. In this reach, dredged material is also deposited in other parts of the river's cross section. Again, dredged material could be transported to open sea sites for disposal. The factors militating against this procedure in the Baton Rouge-New Orleans reach would apply in the harbor as well. In addition, a hopper dredge could not be maneuvered to cover the entire harbor.

c. Southwest and South Pass. Two alternatives to current disposal procedures in this reach are possible - deepwater disposal and use of open water disposal sites in the shallow waters adjacent to Southwest and South Passes. Despite the fact that a shorter haul distance, as compared with the reaches previously discussed, would be involved in deepwater disposal, the seasonal volumes are very large and the method would involve similar practical difficulties. The use of water sites in lieu of land sites would involve a tradeoff between habitat types, without a demonstrable advantage for the alternative procedure.

d. Southwest Pass and South Pass Bar and jetty channels. No reasonable alternatives offering any reduced environmental impact are available to replace the current method wherein dredged material is disposed of in deep water by hopper dredge.

5. I have explicitly considered the alternative of no action. Should no further action be taken, deep draft navigation via South and Southwest Passes would become impossible in a matter of months. The no-action course would have enormous adverse repercussions upon the social well-being of residents in the immediate project area, as well as on those who reside in the one-third of the nation which is served by the Mississippi River and its connecting waterways.

6. In my evaluation, the following factors were considered to be of particular relevance.

a. Environmental considerations. The best information indicates that the environmental impacts sustained as a result of maintenance operations are nominal in magnitude and extent. There is some displacement and destruction of benthic faunas, and, along South and Southwest Passes, existing vegetation is covered with dredged material. In general, recovery is fairly rapid. The dredged material which is disposed of on land areas actually serves to counter, to some extent, the deleterious trend toward loss of viable marshlands now extant in coastal Louisiana.

b. Economic considerations. Analysis of the economic considerations shows that the banks of the river between Baton Rouge and New Orleans are prime potential industrial-commercial sites, and that the parishes which border the river in this area enjoy direct


economic benefits from the project. Moreover, these economic benefits are constantly increasing and are felt throughout all of Louisiana and in several other states as well.

c. Social well-being considerations. Continued maintenance of the channel, regardless of the means chosen to dispose of dredged material, will impact beneficially upon a number of social parameters, including desirable community and regional growth, employment, personal income, tax revenues, property values, and community cohesion. Adverse impacts, in the form of minor increases in air, water, and noise pollution, would occur with any of the alternatives. In all cases, positive effects would greatly outweigh negative impacts.

d. Engineering considerations. It is my judgement that, from an engineering standpoint, the proposed action represents the most feasible and efficient method of maintaining the project.

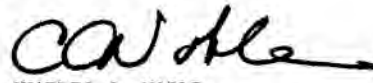
7. I find that the action proposed, as described in section 1 of the environmental impact statement, is based on thorough analysis and evaluation of the various practicable alternative courses of action for achieving the stated objectives; that wherever adverse effects are found to be involved, they cannot be avoided by following reasonable alternative courses of action which would achieve the congressionally specified purposes; that where the proposed action has an adverse effect, this effect is either ameliorated or substantially outweighed by other considerations; that the recommended action is consonant with national policy, statutes, and administrative directives; and that, on balance, the total public interest will best be served by maintaining deep draft access via the Mississippi River to the ports of New Orleans and Baton Rouge.

15 Jan 74  
DATE

  
RICHARD L. HUNT  
Colonel, CE  
District Engineer

I concur in the preceding statement of findings.

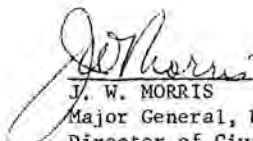
15 Feb 74  
DATE

  
CHARLES C. NOBLE  
Major General, USA  
Division Engineer

I concur in the preceding Statement of Findings.

FOR THE CHIEF OF ENGINEERS:

27 April 1974  
(Date)

  
\_\_\_\_\_  
J. W. MORRIS  
Major General, USA  
Director of Civil Works

STATEMENT OF FINDINGS  
(SUPPLEMENT)

MISSISSIPPI RIVER  
BATON ROUGE TO THE GULF OF MEXICO  
(MAINTENANCE)

1. I have reviewed and evaluated, in light of the overall public interest, all pertinent data concerning the maintenance of the subject project, which provides deep-draft access via the Mississippi River to the Ports of New Orleans and Baton Rouge and the expressed views of Federal, state, and local agencies and the concerned public.

2. The possible consequences of all alternatives have been studied for environmental, social well-being, and economic effects, including regional and national economic development and engineering feasibility. Other factors bearing importantly on my review include national security considerations and world trade.

\* 3. I have reconsidered the needs for maintenance dredging and disposal of dredged material because of the changes in requirements caused by prolonged and recurrent high flow conditions. The prior very conservative maintenance estimates were based on the minimal requirements and on our commitment to minimize the environmental impacts. Baton Rouge Front and Smoke Bend Crossing heretofore have been involved only infrequently in maintenance. In an attempt to maintain this navigation channel to authorized dimensions, I find it necessary to maintain the above locations more frequently and to thereby expand the areas allocated for disposal of dredged material to include the entrance and water bottoms of Pass a Loutre, and the shallow waters in East and West Bays adjacent to Southwest Pass. \*

4. Alternatives to the proposed action are, for all practicable purposes, limited to alternative procedures for the disposal of dredged material and to "no action." This apparent alternative of maintaining the project to lesser than authorized dimensions is, in my opinion, not acceptable because of its serious implications with respect to marine safety, national security, and world trade. Most significantly, no practicable procedures exist for disposal of dredged materials which involve lesser overall adverse impact on the natural environment than the proposed action, which places dredged material on marsh only \*

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\*Indicates the changes made in the SOF from the preceding version.



when disposal within diked areas, shallow bays, or deep, open waters of the Gulf of Mexico is patently impracticable. \*

5. The following alternative procedures for disposal of dredged materials were considered:

a. Baton Rouge to New Orleans. The dredged material could be disposed of in the deep waters of the Gulf of Mexico, utilizing either seagoing hopper dredge or the use of barges to transport the material to deepwater dumping sites. To accomplish the dredging by hopper dredge would require a flotilla of hopper dredges so large as to impact normal navigational usage of the river. Similar problems would be involved in the use of barge tows for deepwater disposal, and the use of barge tows in the open sea would be hazardous. Finally, insofar as environmental impact is concerned, there is little to choose between the current method and deepwater disposal.

b. New Orleans Harbor. In this reach, dredged material is also deposited in other parts of the river's cross section. Again, dredged material could be transported to open sea sites for disposal. The factors militating against this procedure in the Baton Rouge--New Orleans reach would apply in the harbor as well. In addition, a hopper dredge could not be maneuvered to cover the entire narrows.

\* c. Southwest and South Passes. The alternative to current disposal procedures in this reach is deepwater disposal. Despite the fact that a shorter haul distance, as compared with the reaches previously discussed, would be involved in deepwater disposal, the seasonal volumes are very large and the method would involve similar practical difficulties. \*

d. Southwest Pass and South Pass Bar and jetty channels. No reasonable alternatives offering any reduced environmental impact are available to replace the current method wherein dredged material is disposed of in deepwater by hopper dredge.

6. I have explicitly considered the alternative of no action. Should no further action be taken, deep-draft navigation via South and Southwest Passes would become impossible in a matter of months. The no action course would have enormous adverse repercussions upon the social well-being of residents in the immediate project area, as well as on those who reside in the one-third of the Nation which is served by the Mississippi River and its connecting waterways.

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\*Ibid.

7. In my evaluation, the following factors were considered to be of particular relevance.

\* a. Environmental considerations. There will be destruction of benthic fauna in the river and shallow bays. Aquatic habitat will be lost as the bays become filled. Shrub habitat will be destroyed in previously used diked areas and marsh habitat will be destroyed when marsh is used for land disposal. If the elevation of dredged material in the shallow bays is below 1 foot m.s.l., marsh species will appear on the newly created land. This trade-off of bay habitat for marsh, in my opinion, represents the most desirable means of disposal of the dredged material. \*

b. Economic considerations. Analysis of the economic considerations shows that the banks of the river between Baton Rouge and New Orleans are prime potential industrial-commercial sites, and that the parishes which border the river in this area enjoy direct economic benefits from the project. Moreover, these economic benefits are constantly increasing and are felt throughout all of Louisiana and in several other states as well.

c. Social well-being considerations. Continued maintenance of the channel, regardless of the means chosen to dispose of dredged material, will impact beneficially upon a number of social parameters, including desirable community and regional growth, employment, personal income, tax revenues, property values, and community cohesion. Adverse impacts, in the form of minor increases in air, water, and noise pollution, would occur with any of the alternatives. In all cases, positive effects would greatly outweigh negative impacts.

d. Engineering considerations. It is my judgment that, from an engineering standpoint, the proposed action represents the most feasible and efficient method of maintaining the project.

8. I find that the action proposed, as described in section 1 of the environmental impact statement, is based on thorough analysis and evaluation of the various practicable alternative courses of action for achieving the stated objectives; that wherever adverse effects are found to be involved, they cannot be avoided by following reasonable alternative courses

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\*Ibid.

of action which would achieve the congressionally specified purposes; that where the proposed action has an adverse effect, this effect is either ameliorated or substantially outweighed by other considerations; that the recommended action is consonant with national policy, statutes, and administrative directives; and that, on balance, the total public interest will best be served by maintaining deep-draft access via the Mississippi River to the Ports of New Orleans and Baton Rouge.

21 JAN 76

DATE

Early J. Rush III

EARLY J. RUSH III  
Colonel, CE  
District Engineer

I concur with the preceding Statement of Findings.

30 Jan 76

DATE

F. P. Koisch

F. P. KOISCH  
Major General, USA  
Division Engineer

I concur in the preceding Statement of Findings.

8 March 1976

(Date)

Ernest Graves

ERNEST GRAVES  
Major General, USA  
Director of Civil Works

- RECORD OF DECISION

MISSISSIPPI RIVER,

BATON ROUGE TO THE GULF, LOUISIANA

As a result of having carefully examined the environmental, social, economic, and cultural impacts, I have decided to permit this project to proceed as outlined in the Final Environmental Impact Statement (FEIS), Supplement II. Construction of the proposed facilities will reduce shoaling and associated dredging by 7.3 million cubic yards per year and will ensure the availability of the 40 - foot navigation channel throughout the year.

The major environmental impact of the development of the proposed facilities will be the creation of between 9,000 and 13,600 acres of marsh. This marsh will be created as a by-product of the unconfined disposal of hydraulically dredged material into shallow estuarine water bodies. The creation of marsh will benefit fish and wildlife resources and will also offer the potential for bioaccumulation of certain contaminants since six freshwater outlets will be incorporated into the foreshore dikes to maintain year-round freshwater inflow to the adjacent overbank areas. The project will also result in the loss of 3,000 acres of shallow Mississippi River bottoms and 270 acres of natural levee forest, and saltwater intrusion in certain limited areas in the active Mississippi River delta. The construction of freshwater outlets at strategic locations and marsh creation will serve to eliminate the need for fish and wildlife mitigation.

The recommended project consists of 53.2 miles of foreshore dikes and associated bank nourishment, freshwater outlets, 5.5 miles of jetty stabilization, and 5.5 miles of inner bulkheads inside these jetties. The effective life of the project will be 50 years and all economic and environmental analyses are based on this effective life. Marsh creation, which will result from the unconfined disposal of shoal material, will continue as part of the 40 - foot navigation channel maintenance program.

Construction and maintenance of the project features will not jeopardize the existence of any endangered or threatened species or critical habitat. Results of an analysis of floodplain impacts, as required by Executive Order 11988, reveals that construction and maintenance of the project will not significantly impact floodplain functions.

The proposed disposal sites for the discharge of dredged material comply with the requirements of Section 404 guidelines with the inclusion of appropriate and practical conditions to minimize pollution and adverse impacts on the affected aquatic ecosystem. A Water Quality Certificate was obtained from the State of Louisiana on August 9, 1984.

The selected plan has been coordinated with all interested State and Federal agencies and is in full compliance with the following environmental quality statutes: Clean Air Act; Clean Water Act; Endangered Species Act; Federal

Water Project Recreation Act; National Historic Preservation Act; Executive Order 11988, Flood Plain Management; and Executive Order 11990, Protection of Wetlands. A Section 404 (b)(1) Evaluation was distributed for public review. Section 401 Certification was granted by the Louisiana Department of Environmental Quality.

The review period for the Final Environmental Statement as prescribed by law and EPA guidelines ended on March 25, 1985. EPA has no objections to the study findings and the recommended course of action for the selected navigation improvements. The National Environmental Policy Act will be fully complied with upon the signing of this Record of Decision.

I find that the selected plan for navigation improvement will provide significant savings to the Federal Government and represents the course of action which, on balance, best serves the overall public interest.

May 15, 1985



LLOYD A. NUSCHA, P.E.  
Deputy Director  
Directorate of Engineering  
and Construction



REPLY TO  
ATTENTION OF

**DEPARTMENT OF THE ARMY**  
NEW ORLEANS DISTRICT, CORPS OF ENGINEERS  
P. O. BOX 60267  
NEW ORLEANS, LOUISIANA 70160-0267

Planning, Programs, and  
Project Management Division  
Environmental Planning  
and Compliance Branch

**FINDING OF NO SIGNIFICANT IMPACT  
(FONSI)**

**Freshwater Reservoir Additional Disposal Area**

**South Pass of the Mississippi River**

**Plaquemines Parish, Louisiana**

**EA #382**

**Description of the Proposed Action**

The U.S. Army Corps of Engineers, New Orleans District, proposes to designate approximately 640 acres of shallow, open water as a beneficial use disposal area for material removed during routine maintenance dredging cycles of the South Pass Navigational Channel, Mississippi River, Baton Rouge to the Gulf of Mexico, Louisiana project. The proposed disposal site once served as a freshwater reservoir for sulfur mining operations. Approximately 633 acres would be utilized for the beneficial use of material for wetlands development, and approximately seven acres would remain as open water to accommodate water flow through the area. The proposed disposal area would accommodate dredged material from several maintenance events.

Shoal material would be placed within the disposal area via cutterhead dredge to an elevation that upon consolidation would be conducive to marsh development. Material excavated by bucket dredge to create flotation channels would either be placed into the disposal area with the same elevation restrictions as the shoal material or used to refurbish/restore the integrity of the perimeter dike around the disposal area. Internal dikes, closures, and/or weirs would be constructed, as necessary, to further maximize and/or facilitate consolidation of dredged material to the desired elevations. Earth, shell, rock, sheetpile, or a combination thereof, would be used as construction and refurbishment materials for the closures and dikes.

Earthen dikes would be allowed to degrade naturally. Borrow material for construction of dikes and closures would be taken from within the disposal areas, or from flotation channel construction. Fisheries access features would be constructed, as necessary, to allow for tidal exchange and fisheries access to the interior of the disposal area.

#### **Factors Considered in Determination**

This office has assessed the impacts of the proposed action on significant resources, including water bodies, wetlands, fisheries, essential fish habitat, wildlife, threatened or endangered species, cultural resources, recreational resources, and aesthetics. Determination is made that the proposed action would have no impact upon cultural resources, and no significant impact upon water bodies, wetlands, fisheries, essential fish habitats, wildlife, threatened and endangered species, recreational resources, aesthetics, or air quality. The risk of encountering hazardous, toxic, and radioactive waste (HTRW) is low. No impacts were identified that would require compensatory mitigation.

#### **Environmental Design Commitments**

- 1) No colonial nesting waterbirds are currently known to occur within the reservoir, or within 1,500 feet of the proposed project area. However, further informal consultation with the U.S. Fish and Wildlife Service (USFWS) will be necessary when specific disposal plans are developed to ensure that colonial nesting birds would not be impacted.
- 2) Shoal material removed during routine maintenance dredging of South Pass would be placed into the disposal area at elevations conducive to the creation of wetlands. All wetlands created would eventually be hydrologically connected to Cadro Pass to allow water flow exchange and fisheries access to the disposal areas.

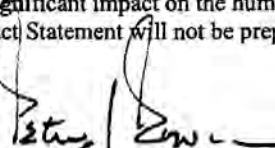
#### **Public Involvement**

The proposed action has been coordinated with appropriate Federal, state, and local agencies, and businesses, organizations, and individuals through distribution of EA #382 for their review and comment.

#### **Conclusion**

This office has assessed the potential environmental impacts of the proposed action. Based on this assessment, and a review of the public comments made on EA #382, a determination has been made that the proposed action would have no significant impact on the human environment. Therefore, a Supplemental Environmental Impact Statement will not be prepared.

26 Aug 83  
Date

  
Peter J. Rowan  
Colonel, U.S. Army  
District Engineer



REPLY TO  
ATTENTION OF

**DEPARTMENT OF THE ARMY**  
NEW ORLEANS DISTRICT, CORPS OF ENGINEERS  
P. O. BOX 60267  
NEW ORLEANS, LOUISIANA 70160-0267

Regional Planning and  
Environment Division South  
Environmental Compliance Branch

**FINDING OF NO SIGNIFICANT IMPACT  
(FONSI)**

**MISSISSIPPI RIVER, BATON ROUGE TO THE GULF OF MEXICO, LOUISIANA  
DESIGNATION OF ADDITIONAL DISPOSAL AREAS**

**PLAQUEMINES PARISH, LOUISIANA**

**Environmental Assessment (EA) #491**

Description of the Proposed Action: The US Army Corps of Engineers, New Orleans District (CEMVN), proposes to designate two additional disposal areas for the beneficial use of dredged material removed during routine maintenance dredging of South Pass, Southwest Pass, and the open water hopper dredge disposal area located at the heads of Pass a Loutre and South Pass in Plaquemines Parish, Louisiana. Southwest Pass of the Mississippi River is the principal shipping channel between the Gulf of Mexico and the Head of Passes, where Southwest Pass and two other access channels, South Pass and Pass a Loutre, converge at the south end of the main stem of the Mississippi River. Maintenance dredging of the Gulf of Mexico entrance channels to the Mississippi River is needed to ensure safe passage of commercial shipping from the Gulf to upriver ports of call. The approximately 20-mile-long Southwest Pass is maintained at -45 feet Mean Low Gulf (MLG) to provide deep-draft access to the New Orleans – Baton Rouge port corridor and its associated commerce and industries. The second important access channel from the Gulf, South Pass, is maintained at -17 feet MLG and provides a more easterly entrance to the Mississippi River. Maintenance dredging of Southwest Pass is performed mainly by hopper dredges. Hopper dredges are favored in Southwest Pass because they are more maneuverable than hydraulic cutterhead dredges, thereby reducing interference with channel traffic and the risk of collisions. Hopper-dredged material removed from Southwest Pass is hauled and deposited into a temporary storage area located in the deep water of the Mississippi River just above the Head of Passes called the Head of Passes hopper dredge disposal area. Management of the Head of Passes hopper dredge disposal area involves maintaining sufficient depths in the area to allow continuous use by hopper dredges during maintenance dredging of Southwest Pass. When hopper dredges can no longer deposit material in the disposal area due to a lack of capacity, the site is “mined” using a hydraulic cutterhead dredge and material is moved to permanent beneficial use disposal areas. Maintenance dredging of South Pass is performed by a hydraulic cutterhead dredge and material is placed into shallow water bottoms adjacent to the channel for wetlands creation and development.



CEMVN intends to continue dredging the navigation channels and requires additional areas for material placement. With the proposed action, CEMVN would designate two additional disposal areas for the beneficial placement of dredged material removed during routine maintenance dredging of South Pass and Southwest Pass navigation channels and during mining of the Head of Passes hopper dredge disposal area. The first new disposal area, East Bay Disposal Area, would be a 9,800-acre expansion of existing disposal areas located between Southwest Pass and South Pass in East Bay of the Mississippi River Delta. The second new disposal area, Wildlife Management Area Disposal Area, would be a 41,100-acre expansion of existing disposal areas located between South Pass and Southeast Pass in the Pass a Loutre Wildlife Management Area (WMA). The Head of Passes hopper dredge disposal area is dredged approximately every 1-2 years. Approximately 1-4 million cubic yards of dredged material would be placed in the disposal area expansions during each hopper dredge maintenance event. South Pass is dredged approximately every 4-5 years. Approximately 4-6 million cubic yards of material would be placed in the proposed disposal areas during each South Pass maintenance dredging event. Maintenance dredging of Southwest Pass using a cutterhead dredge is an infrequent event and a dredging frequency or quantity cannot be readily estimated.

With the proposed action, dredged material would be placed with a hydraulic cutterhead dredge in shallow open water of the proposed disposal areas. A variety of dredged material placement heights and configurations could be created throughout the proposed disposal areas. Prior to each dredging event, the dredged material placement elevation and location would be coordinated with the appropriate state and Federal natural resource agencies, including the Louisiana Department of Wildlife and Fisheries (LDWF), Coastal Operations Program. As with previous placement events in existing disposal areas near the project area, dredged material would be placed unconfined, wherever possible, within the proposed disposal areas and may be used to mimic natural peninsulas, islands, and other land features that are supportive of both nesting habitat for mottled ducks and migratory songbirds along the crowns, with emergent intertidal wetland vegetation taking root along the lower elevations of the placement area slopes and fringes. The maximum initial elevation of the dredged material would be +8.0 feet MLG. Placement of dredged material on existing submerged aquatic vegetation (SAV) and/or emergent marsh would be avoided to the maximum extent practicable. Gaps would be left between each placement area to allow for the continued movement, flow, and intertidal exchange of water and aquatic species. Observation of past placement events in other disposal areas in the Mississippi River Delta indicate approximately 100 acres of wetlands are created per 100 million cubic yards of dredged material.

Access dredging may be required to allow construction equipment and floating pipelines to reach the discharge sites within the disposal areas. If access channels are deemed necessary, the location of these access channels would be determined through coordination with LDWF Coastal Operations Program staff prior to construction. When existing access corridors cannot be used and corridors must be cut through existing marsh, adverse marsh impacts would be minimized to the maximum extent practicable. Such access corridors would be limited to a maximum width of approximately 150 feet. These access corridors may be backfilled with dredged material to a maximum elevation of 2 feet above existing, adjacent marsh upon completion of dredging and disposal activities to degrade the corridors and restore functioning marsh habitat.

During disposal design and prior to each placement event, containment measures such as earthen dikes would be considered and implemented as necessary. Earth, shell, sheetpile, rock, aggregate, or some combination of these materials would be used to construct closures and dikes. Earthen closures/dikes would be allowed to degrade naturally or, if such degradation does not occur, these structures would be mechanically degraded after the dredged material has compacted and dewatered sufficiently to prevent it from entering the navigation channel and adjacent waterways—generally no more than approximately 3 years after project construction. CEMVN would coordinate inspections of these features with LDWF prior to taking action, and if deemed necessary, would mechanically degrade earthen closures or dikes.

Factors Considered in Determination: The US Fish and Wildlife Service (USFWS) by letter dated September 22, 2009 agreed with CEMVN's determination that the proposed action would not be likely to adversely affect any threatened or endangered species or designated critical habitat under the Service's jurisdiction. Since more than a year has expired since the original consultation letter, CEMVN re-initiated consultation with USFWS on July 25, 2011. By stamped facsimile dated August 22, 2011, USFWS concurred with CEMVN's determination that the proposed project is not likely to adversely affect threatened or endangered species or designated critical. Additionally, CEMVN concluded that the proposed action would not be likely to adversely affect any threatened or endangered species under the purview of the National Marine Fisheries Service (NMFS), Protected Resources Division. NMFS determined in its 2003 Gulf of Mexico Regional Biological Opinion that threatened or endangered species under its management would be unlikely to suffer adverse impacts arising from disposal activities in the general project area; NMFS confirmed this view as to the proposed disposal areas in e-mail correspondence dated February 10, 2010. A Public Notice describing the proposed action was mailed out on August 5, 2009. Disposal of fill material into waters or wetlands requires an evaluation under Section 404 (b)(1) of the Clean Water Act (CWA). A Section 404 (b)(1) evaluation was prepared for the disposal activities assessed in this EA, and was signed by the District Engineer on October 6, 2009. As per section 401 of the CWA, a State Water Quality Certification (WQC) Application was prepared and submitted to the Louisiana Department of Environmental Quality (LDEQ) on August 3, 2009. LDEQ determined by letter dated October 1, 2009 that the proposed project would not violate the water quality standards of Louisiana provided for under LAC 33: IX Chapter 11 and issued the WQC Number WQC 090825-01/A1 166466/CER 20090001. By e-mail dated January 11, 2011, the LDEQ Community and Industry Relations indicated there were no objections. Per Section 307 of the Coastal Zone Management Act of 1972, CEMVN determined the proposed action was consistent with the Louisiana Coastal Resources Program. The Louisiana Department of Natural Resources concurred with this determination in a letter dated October 18, 2011. This office has concurred with, or resolved, all Fish and Wildlife Coordination Act recommendations contained in a letter from LDWF, dated September 7, 2011. This office has concurred with, or resolved, all Fish and Wildlife Coordination Act recommendations contained in a letter from USFWS, dated September 7, 2011. In a letter dated September 6, 2011, the National Marine Fisheries Service, Habitat Conservation Division indicated their support of the proposed action. Furthermore, this office has concurred with, or resolved, comments contained in a letter from NMFS, dated September 6, 2011. CEMVN sent a No Effect on cultural resources determination to the Louisiana State Historic Preservation Officer (SHPO) on October 26, 2009. SHPO concurred with this determination in a

letter dated November 22, 2009. In a letter dated September 20, 2011, the Alabama-Coushatta Tribe of Texas stated there were no objections to the FONSI. In a letter dated September 13, 2011, the US Environmental Protection Agency Region 6 stated there were no comments or objections to the proposed action. The risk of encountering HTRW is low. No impacts were identified that would require compensatory mitigation.

Environmental Design Commitments: The following commitments are an integral part of the proposed action:

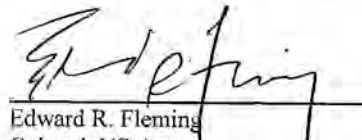
- 1.) If the proposed action is changed significantly or is not implemented within one year, CEMVN will reinitiate coordination with the USFWS to ensure that the proposed action would not adversely affect any Federally-listed threatened or endangered species, or their habitat. [USFWS memo dated September 7, 2011]
- 2.) Due to the close proximity of piping plover Critical Habitat Unit LA-6 to the proposed disposal areas, placement of material in these areas would be closely coordinated with USFWS prior to any placement events. USFWS would have the opportunity to review detailed plans and specifications for disposal design as they become available.
- 3.) The proposed project would be located in an area where waterbird nesting colonies are known to occur. CEMVN shall follow USFWS guidelines for minimizing disturbance to nesting migratory birds. These measures include insuring that construction activities are located more than 650 feet and 1,000 feet away from black skimmers and colonial nesting birds, respectively and 2,000 feet or more from nesting brown pelicans. [USFWS memo dated September 7, 2011]
- 4.) Prior to each dredging event, the dredged material placement elevation and location would be coordinated with the appropriate state and Federal natural resource agencies, including the LDWF Coastal Operations Program. [LDWF memo dated September 7, 2011]
- 5.) If earthen retention features or closures do not sufficiently degrade naturally following appropriate settlement of dredged material placed within the disposal area, they should be mechanically breached and/or degraded as necessary, generally no more than approximately 3 years after construction. [USFWS memo dated September 7, 2011; NMFS memo dated September 6, 2011]
- 6.) To the maximum extent practical, CEMVN shall avoid sediment placement and construction equipment movement on existing SAV and wetlands. [NMFS memo dated September 6, 2011]
- 7.) 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-PDN-NCR archeologist has been notified and final coordination with the SHPO and the Tribal Historic Preservation Officer (THPO) has been completed. [CEMVN-PDN-NCR/SHPO Standard Operating Procedure]

Public Involvement. The proposed action has been coordinated with appropriate Federal, state, and local agencies and businesses, organizations, and individuals through distribution of

EA #491 for their review and comment. EA #491 is attached hereto and made a part of this FONSI.

Conclusion. This office has assessed the potential environmental impacts of the proposed action. Based on this assessment (incorporated herein by reference), a review of the comments made on EA #491, and the implementation of the environmental design commitments listed above, a determination has been made that the proposed action would have no significant impact on the human environment. Therefore, a Supplemental Environmental Impact Statement will not be prepared.

11 November 2011  
Date

  
Edward R. Fleming  
Colonel, US Army  
District Commander



# ELIGIBILITY REVIEW

## Bucket 2 – Council Selected Restoration Component

**PROPOSAL TITLE**

Wetland Creation in the Pass a Loutre WMA Using Dredge Material from South Pass of the Mississippi River

**PROPOSAL NUMBER**

ACOE-2

**LOCATION**

Bird's foot delta of Lower Mississippi River at the Gulf of Mexico.

**SPONSOR(S)**

Department of the Army

**TYPE OF FUNDING REQUESTED (Planning, Technical Assistance, Implementation)**

Technical Assistance/Implementation

**REVIEWED BY:**

Bethany Carl Kraft/ Ben Scaggs

**DATE:**

11-18-14

**1. Does the project aim to restore and/or protect natural resources, ecosystems, fisheries, marine and wildlife habitat, beaches, coastal wetlands and economy of the Gulf Coast Region?**

YES     NO

Notes:

This proposal seeks to create/restore approximately 640 acres of emergent wetlands

**2. Is the proposal a project?**

YES     NO

**If yes, is the proposed activity a discrete project or group of projects where the full scope of the restoration or protection activity has been defined?**

YES     NO

Notes:

**3. Is the proposal a program?**

YES  NO

**If yes, does the proposed activity establish a program where the program manager will solicit, evaluate, select, and carry out discrete projects that best meet the program's restoration objectives and evaluation criteria?**

YES  NO

Notes:

**4. Is the project within the Gulf Coast Region of the respective Gulf States?**

YES  NO

**If no, do project benefits accrue in the Gulf Coast Region?**

YES  NO

Notes:



## Eligibility Determination

ELIGIBLE

## Additional Information

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## Proposal Submission Requirements

1. Is the project submission overall layout complete? *Check if included and formatted correctly.*

- |                                |                                     |                                       |                                     |
|--------------------------------|-------------------------------------|---------------------------------------|-------------------------------------|
| A. Summary sheet               | <input checked="" type="checkbox"/> | F. Environmental compliance checklist | <input checked="" type="checkbox"/> |
| B. Executive summary           | <input checked="" type="checkbox"/> | G. Data/Information sharing plan      | <input checked="" type="checkbox"/> |
| C. Proposal narrative          | <input checked="" type="checkbox"/> | H. Reference list                     | <input checked="" type="checkbox"/> |
| D. Location information        | <input checked="" type="checkbox"/> | I. Other                              | <input checked="" type="checkbox"/> |
| E. High level budget narrative | <input checked="" type="checkbox"/> |                                       |                                     |

If any items are NOT included - please list and provide details



2. Are all proposal components presented within the specified page limits (if applicable)?

YES     NO

Notes: