

**COTE BLANCHE FRESHWATER AND SEDIMENT INTRODUCTION,
AND SHORELINE PROTECTION PROJECT, ST. MARY PARISH,
LOUISIANA
PHASE I - PLANNING, ENGINEERING, AND DESIGN**

**Prepared by the New Orleans District
on Behalf of the Chitimacha Tribe of Louisiana
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**

17 November 2014

1. COUNCIL MEMBER APPLICANT AND PROPOSAL INFORMATION SUMMARY SHEET

Council Member: Department of Army (New Orleans District)		Point of Contact: Mark Wingate
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Project Identification		
Project Title: Cote Blanche Freshwater and Sediment Introduction, and Shoreline Protection Project, St. Mary Parish, Louisiana		Project
State(s): Louisiana	County/City/Region: St. Mary	
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> Located in the Teche/Vermilion Basin, on the shoreline of Cote Blanche Bay		
Project Description		
RESTORE Goals: <i>Identify all RESTORE Act goals this project supports. Place a P for Primary Goal, and S for secondary goals.</i>		
<u>P</u> Restore and Conserve Habitat	<u>S</u> Replenish and Protect Living Coastal and Marine Resources	
<u>S</u> Restore Water Quality	<u>S</u> Enhance Community Resilience	
<u>S</u> Restore and Revitalize the Gulf Economy		
RESTORE Objectives: <i>Identify all RESTORE Act objectives this project supports. Place a P for Primary Objective, and S for secondary objectives.</i>		
<u>P</u> Restore, Enhance, and Protect Habitats	<u>S</u> Promote Community Resilience	
<u>S</u> Restore, Improve, and Protect Water Resources	<u> </u> Promote Natural Resource Stewardship and	
<u>S</u> Protect and Restore Living Coastal and Marine Resources	Environmental Education	
<u>S</u> Restore and Enhance Natural Processes and Shorelines	<u>S</u> Improve Science-Based Decision-Making Processes	
RESTORE Priorities: <i>Identify all RESTORE Act priorities that this project supports.</i>		
<u>X</u> Priority 1: Projects that are projected to make the greatest contribution		
<u>X</u> Priority 2: Large-scale projects and programs that are projected to substantially contribute to restoring		
<u> </u> Priority 3: Projects contained in existing Gulf Coast State comprehensive plans for the restoration		
<u>X</u> Priority 4: Projects that restore long-term resiliency of the natural resources, ecosystems, fisheries ...		
RESTORE Commitments: <i>Identify all RESTORE Comprehensive Plan commitments that this project supports.</i>		
<u>X</u> Commitment to Science-based Decision Making		
<u>X</u> Commitment to Regional Ecosystem-based Approach to Restoration		
<u>X</u> Commitment to Engagement, Inclusion, and Transparency		
<u>X</u> Commitment to Leverage Resources and Partnerships		
<u>X</u> Commitment to Delivering Results and Measuring Impacts		
RESTORE Proposal Type and Phases: <i>Please identify which type and phase best suits this proposal.</i>		
<u>X</u> Project <u>X</u> Planning <u>X</u> Technical Assistance <u> </u> Implementation <u> </u> Program		
Project Cost and Duration		
Project Cost Estimate:	\$2.65 million	Project Timing Estimate:
Planning, Engineering and Design (PED): \$2,650,000		Date Anticipated to Start: <u>Jan/2015</u>
		Time to Completion: <u>12 Months for PED</u>
Total Construction Cost: \$30,603,000		Anticipated Project Lifespan: <u>20</u> years

2. EXECUTIVE SUMMARY

The activities proposed herein includes the planning, engineering, environmental compliance, and design of a project that will restore/protect 763 acres of wetlands in the Teche/Vermilion Basin by increasing freshwater and sediment input from the Gulf Intracoastal Waterway (GIWW) into interior marshes and constructing shoreline protection. Phase I of the project, which consists of planning, engineering, environmental compliance, and design, is estimated to cost \$2.65 million. The project, proposed on behalf of the Chitimacha Tribe of Louisiana, was a Coastal Wetlands Planning, Protection, and Restoration Act (CWPPRA) nominee for Priority Project List (PPL) 22 in 2012. Through CWPPRA, the Natural Resources Conservation Service (NRCS) developed project information for the nominee project and has cooperated with the U.S. Army Corps of Engineers (USACE) in developing this proposal. The project features will provide a synergistic effect with two existing CWPPRA projects: Cote Blanche Hydrologic Restoration Project (TV-04) and Sediment Trapping at the Jaws (TV-15). This proposal is seeking funding for planning and technical assistance (the planning, engineering, environmental compliance, and design) activities for the Cote Blanche Freshwater and Sediment Introduction and Shoreline Protection Project.

The proposed project, located in the Teche/Vermilion Basin in St. Mary Parish, Louisiana, consists of two components: freshwater and sediment introduction, and shoreline protection. The freshwater and sediment introduction component includes channel improvement or enlargement and a structural feature, to increase freshwater and sediment input from the GIWW into interior Cote Blanche Wetlands. By increasing the net flow delivered to the project area's interior marshes, the project will optimize the distribution of water and sediment to further reduce emergent marsh loss and accelerate sediment accretion to promote land building in isolated marsh areas. The shoreline protection component includes construction of approximately 27,150 linear feet of shoreline protection of East Cote Blanche Bay. The project would benefit a total of 11,217 acres of wetlands, including directly restoring/protecting 763 acres at a total cost of \$30.6 million, or an average of \$40,150 per acre restored/protected.

A. Comprehensive Plan Goals and Objectives

Comprehensive Plan Goals - The primary goal of this project is to restore and protect habitat through the introduction of freshwater and sediment from the GIWW and the placement of shoreline protection in Cote Blanche Bay. The proposed project will, amongst other things, stabilize critical shoreline areas of the Cote Blanche Bay, prevent expansion of West Cote Blanche Bay, prevent wave erosion impacts to surrounding marsh, provide a barrier to the progression of saltwater intrusion into freshwater marsh, restore/protect habitat for fish, wildlife and waterfowl species, and support the multiple lines of defense strategy. In doing so, in addition to supporting the Plan's primary goal, 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/protecting coastal wetland habitat through the introduction of freshwater and sediment from the GIWW and the placement of shoreline protection features.

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 retarding saltwater intrusion into the interior wetlands and restoring wetlands that filter chemicals and sediment from water, thereby restricting such constituents from entering the Cote Blanche Bay. The project would replenish and protect healthy, diverse, and sustainable living coastal habitat beneficial to fish, terrestrial, semi-aquatic, and avian wildlife species. The project would maintain the existing shoreline of Cote Blanche Bay, preventing wave erosion impacts to surrounding marsh, and renourish wetlands in the area. 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 providing vital protection to vulnerable inland areas of St. Mary Parish from storm surges associated with hurricanes. 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 – Phase I (planning, engineering, environmental compliance, and design activities) as proposed under this submittal is projected to be completed within 12 months from receipt of funding from the RESTORE Council. Upon completion of design, additional funds would be needed to construct the project. The freshwater and sediment introduction component of the project includes excavating existing channels in the Cote Blanche Wetlands and constructing a steel sheetpile plug with boat bay on one of the interior channels to constrict flow. The shoreline protection component of the project consists of the placement of approximately 27,150 linear feet of fiberglass sheetpile parallel to the northern shoreline of East Cote Blanche Bay. Approximately 275,000 cubic yards of material will be excavated via bucket dredge to construct a channel to allow barge access to the site. Following construction, the excavated material will be used to backfill the channel. Project right-of-entry acquisition and construction contract award is anticipated to take approximately 12 to 15 months from receipt of funding. Once constructed, project benefits would be realized over the 20-year project life.

C. Monitoring and Measures of Success - The project would be monitored through: 1) post-construction survey to document conditions; 2) the use of pre-construction, post-construction, and periodic infrared aerial photography to identify changes in land area; and 3) monitoring through the CWPPRA Coastwide Reference Monitoring System-Wetlands (CRMS) data. The success of the project will be measured by the acres of wetland restored/protected (763 acres), the cost of restoring/protecting the wetlands (\$30.6 million), the average cost per acre restored/protected (\$40,150), and the length of time required to build the project (two years for planning/design/construction from receipt of funding).

D. Risk and Uncertainty - The science and practice of coastal ecosystem restoration in the area has proven to be successful by two existing CWPPRA projects: Cote Blanche Hydrologic Restoration Project (TV-04) and Sediment Trapping at the Jaws (TV-15). As such, risk and uncertainty associated with the proposed project is anticipated to be minimal and should be limited to uncertainty associated with costs, obstacles in obtaining right-of-entry, and unforeseen events and circumstances that may impact operations. Although the project will be designed to restore/protect wetlands, it will not totally eliminate the threat of wetland loss in the project area; hurricanes, storms, frontal passages, subsidence, and other natural events will continue to cause erosion and loss of emergent wetlands.

3. PROPOSAL NARRATIVE

A. Project Overview

1) Description of Project

The activities proposed in this document includes the planning, engineering, environmental compliance, and design of a project that will directly restore/protect 763 acres of wetlands in the Teche/Vermilion Basin in south central coastal Louisiana by increasing freshwater and sediment flow into interior marshes and constructing shoreline protection on East Cote Blanche Bay. Phase I (planning, engineering, environmental compliance, and design) is estimated to cost \$2.65 million, while Phase II (project construction) is estimated to cost an additional \$28 million, for a total implementation cost of \$30.6 million, or an average of \$40,150 per acre restored/protected. Funding for Phase I of the proposed project is being sought through this proposal. The project, which is being proposed on behalf of the Chitimacha Tribe of Louisiana, consists of two components: a freshwater and sediment

Summary

- Phase I Costs: \$2.65 million
- Phase I and II (Construction) Costs: \$30.6 Million
- 763 Acres of Wetlands Created/Protected
- \$40,150 Average Cost Per Acre
- Net Flow Increase to Interior Wetlands of 930 cfs
- 27,150 Linear Feet of Shoreline Protection
- Location: St. Mary Parish, Louisiana
- Sediment & Freshwater Source: GIWW

introduction component and a shoreline protection component. The project includes planning and technical assistance (the planning engineering, environmental compliance, and design) activities. The proposed project will restore/protect wetlands southwest of the GIWW and along portions of the northern shoreline of East Cote Blanche Bay and southeastern shoreline of West

Cote Blanche Bay by improving channels to increase freshwater and sediment input from the GIWW into interior marshes and constructing shoreline protection. The total area directly and indirectly benefitting from both components of the project would be approximately 11,217 acres, of which 763 acres would be directly restored/protected at a total implementation cost of \$30.6 million, or an average of \$40,150 per acre restored/protected. The proposed project will reduce interior wetland loss and promote land building, reduce and/or reverse shoreline erosion rates, protect critical marsh habitat, and maintain the lower energy hydrology of the Cote Blanche wetlands established by the CWPPRA-constructed Cote Blanche Hydrologic Restoration (TV-04) Project. The proposed project is located in the Teche/Vermilion Basin in St. Mary Parish in south central coastal Louisiana (see Figure 1).

The freshwater and sediment introduction component of the proposed project includes channel improvement or enlargement and a structural measure (a steel sheetpile plug with a boat passage bay to be constructed on one of the interior channels) to increase freshwater and sediment input from the GIWW into interior Cote Blanche Wetlands. This component will optimize the distribution through multiple avenues (water conveyances) to further reduce emergent wetland loss and accelerate sediment accretion to promote land building in isolated areas in the interior of the Cote Blanche Wetlands. By increasing the net flow of water into the project area's interior wetlands by 930 cubic feet per second (cfs), 10,722 acres of marsh would directly and indirectly benefit from this component, including 643 acres of wetlands to be

Figure 1. Site Map of Cote Blanche Freshwater and Sediment Introduction, and Shoreline Protection Project



directly benefited (449 acres created and 194 acres protected) by component features over the project life.

The shoreline protection component of the proposed project includes construction of approximately 27,150 linear feet of armored protection parallel to the northern shoreline of East Cote Blanche Bay. This component includes approximately 21,950 linear feet of shoreline protection, starting 3,300 feet west of Humble Canal and extending around Marone Point, and approximately 5,200 feet of protection east of the Humble Canal between existing shoreline protection segments. The total acreage directly and indirectly benefitting from the shoreline protection component of the project would be 495 acres, this includes 120 acres of wetlands that would directly benefit by eliminating shoreline erosion, and approximately 375 acres of wetlands that would indirectly benefit by the prevention of breaching of, and tidal exchange through, several natural bayous and open water ponds adjacent to the East Cote Blanche Bay shoreline.

Wetland loss in the Cote Blanche Wetlands has been caused by a number of factors, of which unnatural water exchange, subsidence, storms, and wave energy are the most important factors. Historically, water slowly exited the Cote Blanche Wetlands through the meandering bayous and tidal channels which flow into the surrounding bays. During the 1950's and 1960's, oilfield activity intensified, resulting in the dredging of an extensive network of canals. These wide, deep channels penetrated the interior marsh and captured much of the flows historically carried by natural waterways. As a result, water now exits the marsh at a much faster rate, often causing erosion in interior areas where highly organic soils are found. Most of these canals have several branches which finger into the marsh and, through large spoil bank breaches, provide an unnatural, deepwater connection to the surrounding bays. This link exposes the organic substrate to a highly-fluctuant, unnatural water regime resulting in export of organic material. This frequently occurs during winter frontal passages when unvegetated areas are rapidly dewatered as a result of strong north winds.

Increasing amounts of freshwater and sediment have been entering the project area from the Atchafalaya River via the GIWW and East Cote Blanche Bay. The GIWW carries huge volumes of freshwater to the west, "freshening" the project area and resulting in the conversion of what was brackish marsh in 1949 to fresh marsh by 1988 (Chabreck and Linscombe 1988). The enormous amount of sediment carried to the project area is evidenced by the delta formation and shallow water at The Jaws (Little Bay) near Bayou Mascot in the northeast corner of West Cote Blanche Bay. While the GIWW has freshened the project area, it also supplies significant quantities of freshwater and sediment available to be tapped to nourish the area. For a number of reasons, only a small portion is currently reaching the interior marshes where storm damage has occurred. Continuous stretches of spoil banks bordering some canals prevent the nourishing flows to the wetlands. Additionally, storms have blocked avenues that had previously allowed some low-level freshwater and sediment flows to interior marsh areas. In other areas, some flows that should be circulating through interior areas have been short-circuited back into the canal systems. The TV-4 project structures continue to function as intended; however, increasing sediment inputs through additional, more efficient paths would accelerate accretion and facilitate restoration of damaged interior marsh within the project's 10,722-acre interior wetlands.

Forming the northern boundary of East Cote Blanche Bay, the position and orientation of the proposed project shoreline places it squarely in the path of direct impact from wave energies generated in the Gulf of Mexico. Although the bay is very shallow, the miles of fetch length from the south and southwest allow uninterrupted impact from wave and tidal amplitudes commensurate with those striking the outer barrier island systems in the deltaic plain. This condition, combined with the lack of a somewhat hardened, naturally reworked shoreline configuration as typically found in more mineral soils, has contributed to serious loss of these

marshes from years of erosion into the vulnerable organic habitat. The shorelines of East and West Cote Blanche Bays protect the marsh interior from wave energy. Without a protective rim, the adjacent marsh would quickly erode into shallow-water habitat unable to support emergent or submergent vegetation because of exposure to excessive wave energy. This project will provide shoreline protection along critical areas of East Cote Blanche Bay.

The proposed project area experienced extensive damage from the major drought of 1999-2000, Hurricane Lili in 2002, and additional loss from Hurricane Rita in 2005. The proposed project features will provide a synergistic effect with two existing CWPPRA projects: Cote Blanche Hydrologic Restoration Project (TV-04); and Sediment Trapping at the Jaws (TV-15) by extending shoreline protection around the entire northern shore of East Cote Blanche Bay, and promoting sustainable restoration to thousands of acres of deteriorating marsh in St. Mary Parish (see Section 9.A, Map of Authorized and Constructed CWPPRA Projects - Region 3). Final design of the proposed project will be completed upon receipt of funding, and will incorporate consultations with the State of Louisiana and other State and Federal agencies. As such, final design could result in revised locations, sizes, and configurations of project elements, which could impact the quantity of wetlands created/protected by the project.

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. Through channel improvement to increase freshwater and sediment input from the GIWW into interior Cote Blanche marshes and shoreline protection in Cote Blanche Bay, the project will restore approximately 763 acres of wetlands, thereby helping mitigate land loss in the Teche/Vermilion Basin, in general, and specifically in East and West Cote Blanche Bays.

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 conversion of freshwater wetlands to open water; and 2) restoring wetlands that filter chemicals and sediment from water, restricting such constituents from entering Cote Blanche Bay, and the Gulf.

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/conserving coastal wetlands, the proposed project addresses a significant ecosystem issue, the loss of coastal wetlands in the Teche/Vermilion Basin. Louisiana wetlands, which account for 40 percent 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.B for USGS Louisiana Coastal Land Loss Map.) The study area, which includes portions of the Cote Blanche wetlands, has experienced significant wetland loss, both on its fringe (shoreline) and in interior portions. Shoreline erosion along East and West Cote Blanche Bays has been measured between 15 and 20 feet per year in some areas (Coast 2050), with loss rates as high as 28 feet per year. Erosion appears to be the most severe along the northern shoreline of East Cote Blanche Bay near Marone Point. Shoreline protection will prevent interior areas of open water from being encroached upon by the advancing shoreline and becoming part of the bay. The importance of restoring this area is illustrated by the investment CWPPRA has made in the area (see Section 9.A, Map of Authorized and Constructed CWPPRA Projects - Region 3). The Cote Blanche Hydrologic Restoration Project (TV-04), which is co-located with the proposed project, was constructed by CWPPRA in 1999, to reduce erosion of the Cost Blanche Wetlands (see Section 9.D for Site Map of Co-located Cote Blanche Hydrologic Restoration Project). TV-04 has helped reduce the rate of erosion experienced in the study area; however, as illustrated in by USGS analysis, from 1998 to 2008, the weighted average annual loss rate was still 9.3 feet per year across the entire proposed project shoreline. If left unchecked, the rapidly eroding shoreline along East Cote Blanche Bay will allow continued rapid conversion of interior wetlands to open bay, and increase tidal exchange with other small, heretofore protected, interior pond and stream systems. In addition, the interior Cote Blanche Wetlands have experienced erosion, as illustrated by the loss of 1,750 acres of emergent wetlands within the interior of the project area due to Hurricane Lili in 2002 (see Section 9.C, Increase in Open Water in Interior Cote Blanche Wetlands Due to Hurricane Lili), and additional loss of wetlands from Hurricane Rita in 2005.

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 freshwater and sediment into the basin. The proposed project will make positive contributions to coastal land restoration/conservation by capturing sediment material that is currently flowing into the Bay. CWPPRA has made significant investment in ecosystem restoration projects in the Teche/Vermilion Basin (see Section 9.A, Map of Authorized and Constructed CWPPRA Projects - Region 3). The proposed project will build upon existing, CWPPRA restoration projects in the area, namely Cote Blanche Hydrologic Restoration Project (TV-04) and Sediment Trapping at the Jaws (TV-15).

i. The Project Will be Sustainable Over Time: Sustainability of the wetlands to be restored/protected by the project will be enhanced through the existing CWPPRA Cote Blanche Hydrologic Restoration Project (TV-04) and through the introduction of sediment from

the GIWW as a result of the construction of the proposed project. The construction of the GIWW and numerous oilfield canals have caused hydrologic changes within the project area that are believed to include increased tidal action and rapid water exchange between the interior marsh and East and West Cote Blanche Bays. The average land loss rate for the project area was estimated at 73 acres per year from 1957 to 1990 (Britsch and Kemp 1990). Rapid water exchange and increased tidal fluctuations have caused breaches in spoil banks of interior canals and are likely responsible for erosion and conversion of fragmented marsh to open water as organic, marsh soils are easily eroded. Although sediment-laden water is available from the bays and the GIWW, rapid water exchange appears to inhibit sediment and nutrient deposition. The CWPPRA Cote Blanche Hydrologic Restoration Project promotes sediment accretion and marsh creation through the creation of a lower energy environment by reducing the larger openings of oilfield access canals that penetrate fragile interior marsh and act as direct conduits for increased tidal influence from East and West Cote Blanche Bays. Water control structures reduce cross sectional areas of major waterways thereby reducing tidal fluctuation and rapid water exchange between bays and interior fragmented marshes. By slowing the flow of water into and out of the project area, additional sediment from the GIWW will be able to settle out in the wetlands. The Cote Blanche Hydrologic Restoration Project and the proposed project are co-located and synergistic. The Cote Blanche Hydrologic Restoration Project slows the flow of sediment-laden water from the GIWW, allowing more sediment to be deposited in the interior wetlands. The proposed project will introduce additional sediment-laden water from the GIWW to the project area and allow the waters to access the more interior wetlands. In addition, both projects include a shoreline stabilization component that prevents wave erosion impacts to project area wetlands. The project life is estimated at not less than 20 years.

ii. The Project is Likely to Succeed: The project has a high probability of success based on the effectiveness of the CWPPRA Cote Blanche Hydrologic Restoration (TV-04) Project which is co-located with the proposed project area. The TV-04 project included the construction of seven passive water control structures (weirs) and 4,140 feet of shoreline protection. The rate of marsh loss has decreased by two-thirds in the project area since construction of TV-04 relative to the historical (1957-1990) land loss rate. The TV-04 project structures continue to function as intended; however, increasing sediment inputs through improved paths would accelerate accretion and restoration, while installing shoreline protection would preserve the hydrologic integrity of the TV-04 water control structures and wetland loss attributable to wave action.

iii. The Project Benefits the Human Community: The project directly and indirectly benefits the Gulf Coast human community. The proposed activities could benefit the local community through the direct and/or indirect purchase of goods and services associated with the conduct of the proposed activities.

The ongoing Cote Blanche Bay shoreline retreat threatens St. Mary Parish by making community infrastructure (including roads, utilities, and commercial and industrial establishments) more susceptible to wave damage. The proposed project restores/protects a key feature (wetlands) in the multiple lines of defense strategy and enhances community resilience by reducing the vulnerability of St. Mary Parish communities, including the Chitimacha Tribe of Louisiana, as well as oil and gas, and fishing industries, to shoreline retreat and storm surge. The project would protect the inland oilfield and oil well locations, and the GIWW transportation

corridor from exposure to open bay conditions and from increased wave energy generated by marsh fragmentation, and expansion of interior open water areas. In addition, the wetlands in the project area buffers the vulnerable Franklin and Baldwin municipal areas and the tribal lands of the Chitimacha Nation from storm impacts. Three archaeological sites have been identified within the Cote Blanche Wetlands and the proposed project has the potential to protect other cultural and natural resources of religious and cultural significance to the Chitimacha Tribe. The archaeological sites are each prehistoric shell middens, the significance of which will be determined prior to project implementation.

By protecting and restoring the freshwater Cote Blanche wetlands, coastal erosion will be abated, and storm surges will be reduced in the Teche/Vermilion Basin. The project will also 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 freshwater 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 restoring an estimated 763 acres of coastal wetlands through increasing freshwater and sediment input from the GIWW into interior Cote Blanche Wetlands, and providing shoreline protection to Cote Blanche Bay. This project is a significant step toward restoring the ecosystem diversity to a region containing freshwater marsh environment with some of the most diverse plant communities found in coastal Louisiana, which include bulltongue, elephantsear, cattail, alligatorweed, deerpea, and smartweed. The project will enhance utilization of GIWW sediment and contribute to maximizing sediment use for effective and sustainable coastal restoration.

Primary Goal:
Restore Habitat

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 interior Cote Blanche Wetlands, thereby reducing the rate of conversion of freshwater wetlands to open water. In addition, the wetlands protected/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 the waters entering Cote Blanche Bay, and the Gulf of Mexico.

c. Replenish and Protect Living Coastal and Marine Resources

The project area contains some of the most diverse plant communities found in coastal Louisiana. The area supports vegetation typically found in fresh and intermediate marshes. Throughout most of the project area, bulltongue is the most common species, and submerged aquatic vegetation is extremely abundant and diverse throughout the project area. Most open water areas are densely covered with submerged aquatics or floating mats of water hyacinth. Fresh and intertidal intermediate water supporting plant species provide nursery and foraging grounds for a variety of economically important marine species including white shrimp, brown shrimp Gulf menhaden, blue crab, catfish, gar, nutria and muskrat. The marsh habitat also provides important habitat for wintering migratory waterfowl, alligator, black bear, and other furbearers. In addition, the endangered Bald Eagle (*Haliaeetus leucecephalus*) and threatened Arctic Peregrin Falcon (*Falco peregrinus*) may occur in the project area, and the endangered Kemp's Ridley Sea Turtle (*Lepidochelys kempii*) probably occurs in the nearshore waters adjacent to the project area, and possibly in the interior waterways of the project area. The proposed project will introduce freshwater and sediment from the GIWW into the project areas wetlands, including existing isolated ponds in the more interior portions of the wetlands that are currently receiving little flow, thereby restoring coastal habitat that has been damaged by natural (hurricanes) and manmade (oil and gas canals) events. The additional sediment input could also provide for improved substrate conditions in the pond bottoms as well as counter subsidence. The project will restore less productive fish and wildlife habitat with higher quality essential habitat by replenishing and protecting healthy, diverse, and sustainable living coastal wetland resources in the Teche/Vermilion Basin at the interface with of the Cote Blanche Bay and the Gulf of Mexico.

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 St. Mary Parish, including the Chitimacha Tribe of Louisiana, and its infrastructure from storm surges associated with hurricanes.

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 St. Mary Parish; (2) protecting the GIWW transportation corridor from exposure to open bay conditions; and (3) providing the habitat necessary for growing and sustaining fish species critical to recreational and commercial fishing industries. Oil and gas production, commercial fishery harvest, trapping, hunting, recreational fishing, and boating are some of the economically important activities supported by the project area. Recreational activities that are popular in or near the project area include hunting, fishing, shrimping, crabbing, boating, hiking, and wildlife observation. The project will enhance fish and wildlife habitat, thus providing for greater long-term recreational opportunities.

Intracoastal City, Abbeville, Delcambre, Port of West St. Mary, and Port of Iberia service a tremendous oil and gas, and commercial fishing industry in the Teche/Vermilion Basin. 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.

Primary Objective:
Restore Habitat

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 763 acres of coastal wetland habitat through introduction of the freshwater and sediment, and shoreline protection at a cost of \$40,150 per acre restored. 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 retarding saltwater intrusion into the interior wetlands of the Teche/Vermilion Basin, and restoring/protecting wetlands that filter chemicals and sediment from water, restricting such constituents from entering Cote Blanche Bay and the Gulf of Mexico.

c. Protect and Restore Living Coastal and Marine Resources

As outlined in the discussion on Comprehensive Plan Goals, restoration of 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 East and West Cote Blanche Bays and increasing freshwater and sediment input from the GIWW into the interior marshes, the project would support the return of the historical configuration of the Cote Blanche Wetlands. 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 wetlands, protecting Cote Blanche Bay shoreline, and stemming the conversion of freshwater wetlands to shallow open water will promote community resilience by

supporting the multiple lines of defense strategy and reducing the vulnerability of St. Mary Parish infrastructure as outlined in the discussion on the Council’s Emphasis Areas.

f. Improve Science-Based Decision Making Processes

The use of the best available science associated with hydrologic restoration and shoreline projection within the study area is illustrated by the success of the CWPPRA-constructed Cote Blanche Hydrologic Restoration Project.

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) will make significant contributions to the Teche/Vermilion Basin and the Gulf Coast ecosystems; (2) supports a large-scale CWPPRA ecosystem restoration program; and (3) restores long-term resiliency of the natural resources impacted by the Deepwater Horizon oil spill. Hydrologic restoration and shoreline protection projects in the Teche/Vermilion Basin are included in the Louisiana Coastal Master Plan and this project is supported by the Chitimacha Tribe of Louisiana and the St. Mary Parish Government (see Section 9.F, letters of support), 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*
- *Not Inconsistent 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 extremely cost effectively. This project has the capacity to restore/protect existing open shallow water ponds to habitat that is more consistent with the Cote Blanche Wetlands.

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

As outlined in this proposal, this project was originally proposed as a project under the CWPPRA Program to restore the Gulf Coast coastal ecosystem. CWPPRA has made significant investment in the Teche/Vermilion Basin, including the co-located Cote Blanche Hydrologic Restoration Project that has synergies with the proposed project. This project has the capacity to restore/protect approximately 763 acres of emergent wetlands habitat, at an estimated total cost of \$30.6 million, or an average of \$40,150 per acre.

c. Project Contained in Existing Gulf Coast State Comprehensive Plan

The State of Louisiana has indicated that the proposed project is not consistent with or complimentary to the State’s Coastal Master Plan, but is supported by the Chitimacha Tribe of Louisiana and the St. Mary Parish Government (as illustrated in Section 9.F, letters of support).

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 on the eastern shoreline of the Cote Blanche Bay, within the Teche/Vermilion Basin, approximately 200 miles from the Deep Water Horizon Oil Spill. The proposed project area, being located south of the Chitimacha Reservation and other tribally owned lands, will directly benefit the Chitimacha Tribe, which is one of the tribes whose aboriginal lands were most affected by the Deep Water Horizon 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

As presented in the discussion on Comprehensive Plan Objectives, the science and practice of coastal restoration through the introduction of freshwater and sediment, and shoreline protection is illustrated by the success of the CWPPRA-constructed Cote Blanche Hydrologic Restoration Project. The proposed project can provide measurable results, and be informed by CWPPRA projects in the immediate area, and build upon existing CWPPRA projects, in a very cost-effective manner.

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

As outlined in the discussion on Comprehensive Plan Objectives, this project was originally proposed under the CWPPRA Program and provides a synergistic effort to restore the Gulf Coast coastal ecosystem. Additionally, the 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).

c. Commitment to Leveraging Resources and Partnerships

As presented in the discussion on Comprehensive Plan Commitments, the proposed project will build upon several existing and proposed CWPPRA Projects. 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 of Louisiana 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 Cote Blanche Hydrologic Restoration Project (TV-04) and Sediment Trapping at the Jaws (TV-15). The proposed project was a CWPPRA nominee for Priority Project List (PPL) 22 in 2012. Through CWPPRA, the Natural Resources Conservation Service (NRCS) developed project information for the nominee and has cooperated with the U.S. Army Corps of Engineers (USACE) to utilize the information in building this proposal. If the proposal is accepted, USACE envisions moving forward on the project in a partnership with NRCS.

In addition, the project will leverage the use of readily available sediment from the GIWW to conserve/restore emergent wetlands.

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

The project has a high probability of success based on the effectiveness of the CWPPRA Cote Blanche Hydrologic Restoration (TV-04) Project located in the same area as the proposed project area. The rate of marsh loss has decreased by two-thirds in the project area since construction of TV-04 relative to the historical (1957-1990) land loss rate. The anticipated land loss rate reduction throughout the area of direct benefits over the project's 20-year life is greater than 75 percent. The current land loss rate would be reversed by the freshwater and sediment introduction component throughout the areas of direct benefit, and result in an estimated land gain rate of 0.25 percent per year over the project life.

B. Implementation Methodology and Timeline

The Phase I planning, engineering, and design activities proposed under this submittal are projected to be completed within 12 months from receipt of funding from the RESTORE Council.

Upon completion of design, additional funds would be needed for Phase II, project construction. In order to increase freshwater and sediment from the GIWW, sediment will be excavated from the existing channels in the Cote Blanche Wetlands using a barge mounted bucket dredge for the larger channels and marsh buggy backhoe for the smaller channels. The excavated material will be sidecast and placed on existing canal spoil banks. In addition, a steel sheetpile plug with boat bay will be constructed on one of the interior channels to constrict flow. These project features are expected to provide a net flow increase of 930 cfs of freshwater and sediment from the GIWW into the interior of the Cote Blanche Wetlands. The shoreline protection component of the project consists of the placement of approximately 27,150 linear feet of fiberglass sheetpile parallel to the northern shoreline of East Cote Blanche Bay. The proposed placement of the fiberglass sheetpile feature includes approximately 21,950 linear feet, starting 3,300 feet west of Humble Canal and extending around Marone Point, and approximately 5,200 feet to the east of the Humble Canal between existing shoreline protection features along East Cote Blanche Bay. A flotation channel will be required to allow for barge access to the site. An estimated 275,000 cubic yards will need to be removed via bucket dredge to create the access channel. Following construction, the material will be used to backfill the channel. Project right-of-entry acquisition, and construction contract award is anticipated to take approximately 12 to 15 months from receipt of funding. Once constructed, project benefits would be realized over the 20-year project life.

C. Best Available Science

As outlined in the discussion on Plan Objectives, the science and practice of introduction of sediment and shoreline protection for coastal restoration is a proven and well established process. As illustrated by the success of CWPPRA projects in the Teche/Vermilion Basin, specifically the Cote Blanche Hydrologic Restoration Project.

1) Risks and Uncertainty

The science and practice of coastal ecosystem restoration in the area has proven to be successful with two existing CWPPRA projects: Cote Blanche Hydrologic Restoration Project (TV-04) and Sediment Trapping at the Jaws (TV-15). As such, risk and uncertainty associated with the proposed project is anticipated to be minimal and should be limited to uncertainty associated with costs, availability of needed equipment, previously unencountered obstacles in obtaining right-of-entry, and unforeseen events. The project measures are designed to reduce wetland loss from rapid water exchange and shoreline erosion; however, project measures will not totally eliminate the threat of wetland loss in the project area. Hurricanes, storms, frontal passages, subsidence, and other natural events will continue to cause erosion and loss of emergent wetlands. Wetland losses from these events are unpredictable.

2) Monitoring and Adaptive Management

Upon completion of construction activities, the project will be monitored using CRMS data. The CWPPRA Cote Blanche Hydrologic Restoration Project (TV-04) is currently monitored by 7 CRMS sites physically located in the project area. These sites can be used to monitor the proposed project as the TV-04 project area overlaps with the proposed project area. CRMS monitoring is paid for by the CWPPRA Program and the State of Louisiana. The data is currently free to use and available online. Adaptive management efforts should not be warranted and are not planned under this proposal.

D. Environmental Compliance

All necessary environmental compliance, as illustrated in the Environmental Compliance Checklist presented at Section 6 of this proposal, will be obtained during Phase I, concurrent with the development of final engineering and design of the proposed project. National Environmental Policy Act compliance will require the conduct of an environmental assessment, which will be based in part on the previously conducted environmental assessment conducted for the CWPPRA-constructed Cote Blanche Hydrologic Restoration (TV-04) St. Mary Parish, Louisiana, Project.

E. Leveraging of Resources and Partnerships

As presented in the discussion on Comprehensive Plan Commitments, the proposed project will build upon several existing and proposed CWPPRA projects. In addition, the project will leverage the use of readily available sediment from the GIWW to conserve/restore emergent wetlands. The State of Louisiana has indicated that the proposed project is not consistent with or complimentary to the State's Coastal Master Plan, but is supported by the Chitimacha Tribe of Louisiana and the St. Mary Parish Government (as illustrated in Section 9.F, letters of support).

F. Project Success

The project has a high probability of success based on the effectiveness of the CWPPRA Cote Blanche Hydrologic Restoration (TV-04) project which is co-located with the proposed project area. The rate of marsh loss has decreased by two-thirds in the project area since construction of TV-04 relative to the historical (1957-1990) land loss rate. The anticipated land loss rate reduction through the area of direct benefits over the proposed project's 20-year life is greater than 75 percent, resulting in an estimated land gain of 0.25 percent per year (23.5 acres per year).

1) Metrics for Success

The metrics for project success is the number of acres of wetland habitat directly restored/protected (approximately 763 acres), the total cost of the project (estimated at \$30.6 million), the average cost per acre (\$40,150), and the length of time required to restore the wetlands (construction phase of 24 months from receipt of funding and 20-years to realize all project benefits).

2) Reasons to Expect Success

Project success is expected because of: (1) the proven success of CWPPRA Cote Blanche Hydrologic Restoration Project (TV-04) co-located with the proposed project; (2) the significant quantity of freshwater and sediment available to be tapped from the GIWW; (3) environmental compliance is obtainable concurrent with final engineering and design; and (4) real estate right-of-entry, while not in hand, should be obtainable during final engineering and design phase.

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 through the existing CWPPRA projects in and surrounding the project area. The proposed project features will provides a synergistic effect with the adjacent projects, providing contiguous protection and promotion sustainable restoration to thousands of acres of deteriorating marsh.

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 includes two components, freshwater and sediment introduction, and shoreline protection, to eliminate shoreline erosion, reverse interior land loss and promote land building, protect critical marsh habitat and maintain lower energy hydrology of the Cote Blanche Wetlands established through other CWPPRA projects. With the availability of a significant quantity of freshwater and sediment from the GIWW, the project offers the opportunity for significant regional impacts. Adjacent CWPPRA projects 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

In recent years, the East and West Cote Blanche Bays have experienced degradation of its freshwater wetlands as a result of increased wave energy generated by marsh fragmentation and expansion of interior open water areas. Restoring 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, including the vulnerable Franklin and Baldwin municipal areas and the tribal community of the Chitimacha Nation, 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

The project is located in the Teche/Vermilion Basin of St. Mary Parish, south of Franklin, Louisiana, in the interior marshes southwest of the GIWW and along portions of the northern shoreline of East Cote Blanche Bay and southeastern shoreline of West Cote Blanche Bay (Figure 2). The project is located adjacent to two CWPPRA-constructed projects: Cote Blanche Hydrologic Restoration Project (TV-04) and Sediment Trapping at the Jaws (TV-15). The approximate center of the proposed project area is 29.68°N and 91.56°W.

The freshwater and sediment introduction component of the proposed project is located south of the GIWW, west of LA Highway 317, north of East Cote Blanche Bay, and east of West Cote Blanche Bay (29.700° N and 91.566° W). This component includes channel improvement to increase freshwater and sediment input from the GIWW into interior Cote Blanche Wetlands. A significant quantity of freshwater and sediment is available to be tapped from the GIWW, but for several reasons only a small portion currently reaches these interior marshes (Figure 3).

The shoreline protection component of the proposed project includes the construction of approximately 27,150 linear feet of armored protection parallel to the northern shoreline of East Cote Blanche Bay (29.629° N and 91.620° W). The proposed location of shoreline protection feature is approximately 21,950 linear feet, starting 3,300 feet west of Humble Canal and extending around Marone Point, and approximately 5,200 feet to the east of the Humble Canal between existing shoreline protection segments (Figure 4).

The proposed project area experienced extensive damage from Hurricane Lili in 2002, which was followed by additional loss from Hurricane Rita in 2005. Final design of the proposed project will be completed upon receipt of funding, and will incorporate consultations with the State of Louisiana and other State and Federal agencies. As such, final design could result in revised locations, sizes, and configurations of project features, which could impact the quantity of wetlands created by the project.

Figure 2. Site Map of Cote Blanche Freshwater and Sediment Introduction, and Shoreline Protection Project

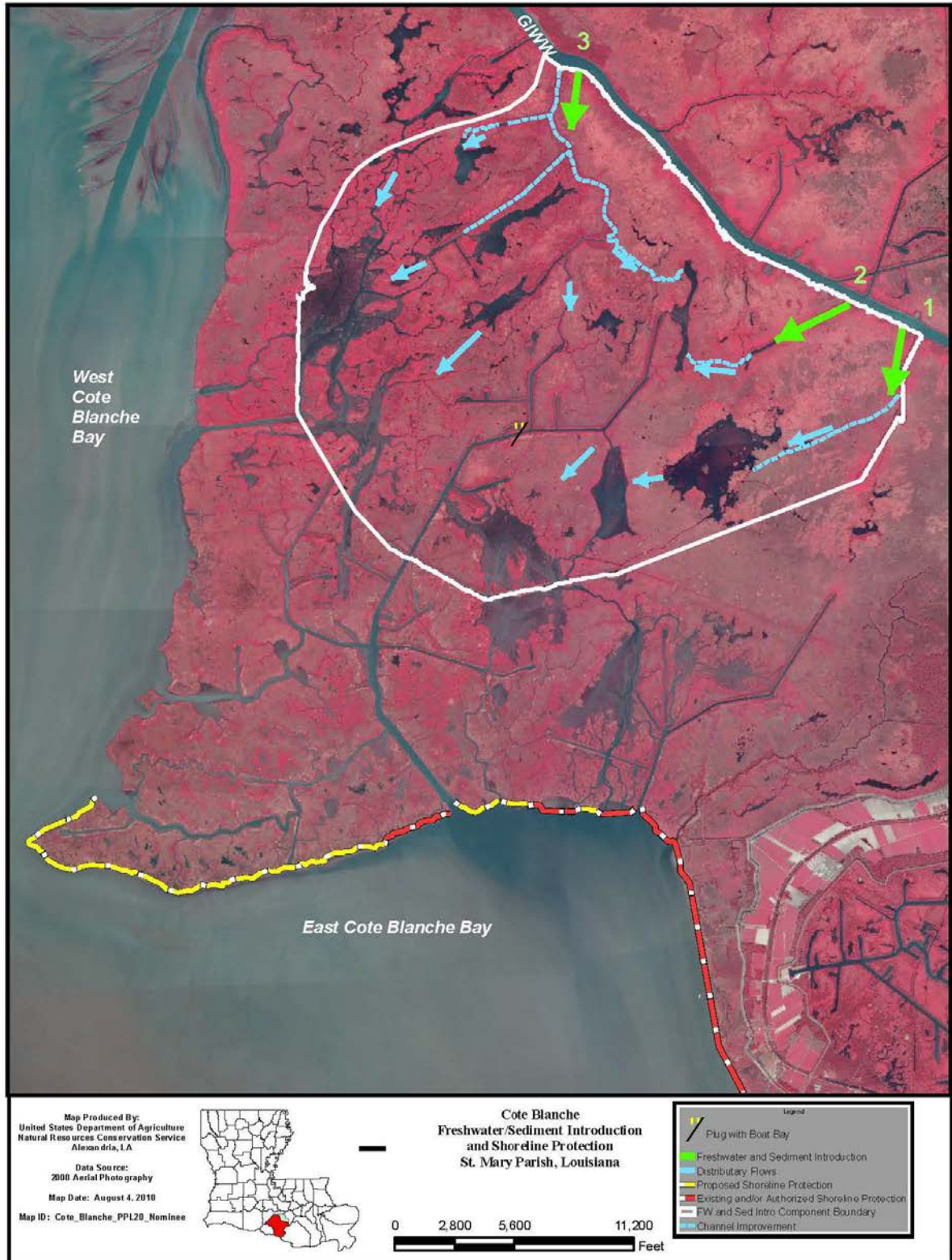


Figure 3. Detailed Site Map of the Freshwater and Sediment Introduction Component of the Cote Blanche Freshwater and Sediment Introduction, and Shoreline Protection Project

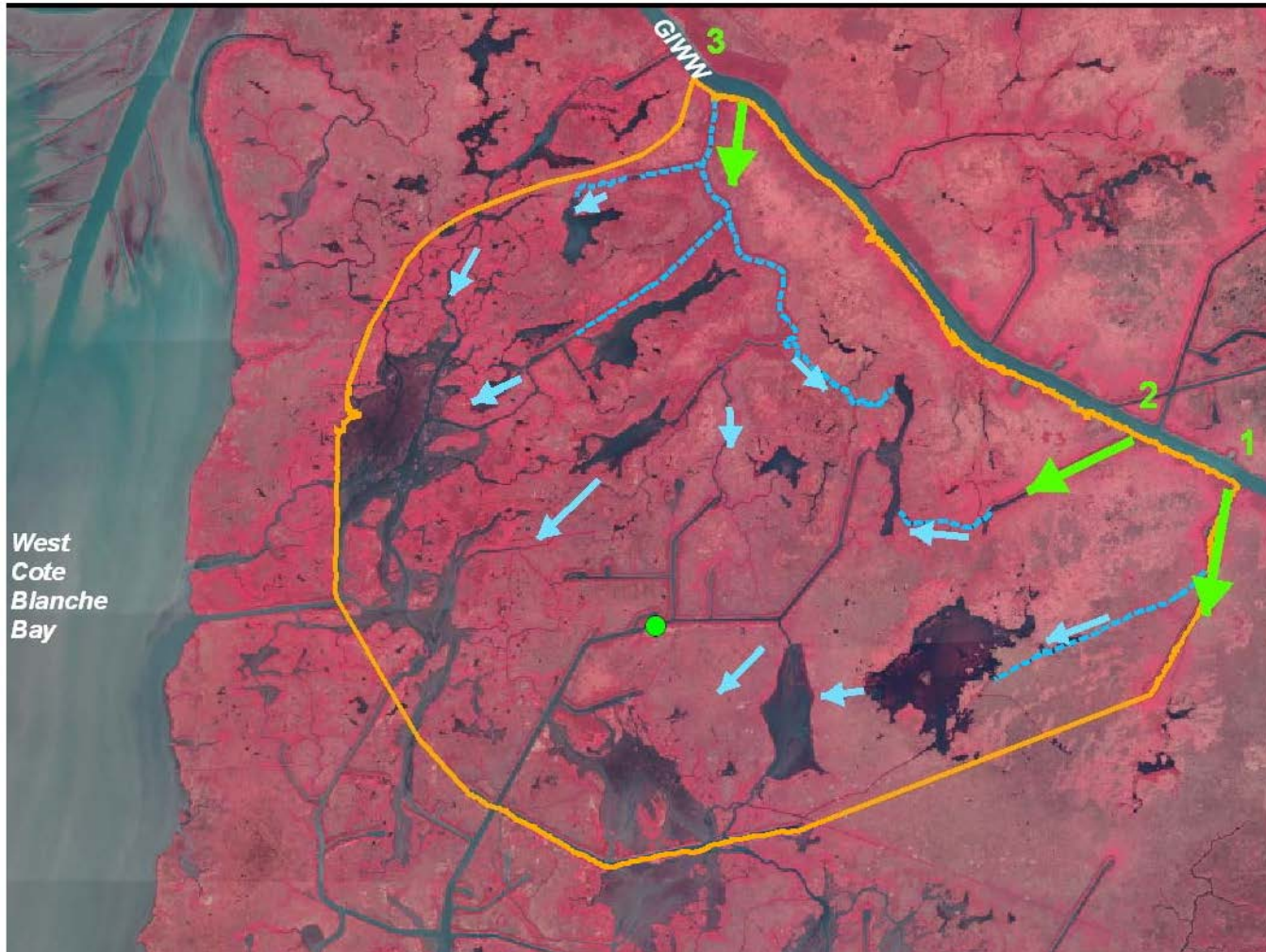
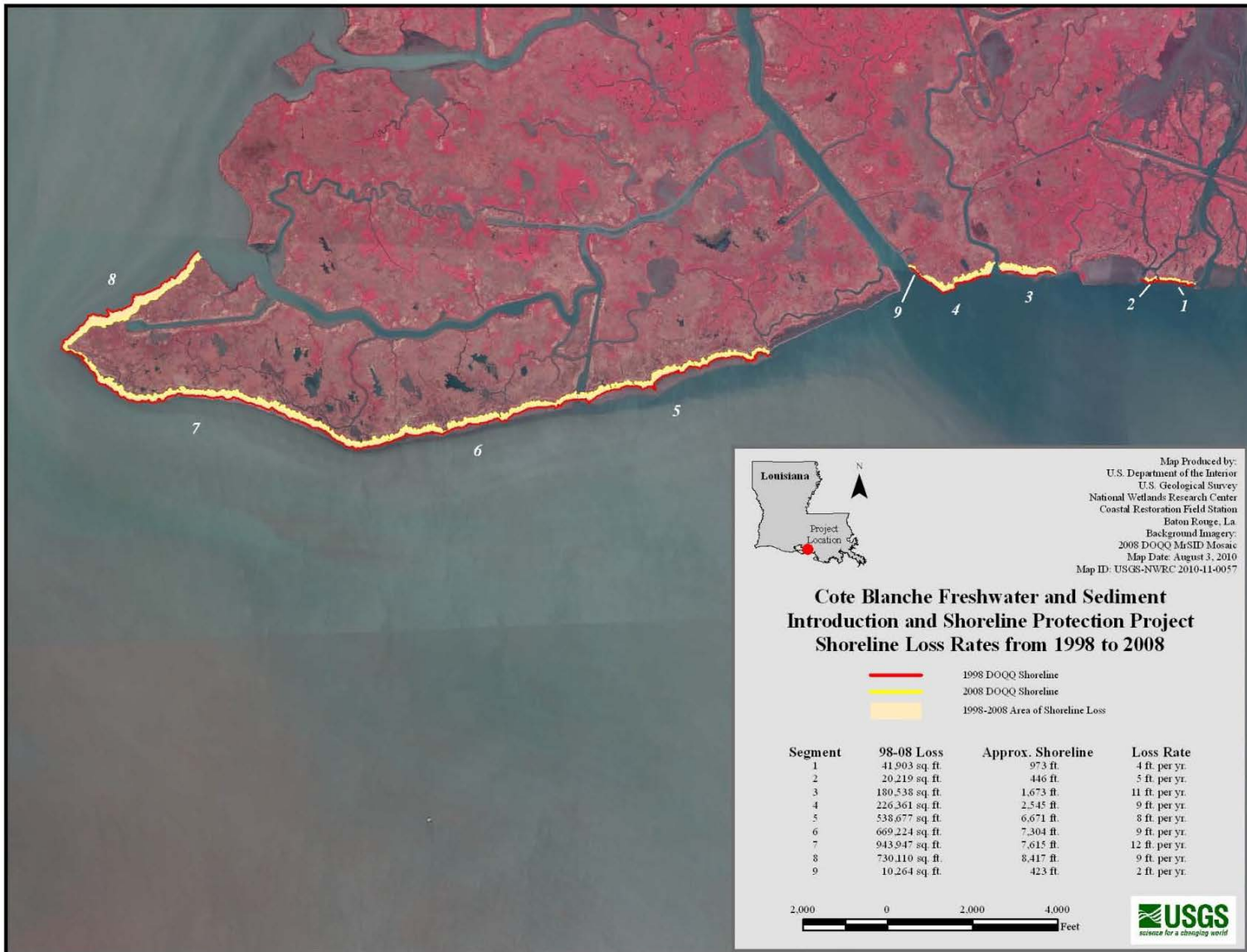


Figure 4. Detailed Site Map of the Shoreline Protection Component of the Cote Blanche Freshwater and Sediment Introduction, and Shoreline Protection Project



5. HIGH LEVEL BUDGET NARRATIVE

The cost of Phase I, the planning, engineering, environmental compliance, and design of the proposed project is estimated at \$2.65 million. The activities proposed for funding in this proposal will result in a project that is shovel ready, pending construction funding.

The total cost of Phase I (including planning and design as proposed in this document), and Phase II (construction surveys, mobilization and demobilization, channel improvements, shoreline protection, contractor profit, contingencies, and supervision and administration) is estimated as \$30.6 million. Contractor profit was included in the cost estimate as 10 percent of the total estimated cost of activities to be advertized for competitive bid. Contingency costs are estimated at 25 percent of construction costs, to account for potential variation in fuel costs, final design, differences between the government cost estimate and actual contractor bid prices, and other unforeseen variation.

The proposed project would directly and indirectly benefit a total of 11,217 acres of wetlands, including directly restoring/protecting 763 acres at a total cost of \$30.6 million, or an average of \$40,150 per acre restored/protected.

Table 1. Preliminary Total Phase I and II Cost Estimate for Cote Blanche Freshwater and Sediment Introduction, and Shoreline Protection Project

Item No.	Description	Estimated Quantity	Unit	Unit Price	Estimated Cost
0001	Planning, Engineering, Environmental Compliance, and Design (the activities included in this proposal)	1	Job	\$2,650,000	\$2,650,000
0002	Mobilization and Demobilization	1	Job	\$650,000	\$650,000
0003	Channel Improvements	212,708	CYS	\$4.00	\$850,832
0004	Site 10 Channel Plug with Boat Bay	1	LS	\$224,219	\$224,219
0005	Shoreline Protection - Sheetpiling	27,150	LF	\$650.00	\$17,647,500
0006	Navais	27	EA	\$1,500	\$40,500
0007	Flotation Access Channel	275,710	CY	\$4.00	\$1,102,842
0008	Supervision and Administration	1	Job	\$1,350,000	\$1,350,000
0009	Construction Surveys	1	LS	\$497,000	\$497,000
0010	Contingencies (25 percent)	1	LS	\$5,591,000	\$5,591,000
	TOTAL PROJECT COST				\$30,603,893

6. GULF COAST ECOSYSTEM RESTORATION COUNCIL ENVIRONMENTAL COMPLIANCE CHECKLIST

Environmental Compliance Type	Yes	No	Applied For	N/A
Federal				
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
State				
As Applicable per State		X		

* USACE will not issue a permit to self, but will do equivalent 404(b)(1) and Section 10 evaluation as required

7. DATA/INFORMATION SHARING PLAN

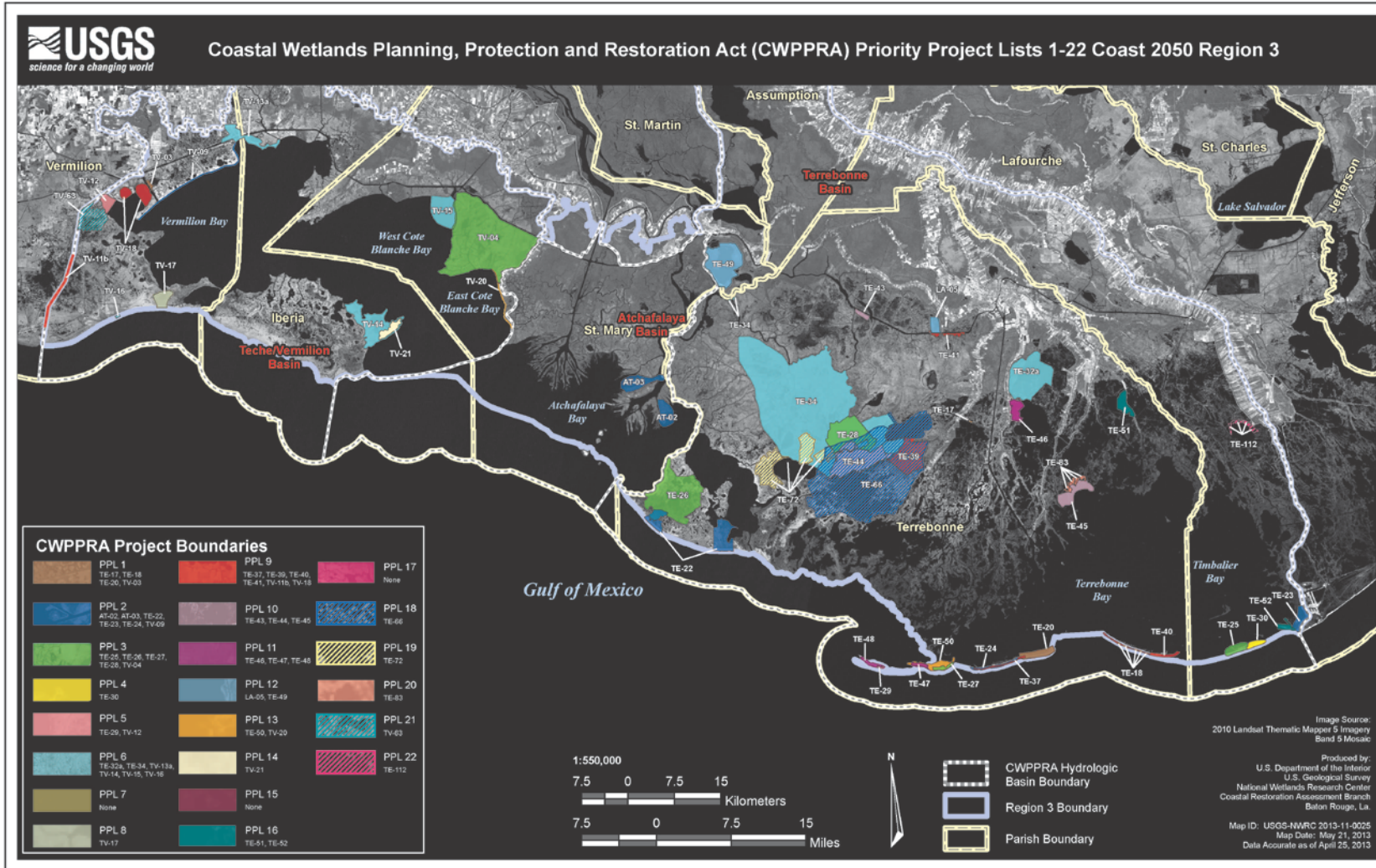
Upon completion of construction activities, the study area will be surveyed, and as-built engineering drawings will be developed, to determine the quantity of emergent wetlands restored by the project. In addition, the project sites will be monitored by CWPPRA's CRMS, as CRMS is currently monitoring the co-located CWPPRA TV-04 project. CRMS data will be made available to the public via the CRMS website: <http://lacoast.gov/crms2/Home.aspx>.

8. REFERENCE LIST OF LITERATURE CITED IN THE PROPOSAL

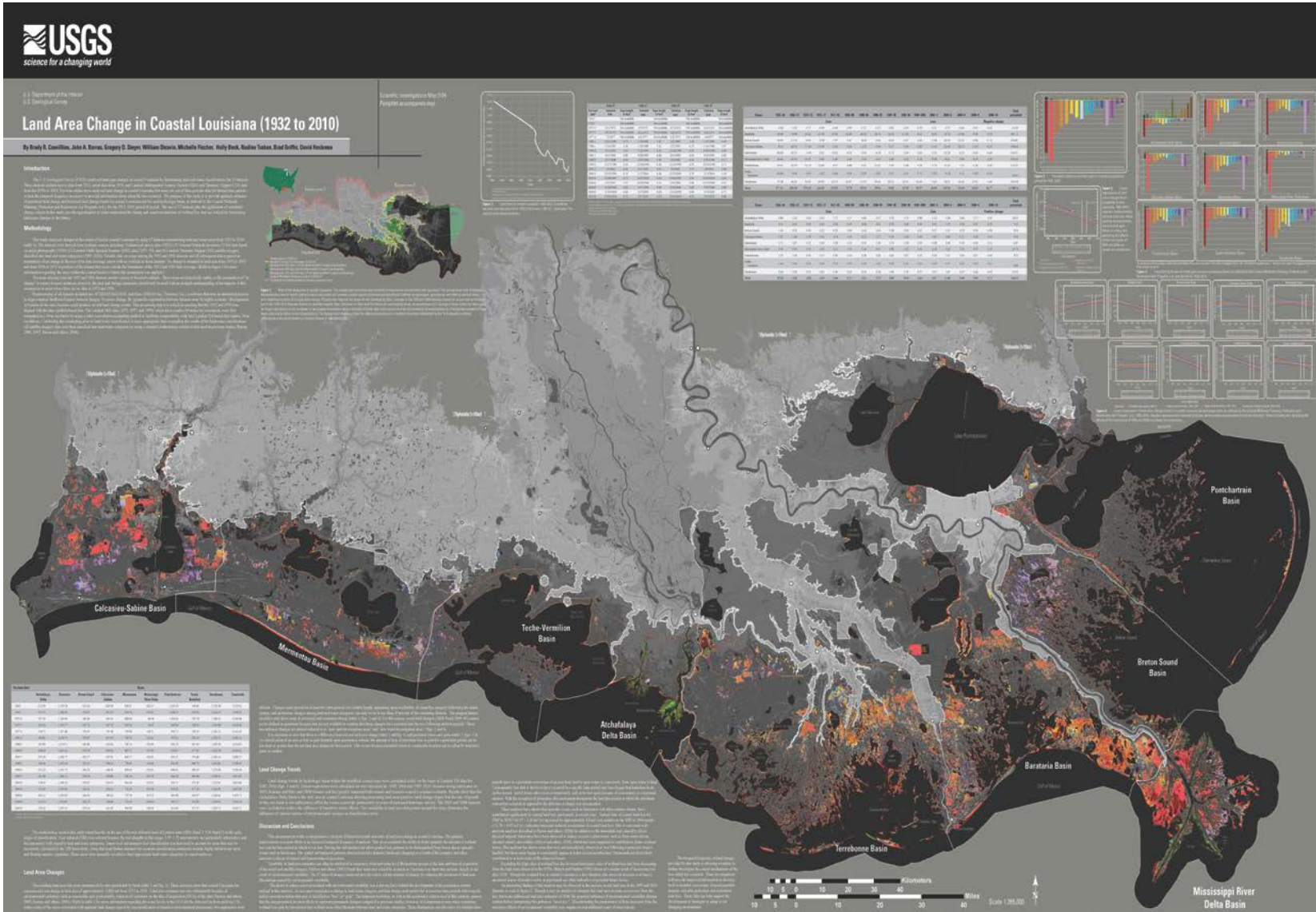
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- U.S. Army Corps of Engineers. 2004. *Louisiana Coastal Area (LCA), Louisiana: Ecosystem Restoration Study*. <http://www.lca.gov/Library/ProductList.aspx?ProdType=0&folder=1125> (accessed September 29, 2014).
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- U.S. Department of 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. Map of Authorized and Constructed CWPPRA Projects - Region 3**
 - B. USGS Louisiana Coastal Land Loss Map**
 - C. Increase in Open Water (in RED) in Interior Cote Blanche Wetlands Due to Hurricane Lili**
 - D. Maps Illustrating Change in Wetland Area in the Cote Blanche Wetlands, 1998-2008**
 - E. Proposed Channel Improvements to Increase Freshwater and Sediment Introduction into the Cote Blanche Wetlands**
 - F. Letters of Support**

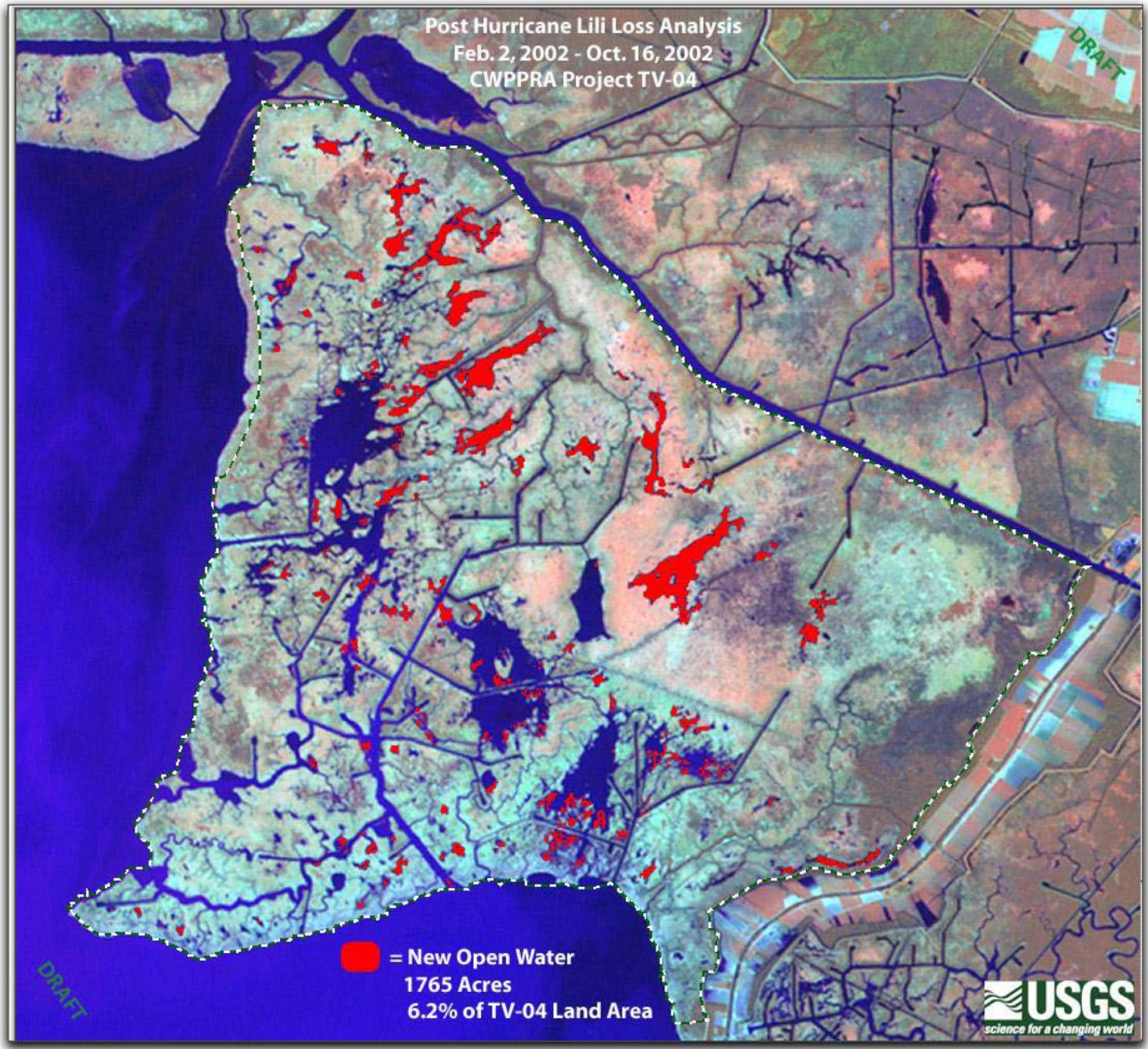
A. Map of Authorized and Constructed CWPPRA Projects - Region 3



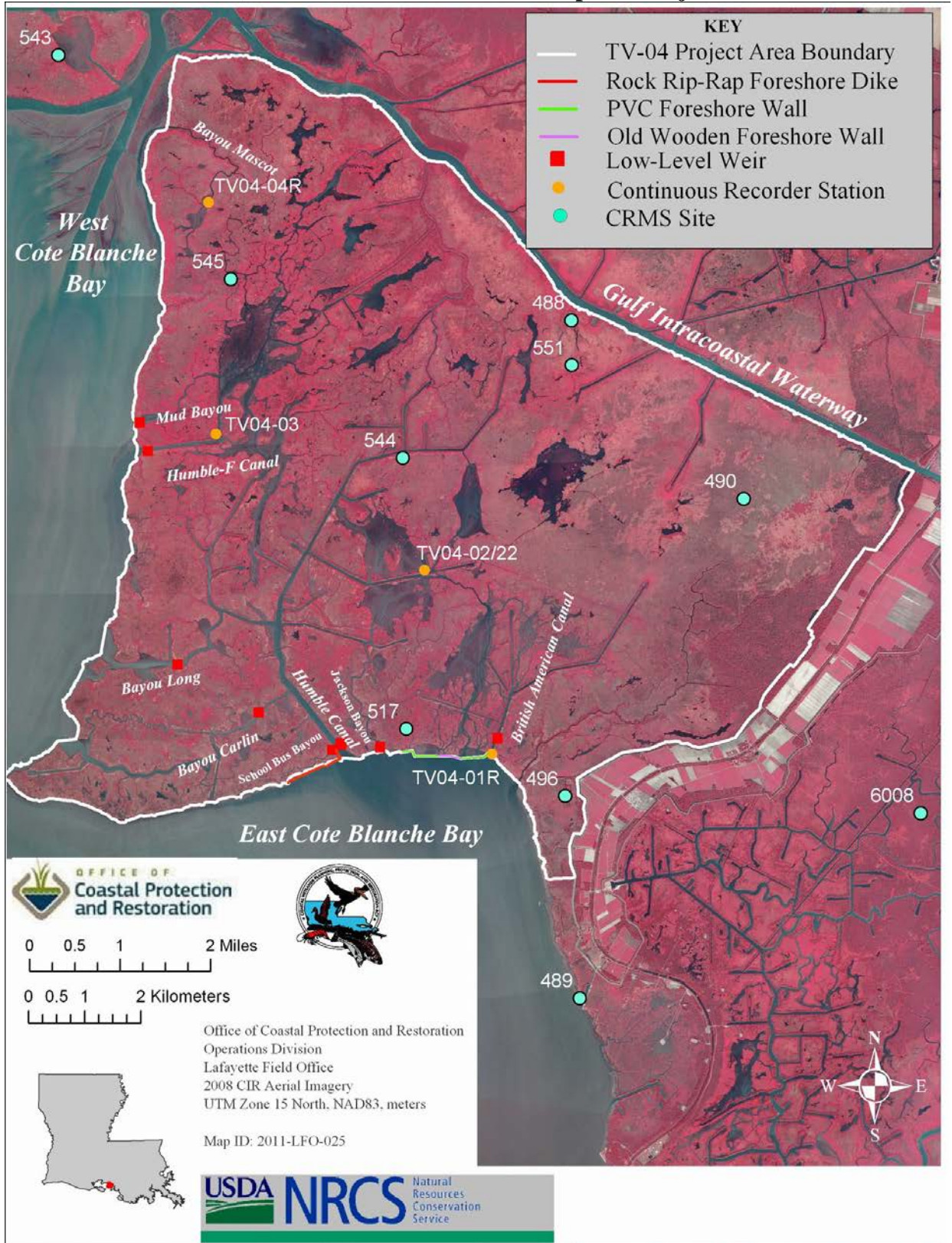
B. USGS Louisiana Coastal Land Loss Map



C. Increase in Open Water (in RED) in Interior Cote Blanche Wetlands Due to Hurricane Lili

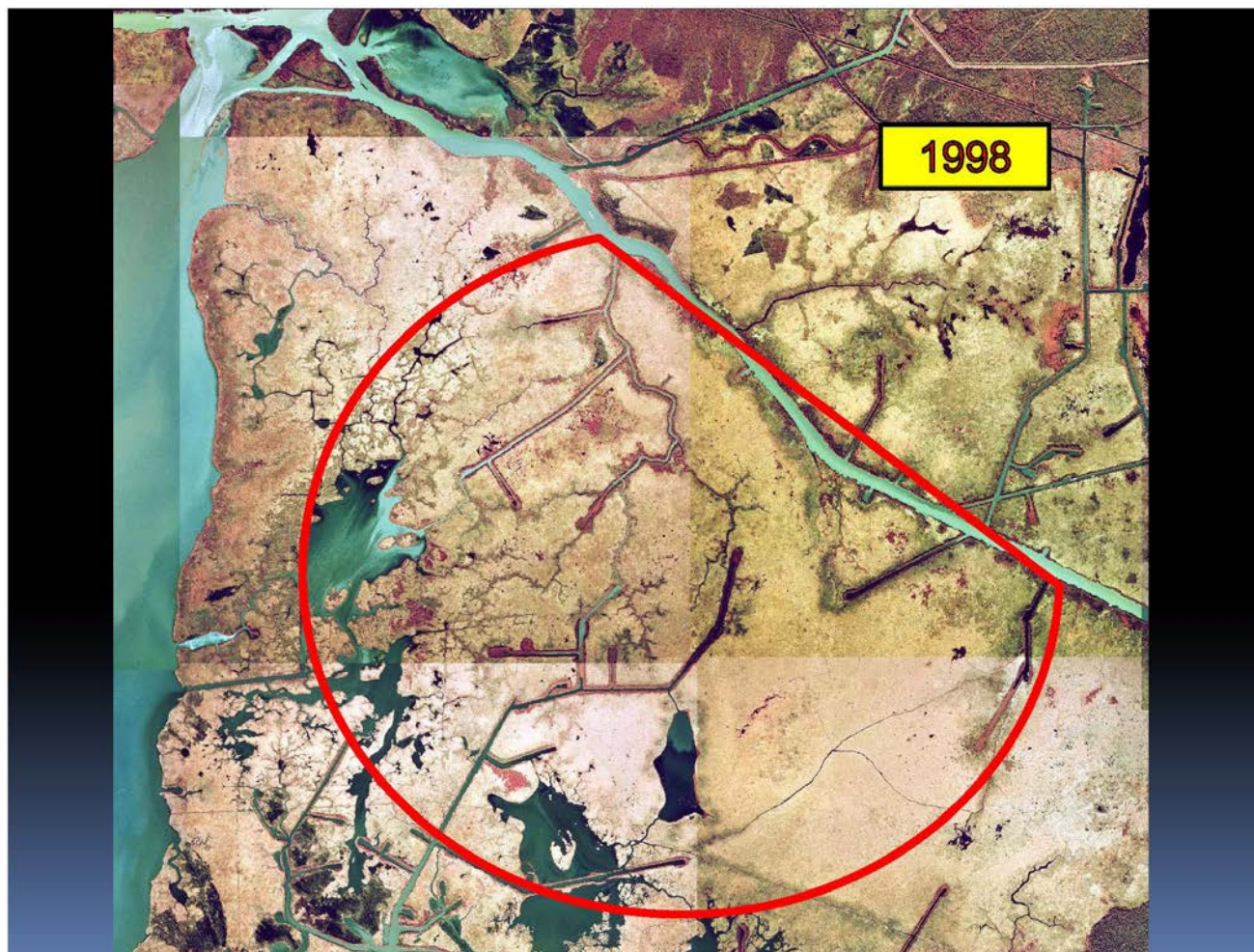


D. Site Map of Existing CWPPRA Cote Blanche Hydrologic Restoration Project (TV-04) that is Co-located with the Proposed Project

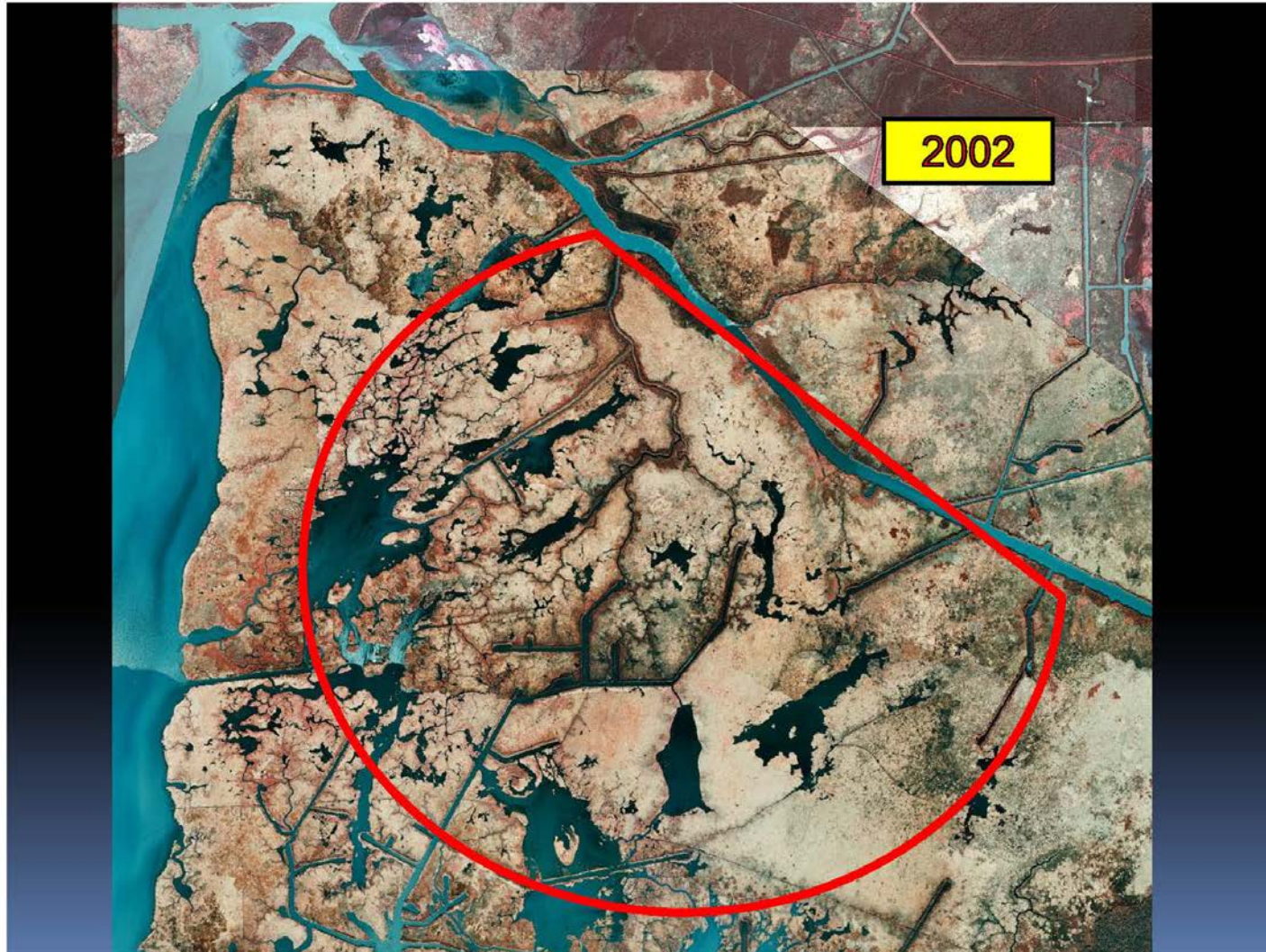


E. Maps Illustrating Change in Wetland Area in the Cote Blanche Wetlands, 1998-2008

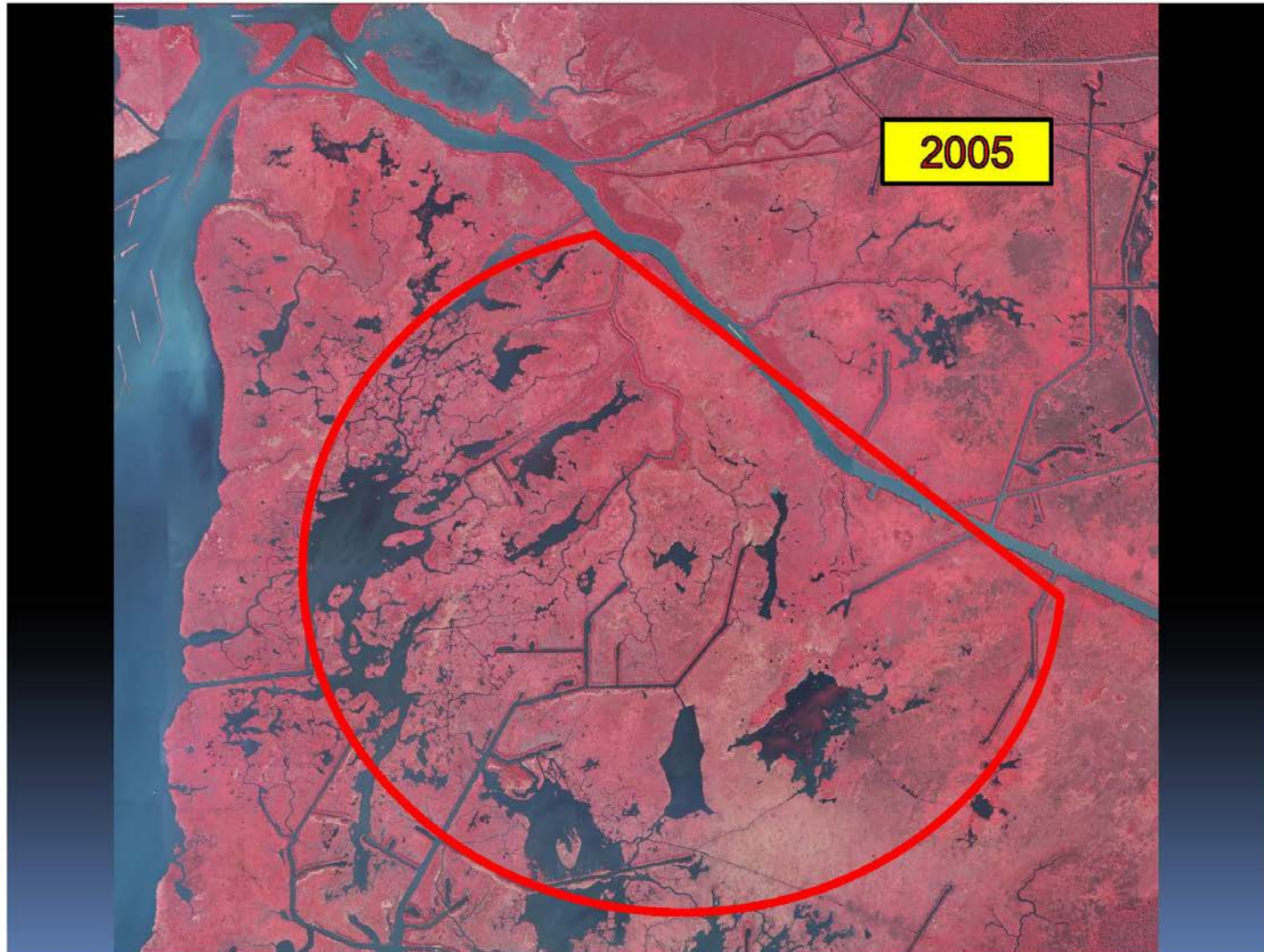
Cote Blanche Wetlands - 1998



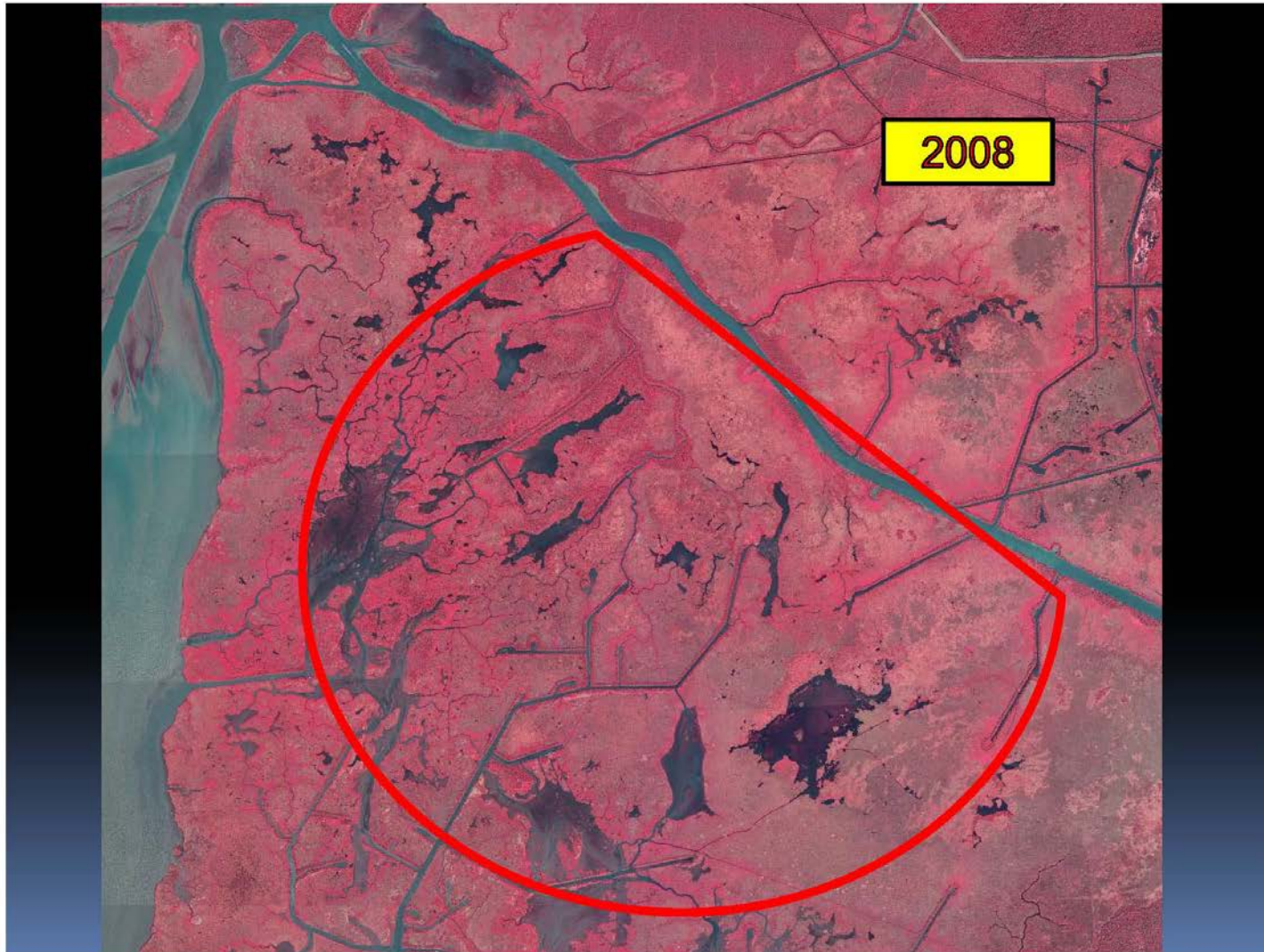
Cote Blanche Wetlands - 2002



Cote Blanche Wetlands – 2005



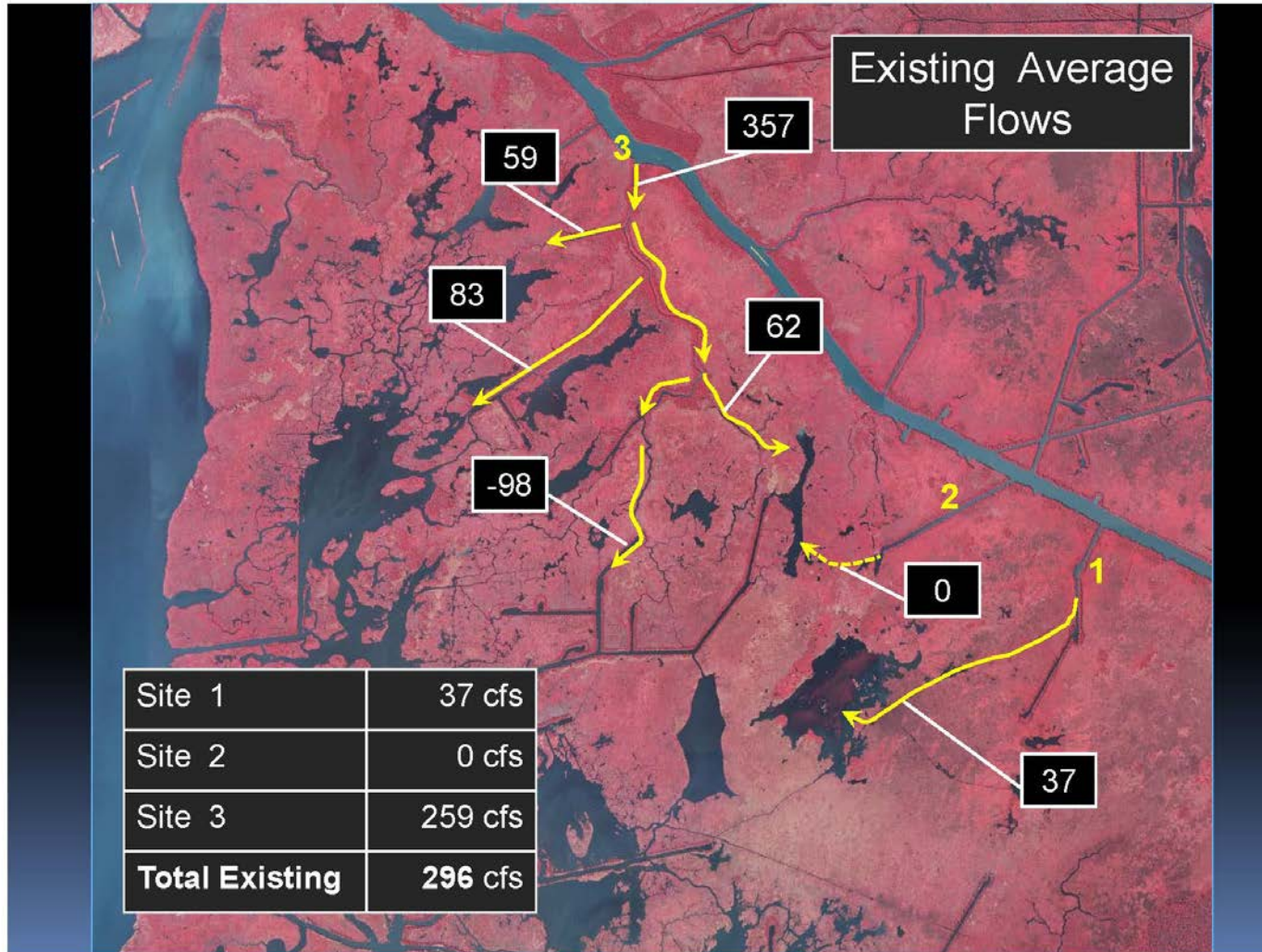
Cote Blanche Wetlands – 2008



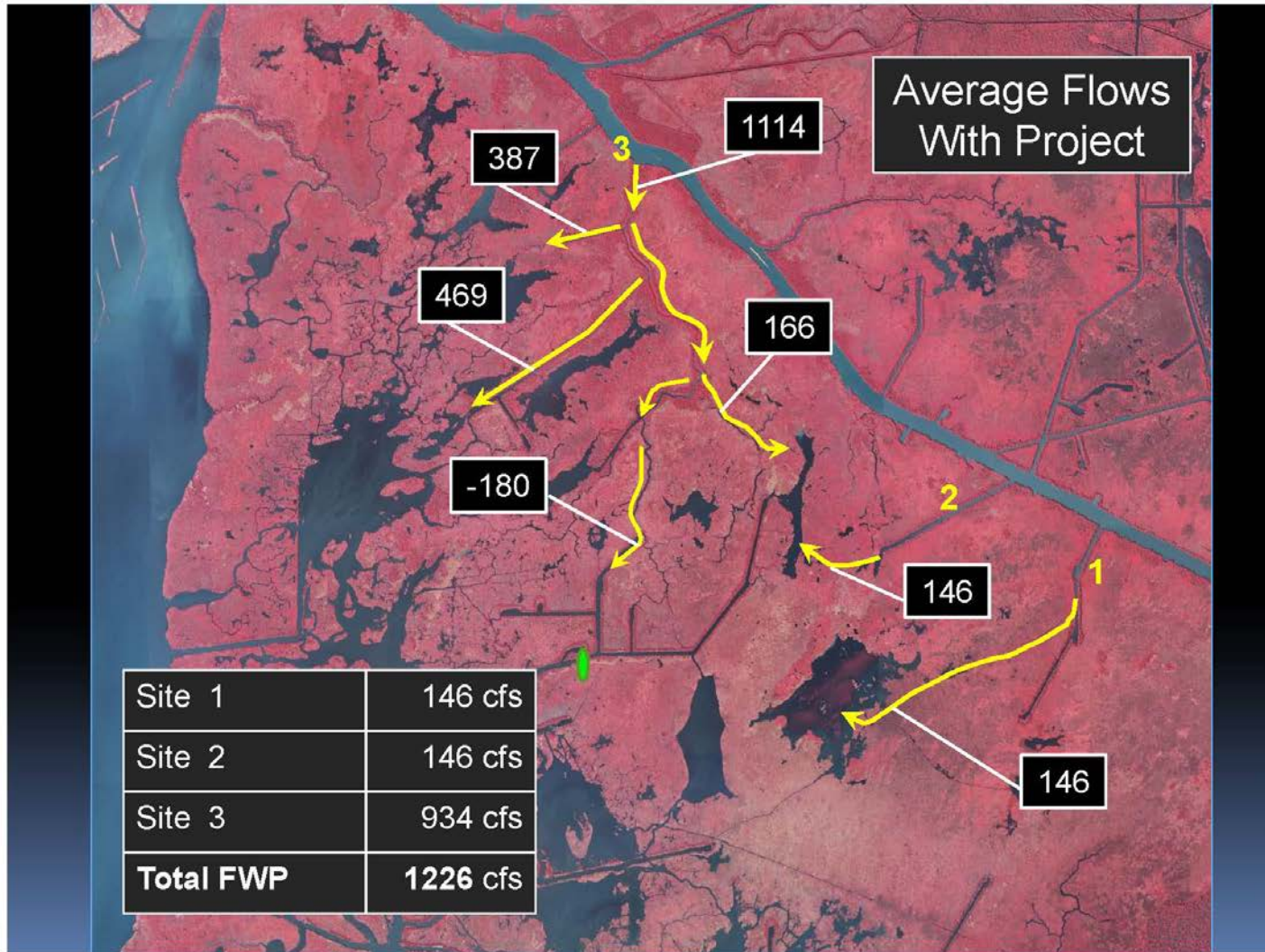
F. Proposed Channel Improvements to Increase Freshwater and Sediment Introduction into the Cote Blanche Wetlands



Existing Flow Rates (Cubic Feet Per Second) to the Interior of the Cote Blanche Wetlands



Proposed With-Project Flow Rates (Cubic Feet Per Second) to the Interior of the Cote Blanche Wetlands



Proposed With-Project Net Change in Flow Rates (Cubic Feet Per Second) to the Interior of the Cote Blanche Wetlands

Net Flow Increase

Estimated Flows (cfs)			
	Existing	FWP	Net to Interior
Site 1	37	146	110
Site 2	0	146	146
Site 3	259	934	674
Total	296	1226	930

F. LETTERS OF SUPPORT



CHITIMACHA
TRIBE OF LOUISIANA

Honorable Jo-Ellen Darcy
Assistant Secretary of the Army (Civil Works)
108 Army Pentagon
Washington, DC 20310

Dear Ms. Darcy,

The purpose of this letter is to indicate our support for the Cote Blanche Freshwater and Sediment Introduction, and Shoreline Protection Project, St. Mary Parish, Louisiana Project, as proposed for consideration for funding by the RESTORE Council. The proposed project will restore and/or protect 763 acres of emergent wetlands in the Teche/Vermilion Basin in the vicinity of the tribal lands of the Chitimacha Nation by increasing freshwater and sediment flow into the interior marshes of the Cote Blanche Wetlands and constructing shoreline protection features on East Cote Blanche Bay, which are south of the Chitimacha Reservation and other tribally owned lands.

The interior Cote Blanche wetlands have experienced significant erosion due to Hurricane Lili in 2002 and Hurricane Rita in 2005. It is our understanding that the proposed project will reduce interior land loss and promote land building, reduce shoreline erosion rates, protect critical marsh habitat, and maintain the lower energy hydrology of the Cote Blanche wetlands as established by projects constructed under the Coastal Wetlands Planning, Protection, and Restoration Act (CWPPRA). The proposed project will reduce the vulnerability of St. Mary Parish communities, the Chitimacha Nation, and associated infrastructure to shoreline retreat and storm surge associated with hurricanes. In addition, three prehistoric archaeological sites have been identified within the Cote Blanche Wetlands, and the proposed project has the potential to protect cultural and natural resources of religious and cultural significance to the Chitimacha Tribe. For the reasons cited above, the Chitimacha Nation strongly supports the project as proposed and all other ecosystem restoration projects in St. Mary Parish that would preserve and protect valuable tribal resources and traditions important to the Chitimacha Nation.

As one of the Tribes whose aboriginal lands were most effected by the Deep Water Horizon Oil Spill, we appreciate the opportunity to have a project considered by the RESTORE Council. Approval of this project would be appreciated because it would protect the Chitimacha Tribe's last remaining land base.

Sincerely,

John Paul Darden,
Chairman

ST. MARY PARISH GOVERNMENT

PAUL P. NAQUIN, JR., PRESIDENT

FIFTH FLOOR - COURTHOUSE
FRANKLIN, LOUISIANA 70538-6198

HENRY "BO" LAGRANGE
CHIEF ADMINISTRATIVE OFFICER

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DUVAL H. ARTHUR, JR., LEM

FRANKLIN
(337) 828-4100
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E-mail: admin@stmaryparishla.gov

OFFICE HOURS
8:00 A.M. TO 12:00 P.M.
1:00 P.M. TO 4:30 P.M.

November 7, 2014

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

Dear Colonel Hansen,

The purpose of this letter is to indicate our support for the Cote Blanche Freshwater and Sediment Introduction, and Shoreline Protection Project, St. Mary Parish, Louisiana Project, as proposed for consideration for funding by the RESTORE Council. The proposed project will restore and/or protect 763 acres of emergent wetlands in the Teche/Vermilion Basin in the vicinity of the tribal lands of the Chitimacha Nation by increasing freshwater and sediment flow into the interior marshes of the Cote Blanche Wetlands and constructing shoreline protection features on East Cote Blanche Bay.

The interior Cote Blanche wetlands have experienced significant erosion due to Hurricane Lili in 2002 and Hurricane Rita in 2005. It is our understanding that the proposed project will reduce interior land loss and promote land building, reduce shoreline erosion rates, protect critical marsh habitat, and maintain the lower energy hydrology of the Cote Blanche wetlands as established by projects constructed under the Coastal Wetlands Planning, Protection, and Restoration Act (CWPPRA). The proposed project will reduce the vulnerability of St. Mary Parish communities, the Chitimacha Nation, and associated infrastructure to shoreline retreat and storm surge associated with hurricanes. In addition, three prehistoric archaeological sites have been identified within the Cote Blanche Wetlands, and the proposed project has the potential to protect cultural and natural resources of religious and cultural significance to Indian tribes.

For the reasons cited above, the St. Mary Parish Government strongly supports the project as proposed.

Sincerely,



Paul P. Naquin, Jr.
St. Mary Parish President

PPN/jrd



ELIGIBILITY REVIEW

Bucket 2 – Council Selected Restoration Component

PROPOSAL TITLE

Cote Blanche Freshwater and Sediment Introduction, and Shoreline Protection Project,
St. Mary Parish, Louisiana

PROPOSAL NUMBER

ACOE-T-2

LOCATION

St. Mary Parish, LA

SPONSOR(S)

Department of the Army

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

Planning, Technical Assistance

REVIEWED BY:

Bethany Carl Kraft/ Ben Scaggs

DATE:

November 18, 2014

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:

Activities proposed include the planning, engineering, environmental compliance and design of a project that will restore/protect 763 acres of wetlands in the Teche/Vermillion Basin by increasing freshwater and sediment input from the Gulf Intracoastal Waterway into interior marshes and constructing shoreline protection.

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

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: