Section 5
Appendices

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Appendix A
Ongoing Protection and Restoration Project Summaries

ONGOING PROTECTION AND RESTORATION PROJECT SUMMARIES

CPRA Program	Name	State Project Number	Project Type	Federal Sponsor	Parish	Acres Benefited	Miles of Levee Improved	Construction Completion	Total Budget	Project Description	Planning Unit
BERM	Riverine Sand Mining/Scofield Island Restoration	BA-40	BH	N/A	PLAQUEMINES	606	N/A	2013	$60,839,484	The goal of this project is to transport sediments from the Mississippi River to restore dune and marsh habitat on Scofield Island. Project was designed under CWPPRA but constructed using Berm to Barrier funds.	2
BERM	Shell Island East	BA-110	BH	N/A	PLAQUEMINES	626	N/A	2014	$47,679,580	The purpose of the project is to restore the integrity of Shell Island, reduce wave energies within the bay area and reestablish productive habitat to Bastian Bay and the surrounding area. Shell Island East was constructed to a length of approximately 2.8 miles, a dune elevation of +8.0 feet NAVD88, a marsh elevation of +2.5 feet NAVD88, and a total fill area of 626 acres.	2
BERM	Emergency Barrier Berms	N/A	OT	N/A	PLAQUEMINES, SAINT BERNARD	1417	N/A	2011	$251,000,000	In response to the *Deepwater Horizon* oil spill of 2010, the State of Louisiana constructed approximately 16 miles of sand berms along several sections of the State's barrier islands both east and west of the Mississippi River. The objective of this project was to provide a barrier to oil and minimize the potential impact of the oil spill to thousands of acres of fragile barrier islands and wetlands in coastal Louisiana. Approximately 16 miles of barrier berm were constructed along existing and relic barrier islands in the Chandeleur Islands (Reach E4- 47,000 LF), Shell Island (Reach W8- 9,000 LF), Pelican Island (Reach W9- 12,700 LF), and Scofield Island (Reach W10- 14,755 LF). Sediment placed in Reaches W8, W9, and W10 was subsequently utilized in barrier island restoration projects BA-110, BA-38, and BA-40, respectively.	1, 2
CDBG	Lafitte Area Levee Repair	BA-82	HP	HUD	JEFFERSON	N/A	4	Pending	$500,000	This project will repair damages to the existing levees in the Fisher Basin Area. This damage was caused by heavy equipment and vehicles used on the levee for flood fighting activities during Ike and Gustav. This project will provide for a 4 inch lift on approximately a 5 mile stretch of levee.	2
CDBG	Rosethorne Wetland Assimilation Project	BA-83	HR	HUD	JEFFERSON	334	N/A	Pending	$1,093,769	The Rosethorne treatment facility currently discharges treated municipal effluent into Bayou Barataria. This project will utilize secondarily treated municipal effluent diverted from the Rosethorne treatment facility, to restore and sustain coastal wetland habitats.	2
CDBG	Bayou Lafourche Fresh Water District - Walter S. Lemann Memorial Pump Station Renovations	BA-84	FD	HUD	ASCENSION	N/A	N/A	Pending	$3,194,355	This project will replace two of the existing pumps and motors at the Walter S. Lemann Pump Station. This project will also install an emergency generator to operate the pump station during power outages.	2, 3A
CDBG	Madisonville Bulkhead	PO-87	SP	HUD	ST TAMMANY	N/A	0.1	Pending	$2,144,266	This project will provide construction of improvements to the existing bulkhead along the shore of Lake Pontchartrain and the Tchefuncte River at the Madisonville Marina.	1
CDBG	St. Tammany Parish Watershed Management Study	PO-151	HR	HUD	ST TAMMANY	N/A	N/A	N/A	$1,363,233	This project involves a planning study to evaluate the feasibility of watershed management measures in St. Tammany Parish.	1
CDBG	Cut-Off/Pointe Aux Chene Levee	TE-78	HP	HUD	LAFOURCHE	N/A	8	Pending	$8,468,857	This project will fill in the missing gap that is currently in the existing levee system. The 2.5-mile levee will be constructed along Grand Bayou and tie into the existing levee systems on each end.	3A
CDBG	Franklin Floodgate Sinkable Barge and Pump Station (Phase 1)	TV-52-1	HP	HUD	ST MARY	N/A	0.2	2012	$4,591,380	This project involves the construction of a sinkable barge structure on Franklin Canal to prevent storm surge from inundating the town of Franklin.	3B
CDBG	Franklin Floodgate Sinkable Barge and Pump Station (Phase 2)	TV-52-2	HP	HUD	ST MARY	N/A	0.2	Pending	$2,148,866	This project will construct a pump station adjacent to the sinkable barge structure on Franklin Canal (constructed in Phase 1 of the project) to prevent storm surge from inundating the town of Franklin.	3B
CDBG	Flood Control Structure at Boston Canal (Deauthorized)	TV-58	HP	HUD	VERMILION	N/A	N/A	Deauthorized	$5,800,000	This project involves a flood control structure at the intersection of Boston Canal and the GIWW, which could be closed in the event of a hurricane or tropical storm.intersection of Boston Canal and the GIWW, that could be closed in the event of a hurricane or tropical storm.	3B
CDBG	Front Ridge Chenier Terracing/Protection	TV-60	TE	HUD	VERMILION	40	N/A	Pending	$2,078,162	This project will construct approximately 85,000 linear feet of marsh terraces south east of Pecan Island in Vermilion Parish.	4
CDBG	Bayou Tigre Flood Control Project	TV-67	HP	HUD	VERMILION	N/A	0.1	Pending	$6,343,862	This project involves the implementation of flood control measures in Bayou Tigre.	4
CIAP	Morgan City Industrial Road	AT-05	OT	USFWS	ST MARY	N/A	N/A	Pending	$1,247,000	The project is a road alignment that begins at the First Street floodgate in Morgan City, LA. The alignment will proceed along the unprotected side of the floodwall a distance of 1857 feet. And end at the Port of Morgan City's north gate. The project goal is to reduce the truck traffic through the residential neighborhoods by rerouting the traffic through the proposed realigned road. The preliminary project benefit is to provide more road access to the industrial facilities and the museum through the proposed new road, and decrease the traffic in the residential area.	3B
CIAP	Atchafalaya Long Distance Sediment Pipeline	AT-15	OT, MC	USFWS	TERREBONNE	N/A	N/A	N/A	$1,500,000	CIAP funds allocated to this project are for the purpose of advancing the design of a sediment pipeline which will be used to restore marsh in lower Terrebonne Parish.	3A
CIAP	Lake Salvador Shoreline Protection (Phase III)	BA-15X-2 (EB)	SP	USFWS	ST CHARLES	844	N/A	2009	$2,300,000	This project involved the construction of approximately 7,000 linear feet of shoreline protection near the northwest shore of Lake Salvador.	2
CIAP	East Grand Terre	BA-30 (EB)	BH	USFWS	PLAQUEMINES	683	N/A	2010	$25,426,247	The project goal is to restore 2.8 miles and 620 acres of barrier shoreline and 450 acres of marsh by dredging 3.3 million cubic yards of offshore material and rebuilding the island. The project was designed under the CWPPRA Program and constructed under the CIAP program.	2
CIAP	Barataria Land Bridge Dedicated Dredging (CIAP)	BA-36 (EB)	MC	USFWS	JEFFERSON	363	N/A	2010	$18,000,000	The objective of this project is to create and or nourish 1200 acres of marsh in conjunction with CWPPRA project BA-36.	2
CIAP	Long Distance Mississippi River Sediment Pipeline	BA-43 (EB)	OT, MC	USFWS	LAFOURCHE, JEFFERSON,	371	N/A	Pending	$66,094,073	The goal of this project is to use material dredged from the Mississippi River and transported via new permanent pipeline across the Barataria Basin to create marsh and/or a ridge.	2
CIAP	Caminada Headlands	BA-45	BH	USFWS	LAFOURCHE	730	N/A	Pending	$70,679,580	The proposed project will restore and protect beach and dune habitat across the Caminada Headland through the direct placement of sediment (sandy material for the beach and dune habitat) from offshore borrow areas.	2
CIAP	LA 1 Improvements - Fourchon to Leeville Bridge (CIAP)	BA-55	OT	USFWS	LAFOURCHE	N/A	N/A	2010	$33,000,000	This project is located 60 miles south of New Orleans in lower Lafourche Parish between Leeville and Port Fourchon. The project involves the construction of a 5 mile long, two lane elevated highway (two, 12 ft lanes and two, 8 ft shoulders). The Phase IA project connects to the Phase IB and Phase IC projects (in Leeville) by relocating LA 1 on a new alignment.	2
CIAP	Fringe Marsh Repair	BA-58	MC	USFWS	PLAQUEMINES	300	N/A	2014	$8,756,605	This program involves the reestablishment of approximately 300 acres of critical areas of fragile marsh in lower Plaquemines Parish to help minimize the continued fragmentation of wetlands system throughout the coast.	2
CIAP	Mississippi River Water Reintroduction into Bayou Lafourche - BLFWD	BA-161	FD	USFWS	ASSUMPTION, LAFOURCHE	Not Available	N/A	Pending	$20,000,000	This project is estimated to allow for the continued dredging of a 1,000 cfs channel for an additional 7 - 12 miles of Bayou Lafourche. Overall project features identified for implementation include a receiving intake structure at the point of diversion in the Mississippi River; a pump/siphon system with a combined discharge capacity of 1,000 cfs; a discharge settling pond/sediment basin in Bayou Lafourche at Donaldsonville; modification of weir structures; bank stabilization along Bayou Lafourche; monitoring stations; and dredging of Bayou Lafourche. Increasing the flow down Bayou Lafourche by 1,000 cfs has been modeled to benefit approx. 120,000 - 130,000 acres in the Terrebonne and Barataria Basins through reductions in the salinities and/or nourishment of wetlands with the introduction and distribution of sediment and nutrients from the river.	2, 3A
CIAP	Shoreline Protection Cat Island	BA-162-CAT	SP	USFWS	PLAQUEMINES	40	N/A	Pending/On Hold	$1,200,000	This project will construct of a series of submerged wave breaks surrounding the existing remnants of the Cat Islands in order to protect the oil damaged shores along the existing island remnants from further wave damage while also collecting sediment in order to naturally rebuild the degraded infrastructure of the islands.	2
CIAP	Shoreline Protection Emergency Restoration	BA-162-SPER	SP	USFWS	PLAQUEMINES	40	N/A	2013	$355,780	This project consist of a series of submerged wave breaks surrounding shoreline segments in Lower Plaquemines Parish to protect the oil damaged shores along the existing island remnants from further wave damage while also collecting sediment in order to naturally rebuild the degraded infrastructure of the islands.	2
CIAP	Bayou Lamoque Floodgate Removal (Inactive)	BS-13 (EB)	FD	USFWS	PLAQUEMINES	660	N/A	Inactive	$2,070,559	This project involves the removal of floodgates to allow unimpeded flow of freshwater through the water control structures.	1
CIAP	FIFi Island Restoration	CIAPFIFI	SP	USFWS	JEFFERSON	126	N/A	2003	$751,406	This project provides protection for approximately 100 acres of existing island habitat (Grand Isle & Fifi Island) by the installation of approximately 10,000 linear feet of rock shore protection. An additional $999,500 was contributed from the CIAP of 2001 for the construction and design of this project.	2
CIAP	Marsh Creation via Bevefical Use (Phase 10 (Black Lake)	CS-35 (EB)	DM	USFWS	CAMERON	300	N/A	2010	$10,000,000	This project involves the creation of approximately 200 acres marsh through beneficial use of dredged material from the Calcasieu Ship Channel.	4
CIAP	Trosclair Road Repairs	CS-47	OT	USFWS	CAMERON	N/A	N/A	2009	$2,039,592	This project involves construction an overlay on Trosclair Road, a parish road that is heavily used by oilfield traffic. The project is approximately 8 miles long and connects State Highway 27/82 from Cameron to State Highway 82 to Oak Grove.	4

ONGOING PROTECTION AND RESTORATION PROJECT SUMMARIES

CPRA Program	Name	State Project Number	Project Type	Federal Sponsor	Parish	Acres Benefited	Miles of Levee Improved	Construction Completion	Total Budget	Project Description	Planning Unit
CIAP	Bush Canal and Bayou Terrebonne Bank Stabilization	DNR 2513-0311	SP	USFWS	TERREBONNE	4300	N/A	2007	$3,700,000	This project reconstructed the south bank of Bush Canal using material dredged from the canal. The restored bank-line was then covered with goetextile fabric and armored with stone rip-rap. The rebuilt bank-line will help to diminish storm surge as well as reduce saltwater intrusion. This project was funded by the CIAP of 2001.	3A
CIAP	Performance Evaluation - Barataria Land Bridge Biological Monitoring	LA-12.2	OT	USFWS	JEFFERSON	N/A	N/A	N/A	$432,618	This research study will be conducted on the Barataria Land Bridge Dedicated Dredging Project (BA-36) and will assess the effect of dredged sediment application on soil-vegetation-hydrologic dynamics within deteriorating interior brackish marshes.	2
CIAP	Performance Evaluation - Freshwater Bayou	LA-12.3	OT	USFWS	VERMILION	N/A	N/A	N/A	$286,029	This study focuses on the expected vertical elevation change of the dredge slurry fill due to immediate and long term settlement and consolidation. Work performed: reviewing previous analyses performed to help improve our ability to predict settlement and consolidation; researching new methods, models, and techniques that could improve how CPRA design teams predict settlement and consolidation. Additionally, field samples and construction monitoring shall be performed to verify the accuracy of the settlement and consolidation analyses performed during project design.	3A
CIAP	CIAP Performance Evaluation - Barrier Island Studies	LA-12.5	OT	USFWS	JEFFERSON, LAFOURCHE	N/A	N/A	N/A	$558,606	Evaluation of Tidal Pass Morphology Post-Restoration at East Grand Terre and Development of Barrier Island Comprehensive Monitoring Program vegetation sampling protocols.	2
CIAP	CIAP Performance Evaluation - Caminada Moreau Subsidence Study	LA-12.6	OT	USFWS	JEFFERSON, LAFOURCHE	N/A	N/A	N/A		Research to be conducted on the Caminada Headland in order to quantify the amount of consolidation in the substrate underlying barrier islands resulting from placement of sand for island restoration.	2
CIAP	CIAP Performance Evaluation - Borrow Area Management and Monitoring	LA-12.7	OT	USFWS	COASTWIDE	N/A	N/A	N/A	$813,512	The Borrow Area Monitoring and Management (BAMM) was initiated to understand the evolution of borrow pits for restoration projects (inshore, nearshore, and offshore) over time, with a particular focus on the infilling (rates and types of sediment) and gradient of the pit-slopes as well as potential dredge impacts. The study involves the collection of geophysical, geotechnical and water quality data from several borrow areas to understand not only the above ovjectives but also the hypoxic conditions vis-à-vis depth of cut of borrow area.	COASTWIDE
CIAP	Coastal Forest Conservation Initiative	LA-13	PP, OT	USFWS	COASTWIDE	40000	N/A	N/A	$20,166,136	A program to preserve existing coastal forest via purchase of fee title or conservation servitudes from willing land owners.	COASTWIDE
CIAP	Rockefeller Shoreline Protection Demo (CIAP)	ME-18 (EB)	SP	USFWS	CAMERON	23	N/A	2009	$8,500,000	The project involves the construction of three types of shoreline protection structures as a demonstration to determine which type(s) of structures are successful in protecting the shoreline. Successful structure(s) are intended for use in a larger CWPPRA Project.	4
CIAP	Grand Lake Shoreline Protection (CIAP)	ME-21 (EB)	SP	USFWS	CAMERON	495	N/A	2010	$9,129,919	This project involves the construction of approximately 37,800 linear feet of shoreline protection on the south shore of Grand Lake from Superior Canal to Tebo Point.	4
CIAP	Mississippi River Delta Strategic Planning - SSPM Expansion	MR-16-SSPM	OT	USFWS	EAST BATON ROUGE	N/A	N/A	Pending	$13,520,000	This project involves the construction of a new expanded Small Scale Physical Model (SSPM) capable of modeling smaller flows and with an increased area of coverage in comparison to the previous SSPM. The project will also include the construction of a new facility to house the model as well as facilitate the use of the model for public outreach the educational efforts. The project will be a valuable educational and research tool to providing insight and qualitative understanding of critical aspects of the impacts of major diversions of water and sediments, future conditions, and navigation impacts.	1, 2, 3A
CIAP	Living Shoreline	PO-148	SP	USFWS	ST BERNARD, JEFFERSON, ORLEANS	5340	N/A	Pending	$26,500,000	The primary project involves the construction of bioengineered oyster reefs along coastal fringe marsh in St. Bernard Parish. The installation will take place from Eloi Point to the mouth of Bayou La Loutre around Lydia Point and Paulina Point extending around the southern shore of Treasure Bay. Other related Living Shoreline projects are in Plaquemines Parish and Jefferson Parish.	1,2
CIAP	Violet Diversion	PO-35 (EB)	FD	USFWS	ST BERNARD	13200	N/A	N/A	$1,170,982	This project investigates the diversion of freshwater from the Mississippi River into Lake Borgne to freshen Mississippi Sound, Central Wetlands, and Biloxi Marsh areas. The Feasibility Study for this project is being done as part of the MRGO Ecosystem Restoration FS.	1
CIAP	Orleans Land Bridge SP & Marsh Creation	PO-36 (EB)	SP	USFWS	ORLEANS	140	N/A	2013	$20,860,000	This project provides shoreline protection on the northwest rim of Lake Borgne west of Alligator Point.	1
CIAP	East LaBranche Shoreline Protection	PO-43	SP	USFWS	ST CHARLES	Not Available	N/A	Pending	$3,753,816	Through various funding mechanisms, including CWPPRA and CIAP, all but approximately 18,000 linear feet of the East LaBranche shoreline has been protected. Saint Charles Parish has acquired $1,753,816 of CIAP funding to construct 1,400 linear feet of shoreline protection (PO-43 East LaBranche Shoreline Protection). The State has contributed additional $2,000,000 in CIAP funding to construct shoreline protection for the most critical areas.	1
CIAP	Central Wetlands Demonstration	PO-73	HR	USFWS	ST BERNARD	10-20	N/A	Pending	$3,500,000	This demonstration project investigates the beneficial use of Ferrate as an alternative to chlorine to treat effluent at the SWBNO's East Bank Sewer Treatment Plant.	1
CIAP	Central Wetlands - Riverbend	PO-73-1	HR	USFWS	ST BERNARD	346	N/A	Pending	$2,000,000	This project involves the discharge of effluent from a CWBNO oxidation plant to be discharged into the Central Wetlands. This would allow vegetation to prosper once again in the area, and would also save St. Bernard Parish the cost of running a sewer line from the Oxidation plant to the Munster Plant.	1
CIAP	Central Wetlands - EBSTP to A2	PO-73-2	HR	USFWS	ST BERNARD, ORLEANS	473	N/A	Pending	$4,500,000	This project involves the introduction of freshwater from the SWBNO's East Bank Sewer Treatment Plant to combat salt water intrusion from MRGO and thus attempt to replenish the once thriving Central Wetlands. The project involves piping treated effluent from the EBSTP to St. Bernard parish and vegetative plantings to nourish and sustain marsh.	1
CIAP	Central Wetlands Demonstration Expansion	PO-73-3	HR	USFWS	ORLEANS	17.2	N/A	Pending	$4,500,000	The Central Wetlands Demonstration Expansion project would restore up to 17.2 acres of critical wetlands in the area designated A-1 using wetlands assimilation of treated wastewater effluent and/or beneficial use of ash/biosolids from the East Bank Wastewater Treatment Plant, other sediment from SWBNO operations. Once the cell has been completed, the intent is to promote an ecological diversity with indigenous planting from cypress/tupelo trees to floating marsh islands. Marsh islands shall encourage the development of habitat for wetlands birds and fish.	1
CIAP	Rainey Audubon Wildlife Sanctuary Earthen Terraces	RAINEY	MC	USFWS	VERMILION	640	N/A	2005	$951,869	The project consists of constructing approximately 35,000 linear feet of terraces. The terraces were created by dredging in shallow open water areas and piling the spoil on one side of the borrow area. An additional $391,763 was contributed from the CIAP of 2001.	3B
CIAP	GIWW Bank Restoration of Critical Areas of Terrebonne (CIAP)	TE-43 (EB)	SP	USFWS	TERREBONNE	1,180	N/A	2011	$7,274,676	The project objective is to restore critical lengths of deteriorated channel banks and stabilize/armor selected critical lengths of deteriorated channel banks with hard shoreline stabilization materials.	3B
CIAP	Falgout Canal Freshwater Enhancement	TE-63	FD	USFWS	TERREBONNE	5000	N/A	Pending	$9,351,074	This project involves construction/modification of an inlet structure at a site located on the HNC north of Falgout Canal, modeling of the basin, along with channel improvements, as necessary, to improve efficiency of freshwater flow within the basin area. In addition, existing structures along Falgout Canal would be improved and/or replaced to facilitate operation and maintenance concerns, and facilitate movement of freshwater, nutrients, and sediment to the hydrologic unit south of Falgout Canal.	3A
CIAP	Freshwater Bayou Bank Stabilization	TV-11B (EB)	SP	USFWS	VERMILION	223	N/A	Pending	$13,568,804	The goal of this project is to stop erosion along the bank of Freshwater Bayou Canal and to protect the interior wetlands from saltwater intrusion, increased tidal exchange and wake-induced erosion. This will be achieved by constructing a rock dike along critical areas of the eastern and western banks of the canal.	3B
CIAP	Port of Iberia Bridge Replacement - Port Road over Commercial Canal	TV-28	OT	USFWS	IBERIA	N/A	N/A	2013	$625,792	This project involves the replacement of the bridge on Port Road over Commercial Canal at the Port of Iberia. The Port of Iberia handles a substantial amount of OCS produced products and the large equipment used in transporting these products take a major toll on the ports bridges and roadways.	3B
CIAP	Port of Iberia Bridge Replacement - David Dubois Road over Commercial Canal	TV-30	OT	USFWS	IBERIA	N/A	N/A	2013	$1,058,013	This project involves the replacement of the bridge on David Dubois Road over Commercial Canal at the Port of Iberia. The Port of Iberia handles a substantial amount of OCS produced products and the large equipment used in transporting these products takes a major toll on the port's bridges and roadways.	3B
CIAP	Acadiana Regional Airport Street Improvements - Admiral Doyle Drive	TV-31	OT	USFWS	IBERIA	N/A	N/A	Pending	$1,114,942	This project involves patching and overlaying 5,310 feet (about 1 mile) of Admiral Doyle Road around the Acadiana Regional Airport in Iberia Parish from its intersection with LA 3212 to the end of the four lane section. The project provides improved access to both the airport and the Port of Iberia, both of which support OCS facilities and commerce.	3B
CWPPRA	Atchafalaya Sediment Delivery	AT-02	SD	NMFS	ST MARY	2232	N/A	1998	$2,532,147	The objective of this project is to enhance natural delta growth by re-opening Natal Channel and Castille Pass. Natal Channel was re-established with a 120-foot wide, 10-foot deep, 8,800-foot long channel and Castille Pass with a 190-foot wide, 10-foot deep, 2,000-foot long channel. Material dredged (700,925 cubic yards) as a result of construction was strategically placed at elevations mimicking natural delta lobes.	3B
CWPPRA	Big Island Mining	AT-03	DM	NMFS	ST MARY	1560	N/A	1998	$7,077,404	The project includes creating a new western delta lobe behind Big Island to enhance the accretion of land beyond the west bank of the Atchafalaya River. Construction included dredging of a main stem and five branch channels designed to mimic natural channel bifurcations. Dredged material was strategically placed at elevations mimicking natural delta lobes. Re-opening the channels is allowing continued natural sediment transport and marsh growth.	3B

ONGOING PROTECTION AND RESTORATION PROJECT SUMMARIES

CPRA Program	Name	State Project Number	Project Type	Federal Sponsor	Parish	Acres Benefited	Miles of Levee Improved	Construction Completion	Total Budget	Project Description	Planning Unit
CWPPRA	Castille Pass Channel Sediment Delivery (Deauthorized)	AT-04	SD	NMFS	ST MARY	589	N/A	Deauthorized	$1,717,883	This project investigates dredging a system of distributary channels to create 589 acres of marsh through sediment placement and natural deposition.	3B
CWPPRA	GIWW (Gulf Intracoastal Waterway) to Clovelly Hydrologic Restoration	BA-02	HR	NRCS	LAFOURCHE	175	N/A	2000	$12,896,358	The project includes the construction of features (including canal plugs, rock weirs, fixed crest weirs with boat bays, one variable crest weir, and the rebuilding of low overflow banks that have eroded away) in eastern Lafourche Parish to restore the area to the hydrologic conditions that prevailed historically.	2
CWPPRA	Naomi Outfall Management	BA-03C	OM	NRCS	JEFFERSON	634	N/A	2002	$2,285,972	The project manages the outfall of the existing eight siphons by controlling the movement of the diverted waters. The siphons divert sediment-laden water from the Mississippi River into the west bank wetlands to retard saltwater intrusion and enhance wetland productivity.	2
CWPPRA	West Pointe a la Hache Outfall Management	BA-04C	HR	NRCS	PLAQUEMINES	646	N/A	Pending	$6,620,516	The project goal is to optimize use of fresh water and sediment supplied by existing siphon by reducing channelized flow and routing the diverted flow to nourish marshes.	2
CWPPRA	Lake Salvador Shore Protection Demonstration	BA-15	SP	NMFS	ST CHARLES	N/A	N/A	1998	$5,856,506	The objective of this project is to maintain the shoreline along a section of Lake Salvador and help re-establish the natural hydrology of interior marsh. Phase I of the project was constructed to demonstrate the effectiveness of four separate types of segmented breakwaters in a poor soil environment. Phase II of the project included the installation of 8,000 feet of continuous rock structure along the western section of the lake.	2
CWPPRA	Fourchon Hydrologic Restoration (Deauthorized)	BA-18	HR		LAFOURCHE	N/A	N/A	Deauthorized	$7,703	The goal of this project was to restore tidal exchange to 2,400 acres of impounded wetlands. The project was officially deauthorized by the CWPPRA Task Force in July of 1994 at the request of the landowner.	2
CWPPRA	Barataria Bay Waterway Wetland Restoration	BA-19	MC	USACE	JEFFERSON	510	N/A	1996	$1,170,000	The project beneficially used dredge material to enlarge Queen Bess Island.	2
CWPPRA	Jonathan Davis Wetland Protection	BA-20	HR, SP	NRCS	JEFFERSON	510	N/A	2003, 2012	$28,886,616	The goal of this project is to restore the natural hydrologic conditions of the area and reduce shoreline erosion. The goal was partly accomplished through constructing a series of water control structures. Construction unit 4 consists of 4,180 lf of rock rip rap revetment, 15,110 lf of concrete sheetpile wall, plugs and marsh creation.	2
CWPPRA	Bayou Perot/Bayou Rigolettes Marsh Restoration (Deauthorized)	BA-21	MC	NMFS	JEFFERSON	1065	N/A	Deauthorized	$20,964	This project was authorized to protect deteriorated intermediate-to-brackish marsh located between Lake Salvador and Little Lake by using dredged material to re-establish the shoreline. Due to an unstable and rapidly eroding site, the project was deemed unfeasible and was officially deauthorized by the CWPPRA Task Force in January of 1998.	2
CWPPRA	Bayou L'Ours Ridge Hydrologic Restoration (Deauthorized)	BA-22	HR	NRCS	LAFOURCHE	737	N/A	Deauthorized	$371,232	This project was proposed to restore natural hydrologic flow to the marsh by reinforcing breached areas of the Bayou L'Ours Ridge through a series of canal closures and two water control structures. The project was officially deauthorized by the CWPPRA Task Force in April 2003 because of landrights issues.	2
CWPPRA	Barataria Bay Waterway West Side Shoreline Protection	BA-23	SP	NRCS	JEFFERSON	1789	N/A	2000	$3,013,365	The project objective is to rebuild the west bank of the Dupree Cut to protect the adjacent marsh from unnatural water exchange and subsequent erosion. A rock dike was constructed along 9,400 linear feet of the west bank of the Barataria Bay Waterway.	2
CWPPRA	Myrtle Grove Siphon (Deauthorized)	BA-24	FD	NMFS	PLAQUEMINES	N/A	N/A	Deauthorized	$481,802	The goal of the project is to reduce saltwater intrusion and to nourish existing marsh. This will be accomplished by diverting water through a siphon from the Mississippi River to adjacent wetlands. This project was officially deauthorized by the CWPPRA Task Force in October 2007 because a larger diversion was authorized at the same location (see BA-33).	2
CWPPRA	Bayou Lafourche Siphon (Deauthorized)	BA-25a	FD	EPA	LAFOURCHE	428	N/A	Deauthorized	$45,922	The goal of the project is to reduce marsh loss adjacent to Bayou Lafourche by introducing nutrient and sediment laden river water through large siphon pipes. This project was reauthorized on the 11th PPL as BA-25b.	2
CWPPRA	Mississippi River Reintroduction Into Bayou Lafourche (Deauthorized)	BA-25b	FD	EPA	ASCENSION, ASSUMPTION, LAFOURCHE, TERREBONNE	85000	N/A	Deauthorized	$9,619,586	The goal of the project is to restore and protect the health of marshes in the Barataria and Terrebonne basins through reintroduction of sediment and nutrient laden Mississippi River water via Bayou Lafourche. This project was orginally authorized on the 5th PPL as BA-25. This project was officially deauthorized by the Breaux Act Task Force in October 2007; however, engineering and design will be continued by the CPRA using state funds.	2
CWPPRA	Barataria Bay Waterway East Side Shoreline Protection	BA-26	SP	NRCS	JEFFERSON	217	N/A	2001	$5,224,477	The objective of this project is to rebuild the banks of the BBWW to protect the adjacent marsh from excessive tidal action and saltwater intrusion. The project consists of 17,600 (3.3 miles) of levee constructed with dredged material from the BBWW; and 17,600 (3.3 miles) of rock armor.	2
CWPPRA	Barataria Basin Landbridge Shoreline Protection, Phases 1 and 2	BA-27	SP	NRCS	JEFFERSON	1304	N/A	2009	$31,288,623	The objective of the project is to select a cost-effective erosion control technique to stop the erosion on the southwestern shoreline of Bayou Perot and the southeastern shoreline of Bayou Rigolettes. The length of protection is estimated to be approximately 71,000 feet.	2
CWPPRA	Barataria Basin Landbridge Shoreline Protection, Phase 3	BA-27C	SP	NRCS	JEFFERSON, LAFOURCHE	5587	N/A	1999, 2008, Pending	$26,351,988	The project tested sections of different shoreline protection types, such as, concrete panel wall, rock and light rock. These projects have constructed over 41,000 feet of shoreline protection.	2
CWPPRA	Barataria Basin Landbridge Shoreline Protection Phase 4	BA-27D	SP	NRCS	JEFFERSON	589	N/A	2006	$17,709,216	This project consist sof 31,500 feet of foreshore rock dike with a lightweight aggregate core or concrete sheetpile and will incorporate "fish dips" and openings at historic natural channels to eliminate shoreline erosion and deterioration of the Barataria landbridge.	2
CWPPRA	Vegetative Plantings of a Dredged Material Disposal Site on Grand Terre Island	BA-28	VP	NMFS	JEFFERSON	127	N/A	2001	$526,314	This project involved the installation of vegetative plantings on previously constructed marsh and dune platform.	2
CWPPRA	LA Highway 1 Marsh Creation (Deauthorized)	BA-29	MC	EPA	LAFOURCHE	146	N/A	Deauthorized	$250,257	The objective of this project was to create marsh habitat in a large open water area adjacent to Louisiana Highway 1 using dredged material from two proposed borrow areas. This project was officially deauthorized by the CWPPRA Task Force in February of 2005 because it was determined to be infeasible.	2
CWPPRA	East/West Grand Terre Islands Restoration (Transferred)	BA-30	MC	NMFS	JEFFERSON	403	N/A	Transferred	$2,211,739	The goal of this project is to stabilize and benefit 1,575 acres of barrier island habitat and extend the island's life expectancy. Dredged material will be used to create dune and marsh habitat on East Grand Terre Island. This project was constructed using CIAP 2007 funds.	2
CWPPRA	Delta Building Diversion at Myrtle Grove (Transferred)	BA-33	SD	USACE	JEFFERSON, PLAQUEMINES	8891	N/A	Transferred	$327,422	The objective of this project is to divert Mississippi River water and sediment for the creation of new emergent wetlands. The project will involve: installation of gated box culverts on the west bank of the Mississippi River in the vicinity of Myrtle Grove; dedicated dredging from the Mississippi River to create marsh in the vicinity of Bayou Dupont, the Barataria Bay Waterway, and the Wilkinson Canal; or a combination of these actions. This project was transferred to the LCA Program.	2
CWPPRA	Mississippi River Reintroduction Into Northwest Barataria Basin (Transferred)	BA-34	FD	EPA	ST JOHN THE BAPTIST, ST JAMES, LAFOURCHE	5134	N/A	Transferred	$17,098,769	The goal of this project is to restore the natural hydrologic regime and add nutrients to adjacent swamp areas. The project would utilize a freshwater diversion/siphon from the Mississippi River to northwest Barataria Basin wetlands with gapping of spoil banks and placement of culverts under LA Highway 20. The scope of the project was changed and the revised project was re-numbered BA-34-2.	2
CWPPRA	Hydrologic Restoration and Vegetative Plantins in the Lac des Allemands Swamp	BA-34-2	HR, VP	USFWS	ST JOHN THE BAPTIST, ST JAMES, LAFOURCHE	5134	N/A	Pending	$14,355,710	The goal of this project is to restore the natural hydrologic regime and add nutrients to adjacent swamp areas via hydrologic restoration. Project features include the implementation of spoil bank gaps, culverts, and other hydrologic improvements for the impounded swamps to reverse the impoundment effects that are currently serious impediments to swamp health	2
CWPPRA	Pass Chaland to Grand Bayou Pass	BA-35	BH	NMFS	PLAQUEMINES	359	N/A	2009	$46,414,530	This project involved the creation of a dune and marsh platform on the north side of the Gulf of Mexico adjacent to Bay Joe Wise. Sand fencing and vegetation were installed.	2
CWPPRA	Dedicated Dredging on the Barataria Basin Landbridge	BA-36	MC	USFWS	JEFFERSON	2800	N/A	2010	$36,281,893	Approximately 5,368,000 cubic yards of material was placed in two contained marsh creation areas to construct approximately 1,211 acres of intertidal marsh at a final elevation of +2.5' NAVD 88. Approximately 3,901,000 cubic yards of material was placed in adjoining fill areas to nourish approximately 1,578 acres of marsh.	2
CWPPRA	Little Lake Shoreline Protection/Dedicated Dredging Near Round Lake	BA-37	MM, SP	NMFS	LAFOURCHE	713	N/A	2007	$44,931,412	This project is designed to protect area wetlands, which currently experience high rates of shoreline erosion. This project protects approximately 21,000 feet of Little Lake shoreline, create 488 acres of intertidal wetlands, and nourish an additional 532 acres of fragmented, subsiding marsh.	2
CWPPRA	Pelican Island and Pass La Mer to Chaland Pass Restoration	BA-38	BH, VP	NMFS	PLAQUEMINES	1117	N/A	2012	$52,893,695	The objectives of this project are to create barrier island habitat, enhance storm-related surge and wave protection, prevent overtopping during storms, and increase the volume of sand within the active barrier system. This project was first authorized on the 9th PPL as Barrier Island Restoration Grande Terre to SW Pass (BA-32). Construction of the Pass La Mer to Chaland Pass Restoration segment was completed in 2007.	2
CWPPRA	Mississippi River Sediment Delivery System - Bayou Dupont	BA-39	MC	EPA	JEFFERSON, PLAQUEMINES	577	N/A	2010	$31,631,908	The goal of this project is to create/restore 493 acres of brackish marsh by delivering via pipeline, dredged material from the Mississippi River to an adjacent area within the Barataria Basin, and planting marsh vegetation.	2
CWPPRA	Rivering Sand Mining/Scofield Island Restoration (Transferred)	BA-40	BH	NMFS	PLAQUEMINES	234	N/A	Transferred	$40,851,272	The goals of this project are to repair breaches and tidal inlets int eh shoreline, reinforce the wxisting shoreline with sand, and increase the island width with back barrier marsh creation to increase longevity. This project was transferred to the Berm to Barrier Program for construction.	2

ONGOING PROTECTION AND RESTORATION PROJECT SUMMARIES

CPRA Program	Name	State Project Number	Project Type	Federal Sponsor	Parish	Acres Benefited	Miles of Levee Improved	Construction Completion	Total Budget	Project Description	Planning Unit
CWPPRA	South Shore of the Pen Shoreline Protection and Marsh Creation	BA-41	SP, MC	NRCS	JEFFERSON	211	N/A	2012	$21,639,575	This project involves the construction of approximately 1,000 feet of concrete pile and panel wall and 10,900 feet of rock revetment along the south shore of The Pen and Bayou Dupont. Dedicated dredging was used to create approximately 74 acres of marsh, and nourish an additional 107 acres of marsh, within the triangular area bounded by the south shore of The Pen, the Barataria Bay Waterway (Dupre Cut) and the Creole Gas Pipeline Canal.	2
CWPPRA	Lake Hermitage Marsh Creation	BA-42	TE, SP, MC	USFWS	PLAQUEMINES	438	N/A	Pending	$40,538,484	The goals of this project are to create approximately 438 acres of wetlands, reduce tidal exchange in marshes surrounding Lake Hermitage using material dredged from the Mississippi River.	2
CWPPRA	West Pointe a la Hache Marsh Creation	BA-47	MC	NRCS	PLAQUEMINES	203	N/A	Pending	$15,671,708	The goal of this project is to create/nourish marsh using sediment hydraulically dredged from the Mississippi River and pumped via pipeline to the project area.	2
CWPPRA	Bayou Dupont Marsh and Ridge Creation Project	BA-48	MC	NMFS	JEFFERSON	317	N/A	Pending	$38,324,646	This marsh and ridge creation project will nourish approximately 118 acres of marsh and create 15 acres of maritime ridge by long distance pumping of Mississippi River sediment.	2
CWPPRA	Grand Liard Marsh and Ridge Restoration	BA-68	BH	NMFS	PLAQUEMINES	502	N/A	Pending	$41,872,785	This project will create 328 about acres of marsh, nourish about 140 acres of marsh and build about 20,000 lf of ridge.	2
CWPPRA	Cheniere Ronquille Barrier Island Restoration (Transferred)	BA-76	BH	NMFS	PLAQUEMINES	398	N/A	Transferred	$51,145,769	The project goal is to maintain shoreline integrity and create and restore saline marsh on Chenier Ronquille. The project involves dedicated dredging from nearshore Gulf deposits to creat saline marsh in open water areas and nourish existing marshes and barrier shoreline in project area. Intensive dune plantings in the project area were also proposed. This project was transferred to NRDA for construction.	2
CWPPRA	Northwest Turtle Bay Marsh Creation	BA-125	MC	USFWS	JEFFERSON	407	N/A	Pending	$24,448,757	This project involves the creation of approximately 423 acres and nourish approximately 337 acres of marsh using sediment dredged from Turtle Bay or Little Lake. Existing canal spoil banks, emergent marsh, and limited segments of containment dikes will be used to guide the distribution of the dredged material. Containment dikes will be degraded as necessary to reestablish hydrologic connectivity with adjacent wetlands.	2
CWPPRA	Bayou Dupont Sediment Delivery- Marsh Creation 3	BA-164	MC	EPA	PLAQUEMINES, JEFFERSON	302	N/A	Pending	$39,529,163	This project involves dedicated dredging from the Mississippi River to create and nourish 415 acres of marsh.	1
CWPPRA	Caminada Headlands Back Barrier Marsh Creation	BA-171	MC	EPA	LAFOURCHE	430	N/A	Pending	$32,284,094	This project involves the creation of approximately 300 acres of back barrier intertidal marsh and nourishment of 130 acres of emergent marsh behind 3.5 miles of the Caminada beach using material dredged from the Gulf of Mexico.	2
CWPPRA	Bayou Grande Cheniere Marsh and Ridge Restoration	BA-173	MC	USFWS	PLAQUEMINES	264	N/A	Pending	$30,311,402	The goal of this project is to re-create approximately 342 acres of marsh habitat in the open water areas and nourish marsh along the eastern side of the Bayou Grande Cheniere ridge, as well as create 12 acres of forested coastal ridge habitat.	2
CWPPRA	Caernarvon Diversion Outfall Management	BS-03A	OM	NRCS	PLAQUEMINES	802	N/A	2002	$4,536,000	The primary objective of this project is to enhance marsh by increasing the utilization of freshwater, nutrients, and sediments provided by the Mississippi River through the Caernarvon Freshwater Diversion Structure.	1
CWPPRA	White's Ditch Outfall Management (Deauthorized)	BS-04A	OM	NRCS	PLAQUEMINES	N/A	N/A	Deauthorized	$32,862	This project was designed to direct the flow of Mississippi River nutrients and sediment into the deteriorating wetlands in the Breton Sound Basin that are not directly benefited by the Caernarvon Freshwater Diversion project. Because of the failure to secure landrights, the project was officially deauthorized by the CWPPRA Task Force in January of 1998. This project was reauthorized on the 14th PPL as BS-12.	1
CWPPRA	Grand Bay Crevasse (Deauthorized)	BS-07	SD	USACE	PLAQUEMINES	N/A	N/A	Deauthorized	$65,747	Project goals included construction of a rock-lined opening through the rocks at the head of the Jurjevich Canal in order to establish a pathway for freshwater and sediment into Grand Bay and the adjacent marshes to create, restore, and enhance wetlands in the area. The project was officially deauthorized by the CWPPRA Task Force in July of 1998 because of landrights issues.	1
CWPPRA	Upper Oak River Freshwater Siphon (Deauthorized) Phase 1	BS-09	FD	NRCS	PLAQUEMINES	N/A	N/A	Deauthorized	$56,476	The primary goal of this project was to reverse the trend of interior marsh deterioration in the project area due to saltwater intrusion through installation of a freshwater siphon and outfall channel. These strategies would have provided freshwater, nutrients, and sediment to enhance marsh health. The project was officially deauthorized by the CWPPRA Task Force in January of 2003 because of landrights issues.	1
CWPPRA	Delta Building Diversion North of Fort St. Philip (Deauthorized)	BS-10	SD	USACE	PLAQUEMINES	543	N/A	Deauthorized	$1,178,640	A diversion channel will be constructed along the left descending bank of the Mississippi River up stream from Fort St. Philip. The channel will be constructed mainly through shallow open water and will tie into the Mississippi River.	1
CWPPRA	Delta Management at Fort St. Philip	BS-11	SNT	USFWS	PLAQUEMINES	267	N/A	2006	$3,199,948	The objective of the project is to enhance the delta-building process occurring due to the crevasse at Fort St. Philip. Six artificial crevasses were constructed to divert freshwater and sediment into areas currently restricted by spoil banks or natural ridges and linear vegetated terraces were constructed to enhance sediment retention and reduce wave energy in one of the receiving bays.	1
CWPPRA	White Ditch Resurrection and Outfall Management (Deauthorized)	BS-12	OM, FD	NRCS	PLAQUEMINES	189	N/A	Deauthorized	$1,595,677	The goal of this project was to promote utilization of freshwater, sediments, and nutrients from Mississippi River by renewing operation of existing siphon and adding another. The project was deauthorized by the CWPPRA Task Force in 2013.	1
CWPPRA	Bayou Lamoque Freshwater Diversion (Transferred)	BS-13	FD	EPA	PLAQUEMINES	620	N/A	Transferred	$9,509	The goal of this project was to create approximately 620 acres of new marsh, increase the percent cover of aquatic vegetation, increase the area of shallow open water habitat, and decrease mean salinity in the project area.This CWPPRA project was transferred to the CIAP Program.	1
CWPPRA	Bohemia Mississippi River Reintroduction Project (Deauthorized)	BS-15	FD	EPA	PLAQUEMINES	640	N/A	Deauthorized	$556,703	The goal of the project was to reintroduce Mississippi River water into adjacent wetlands through an uncontrolled diversion with a capacity of approximately 10,000 cfs, restoring natural deltaic growth and habitats. The project was deauthorized by the CWPPRA Task Force in 2013.	1
CWPPRA	South Lake Lery Shoreline and Marsh Restoration	BS-16	VP, MC	USFWS	PLAQUEMINES	652	N/A	Pending	$33,716,987	This project involves dredging sediment to create 396 acres of marsh and restore approximately 32,000 feet of the southern Lake Lery shoreline.	1
CWPPRA	Bertrandville Siphon (Deauthorized)	BS-18	FD	EPA	PLAQUEMINES	1613	N/A	Deauthorized	$22,578,208	The goal of the project was to create and sustain marsh through a MS River reintroduction (2,000 cfs maximum siphon) into the open water near Bertrandville. The project was deauthorized by the CWPPRA Task Force in 2013.	1
CWPPRA	Terracing and Marsh Creation South of Big Mar	BS-24	MC, TE	USFWS	PLAQUEMINES	383	N/A	Pending	$22,774,368	This project involves the construction of approximately 65,000 linear feet of terraces (37 acres) with in-situ material to reduce fetch and turbidity and capture suspended sediment. Sediments will be hydraulically dredged from Lake Lery and pumped via pipeline to create and restore approximately 334 acres of marsh in the project area.	2
CWPPRA	Cameron-Creole Maintenance	CS-04A	HR	NRCS	CAMERON	2602	N/A	1997, 2011	$4,644,371	The project area falls within the Cameron-Creole watershed management area, which has been adversely impacted by saltwater intrusion and loss of sediments due to channelization and water diversion of the Calcasieu River. The project providse maintenance for the existing 19 miles of levee and five major structures which make up the Cameron-Creole Watershed Project.	4
CWPPRA	Brown Lake Hydrologic Restoration (Deauthorized)	CS-09	MM	NRCS	CALCASIEU, CAMERON	916	N/A	Deauthorized	$1,097,828	The project investigated the restoration of the natural hydrology of the Brown Lake area. The project was deauthorized by the CWPPRA Task Force.	4
CWPPRA	Sweet Lake/Willow Lake Hydrologic Restoration	CS-11B	SP	NRCS	CAMERON	247	N/A	2002	$3,929,152	The project objectives are to re-establish the shoreline (hydrologic boundary) between Sweet Lake and the Gulf Intracoastal Waterway (GIWW), to reduce lake turbidity and tidal exchange, and to halt erosion and trap sediment needed to rebuild marsh along the northern and northwestern shorelines of Sweet Lake. This project includes construction of rock embankments on the GIWW to close off the lakes, vegetation plantings to reduce erosion, and construction of earthen terraces combined with vegetation plantings in open water areas to promote revegetation.	4
CWPPRA	Cameron Creole Plugs	CS-17	HR	USFWS	CAMERON	865	N/A	1997	$418,539	The project goal is to restore historic water circulation patterns within the Cameron-Creole Watershed. This objective will be accomplished by slowing the rapid movement of saline waters that enter the watershed from Calcasieu Lake. The project consisted of the installation of two sheetpile plugs in the lakeshore borrow canal.	4
CWPPRA	Sabine National Wildlife Refuge Erosion Protection	CS-18	SP	USFWS	CAMERON	5542	N/A	1995	$1,602,656	The goal of this project is to protect 13,000 acres of fresh marsh from deterioration associated with the anticipated failure of the existing west levee. The original design was to reconstruct 5.5 miles of eroded levee. The project was redesigned to include 1,000 feet of levee reconstruction and 5.5 miles of rock armor. Vegetation plantings were used to reduce erosion from boat traffic.	4
CWPPRA	West Hackberry Vegetative Planting Demonstration	CS-19	VP	NRCS	CAMERON	N/A	N/A	1994	$256,250	The goal of this demonstration project is to reduce marsh erosion from interior open water wave energy using vegetation plantings consisting of California bullrush (Schoenoplectus californicus). In addition, wave-stilling hay bale fences were utilized to protect the vegetation plantings.	4
CWPPRA	East Mud Lake Marsh Management	CS-20	MM	NRCS	CAMERON	1520	N/A	1996	$5,392,765	The project involves the creation of a hydrologic regime conducive to restoration, protection, and enhancement of the Mud Lake area using various types of water control structures and vegetative plantings. Structural components include culverts with flap gates, two variable crest weirs, three earthen plugs, overflow bank and repair of existing levee.	4
CWPPRA	Highway 384 Hydrologic Restoration	CS-21	MM	NRCS	CAMERON	650	N/A	2000	$1,551,196	The project purpose is to restore the natural hydrology of the project area and eliminate undesirably high salinities and severe water fluctuations, tremendously reduce the potential for future marsh losses.	4

ONGOING PROTECTION AND RESTORATION PROJECT SUMMARIES

CPRA Program	Name	State Project Number	Project Type	Federal Sponsor	Parish	Acres Benefited	Miles of Levee Improved	Construction Completion	Total Budget	Project Description	Planning Unit
CWPPRA	Clear Marais Bank Protection	CS-22	SP	USACE	CALCASIEU	1067	N/A	1997	$3,696,088	The project is located north of the Gulf Intracoastal Waterway (GIWW) approximately 10 miles northwest of Hackberry in Calcasieu Parish, Louisiana. The goal of this project is to extend the rock armored shoreline stabilization by one mile adjacent to the GIWW to prevent continued erosion of the GIWW levee and to prevent the encroachment of the GIWW into the marshes north of the project area.	4
CWPPRA	Replace Sabine Refuge Water Control Structures at Headquarters Canal, West Cove Canal, and Hog Island Gully	CS-23	MM	USFWS	CAMERON	953	N/A	2001	$5,709,299	This project involved the replacement of existing structures at Sabine National Wildlife Refuge with structures that have substantially greater discharge potential and greater management flexibility.	4
CWPPRA	Perry Ridge Shore Protection	CS-24	SP	NRCS	CALCASIEU	1203	N/A	1999	$2,289,090	The project reduces tidal scour, wave action from boats, and other excessive energy impacts on interior marshes and the possibility of saltwater intrusion by placing rip-rap along low areas on the northern spoil bank of the GIWW from Perry Ridge to Vinton Drainage Canal.	4
CWPPRA	Plowed Terraces Demonstration	CS-25	SNT	NRCS	CAMERON	N/A	N/A	2000	$325,641	This objective of this demonstration project is to develop and demonstrate a non-traditional procedure for constructing earthen terraces in shallow open water areas. Thirty-eight earthen terraces served as wave-stilling, sediment-trapping structures and provided a medium base for the establishment of emergent vegetation.	4
CWPPRA	Compost Demonstration (Deauthorized)	CS-26	MC	EPA	CAMERON	N/A	N/A	Deauthorized	$255,390	This project was authorized to evaluate the effectiveness of using tree trimmings as compostable material, using compost amended material in providing a growth medium for emergent vegetation, and determining settlement rates of the compost amended materials and tree trimmings. The project was officially deauthorized by the CWPPRA Task Force in January 2002.	4
CWPPRA	Black Bayou Hydrologic Restoration	CS-27	HR	NMFS	CALCASIEU, CAMERON	3594	N/A	2003	$6,170,284	The project goals are to reduce wetland loss resulting from hydrologic changes including reduced freshwater inflow, increased magnitude and duration of tidal fluctuations, increased salinities, higher water levels, and excessive water exchange. This project included the construction of spoil banks, weirs, plugs, and culverts designed to allow freshwater from the Gulf Intracoastal Waterway (GIWW) into the wetlands and to create a hydrologic head that increases freshwater retention time and reduces saltwater intrusion.	4
CWPPRA	Sabine Refuge Marsh Creation, Cycles 4-5	CS-28	MC	USACE	CAMERON	460	N/A	Pending	$11,838,649	The Sabine Refuge Marsh Creation Cycles 4-5 Project consists of the placement of dredged material from routine maintenance of the Calcasieu River Ship Channel via temporary pipeline into a marsh creation site within the Sabine National Wildlife Refuge.	4
CWPPRA	Sabine Refuge Marsh Creation, Cycles 1-3	CS-28-1	MC	USACE	CAMERON	662	N/A	2002, 2010	$24,627,399	The Sabine Refuge Marsh Creation Cycles 1-3 Project consists of the placement of dredged material from routine maintenance of the Calcasieu River Ship Channel via temporary pipeline into a marsh creation site within the Sabine National Wildlife Refuge.	4
CWPPRA	Black Bayou Culverts Hydrologic Restoration	CS-29	HR	NRCS	CALCASIEU	540	N/A	2007	$16,399,059	This project involved the construction of 10 box culverts (10 ft x 10 ft) with flap gates in the embankment of Highway 384 in Cameron Parish.	4
CWPPRA	GIWW - Perry Ridge West Bank Stabilization	CS-30	SP	NRCS	CALCASIEU	1132	N/A	2001	$2,256,216	The project consists of installing rock along the bank of the GIWW to prevent further erosion.	4
CWPPRA	Holly Beach Sand Management	CS-31	SP	NRCS	CAMERON	330	N/A	2003	$14,130,233	The purpose of the project is to protect existing coastal wetlands by restoring and maintaining the integrity and functionality of the remaining chenier/beach ridge. This objective was accomplished through beach renourishment, installation of sand fencing, vegetation plantings, and monitoring of the shoreline response. This project was originally authorized on the 9th PPL as the complex project: Holly Beach Project, CS-01.	4
CWPPRA	East Sabine Lake Hydrologic Restoration CU1	CS-32-CU1	TE, HR	USFWS	CAMERON	281	N/A	2009	$4,944,870	The objectives of this project are to protect and restore area marsh, and restore the historical hydrologic regime to the Sabine National Wildlife Refuge. This was to be accomplished using shoreline protection, terraces, vegetation plantings, and water control structures to reduce tidal scour, shoreline erosion, turbidity, and salinities. However, design of the water control structures has been discontinued and the remaining construction funds was used to build additional terraces.	4
CWPPRA	Cameron-Creole Freshwater Introduction	CS-49	VP, FD	NRCS	CAMERON	473	N/A	Pending	$14,037,045	The purpose of the project is to restore the function, value and sustainability to approximately 22,247 acres of marsh and open water by improving hydrologic conditions via freshwater input and increasing organic productivity.	4
CWPPRA	Kelso Bayou Marsh Creation and Hydrologic Restoration	CS-53	MC, SP	NRCS	CAMERON	274	N/A	Pending	$17,882,765	The goal of this project is to restore and protect approximately 319 acres of critically important marsh and the numerous functions provided by those acres. The proposed project will restore a portion of the historic meandering channel of Kelso Bayou and provide direct protection to Louisiana State Highway 27, the region's only northward hurricane evacuation route.	4
CWPPRA	Cameron-Creole Watershed Grand Bayou Marsh Creation	CS-54	MC	USFWS	CAMERON	534	N/A	Pending	$22,918,987	Project goals include creating 609 acres of brackish marsh and nourishing 7 acres of brackish marsh with dedicated dredged material from Calcasieu Lake to benefit fish and wildlife resources in the Cameron Prairie National Wildlife Refuge and adjacent brackish marshes of the Calcasieu Lake estuary.	4
CWPPRA	Oyster Bayou Marsh Creation and Terracing	CS-59	MC, SNT	NMFS	CAMERON	489	N/A	Pending	$31,031,354	The project consists of creating/nourishing marsh and associated edge habitat and creating terraces in order to reduce wave/wake erosion.	4
CWPPRA	Cameron Meadows Marsh Creation and Terracing	CS-66	MC, TE	NOAA	CAMERON	401	N/A	Pending	$28,935,820	This project involves the construction of 334 acres of marsh and the reestablishment of Old North Bayou via dredged material from the Gulf of Mexico. The project also involves the construction of 35,000 linear feet of terraces (18 acres) to reduce wind generated wave fetch.	4
CWPPRA	Nutria Harvest for Wetland Restoration Demonstration	LA-03A	OT	USFWS	COASTWIDE	N/A	N/A	2003	$806,220	This project enables the Louisiana Department of Wildlife and Fisheries to establish an economic incentive program to trap and control nutria, which are contributing to coastal wetland loss, by promoting the consumption of nutria meat.	COASTWIDE
CWPPRA	Coastwide Nutria Control Program	LA-03B	MM	NRCS	COASTWIDE	14963	N/A	N/A	$68,738,156	Project goal is to harvest approximately 400,000 nutria tails annually. Damage inflicted by nutria is estimated to be reduced 25 to 49%, and damaged areas to reduce by 25,000 to 49,000 acres.	COASTWIDE
CWPPRA	Floating Marsh Creation Demonstration	LA-05	OT	NRCS	TERREBONNE	N/A	N/A	2006	$1,080,891	The purpose of this demonstration project was to develop and test unique and previously untested technologies for creating floating marsh made of buoyant vegetated mats or artificial islands.	3A
CWPPRA	Shoreline Protection Foundation Improvements Demonstration	LA-06	SP	USACE	VERMILION	0	N/A	2006	$1,055,000	The purpose of the project is to investigate the potential to improve the foundation of rock dikes. The project was paired with the South White Lake Shoreline Protection (ME-22) project.	4
CWPPRA	Bioengineered Oyster Reef Demonstration	LA-08	SP	NMFS	CAMERON	4.5	N/A	2012	$2,316,692	This project is intended to evaluate the Oysterbreak structure to prevent beach erosion and increase habitat diversity associated with natural oyster reefs.	4
CWPPRA	Sediment Containment System for Marsh Creation Demonstration	LA-09	MC	NRCS	ST CHARLES	N/A	N/A	2013	$2,323,073	This demonstration project utilizes an uncoventional sediment containment system for marsh creation.	3A
CWPPRA	Non-rock Alternatives to Shoreline Protection Demo	LA-16	SP	NRCS	IBERIA, JEFFERSON, LAFOURCHE	N/A	N/A	2014	$6,233,700	Project goals are to demonstrate different alternatives to rock shoreline protection methods by testing several different products along highly erosive shorelines in areas that are not conducive to construction with rock.	2, 3B
CWPPRA	Coastwide Planting	LA-39	VP	NRCS	COASTWIDE	779	N/A	N/A	$12,689,725	The goals of this project are to facilitate a consistent and responsive planting effort in coastal Louisiana that is flexible enough to routinely plant on a large scale and be able to rapidly respond to "hot spots" following storms or other damaging events.	COASTWIDE
CWPPRA	Freshwater Bayou Wetland Protection	ME-04	SP	NRCS	VERMILION	14381	N/A	1998	$6,035,584	The project features include the installation of 10,000 linear feet of rock breakwater (rip-rap) along the west shoreline of Freshwater Bayou Canal, where needed, to protect this shoreline from further erosion; and the installation of gated water control structures on the Acadiana Marina Canal to reduce ponding in the area known as the Freshwater Bayou Wetlands.	4
CWPPRA	Dewitt-Rollover Vegetative Plantings Demonstration (Deauthorized)	ME-08	VP	NRCS	VERMILLION	102	N/A	1994; Deauthorized	$92,147	This demonstration project's purpose was to investigate the ability of vegetation plantings of smooth cordgrass (Spartina alterniflora) to colonize a newly accreted mudflat, thereby establishing a vegetation buffer between the Gulf of Mexico and coastal wetlands. This project was officially deauthorized by the CWPPRA Task Force in February 1996 because no plants remained.	4
CWPPRA	Cameron Prairie National Wildlife Refuge Shoreline Protection	ME-09	SP	USFWS	CAMERON	640	N/A	1994	$1,227,123	This project protects the emergent wetlands of the Cameron Prairie National Wildlife Refuge adjacent to the GIWW, enhances the emergent wetlands protected by constructing approximately 2.5 miles of rock dike parallel to the existing spoil bank, and terminates the encroachment of the GIWW into the refuge.	4
CWPPRA	Humble Canal Hydrologic Restoration	ME-11	HR	NRCS	CAMERON	378	N/A	2003	$1,530,812	The project consists of replacing the existing Humble Canal structure to restore water management capabilities to the area.	4
CWPPRA	Southwest Shore White Lake Demonstration (Deauthorized)	ME-12	SP	NRCS	IBERIA	N/A	N/A	1996; Deauthorized	$41,777	The objective of this demonstration project was to stabilize one mile of the White Lake shoreline and prevent breaching into Deep Lake. The project was initiated to determine if California bulrush (Schoenoplectus californicus) is effective at damping high energy wave action. The project was officially deauthorized by the CWPPRA Task Force in October of 1998 and is no longer monitored.	4

ONGOING PROTECTION AND RESTORATION PROJECT SUMMARIES

CPRA Program	Name	State Project Number	Project Type	Federal Sponsor	Parish	Acres Benefited	Miles of Levee Improved	Construction Completion	Total Budget	Project Description	Planning Unit
CWPPRA	Freshwater Bayou Bank Stabilization	ME-13	SP	NRCS	VERMILION	511	N/A	1998	$5,609,584	The goal of this project is to stop erosion along the bank of Freshwater Bayou Canal and to protect the interior wetlands from saltwater intrusion, increased tidal exchange and wake-induced erosion. This was achieved by constructing a rock dike along critical areas of the eastern and western banks of the canal.	4
CWPPRA	Pecan Island Terracing	ME-14	TE	NMFS	VERMILION	437	N/A	2003	$2,390,984	The goal of this project is to convert areas of open water back to vegetated marsh. Project features included the construction of earthen terraces to reduce wave action. Terraces were constructed in a staggered gap formation and planted with smooth cordgrass (Spartina alterniflora) and California bulrush (Schoenoplectus californicus).	4
CWPPRA	Freshwater Introduction South of Highway 82	ME-16	HR	USFWS	IBERIA	296	N/A	2006	$6,342,505	The purpose of the project was to move freshwater from White Lake across LA Hw 82 to target marshes and marsh restoration through earthen terraces.	4
CWPPRA	Little Pecan Bayou Hydrologic Restoration (Deauthorized)	ME-17	HR	NRCS	CAMERON	144	N/A	Deauthorized	$1,303,713	The purpose of the project was to introduce fresh water into brackish marsh habitat south of La. Highway 82 through use of water control structures and conveyance channels. The project was subsequently deauthorized by the CWPPRA Task Force.	4
CWPPRA	Rockefeller Refuge Gulf Shoreline Stabilization	ME-18	SP	NMFS	CAMERON	863	N/A	Pending	$26,776,463	The purpose of the project is to construct a continuous near shore breakwater along the Gulf of Mexico shoreline, approximately 50,691 feet from Beach Prong to Joseph Harbor.	4
CWPPRA	Grand-White Lakes Landbridge Protection	ME-19	SP	USFWS	CAMERON	213	N/A	2004	$3,536,830	The purpose of the project was to prevent the coalesence of Grand and White Lakes through the installation of 11,000 feet of hard shoreline stabilization and construction of terraces.	4
CWPPRA	South Grand Chenier Hydrologic Restoration	ME-20	HR, MC	USFWS	VERMILION	440	N/A	Pending	$23,873,346	The objective of this project is a reduction in salinity in target marshes via fresh water introduction from Upper Mud Lake via the Dr. Miller Canal and culverts under Hwy 82. Restoration of 402 acres of brackish marsh from shallow open water and nourishment of 51 acres of marsh (total 453 acres) in two cells (176 and 277 acres) via 1.55 M cubic yards of dredged material from a Gulf of Mexico borrow site.	4
CWPPRA	Grand Lake Shoreline Protection, Tebo Point	ME-21	SP	NRCS	CAMERON	495	N/A	Pending	$11,305,616	This project involves the construction of a rock dike to protect the south shoreline of Grand Lake from Catfish Lake to Tebo Point and perform long-term O&M on this dike as well as a separate portion from Superior Canal to Catfish Lake (constructed using CIAP 2007 funds).	4
CWPPRA	South White Lake Shoreline Protection	ME-22	SP	USACE	VERMILION	844	N/A	2006	$19,673,961	This project involved the construction of a rock dike along the south shoreline of White Lake to reduce erosion and maintain shoreline integrity.	4
CWPPRA	South Pecan Island Freshwater Introduction (Deauthorized)	ME-23	FD	NMFS	CAMERON	98	N/A	Deauthorized	$4,438,693	The purpose of the project was to introduce freshwater from the lakes subbasin north, under Hwy. 82 and into the lakes subbasin south of Hwy. 82. The project was officially deauthorized by the CWPPRA Task Force in January of 2011.	4
CWPPRA	Southwest Louisiana Gulf Shoreline Nourishment and Protection	ME-24	OT	USACE	IBERIA	888	N/A	Pending/On Hold	$17,144,234	The goal of the project is to nourish 47,900 linear feet of gulf shoreline with sediment between Dewitt Canal and Big Constance Lake; and create approximately 421 acres of marsh platform, mud flat and shallow water, extending approximately 384 feet seaward. The project is on hold until the Phase I CSA template is finalized with the USACE.	4
CWPPRA	Freshwater Bayou Marsh Creation	ME-31	MC	NRCS	VERMILION	401	N/A	Pending	$26,756,528	The purpose of the project is to create and/or nourish about 400 acres of marsh near Freshwater Bayou north of intersection with Humble Canal.	4
CWPPRA	South Grand Chenier Marsh Creation - Baker Tract	ME-32	MC	NRCS	CAMERON	393	N/A	Pending	$26,691,833	The purpose of this project is to create new wetland habitat, restore degraded marsh, and reduce wave erosion. Material dredged from the Gulf of Mexico will be utilized to create and nourish approximately 420 acres of marsh. Retention levees will be degraded and approximately 11,756 linear feet of tidal creeks will be constructed by tracking marsh buggies on the marsh platform for estuarine fisheries access. Smooth cordgrass plugs will be planted on 20-foot centers throughout the area (total 49,268 plants).	4
CWPPRA	West Bay Sediment Diversion	MR-03	SD	USACE	PLAQUEMINES	9831	N/A	2003	$50,863,503	The project consists of a conveyance channel for large-scaled uncontrolled diversion of freshwater and sediments from the Mississippi River. The diversion channel was designed to be constructed in two phases: (1) Initial construction of an interim channel to accommodate a discharge of 20,000 cubic feet per second (cfs) at the 50% duration stages in the River and marsh development areas, and (2) Modification of the interim diversion channel design to accommodate full-scale diversion of 50,000 cfs at the 50% duration stage on the River after a period of intensive monitoring of diversion operations.	2
CWPPRA	Channel Armor Gap Crevasse	MR-06	SD	USACE	PLAQUEMINES	2097	N/A	1997	$888,985	The project consists of deepening the invert of the existing 150 foot wide gap in the Mississippi River channel bank armor. The existing invert was lowered to -4.0 feet NGVD. In addition, an existing earthen channel leading from the armored gap to the open water area beyond the bank were enlarged. Approximately 125,000 cubic yards of material were excavated from the outfall channel and cast adjacent to the channel in a manner conducive to marsh nourishment.	1
CWPPRA	Pass-a-Loutre Crevasse (Deauthorized)	MR-07	SD	USACE	PLAQUEMINES	1043	N/A	Deauthorized	$119,835	The objective of this project was to create and restore marsh in the Mississippi River Delta. This was to be accomplished through construction of a crevasse on the left descending bank of the Mississippi River between Pass-a-Loutre and Raphael Pass. The project was officially deauthorized by the CWPPRA Task Force in July of 1998 due to high costs attributed to relocating underground utilities in the area.	1
CWPPRA	Beneficial Use of Hopper Dredged Material Demonstration (Deauthorized)	MR-08	DM	USACE	PLAQUEMINES	N/A	N/A	Deauthorized	$58,309	The goal of this project was to utilize dredged material from a hopper dredge to create emergent vegetated marsh in an area that is currently a shallow open-water pond. Due to design problems, the project was officially deauthorized by the CWPPRA Task Force in November of 2000.	2
CWPPRA	Delta Wide Crevasses	MR-09	SD	NMFS	PLAQUEMINES	2386	N/A	1999	$4,728,318	The objective of this project is to promote the formation of emergent freshwater and intermediate marsh in shallow, open water areas of the Pass-a-Loutre Wildlife Management Area and the Delta National Wildlife Refuge by either cleaning existing splays or creating new ones.	1
CWPPRA	Dustpan Maintenance Dredging Operations for Marsh Creation in the Mississippi River Delta Demonstration	MR-10	DM	USACE	PLAQUEMINES	N/A	N/A	2002	$1,909,020	This project demonstrated the beneficial use of dredged material from routine maintenance of the Mississippi River Navigation Channel by using a dustpan hydraulic dredge to create and restore adjacent marsh. Approximately 40 acres of deteriorated marsh that had converted to shallow open water were restored with approximately 222,000 cubic yards of dredged material.	2
CWPPRA	Periodic Introduction of Sediment and Nutrients at Selected Diversion Sites Demonstration (Deauthorized)	MR-11	FD	USACE	ST BERNARD	N/A	N/A	Deauthorized	$83,556	This demonstration project was intended to show the effectiveness of using a hydraulic pipeline dredge to provide increased sediment through a diversion structure or siphon. Monitoring of the project will determine not only the characteristics of the sediment input concentrations, but also the subsequent effects in the outfall area. The project was subsequently deauthorized by the CWPPRA Task Force.	1
CWPPRA	Mississippi River Sediment Trap (Deauthorized)	MR-12	MC	USACE	PLAQUEMINES	1190	N/A	Deauthorized	$354,790	This project was reauthorized on the 12th PPL to create emergent wetlands through the beneficial use of material dredged from a sediment trap located between miles 5 and 1 above Head of Passes in the Mississippi River. The proposed sediment trap will consist of an area dredged out of the riverbed that will force sediment deposition. The project was officially deauthorized by the CWPPRA Task Force in 2009 due to the high cost to implement the project.	1, 2
CWPPRA	Benneys Bay Diversion (Deauthorized)	MR-13	SD	USACE	PLAQUEMINES	4580	N/A	Deauthorized	$976,580	The objective of the project was to create vegetated wetlands in shallow open water areas in Benneys Bay. The project would divert sediment in an effort to create, nourish, and maintain approximately 16,982 acres of fresh to intermediate marsh over the 20-year project life. The project was deauthorized by the CWPPRA Task Force in 2013.	1
CWPPRA	Spanish Pass Diversion (Deauthorized)	MR-14	SD	USACE	PLAQUEMINES	433	N/A	Deauthorized	$310,151	The goal of this project was to create emergent marsh by diverting Mississippi River water and sediment from Grand Pass into open water receiving areas. The project was deauthorized by the CWPPRA Task Force in 2013.	2
CWPPRA	Venice Ponds Marsh Creation and Crevasses (Inactive)	MR-15	MC	EPA	PLAQUEMINES	511	N/A	Inactive	$23,442,176	The goals of the project are to create, maintain, nourish, and replenish existing deteriorating wetlands through dedicated dredging, hydrologic restoration, crevasse construction, and crevasse enhancement. The project was designated as Inactive by the CWPPRA Task Force in 2013.	2
CWPPRA	Fritchie Marsh Restoration	PO-06	HR	NRCS	ST TAMMANY	1040	N/A	2001	$2,201,674	The purpose of the project is to achieve remediation of the causes of wetland loss in the area and to improve habitat for wildlife and fisheries by increasing the flow of fresh water into the marsh and managing the outfall.	1
CWPPRA	Violet Freshwater Distribution (Deauthorized)	PO-09A	HR	NRCS	ST BERNARD	247	N/A	Deauthorized	$128,626	The objective of the outfall management plan was to optimize the use of freshwater and sediment supplied by the existing siphons by managing water flow through the area. This would be accomplished by reducing channelized flow and routing the diverted flow across marshes or through shallow water areas instead of through larger channels. This project was officially deauthorized by the CWPPRA Task Force in 2001 because of landrights issues.	1
CWPPRA	Bayou Sauvage National Wildlife Refuge Hydrologic Restoration, Phase 1	PO-16	HR	USFWS	ORLEANS	3800	N/A	1996	$1,680,193	The Lake Pontchartrain Hurricane Protection levee isolates units 3 and 4 of the Bayou Sauvage Wildlife Refuge from the surrounding marsh complex and establishes a large freshwater impoundment. This project established a means for removing the excess water during the spring and summer.	1
CWPPRA	Bayou LaBranche Wetland Creation	PO-17	MC	USACE	ST CHARLES	487	N/A	1994	$3,934,000	The project involved dredging sediments from Lake Pontchartrain to create vegetated wetlands in an area roughly bounded by I-10, Lake Pontchartrain, Bayou Labranche.	1
CWPPRA	Bayou Sauvage National Wildlife Refuge Hydrologic Restoration, Phase 2	PO-18	HR	USFWS	ORLEANS	1280	N/A	1997	$1,692,552	The construction of U.S. Highway 90, canals, railroad lines, and Lake Ponctchartrain hurricane protection levees has impounded the marsh in the project area. Project features consist of two 36-inch pumps, which operate to maintain water levels at 0.5 feet above or below marsh elevation to promote vegetative growth in the project area.	1

ONGOING PROTECTION AND RESTORATION PROJECT SUMMARIES

CPRA Program	Name	State Project Number	Project Type	Federal Sponsor	Parish	Acres Benefited	Miles of Levee Improved	Construction Completion	Total Budget	Project Description	Planning Unit
CWPPRA	Mississippi River Gulf Outlet (MRGO) Disposal Area Marsh Protection	PO-19	MM	USACE	ST BERNARD	755	N/A	1999	$318,445	The objective of this project is to preserve vegetated wetlands by repairing the lateral and rear dikes of the Mississippi River Gulf Outlet (MRGO) disposal areas. Repairs to a 28,000 linear-foot dike, in conjunction with the installation of metal box weirs with a single 40-inch pipe, were used to control and divert water flow to prevent the perched marshes from draining.	1
CWPPRA	Red Mud Demonstration (Deauthorized)	PO-20	MC	EPA	ST JOHN THE BAPTIST	N/A	N/A	Deauthorized	$520,129	This project was authorized to determine whether red mud, produced as a by-product of removing alumina from bauxite, could be utilized as marsh-creation material in combination with compost and marsh sediment. Construction of experimental units was initiated in 1997; however, due to unexpected problems with fill material, liners, and contaminants in the water source, the project was officially deauthorized by the CWPPRA Task Force in August 2001.	1
CWPPRA	Eden Isles East Marsh Restoration (Deauthorized)	PO-21	HR	NMFS	CAMERON	1453	N/A	Deauthorized	$39,025	The project intended to restore 2,536 acres of drained fastlands by actively managing water levels to maximize marsh creation. There was a change in landowners of the project area during the planning phase of this project. Consequently, the project was officially deauthorized by the CWPPRA Task Force in January 1998.	1
CWPPRA	Bayou Chevee Shoreline Protection	PO-22	SP	USACE	ORLEANS	212	N/A	2001	$2,589,403	The project consists of constructing a 5,000-foot earthen, erodible dike to contain dredged material from Lake Pontchartrain. The project created about 150 acres of marsh.	1
CWPPRA	Hopedale Hydrologic Restoration	PO-24	HR	NMFS	ST BERNARD	106	N/A	2005	$2,281,287	This project is designed to abate site-specific wetland loss by replacing collapsed culverts installed in the 1950s near Yscloskey, Louisiana. Replacement of these structures would allow more rapid drainage of the area, improve fisheries access, reduce wetland loss rates, and protect approximately 3,086 acres of marsh.	1
CWPPRA	Bayou Bienvenue Pump Station Diversion and Terracing (Deauthorized)	PO-25	MC	NMFS	TERREBONNE	442	N/A	Deauthorized	$212,152	This project intended to combine the use of existing pump stations with the construction of a diversion channel, water control structures, and earthen terraces planted with smooth cordgrass (Spartina alterniflora). This would force the flow of freshwater and nutrients through a deteriorated marsh area to abate site-specific marsh loss. The project was officially deauthorized by the CWPPRA Task Force in April 2002 because construction was determined to be too costly.	1
CWPPRA	Opportunistic Use of the Bonnet Carre Spillway (Deauthorized)	PO-26	FD	USACE	PLAQUEMINES	177	N/A	Deauthorized	$83,932	This project intended to abate high salinity stress on the vegetated wetlands surrounding Lake Pontchartrain. This objective was to be accomplished through the removal of pins from the Bonnet Carre´ Spillway structure during high flow periods in the Mississippi River to allow no more than 4,000 cubic feet per second of water to flow from the river into Lake Pontchartrain. This project was officially deauthorized by the CWPPRA Task Force in October of 2007 due to uncertainty of benefits and lack of landowner support.	1
CWPPRA	Chandeleur Islands Marsh Restoration	PO-27	VP	NMFS	ST BERNARD	88	N/A	2001	$839,927	The objective of this project was to accelerate the recovery period of barrier island areas overwashed by Hurricane Georges in 1998 through vegetation plantings. The overwash areas, which encompass 364 acres, are located at 22 sites along the Chandeleur Sound side of the island chain and were planted with smooth cordgrass (Spartina alterniflora).	1
CWPPRA	LaBranche Wetlands Terracing, Planting, and Shoreline Protection (Deauthorized)	PO-28	VP	NMFS	ST CHARLES	489	N/A	Deauthorized	$306,836	Located along Lake Pontchartrain, the project intended to reduce emergent marsh loss along the shoreline by restoring and creating 489 acres through marsh terracing, shoreline protection, and vegetation planting. This project was officially deauthorized by the CWPPRA Task Force in October 2007.	1
CWPPRA	Lake Borgne Shoreline Protection	PO-30	SP	EPA	ST BERNARD	229	N/A	2008	$28,908,775	The goal of this project is to maintain the integrity of the narrow strip of marsh that separates Lake Borgne from the Mississippi River Gulf Outlet (MRGO). This land helps protect the communities of Shell Beach, Yscloskey, and Hopedale from direct exposure to lake wave energy and storm surges. The goal was accomplished through construction of a continuous nearshore rock breakwater.	1
CWPPRA	Lake Borgne and MRGO Shoreline Protection (Deauthorized)	PO-32	SP	USACE	ST BERNARD	93	N/A	Deauthorized	$1,089,193	The objective of this project was to preserve the marsh between Lake Borgne and the Mississippi River Gulf Outlet (MRGO) by constructing a rock dike along the Lake Borgne shoreline and the northern bank of the MRGO. The Lake Borgne segment of this project was constructed by the USACE with funds from the 3th supplemental, and the remaining portion of the project was deauthorized by the CWPPRA Task Force.	1
CWPPRA	Goose Point/Point Platte Marsh Creation	PO-33	MC	USFWS	ST TAMMANY	436	N/A	2009	$15,979,442	The goal of this project is to create about 437 acres of marsh and nourish about 114 acres of degraded marsh along the northern shoreline of Lake Pontchartrain.	1
CWPPRA	Alligator Bend Marsh Restoration and Shoreline Protection	PO-34	TE, VP, SP	NRCS	ORLEANS	121	N/A	Pending	$29,716,052	The goal of this project is to provide shoreline protection in Lake Borgne, starting at Alligator Point, using rock dikes and vegetative plantings.	1
CWPPRA	LaBranche East Marsh Creation	PO-75	MC	NRCS	ST CHARLES	715	N/A	Pending	$33,555,033	Project features consist of the creation of 729 acres of marsh and the nourishment of 202 acres of existing marsh using dedicated dredging from Lake Pontchartrain.	1
CWPPRA	Bayou Bonfouca Marsh Creation	PO-104	MC	USFWS	ST TAMMANY	424	N/A	Pending	$29,273,984	The primary goal of the project is to create 533 acres and nourish 42 acres of low salinity brackish marsh in open water areas adjacent to Bayou Bonfouca with sediment pumped from Lake Pontchartrain.	1
CWPPRA	LaBranche Central Marsh Creation	PO-133	MC	NRCS	ST CHARLES	731	N/A	Pending	$43,409,208	Project features include the creation of 762 acres of marsh and the nourishment of 240 acres of existing marsh using dedicated dredging from Lake Pontchartrain.	1
CWPPRA	Grand Bayou Hydrologic Restoration (Deauthorized)	TE-10	HR	USFWS	LAFOURCHE	199	N/A	Deauthorized	$1,452,357	The objective of the project was to maintain emergent wetlands in this area by providing supplemental freshwater, nutrients, and sediment from the Atchafalaya River via the Gulf Intracoastal Waterway (GIWW). Project features included a water control structure on Bayou Pointe au Chien just south of its junction with St. Louis Canal, the relief structure on Grand Bayou, and the pipeline structure on Grand Bayou Canal. The project has been deauthorized by the CWPPRA Task Force.	3A
CWPPRA	Falgout Canal Planting Demonstration	TE-17	VP	NRCS	TERREBONNE	N/A	N/A	1996	$206,522	For this demonstration project, smooth cordgrass (Spartina alterniflora) suited to the salinity and habitat type of the Falgout Canal area was planted along the canal and protected by six types of wave-stilling devices.	3A
CWPPRA	Timbalier Island Planting Demonstration	TE-18	VP	NRCS	TERREBONNE	N/A	N/A	1996	$300,492	For this demonstration project, approximately 7,390 linear feet of sand fences were installed and vegetation suited to the salinity and habitat type of Timbalier Island was planted in several areas on the island to trap sand and buffer wind and wave energy.	3A
CWPPRA	Lower Bayou LaCache Hydrologic Restoration (Deauthorized)	TE-19	MM	NMFS	TERREBONNE	N/A	N/A	Deauthorized	$99,625	The project would have reduced marsh loss rates and improved fish and wildlife habitat quality by restoring natural north-south water exchange with estuarine water bodies and by reducing flow through the numerous dredged canals in the area. Because of problems with landrights and navigation, the project was officially deauthorized by the CWPPRA Task Force in 1996.	3A
CWPPRA	Isles Dernieres Restoration East Island	TE-20	BH	EPA	TERREBONNE	449	N/A	1999	$8,762,416	The project objective is to restore the coastal dunes and wetlands of the Eastern Isles Dernieres barrier island chain. Approximately 3.9 million cubic yards of sand were dredged from Lake Pelto and used to build a retaining dune which was then hydraulically filled to create an elevated marsh platform. Sand fences and vegetation were also installed to stabilize the sand and minimize wind-driven transport.	3A
CWPPRA	Point Au Fer Canal Plugs	TE-22	VP, MC	NMFS	TERREBONNE	375	N/A	1997	$5,544,367	This project is intended to reduce saltwater intrusion into the Point au Fer marshes without reducing freshwater back flooding from the Atchafalaya River. Phase I of this project, completed in 1997, involved the plugging of two major natural gas/oil pipeline canals on the eastern half of the island. Under Phase II, a rock shoreline stabilization structure was constructed in 2000 along a thin strech of beach separating the Gulf of Mexico from the Mobil Canal.	3B
CWPPRA	West Belle Pass Headland Restoration	TE-23	SP	USACE	LAFOURCHE	474	N/A	1998	$6,826,754	The project reduces the encroachment of Timbalier Bay into the marshes on the west side of Bayou Lafourche with the use of dedicated dredged materials to create 184 acres of marsh on the west side of Belle Pass. A water control structure was placed in the Evans Canal, and plugs on other canals.	3A
CWPPRA	Isles Dernieres Restoration Trinity Island	TE-24	BH, MC	EPA	TERREBONNE	776	N/A	1999	$10,774,974	The project objectives are to restore the Trinity Island (dunes and marsh) wetlands of the Isles Dernieres chain, enhance the physical integrity of the island, and protect the lower Terrebonne estuary.	3A
CWPPRA	East Timbalier Island Sediment Restoration	TE-25	BH	NMFS	TERREBONNE	1913	N/A	2001	$3,720,721	The objective of this project is to strengthen and thus increase the life expectancy of East Timbalier Island. The project called for the mining of 2.7 million cubic yards of sediment and placement of the material in three embayments along the landward shoreline of East Timbalier Island. The project also included aerial seeding of the dune platform, installation of sand fencing, and dune vegetation plantings.	3A
CWPPRA	Lake Chapeau Sediment Input and Hydrologic Restoration, Point Au Fer Island	TE-26	MC	NMFS	TERREBONNE	509	N/A	1999	$6,810,133	The objectives of this project are to restore the marshes west of Lake Chapeau, re-establish the hydrologic separation of the Locust Bayou and Alligator Bayou watersheds, and re-establish the natural drainage patterns within the Lake Chapeau area. To accomplish this material dredged from Atchafalaya Bay was used to create marsh, oil field access canals were plugged, and spoil banks were gapped. An estimated 850,000 cubic yards of material were hydraulically dredged from Atchafalaya Bay and spread to a thickness of approximately 2 feet to create 160 acres of marsh.	3B
CWPPRA	Whiskey Island Restoration	TE-27	BH, MC	EPA	TERREBONNE	657	N/A	2000	$7,106,586	The project created and restored beaches and back island marshes on Whiskey Island. The project created 523 acres of back island marsh and filling in the breach at Coupe Nouvelle (134 acres). The initial vegetation planting with smooth cordgrass (Spartina alterniflora) on the bay shore was completed in July 1998 and additional vegetation seeding/planting was carried out in Spring 2000.	3A
CWPPRA	Brady Canal Hydrologic Restoration	TE-28	HR	NRCS	TERREBONNE	297	N/A	2000	$7,593,752	The objective of the project is to maintain the fragile, highly-fragmented transitional marshes between the fresh and estuarine zones by enhancing freshwater, sediment, and nutrient delivery into the area.	3B
CWPPRA	Raccoon Island Breakwaters Demonstration	TE-29	BH	NRCS	TERREBONNE	N/A	N/A	1997	$1,795,388	This project protects the newly refurbished beaches and wetlands of Raccoon Island and protect back barrier and mainland marshes with six segmented breakwaters.	3A

ONGOING PROTECTION AND RESTORATION PROJECT SUMMARIES

CPRA Program	Name	State Project Number	Project Type	Federal Sponsor	Parish	Acres Benefited	Miles of Levee Improved	Construction Completion	Total Budget	Project Description	Planning Unit
CWPPRA	East Timbalier Island Sediment Restoration	TE-30	BH	NMFS	TERREBONNE	215	N/A	2000	$7,600,150	The project goal is to strengthen and increase the life expectancy of East Timbalier Island by placing dredged material along its landward shoreline. Additional rock has been placed on the existing breakwater in front of the island, which will help protect the created area from erosion.	3A
CWPPRA	Flotant Marsh Fencing Demonstration (Deauthorized)	TE-31	SP	NRCS	TERREBONNE	N/A	N/A	Deauthorized	$106,960	The purpose of this demonstration project was to determine the effectiveness of different fencing techniques used to conserve and restore floating marshes. There was difficulty in locating an appropriate site for demonstration and in addressing engineering constraints. The restoration techniques that were originally suggested for this project were not feasible. The project was officially deauthorized by the CWPPRA Task Force in 2001.	3A
CWPPRA	North Lake Boudreaux Basin Freshwater Introduction and Hydrologic Management	TE-32A	FD	USFWS	TERREBONNE	603	N/A	Pending	$26,875,959	The project aims to introduce freshwater from the HNC through an enlarged Bayou Pelton channel across Bayou Grand Caillou and through a gated channel.	3A
CWPPRA	Bayou Boeuf Pump Station (Deauthorized)	TE-33	HR	EPA	TERREBONNE	N/A	N/A	Deauthorized	$3,452	The purpose of this project was to link the wetlands protection/restoration objectives of the CWPPRA with flood protection and navigation needs generally covered by WRDA. The project components consisted of implementing a long-term water management strategy for the Verret Basin, and evaluating a long-term river water delivery strategy from Atchafalaya River to Terrebonne wetlands. The project was officially deauthorized by the CWPPRA Task Force in 1998.	3A
CWPPRA	Penchant Basin Natural Resources Plan, Increment 1	TE-34	FD, HR, SP	NRCS	TERREBONNE	675	N/A	2011	$17,628,814	The objective of the project is to divert freshwater flow from north-western to south-eastern sub project areas coupled with protection measures to reduce inundation of fragile marsh areas in overall Penchant Basin in Terrebonne Parish.	3B
CWPPRA	Marsh Creation East of the Atchafalaya River - Avoca Island (Deauthorized)	TE-35	MC	USACE	ST MARY	434	N/A	Deauthorized	$66,869	The project consisted of the beneficial use of dredged material from the "Crew Boat Chute" and placing it in the Avoca Island area. Although the project would have benefited 434 acres at a cost of $6,438,400, the cost of the project was estimated to be considerably higher than originally planned, making it economically unjustifiable. The project was officially deauthorized by the CWPPRA Task Force in 1998.	3B
CWPPRA	Thin Mat Floating Marsh Enhancement Demonstration	TE-36	MC	NRCS	TERREBONNE	N/A	N/A	2000	$538,101	The objective of this project is to induce the development of thick-mat, continuously floating marsh from a thin-mat flotant using various combinations of treatments including fertilization, herbivory reduction, and transplanting healthy, thick-mat marsh plugs into the thin-mat flotant. Project monitoring is intended to determine the effects of water movement and sediment availability on these marshes.	3B
CWPPRA	New Cut Dune and Marsh Restoration	TE-37	BH, MC	EPA	TERREBONNE	386	N/A	2008	$12,869,325	The objective of this project was to close the breach between East and Trinity Islands that was originally created by Hurricane Carmen (1974) and subsequently enlarged by Hurricane Juan (1985) and Hurricane Andrew (1992). The project involved the creation of barrier island dunes and marsh habitat and lengthening the structural integrity of the eastern Isles Dernieres by restoring the littoral drift and adding sediment into the near-shore system.	3A
CWPPRA	South Lake Decade Freshwater Introduction	TE-39	SP	NRCS	TERREBONNE	202	N/A	2011	$5,223,806	This project involves the construction of a water control structure in the southern bank of Lake DeCade. The strucure increases the amount of Atchafalaya River water and sediment introduced into the marshes south of the lake. In addition, shoreline protection was implemented adjacent to the proposed structure, and a weir in Lapeyrouse Bayou was removed.	3A
CWPPRA	Timbalier Island Dune and Marsh Restoration	TE-40	BH, MC	EPA	TERREBONNE	663	N/A	2004	$16,662,199	Timbalier Island is migrating rapidly to the west/northwest; therefore, the western end of Timbalier Island is undergoing lateral migration by spit-building processes at the expense of erosion along the eastern end. The objective of this project is to restore the eastern end of Timbalier Island by the direct creation of beach, dunes, and marsh.	3A
CWPPRA	Mandalay Bank Protection Demonstration	TE-41	SP	USFWS	TERREBONNE	N/A	N/A	2003	$1,732,498	This demonstration project is intended to develop new techniques for protecting and restoring organic soils, which can be easily eroded. Intact banks and breakthroughs were treated to determine the cost-effectiveness of demonstrated approaches. The project allows the evaluation of several low-cost solutions for restoring habitat in blowout areas and preventing bank erosion.	3A, 3B
CWPPRA	Move Existing Atchafalaya Water to Central Terrebonne (Transferred)	TE-42	HR	USFWS	ST MARY	N/A	N/A	Transferred	N/A	This project is intended to reduce marsh loss through the improved distribution of excess freshwater seasonally available in the Gulf Intracoastal Waterway (GIWW). The project will benefit deteriorating marshes in central and/or eastern portions of the Terrebonne Basin. This project was transferred to the LCA program.	3A
CWPPRA	GIWW Bank Restoration of Critical Areas in Terrebonne	TE-43	SP	NRCS	TERREBONNE	345	N/A	2014	$13,022,245	The project objective is to restore critical lengths of deteriorated channel banks and stabilize/armor selected critical lengths of deteriorated channel banks with hard shoreline stabilization materials. A portion of this project was constructed using CIAP 2007 funds and the remainder of the project was constructed under CWPPRA.	3A
CWPPRA	North Lake Mechant Landbridge Restoration	TE-44	SP, MC	USFWS	TERREBONNE	604	N/A	2009	$39,004,428	The project is intended to help maintain and restore the landbridge (Lake Mechant north shoreline and the Small Bayou La Pointe Ridge), which provides a hydrologic barrier between brackish and low-salinity habitats. Project features include marsh creation, the planting of smooth cordgrass (Spartina alterniflora) on the shoreline, the construction of various plugs, and repairing a fixed-crest weir along Bayou Raccourci.	3A
CWPPRA	Terrebonne Bay Shore Protection Demonstration	TE-45	SP	USFWS	TERREBONNE	0	N/A	2007	$2,718,768	This project is intended to evaluate several different shoreline protection methods, including concrete mats, artificial oyster reefs and A-Jacks.	3A
CWPPRA	West Lake Boudreaux Shoreline Protection and Marsh Creation	TE-46	SP	USFWS	TERREBONNE	145	N/A	2008	$17,893,813	The purpose of this project is to create and nourish about 200 acres of marsh along the western shoreline of Lake Boudreaux to protect the shoreline from erosion due to direct exposure to lake wave energy and to restore interior marsh lost to subsidence and saltwater intrusion.	3A
CWPPRA	Ship Shoal: Whiskey West Flank Restoration (Inactive)	TE-47	BH	EPA	TERREBONNE	500	N/A	Inactive	$1,599,810	The objective of this project is to rebuild dunes and a marsh platform on the west flank of Whiskey Island through the deposition of dredged material transported from Ship Shoal. This project would provide a barrier to reduce wave and tidal energy, thereby protecting mainland shoreline from continued erosion. The project was designated as Inactive by the CWPPRA Task Force in 2013.	3A
CWPPRA	Raccoon Island Shoreline Protection and Marsh Creation	TE-48	BH, MC	NRCS	TERREBONNE	16	N/A	2007, 2013	$21,364,793	The purpose of the project is to protect the existing southern shoreline of the island by constructing 8 more rock breakwaters. Phase B utilized dredged sediment from the Gulf of Mexico to create marsh on the land side of the island.	3A
CWPPRA	Avoca Island Diversion and Land Building (Deauthorized)	TE-49	FD, MC	USACE	ST MARY	N/A	N/A	Deauthorized	$19,157,200	Project features include a small diversion from Bayou Shaffer into Avoca Lake paired with marsh creation through dedicated dredging. The project was subsequently deauthorized by the CWPPRA Task Force.	3A
CWPPRA	Whiskey Island Back Barrier Marsh Creation	TE-50	BH	EPA	TERREBONNE	270	N/A	2010	$30,414,083	The goal of this project is to recreate a back barrier marsh platform on which the barrier island can migrate in order to increase the longevity of the previously restored and natural portions of the island. Heavy construction was complete in the fall of 2009. Project features included construction of 316 acres of back barrier marsh, 5,800 linear feet of tidal creeks, three 1-acre tidal ponds, and 13,000 linear feet of sand dune on the gulf side beach shore.	3A
CWPPRA	Madison Bay Marsh Creation and Terracing	TE-51	MC, TE	NMFS	TERREBONNE	1019	N/A	Pending	$39,821,438	The goals of this project are to create and nourish marsh and associated edge habitat and to promote conditions conducive to the growth of submerged aquatic vegetation. The proposed terraces will reduce the wave erosion of existing marshes along the fringes of Madison Bay. The project would benefit approximately 1,019 acres of fresh marsh and open water over the 20-year project life.	3A
CWPPRA	West Belle Pass Barrier Headland Restoration	TE-52	BH	NMFS	LAFOURCHE	389	N/A	2012	$39,422,093	This project involves the reestablishment of the West Belle headland by rebuilding a large portion of the beach, dune, and back barrier marsh that once existed. Approximately 9,300 feet of beach and dune were rebuilt.	3A
CWPPRA	Enhancement of Barrier Island Vegetation Demo	TE-53	VP	EPA	TERREBONNE	N/A	N/A	2011	$919,264	The goal of this project is to test several technologies or products to enhance the establishment and growth of key barrier island and salt marsh vegetation. The project focuses specifically on enhancing the establishment and growth of transplants of both dune vegetation [bitter panicum (Panicum amarum) and sea oats (Uniola paniculata)] and marsh vegetation [smooth cordgrass (Spartina alterniflora) and black mangrove (Avicennia germinans)].	3A
CWPPRA	Central Terrebonne Freshwater Enhancement	TE-66	MC, HR	NRCS	TERREBONNE	456	N/A	Pending	$17,890,120	The project will reestablish historic hydrologic and salinity conditions by reducing the artificial intrusion of Gulf marine waters via the Grand Pass into the Central Terrebonne marshes while enhancing the influence of the Atchafalaya River waters into the area.	3A
CWPPRA	Lost Lake Marsh Creation and Hydrologic Restoration	TE-72	HR, MC	USFWS	TERREBONNE	749	N/A	Pending	$35,873,728	Project goals include 1) restore an important feature of structural framework between Lake Pagie and Bayou Decade to prevent the coalescence of those two water bodies, 2) increase the delivery of fresh water, sediments, and nutrients into marshes north and west of Lost Lake, 3) reduce fetch in open water areas via construction of a terrace field.	3A, 3B
CWPPRA	Terrebonne Bay Marsh Creation - Nourishment	TE-83	MC	USFWS	TERREBONNE	353	N/A	Pending	$28,664,401	Project goals are to create 365 acres of intertidal marsh in shallow open water and nourish 299 acres of fragmented marsh within the project area reducing water exchange between Terrebonne Bay and interior lakes during tidal and small storm events and to reduce erosion along 16,000 ft of the northern Terrebonne Bay shoreline.	3A
CWPPRA	North Catfish Lake Marsh Creation	TE-112	MC	NRCS	LAFOURCHE	265	N/A	Pending	$30,325,016	Sediments will be hydraulically dredged from Catfish Lake and pumped via pipeline to create approximately 415 acres of marsh habitat and nourish an additional 251 acres of marsh habitat.	3A
CWPPRA	Island Road Marsh Creation & Nourishment	TE-117	MC	NOAA	TERREBONNE	312	N/A	Pending	$40,435,267	The proposed project's primary feature is 364 acres of created saline marsh and 19 acres of nourished saline marsh adjacent to Island Road. Sediment will be hydraulically pumped from a borrow source near Lake Felicity. Half of the newly constructed marsh (182 acres) will be planted following construction to stabilize the platform and reduce time for full vegetation. The project would result in an approximate net increase of 312 acres over the 20-year project life.	3A

ONGOING PROTECTION AND RESTORATION PROJECT SUMMARIES

CPRA Program	Name	State Project Number	Project Type	Federal Sponsor	Parish	Acres Benefited	Miles of Levee Improved	Construction Completion	Total Budget	Project Description	Planning Unit
CWPPRA	Vermilion River Cutoff Bank Protection	TV-03	SP	USACE	VERMILION	202	N/A	1996	$2,047,479	The project design includes protecting the east side of the Vermilion River Cutoff with rock to prevent further erosion; hardening the points on existing land bridges on the west bank of the Cutoff with rock; and constructing sediment trapping fences on the Vermilion Bay side to help stabilize and protect the land bridge from wave action in the Bay.	3B
CWPPRA	Cote Blanche Hydrologic Restoration	TV-04	HR	NRCS	ST MARY	2223	N/A	1998	$10,093,902	The primary objectives of the project are to reduce future shoreline loss from wave erosion, reduce excessive tidal fluctuations and rapid tidal exchange to prevent scouring of interior marsh, develop a hydrologic regime conducive to sediment and nutrient deposition, and to re-establish vegetation in eroded areas.	3B
CWPPRA	Boston Canal/Vermilion Bay Bank Protection	TV-09	SP	NRCS	VERMILION	378	N/A	1995	$1,043,748	The project involves stabilizing 15 miles of Vermilion Bay shoreline and preventing further regression of the Boston Canal banks. A strip of Vermilion Bay shoreline approximately 25 feet wide by 15 miles long was planted with single stems of Spartina alterniflora at 3 foot intervals.	3B
CWPPRA	Freshwater Bayou Bank Stabilization - Belle Isle Canal to Lock (Inactive)	TV-11B	SP	USACE	VERMILION	N/A	N/A	Inactive	$1,101,738	The project was intended to construct a rock dike to protect the east shoreline of Freshwater Bayou Canal. The project was subsequently designated as Inactive by the CWPPRA Task Force.	3B
CWPPRA	Little Vermilion Bay Sediment Trapping	TV-12	TE	NMFS	VERMILION, IBERIA	441	N/A	1999	$886,030	This project is designed to optimize the retention of sediment from the Atchafalaya River to create new marsh areas in Little Vermilion Bay. Dredged material was placed to create emergent marsh, thereby protecting the existing shoreline from wind-induced wave erosion.	3B
CWPPRA	Oaks/Avery Canal Hydrologic Restoration, Increment 1	TV-13A	HR	NRCS	VERMILION, IBERIA	160	N/A	2002	$2,925,216	The objective of the project is to improve hydrology, reduce tidal fluctuation to minimize marsh loss, and provide protection to critically eroding bankline and shoreline area.	3B
CWPPRA	Marsh Island Hydrologic Restoration	TV-14	HR	USACE	IBERIA	408	N/A	2001	$5,143,323	The objective of the project is to stabilize the northeastern shoreline of Marsh Island, including the northern shoreline of Lake Sand, and to help to restore the historical hydrology. The project included construction of nine plugs in oil and gas canals at the northeast end of Marsh Island, protection of the northeast shoreline with rock, and isolation of Lake Sand from Vermilion Bay with a rock dike.	3B
CWPPRA	Sediment Trapping at "The Jaws"	TV-15	TE, VP	NMFS	ST MARY	1999	N/A	2005	$1,653,792	The objective of the project is to induce sedimentation to create emergent vegetated wetlands. This was achieved by constructing wetland terraces, thereby reducing wave fetch. Distributary channels were dredged to deliver water and sediment to the project area.	3B
CWPPRA	Cheniere Au Tigre Sediment Trapping Demonstration	TV-16	SNT	NRCS	VERMILION	N/A	N/A	2001	$624,999	The objective of the project is to field test a conceptual device designed to trap sediment from the gulf tides, stabilize the on-going erosion on Cheniere au Tigre and build up portions of the coastline that have already eroded away.	3B
CWPPRA	Lake Portage Land Bridge	TV-17	SP	NRCS	VERMILION	1496	N/A	2004	$1,181,129	The objective of this project is to prevent the shoreline south of Lake Portage from breaching and creating another pass from Vermilion Bay to the Gulf. The project consists of backfilling a canal and armoring the beach with rock.	3B
CWPPRA	Four Mile Canal Terracing and Sediment Trapping	TV-18	TE	NMFS	IBERIA	52	N/A	2004	$2,667,186	This project includes construction and planting of terraces with smooth cordgrass (Spartina alterniflora) within Little White Lake and Little Vermilion Bay, along Four Mile Canal, to abate wave-induced shoreline erosion and facilitate sedimentation in the open water areas between the terraces.	3B
CWPPRA	Weeks Bay Marsh Creation and Shore Protection/ Commercial Canal Freshwater Redirection (Transferred)	TV-19	SP	USACE	IBERIA	N/A	N/A	Transferred	$30,227	The goal of the project is to create marsh to restore land-bridge separating Weeks Bay and GIWW. In 2013, the CWPPRA Task Force transferred implementation of the project to parish stakeholders.	3B
CWPPRA	Bayou Sale Shoreline Protection (Deauthorized)	TV-20	SP	NRCS	ST MARY	131	N/A	Deauthorized	$32,103,020	The goal of the project was to protect an eroding shoreline with approx 35,776 feet of rock dike shoreline protection. The project was deauthorized by the CWPPRA Task Force in 2014.	3B
CWPPRA	East Marsh Island Marsh Creation	TV-21	MC	NRCS	IBERIA	1159	N/A	2010	$21,215,936	The objective of the project was to create approximately 362 acres of sustainable marsh. The majority of the project area has been converted to open water, primarily because of hurricane Lili (2002). Through the use of approximately $5 million in unused construction funds, over 500 acres of additional marsh was created/nourished. The sediment for marsh creation was dredged from East Cote Blanche Bay and pumped a maximum of 6 miles.	3B
CWPPRA	Cole's Bayou Marsh Creation	TV-63	MC	NMFS	VERMILION	398	N/A	Pending	$27,881,223	The project consists of creating/nourishing marsh habitat and increasing freshwater and sediment inflow into interior wetlands by improving project area hydrology.	3B
FEDERAL	Lake Pontchartrain Hurricane Mitigation Project	HPL-MIT	SP	USACE	ST JOHN THE BAPTIST	600	N/A	1996	$2,222,892	This project consisted of a near-shore, segmented breakwater system in Lake Pontchartrain parallel to a five-mile reach of the Manchac Wildlife Management Area. The project specifically mitigated for damages resulting from construction of the Lake Pontchartrain Hurricane Protection project.	1
FEDERAL	MRGO Ecosystem Restoration	PO-65	VP, FD, MM, SP, MC	USACE	ST BERNARD, ORLEANS	53700	N/A	Pending	$2,900,000,000	This project investigates an suite of restoration measures that are collectively intended to restore some of the ecosystem damaged by construction of MRGO.	1
FEDERAL	Lost Lake Vegetation Project	TE-82	VP	USFWS	TERREBONNE	N/A	N/A	2011	$161,000	This coastal vegetative planting project is for erosion control and habitat restoration in the Lost Lake area of southwestern Terrebonne Parish.	3A
FEMA	Houma Navigation Canal Levee Maintenance	DSR-81557	SP	FEMA	TERREBONNE	4000	N/A	1995	$218,165	This FEMA project involved the repair of segments of the western bank of the Houma Navigation Canal damaged by Hurricane Andrew in 1992.	3A
FEMA	Wine Island	DSR-81558	DM	FEMA	TERREBONNE	25	N/A	1995	$253,579	This FEMA project was a cooperative venture with the USACE in the beneficial use of dredged material from a scheduled Houma Navigational Canal maintenance dredging project. The island was repaired to pre-Hurricane Andrew condition and planted with vegetation to stabilize the sediment.	3A
FEMA	Timbalier Island Repairs	DSR-81559	BH	FEMA	TERREBONNE	70	N/A	1996	$551,653	This FEMA project closed a major breach created by Hurricane Andrew and provided a 300-foot-wide elevated marsh platform to stabilize the island. Vegetation was also planted to stabilize the sand.	3A
FEMA	East Island Repair Protection	DSR-81560	DM	FEMA	TERREBONNE	25	N/A	1996	$633,179	This FEMA project constructed an elevated marsh platform in an area of a Terrebonne Parish project destroyed by Hurricane Andrew in 1992. Vegetation was also planted to stabilize the sand.	3A
FEMA	LaBranche Wetlands	DSR-81768	SP	FEMA	ST CHARLES	N/A	N/A	2000	$43,315	A 700-foot section of a Christmas tree brush fence was repaired. This project was damaged by Hurricane Georges, Hurricane Earl, and Tropical Storm Francis in 1998.	1
FEMA	Timbalier Island	DSR-81784	BH	FEMA	TERREBONNE	N/A	N/A	2000	$181,394	This FEMA project repaired sand fencing on Timbalier Island that was destroyed during a series of tropical storms and hurricanes in the fall of 1998.	3A
FEMA	Falgout Canal	DSR-81785	SP	FEMA	TERREBONNE	N/A	N/A	2000	$10,761	This FEMA project replaced flap gates on water control structures damaged during tropical storms and hurricanes in the fall of 1998. The installation of the new flapgate culverts was completed by Terrebonne Parish Consolidated Government.	3A
FEMA	East Island	DSR-81786	VP	FEMA	TERREBONNE	N/A	N/A	2000	$168,113	This FEMA project involved the planting of marsh vegetation on the dune and Lake Pelto shoreline of East Island. This area is part of a CWPPRA project damaged by a series of tropical storms and hurricanes in the fall of 1998. A total of 4,280 smooth cordgrass (Spartina alterniflora), 500 black mangrove (Avicennia germinans), and 6,147 roseau cane (Phragmites australis) plants were planted in April 2000.	3A
FEMA	Isle Dernieres (Whiskey Island)	DSR-81787	VP	FEMA	TERREBONNE	1259	N/A	2000	$581,566	This FEMA project involved the installation of sand fencing and the planting of vegetation to repair areas of Whiskey Island damaged by tropical storms and hurricanes during the fall of 1998. This area is part of a CWPPRA project area and CWPPRA funds were combined with the FEMA funds for repairs.	3A
FEMA	Marsh Island Repairs	PW-1646	MM	FEMA	IBERIA	N/A	N/A	2005	$885,861	This FEMA project consisted of repairs to areas of stone paving, stone dikes, and minor repair of navigation aids on the Marsh Island Hydrologic Restoration (TV-14) project damaged during Hurricane Lili in 2002. The project also included minor maintenance work paid for by CWPPRA.	3B
FEMA	Cote Blanche Repairs	PW-1906	HR	FEMA	ST MARY	N/A	N/A	2005	$64,092	This FEMA project consisted of repairs to areas of stone paving, stone dikes, and minor repair of navigation aids on the Cote Blanche Hydrologic Restoration (TV-04) project damaged during Hurricane Lili in 2002. The project also included minor maintenance work paid for by CWPPRA.	3B
FEMA	Cameron Creole Structures	PW-4257	HR	FEMA	CAMERON	N/A	N/A	2007	$325,700	This FEMA project consists of repairs to five structures of the Cameron-Creole Maintenance (CS-04a) project that were damaged by Hurricane Rita in 2005. These structures are located at Grand, Peconi, Lambert, No Name, and Mangrove Bayous.	4
FEMA	Holly Beach Sand Fencing	PW-4403	SP	FEMA	CAMERON	N/A	N/A	2006	$218,473	This FEMA project consists of the replacement of 46,000 linear feet of sand fencing on the Holly Beach Sand Management (CS-31) project that was destroyed by Hurricane Rita in 2005.	4
FEMA	Hopedale Hydrological Structure	PW-8743	HR	FEMA	ST BERNARD	N/A	N/A	2007	$64,900	This FEMA project consists of repairs to the water control structure of the Hopedale Hydrologic Restoration (PO-24) project that was damaged by Hurricane Katrina in 2005. Repairs were made to damaged fencing, railings, and displaced riprap, and a lost portable hydraulic actuator is being replaced.	1

ONGOING PROTECTION AND RESTORATION PROJECT SUMMARIES

CPRA Program	Name	State Project Number	Project Type	Federal Sponsor	Parish	Acres Benefited	Miles of Levee Improved	Construction Completion	Total Budget	Project Description	Planning Unit
FEMA	Lake Pontchartrain Debris Removal	N/A	N/A	N/A	JEFFERSON, ORLEANS, ST CHARLES, ST JOHN THE BAPTIST, ST TAMMANY,	N/A	N/A	2010	$10,000,000	The goal of this project was to remove debris from aproximately 758 square miles of Lake Pontchartrain.	1
FEMA	Montegut Wetlands	PW-1728	MM	FEMA	TERREBONNE	N/A	N/A	2005	$1,093,962	This FEMA project repaired damage to the Montegut Wetland (TE-01) project that occurred during Hurricane Lili in 2002. The project consisted of refurbishing and reconstructing 17,000 linear feet of an existing earthen levee using off-site borrow material.	3A
HSDRRS	West Bank and Vicinity	BA-66	HP	USACE	ST CHARLES, ORLEANS, JEFFERSON, PLAQUEMINES	N/A	71	Pending	$3,150,000,000	The project is currently designed to provide 100 Year protection levels to the project area through the construction of levees to the 2011 protection levels and T-Walls and other structures to the 2057 protection levels.	2
HSDRRS	New Orleans to Venice	BA-67	HP	USACE	PLAQUEMINES	N/A	58	Pending	$1,301,523,760	The NOV project consists of 24 areas of work covered by projects NOV 1-2, NOV 5-16, NOV-NF-W- 4 to 6, NF-02, and Taskforce Guardian (TFG) Continuing Projects P13- 15, P17, and P24 that includes the section of the Plaquemines Parish Hurricane Protection System.	1,2
HSDRRS	Grand Isle and Vicinity	BA-73	SP	USACE	JEFFERSON	N/A	Not Available	Pending	$25,000,000	The Grand Isle and Vicinity Hurricane Protection Project consists of a 7.5 mile vegetated sand dune extending the length of Grand Isle's gulf shore, a jetty to stabilize the western end of the island at Caminada Pass, and an offshore breakwater system.	2
HSDRRS	Storm-Proofing of Interior Pumping Stations	BA-74	FP	USACE	JEFFERSON, ORLEANS	N/A	N/A	Pending	$340,000,000	This project involves the installation of various improvement features to the interior pump stations of Orleans and Jefferson Parish under the Hurricane and Storm Damage Risk Reduction System (HSDRRS).	2
HSDRRS	HSDRRS Mitigation- WBV	BA-109	MC	USACE	JEFFERSON, LAFOURCHE	1318	N/A	Pending	$126,000,000	This USACE project involves the implementation of various restoration measures to mitigate wetland impacts associated with the construction of the West Bank and Vicinity (WBV) project.	2, 3A
HSDRRS	Risk Reduction- Barataria Basin Landbridge	BA-148	MC, HP	USACE	JEFFERSON	223	N/A	Pending	$10,100,000	This project is being led by USACE and is 100% federally funded with $10.1 Million allocated by the U.S. 4th Supplemental Appropriations as a Hurricane Risk Reduction project. It provides for about 101 acres of marsh creation and 122 acres of marsh nourishment on the south shore of the Pen.	2
HSDRRS	Previously Authorized Mitigation WBV	BA-154	MM, VP, PP	USACE	JEFFERSON, ST. CHARLES	1130	N/A	Pending	$11,000,000	This project is being led by USACE and is 100% federally funded with approximately $79 Million allocated. It provides for about 1,130 acres of mitigation, including: 1) acquisition, improvement, and management of approximately 128 acres of BLH wetland habitat adjacent to Bayou Segnette State Park, 2) acquisition of approximately 970 acres of high value wooded wetlands in St. Charles Parish, and 3) acquisition, improvement, and management of approximately 350 acres of high quality wooded lands in St. Charles Parish.	2
HSDRRS	Plaquemines TFU Mitigation - Braithwaite to Scarsdale - Big Mar	BA-156	MC	USACE	PLAQUEMINES	24	N/A	Pending	$2,800,000	This project is being led by USACE and is 100% federally funded with approximately $2.8 Million allocated. It provides for the creation of approximately 24 acres of Marsh. Additionally, Plaquemines Parish will be combining a neighboring local project of 16 acres of marsh creation to this project with supplemental funding for a total of 40 acres.	1
HSDRRS	New Orleans to Venice Mitigation - Plaquemines Non-Federal	BA-158	MC	USACE	PLAQUEMINES	342	N/A	Pending	$14,500,000	This project is being led by USACE and is 100% federally funded with approximately $14.5 Million allocated. It provides for about 180 acres of mitigation, which includes approximately 50 acres of BLH wet/dry combined, 50 acres of swamp, 60 acres of freshwater marsh, and 20 acres of brackish marsh.	2, 1
HSDRRS	New Orleans to Venice Mitigation - Federal	BA-159	MC	USACE	PLAQUEMINES	410	N/A	Pending	$30,000,000	This project is being led by USACE and is 100% federally funded with approximately $30 Million allocated. It provides for about 700 acres of mitigation, which includes approximately 130 acres of BLH wet/dry combined, 140 acres of intermediate marsh, 70 acres of freshwater marsh, 76 acres of brackish marsh, and 280 acres of saline marsh.	2, 1
HSDRRS	Risk Reduction Via Modification to the Caernarvon Freshwater Diversion	BS-03B	FD, SD, HP	USACE	PLAQUEMINES	65	N/A	Pending/On Hold	$10,100,000	This project is being led by USACE and is 100% federally funded with $10.1 Million allocated by the U.S. 4th Supplemental Appropriations as a Hurricane Risk Reduction project. It provides for redirecting water from the Caernarvon Diversion into the 40 Arpent Canal to enhance the movement of fresh, sediment-laden water into the marsh north of Lake Lery in order to halt and reverse marsh deterioration. This project was originally included as a shunt under CWWPRA BS-16 but removed to allow USACE to fund it as a marsh creation project.	1
HSDRRS	Lake Pontchartrain & Vicinity, Lake Borgne Surge Barrier LPV-IHNC-02	PO-55	HP	USACE	ST BERNARD, ORLEANS	N/A	2	2013	$1,134,000,000	This project involves the construction of a Hurricane Surge Barrier across the tip of Lake Borgne connecting the MRGO levees south of Bayou Bienvenue with the GIWW levees East of Michoud Canal with floodgates at Bayou Bienvenue and GIWW.	1
HSDRRS	SELA	PO-57	OT	USACE	JEFFERSON, ORLEANS	N/A	N/A	Pending	$1,170,974,586	This project consists of drainage and pump station projects within Jefferson Parish and Orleans Parish, on both the east bank and west bank of the Mississippi River.	1,2
HSDRRS	Permanent Closure of Canals and Pumps	PO-60	HP	USACE	ORLEANS, JEFFERSON	N/A	0.34	Pending	$614,800,000	This project, authorized under Public Law 109-234, involves the design and construction of a permanent protection system for the outfall canals along 17th Street, Orleans Avenue, and London Avenue and install pumps and closure structures at or near the lakefront.	1
HSDRRS	West Shore Lake Pontchartrain	PO-62	HP	USACE	ST JOHN THE BAPTIST, ST CHARLES, ST JAMES, ASCENSION	N/A	27	Pending	$898,584,586	This project involves the assessment of hurricane and storm reduction measures in a study area bounded by the Bonnet Carre Spillway to the east, The Mississippi River to the south, Lakes Pontchartrain and Maurepas to the north, and the St. James Parish/Ascension Parish line to the west.	1
HSDRRS	Lake Pontchartrain and Vicinity	PO-63	HP	USACE	ST CHARLES, JEFFERSON	N/A	128	2010	$3,852,000,000	Lake Pontchartrain and Vicinity (LPV) is the hurricane protection program that involves approximately 30 hurricane protection projects in East Jefferson and St. Charles Parishes.	1
HSDRRS	Lake Pontchartrain & Vicinity, Seabrook Lock LPV-IHNC-01	PO-64	HP	USACE	ORLEANS	N/A	0.5	2012	$157,156,414	This project consists of a gate closure structure across the Industrial Canal approximately 500 ft South of the Ted Hickey Bridge at Lake Pontchartrain to work in conjunction with the IHNC Borgne Surge Barrier.	1
HSDRRS	HSDRRS Mitigation- LPV	PO-121	MC	USACE	ST TAMMANY, ORLEANS	1089	N/A	Pending	$85,000,000	This USACE project involves the implementation of various restoration measures to mitigate wetland impacts associated with the construction of the Lake Pontchartrain and Vicinity (LPV) project.	1
HSDRRS	LPV Task Force Guardian Mitigation- Bayou Sauvage	PO-145	MM, VP	USACE	ORLEANS	58	N/A	Pending	$780,000	This project is being led by USACE and is 100% federally funded with approximately $2 Million allocated. This project is mitigating approximately 147 acres due to emergency levee work that utilized 2 borrow pits of about 57 acres. It provides for the elimination of non-native trees with spraying and mechanical clearing, and then the replanting of up to 89,000 trees and shrubs of native species, including butternuts, pecans, cypresses and oaks.	1
HSDRRS	Previously Authorized Mitigation LPV- Manchac	PO-146	MC, SP	USACE	ST JOHN THE BAPTIST	1329	N/A	Pending	$22,985,958	This project is being led by USACE and is 100% federally funded with approximately $21.3 Million allocated. It provides for containment dikes with rock and fill areas with dredge material (to match the CPRA Turtle Cove project success). The project is intended to create marsh and reduce erosion.	1
LOUISIANA COASTAL AREA	LCA Small Bayou Lafourche Reintroduction	BA-70	FD	USACE	ASSUMPTION, LAFOURCHE	N/A	N/A	Pending/On Hold	$133,500,000	The project will use a small diversion (less than 5000 cfs) to reintroduce flow from the Mississippi River into Bayou Lafourche. Project goals include providing freshwater, sediment and nutrients needed to reduce salinity, stimulating plant productivity, and reducing wetland loss between Bayous Lafourche and Terrebonne. Funds from the budget surplus of 2008 will be used for the state's cost-share requirement. *Construction cost taken from WRDA 2007 legislation.	3A
LOUISIANA COASTAL AREA	LCA Medium Diversion with Dedicated Dredging at Myrtle Grove	BA-71	FD	USACE	PLAQUEMINES	N/A	N/A	Pending/On Hold	$278,300,000	Authorized by WRDA 2007 as a sediment diversion between 2,500 and 15,000 cfs. Ongoing modeling effort to examine potential for modification of the WRDA authority for a larger sediment diversion to promote infilling of shallow open water areas through deposition and marsh expansion. *Fully funded Phase 2 cost taken from WRDA 2007 legislation.	2
LOUISIANA COASTAL AREA	LCA Modification of Davis Pond Diversion	BA-72	FD	USACE	ST CHARLES, JEFFERSON, PLAQUEMINES, LAFOURCHE	N/A	N/A	Pending/On Hold	$68,277,885	This modification project is authorized to study and design the modification of the structure and or outfall of the diversion to increase wetland restoration outputs within the Barataria Basin.	2

ONGOING PROTECTION AND RESTORATION PROJECT SUMMARIES

CPRA Program	Name	State Project Number	Project Type	Federal Sponsor	Parish	Acres Benefited	Miles of Levee Improved	Construction Completion	Total Budget	Project Description	Planning Unit
LOUISIANA COASTAL AREA	LCA Modification of Caernarvon Diversion	BS-19	FD	USACE	ST BERNARD, PLAQUEMINES	N/A	N/A	Pending/On Hold	$21,000,000	This modification project is authorized to study and design the modification of the diversion structure and/or outfall of the diversion to increase wetland restoration outputs south of Caernarvon, west of the Mississippi River.	1
LOUISIANA COASTAL AREA	LCA Medium Diversion at White's Ditch	BS-20	FD	USACE	PLAQUEMINES	N/A	N/A	Pending/On Hold	$126,686,400	A medium diversion from the Mississippi River into the central River aux Chenes area using a controlled structure to provide additional freshwater, nutrients, and fine sediment to the area between the Mississippi River and River aux Chenes ridges.	1
LOUISIANA COASTAL AREA	LCA Barataria Basin Barrier Shoreline - 2007	LA-10	MC, BH	USACE	JEFFERSON, PLAQUEMINES, LAFOURCHE	N/A	N/A	Pending/On Hold	$363,900,000	The purpose of this project is to provide beach/dune restoration and marsh creation on Caminada Headlands and Shell Island.	2
LOUISIANA COASTAL AREA	LCA Beneficial Use Feasibility Study	LA-19	DM	USACE	COASTWIDE	N/A	N/A	Pending/On Hold	$100,000,000	This Feasibility Study will examine increased beneficial use of dredged material from Federally authorized navigation channels.	COASTWIDE
LOUISIANA COASTAL AREA	LCA Mississippi River Delta Management Study	MR-16	OT	USACE	PLAQUEMINES	N/A	N/A	Pending/On Hold	$25,358,136	This project involves the development of a strategic framework for feasibility evaluation of improved management of fresh water, nutrients, and sediment resources of the Lower Mississippi River, from the Old River Control Structure to Head of Passes, to better sustain its Deltaic Plain.	1, 2
LOUISIANA COASTAL AREA	Small Diversion at Hope Canal	PO-67	FD	USACE	ST JOHN THE BAPTIST	N/A	N/A	Pending/On Hold	$150,000,000	This project evaluates a small freshwater diversion (less than 5000 cfs) to introduce sediment and nutrients into Maurepas Swamp in order to facilitate organic deposition, improve biological productivity, and prevent further deterioration of the swamp. The state is using surplus funds as part of the required cost-share for this project. *Fully funded Phase 2 cost provided si the the projected cost estimates.	1
LOUISIANA COASTAL AREA	LCA Small Diversion at Convent / Blind River	PO-68	FD	USACE	ST JAMES, ASCENSION	N/A	N/A	Pending/On Hold	$123,140,000	This project evaluates a small diversion of up to 5,000 cfs from the Mississippi River into the Blind River through a new control structure to introduce freshwater, sediments, and nutrients into the southeast portion of the Maurepas swamp.	1
LOUISIANA COASTAL AREA	LCA Amite River Diversion Canal Modification (Transferred)	PO-69	VP, HR	USACE	LIVINGSTON, ASCENSION	N/A	N/A	Transferred	$10,760,000	The goal of this project is to reestablish hydrologic connectivity between Maurepas Swamps and natural waterbodies. The project was transferred from the LCA program and is being implemented as State project PO-142.	1
LOUISIANA COASTAL AREA	LCA Maintain Land Bridge Between Caillou Lake and Gulf of Mexico	TE-67	MC	USACE	TERREBONNE	N/A	N/A	Pending/On Hold	$62,600,000	The goals of this project are to prevent connection between the gulf and Caillou Lake by constructing shoreline protection on the gulf and Grand Bayou du Large, marsh creation, and closure of newly opened channels and to minimize saltwater intrusion, prevent gulf shore erosion and increase freshwater influence on marshes in project area.	3A
LOUISIANA COASTAL AREA	LCA Point Au Fer	TE-68	SP	USACE	TERREBONNE	N/A	N/A	Pending/On Hold	$48,300,000	The goal of the project is to stabilize gulf shoreline of Point Au Fer Island to prevent direct connection between gulf and interior water bodies thereby preventing conversion of existing wetlands to marine habitat.	3A
LOUISIANA COASTAL AREA	LCA Terrebonne Basin Barrier Shoreline Restoration	TE-70	BH	USACE	TERREBONNE	N/A	N/A	Pending/On Hold	$133,300,000	This project provides for the restoration of the Timbalier and Isles Dernieres barrier island chains. This would simulate historical conditions by reducing the current number of breaches, enlarging (width and dune crest) of the Isles Dernieres (Raccoon Island, East Island, Trinity Island, Wine Island, and Whiskey Island),Timbalier Island, and East Timbalier Island.	3A
LOUISIANA COASTAL AREA	LCA Convey Atchafalaya River Water to Northern Terrebonne Marshes	TE-71	HR	USACE	TERREBONNE	N/A	N/A	Pending/On Hold	$349,995,500	The project would increase existing Atchafalaya River influence to central (Lake Boudreaux) and eastern (Grand Bayou) Terrebonne marshes via the Gulf Intracoastal Waterway (GIWW).	3A
NFWF	Caminada Headland Beach and Dune Restoration Increment 2	BA-143	BH	N/A	JEFFERSON, LAFOURCHE	532	N/A	Pending	$147,063,587	This project will restore and protect beach and dune habitat across the Caminada Headland through the direct placement of approximately 5.4 million cubic yards of sandy material from Ship Shoal (an offshore borrow source). The project footprint begins near Bayou Mareau and extends approximately 9 miles east towards Caminada Pass. A total of 489 acres of beach and dune habitat will be restored.	2
NFWF	Mid-Barataria Diversion	BA-153	SD	N/A	PLAQUEMINES	68,000	N/A	Pending	In Development	The MBSD is a large and complex civil works and restoration project. MBSD, when in operation, would transfer sediment-laden water from the Mississippi River through a self-contained channel roughly 1.5 miles long, before outfalling past the back levee into mid-Barataria Basin. The project will restore the natural deltaic and sedimentation processes along the Mississippi River near River Mile 60.7 just north of Ironton. The MBSD would be expected to build and nourish ten to thirty thousand acres of critical coastal wetlands over a 50 year period, being a top contributor to the 2012 Master Plan's goal of achieving no net loss of land in the future.	2
NFWF	Lower Barataria Diversion	BA-163	SD	N/A	PLAQUEMINES	In Development	N/A	Pending	In Development	The purpose of the project is to construct a sediment diversion to transport sediment from the Mississippi River into the Lower Barataria Basin to reestablish deltaic processes in order to build, sustain, and maintain wetlands. The project intends to build a sediment diversion in the lower Barataria Bay in the vicinity of Empire around 50,000 cfs capacity.	2
NFWF	Lower Breton Diversion	BS-23	SD	N/A	PLAQUEMINES	In Development	N/A	Pending	In Development	The purpose of the project is to construct a sediment diversion to transport sediment from the Mississippi River into the Lower Breton Sound Basin to reestablish deltaic processes in order to build, sustain, and maintain wetlands. The project intends to build a sediment diversion in the lower Breton Sound in the vicinity of Black Bay around 50,000 cfs capacity.	1
NFWF	Mid Breton Diversion	BS-25	DI	N/A	PLAQUEMINES	In Development	N/A	Pending	In Development	The purpose of this project is to evaluate a sediment diversion located in the vicinity of White Ditch around 75,000 cfs.	1
NFWF	Increase Atchafalaya Flow to Easter Terrebonne	TE-110	SD	N/A	TERREBONNE	In Development	N/A	Pending	In Development	The purpose of the project is to utilize freshwater and sediment from the Atchafalaya River in order to build, sustain, and maintain wetlands within the Terrebonne Basin. The project intends to dredge the GIWW east of the Atchafalaya and install a bypass structure at Bayou Boeuf Lock to increase freshwater and sediment flows from Atchafalaya River to Terrebonne marshes.	3A, 3B
NFWF	East Timbalier Island Restoration	TE-118	BH	N/A	LAFOURCHE	In Development	N/A	Pending	$74,000,000	This project will engineer and design a restoration of dune, supratidal, and intertidal habitat, such that the two presently remaining, severely degraded island segments will be reconnected and the historic island footpring re-established, which will improve bird and fish habitat, help protect oil and gas infrastructure, and provide hurricane surge protection for western Lafourche Parish.	3A
NRDA	Cheniere Ronquille Barrier Island Restoration	BA-76	BH, MC	NMFS	PLAQUEMINES	408	N/A	Pending	$38,883,175	The objective of this project is to prevent breaching of the barrier shoreline by restoring the dune and marsh platform. Project was designed under CWPPRA but will seek NRDA funds for construction.	2
NRDA	Shell Island West- NRDA	BA-111	BH	N/A	PLAQUEMINES	347	N/A	Pending	$110,524,280	This project aims to restore the integrity of the Shell Island West barrier island, reduce wave energies within the bay area, and reestablish productive habitat to Bastian Bay and the surrounding area. It will create 328 acres of marsh and 372 acres of dune and beach.	2
NRDA	Lake Hermitage Marsh Creation Increment 2	BA-141	MC	N/A	PLAQUEMINES	101	N/A	Pending	$139,000,000	This project will create 101 acres of marsh building off of the BA-42 Lake Hermitage CWPPRA project utilizing NRDA early restoration funds.	2
NRDA	NRDA Caillou Lake Headlands	TE-100	BH	N/A	TERREBONNE	1272	N/A	Pending	$111,309,000	This project aims to restore the Whiskey Island Barrier Island in order to retain its geomorphologic form and ecologic function. It will create 170 acres of marsh habitat and 917 acres of dune and beach habitat.	3a
OIL SPILL	Calcasieu Ship Channel Salinity Control Measures	CS-65	HR	N/A	CAMERON	In Development	N/A	Pending	In Development	The purpose of the project is to manage salinities being introduced into adjacent water bodies through the Calcasieu Ship Channel to reduce the rate of wetland loss in the surrounding wetlands. The project intends to construct features to prevent saltwater from entering wetlands adjacent to Calcasieu Lake through the Calcasieu Ship Channel. Measures would control salinity spikes and would be constructed in a manner that would allow for the continued functioning and ideally improvement and increased viability of the Calcasieu Ship Channel and the Port of Lake Charles.	4
OIL SPILL	Houma Navigation Canal Lock Complex	TE-113	HR	N/A	TERREBONNE	In Development	N/A	Pending	In Development	The Houma Navigation Canal Lock Complex (TE-113) is a part of the Morganza to the Gulf of Mexico Hurricane Protection Project. The structure will provide storm surge protection, increase freshwater distribution, and provide navigation along the Houma Navigation Canal. The initial step is to meet with stakeholders to discuss alternative design considerations for optimization of the HNC Lock Complex and determine a preferred design. The next step will be to conduct Engineering and Design of the preferred design.	3A
OTHER	Lake Pontchartrain Mitigation Project	HPL-MIT	SP	N/A	ST JOHN THE BAPTIST	600	N/A	1996	$2,222,892	This project consisted of a near-shore, segmented brakwater system in Lake Pontchartrain parallel to a five-mile reach of the Manchac Wildlife Management Area. The project specifically mitigated for damages resulting from construction of the Lake Pontchartrain Hurricane Protection project.	1
OTHER	Coastal Wetlands Public Outreach	N/A	OT	N/A	N/A	N/A	N/A	N/A	$400,000	The DNR Public Information Office provides a cariety of printed materials, educational videos and cds, fact sheets, website information, and a traveling wetlands exhibit for the public. Other department outreach efforts include participating in conferences, workshops, civic events, and school activities. Much of the agency's educational outreach is in partnership with the Breaux Act Task Force committees and the America's WETLAND campaign. As a result of workingw ith several noted authors, writers and reporters, the Public Information Office has contributed to the publishing of hundreds of national articles over the past years. To contact the Louisiana Department of Natural Resources' Public Information Office online----info@dnr.state.la.us.	COASTWIDE

ONGOING PROTECTION AND RESTORATION PROJECT SUMMARIES

CPRA Program	Name	State Project Number	Project Type	Federal Sponsor	Parish	Acres Benefited	Miles of Levee Improved	Construction Completion	Total Budget	Project Description	Planning Unit
SECTION 204/1135	MRGO, Breton Island Restoration, Mile -2.3 to 4.0	N/A	DM	USACE	PLAQUEMINES	26	N/A	1999	$1,050,000	This Section 204 project utilized material from maintenance dredging activities along the Mississippi River Gulf Outlet (MRGO) to repair Breton Island.	1
SECTION 204/1135	MRGO, Breton Island Berm, Mile -2 to -3	N/A	DM	USACE	PLAQUEMINES	N/A	N/A	1999	$150,000	This Section 204 project utilized material from maintenance dredging activities along the Mississippi River Gulf Outlet (MRGO) to nourish the littoral system that feeds Breton Island.	1
SECTION 204/1135	Mississippi River Gulf Outlet Berm, Mile 14 to 11	N/A	DM	USACE	ST BERNARD	50	N/A	1999	$350,000	This Section 204 project provided for the unconfined placement of 3,468,901 cubic yards of material into shallow water adjacent to the south jetty at about mile 15.3. The material was dredged from miles 14.0 to 11.0 of the Mississippi River Gulf Outlet (MRGO) navigation channel and placed to an elevation conducive to marsh vegetation establishment.	1
SECTION 204/1135	Mississippi River Gulf Outlet, Mile 14 to 12 (2002)	N/A	DM	USACE	ST BERNARD	50	N/A	2002	$290,000	The project involved pumping approximately 1.6 million cubic yards to create some 50 acres of marsh behind the MRGO jetty. This project was fast tracked due to the impact of Hurricane Lili and Tropical Storm Isidore in 2002.	1
SECTION 204/1135	Mississippi River Gulf Outlet, Mile 14 to 12 (2003)	N/A	DM	USACE	ST BERNARD	113	N/A	2003	$580,000	This project involved pumping 4.3 million cubic yards of sediments to create 113 acres of marsh. The material was dredged from miles 14.0 to 12.0 of the Mississippi River Gulf Outlet (MRGO) navigation channel and placed at an elevation conducive to marsh vegetation establishment.	1
SECTION 204/1135	Barataria Bay Waterway, Mile 31 to 24.5	N/A	DM	USACE	JEFFERSON	125	N/A	1999	$140,000	This Section 204 project utilized dredged material taken from a zone between miles 31 and 24.5 of the Barataria Bay Waterway (BBWW) to create marsh habitat.	2
SECTION 204/1135	Barataria Waterway Grand Terre Island Ph 2	N/A	DM	USACE	JEFFERSON	80	N/A	2002	$100,000	This Section 204 project provided for the beneficial placement of 500,000 cubic yards of material dredged from the Barataria Bay Waterway (BBWW) to create wetlands on the bay side of Grand Terre Island.	2
SECTION 204/1135	Calcasieu River and Pass (Sabine NWR) Phase I, II, III	N/A	DM	USACE	CAMERON	480	N/A	1999	$1,560,804	This Section 204 project provides for the disposal of dredged material removed from the area between mile 7.5 and 11.5 of the Calcasieu Ship Channel. A total of 4 million cubic yards of material was deposited in three phases within the Sabine National Wildlife refuge at an elevation conducive to marsh creation.	4
SECTION 204/1135	Wine Island Restoration	DSR-81558	DM	USACE	TERREBONNE	37	N/A	1991, 2003	$1,007,000	This Section 204/1135 project was a cooperative effort with the USACE and included the use of beneficial dredging from a scheduled Houma Navigational Canal maintenance dredging project to restore Wine Island.	3A
SECTION 204/1135	Barataria Bay Waterway, Grand Terre Island (Phase I)	N/A	DM	USACE	JEFFERSON	115	N/A	1996	$1,370,000	This Section 204 project provides for the beneficial placement of 500,000 cubic yards of dredged material from the Barataria Bay Waterway (BBWW) to create wetlands on Grand Terre Island.	2
SECTION 204/1135	Houma Navigation Canal, Wine Island Barrier Island Restoration	N/A	DM	USACE	TERREBONNE	50	N/A	2002	$1,000,000	This Section 204/1135 project investigated the feasibility of beneficially using the dredged material from the bar channel area in lieu of the Ocean Dredged Material Disposal Site. The project area is approximately 35 miles south of Houma, Louisiana at the mouth of the navigation channel in Terrebonne Bay. The construction schedule of this project was expedited due to the impact of Hurricane Lili and Tropical Storm Isadore.	3A
SECTION 204/1135	Brown Lake	N/A	MC, DM	USACE	CAMERON	315	N/A	1999	$1,132,435	The project will restore, to the extent possible, the natural hydrology of the area. A reduction in marsh loss and improved water conditions are expected to occur following project implementation. Long-term water management objectives will be directed towards maintaining a brackish marsh system.	4
STATE	Alexandria to the Gulf	AT-12	OT	N/A	RAPIDES	N/A	N/A	N/A	$970,000	This feasibility study is intended to evaluate options and alternates for providing urban drainage and flood reduction to the City of Alexandria and irrigation and flood reduction benefits to agricultural areas south and southeast of the city.	3B
STATE	Atchafalaya Basin Natural Resources Inventory and Assessment	AT-13	OT	N/A	ST MARY, IBERIA, ST MARTIN	N/A	N/A	N/A	$1,450,000	This project assesses and inventories the natural resources in the Atchafalaya Swamp.	3B
STATE	Naomi Siphon Diversion	BA-03	FD	N/A	PLAQUEMINES, JEFFERSON	8200	N/A	1992	$9,602,381	This project involved the construction of eight parallel siphons to divert water from the Mississippi River into the adjacent wetlands near Naomi, Louisiana. The maximum discharge of the siphons is 2,100 cfs.	2
STATE	West Pointe a la Hache Siphon Diversion	BA-04	FD	N/A	PLAQUEMINES	9200	N/A	1992	$9,845,693	This project involved the construction of eight parallel siphons to divert water from the Mississippi River into the adjacent wetlands on the west side of the river near Pointe a la Hache, Louisiana. The maximum discharge of the siphons is 2,100 cfs.	2
STATE	Queen Bess	BA-05B	SP, DM	N/A	JEFFERSON	145	N/A	1993	$1,475,176	The purpose of this project is to restore Queen Bess Island as a brown pelican (Pelecanus occidentalis) rookery. Dredged material was added to the island to increase its size in 1991, and a rock dike was installed around the perimeter of the original island in 1992 to armor the shoreline. The area has become vegetated and the number of pelican nests on the island increased after project construction.	2
STATE	Baie de Chactas	BA-05C	SP	N/A	ST CHARLES	130	N/A	1990	$175,000	Approximately 300,000 pounds of crushed oyster shell were placed on 7,400 feet of shoreline to restore the physical integrity of the marsh shoreline separating Lake Salvador and Baie de Chactas and Baie du Cabanage.	2
STATE	Lake Salvador Shoreline Protection Extension	BA-15-X1	SP	N/A	ST CHARLES	2035	N/A	2005	$4,840,344	The purpose of this project is to build a rock dike that will protect the marsh shoreline along the northeastern portion of Lake Salvador. The shoreline protection project was built on the land to avoid dredging in an area with cultural resources. This project was designed as an extension of the BA-15 Phase II CWPPRA project.	2
STATE	Bayou Segnette	BA-16	SP	N/A	JEFFERSON	88	N/A	1994, 1998	$1,373,151	This project involved the construction of a 6,800-foot limestone rock berm to reinforce the bank between Lake Salvador and Bayou Segnette and the installation of a timber piling fence across an abandoned access canal that connects the two water bodies. The fence is designed to reduce wave energies and erosive forces from the lake while still allowing exhange of sediment and aquatic organisms. Additional CWPPRA funds were appropriated for the design of this state-funded project. Maintenance of this project was necessary in the 1998-1999 fiscal year at a cost of $300,000.	2
STATE	Bayou Lafourche Freshwater Introduction	BA-25	FD	N/A	LAFOURCHE	Not Available	N/A	2011	$20,000,000	The Mississippi River diversion into Bayou Lafourche will restore coastal marshes and provide drinking water to over 300,000 residents. This project funded the dredging of the fist 6.2 miles of the bayou to accommodate a proposed increased flow of 1,000 cfs.	2
STATE	Plaquemines Parish - Southeast Louisiana Strategic Restoration	BA-46 SF	MC	N/A	PLAQUEMINES	N/A	N/A	N/A	$4,500,000	This project provided State funding to supplement a Plaqumines Parish dredging design project.	2
STATE	Jean Lafitte Tidal Protection	BA-75-1	HP	N/A	JEFFERSON	N/A	2.9	Pending	$15,730,000	This project will provide flood protection improvements by raising 15,840 linear feet of existing earthen levee. The project will also include approximately 7600 liner feet of concrete capped, steel sheet pile floodwall and flood gates to 8.0 NAVD.	2
STATE	Rosethorne Tidal Protection	BA-75-2	HP	N/A	JEFFERSON	N/A	5.3	Pending	$20,500,000	This project will provide flood protection improvements consisting of new earthen levees, approximately 8,010 linear feet of reinforced concrete floodwall and flood gates to 8.0 NAVD.	2
STATE	St. Charles West Bank Hurricane Protection Levee	BA-85	HP	N/A	ST CHARLES	N/A	9	Pending	$14,500,000	This project is a system of levees, drainage structures and pump stations being constructed to provide flood protection to the communities of St. Charles Parish on the West Bank of the Mississippi River.	2
STATE	Bayou LaFourche Salt Water Control Structure	BA-91	OT	N/A	LAFOURCHE	N/A	N/A	Pending	$4,890,000	This project will allow salinity levels in Bayou Lafourche to be more effectively managed through operation of the saltwater control structure.	2
STATE	Grand Isle East End Breakwater/ Jetty Design	BA-92	SP	N/A	JEFFERSON	N/A	N/A	N/A	$1,000,000	This project provided funding for the design of breakwaters/jetties work for Grand Isle State Park.	2

ONGOING PROTECTION AND RESTORATION PROJECT SUMMARIES

CPRA Program	Name	State Project Number	Project Type	Federal Sponsor	Parish	Acres Benefited	Miles of Levee Improved	Construction Completion	Total Budget	Project Description	Planning Unit
STATE	Donaldsonville to the Gulf of Mexico Hurricane Protection	BA-115	HP	USACE	ASSUMPTION, JEFFERSON, LAFOURCHE, ST JOHN THE BAPTIST, ST CHARLES, ST JAMES	N/A	Not Available	Pending/On Hold	$10,269,987	The purpose of the project is to reduce the risk of flooding from coastal storm surge and rainfall to prevent further economix losses and environmental damage in the Barataria Basin. The project is currently in its feasibility study phase, during which various alternatives to areducing storm surge are being examined, the adequacy of the existing drainage system is being assessed, and cultural, environmental, and recreational issues are being identified. The scope is to study various alternatives that will provide flood protection from tidal, hurricane surges, and heavy rainfall events, detemine the adequacy of the existing interior drainage systems and evaluate whether additional pumping capacity is required, and analyze recreational, cultural, and environmental needs.	2
STATE	Grand Isle-Fifi Island Breakwaters	BA-168	SP	N/A	JEFFERSON	Not Available	N/A	Pending	$6,000,000	The project will construct breakwaters along the southwestern portion of Fifi Island to reduce erosion on Fifi Island and the bay side of Grand Isle in order to protect commercial and residential infrastructure, wetlands, and fisheries. The project includes renourishment of 1,450 feet of existing breakwaters to an elevation of 8 feet and construction of 1,450 feet of new breakwaters to an elevation of 8 feet.	2
STATE	Kraemer Bayou Boeuf Levee Lift	BA-169	HP	N/A	LAFOURCHE	N/A	6	Pending	$1,000,000	This project will improve and raise approximately 33,000 feet of ring levees surrounding the Kraemer Community, a forced drainage area. The levees were not sufficient during Hurrican Isaac and overtopped.	2
STATE	Breach Management Plan	BA-170	BH	N/A	JEFFERSON, LAFOURCHE, PLAQUEMINES, TERREBONNE	N/A	N/A	N/A	$7,106,511	This project involves the development of a system-wide program for handling breaching that occurs within the barrier island and headland system of the Louisiana coastline. The project will extend eastward from Raccoon Island to Scofield Island within the Terrebonne and Barataria Basins. The project will include development of identification, classification, and prioritization methodologies with recommendations for breach prevention and response measures. The project goals are to reverse landloss, increase sustainability of restoration projects, reduce operations and maintenance costs, and improve ecosystems	2, 3A
STATE	Brannon Ditch	BD	SP	N/A	CALCASIEU	480	N/A	1991	$12,440	This project included the construction of wooden breakwater fences along 2,200 feet of the GIWW across from Brannon Ditch in Calcasieu Parish. This area has experienced shoreline erosion in excess of 25 feet/year. The breakwaters reduce wave action from boats and the current from Brannon Ditch during periods of high discharge. Smooth cordgrass (Spartina alterniflora) was also planted behind the breakwaters in order to enhance accretion and increase the stability of this site.	4
STATE	Brown Marsh	BRM-01	MC	N/A	LAFOURCHE	44	N/A	2002	$473,365	Project features consisted of a thin layer marsh creation/nourishment covering 44 acres in Lafourche Parish.	3A
STATE	Lake Lery Hydrologic Restoration	BS-06	FD	N/A	ST BERNARD	100	N/A	1997	$1,000,000	This project involved the construction of a pumping station located along the south-central edge of the St. Bernard Parish Ridge. This will discharge collected rainfall into the marsh north of Lake Lery and help prevent saltwater intrusion. The project was built in partnership with the Lake Borgne Basin Levee District and was completed in May of 1997.	1
STATE	Cheniere Au Tigre	CAT-01	SP	BOEMRE	VERMILION	40	N/A	2005	$1,802,271	The primary objective of this project is to protect the Cheniere au Tigre shoreline from additional erosion and protect local infrastructure. The project used segmented rock breakwater structures to help reduce the rate of shoreline erosion and promote sediment deposition along the beach north of the breakwater structures. The proposed series of segmented breakwaters was placed just east of the CWPPRA funded TV-16 project with up to nine additional structures. The structures cover approximately 2,800 linear feet with an approximate distance of 240 feet from the existing shoreline.	3B
STATE	Holly Beach	CS-01	SP	N/A	CAMERON	88	N/A	1991, 1992, 1993, 1994	$8,437,000	The objective of this project is to protect the marsh north of the Gulf of Mexico shoreline by expanding shoreline protection in phases from Ocean View, Louisiana to the east near Calcasieu Pass. A total of 34 breakwaters were constructed in 1991, 21 breakwaters were constructed in 1992, 21 breakwaters were constructed in 1993, and nine breakwaters were constructed in 1994 between Calcasieu Pass and Holly Beach, Louisiana. Eighteen of the existing breakwaters were raised and/or extended in 2003 utilizing marine mattress foundations and armor stone.	4
STATE	Rycade Canal Marsh Management	CS-02	MM	N/A	CAMERON	6575	N/A	1994	$2,005,857	The project was designed to stabilize salinities and water levels by reducing water flows through Rycade canal and Black Lake.	4
STATE	Cameron Creole Levee	CS-04a	HP	N/A	CAMERON	2602	N/A	2011	$12,600,000	The intent of this project is to provide for repair and maintenance of critical perimeter control structures around Calcasieu Lake and repairs to the Cameron-Creole Levee. These structures were severely damaged by Hurricane Rita.	4
STATE	Cameron-Creole Structure Automation	CS-04A-1	HR	N/A	CAMERON	N/A	N/A	1999	$700,000	This project consists of automating three existing water control structures along the east shore of Calcasieu Lake. These structures are remotely located and are difficult to manipulate. Automation of these structures will improve management capabilities in the Sabine National Wildlife Refuge.	4
STATE	Cameron Parish Shoreline Restoration	CS-33	OT	N/A	CAMERON	523	N/A	2014	$45,800,000	The project involved the re-establishment of dunes and beachead for 8.7 miles extending from the western Calcasieu River Jetty to the eastern-most breakwater at the Holly Beach – Constance Beach breakwater field.	4
STATE	Black Lake Supplemental Beneficial Use Disposal Area	CS-34	DM	USACE	CAMERON	440	N/A	2010	$21,034,329	The project beneficially used dredged sediment from maintenance dredging of the Calcasieu River Ship Channel from mile 14 thru mile 17 for delivery by sediment pipeline to the Black Lake/Marcantel Beneficial Use site.	4
STATE	Beneficial Use - Calcasieu Ship Channel (Black Lake)	CS-34 SF	DM	N/A	CAMERON	300	N/A	2010	$8,000,000	The purpose of this project is to create approximently 300 acres marsh through beneficial use of dredged material from the Calcasieu Ship Channel.	4
STATE	Blind Lake	CS-BL	SP	N/A	CAMERON	480	N/A	1989	$173,433	The purpose of this project was to prevent the Gulf Intracoastal Waterway from breaching into Blind Lake. The project consisted of placing 2,339 linear feet of limestone breakwater along the south side of the GIWW adjacent to Blind Lake. The second phase of this project included planting giant cutgrass (Zizaniopsis miliacea) along the inside of the breakwater to enhance the accretion process.	4
STATE	Sabine Terraces	CS-ST	SNT	N/A	CAMERON	110	N/A	1990	$190,047	A total of 128 earthen terraces were constructed in a checkerboard pattern and planted with smooth cordgrass (Spartina alterniflora) in open water areas of the Sabine National Wildlife Refuge. The project's objective was to increase the length of marsh-water interface, re-establish emergent marsh vegetation, reduce marsh fringe retreat by reducing wind-generated wave energy, increase overall primary productivity, and promote the deposition of suspended sediment.	4
STATE	Fisheries Habitat Restoration on West Grand Terre Island at Fort Livingston	FTL-01	SP	N/A	JEFFERSON	Not Available	N/A	2003	$2,076,816	This project consists of a rock dike built to protect the Gulf shoreline of West Grand Terre Island and Fort Livingston. This project was expedited because erosion rates along West Grand Terre rapidly accelerated due to the impacts of tropical storms in 2002.	2
STATE	Grand Isle Bay Side Breakwaters	GIBSB	SP	N/A	JEFFERSON	50	N/A	1995	$500,000	The purpose of this project was to reduce erosion on the bay side of Grand Isle. Fifteen 300-foot breakwaters were constructed on the back-bay side of Grand Isle.	2
STATE	Dedicated Dredging Program - Lake Salvador	LA-01a	MC, DM	N/A	ST CHARLES	28	N/A	1999	$342,276	Two sites were filled utilizing dredged material adjacent to Baie du Cabanage on the Salvador Wildlife Management Area. This project is part of the coastwide state Dedicated Dredging Program. The goal of this program is to use a small, mobile hydraulic dredge along inland waterways in Louisiana's coastal zone to deposit dredged material, and thereby nourish and/or rebuild threatened coastal marshes adjacent to the waterways.	2
STATE	Dedicated Dredging Program - Bayou Dupont	LA-01b	DM, MC	N/A	JEFFERSON	66	N/A	2000	$1,080,017	Three sites were filled utilizing dredged material adjacent to Bayou Dupont and The Pen. This project is part of the coastwide state Dedicated Dredging Program. The goal of this program is to use a small, mobile hydraulic dredge along inland waterways in Louisiana's coastal zone to deposit dredged material, and thereby nourish and/or rebuild threatened coastal marshes adjacent to the waterways.	2
STATE	Pass a Loutre Site - Dedicated Dredging Program	LA-01C	DM	N/A	PLAQUEMINES	26	N/A	2005	$450,000	The project created approximately 26 acres of sustainable freshwater marsh in the vicinity of Pass a Loutre, Louisiana. This project is part of the coastwide state Dedicated Dredging Program. The goal of this program is to use a small, mobile hydraulic dredge along inland waterways in Louisiana's coastal zone to deposit dredged material, and thereby nourish and/or rebuild threatened coastal marshes adjacent to the waterways.	1

ONGOING PROTECTION AND RESTORATION PROJECT SUMMARIES

CPRA Program	Name	State Project Number	Project Type	Federal Sponsor	Parish	Acres Benefited	Miles of Levee Improved	Construction Completion	Total Budget	Project Description	Planning Unit
STATE	Terrebonne School Board Site - Dedicated Dredging	LA-01D	DM	N/A	TERREBONNE	40	N/A	2006	$2,599,587	This project created approximately 40 acres of marsh just north of Lake DeCade along the western bank of Minors Canal. This project is part of the coastwide state Dedicated Dredging Program. The goal of this program is to use a small, mobile hydraulic dredge along inland waterways in Louisiana's coastal zone to deposit dredged material, and thereby nourish and/or rebuild threatened coastal marshes adjacent to the waterways.	3B
STATE	Grand Bayou Blue Site - Dedicated Dredging	LA-01E	DM, MC	N/A	LAFOURCHE	38	N/A	2007	$1,831,534	This project created approximately 38 acres of marsh near Catfish Lake using dredged material from Grand Bayou Blue. This project is part of the coastwide state Dedicated Dredging Program. The goal of this program is to use a small, mobile hydraulic dredge along inland waterways in Louisiana's coastal zone to deposit dredged material, and thereby nourish and/or rebuild threatened coastal marshes adjacent to the waterways.	3A
STATE	Dedicated Dredging - Point au Fer	LA-01F	DM	N/A	TERREBONNE	67	N/A	2007	$2,469,250	This project created approximately 67 acres of marsh on Point Au Fer Island adjacent to the CWPPRA TE-26 project using material dredged from Atchafalaya Bay. This project is part of the coastwide state Dedicated Dredging Program. The goal of this program is to use a small, mobile hydraulic dredge along inland waterways in Louisiana's coastal zone to deposit dredged material, and thereby nourish and/or rebuild threatened coastal marshes adjacent to the waterways.	3B
STATE	Southwest Coastal Louisiana Feasibility Study	LA-20	DM, TE, SP, MC	USACE	CALCASIEU, VERMILION,	In Development	In Development	Pending	$8,800,000	The project integrates ecosystem restoration and hurricane protection alternatives to address the coastal issues of Southwest Louisiana. It includes shoreline stabilization, marsh creation, salinity control, hurricane protection, and chenier restoration measures. Project was	4
STATE	Sabine Cycle 2	LA-21.1	DM	N/A	CAMERON	227	N/A	2010	$6,600,000	The purpose of this project is to cover the cost of marsh fill for the Sabine Refuge Marsh Creation, Cycle 2 Breaux Act project.	4
STATE	MAS1 - Management	LA-211	OT	N/A	COASTWIDE	N/A	N/A	N/A	$200,000	This project is to recognize activities undertaken by the State of Louisiana's Coastal Protection and Restoration Authority as part of the active process of managing multiple floodplain mapping projects for the coastal area of Louisiana.	3B
STATE	Pecan Island Freshwater Introduction	ME-01	FD	N/A	VERMILION	39000	N/A	1992	$487,152	The purpose of this project is to introduce freshwater from the north to counteract the saltwater intrusion from the south. The project consists of two water control structures and approximately 5,700 linear feet of earthen embankment needed to channel water from White Lake to the south marshes.	4
STATE	Marsh Creation Near Freshwater Bayou	ME-25 SF	MC	N/A	VERMILION	96	N/A	Pending	$5,700,000	The purpose of this project is to create 96 acres of marsh southeast of intersection of Acadiana Canal and Freshwater Bayou.	4
STATE	Small Sediment Diversions	MR-01B	SD	N/A	PLAQUEMINES	6719	N/A	1993	$1,010,500	This project involved the excavation of 13 crevasses through the levees of Mississippi River distributary channels within the Balize Delta in order to create self-sustaining emergent marsh.	1
STATE	North Grand Isle Breakwaters	NGI	SP	N/A	JEFFERSON	50	N/A	1995	$160,000	This project was authorized to construct segmented rock breakwaters on the bay side of Grand Isle to protect camps located between Caminada Bay and the west side of Louisiana Hwy 1. The Louisiana Department of Natural Resources (LDNR) contributed no construction funds and was involved in construction inspection only. The local Levee District supplied construction funds.	2
STATE	Violet Siphon Diversion	PO-01	FD	N/A	ST BERNARD	84	N/A	1992	$380,584	The purpose of this project is to return into operation the existing siphon, and to enlarge the size of the diversion so that more sediment and freshwater are available to offset marsh subsidence and saltwater intrusion.	1
STATE	Bayou Chevee	PO-02c	SP	N/A	ORLEANS	75	N/A	1994	$62,000	This project installed 2,000 feet of brush fences at the mouth of Bayou Chevee.	1
STATE	LaBranche Shoreline Stabilization and Canal Closure	PO-03	SP	N/A	ST CHARLES	1750	N/A	1987	$1,324,000	The purpose of this project is to restore the integrity of the shoreline, which separates Lake Pontchartrain from the western edge of the LaBranche wetlands.	1
STATE	LaBranche Shoreline Protection	PO-03B	SP	N/A	ST CHARLES	50	N/A	1996	$1,290,851	A rock breakwater was constructed along the Lake Pontchartrain shoreline, east of Bayou LaBranche, to protect the hydrologic boundary between the lake and the wetlands from being breached.	1
STATE	Central Wetlands Pump Outfall	PO-08	FD	N/A	ST BERNARD	300	N/A	1992	$250,000	This project is designed to provide freshwater, nutrients, and sediment associated with storm water runoff to an area of marsh near the Violet Siphon (PO-01).	1
STATE	Turtle Cove Shore Protection	PO-10	SP	N/A	ST JOHN THE BAPTIST	184	N/A	1994	$366,000	This project involved the construction of a 1,640 foot rock-filled gabion breakwater to maintain and protect the Lake Pontchartrain shoreline that shelters "The Prairie" (an 800-acre expanse of shallow, open water marsh bordered by organic freshwater marsh) from high wave energies and to encourage sediment deposition behind the gabion structure. An additional $195,600 was used for maintenance in 2001.	1
STATE	River Reintroduction into Maurepas Swamp	PO-29	FD	EPA	ST JOHN THE BAPTIST, ST JAMES	36121	N/A	Pending	$147,028,735	This project intends to restore a natural hydrologic regime and increase nutrient inputs in cypress-tupelo swamp tracts south of Lake Maurepas through the diversion of Mississippi River water into an area of degraded swamp. The project was originally proposed under CWPPRA but underwent subsequent development as a State-only project.	1
STATE	MRGO Closure Structure	PO-38SF	OT	USACE	ST BERNARD	2343	N/A	2009	$14,116,500	This project involves the installation of a closure structure in the Mississippi River Gulf Outlet (MRGO) to prevent the intrusion of saline Gulf waters into interior marsh via the channel. Project implementation was 100% Federal; the State acquired Real Estate interests for structure and is responsible for O&M activities.	1
STATE	St. Bernard Parish 40 Arpent Levee Repairs	PO-61	HP	N/A	ST BERNARD	N/A	Not Available	2011	$5,000,000	This project is in the Lake Borgne Levee District and provided funds for the raising of low reaches of the Forty Arpent Levee.	1
STATE	Biloxi Marsh	PO-72	SP	N/A	ST BERNARD	300	N/A	2014	$22,000,000	This project involved the construction of approximately four miles of shoreline protection along the southeastern shoreline of Lake Borgne.	1
STATE	North Shore Hurricane/Flood Protection and Restoration Plan	PO-74	OT	N/A	ST TAMMANY, TANGIPAHOA	N/A	N/A	N/A	$1,271,898	This project involves the development of a hurricane protection plan for the North Shore.	1
STATE	MRGO and Lake Borgne (Bayou Dupre Segment)	PO-93	SP	USACE	ST BERNARD	N/A	N/A	Pending	Not Available	This project will construct approximately 17,650 linear feet of stone foreshore dike along the southwest shoreline of Lake Borgne in the vicinity of Bayou Dupre. CPRA is acquiring portions of the two oyster leases that are impacted by this project.	1
STATE	MRGO and Lake Borgne (Bayou Bienvenue Segment)	PO-94	SP	USACE	ST BERNARD	N/A	N/A	Pending	Not Available	This project will construct approximately 14,440 linear feet of stone foreshore dike along the southwest shoreline of Lake Borgne in the vicinity of Bayou Bienvenue. CPRA is acquiring portions of the three oyster leases that are impacted by this project.	1
STATE	MRGO and Lake Borgne (Shell Beach Segment)	PO-95	SP	USACE	ST BERNARD	N/A	N/A	Pending	Not Available	This project will construct approximately 15,700 linear feet of stone foreshore dike along the southern shoreline of Lake Borgne, west of Shell Beach. CPRA is acquiring portions of the four oyster leases that are impacted by this project.	1
STATE	MAS2 - Outreach	PO-129	OT	N/A	JEFFERSON, ORLEANS,	N/A	N/A	N/A	$266,670	The objective of this project is to support the release by the Federal Emergency Management Agency (FEMA) of a Digital Flood Insurance Rate Map (DFIRM) and Flood Insurance Study (FIS) report, for the Greater New Orleans area.	1
STATE	Hydrologic Restoration of the Amite River Diversion Canal	PO-142	HR, VP	N/A	ASCENSION, LIVINGSTON	1600	N/A	Pending	$3,592,100	The purpose of this project is to reestablish hydrologic connectivity between Maurepas Swamps and natural waterbodies; plant vegetation in highly degraded swamp habitat.	1
STATE	Fontainebleau State Park Mitigation	PO-4355NP4	SP	N/A	ST TAMMANY	6	N/A	1999	$476,104	This project repaired a section of breached shoreline by depositing approximately 9,000 cubic yards of sand for a feeder berm on the easternmost end of Fontainebleau State Park.	1

ONGOING PROTECTION AND RESTORATION PROJECT SUMMARIES

CPRA Program	Name	State Project Number	Project Type	Federal Sponsor	Parish	Acres Benefited	Miles of Levee Improved	Construction Completion	Total Budget	Project Description	Planning Unit
STATE	Raccoon Island Repair	RI	DM	N/A	TERREBONNE	197	N/A	1994	$1,400,000	This project was a cooperative effort that utilized dredged material and vegetation to repair storm damage to Raccoon Island. Cooperators include the Louisiana Department of Natural Resources/Coastal Restoration Division, Louisiana Department of Wildlife and Fisheries/Fur and Refuge Division, Terrebonne Parish Consolidated Government, South Terrebonne Tidewater Management and Conservation District, T. Baker Smith & Son, Inc., Coastal Engineering & Environmental Consultants, Inc., and Bean Dredging. Federal grant money was also utilized for this project by LDWF and TPCG.	3A
STATE	Spoilbank along the GIWW	SBG	VP	N/A	TERREBONNE	1	N/A	1993	$9,400	This project planted 8,000 feet of spoilbank along the Gulf Intracoastal Waterway with black willow (Salix nigra) and bald cypress (Taxodium distichum) in an effort to reduce further bank erosion. The effectiveness of different types of nutria exclusion devices was also tested.	3A
STATE	Sabine Shellbank Stabilization	SSB	SP	N/A	CAMERON	10	N/A	1990	$66,000	The purpose of this project was to provide natural shoreline protection by using tidal currents to deposit clam shell on the shoreline. The benefits of this design over the use of permanent structures are lower cost, less disturbance of the natural habitat during construction, and allowing natural distribution of sediment and organisms without impediment.	4
STATE	Montegut Wetland	TE-01	MM	N/A	TERREBONNE	4200	N/A	1993	$5,537,036	The objective of the Montegut Wetland project is to protect and enhance 4,200 acres of degraded wetland habitat in the Pointe au Chein Wildlife Management Area southeast of Montegut, Louisiana.	3A
STATE	Falgout Canal Wetland	TE-02	MM	N/A	TERREBONNE	1300	N/A	1993, 1995	$1,560,000	The primary objectives of this project were to protect approximately 8,000 acres of marsh and cypress-tupelo swamp, reduce saltwater intrusion, and improve wildlife habitat by moderating water flux and tidal energy in the deteriorating wetland community.	3A
STATE	Bayou LaCache Wetland	TE-03	MM	N/A	TERREBONNE	4374	N/A	1991, 1996	$2,047,222	The goal of the project is to minimize the effects of saltwater intrusion by increasing the retention of freshwater derived from local runoff and establish control over saltwater flow into the project area.	3A
STATE	Pointe Aux Chien Hydrologic Restoration	TE-06	MM	N/A	TERREBONNE	4700	N/A	2006	$2,771,819	This cooperative coastal restoration project benefits approximately 4,700 acres of brackish-intermediate marsh within the Pointe Aux Chenes WMA managed by the Louisiana Department of Wildlife and Fisheries. Major funding for the project was provided by Ducks Unlimited and the North American Wetlands Conservation Act.	3A
STATE	Lower Petit Caillou	TE-07B	HR	N/A	TERREBONNE	3465	N/A	1995, 2007	$1,536,084	The objective of this project is to decrease saltwater intrusion into the project area by re-routing freshwater discharge from the Lashbrook pumping station through the project area prior to entry into Lake Boudreaux.	3A
STATE	Point Farm Refuge Planting	TE-14	VP	N/A	TERREBONNE	150	N/A	1995	$226,931	This project was developed to create bottomland hardwood forests in former farmlands within the Point Farm Refuge Area (PFRA). Approximately 108,900 seedlings of bitter pecan (Carya aquatica), water oak (Quercus nigra), and cow oak (Quercus michauxii) (with nutria exclusion devices) were planted on 300 acres of former farmland within the PFRA.	3A
STATE	Morganza to the Gulf	TE-64	HP	USACE	LAFOURCHE, TERREBONNE	N/A	18	Pending	$136,703,835	The project is currently being designed to provide protection to Terrebonne and portions of Lafourches parishes to provide protection against the project storm event. When complete, the project will consist of the construction of 66 miles of levees and t-walls, navigation structures, water control structures, and floodgates.	3A
STATE	Larose to Golden Meadow - Flood Protection	TE-65	HP	N/A	LAFOURCHE	N/A	23	Pending	$27,820,000	This project includes levee modifications and improvements. The project was allocated $15 million in '08 Surplus and $4.82 million in '09 Surplus.	2, 3A
STATE	Lost Lake Vegetation Project	TE-82	VP	N/A	TERREBONNE	N/A	N/A	2011	$161,000	This project consists of vegetative plantings on the shore and vicinity of Lost Lake.	3A, 3B
STATE	HNC Deepening Section 203 Study	TE-108	OT	USACE	TERREBONNE	N/A	N/A	Pending	TBD	Feasibility Study and EIS preparation for investigating deepening of the HNC to accommodate the current fleet of large vessels utilizing the navigation channel, as well as the increased need for support of the offshore oil and gas platform fabrication operations along the HNC. This project is being managed by DOTD with interim funding being provided by CPRA.	3A
STATE	Valentine to Larose	TE-111	HP	N/A	LAFOURCHE	N/A	0.38	2014	$1,000,000	This project provides flood protection improvements to the current flood protection system under local jurisdiction and consists of engineering, design, survey, repair, rehabilitation and possible construction of approximately 2,000 linear feet of levee along Bayou Lafourche, from the town of Valentine to the town of Larose.	2
STATE	St. Mary Backwater Flooding	TE-116	HP	N/A	ST MARY, TERREBONNE	N/A	1.72	Pending	$5,000,000	This project provides for flood protection improvement to the current Morgan City flood protection system by raising some of the existing levees to elevations as identified in the March 27, 2013 report by T. Baker Smith.	3B
STATE	Yellow Bayou	TV-02b	SP	N/A	ST MARY	126	N/A	1992	$194,500	The objectives of the project were to maintain the integrity of approximately 2,000 acres of interior marsh between Jackson Bayou and the British-American Canal and to stabilize 7,465 feet of the East Cote Blanche Bay shoreline. This was achieved by constructing an oyster shell berm adjacent to the water's edge to reduce shoreline erosion.	3B
STATE	Marsh Island Control Structures	TV-06	MM	N/A	IBERIA	643	N/A	1993	$453,500	The objectives of this project were to reduce the rate of land loss, revegetate shallow open-water areas, and increase waterfowl food within the water management units. Flap-gated/stoplog culverts and earthen canal plugs were installed in October of 1993 at the northeast and southeast units to control water exchange between the units and the surrounding water bodies. Within the management units, canal spoil banks were breached and ditches were constructed to facilitate water movement between interior marsh ponds.	3B
STATE	Freshwater Bayou Bank Protection	TV-11	SP	N/A	VERMILION	241	N/A	1994	$2,177,025	This project conserves vegetated wetlands by maintaining the physical integrity of marshes that separate Freshwater Bayou and interior water bodies. The dominant project feature consists of the construction of 24,000 linear feet of rock dike, extending north to the confluence of Belle Isle Bayou and Freshwater Bayou. The original project was constructed in 1994; however, repairs were made to the structure in 1996 and 2001.	3B
STATE	Oaks/Avery Structures	TV-13B	SP	N/A	VERMILION, IBERIA	160	N/A	2000	$3,107,735	This project enhanced the adjacent CWPPRA-funded TV-13a project by installing low-sill structures at the outfall of Oaks and Avery Canals to redirect more water flow through the portion of Bayou Petite Anse south of the GIWW.	3B
STATE	South Central Coastal Plan	TV-54	OT	USACE	ST MARY, IBERIA, ST MARTIN	In Development	In Development	Pending	$970,000	The South Central Coastal project was authorized $970,000 in 2009 surplus funds. The project team, which includes the Office of Coastal Protection and Restoration, St Mary Parish, St. Martin Parish and Iberia Parish, have initiated a data gathering effort. We anticipate completing this phase of the project by the end of 2010. This information will be used kick start the project with the US Army corps of Engineers. Once study authorization is obtained from the US Congress the project will progress to the feasibility phase.	3B
STATE	Morgan City/ St Mary Flood Protection	TV-55	HP	N/A	ST MARY	N/A	4.5	Pending	$3,870,000	This project will provide flood protection improvements by raising or improving over seven miles of the current levee system in the Morgan City area.	3B
STATE	Delcambre-Avery Canal (E&D)	TV-57	HP	N/A	IBERIA	N/A	N/A	N/A	$970,000	This project will design and engineer a flood control structure for the Delcambre-Avery Canal just south of the Intracoastal Waterway. When constructed this project will provide flood protection improvements by allowing the closure of the Delcambre-Avery Canal to reduce the impact of storm surge from Vermilion Bay.	3B
STATE	Quintana Canal/Cypremort Point	TV-4355NP1	SP	N/A	ST MARY	26	N/A	1998	$1,316,818	The project features approximately 3,650 linear feet of rock breakwaters along the Vermilion Bay shoreline and approximately 3,375 linear feet of foreshore rock dike along the Vermilion Bay/Quintana Canal intersect and the south bank of the Quintana Canal.	3B
STATE	Beneficial Use of I-10 Twin Span Debris (Deauthorized)	N/A	OT	N/A	ORLEANS	N/A	N/A	Deauthorized	$1,500,000	This project involves the use of Twin Span Debris as a form of shoreline protection for the Bayou Sauvage area.	1
STATE	East of Harvey Canal Interim Hurricane Protection - Phase I	N/A	HP	N/A	JEFFERSON	N/A	N/A	2009	$4,000,000	This project involved the installation of a combination of sheet pile and earthen flood protection, ultimately to an elevation of 10.0 feet along the east side of the Harvey Canal from the sector gate at Lapalco Boulevard to the existing levee at the west end, to provide interim hurricane protection during construction of the HSDRRS system.	2
STATE	Raising of LA 1 at Golden Meadow Floodgate and Completion of Golden Meadow Lock Structure	N/A	HP	N/A	LAFOURCHE	N/A	N/A	2010	$18,000,000	This project funded the raising of LA-1 to the 100-year flood elevation and to complete the lock in Bayou Lafourche, both critical elements of the Larose to Golden Meadow Hurricane Protection System. .	2
STATE	Raising of LA 23 at LaReussite	N/A	HP	N/A	PLAQUEMINES	N/A	N/A	2012	$1,200,000	This project involves raising LA Hw. 23 to the elevation of the adjoining La Reussite Siphon guide levees, where the highway crosses those guide levees. LDOTD performed the engineering in house and let contracts to complete the project.	2
STATE	Bay Welsh Disposal Site (Houma Navigation Canal)	N/A	DM	N/A	TERREBONNE	N/A	N/A	N/A	$300,000	The purpose of this project is to pre-clear the Bay Welsh disposal site adjacent to and east of the Houma Navigation Canal.	3A

ONGOING PROTECTION AND RESTORATION PROJECT SUMMARIES

CPRA Program	Name	State Project Number	Project Type	Federal Sponsor	Parish	Acres Benefited	Miles of Levee Improved	Construction Completion	Total Budget	Project Description	Planning Unit
STATE	Chabert Ring Levee	N/A	HP	N/A	TERREBONNE	N/A	Not Available	2008	$500,000	The project consists of the design and construction for a segment of levee around the Chabert Medical Center in Houma, Louisiana. The proposed ring levee will surround the Chabert Medical Center and will provide flood protection for the facility allowing operation during possible flood events.	3A
STATE	Wine Island	N/A	DM	N/A	TERREBONNE	N/A	N/A	2007	$2,000,000	The purpose of this project was to beneficially use material from the dredging of the houma Navigation Canal Bay Channel on Wine Island.	3A
STATE	NRCS Biomass Production Program	N/A	VP	NRCS	COASTWIDE	N/A	N/A	N/A	$80,000	The NRCS-LDNR/CRD Biomass Program is a multiyear programmatic initiative to accelerate the collection, testing, and release of important coastal wetland restoration plants. The Biomass Program began in 1999 in conjunction with the LDNR/CRD Small-Drdge Program with emphasis on plant performance and dedicated dredged sediment. This program is an important coastal restoration initiative that is advancing coastal wetland plant technology development.	COASTWIDE
STATE	NRCS Biomass Production Program	N/A	VP	NWRC	COASTWIDE	N/A	N/A	N/A	$1,552,100	This multi-year cooperative agreement funds the study of endemic wetland plant productivity, with the goal of identifying specific environmental conditions for maximum growth of a number of varieties (i.e., cultivars) within four plant species. The information obtained is intended to facilitate matching plant species and varieties to expected environmental conditions at restoration sites, thereby increasing the likelihood of successful revegetation efforts.	COASTWIDE
STATE	NRCS Vegetative Planting	N/A	VP	NRCS	COASTWIDE	609	N/A	N/A	$399,858	This is a coastal vegetative planting program that is implemented annually and involves the installation of vegetative plantings in selected areas where vegetation is needed.	COASTWIDE
WRDA	Davis Pond Freshwater Diversion	BA-01	FD	USACE	ST CHARLES	33000	N/A	2002	$120,000,000	The purpose of this project is to maintain and enhance the existing ecological framework of the Barataria Basin by providing freshwater, nutrients, and sediment. This will counter saltwater intrusion and help offset marsh subsidence. This project can divert up to 10,650 cfs.	2
WRDA	Caernarvon Freshwater Diversion	BS-08	FD	USACE	PLAQUEMINES	16000	N/A	1991	$24,818,800	This project diverts freshwater and its accompanying nutrients and sediment from the Mississippi River to coastal bays and marshes in Breton Sound for fish and wildlife enhancement. This project can divert up to 8,000 cubic feet per second.	1

Notes:

Program: CWPPRA=Coastal Wetlands Planning, Protection and Restoration Act; State=Restoration projects funded primarily by the State of Louisiana; SECTION 204/1135= Water Resource Development Act Sections 204 and 1135 beneficial use of dredged material projects; WRDA=Water Resources Development Act; LCA=Louisiana Coastal Area; FEMA= Federal Emergency Managment Agency funded projects; CIAP 2007= Coastal Impact Assistance Program; Surplus 07, Surplus 08, Surplus 09=State surplus-funded projects; Other=funded by programs not otherwise listed.

Agency/Sponsor: BOEMRE=Bureau or Ocean Energy Management, Regulation, and Enforcement; EPA=Environmental Protection Agency; FEMA=Federal Emergency Management Agency; HUD=Housing and Urban Development; NMFS=National Marine Fisheries Service; NRCS=Natural Resources Conservation Service; NWRC=National Wetlands Research Center; USFWS=U.S. Fish and Wildlife Service; USACE=U.S. Army Corps of Engineers; USGS=U.S. Geological Survey.

Project Type: BH=Barrier Island/Headland; DM=Beneficial Use of Dredged Material; FD=Freshwater Diversion; HP=Hurricane Protection; HR=Hydrologic Restoration; MC=Marsh Creation; MM=Marsh Management; OM=Outfall Management; OT=other project types (infrastructure, etc.); PP=Property Purchase; SD=Sediment Diversion; SNT=Sediment and Nutrient Trapping; SP=Shoreline Protection; TE=Terraces; VP=Vegetation Planting.

PPL: Priority Project List (as authorized each year by the CWPPRA Task Force).

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Appendix B
Three-Year Expenditure Projections

Table B-1. Coastal Wetlands Planning, Protection and Restoration Act (CWPPRA) Projected Expenditures

Project ID	Project Name	FY 2016	FY 2017	FY 2018	Project Total (FY 2016 - FY 2018)
Engineering and Design (P1)					
BA-0034-2	Hydrologic Restoration and Vegetative Planting in the Lac des Allemands Swamp[1]	$319,546	$0	$0	$319,546
BA-0125	Northwest Turtle Bay Marsh Creation[1]	$1,040,327	$658,399	$0	$1,698,725
BA-0171	Caminada Headlands Back Barrier Marsh Creation[1]	$1,438,125	$717,093	$0	$2,155,218
BA-0173	Bayou Grand Cheniere Marsh and Ridge Restoration[1]	$967,092	$967,092	$321,476	$2,255,660
BS-0024	Terracing and Marsh Creation South of Big Mar	$74,415	$0	$0	$74,415
CS-0049	Cameron-Creole Freshwater Introduction	$60,135	$0	$0	$60,135
CS-0053	Kelso Bayou Marsh Creation and Hydrologic Restoration	$65,945	$65,945	$14,655	$146,545
CS-0066	Cameron Meadows Marsh Creation and Terracing[1]	$1,200,629	$0	$0	$1,200,629
ME-0031	Freshwater Bayou Marsh Creation	$179,250	$30,939	$0	$210,189
ME-0032	South Grand Chenier Marsh Creation- Baker Tract	$248,678	$129,235	$0	$377,913
PO-0075	LaBranche East Marsh Creation	$93,809	$41,379	$0	$135,188
PO-0133	LaBranche Central Marsh Creation	$126,007	$126,007	$57,810	$309,824
TE-0066	Central Terrebonne Freshwater Enhancement	$142,119	$128,101	$0	$270,220
TE-0083	Terrebonne Bay Marsh Creation - Nourishment[1]	$752,473	$752,473	$252,201	$1,757,147
TE-0112	North Catfish Lake Marsh Creation	$146,331	$72,965	$0	$219,295
TE-0117	Island Road Marsh Creation and Nourishment[1]	$1,112,152	$755,654	$0	$1,867,806
TV-0063	Cole's Bayou Marsh Restoration[1]	$927,902	$0	$0	$927,902
Construction (P2)					
BA-0027-C	Barataria Basin Landbridge Shoreline Protection Phase 3-CU7 and CU8	$100,000	$0	$0	$100,000
BA-0048	Bayou Dupont Marsh and Ridge Creation[1]	$16,887,635	$0	$0	$16,887,635
BA-0068	Grand Liard Marsh and Ridge Restoration	$618,683	$0	$0	$618,683
BS-0016	South Lake Lery Shoreline and Marsh Restoration	$100,000	$0	$0	$100,000
CS-0028	Sabine Refuge Marsh Creation[2]	$1,462,683	$0	$0	$1,462,683
ME-0020	South Grand Chenier Marsh Creation Project	$2,453,970	$408,995	$0	$2,862,965
ME-0021	Grand Lake Shoreline Protection, Tebo Point	$1,346,088	$0	$0	$1,346,088
PO-0104	Bayou Bonfouca Marsh Creation	$2,177,723	$1,451,815	$0	$3,629,538
TE-0032-A	North Lake Boudreaux Basin Freshwater Introduction and Hydrologic Management[1]	$1,268,272	$15,472,913	$5,823,553	$22,564,738
TE-0072	Lost Lake Marsh Creation and Hydrologic Restoration[1]	$22,487,392	$1,725,060	$0	$24,212,453
Demonstration Projects (P1 & P2)					
LA-0016	Non-rock Alternatives to Shoreline Protection Demonstration	$3,000	$0	$0	$3,000
Subtotal		$57,800,381	$23,504,066	$6,469,694	$87,774,141
Adjustment for Outlying Years[3]		N/A	$36,495,934	$53,530,306	$90,026,240
Total Expenditures		$57,800,381	$60,000,000	$60,000,000	$177,800,381
Surplus Expenditures[4]		($618,683)	$0	$0	($618,683)
Federal Expenditures (see Note 1)		$41,667,195	$43,438,535	$42,908,859	$128,014,589
Trust Fund Expenditures		$15,514,503	$16,561,465	$17,091,141	$49,167,109

Notes:

1- Project is being led by CPRA; projected expenditures include Federal funds; any State expenditures beyond its 15% cost share will be reimbursed by the Federal partners.

2- Project is scheduled to complete construction at end of FY 2015; expenditures for FY 2016 are for project closeout activities.

3- Because CWPPRA projects compete for funding annually, CWPPRA expenditures as presented in Table B-1 (which include projected expenditures for approved projects only) do not adequately capture likely CWPPRA expenditures in outlying years. The State's estimated CWPPRA expenditures for FY 2017 - FY 2018 are therefore based on prior years' expenditures.

4- Used to partially fund construction of BA-0068 (see Table B-6).

Table B-2. Louisiana WRDA Projected Expenditures

Project ID	Project Name	FY 2016	FY 2017	FY 2018	Project Total (FY 2016 - FY 2018)
LCA Projects[1]					
BA-0071	Medium Diversion with Dedicated Dredging at Myrtle Grove[2]	$500,000	$0	$0	$500,000
BA-0072	Modification of Davis Pond Diversion[2]	$80,000	$0	$0	$80,000
BS-0019	Modification of Caernarvon Diversion[2]	$80,000	$0	$0	$80,000
BS-0020	Medium Diversion at White Ditch[2]	$525,000	$0	$0	$525,000
PO-0068	Small Diversion at Convent/ Blind River[2]	$525,000	$0	$0	$525,000
PO-0069	Amite River Diversion Canal Modification[2]	$525,000	$0	$0	$525,000
TE-0068	Stabilize Gulf Shoreline at Point Au Fer Island[2]	$80,000	$0	$0	$80,000
TE-0070	Terrebonne Basin Barrier Shoreline Restoration[2]	$525,000	$0	$0	$525,000
TE-0071	Convey Atchafalaya River Water to Northern Terrebonne Marshes[2]	$525,000	$0	$0	$525,000
Long term, Large Scale Studies					
MR-0016	Mississippi River Hydrodynamic and Delta Management Study[3]	$5,500,000	$4,500,000	$0	$10,000,000
Other Projects					
LA-0020	Southwest Coastal Louisiana[4]	$1,584,445	TBD	TBD	$1,584,445
Total Expenditures		**$10,449,445**	**$4,500,000**	**$0**	**$14,949,445**
Surplus Expenditures for WRDA (see Table B-7)		**($1,584,445)**	**$0**	**$0**	**($1,584,445)**
CIAP Expenditures for WRDA (see Table B-3)		**($3,088,288)**	**$0**	**$0**	**($3,088,288)**
MOEX Expenditures for WRDA (see Table B-5)		**($2,411,712)**	**($173,347)**	**$0**	**($2,585,059)**
Credit Applied		**(3,365,000)**	**(4,326,653)**	**0**	**($7,691,653)**
Trust Fund Expenditures for WRDA		**$0**	**$0**	**$0**	**$0**

Notes:

1- Expenditures represent payment of remaining portion of the State's cost share per the Federal sponsor

2- All or a portion of project expenditures will be covered with accrued credit

3- All or a portion of project expenditures are funded through CIAP (see Table B-3) and MOEX funds (see Table B-5).

4- Project expenditures are funded through Surplus revenues (see Table B-6); expenditures in future fiscal years will be covered with accrued credit o
Trust Fund dollars.

Table B-3. Coastal Impact Assistance Program (CIAP) Projected Expenditures[1]

Project ID	Project Name	FY 2016	FY 2017	FY 2018	Project Total (FY 2016 - FY 2018)
Restoration Projects					
AT-0015	Atchafalaya Long Distance Sediment Pipeline	$500,000	$0	$0	$500,000
BA-0043 (EB)	Mississippi River Long Distance Sediment Pipeline[2]	$7,750,000	$0	$0	$7,750,000
BA-0161	Mississippi River Reintroduction into Bayou Lafourche	$9,200,206	$4,587,500	$0	$13,787,706
BA-0162-CAT	Shoreline Protection Cat Island	$1,000,000	$0	$0	$1,000,000
LA-0012.3	Performance Evaluation - Freshwater Bayou	$100,000	$50,000	$0	$150,000
LA-0012.5	Performance Evaluation - Barrier Island Studies	$490,000	$0	$0	$490,000
LA-0013	Coastal Forest Conservation Initiative	$9,051,302	$0	$0	$9,051,302
MR-0016	Mississippi River Hydrodynamic and Delta Management Study[3]	$3,088,288	$0	$0	$3,088,288
MR-0016-SSPM	Mississippi River Delta Strategic Planning- SSPM Expansion	$11,702,944	$500,000	$0	$12,202,944
PO-0073	Central Wetlands Demonstration	$0	$0	$0	$0
PO-0073-1	Central Wetlands - Riverbend[4]	$300,000	$0	$0	$300,000
PO-0073-2	Central Wetlands - EBSTP to A2	$4,218,168	$0	$0	$4,218,168
PO-0073-3	Central Wetlands Demonstration Expansion	$4,010,000	$0		
PO-0148	Living Shoreline	$14,437,375	$9,400,000	$0	$23,837,375
TE-0063	Falgout Canal Freshwater Enhancement	$3,046,154	$253,846	$0	$3,300,000
Infrastructure Projects					
TV-0031	Acadiana Regional Airport	$220,382	$0	$0	$220,382
Total Expenditures		**$69,114,819**	**$14,791,346**	**$0**	**$79,896,165**

Notes:

1- Funding shown in table represents State CIAP expenditures only. Some projects have multiple funding sources (see other footnotes).

2- Project to receive supplemental funding from surplus funds (see Table B-6).

3- Project authorized through WRDA; CIAP funds used to supplement WRDA expenditures (see Table B-2).

4- FY 2016 expenditures are for post-construction vegetative plantings.

Table B-4. Community Development Block Grant (CDBG) Projected Expenditures

Project ID	Project Name	FY 2016	FY 2017	FY 2018	Project Total (FY 2016 - FY 2018)
BA-0082	Lafitte Area Levee Repair	$231,452	$0	$0	$231,452
BA-0083	Rosethorne Wetland Assimilation Project	$348,228	$0	$0	$348,228
BA-0084	Bayou Lafourche Freshwater District - Walter S. Lemann Memorial Pump Station Renovations	$0	$0	$0	$0
PO-0087	Madison Bulkhead Project[1]	$0	$0	$0	$0
PO-0151	St. Tammany Parish Watershed Management Study	$0	$0	$0	$0
TE-0078	Cut-Off/Pointe Aux Chene Levee	$5,882,054	$1,470,513	$0	$7,352,567
TV-0052-2	Franklin Floodgate Sinkable Barge and Pump Station (Phase 2)[1]	$366,748	$0	$0	$366,748
TV-0060	Front Ridge Chenier Terracing/Protection	$916,673	$0	$0	$916,673
TV-0067	Bayou Tigre Flood Control Project	$3,125,006	$2,083,338	$0	$5,208,344
Total Expenditures		**$10,870,161**	**$3,553,851**	**$0**	**$14,424,012**

Notes:

1- Project to receive supplemental funding from surplus funds (see Table B-6).

Table B-5. State-Only Project Expenditures (Non-Surplus)

Project ID	Project Name	FY 2016	FY 2017	FY 2018	Project Total (FY 2016 - FY 2018)
MOEX Projects					
MR-0016	Mississippi River Hydrodynamic and Delta Management Study[1,2]	$2,411,712	$173,347	$0	$2,585,059
PO-0142	Hydrologic Restoration of the Amite River Diversion Canal[3]	$815,000	$262,500	$1,409,400	$2,486,900
Capital Outlay Projects					
BA-0066	West Bank and Vicinity[1]	$599,885	$0	$0	$599,885
BA-0075-1	Jean Lafitte Tidal Protection[1]	$2,000,000			$2,000,000
TE-0064	Morganza to the Gulf[1]	$7,000,000	$0	$0	$7,000,000
LDOTD Interagency Transfer Projects					
TE-0108	HNC Deepening Section 203 Study	$100,000	$45,470	$0	$145,470
Projects with Trust Fund Expenditures					
BA-0074	Stormproofing of Interior Pumping Stations[4]	$0	$0	$0	$0
BA-0091	Bayou Lafourche Salt Water Control Structure	$0	$4,291,400	$0	$4,291,400
BA-0109	HSDRRS Mitigation- WBV[4]	$10,000	$10,000	$10,000	$30,000
BA-0154	Previously Authorized Mitigation WBV[4]	$10,000	$10,000	$10,000	$30,000
BA-0156	Plaquemines TFU Mitigation- Braithwaite to Scarsdale- Big Mar[4]	$21,000	$21,000	$21,000	$63,000
BA-0158	New Orleans to Venice Mitigation- Plaquemines Non-Fed[4]	$5,000	$5,000	$5,000	$15,000
BA-0159	New Orleans to Venice Mitigation- Fed[4]	$5,000	$5,000	$5,000	$15,000
PO-0057	SELA- Overall[4]	$10,000	$10,000	$10,000	$30,000
PO-0121	HSDRRS Mitigation- LPV[4]	$34,000	$34,000	$34,000	$102,000
PO-0145	LPV Task Force Guardian Mitigation- Bayou Sauvage[4]	$21,000	$21,000	$21,000	$63,000
PO-0146	LPV Mitigation Project, Manchac WMA Marsh Creation[4]	$20,000	$20,000	$20,000	$60,000
Total State Expenditures		**$13,062,597**	**$4,908,717**	**$1,545,400**	**$19,516,714**

Notes:

1- Project receiving supplemental funding from Surplus funds (see Table B-6).

2- Project authorized through WRDA; MOEX funds used to supplement WRDA expenditures (see Table B-2).

3- Projected expenditures in outlying years are for post-construction activities including site assessment, nutria control, and vegetative plantings.

4- Project is currently 100% Federal. Projected expenditures are for staff coordination with Federal project team members.

Table B-6. Surplus Projected Expenditures (2007, 2008, 2009)

Project ID	Project Name	FY 2016	FY 2017	FY 2018	Project Total (FY 2016 - FY 2018)
Project Surplus Expenditures					
BA-0025	Bayou Lafourche Freshwater Introduction[1]	$848,739	$0	$0	$848,739
BA-0043 (EB)	Mississippi River Long Distance Sediment Pipeline[2]	$33,883,233	$0	$0	$33,883,233
BA-0045	Caminada Headland Beach and Dune Restoration[2,3]	$763,513	$75,251	$45,236	$884,000
BA-0071	Medium Diversion with Dedicated Dredging at Myrtle Grove[4]	$2,623,791	$1,315,835	$0	$3,939,626
BA-0075-1	Jean Lafitte Tidal Protection	$12,773,916	$0	$0	$12,773,916
BA-0075-2	Rosethorne Tidal Protection	$12,021,000	$8,014,000	$0	$20,035,000
BA-0085	St. Charles West Bank Hurricane Levee Protection	$3,200,000	$3,200,000	$1,600,000	$8,000,000
BA-0115	Donaldsonville to the Gulf[5]	$1,297,133	$0	$0	$1,297,133
BA-0168	Grand Isle Fifi Island Breakwater	$6,000,000	$0	$0	$6,000,000
BA-0169	Kraemer/Bayou Boeuf Levee Lift	$1,000,000	$0	$0	$1,000,000
CS-0004	Cameron Creole Levee	$2,887,161	$0	$0	$2,887,161
LA-0020	Southwest Coastal Louisiana	$1,584,445	$0	$0	$1,584,445
PO-0061	Forty Arpent Levee[6]	$577,006	$577,006	$0	$1,154,011
PO-0062	West Shore Lake Pontchartrain Feasibility	$3,500,000	$0	$0	$3,500,000
PO-0063	Lake Pontchartrain and Vicinity	$27,916,873	$0	$0	$27,916,873
PO-0072	Biloxi Marsh	$2,749,256	$0	$0	$2,749,256
PO-0167	South Slidell Ring Levee	$1,000,000	$1,000,000	$0	$2,000,000
TE-0064	Morganza to the Gulf[7]	$16,000,000	$0	$0	$16,000,000
TE-0065-SP	Larose to Golden Meadow- Larose Sheetpile	$8,611,334	$0	$0	$8,611,334
TE-0113	Houma Navigation Canal Lock Complex	$9,000,000	$8,826,641	$0	$17,826,641
TE-0116	St. Mary Backwater Flooding	$927,164	$2,850,985	$1,221,851	$5,000,000
TV-0054	South Central Coastal Plan	$523,648	$0	$0	$523,648
TV-0055	Morgan City/ St Mary Flood Protection	$2,696,000	$674,000	$0	$3,370,000
TV-0057	Delcambre-Avery Canal (E&D)	$797,332	$0	$0	$797,332
TV-0075	Bayou Tigre Flood Control Complex	$4,125,963	$2,069,176	$0	$6,195,139
N/A	East of Harvey Canal	$161,399	$0	$0	$161,399
N/A	Southeast Louisiana Flood Protection/ LERRDS[8]	$21,639,596	$35,538,755	$20,876,851	$78,055,202
Programmatic and Non-Project Surplus Expenditures					
AT-0013	Atchafalaya Basin Natural Resources Inventory and Assessment	$302,784	$0	$0	$302,784
LA-0026	Rehabilitation and Repair of State Restoration Projects	$1,098,240	$0	$0	$1,098,240
LA-0027	Barrier Island Maintenance Program	$3,161,825	$0	$0	$3,161,825
N/A	Science, Technology, and Education	$6,214,469	$500,000	$0	$6,714,469
N/A	Coastal Wetlands Planning, Protection and Restoration Act (CWPPRA)[9]	$618,683	$0	$0	$618,683
LA-0025	Innovative Coast-Wide Initiatives	$6,646,025	$0	$0	$6,646,025
N/A	Beneficial Use	$4,000,000	$902,432	$0	$4,902,432
N/A	Emergency Reserve[10]	$9,705,028	$1,216,767	$0	$10,921,795
N/A	Innovative Programs	$0	$0	$0	$0
LA-0259	University Partnerships	$1,169,102	$0	$0	$1,169,102
N/A	Non-Structural Program Development[11]	$650,000	$1,500,000	$850,000	$3,000,000
LA-0265	Levee Engineering and Design Standards Development and Analysis	$3,500,000	$0	$0	$3,500,000
Total Expenditures		**$ 216,174,656**	**$ 68,260,848**	**$ 24,593,938**	**$ 309,029,442**

Notes:

1- Expenditures represent contingency funds to cover post-construction activities.

2- Project to receive supplemental funding from CIAP (see Table B-3).

3- Surplus funds include post-construction monitoring expenditures (see Table B-9).

4- Includes funding for Mid-Barataria Diversion (BA-153; see Table B-15).

Table B-7. CWPPRA Monitoring Projected Expenditures

Project No.	Project Name	FY 2016	FY 2017	FY 2018	Project Total (FY 2016 - FY 2018)
AT-0002	Atchafalaya Sediment Delivery	$ 40,236	$ 2,768	$ 2,768	$45,772
AT-0003	Big Island Mining	$ 40,236	$ 2,768	$ 2,768	$45,772
BA-0002	GIWW (Gulf Intracoastal Waterway) to Clovelly Hydrologic Restoration	$ 88,652	$ 54,627	$ 61,249	$204,528
BA-0037	Little Lake Shoreline Protection/Dedicated Dredging Near Round Lake	$ 16,698	$ 5,698	$ 5,698	$28,094
BA-0171	Caminada Headlands Back Barrier Marsh Creation	$ 62,305	$ 62,305	$ 62,305	$186,915
BA-0003-C	Naomi Outfall Management	$ 8,128	$ 18,814	$ 8,557	$35,499
BA-0020	Jonathan Davis Wetland Protection	$ 18,000	$ 2,768	$ 2,841	$23,609
BA-0027-C	Barataria Landbridge Shoreline Protection (Phase 3)	$ 25,000	$ 18,500	$ 2,841	$46,341
BA-0035	Chaland Pass to Grand Bayou	$ 2,698	$ 12,500	$ 2,841	$18,039
BA-0036	Dedicated Dredging on the Barataria Basin Landbridge	$ 77,264	$ 15,000	$ 2,841	$95,105
BA-0038	Barataria Barrier Island Complex Project: Pelican Island and Pass La Mer to Chaland Pass Restoration	$ 31,500	$ 90,000	$ 2,841	$124,341
BA-0039	Mississippi River Sediment Delivery (Bayou Dupont)	$ 19,505	$ 4,500	$ 4,616	$28,621
BA-0042	Lake Hermitage Marsh Creation	$ 37,106	$ 2,768	$ 35,502	$75,376
BA-0048	Bayou Dupont Marsh and Ridge Creation	$ 2,698	$ 50,738	$ 2,840	$56,276
BA-0068	Grand Liard Marsh and Ridge Restoration	$ 97,256	$ 13,080	$ 87,106	$197,441
BS-0003-A	Caernarvon Diversion Outfall Management	$ 2,698	$ 29,373	$ 88,804	$120,875
BS-0011	Delta Management at Fort St. Philip	$ 2,698	$ 30,500	$ 2,841	$36,039
BS-0016	South Lake Lery Shoreline and Marsh Restoration	$ 24,064	$ 2,768	$ 10,433	$37,265
CS-0017	Cameron Creole Plugs	$ 15,000	$ 15,000		$30,000
CS-0020	East Mud Lake Marsh Management	$ 67,000	$ -	$ -	$67,000
CS-0021	Highway 384 Hydrologic Restoration	$ 25,000	$ 3,000	$ -	$28,000
CS-0022	Clear Marais Bank Protection	$ 5,000	$ 18,000	$ -	$23,000
CS-0023	Replace Sabine Refuge Water Control Structures at Headquarters Canal, West Cove Canal, and Hog Island Gully	$ 10,000	$ 27,500	$ -	$37,500
CS-0024	Perry Ridge Shore Protection	$ -	$ 7,500	$ 18,000	$25,500
CS-0027	Black Bayou Hydrologic Restoration	$ 36,000	$ 12,000	$ 20,000	$68,000
CS-0028-3	Sabine Refuge Marsh Creation, Increment 3	$ -	$ 3,000	$ 50,000	$53,000
CS-0028	Sabine Refuge Marsh Creation, Increment 4	$ 45,000	$ 15,000	$ 35,000	$95,000
CS-0029	Black Bayou Culverts Hydrologic Restoration	$ 20,000	$ 25,000	$ 25,000	$70,000
CS-0030	GIWW - Perry Ridge West Bank Stabilization	$ 12,000	$ 18,000		$30,000
CS-0032	East Sabine Lake Hydrologic Restoration	$ 45,000	$ 5,000	$ 5,000	$55,000
CS-0049	Cameron-Creole Freshwater Introduction - Vegetative Plantings	$ -	$ 25,000	$ 25,000	$50,000
CS-0053	Kelso Bayou Marsh Creation	$ 45,000	$ 25,000	$ 25,000	$95,000
CS-0054	Cameron-Creole Watershed Grand Bayou Marsh Creation	$ -	$ 65,000	$ 50,000	$115,000
CS-0059	Oyster Bayou Marsh Creation & Terracing	$ 45,000	$ 65,000	$ 45,000	$155,000
LA-0008	Bioengineered Oyster Reef Demonstration	$ 98,000	$ 101,000	$ 18,000	$217,000
LA-0016	Non-Rock Alternatives for Shoreline Protection Demonstration Project	$ 270,000	$ 96,000	$ 18,000	$384,000
LA-0039	Coastwide Plantings Program	$ 65,000	$ 82,000	$ 70,000	$217,000
LA-0003-B	Coastwide Nutria Control Plan	$ 145,000	$ 150,000	$ 150,000	$445,000
ME-0004	Freshwater Bayou Wetland (Phases 1 & 2)		$ 3,000	$ 25,000	$28,000
ME-0011	Humble Canal Hydrologic Restoration	$ 15,000	$ 30,000	$ 15,000	$60,000
ME-0013	Freshwater Bayou Bank Stabilization	$ 15,000	$ -	$ -	$15,000
ME-0014	Pecan Island Terracing	$ -	$ 3,000	$ 30,000	$33,000
ME-0016	Freshwater Introduction South of Highway 82	$ 25,000	$ 12,000	$ 12,000	$49,000
ME-0018	Rockefeller Refuge Gulf Shoreline Stabilization	$ -	$ 10,000	$ 25,000	$35,000
ME-0019	Grand-White Lakes Landbridge Protection	$ 20,000	$ 3,000	$ -	$23,000
ME-0020	South Grand Chenier Hydrologic Restoration Project	$ 45,000	$ 25,000	$ 25,000	$95,000
ME-0022	South White Lake Shoreline Protection	$ -	$ 15,000	$ 15,000	$30,000
ME-0031	Freshwater Bayou Marsh Creation	$ -	$ 25,000	$ 25,000	$50,000
MR-0003	West Bay Sediment Diversion	$ 12,512	$ 2,768	$ 217,135	$232,415
MR-0006	Channel Armor Gap Crevasse	$ 2,698	$ 95,008	$ 12,000	$109,706
MR-0009	Delta-Wide Crevasses	$ -	$ 2,768	$ 172,731	$175,499
PO-0006	Fritchie Marsh Restoration	$ 18,000	$ 12,000	$ 2,841	$32,841
PO-0104	Bayou Bonfouca Marsh Creation	$ 18,889	$ 2,768	$ 12,000	$33,657
PO-0016	Bayou Sauvage National Wildlife Refuge Hydrologic Restoration, Phase 1	$ 12,000	$ 2,769	$ 2,841	$17,610
PO-0018	Bayou Sauvage National Wildlife Refuge Hydrologic Restoration, Phase 2	$ 2,698	$ 12,000	$ 2,841	$17,539
PO-0022	Bayou Chevee Shoreline Protection	$ 2,698	$ 11,426	$ 12,000	$26,124
PO-0024	Hopedale Hydrologic Restoration	$ 14,000	$ 14,500	$ 2,841	$31,341
PO-0033	Goose Point/Point Platte Marsh Creation	$ 2,698	$ 2,768	$ 2,841	$8,307
TE-0020	Isle Dernieres Restoration East Island	$ 10,698	$ 32,238	$ 2,768	$45,704
TE-0022	Point Au Fer Canal Plugs	$ 3,250	$ 2,768	$ 2,768	$8,786
TE-0023	West Belle Pass Headland Restoration	$ 51,231	$ 2,768	$ 2,768	$56,767
TE-0026	Lake Chapeau Sediment Input and Hydrologic Restoration, Point Au Fer Island	$ 101,235	$ 75,253	$ 31,268	$207,756
TE-0028	Brady Canaly Hydrologic Restoration	$ 51,231	$ 101,368	$ 2,768	$155,367
TE-0032-A	North Lake Boudreaux Basin Freshwater Introduction and Hydrologic Management	$ 5,698	$ 5,698	$ 5,698	$17,094
TE-0034	Penchant Basin Natural Resources Plan, Increment 1	$ 51,231	$ 11,253	$ 11,253	$73,737
TE-0037	New Cut Dune/Marsh Restoration	$ 16,698	$ 42,365	$ 2,768	$61,831
TE-0040	Timbalier Island Dune/Marsh Restoration	$ 10,698	$ 31,268	$ 2,768	$44,734
TE-0044	North Lake Mechant Landbridge Restoration	$ 5,698	$ 5,698	$ 5,698	$17,094
TE-0045	Terrebonne Bay Shore Protection Demonstration	$ 62,305	$ 2,768	$ 2,768	$67,841
TE-0046	West Lake Boudreaux Shoreline Protection and Marsh Creation	$ 5,698	$ 2,768	$ 2,768	$11,234
TE-0048	Raccoon Island Shoreline Protection/Marsh Creation	$ 41,986	$ 45,368	$ 6,258	$93,612
TE-0050	Whiskey Island Back Barrier Marsh Creation	$ 30,598	$ 96,062	$ 15,129	$141,789
TE-0052	West Belle Pass Barrier Headland Restoration	$ 10,250	$ 12,908	$ 14,478	$37,636

Table B-7. CWPPRA Monitoring Projected Expenditures

Project No.	Project Name	FY 2016	FY 2017	FY 2018	Project Total (FY 2016 - FY 2018)
TE-0072	Lost Lake Marsh Creation and Hydrologic Restoration	$ 62,305	$ 62,305	$ 5,698	$130,308
TV-0003	Vermilion River Cutoff Bank Protection	$ 25,000	$ 3,000	$ 18,000	$46,000
TV-0004	Cote Blanche Hydrologic Restoration	$ 5,000	$ 8,500	$ 23,000	$36,500
TV-0012	Little Vermilion Bay Sediment Trapping	$ 5,000	$ 15,000	$ -	$20,000
TV-0013-A	Oaks/Avery Canal Hydrologic Restoration, Increment 1	$ 25,000	$ 3,000	$ 18,000	$46,000
TV-0014	Marsh Island Hydrologic Restoration	$ 5,000	$ 6,000	$ 18,000	$29,000
TV-0015	Sediment Trapping at "The Jaws"	$ 18,000	$ 20,000	$ 18,000	$56,000
TV-0018	Four Mile Canal Terracing and Sediment Trapping	$ -	$ 20,000	$ 18,000	$38,000
TV-0021	East Marsh Island Marsh Creation	$ 50,000	$ 5,000	$ 5,000	$60,000
CRMS	Coastwide Reference Monitoring System[1]	$ 10,000,000	$ 9,439,266	$ 10,197,109	$29,636,375
	Total Expenditures	**$12,404,745**	**$11,514,871**	**$11,988,496**	**$35,908,112**
	Federal CWPPRA Monitoring Expenditures	**$10,544,033**	**$9,787,640**	**$10,190,221**	**$30,521,895**
	Surplus CWPPRA Monitoring Expenditures	**$1,500,000**	**$1,415,890**	**$1,529,566**	**$4,445,456**
	Trust Fund CWPPRA Monitoring Expenditures	**$360,712**	**$311,341**	**$268,708**	**$940,761**

Notes:

1- State expenditures funded with Surplus funds (see Table B-6).

Table B-8. Projected Expenditures for Monitoring of WRDA Projects

Project ID	Project Name	FY 2016	FY 2017	FY 2018	Project Total (FY 2016 - FY 2018)
BA-0001	Davis Pond Freshwater Diversion	$525,432	$562,213	$601,567	$138,502
BS-0008	Caernarvon Freshwater Diversion	$415,168	$444,229	$475,325	$91,522
	Total Expenditures	**$940,600**	**$1,006,442**	**$1,076,892**	**$3,023,934**
	Federal WRDA Monitoring Expenditures	**$705,450**	**$754,832**	**$807,669**	**$2,267,951**
	State WRDA Monitoring Expenditures	**$235,150**	**$251,611**	**$269,223**	**$755,984**

Table B-9. Projected Expenditures for Monitoring of Other Projects

Project ID	Project Name	FY 2016	FY 2017	FY 2018	Project Total (FY 2016 - FY 2018)
Berm to Barrier Projects[1]					
BA-0040	Riverine Sand Mining/Scofield Island Restoration	$ 96,846	$ 30,164	$ 96,846	$223,857
BA-0110	Shell Island East	$ 2,698	$ 74,447	$ 2,841	$79,986
NRDA Projects					
BA-0111	Shell Island West	$ 2,698	$ 2,769	$ 2,841	$8,308
Proposed RESTORE Projects					
PO-0029	River Reintroduction into Maurepas Swamp[2]	$5,000	$5,000	$5,000	$15,000
Surplus Projects[3]					
BA-0045	Caminada Headland Restoration	$62,589	$75,251	$45,236	$183,076
USACE Mitigation Projects					
BA-0109	HSDRRS Mitigation - WBV	$ -	$ -	$ 5,263	$5,263
BA-0154	Previously Authorized Mitigation - WBV	$ -	$ 5,130	$ 5,263	$10,393
BA-0158	New Orleans to Venice Mitigation - Plaquemines Non-Federal	$ -	$ -	$ 5,263	$5,263
BA-0159	New Orleans to Venice Mitigation - Federal	$ -	$ -	$ 5,263	$5,263
PO-0038SF	MRGO Closure Structure	$ 5,000	$ 5,130	$ 5,263	$15,393
PO-0093	MRGO - Lake Borgne -Bayou Dupre Segment	$ 5,000	$ 5,130	$ 5,263	$15,393
PO-0094	MRGO - Lake Borgne -Bayou Bienvenue Segment	$ 5,000	$ 5,130	$ 5,263	$15,393
PO-0095	MRGO - Lake Borgne -Shell Beach Segment	$ 5,000	$ 5,130	$ 5,263	$15,393
PO-0121	HSDRRS Mitigation - LPV	$ 10,000	$ 20,000	$ 20,000	$50,000
PO-0145	LPV Task Force Guardian Mitigation - Bayou Sauvage	$ 20,000	$ 20,000	$ 20,000	$60,000
PO-0146	LPV Mitigation Project, Manchac WMA Marsh Creation	$ 55,000	$ 20,000	$ 20,000	$95,000
State-Only Projects					
CS-0002	Rycade Canal	$10,000	$0	$0	$10,000
PO-0142	Hydrologic Restoration of the Amite River Diversion Canal	$67,842	$29,850	$46,394	$144,086
	Total Expenditures	**$352,673**	**$303,132**	**$301,262**	**$957,067**
	Berm to Barrier Expenditures	**$99,544**	**$104,612**	**$99,687**	**$303,843**
	NRDA Expenditures	**$2,698**	**$2,769**	**$2,841**	**$8,308**
	NFWF Adaptive Management Expenditures	**$5,000**	**$5,000**	**$5,000**	**$15,000**
	Surplus Expenditures	**$62,589**	**$75,251**	**$45,236**	**$183,076**
	Trust Fund Expenditures	**$182,842**	**$115,500**	**$148,498**	**$446,840**

Notes:

1- Monitoring expenditures funded with Berm to Barrier funds.

2- Pre-construction monitoring expenditures funded with NFWF Adaptive Management funds (see Table B-15).

3- Monitoring expenditures funded with Surplus funds (see Table B-6).

Table B-10. CWPPRA Projects with O&M Budget Project Expenditures[1,2,3]

Project No.	Project Name	FY 2015	FY 2016	FY 2017	Project Total (FY 2015 - FY 2017)
AT-0002	Atchafalaya Sediment Delivery	$24,544	$410,208	$4,078	$438,830
AT-0003	Big Island Mining	$24,544	$410,208	$4,078	$438,830
BA-0002	GIWW (Gulf Intracoastal Waterway) to Clovelly Hydrologic Restoration	$1,708,949	$31,798	$32,061	$1,772,808
BA-0003-C	Naomi Outfall Management	$3,800	$4,000	$4,200	$12,000
BA-0004-C	West Point a la Hache Outfall Management	$6,625	$6,800	Deauthorized	$13,425
BA-0020	Jonathan Davis Wetland Protection	$6,016	$7,000	$1,120	$14,136
BA-0023	Barataria Bay Waterway West Side Shoreline Protection	$6,005	$6,109	$6,220	$18,334
BA-0026	Barataria Bay Waterway East Side Shoreline Protection	$4,159	$4,267	$4,380	$12,806
BA-0027	Barataria Basin Landbridge Shoreline Protection, Phases 1 and 2	$38,685	$5,728	$5,898	$50,311
BA-0027-C	Barataria Basin Landbridge Shoreline Protection, Phase 3	$33,810	$5,728	$5,898	$45,436
BA-0027-D	Barataria Basin Landbridge Shoreline Protection Phase 4	$46,238	$5,780	$5,953	$57,971
BA-0035	Pass Chaland to Grand Bayou Pass Barrier Shoreline Restoration	$228,968	$7,000	$7,000	$242,968
BA-0037	Little Lake Shoreline Protection/ Dedicated Dredging Near Round Lake	$500,000	$10,078	$10,380	$520,458
BA-0038	Pelican Island and Pass La Mer to Chaland Pass Restoration	$30,557	$9,000	$9,000	$48,557
BA-0039	Bayou Dupont Sediment Delivery System	$7,452	$7,943	$8,102	$23,497
BA-0041	South Shore of the Pen Shoreline Protection and Marsh Creation	$2,088,500	$6,200	$6,710	$2,101,410
BA-0042	Lake Hermitage Marsh Creation	$5,951	$6,200	$6,200	$18,351
BA-0048	Bayou Dupont Marsh and Ridge Creation	$146,189	$200,000	$200,000	$546,189
BA-0068	Grand Liard Marsh and Ridge Restoration	$31,151	$6,400	$225,900	$263,451
BS-0003-A	Caernarvon Diversion Outfall Management	$70,400	$70,543	$70,687	$211,630
BS-0011	Delta Management at Fort St. Philip	$470,000	$5,817	$5,688	$481,505
BS-0016	South Lake Lery Shoreline and Marsh Restoration	$7,922	$6,534	$6,645	$21,101
BS-0024	Terracing and Marsh Creation South of Big Mar	Not Constructed	Not Constructed	$126,928	$126,928
CS-0004-A	Cameron-Creole Maintenance	$2,168,213	$127,184	$133,407	$2,428,804
CS-0011-B	Sweet Lake/Willow Lake Hydrologic Restoration	$6,850	$7,055	$7,269	$21,174
CS-0017	Cameron Creole Plugs	$6,850	$7,055	$7,269	$21,174
CS-0018	Sabine National Wildlife Refuge Erosion Protection	$6,850	$7,055	$7,269	$21,174
CS-0020	East Mud Lake Marsh Management	$103,350	$328,555	$28,769	$460,674
CS-0021	Highway 384 Hydrologic Restoration	$150,000	$23,055	$24,269	$197,324
CS-0022	Clear Marais Bank Protection	$66,656	$7,050	$7,269	$80,975
CS-0023	Replace Sabine Refuge Water Control Structures at Headquarters Canal, West Cove Canal, and Hog Island Gully	$41,200	$42,436	$43,709	$127,345
CS-0024	Perry Ridge Shore Protection	$6,850	$7,055	$7,269	$21,174
CS-0027	Black Bayou Hydrologic Restoration	$272,837	$12,055	$12,269	$297,161
CS-0028-2	Sabine Refuge Marsh Creation, Increment 2	$281,850	$57,055	$287,269	$626,174
CS-0028-4	Sabine Refuge Marsh Creation, Increment 4	$132,906	$7,055	$7,269	$147,230
CS-0028-5	Sabine Refuge Marsh Creation, Increment 5	$132,906	$7,055	$7,269	$147,230
CS-0029	Black Bayou Culverts Hydrologic Restoration	$8,000,000	$22,055	$24,269	$8,046,324
CS-0030	GIWW - Perry Ridge West Bank Stabilization	$56,850	$306,855	$7,269	$370,974
CS-0031	Holly Beach Sand Management	$106,058	$7,055	$7,269	$120,382
CS-0032	East Sabine Lake Hydrologic Restoration	$56,656	$7,055	$7,269	$70,980
CS-0049	Cameron-Creole Freshwater Introduction - Vegetative Plantings	$452,967	$7,055	$7,269	$467,291
CS-0059	Oyster Bayou Marsh Creation & Terracing	$17,000	$7,055	$7,269	$31,324
LA-0003-B	Coastwide Nutria Control Program	$3,293,970	$3,294,258	$3,304,980	$9,893,208
LA-0016	Non-Rock Alternatives for Shoreline Protection Demonstration Project	$6,850	$7,055	$7,269	$21,174
LA-0039	Coastwide Plantings Program	$1,200,000	$1,200,000	$1,200,000	$3,600,000
ME-0004	Freshwater Bayou Wetland (Phases 1 & 2)	$1,210,353	$7,050	$7,269	$1,224,672
ME-0009	Cameron Prairie National Wildlife Refuge Shoreline Protection	$6,850	$7,055	$7,269	$21,174
ME-0011	Humble Canal Hydrologic Restoration	$20,350	$21,555	$22,769	$64,674
ME-0013	Freshwater Bayou Bank Stabilization	$1,540,193	$7,055	$7,269	$1,554,517
ME-0014	Pecan Island Terracing	$166,256	$1,709,255	$7,269	$1,882,780
ME-0016	Freshwater Introduction South of Highway 82	$16,850	$17,055	$17,269	$51,174
ME-0018	Rockefeller Refuge Gulf Shoreline Stabilization	$5,000	Not Constructed	Not Constructed	$5,000
ME-0019	Grand-White Lakes Landbridge Protection	$91,656	$3,007,055	$7,269	$3,105,980

Table B-10. CWPPRA Projects with O&M Budget Project Expenditures[1,2,3]

Project No.	Project Name	FY 2015	FY 2016	FY 2017	Project Total (FY 2015 - FY 2017)
ME-0020	South Grand Chenier Hydrologic Restoration Project	$17,000	$7,055	$7,269	$31,324
ME-0021a	Grand Lake Shoreline Protection, Tebo Point	$17,000	$7,055	$7,269	$31,324
ME-0021-B	Grand Lake Shoreline Protection, O&M Only (CIAP)	$6,850	$7,055	$7,269	$21,174
ME-0022	South White Lake Shoreline Protection	$6,850	$7,055	$7,269	$21,174
MR-0009	Delta Wide Crevasses	$7,921	None	$8,338	$16,259
PO-0006	Fritchie Marsh Restoration	$4,207	$4,500	$4,428	$13,135
PO-0104	Bayou Bonfouca Marsh Creation Project	Not Constructed	$23,721	$6,502	$30,223
PO-0133	Labranche Central Marsh Creation	Not Constructed	$70,990	$6,880	$77,870
PO-0016	Bayou Sauvage National Wildlife Refuge Hydrologic Restoration, Phase 1	$21,777	$22,000	None	$43,777
PO-0018	Bayou Sauvage National Wildlife Refuge Hydrologic Restoration, Phase 2	$18,941	$19,300	None	$38,241
PO-0022	Bayou Chevee Shoreline Protection	$6,000	None	$6,670	$12,670
PO-0024	Hopedale Hydrologic Restoration	$13,569	$14,000	$13,400	$40,969
PO-0030	Lake Borgne Shoreline Protection	$90,406	$7,329	$7,544	$105,279
PO-0033	Goose Point/Point Platte Marsh Creation	$7,300	$7,451	$76,936	$91,687
PO-0075	Labranche East Marsh Creation	Not Constructed	$225,340	$7,377	$232,717
TE-0022	Point au Fer Canal Plugs	$12,010	$12,370	$12,741	$37,121
TE-0023 (USACE)	West Belle Pass Headland Restoration	$52,639	None	None	$52,639
TE-0026	Lake Chapeau Sediment Input and Hydrologic Restoration, Point Au Fer Island	$11,500	$11,893	$12,250	$35,643
TE-0028	Brady Canal Hydrologic Rest.	$80,000	$31,555	$31,768	$143,323
TE-0032-A	North Lake Boudreaux Basin Freshwater Introduction & Hydrologic Management	Not Constructed	Not Constructed	$150,000	$150,000
TE-0034	Penchant Basin Natural Resources Plan Increment 1	$78,750	$10,000	$83,546	$172,296
TE-0037	New Cut Dune and Marsh Restoration	$289,009	None	None	$289,009
TE-0039	South Lake Decade Freshwater Introduction	$50,000	$8,732	$8,908	$67,640
TE-0043	GIWW Bank Restoration of Critical Areas in Terrebonne	$100,000	$4,016	$4,101	$108,117
TE-0044	North Lake Mechant Landbridge Restoration	$5,693	$108,489	$7,573	$121,755
TE-0045	Terrebonne Bay Shore Protection Demonstration	$10,000	$10,000	None	$20,000
TE-0046	West Lake Boudreaux Shoreline Protection and Marsh Creation	$6,800	$7,003	$7,213	$21,016
TE-0048	Raccoon Island Shoreline Protection/Marsh Creation	$295,918	$8,561	$8,734	$313,213
TE-0050	Whiskey Island Back Barrier Marsh Creation	$124,508	$8,990	$133,943	$267,441
TE-0052	West Belle Pass Barrier Headland Restoration	$400,000	$200,000	$300,000	$900,000
TE-0072	Lost Lake Marsh Creation and Hydrologic Restoration	Not Constructed	$76,355	$78,646	$155,001
TV-0003	Vermilion River Cutoff Bank Protection	$6,850	$7,055	$7,269	$21,174
TV-0004	Cote Blanche Hydrologic Restoration	$1,410,000	$12,055	$12,269	$1,434,324
TV-0012	Little Vermilion Bay Sediment Trapping	$158,627	$2,030,318	$7,269	$2,196,214
TV-0013-A	Oaks/Avery Canal Hydrologic Restoration, Increment 1	$26,850	$7,055	$7,269	$41,174
TV-0014	Marsh Island Hydrologic Restoration	$156,850	$2,007,055	$7,269	$2,171,174
TV-0015	Sediment Trapping at "The Jaws"	$56,850	$7,055	$7,269	$71,174
TV-0017	Lake Portage Land Bridge	$6,850	$7,055	$7,269	$21,174
TV-0018	Four Mile Canal Terracing and Sediment Trapping	$396,538	$5,194,593	$7,269	$5,598,400
TV-0021	East Marsh Island Marsh Creation	$250,958	$672,696	$7,269	$930,923
	TOTAL CWPPRA O&M Expenditures	**$29,320,663**	**$22,373,336**	**$7,063,942**	**$58,757,941**
	Federal CWPPRA O&M Expenditures	**$24,922,564**	**$19,017,336**	**$6,004,351**	**$49,944,250**
	State CWPPRA O&M Expenditures	**$4,398,099**	**$3,356,000**	**$1,059,591**	**$8,813,691**

Notes:

1. Table shows all approved CWPPRA projects. Demonstration and vegetative planting projects are not shown as they have no O&M budgets. Other projects without O&M budgets have "None" entered in the budget columns. Projects not scheduled to complete within a given year have "Not Constructed" entered in the budget column(s).
2. State share is based on CWPPRA cost share of 85% Federal/15% State except for PPL 5-6 projects, which have a 90% Federal/10% State cost share.
3. Projects that the USACE is responsible for O&M are indicated by (USACE) after the project number.

Table B-11. O&M Projected Expenditures for CWPPRA Projects without Federal Cost Share

Project ID	Project Name	FY 2016	FY 2017	FY 2018	Project Total (FY 2016 - FY 2018)
TE-0020	Isles Dernieres Restoration East Island	$3,390	$3,492	$3,598	$10,480
TE-0024	Isles Dernieres Restoration Trinity Island	$3,390	$3,492	$3,598	$10,480
TE-0025	East Timbalier Island Sediment Restoration, Phase 1	$3,390	$3,492	$3,598	$10,480
TE-0027	Whiskey Island Restoration	$3,390	$3,492	$3,598	$10,480
TE-0030	East Timbalier Island Sediment Restoration, Phase 2	$3,390	$3,492	$3,598	$10,480
TE-0040	Timbalier Island Dune and Marsh Restoration	$3,390	$3,492	$3,598	$10,480
	Total Expenditures	**$20,340**	**$20,952**	**$21,588**	**$62,880**

Table B-12. Projected Expenditures for O&M of WRDA Projects

Project ID	Project Name	FY 2016	FY 2017	FY 2018	Project Total (FY 2016 - FY 2018)
BA-0001	Davis Pond Freshwater Diversion	$140,772	$150,626	$161,170	$138,502
BS-0008	Caernarvon Freshwater Diversion	$103,055	$110,269	$117,988	$91,522
	Total Expenditures	**$243,827**	**$260,895**	**$279,158**	**$783,880**
	Federal O&M Monitoring Expenditures	**$182,870**	**$195,671**	**$209,369**	**$587,910**
	State WRDA O&M Expenditures	**$60,957**	**$65,224**	**$69,790**	**$195,970**

Table B-13. Projected Expenditures for Structural Operations/Inspections of State Projects

Project ID	Project Name	FY 2016	FY 2017	FY 2018	Project Total (FY 2016 - FY 2018)
CS-0002	Rycade Canal Marsh Management	$15,000	$15,000	$15,000	$45,000
PO-0001	Violet Siphon	$10,000	$10,000	$10,000	$30,000
PO-0036	Orleans Landbridge	$3,390	$3,490	$3,590	$10,470
PO-0072	Biloxi Marsh	$59,190	$3,290	$3,390	$65,870
TE-0003	Bayou LaCache Wetlands	$100,000	$100,000	$100,000	$300,000
TV-xx	Quintana Canal	$5,000	$5,000	$5,000	$15,000
TV-0013-B	Oaks Avery Structures (Navigation Aids Inspection and Maintenance	$5,000	$5,000	$5,000	$15,000
	Total Expenditures	**$197,580**	**$141,780**	**$141,980**	**$481,340**

Table B-14. Projected Expenditures for O&M of Other Projects

Project ID	Project Name	FY 2016	FY 2017	FY 2018	Project Total (FY 2016 - FY 2018)
Hurricane Protection Projects[1]					
BA-0066	West Bank and Vicinity	$468,000	$468,000	$390,000	$1,326,000
BA-0067	New Orleans and Vicinity	$93,000	$93,000	$0	$186,000
LA-0206	HSDRRS Armoring	$1,250,000	$750,000	$0	$2,000,000
PO-0055	LPV IHNC Surge Barrier	$40,000	$0	$0	$40,000
PO-0057	SELA- Overall	$55,800	$55,800	$55,800	$167,400
PO-0060	Permanent Canal Closures and Pump Stations	$2,431,437	$2,463,541	$615,885	$5,510,863
PO-0063	Lake Pontchartrain and Vicinity	$468,000	$468,000	$390,600	$1,326,600
PO-0096	Flood Protection Assistance	$3,541,500	$2,955,000	$2,895,000	$9,391,500
TV-0066	Teche Vermilion Freshwater District	$50,000	$0	$0	$50,000
N/A	Flood Protection Inspections	$350,000	$350,000	$0	$700,000
USACE Mitigation Projects					
BA-0109	HSDRRS Mitigation - WBV	$0	$0	$5,263	$5,263
BA-0154	Previously Authorized Mitigation - WBV	$0	$5,130	$5,263	$10,393
BA-0158	New Orleans to Venice Mitigation - Plaquemines Non-Federal	$0	$0	$5,263	$5,263
BA-0159	New Orleans to Venice Mitigation - Federal	$0	$0	$5,263	$5,263
PO-0038SF	MRGO Closure Structure	$5,000	$5,130	$5,263	$15,393
PO-0093	MRGO - Lake Borgne -Bayou Dupre Segment	$5,000	$5,130	$5,263	$15,393
PO-0094	MRGO - Lake Borgne -Bayou Bienvenue Segment	$5,000	$5,130	$5,263	$15,393
PO-0095	MRGO - Lake Borgne -Shell Beach Segment	$5,000	$5,130	$5,263	$15,393
PO-0121	HSDRRS Mitigation - LPV	$15,000	$30,000	$30,000	$75,000
PO-0145	LPV Task Force Guardian Mitigation - Bayou Sauvage	$20,000	$20,000	$20,000	$60,000
PO-0146	LPV Mitigation Project, Manchac WMA Marsh Creation	$15,000	$30,000	$30,000	$75,000
State-Only Projects					
BA-0003	Naomi Siphon	100,000	5,000	5,000	$110,000
BA-0004	West Point a la Hache Siphon	50,000	5,000	5,000	$60,000
CS-0002	Rycade Canal	$0	$1,200,000	$4,442,200	$5,642,200
PO-0001	Violet Siphon	$14,000	$14,000	$14,000	$42,000
PO-0029	River Reintroduction into Maurepas Swamp	$10,000	$10,000	$10,000	$30,000
PO-0142	Hydrologic Restoration of the Amite River Diversion Canal	$11,000	$56,000	$11,000	$78,000
TV-xx	Quintana Canal	$213,625	$1,868,650	$0	$2,082,275
TV-0013-B	Avery Canal	$75,000	$0	$0	$75,000
N/A	Maintenance Surveys	$100,000	$100,000	$100,000	$300,000
N/A	GPS Network (continued development and maintenance)	$75,000	$75,000	$75,000	$225,000
	Total Expenditures	**$9,466,362**	**$11,042,641**	**$9,131,589**	**$29,640,592**
	Surplus Expenditures	**$8,747,737**	**$7,603,341**	**$4,347,285**	**$20,698,363**
	Trust Fund Expenditures	**$718,625**	**$3,439,300**	**$4,784,304**	**$8,942,229**

Notes:

1- Expenditures funded with Surplus funds (see Table B-6).

Table B-15. Oil Spill Projected Expenditures[1]

Project ID	Project Name	FY 2016	FY 2017	FY 2018	Project Total (FY 2016 - FY 2018)
NRDA Early Restoration[2,3]					
BA-0076	Cheniere Ronquille Barrier Island Restoration[4]	$1,500,000	$0	$0	$1,500,000
BA-0111	Shell Island West- NRDA	$75,000,000	$26,076,699	$231,161	$101,307,860
TE-0100	NRDA Caillou Lake Headlands	$59,979,000	$39,986,000	$0	$99,965,000
N/A	Oyster Reestablishment Program[5]	$0	$0	$0	$0
N/A	Salt Water Hatchery[5]	$0	$0	$0	$0
N/A	NRDA Restoration Planning	$5,000,000	$3,000,000	$0	$8,000,000
NFWF Projects					
BA-0143	Caminada Headland Beach and Dune Restoration Increment 2	$90,344,650	$27,477,675	$0	$117,822,325
BA-0153	Mid-Barataria Sediment Diversion[6]	$12,000,000	$7,763,620	$7,763,620	$27,527,239
BA-0163	Lower Mississippi River Sediment Diversions	TBD	TBD	TBD	$0
TE-0110	Increase Atchafalaya Flow to Eastern Terrebonne	$3,000,000	TBD	TBD	$3,000,000
TE-0118	East Timbalier Island	$2,300,000	$2,300,000	TBD	$4,600,000
N/A	NFWF Adaptive Management	$3,487,500	$6,443,726	$1,511,574	$11,442,800
Proposed RESTORE Projects					
CS-065	Calcasieu Ship Channel Salinity Control Measures	$10,404,885	$10,104,885	$55,552,443	$76,062,213
PO-0029	Mississippi River Reintroduction into Maurepas Swamp[6]	$4,400,000	$4,400,000	$4,400,000	$13,200,000
PO-0163	Golden Triangle Marsh Creation	$1,500,000	$1,272,202	$1,272,202	$4,044,403
TE-0113	Houma Navigation Canal Lock Complex[6]	$9,000,000	$9,000,000	$9,000,000	$27,000,000
N/A	West Grand Terre Beach Nourishment and Stabilization	$2,250,920	$2,250,920	$2,250,920	$6,752,759
N/A	Biloxi Oyster Reef	$998,592	$998,592	$998,592	$2,995,777
N/A	Lower Mississippi River Management	$5,000,000	$5,000,000	$5,000,000	$15,000,000
N/A	RESTORE Center of Excellence	$2,500,000	$1,500,000	$0	$4,000,000
Total Expenditures		**$288,665,547**	**$147,574,318**	**$87,980,511**	**$524,220,376**
Surplus Expenditures		**($16,023,791)**	**($11,359,243)**	**$0**	**($27,383,034)**
Total State Expenditures		**$272,641,756**	**$136,215,075**	**$87,980,511**	**$496,837,342**
Project Generated Adaptive Management (7.5%- RESTORE ONLY)		**$2,704,080**	**$2,589,495**	**$5,885,562**	**$11,179,136**

Notes:

1- Red font denotes projected expenditures for which funding has not yet been procured.

2- Projects may be initiated with Trust Fund revenue if available to be reimbursed with oil spill revenues.

3- Expenditures represent early restoration under the Early Restoration Framework Agreement announced on April 21, 2011 and are based on the Louisiana Plan announced by Governor Jindal in July 2011. Negotiations with BP are ongoing and Louisiana expects to receive additional (early and long-term) NRDA funds, but the timing of these funds is highly uncertain. During negotiations it may be determined to advance these projects with oil spill related funding.

4- Project to be implemented by NOAA.

5- Project to be implemented by Louisiana Department of Wildlife and Fisheries (no CPRA funds to be allocated).

6- Project partially funded with surplus funds (see Table B-6).

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Appendix C
Barrier Island Status Report

BARRIER ISLAND STATUS REPORT
Draft Fiscal Year 2016 Annual Plan
February 2015

1.0 Introduction

The Coastal Protection and Restoration Authority (CPRA) provides this barrier island status report as part of the Annual Plan document to be submitted to each member of the Louisiana Legislature in compliance with Act 297 of the 2006 Regular Legislative Session. The Act requires that the report: 1) indicate the condition of all barrier islands; 2) provide the status of all barrier island stabilization and preservation projects under construction; and 3) outline future plans for restoration and maintenance of the barrier islands and coastal passes. Because the Annual Plan provides information about all coastal restoration projects in Louisiana (including location, status, features, acres benefited, cost, and funding source), it is appropriate to include a report on the status of the barrier islands.

2.0 Overview of Barrier Islands

The coastline of the modern Mississippi River delta plain is bordered by numerous barrier islands related to several historic major deltaic headlands. For the sake of convenience these islands and headlands can be organized into four distinct barrier systems, each tied to an abandoned Mississippi River delta complex: from west to east they are the Teche, Lafourche, Modern, and St. Bernard delta systems (Figure 1). The back-barrier bays and lagoons are connected to the Gulf of Mexico by numerous tidal inlets, which allow the exchange of diurnal

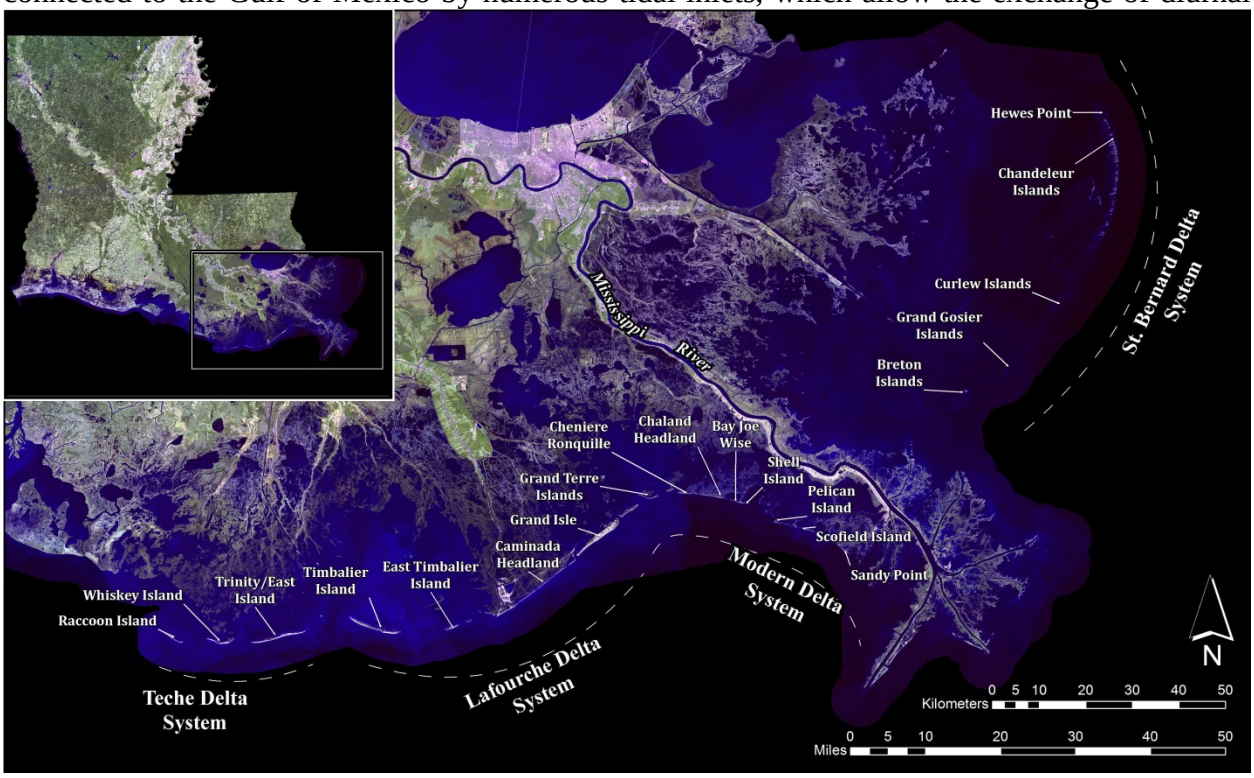


Figure 1. Location of Teche, Lafourche, Modern, and St. Bernard barrier island systems in Louisiana.

tides and separates these barrier islands from each other. The morphology of the barrier islands along the Louisiana coast is related to the sediment supply and physical processes acting in the region (Georgiou et al., 2005). Because barrier islands migrate and deteriorate over time (McBride and Byrnes, 1997), restoration of these habitats requires periodic replenishment of sediment/sand to counteract the losses due to erosion. Numerous hurricanes and the *Deepwater Horizon* oil spill have clearly demonstrated the advantage of robust barrier islands and a well-managed coastline in terms of shoreline resilience and hurricane damage reduction. These events have also highlighted the ecological concerns related to the massive loss of coastal wetland and barrier island systems (Ewing and Pope, 2006). Coastal landscapes created by these barriers can provide a significant and potentially sustainable buffer from wind and wave action as well as storm surges generated by tropical storms and hurricanes. In addition, barrier shorelines are unique habitats that represent the foundation for complex and productive coastal ecosystems.

The restoration of Louisiana's barrier islands has been a priority for a number of programs over the past several decades. In the 1990s, barrier island restoration was a priority for the Coastal Wetlands Planning, Protection and Restoration Act (CWPPRA) program, which funded construction of a number of barrier island restoration projects. More recently, the CPRA has constructed or is planning to construct a large number of additional projects (see below) to restore barrier islands and headlands in coastal Louisiana. The constructed projects have been studied and their performance has been assessed to adaptively improve resilience and persistence of these projects.

More than 20 barrier island projects have been implemented in Louisiana over the past two decades. These projects are described below geographically from west to east, and are grouped by barrier island system.

2.1 Teche Delta System (Raccoon Island to Wine Island)

2.1.1 Constructed Projects

1. Raccoon Island Breakwaters Demonstration (TE-29; CWPPRA; 1997) – The goal of this project was to reduce shoreline erosion and increase land coverage. Eight segmented breakwaters were constructed along the eastern end of the island to reduce the rate of shoreline retreat, promote sediment deposition along the beach, and protect seabird habitat. Project effectiveness was determined by monitoring changes in the shoreline, wave energy, and elevations along the beach, and by surveys of the gulf floor between the shoreline and the breakwaters.
2. Raccoon Island Shoreline Protection/ Marsh Creation (TE-48; CWPPRA; 2007, 2013) – The goal of this project was to protect the Raccoon Island rookery and seabird colonies from an encroaching shoreline by reducing the rate of erosion along the western end of the island and creating more land along the northern shoreline. This goal was accomplished through the construction of eight additional breakwaters west of the existing (TE-29) breakwaters and a terminal groin at the eastern of the island (Phase A). In addition, mixed sediment from an offshore borrow site in federal waters was dredged to create 60 acres of back barrier marsh platform with an average elevation of 3.5 feet (Phase B). The shoreline protection (Phase A)

component of this project was constructed in 2007; construction of the back barrier marsh platform component (Phase B) was completed in April 2013.

3. Whiskey Island Restoration (TE-27; CWPPRA; 1999) – The objective of this project was to create and restore beaches and back barrier marsh platform on Whiskey Island. About 4.6 miles of the Gulfside shoreline with beach/dune component of variable width (700-800 feet) was restored using about 2.9 million cubic yards (MCY) of sand. The dune height was 4 feet with crest varying from 300-500 feet. The project consisted of creating 523 acres of back barrier marsh platform and filling in the breach at Coupe Nouvelle. The initial vegetation planting of smooth cordgrass (*Spartina alterniflora*) on the bayside shore was completed in July 1998 and additional vegetation seeding and planting was carried out in spring 2000.
4. Whiskey Island Back Barrier Marsh Creation (TE-50; CWPPRA; 2009) – The goal of the TE-50 project was to increase the longevity of the previously restored and natural portions of the island by increasing the island's width which helped retain sand volume and elevation. Approximately 316 acres of back barrier intertidal marsh habitat, 5,800 linear feet of tidal creeks, three 1-acre tidal ponds and 13,000 linear feet of protective sand dune were created by semiconfined disposal and placement of dredged material. About 2.76 MCY of mixed sediment was dredged from an offshore borrow area in Gulf of Mexico near the island. After removal of the mixed sediment overburden, about 0.36 MCY of underlying sand was used to create the dune fronting the marsh platform. The vegetative planting with native marsh vegetation to colonize and protect the newly-placed marsh soil was undertaken.
5. Isles Dernieres Restoration Trinity Island (TE-24; CWPPRA; 1999) – The project objectives included the restoration of the dunes and back barrier marshes of Trinity Island. Approximately 4.85 MCY of sand/sediment were dredged from a borrow area in Lake Pelto to build approximately 4.3 miles of 8-feet high dune with crest width of about 300 feet along with an elevated marsh platform at the bay side of the island. A total of about 353 acres of supratidal and intratidal habitats were created. About 22,500 feet of sand fences were installed in various orientations along with vegetative planting to stabilize the sand and minimize wind-driven transport.
6. New Cut Dune and Marsh Restoration Project (TE-37; CWPPRA; 2007) – The purpose of this project was to close the breach between Trinity and East Islands through the creation of beach, dune, and marsh habitats in order to increase the structural integrity of eastern Isles Dernieres by restoring the littoral drift and adding sediment into the nearshore system. New Cut was closed through the construction of about 8,000 feet of dune platform (by placing approximately 0.85 MCY of sand dredged from an offshore borrow area) matching the dune elevations on the east and west, strengthening the connection between East and Trinity Islands. Nine species of native barrier island vegetation were planted along with over 17,000 linear feet of sand fence.
7. Isles Dernieres Restoration East Island (TE-20; CWPPRA; 1999) – The project objective was to restore the coastal dunes and wetlands of the Eastern Isles Dernieres. Approximately 3.9 MCY of sand were dredged from Lake Pelto to build about 353 acres of beach and dune with target elevations of 2 feet and 8 feet, respectively. The dune crest width ranges from 300 to 500 feet. Sand fences and vegetation were also installed to stabilize the sand and minimize wind-driven transport.
8. Enhancement of Barrier Island Vegetation Demonstration (TE-53; CWPPRA; 2010) – The goal of this project was to test several technologies or products to enhance the establishment and growth of key barrier island and salt marsh vegetation. The project focuses specifically

on enhancing the establishment and growth of transplants of both dune vegetation (*Panicum amarum* and *Uniola paniculata*) and marsh vegetation (*Spartina alterniflora* and *Avicennia germinans*). Planting took place on Whiskey Island and New Cut in 2010, and monitoring of vegetation began in 2011.

2.1.2 Projects under Construction

None.

2.1.3 Future Projects

1. NRDA Caillou Lake Headlands Restoration Project (TE-100; NRDA): This project includes the project area as envisaged by previous CWPPRA project entitled "Ship Shoal: Whiskey West Flank Restoration (TE-47)". The design template of this project is same as that suggested under the Louisiana Coastal Area (LCA)- Terrebonne Basin Barrier Shoreline (TBBS) Restoration Project, which includes the entire island footprint. This project will provide a barrier to reduce wave and tidal energy, thereby protecting the mainland shoreline from continued erosion. The objective of this project is to rebuild dunes and a marsh platform on the Whiskey Island through the emplacement of about 8.9 MCY of sand transported from Ship Shoal Block 88. About 4.26 miles of shoreline will be nourished with a 6.4 feet high and 100 feet wide dune crest and 4.2 feet high and 464 feet wide beach on Gulf side and 100 feet wide on Bay side, covering around 1,063 acres. About 0.82 MCY of sediment would be used to construct 178 acres of marsh platform. NRDA funds will be used for construction of this project.

2.2 <u>Lafourche Delta System (Timbalier Island to Grand Isle)</u>

2.2.1 Constructed Projects

1. Timbalier Island Planting Demonstration (TE-18; CWPPRA; 1996) – For this project, sand fences were installed and vegetation suited to the salinity and habitat type of Timbalier Island was planted in several areas on the island to trap sand and buffer wind and wave energy.
2. Timbalier Island Dune and Marsh Creation (TE-40; CWPPRA; 2004) – Timbalier Island is migrating rapidly to the west/northwest; therefore, the western end of Timbalier Island is undergoing lateral migration by spit-building processes at the expense of erosion along the eastern end. The objective of this project was to restore the eastern end of Timbalier Island by restoring beach, dunes, and marsh. An 8-foot high dune with average crest width of about 400 feet was built using about 4.6 MCY of sand/sediment dredged from offshore borrow area which created a total fill area of about 273 acres, including about 196 acres of marsh platform.
3. East Timbalier Island Sediment Restoration, Phase 1 (TE-25; CWPPRA; 2000) – The objective of this project was to strengthen and thus increase the longevity of East Timbalier Island. The project included the placement of dredged sediment in three embayments along the landward shoreline of East Timbalier Island, along with aerial seeding of the dune platform, installation of about 13,000 linear feet of sand fencing, and dune vegetation plantings. About 2.8 MCY of sediment was dredged from an offshore borrow area to create a total of about 217 acres of supratidal and intratidal habitats which included a 5-foot high

dune with crest width of about 200 feet and a 2-foot high and 500-foot wide marsh platform. This project was funded over two funding cycles, PPL 3 and 4, from 1999 and 2000, respectively.

4. East Timbalier Island Sediment Restoration, Phase 2 (TE-30; CWPPRA; 2000) – The project goals and objectives were the same as that of Phase 1. While Phase 2 of the project along the western half of the island did not reconnect the western and eastern portions of the island, it did create 99% of the targeted acreage. It has helped to protect thousands of acres of existing fringing marsh to the north. Construction funds from this phase of the project were also used for 7,000 feet of rubble mound revetment created to protect the newly created habitats.
5. West Belle Pass Barrier Headland Restoration (TE-52; CWPPRA; 2012) – The goals of this project were to re-establish the eroded West Belle Pass headland via dune and marsh creation and to prevent increased erosion along the adjacent bay shoreline, protect the interior marshes and the Port Fourchon area. The project created a continuous headland approximately 10,660 feet in length, creating about 93 acres of dune habitat using nearly 1.74 MCY of dredged sand, and about 227 acres of marsh habitat using 3.05 MCY of dredged mixed sediment. Construction began in May 2011 and completed in 2012.
6. Bayside Segmented Breakwaters at Grand Isle (BA-50; CIAP; 2012) – The purpose of this project was to reduce erosion on the bay side of Grand Isle. Twenty-four 300 foot breakwaters (approximately 1.5 miles) were constructed on the back-bay side of Grand Isle. This project was constructed with Jefferson Parish CIAP funds in September 2012.

2.2.2 Projects under Construction

1. Caminada Headland Beach and Dune Restoration (BA-45; CIAP; Surplus) – The Caminada Headland Beach and Dune Restoration project will restore and maintain the headland through the creation of dunes and beach habitat and will protect unique coastal habitats, continue littoral sand transport to Grand Isle, and protect Port Fourchon and the only hurricane evacuation route available to the region. This reach of the Barataria shoreline also supports the only land-based access to the barrier shoreline in the Deltaic Plain. Construction of portions of the Caminada Headland component of the LCA-BBBS Restoration Project template began in early 2013 using CIAP 2007 and Surplus 2008 funds. Approximately 3.3 MCY of sand from South Pelto Blocks 12 and 13 borrow area (eastern portion of Ship Shoal Complex) was placed to restore approximately 6 miles of shoreline by constructing a 7-foot high and about 290-foot wide dune and a 4.5-foot high and 65-foot wide beach over a surface area of about 303 acres. This restoration project is unique in that it is the first time that sand from the Ship Shoal complex was dredged for coastal restoration purposes and was transported a distance of almost 22 miles.
2. Caminada Headland Beach and Dune Restoration Increment II (BA-143, NFWF) – In order to achieve the goals of this project approximately 5.39 MCY of sand will be dredged from the South Pelto Block in Ship Shoal and construct a 7-foot high dune with a 290 foot width along with a 4.5-foot high and 65-foot wide beach over a project length of 39,000 linear feet thereby restoring the headland on the same template as BA-45. This project will start approximately in the middle of the headland, where the BA-45 project ended and continue east to Caminada Pass. It is expected to create a surface area of about 489 acres. Construction of the project is anticipated to begin in the spring of 2015 and be complete by the end of 2016. When complete the BA-45 and BA-143 projects will have pumped over 8.5 million cubic yards onto the headland to restore over 13 miles of beach and dune habitat.

2.2.3 Future Projects

1. East Timbalier Island Restoration Project (TE-118; NFWF) – East Timbalier Island is part of a barrier island chain that separates Terrebonne and Timbalier Bays from the Gulf of Mexico. The island is currently comprised of two severely degraded segments. This project is for engineering and design to develop a final design package consisting of permitting, WVA assessment, and construction plans and specifications – with probable construction cost and schedule, all sufficient to re-establish the historic island footprint, reconnecting the two segments, with restoration of dune, supratidal, and intertidal habitat. Estimated Benefits (East Timbalier Plan B) include in TY1 Beach/Dune Minimum Template – 241 acres and Intertidal Marsh – 279 acres.
2. Caminada Headlands Back Barrier Marsh Creation Project (BA-171; CWPPRA) – This project would create 300 acres of back barrier intertidal marsh and nourish 130 acres of emergent marsh behind 3.5 miles of Caminada Beach using 2.7 MCY of mixed sediment dredged/ pumped from delineated borrow area in the Gulf of Mexico. The marsh creation and nourishment cells are designed to minimize impacts on existing marsh and mangroves. Assuming some natural vegetative recruitment, vegetative plantings are planned at a 50% density, with half planned at Target Year 1 (TY1) and half planned at TY3. This project (BA-171) will be designed to create and nourish marsh habitat behind BA-45 to further decrease the likelihood of breaches and improve the longevity of the shoreline. BA-171 is a CWPPRA project which is funded for E&D (Phase 1).
3. Barataria Basin Barrier Shoreline (BBBS) Restoration (LA-10; LCA) – Initially this project included the Caminada Headland Beach and Dune Restoration and Shell Island Restoration Projects. Portions of Caminada Headland were constructed with CIAP and Surplus funds. The eastern beach/dune portion will be constructed with NFWF funds, and a portion of the back barrier marsh platform is being designed through CWPPRA. Shell Island East was constructed with Berm to Barrier Funds, and Shell Island West will be constructed with NRDA funding. Construction of the remainder of the BBBS template features will be decided at a later date.

2.3 Modern Delta System (Cheniere Ronquille to Scofield Island)

2.3.1 Constructed Projects

1. Vegetative Plantings of a Dredged Material Disposal Site on Grand Terre Island (BA-28; CWPPRA; 2001) – The goal of this project was to stabilize dredged material sites on West Grand Terre Island. This objective was achieved through vegetation plantings and by purchasing grazing rights on the island for the 20-year life of the project.
2. East Grand Terre Island Restoration (BA-30; CIAP; 2010) – The goal of this project was to stabilize and benefit 1,575 acres of barrier island habitat and extend the island's life expectancy by filling breaches and tidal inlets in the shoreline, and reinforce the existing shoreline with sand. For this about 621 acres of barrier island were created by restoring 2.8 miles of barrier shoreline through construction of a 6-foot high dune along with 165 acres of beach habitat and construction of about 456 acres of marsh platform using about 3 MCY of sand and 1.6 MCY of mixed sediment from two offshore borrow areas. Although the CPRA

constructed this projects using CIAP 2007 funds, this project was engineered, designed, permitted, and received the necessary land rights for construction, through the CWPPRA program, in partnership with the NOAA Fisheries.

3. Barataria Barrier Island Complex Project: Pelican Island and Pass La Mer to Chaland Pass Restoration (BA-38; CWPPRA; 2007, 2012) – The objectives of this project were to create barrier island habitat, enhance storm-related surge and wave protection, prevent overtopping during storms, and increase the volume of sand within the active barrier system. This project includes restoration of two barrier islands viz. the Chaland Headland portion of this project, which was constructed in 2007, and the Pelican Island segment, which began construction in May 2011 and was completed in 2012. Additionally in June 2010, the state began construction of a barrier berm in response to the *Deepwater Horizon* oil spill from Shell Island to Scofield Island west of the river to safeguard its coast from the effects of the oil. The construction of the berm introduced a significant amount of sand into the barrier island system.
    a. Pass La Mer to Chaland Pass Restoration (BA-38-1; CWPPRA; 2007) – A total fill area of 484 acres was created which included about 254 acres of back barrier marsh platform with an average elevation of 2.5 feet. Back barrier marsh platform was constructed using about 1.0 MCY of overburden mixed sediment from an offshore borrow area. About 2.4 MCY of sand was placed to build about 230 acres of beach-dune habitat with a dune height of 6 feet and crest width of 400 feet over a project length of 2.7 miles.
    b. Pelican Island Restoration Project (BA-38-2; CWPPRA; 2012) – Pelican Island was restored using about 6.4 MCY of mixed sediment and sand from 4 different borrow areas in state and federal waters ranging in distance from 2 to 12 miles. About 2.1 MCY (in-place volume) of sand were utilized to create 192 acres of beach-dune habitats. About 398 acres of marsh platform, with an average elevation of about 2.6 feet, was constructed using 1.6 MCY of sediment. Average dune elevation was about 7.5 feet extending to a length of 2.5 miles. It may be noted that Emergency Berm W9 was built in front of this island using about 1.24 MCY of sand.
4. Pass Chaland to Grand Bayou Pass Barrier Shoreline Restoration (BA-35; CWPPRA; 2009) – Also known as Bay Joe Wise, this project includes the emplacement of mixed sediment to create marsh along with tidal creeks and ponds, followed by vegetation plantings. The project's objectives were to: 1) prevent the breaching of the Bay Joe Wise shoreline by increasing barrier shoreline width; 2) increase back-barrier, emergent marsh area by approximately 220 acres to maintain the barrier shoreline; and 3) create emergent marsh suitable for tidal aquatic habitats. These features act as a buffer against wave and tidal energy, thereby protecting the mainland shoreline from breaching and continued erosion. About 350 acres of total fill area was created which included a marsh platform approximately 1,000 feet wide contiguous with the northern side of the gulf shoreline of Bay Joe Wise. The dune was built to an elevation of 6 feet with a dune crest width of about 110 feet. Approximately 3 MCY of sediment was dredged from the Pas la Mer Ebb-Tide Delta, Pass Chaland Ebb-Tide Delta, and Grand Pass Ebb-Tide Delta. The project also included the construction of approximately 10,000 feet of 4-foot wide, 2-foot deep tidal creeks or water exchange channels. In addition, immediate post-construction aerial seeding with Japanese millet (*Echinochloa frumentacea*) or brown top millet (*Panicum ramosum*) followed by smooth cordgrass (*Spartina alterniflora*) and black mangrove (*Avicennia germinans*) vegetative plantings were undertaken.

5. Riverine Sand Mining/Scofield Island Restoration (BA-40; Berm Funds; 2013) – The goals of this project were to mitigate breaches and tidal inlets in the shoreline, reinforce the existing shoreline with sand, increase the width of the island with back barrier marsh to increase island longevity, and to re-establish a sandy dune along the length of the shoreline to protect the back barrier marsh platform from sea level rise and storm damage. The beach-dune habitats were constructed by the sand dredged from a borrow area in the Lower Mississippi River via a 22-mile long pipeline and the marsh platform was constructed from an offshore borrow source of mixed sediment. Although this project was designed under CWPPRA, construction began in December 2012 using Berm Funds. This created approximately 2.16 miles of beach and dune fill to close the breach areas and restore/protect the eroding beach. The dune component included a 50-foot wide crest width at +6 feet NAVD88. The beach fill template included a 100-foot wide construction berm at +4 feet NAVD88. The surface area of the beach platform was approximately 223 acres measured at +4 feet NAVD88. The required fill volume was approximately 2.03 MCY (required excavation (cut) volume was approximately 2.64 MCY). An approximately 2.23-mile long back barrier marsh platform on the bay side of Scofield Island was constructed. The surface area of the proposed marsh platform is approximately 375 acres with target marsh platform elevation of +3.0 feet NAVD88. The required fill volume was approximately 1.74 MCY (the required excavation (cut) volume is approximately 2.79 MCY). It may be noted that Emergency Berm W-10 was built in front of this island using about 0.964 MCY of sand.
6. Western Berm Reaches (West of Mississippi River along Shell, Pelican and Scofield Islands) In response to the *Deepwater Horizon* oil spill which began on April 20, 2010, the State of Louisiana constructed approximately 16 miles of sand berms along several sections of the state's barrier islands both east and west of the Mississippi River. The objective of these projects was to provide a barrier to oil and minimize the potential impact of the oil spill to thousands of acres of fragile barrier islands and wetlands in coastal Louisiana.
   a. Berm Reach W8 (Shell Island): The initial template of berm reach W8 was located within the footprint of the Shell Island restoration project which was proposed under the Barataria Basin Barrier Shoreline LCA project. However, pre-construction surveys indicated that the island had receded, so the profile was shifted approximately 750 feet north. The construction template for the W8 berm reach was identical to the templates used on the other berm reaches: a 20-foot crest width, +5 feet, NAVD 88 crest elevation, 1V:25H side slopes above -2.0 feet, NAVD88 and 1V:50H below -2.0 feet, NAVD 88. Construction of approximately 9,000 linear feet of berm on Shell Island started on October 9, 2010 and was completed by November 23, 2010. Approximately 777,000 cubic yards of sand was placed along the island.
   b. Berm Reach W9 (Pelican Island): Construction of berm reach W9 along Pelican Island started on July 18, 2010 and was completed by October 2, 2010. Sand was placed within the construction template, which was identical to the template used for the other berm reaches. The template was superimposed on the existing island and within the footprint of the proposed CWPPRA Pelican Island Restoration Project (BA-38-1). A total length of 12,700 feet of berm was constructed and approximately 1,294,000 cubic yards of sand was emplaced within the berm along Pelican Island.
   c. Berm Reach W10 (Scofield Island): Construction of berm reach W10 on Scofield Island started on September 13, 2010. Approximately 935,000 cubic yards of sand was placed between September 13 and November 23, 2010 for constructing approximately 14,755

feet of berm. The construction template for berm reach W10 was identical to the other berm reaches. The berm was constructed within the footprint of the proposed CWPPRA Scofield Island Restoration Project (BA-40).

7. Shell Island Restoration – Shell Island is a critical component of the Barataria shoreline which has been breached into two islands – east and west. Restoration of these two islands was initially included in the LCA-BBBS Project. The Shell Island Restoration project would restore this barrier island through the creation of dune and marsh habitat. The overall goals of this project are to prevent intrusion of the Gulf of Mexico into interior bays and marshes, restore natural sand transport along this reach of the coast, and protect oil and gas facilities. This segment of the shoreline has been nearly lost. It may be noted that Emergency Berm Reach W8 was built using about 0.777 MCY of sand on the eastern portion of the Shell East island. This project has been split into two projects: Shell Island East-Berm (BA-110) and Shell Island West NRDA (BA-111). Shell Island East (Berm) has been constructed, whereas Shell Island West NRDA is funded through the Louisiana Outer Coast Restoration project using NRDA Early Restoration Funds.
    a. Shell Island East Berm (BA-110) was constructed between April 2013 and August 2013. About 2.29 MCY of sand from a Lower Mississippi River Borrow Area (the same borrow area used for the Scofield Restoration Project [BA-40]) was utilized to construct an 8-foot NAVD 88 dune with a crest width of 340 feet between station 76+79 and station 144+00 creating a dune area of about 87 acres as well as a beach area of approximately 54 acres. About 136 acres of marsh platform was constructed using about 0.286 MCY from the same borrow area as the dune sediment.

2.3.2 Projects under Construction

None.

2.3.3 Future Projects

1. Cheniere Ronquille Barrier Island Restoration (BA-76; NRDA) – This project would expand the Cheniere Ronquille's gulf shoreline structural integrity by tying into two recently constructed projects to the east and address one of the remaining reaches of the Barataria/ Plaquemines shoreline. The design includes fill for a beach and dune plus 20 years of advanced maintenance fill, as well as fill for marsh creation/nourishment. Approximately 127 acres of beach/dune fill would be constructed and approximately 259 acres of back barrier marsh platform would be constructed using the sand/sediment from the borrow areas identified for earlier projects. Once restored, this island will provide critical habitat, and help reconnect the barrier island chain that provides defense to inland communities. Dune plantings would be conducted by seeding and installing approved nursery stock. About half of the marsh platform would be planted with cordgrass and portions of the dune, swale, and marsh would be planted with appropriate woody species. This project will be built by the National Marine Fisheries Services and is funded through the Louisiana Outer Coast Restoration project using NRDA Early Restoration Funds.
2. Shell Island West (BA-111: NRDA): This project is in the final design phase. The template of this project includes 16,100 feet of shoreline with an 8-foot high and 340-foot wide dune on the western portion of the east island, and a 380-foot wide dune on the western island,

creating an area of about 231 acres with 4.8 MCY of sand. About 285 acres of barrier marsh platform will be constructed using about 1.1 MCY of mixed sediment from an offshore borrow area. This project is funded through the Louisiana Outer Coast Restoration project using NRDA Early Restoration Funds.

2.4 St. Bernard Delta System

2.4.1 Constructed Projects

1. Chandeleur Islands Marsh Restoration (PO-27; CWPPRA; 2001) – This project is intended to accelerate the recovery period of barrier island areas overwashed by Hurricane Georges in 1998 through vegetation plantings. The overwash areas, which encompass 364 acres, are located at 22 sites along the Chandeleur Sound side of the island chain and were planted with smooth cordgrass (Spartina alterniflora).
2. Eastern Berm Reach E4 (East of Mississippi River along Chandeleur Islands): In response to the *Deepwater Horizon* oil spill which began on April 20, 2010, the State of Louisiana constructed approximately 16 miles of sand berms along several sections of the state's barrier islands both east and west of the Mississippi River. The objective of this project was to provide a barrier to oil and minimize the potential impact of the oil spill to thousands of acres of fragile barrier islands and wetlands in coastal Louisiana. A total of 47,000 feet (8.9 miles) of berm were constructed along the Chandeleur Islands. It was estimated that a total of 5.85 MCY of sand was dredged from Hewes Point.

2.4.2 Projects under Construction

None.

2.4.3 Future Projects

1. Louisiana Outer Coast Restoration Project: North Breton Island (NRDA) – Funded as an Early NRDA Restoration Project, the Louisiana Outer Coast Restoration project comprises four island segments including Breton Island. The goals of this project are to restore beach, dune, and back-barrier marsh habitats, as well as habitat for brown pelicans, terns, skimmers, and gulls to help compensate the public for spill-related injuries and losses to these resources. The restoration work involves placement of appropriately sized sediments to create beach, dune, and back-barrier marsh areas; installation of sand fencing to trap and retain windblown sediments and foster dune development; and revegetation of appropriate native species in dune and back-barrier marsh habitat.

3.0 Monitoring and Maintenance

Louisiana's barrier islands are part of a complex system controlled by many overlapping and interrelated processes. The four primary barrier island systems have been monitored and evaluated by recent efforts, such as the Barrier Island Comprehensive Monitoring (BICM) program (Section 3.1) and the monitoring of the Emergency Berms (Section 3.2). In addition to the monitoring, the Barrier Island Maintenance Program (BIMP; Section 3.3) provides a

framework for prioritizing planning, design, and construction of barrier island maintenance projects when needs are identified. These programs have provided information to the CPRA regarding the current condition and stability of Louisiana's barrier islands. To minimize the acceleration of island disintegration that commonly occurs after islands breach, a barrier island Breach Management Program is currently being developed to address both breach prevention and response to breaches when they occur (Section 3.4). This program will drastically improve the state's ability to repair storm-induced damages and extend the life-expectancy and integrity of Louisiana's barrier shorelines. Finally, to ensure the efficient and effective use of limited sediment resources in Louisiana, a Borrow Area Monitoring and Maintenance (BAMM) project has been initiated to provide information to understand the evolution of the borrow pits (inland, riverine, and offshore) over time, especially the infilling characteristics (rate and types of sediment) and gradient of the pit-slopes (Section 3.5).

3.1 Barrier Island Comprehensive Monitoring (BICM) program

The development of a comprehensive program to evaluate the state's barrier shoreline was initiated by a Louisiana Department of Natural Resources (LDNR) workgroup (now headed by the CPRA) in 2002-03. This workgroup developed a monitoring framework to assess shoreline processes and resulting habitats, and the changes in these ecosystems over time. The initial plan was then reviewed in 2004 by the Louisiana Shoreline Science Restoration Team (SSRT) working under the LCA program. The LCA study recommended the establishment of a coordinated System-wide Assessment and Monitoring Program (SWAMP), which would integrate the environmental monitoring of wetlands (Coastwide Reference Monitoring System, or CRMS-*Wetlands*), rivers and inshore waters (CRMS-*Waters*), near-shore waters, and barrier islands (BICM). The initiation of the BICM program in 2005 was conducted through the CPRA and was funded by the LCA Science and Technology (S&T) office and through a partnership between the University of New Orleans (UNO) and the U.S. Geological Survey (USGS). Initial goals of the BICM program were to establish baseline conditions for the state's barrier shoreline after hurricanes Katrina and Rita, as well as to refine the methods and products for use in programs other than LCA (e.g., CWPPRA; CIAP; BIMP).

The advantage of BICM over CWPPRA project-specific monitoring alone, is the ability to provide integrated long-term data on all of Louisiana's barrier shorelines, instead of only those areas with constructed projects. As a result, a greater amount of long-term data are now available to evaluate constructed projects, facilitate planning and design of future barrier island projects, assist operations and maintenance activities, and determine storm impacts. Because data were collected for the entire barrier island system concurrently, BICM data are more consistent and complete than previous barrier island data collection efforts.

Initial BICM datasets collected include 1) post-storm damage assessment photography and videography, 2) shoreline position, 3) land/water analysis, 4) topography, 5) bathymetry, 6) habitat composition, and 7) surficial sediment composition. Additionally, these datasets have been compared to historic datasets (where available) that have been standardized, thereby providing digital datasets to user groups for their use in multiple restoration efforts. Data collection for all seven BICM components initiated in 2005 was completed in 2008. Final datasets and reports are currently available through the CPRA web site.

Post-storm assessment products included an aerial video survey of the entire coastline and photographs of the majority of the shoreline. Photography of particular shoreline locations were then matched with historic photographs to provide time-series datasets for shoreline evaluations and comparisons (Figure 2).

These datasets have already proven invaluable in assessment of the impacts of Hurricanes Gustav and Ike in 2008, in the planning of LCA projects currently in the feasibility stage, and in the *Deepwater Horizon* oil spill of 2010. These photos have also allowed assessment of impacts for documentation of damage claims to FEMA.

A combination of CRMS-*Wetlands*, UNO photography, and Quickbird satellite imagery was collected for the entire Louisiana coast. Shoreline positions using post-storm photography have been developed along with complete 1880s, 1930s, 1990s, and 2004 shorelines. The imagery has been analyzed, and datasets for historic, long-term, short-term, and near-term erosion rates for the entire coastline are available (Figure 3). Additionally, land/water change maps and tables have been developed with the shoreline changes (Figures 4 and 5).

Figure 2. Photo comparison of Elmer's Island shoreline in Lafourche Parish, LA immediately after Hurricanes Katrina and Rita in 2005, and approximately 2 years later.

LiDAR data have been collected for all three portions of the sandy coast; the Chandeleur Islands, from Raccoon Island to Sandy Point, and the Chenier Plain from Sabine Pass to the Mermentau River Outlet. Data, grid models, and change models for all coastal areas are complete (Figure 6). USGS has continued to fly LiDAR for the Chandeleur region and has provided an additional four surveys of the area (Figure 7). Additionally, LiDAR was flown by USGS for the Teche and Lafourche Deltaic Regions in early 2008 and plans are underway to bring these data into the BICM program for use. LiDAR data were acquired from the Caminada Headland to Sandy Point in March, 2013 as part of a lower Barataria basin LiDAR update through a partnership with USGS. The processed data is scheduled for delivery from USGS in early 2014.

Bathymetric surveys were conducted during 2006 and 2007. The Chenier plain area and the southern Chandeleur Islands were surveyed to complete the coast-wide coverage areas begun in 2006. Surveys covered from five kilometers (km) offshore to two km bayward of the shoreline. In addition to bathymetry data, USGS collected sonar and seismic data along all the offshore lines and did a complete sidescan sonar mosaic of the gulf side of the Chandeleur Islands. Data, grid models, and change models from all field work are finalized (Figures 8, 9, and 10).

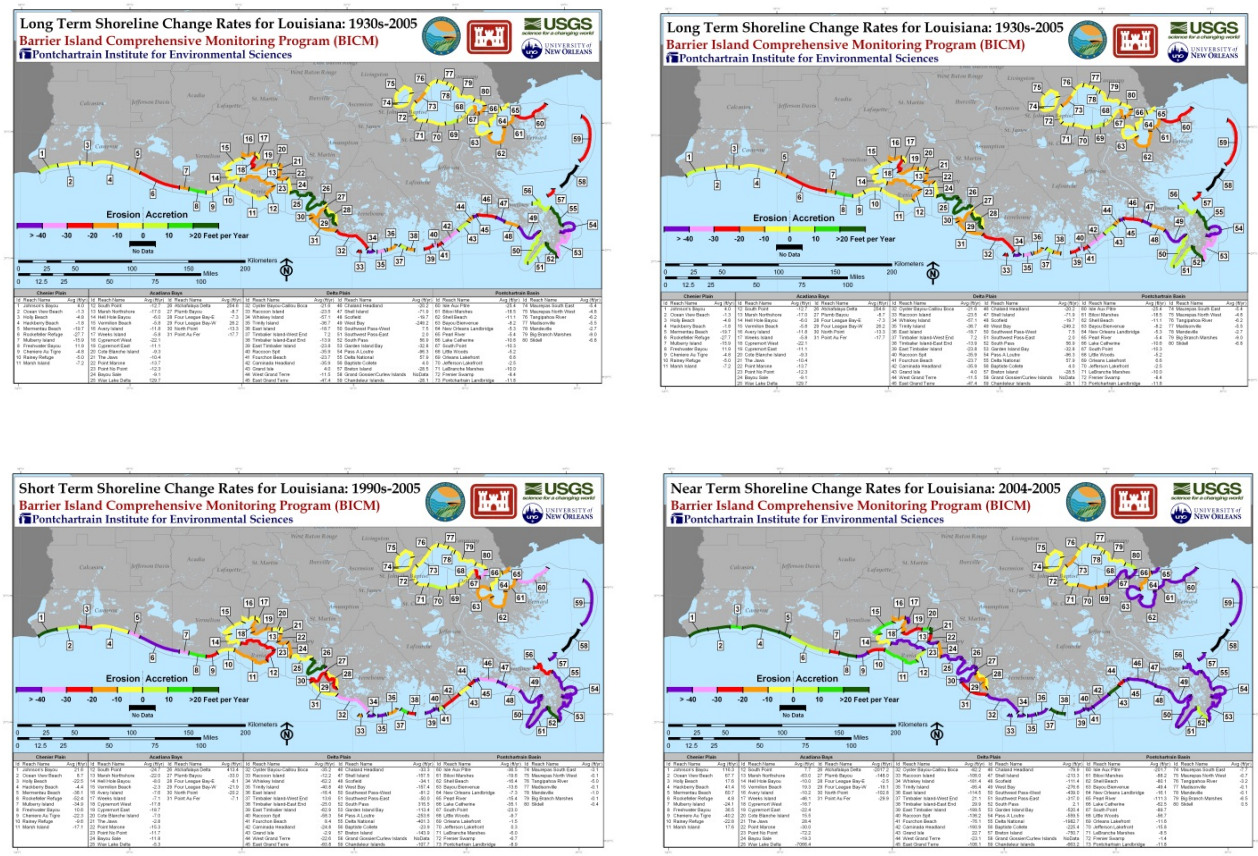


Figure 3. Shoreline erosion rates for sections of the Louisiana coast. A) Historic (1850s-2005), B) Long-term (1920s–2005), C) Short-term (1996-2005), and D) Near-term (2004-2005) (Martinez et al., 2009).

Habitat analysis based on the aerial photography is complete. Detailed habitat data for all BICM shoreline areas are available for 1996/98, 2002, 2004, and 2005 along with change maps showing habitat differences for all time periods (Figures 11 and 12).

Collection of surficial sediments for sediment characterization was conducted in 2008 and analysis is complete. Sediment characterization analysis, reports, and distribution maps are available (Figure 13).

A final report entitled "Louisiana Barrier Island Comprehensive Monitoring (BICM) Program Summary Report: Data and Analyses 2006 through 2010: U.S. Geological Survey Open-File Report 2013–1083" was published as a USGS open file and can be accessed online at http://pubs.usgs.gov/of/2013/1083/ (Kindinger et al., 2013). The BICM program used both historical and newly acquired (2006 - 2010) data to assess and monitor changes in the aerial and subaqueous extent of islands, habitat types, sediment texture and geotechnical properties, environmental processes, and vegetation composition. BICM datasets included aerial still and video photography (multiple time series) for shoreline positions, habitat mapping, and land loss; LiDAR surveys for topographic elevations; single-beam and swath bathymetry; and sediment

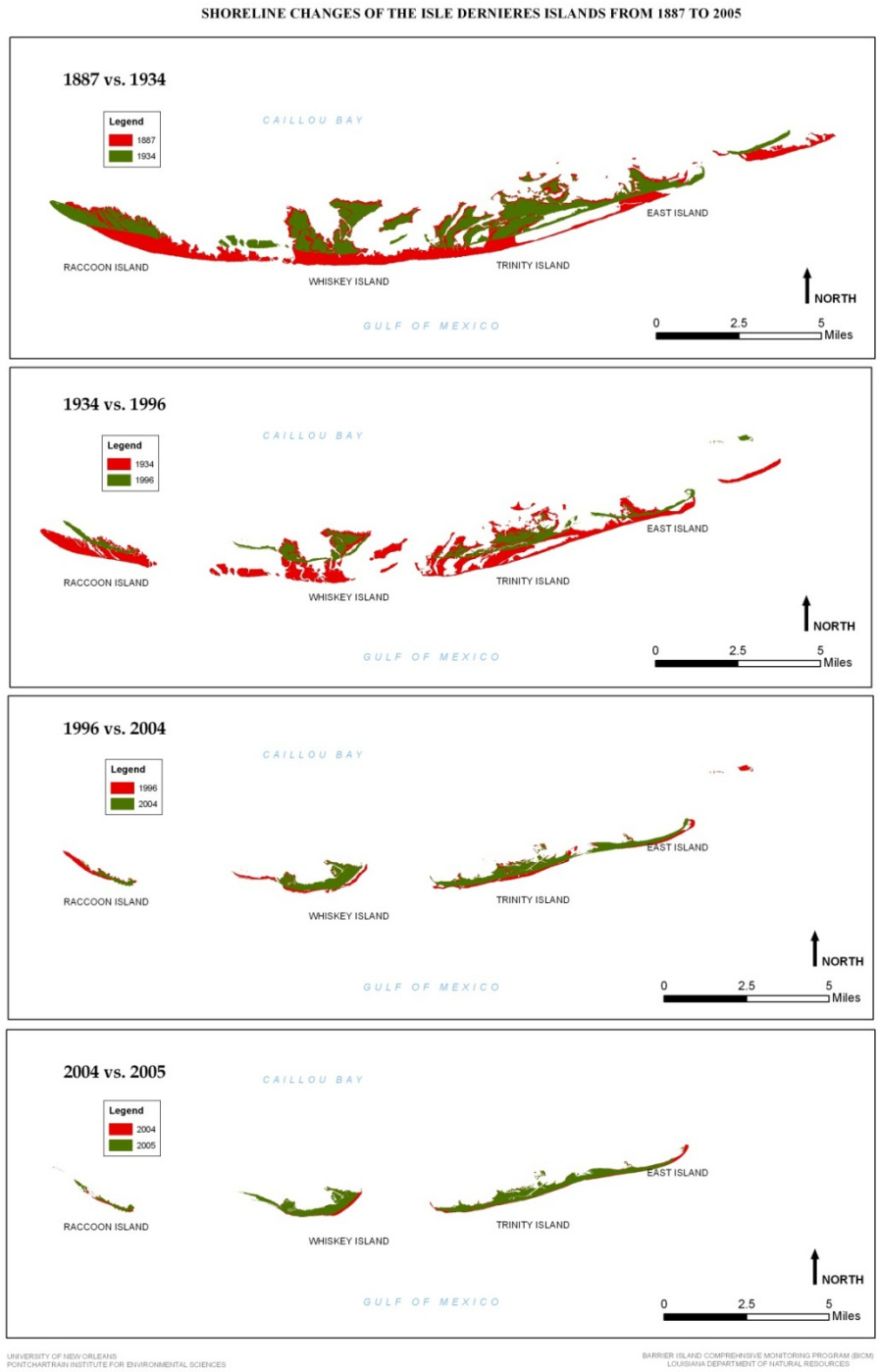


Figure 4. Historical overlays for the Isle Dernieres for 1887 – 2005. (Martinez et al., 2009).

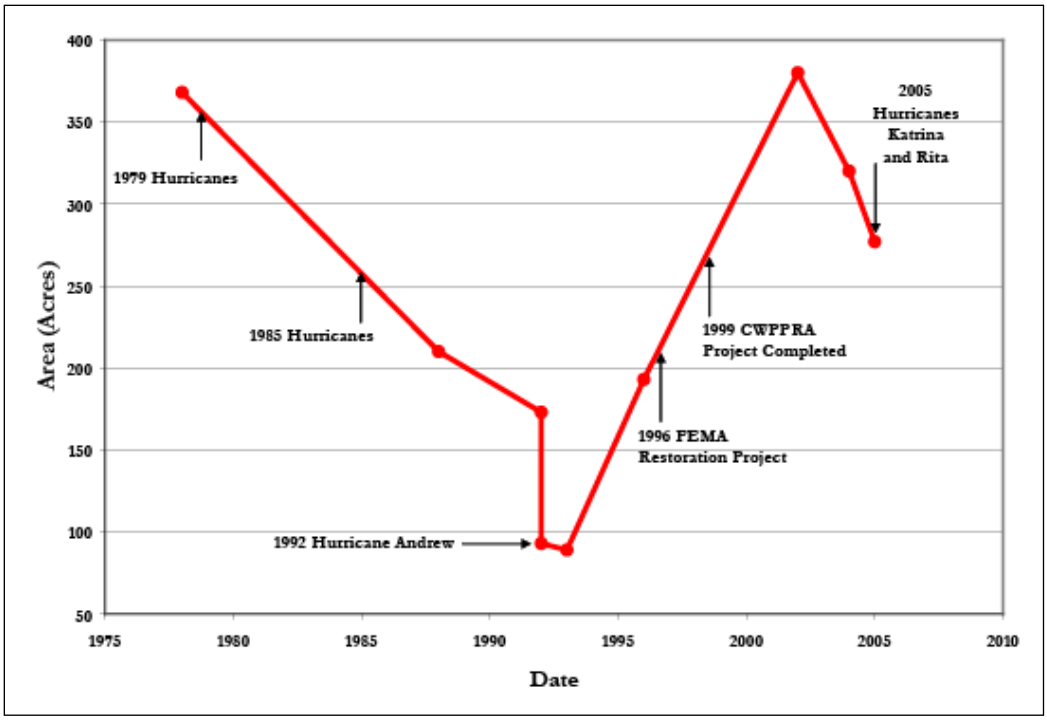


Figure 5. A time-series documenting the historical area changes in East Island (TE-20) between 1978 and 2005. Significant shoreline events are illustrated along the time-series line (Martinez et al., 2009).

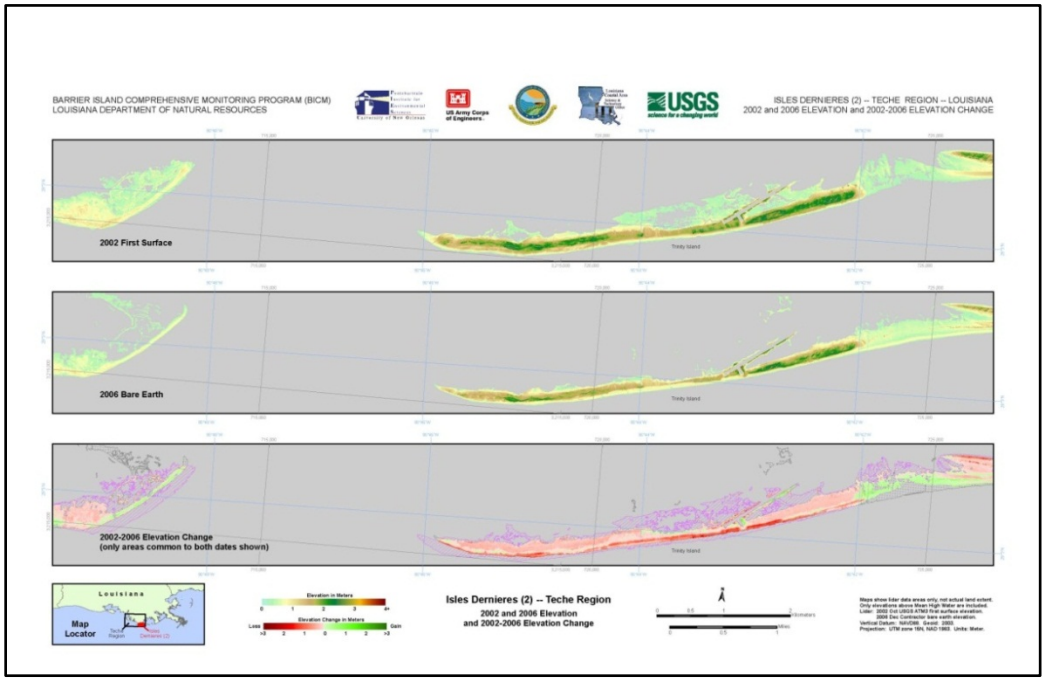


Figure 6. LiDAR topography of a portion of the Isle Derniers in Terrebonne parish in 2002 and 2006, as well as analysis of elevation changes within common areas of the data.

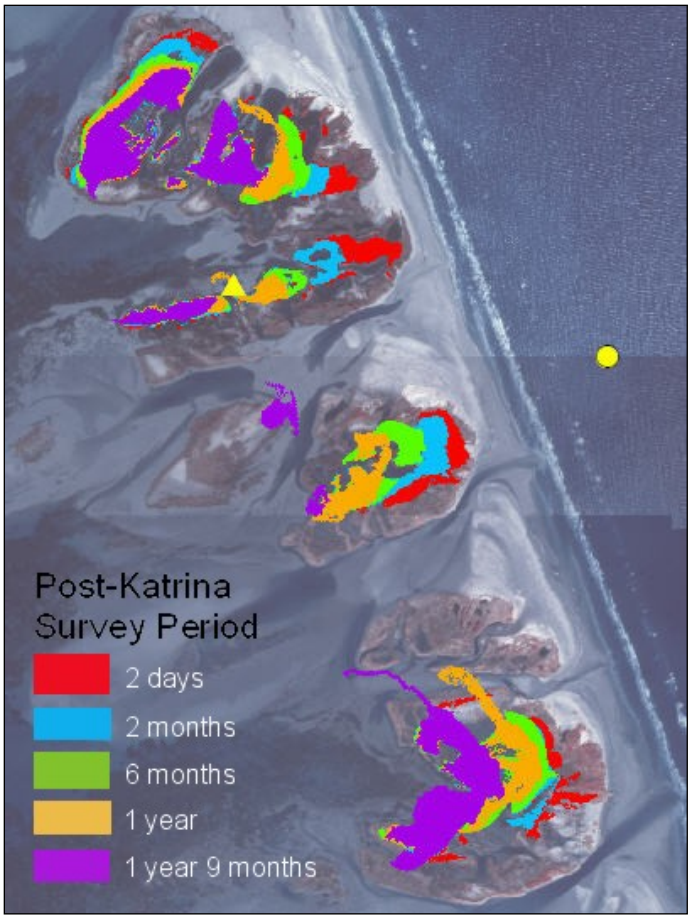


Figure 7. Draft LiDAR surveys of a portion of the Northern Chandeleur Islands. Colored portions are the land areas above MHW.

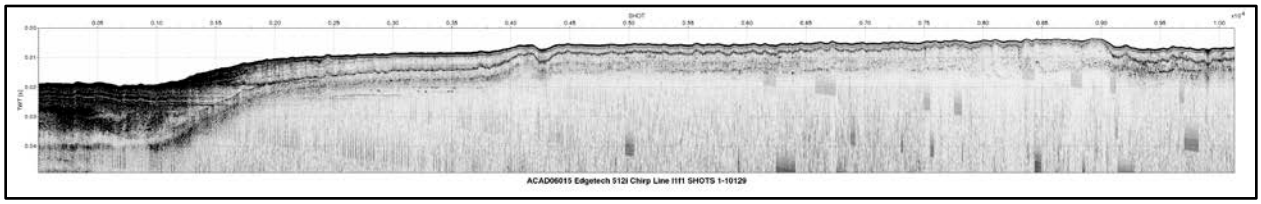
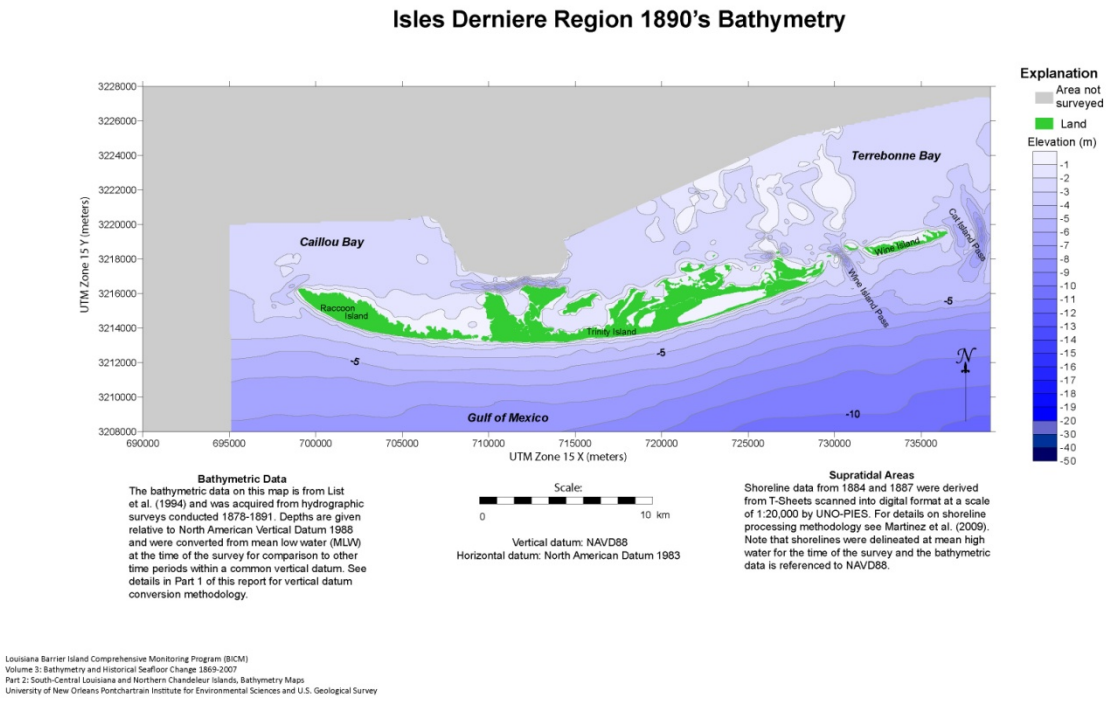


Figure 8. Example of chirp seismic–reflection profile data provided by USGS surveys of the Chandeleur Islands. Data is available from Baldwin et al., 2009.



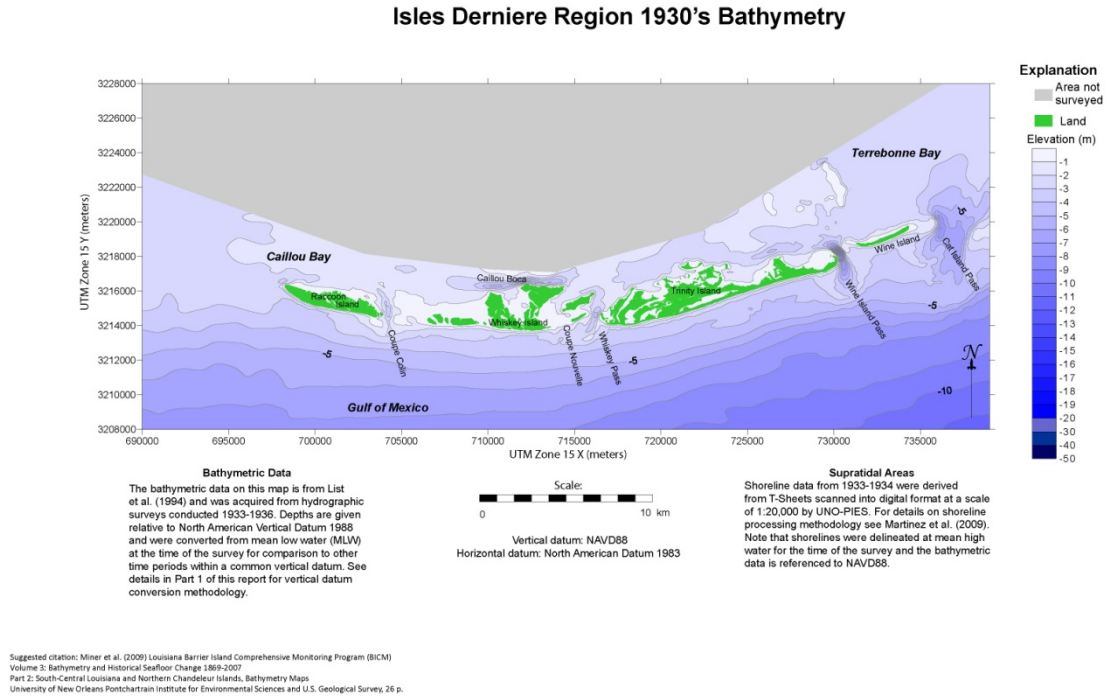
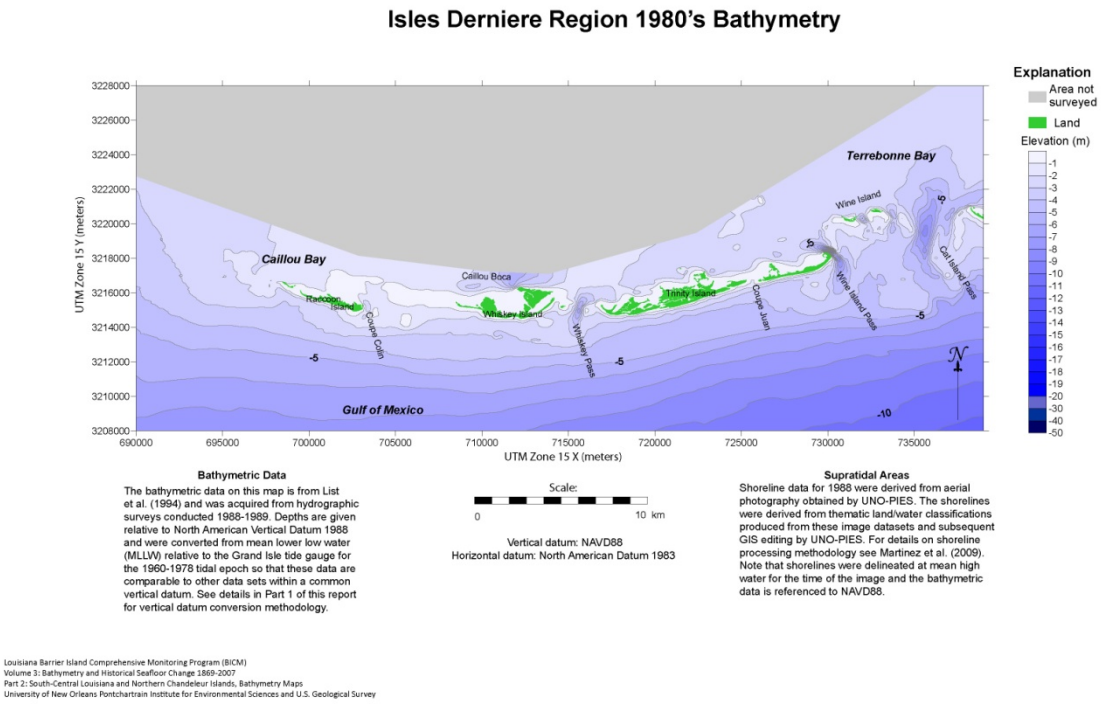


Figure 9. Bathymetric maps for the Isle Dernieres - 1890s and 1930s.



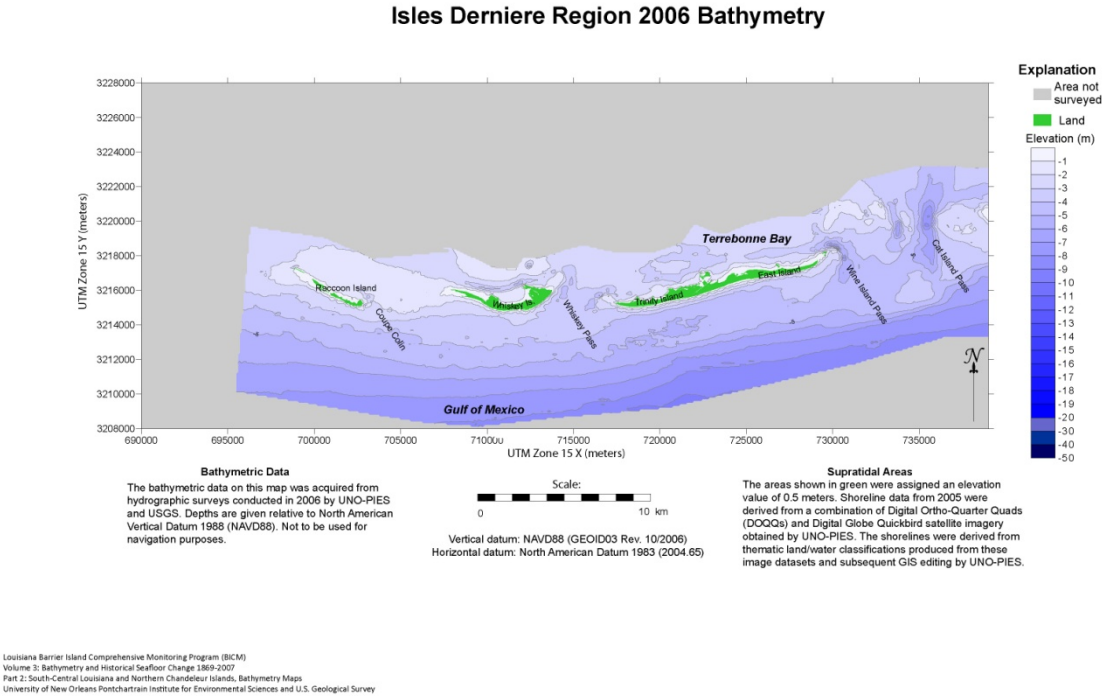
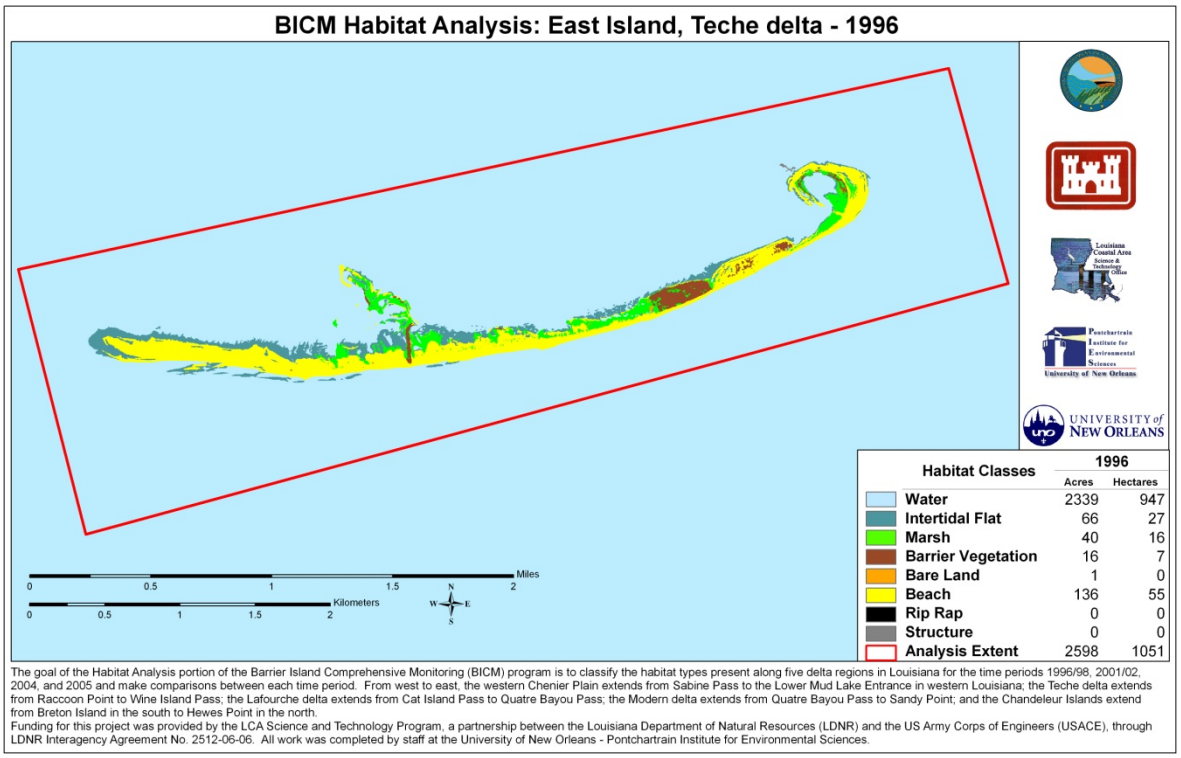


Figure 10. Bathymetric maps for the Isle Dernieres - 1980s and 2006.



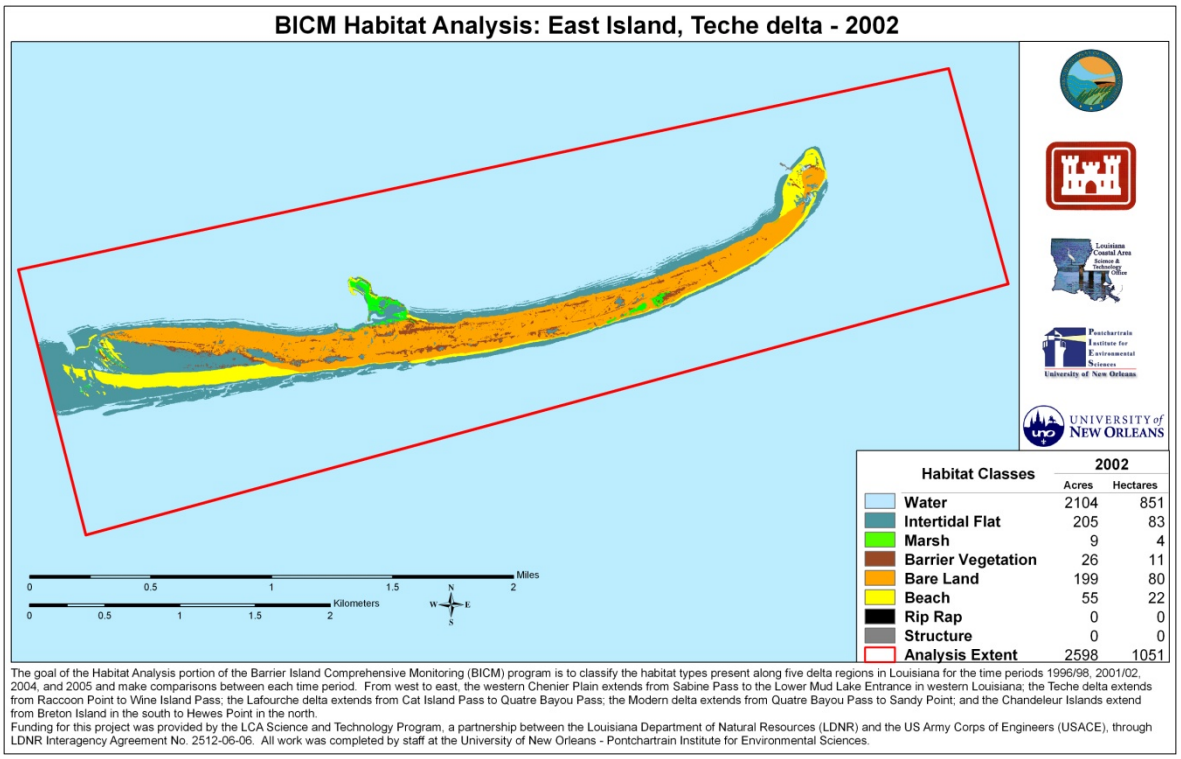
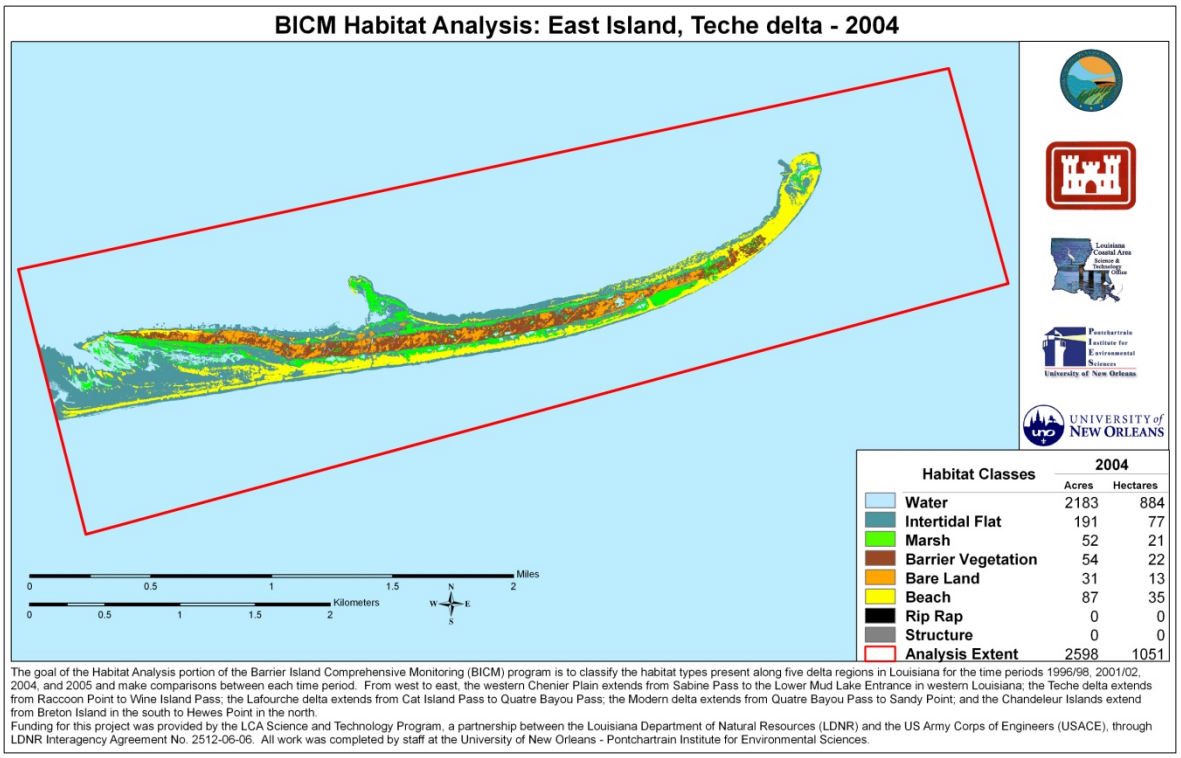


Figure 11. Habitat classification maps of East Island (TE-20), Isle Dernieres, Terrebonne Parish, LA for 1996 and 2002.



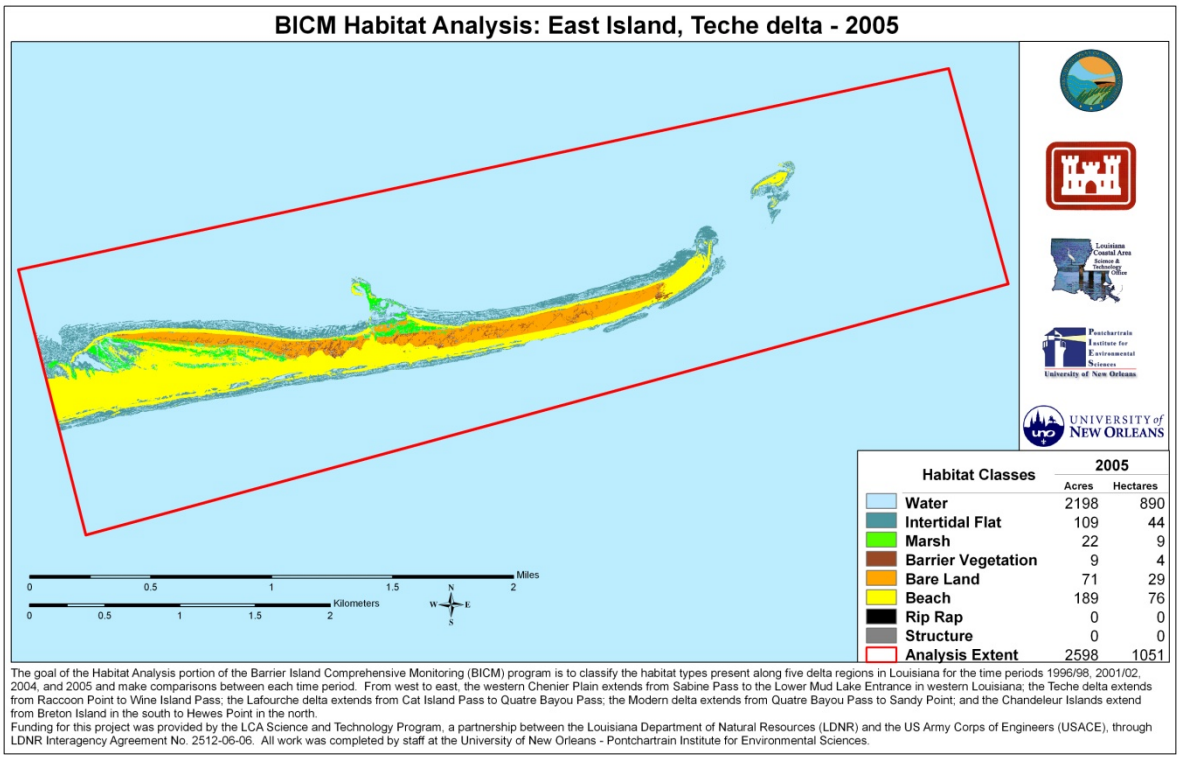


Figure 12. Habitat classification maps of East Island (TE-20), Isle Dernieres, Terrebonne Parish, LA for 2004 and 2005.

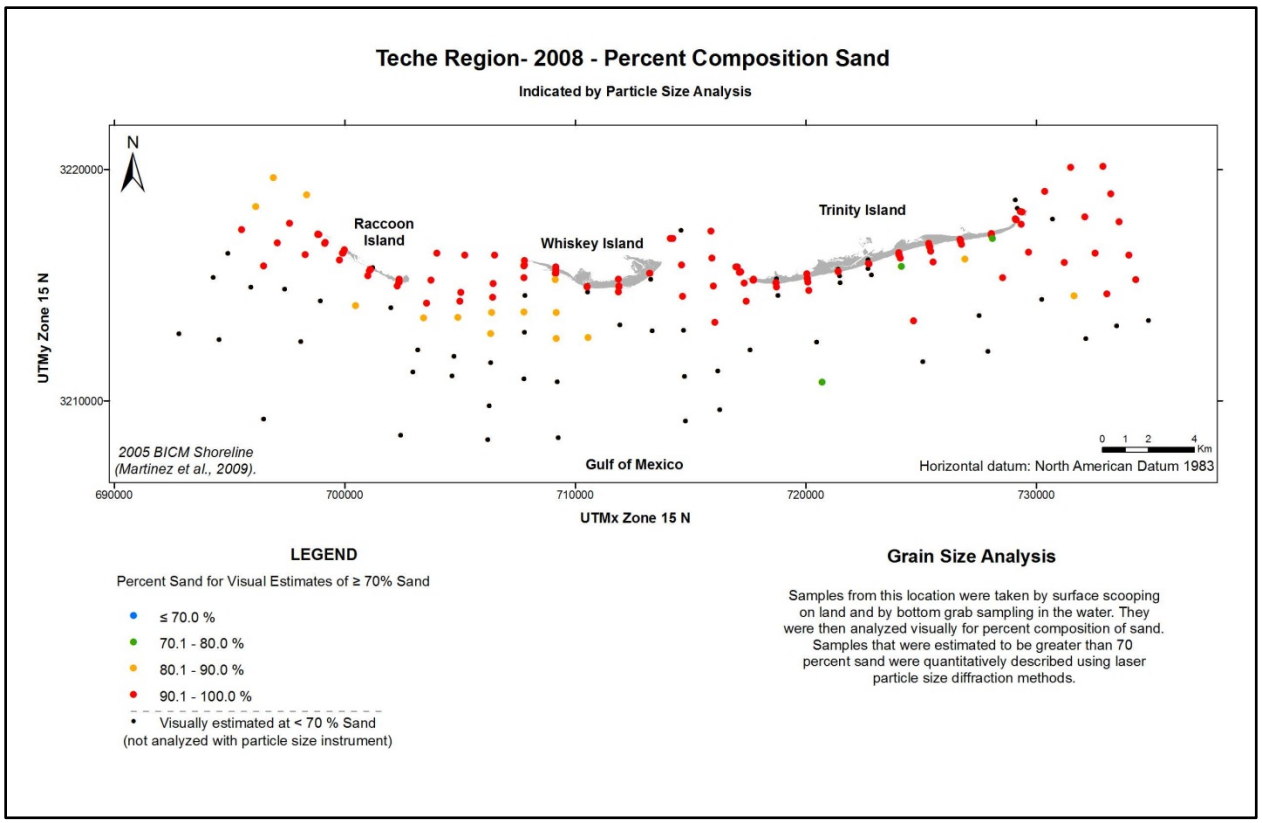


Figure 13. Surficial sediment characterization of the 2008 Isle Dernieres area in Terrebonne Parish, LA.

grab samples. Planning and design of the program will continue to refine future data collection, analysis, products, tools, and timelines for future programmatic monitoring.

CIAP funded monitoring of vegetation on some barrier island projects will be used to refine vegetative sampling procedures proposed in the original 2003 BICM proposal document. These vegetative sampling procedures will be conducted and analyzed to determine the added value of vegetative sampling within the BICM program, and potential costs of full-scale implementation. Once this analysis is completed, decisions will be made whether to incorporate this additional BICM component as originally recommended.

The USGS Coastal and Marine Science Center (St. Petersburg, FL) completed a final BICM report in 2013 (Kindinger et al., 2013) synthesizing the findings covering all aspects of the initial BICM program and held a workshop to report findings and discuss future efforts. Stakeholders participated in discussions of results and identified additional future needs such as overwash, subsidence, and storm impacts, within the context of a long-term monitoring program. The report is available digitally via the CPRA or USGS websites and presents the data collection efforts, as well as discusses several broad scale issues synthesizing the BICM data as a basis for assessments. Various themes discussed include shoreline change within the context of sea-level rise, hurricane impacts and island response, tidal inlet management, habitat changes, and future BICM goals. The report provides not only an overview of the data collection efforts, but also

provides an initial overview of issues addressed by the data, as well as additional stakeholder needs.

The next BICM data collection cycle (2013-2017) has been initiated with the revisions and development of shoreline position data and the addition of shorelines for the 1950s, 2008, and 2012. These data will be available within the next six months and provide updated shoreline erosion data, including added time periods to better evaluate changes in shoreline position. BICM is currently moving to capture other data sets in the Teche, Lafourche, and Modern Deltas, and Chandeleurs in 2015, and then move through data collection efforts in the Chenier Plain (2016), with data synthesis and delivery in 2017.

Data collection activities for the other BICM datasets are being planned with USGS and other contractors to reoccupy the original BICM data locations for comparisons, as well as provide some added coverage areas based on stakeholder needs (Western Chenier Plain). Efforts are continuing to contract USGS for topographic LiDAR surveys of the Teche Delta region in early 2015. USGS has already conducted LiDAR surveys of the Lafourche and Modern Delta BICM areas in 2013 through other efforts of the CPRA. Bathymetric surveys are being scoped for the Teche, Lafourche, and Modern Deltas for the 2015 time frame and USGS and the CPRA are in contracting for bathymetric surveys in the vicinity of the Chandeleur Islands in 2015. Other variables such as habitat mapping and surficial sediment sampling are under negotiation as well and will be conducted during the appropriate time frames for data comparisons. Currently, historic datasets are also being considered for those areas not already covered under the initial BICM effort.

Additional data collections such as subsidence, overwash incidents, and annual shoreline survey profiles are being proposed and budgeted based on user input and needs identified for the 2017 Master Plan update, as well as storm damage assessments and other programs (Figure 14).

3.2 Monitoring of the Emergency Berms

In response to the *Deepwater Horizon* oil spill which began on April 20, 2010, the State of Louisiana constructed approximately 16 miles of sand berms along several sections of the state's barrier islands both east and west of the Mississippi River. The objective of this project was to provide a barrier to oil and minimize the potential impact of the oil spill to thousands of acres of fragile barrier islands and wetlands in coastal Louisiana. These berms are man-made features, were constructed for a specific purpose, as stated above, and are different geomorphologically than native barrier islands. However, significant insight into coastal processes which affect barrier islands can be gained by monitoring their changes over time. On May 27, 2010, a NOD-20 emergency permit (MVN 2010-1066-ETT) was issued by the U.S. Army Corps of Engineers (USACE), New Orleans District (CEMVN). The emergency permit allowed the construction of sand berms in specified areas or "reaches". Specifically, reaches E3 and E4 to the east of the Mississippi River, and reaches W8, W9, W10, and W11 to the west of the Mississippi River, were authorized for a total of approximately 38 miles of barrier berm. These areas were identified by USACE staff as critical locations where greater immediate benefit was likely to be achieved with minimal adverse disruption of the coastal environment. Only reaches E4, W8, W9

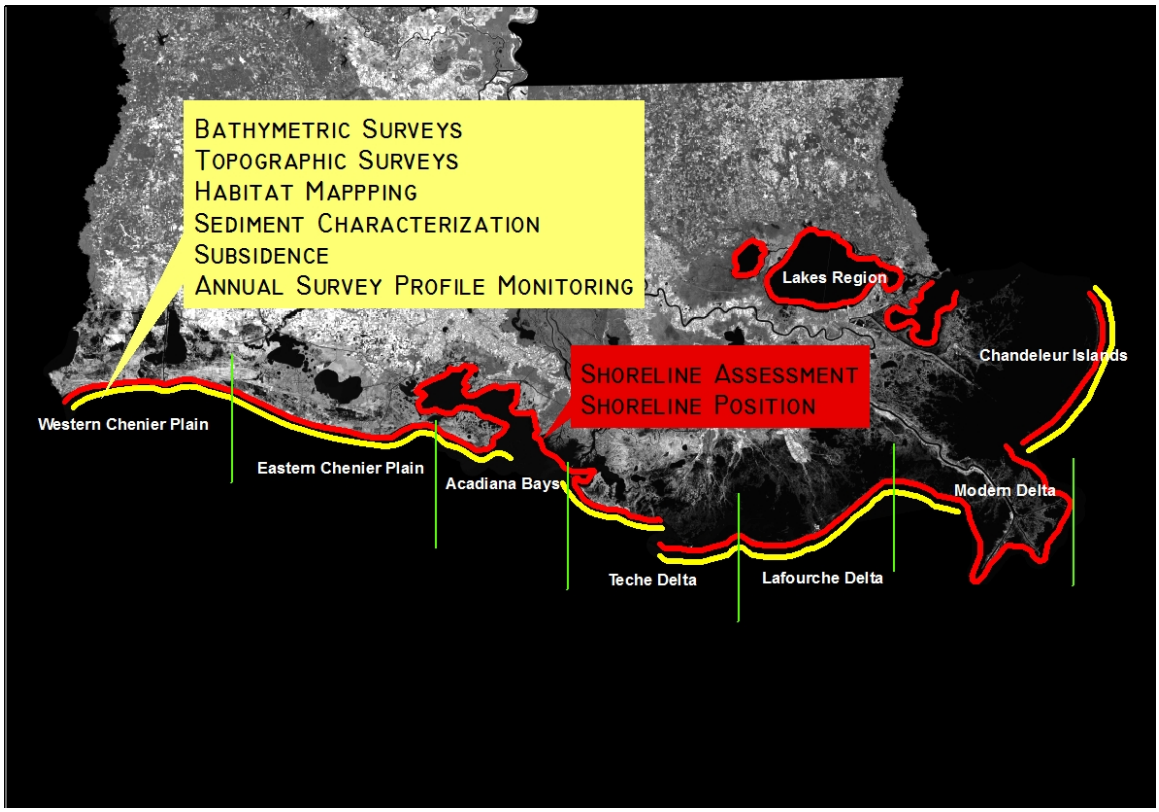


Figure 14. Proposed BICM data collection structure for the 2013 through 2017 work effort. Note the additional areas of effort in the Eastern Chenier Plain and Teche Delta regions.

and W10 (over 83,000 linear feet; approximately 16 miles of sand berm) were constructed under the NOD-20 emergency permit (Figures 15 and 16). Reaches W11 and E3 were not constructed.

Monitoring was required as a part of the emergency permit. Transects were established perpendicular to the shoreline, beginning at a point 1,000 feet landward from the inside toe of the berm and ending at the -20 foot NAVD 88 isobath. The constructed berms were surveyed along these transects at five time-intervals: after construction (as-built), and at 30-, 90-, 180- and 360-days post-construction to estimate sand-volume-changes (Table 1).

The monitoring data suggest that for berm reach E4, 77% of the fill had been retained at the 360-day monitoring survey; for berm reach W8, 83% of the fill had been retained at the 360-day monitoring survey; for berm reach W9, 79% of the total volume placed appears to be retained at 360-days post-construction and for berm reach W10, approximately 91% of the volume placed in the berm had been retained at the 360-day monitoring survey. It should be noted that the direct causes of the changes in sand volumes discussed above are difficult to determine at this time. However, these changes are undoubtedly attributed to a combination of factors, such as longshore transport, overwash, settlement, and subsidence that have all been experienced along Louisiana's barrier island system.

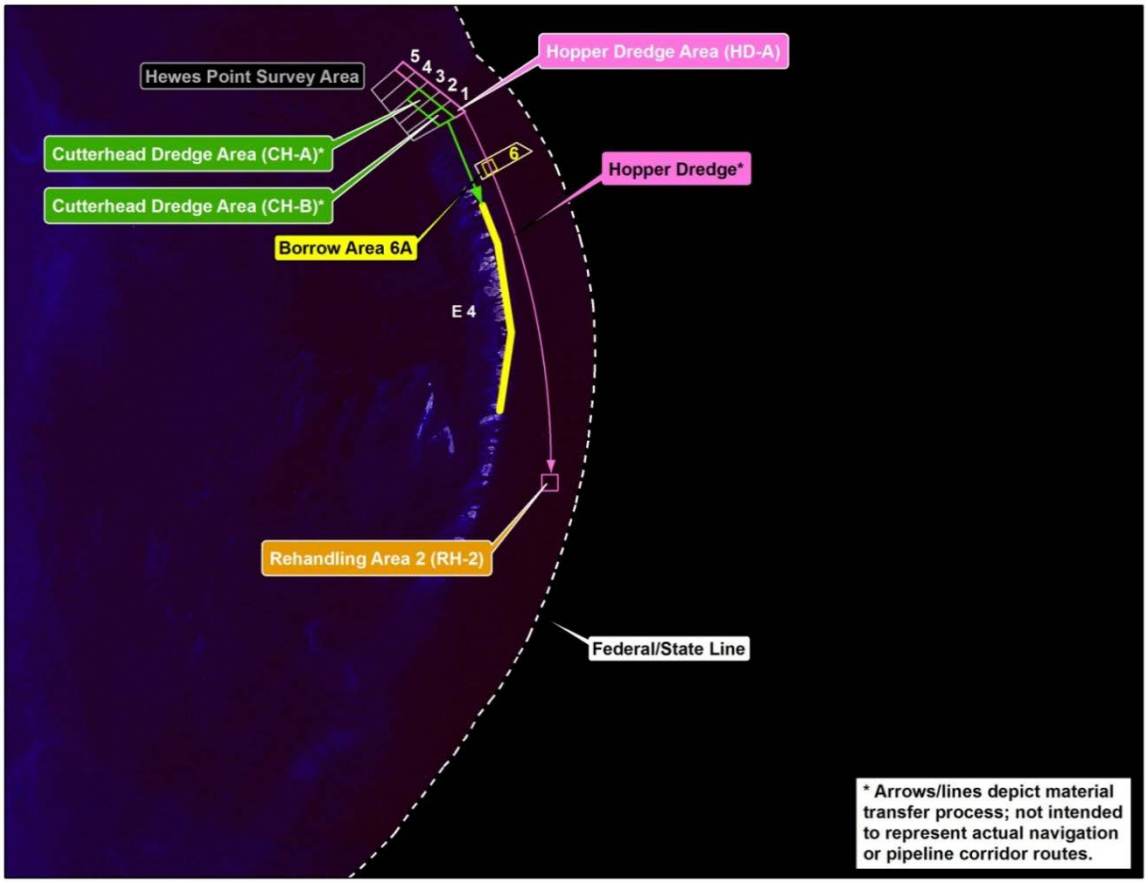


Figure 15. Borrow Area and Sand Berm (E4) locations on the eastern side of the Mississippi River. Sand for E4 was mined from Hewes Point to the north and either placed directly into the berm, or transported to a rehandling area (RH-2) using a hopper dredge (from borrow area HD-A). Borrow Area 6A was used as a temporary borrow site to begin work on the northernmost 2,000 linear feet of Reach E4 of the sand berm and was backfilled with sand from Borrow Area CH-B.

The data collected as part of the monitoring programs are extremely valuable to increase the understanding of coastal processes on Louisiana's barrier islands. Data sets collected at such frequent intervals and relatively tight spacing are rare.

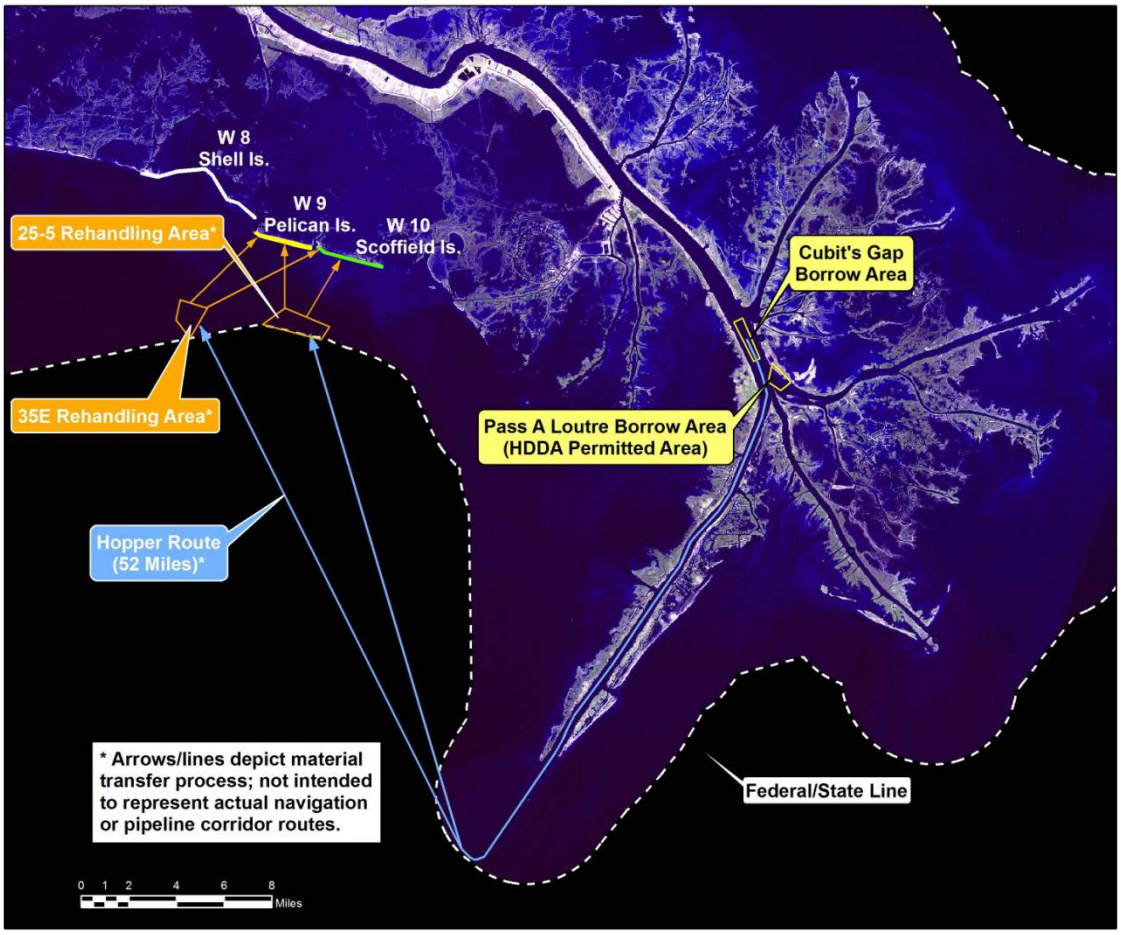


Figure 16. Sand Berm (W8, W9 and W10) and Borrow Area locations on the western side of the Mississippi River. Reaches W8, W9, and W10 were constructed by dredging sand from approved borrow sites in Lower Mississippi River to pre-approved rehandling areas 35E and 25-5.

Table 1. Summary of sand volumes from as-built and monitoring surveys for Emergency Berm reaches.

	Volumes (cy)				
Reach No.	As-built	30-day Monitoring	90-day Monitoring	180-day Monitoring	360-day Monitoring
E4	3,166,600	3,117,400	3,857,400	3,493,000	2,451,700
W8	777,300	722,600	685,100	625,100	642,600
W9	1,242,500	1,194,000	979,800	1,004,300	977,500
W10	964,200	817,100	863,900	931,800	875,200

3.3 Barrier Island Maintenance Program (BIMP)

Several legislative programs have been established on both the state and federal levels that call for the implementation of a program to stabilize and preserve Louisiana's barrier islands and shorelines. House Bill No. 429, Act No. 407, authored by Representative Gordon Dove during the 2004 Regular Session, outlined the process by which the CPRA would annually develop a list of priority projects to be submitted to the House and Senate Committees on Natural Resources. These projects would be funded by the Barrier Island Stabilization and Preservation Fund, which was established by House Bill No. 1034, Act No. 786 of the 2004 Session to provide appropriations, donations, grants and other monies for the program. The legislation requires this fund to be used exclusively by the CPRA to support the Barrier Island Stabilization and Preservation Program, with all interest earnings and unencumbered monies remaining in the fund at the end of the fiscal year.

In accordance with this legislation, and with the understanding that maintenance is an integral part of stabilization, preservation, and restoration of any barrier island or shoreline, BIMP was conceptualized by the CPRA. BIMP provides the framework for categorizing, prioritizing, selecting, and funding state barrier island maintenance projects, while coordinating with CWPPRA and other existing restoration mechanisms.

3.3.1 Rationale

The BIMP program is necessary to quickly coordinate and fund the maintenance of previously constructed barrier shoreline restoration projects in Louisiana. This program can act as a comprehensive management approach to prioritizing rehabilitation efforts in coordination with other restoration initiatives (e.g., CWPPRA, LCA).

During the past decade, numerous barrier islands and headlands in Louisiana have been or are currently being restored by the state and its federal partners through CWPPRA and other sources. CWPPRA projects have a design life of 20 years; however, scheduled maintenance of these projects has not been incorporated into their funding or design. Design of these projects relies heavily on numerical models for predicting their longevity and ultimate success. Inherent in these models are certain assumptions and the realization that there are significant uncertainties about the physical processes that affect the stability of these land masses. If the project is impacted by more events than assumed in the model, the condition of the barrier island or headland deteriorates considerably, thereby reducing the life of the project. The project then requires maintenance to sustain the predicted design template. Maintenance costs can increase exponentially when not performed in a timely manner. Therefore, BIMP is a tool that can be used to formulate a much needed component of maintenance planning for existing projects without maintenance funds. This strategy will address the need for timely and cost-effective maintenance of barrier shoreline projects to ensure their long-term success.

3.3.2 Program Area

BIMP encompasses all barrier islands, headlands, and sandy shorelines, restored or otherwise (Figure 17). Based on the geographic and geologic setting, the domain of the BIMP program includes the eight coastal segments identified below (Campbell et al., 2005).

1. Chandeleur Islands – Northern Chandeleur Islands (Freemason Islands, North Islands, and New Harbor Islands) and Southern Chandeleur Islands (Breton Island, Grand Gosier Island, and Curlew Islands).
2. Plaquemines – Sandy Point, Pelican Island, Shell Island, Chaland Headland (Pass La Mer area), Cheniere Ronquille, and East and West Grand Terre Islands.
3. Lafourche – Grand Isle and Caminada- Moreau Headland.
4. Timbalier Islands – Timbalier and East Timbalier Islands.
5. Isle Dernieres – Raccoon, Whiskey, Trinity, East, and Wine Islands.
6. Freshwater Bayou to Point Au Fer – Point Au Fer, Marsh Island, and Chenier au Tigre.
7. Eastern Chenier Plain – Freshwater Bayou to Calcasieu Pass.
8. Western Chenier Plain – Calcasieu Pass to Sabine Pass.

Grouping these apparently disparate and disjointed units of barrier islands, headlands, and sandy shorelines into coastal segments will facilitate the development of a regional long-term strategy for shoreline maintenance, including project prioritization and development. It should be noted that any alteration to an area within a segment will affect the remainder of the segment due to coastal processes and morphodynamics, and, consequently, the sediment budget.

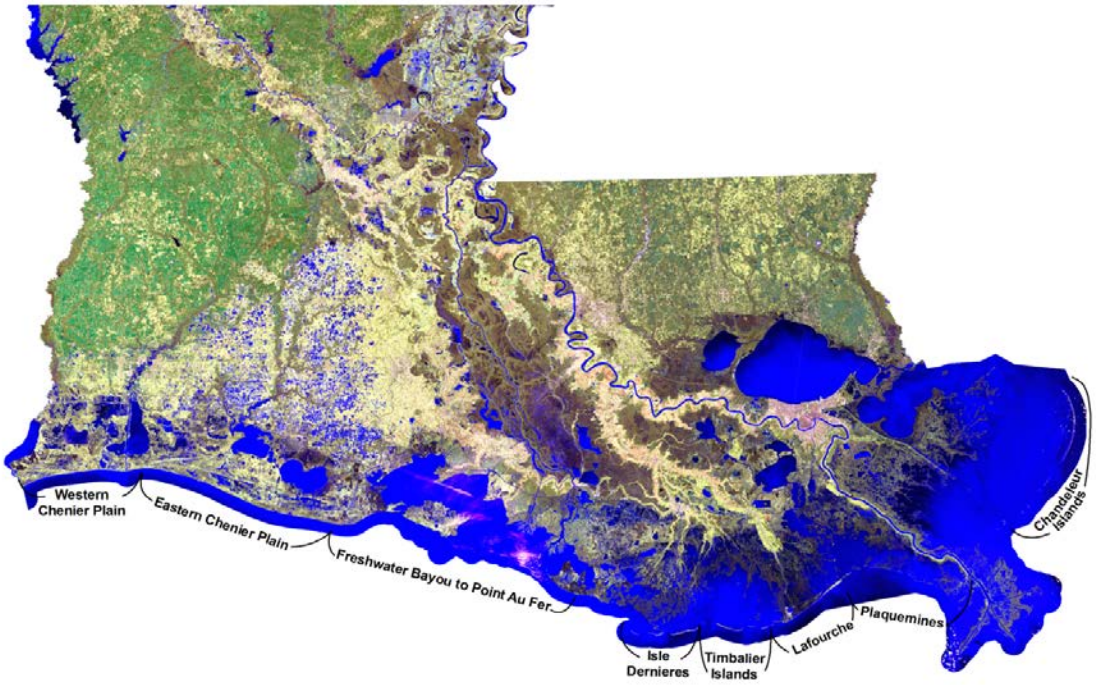


Figure 17. Various coastal segments including sandy shorelines, headlands, and barrier islands.

3.3.3 Funding and Timeline

As part of BIMP, the CPRA will formulate an annual list of potential projects based on inspections of previously constructed projects, post-storm assessments, BICM data, and existing project maintenance schedules. Data from these sources will be used to identify existing projects with an immediate need for repairs. All projects will be compiled and ranked by December 1 of each year. This list, along with recommended funding levels, will be provided to both the House and Senate Committees on Natural Resources for approval and funding. Funding will come from the Barrier Island Stabilization and Preservation Fund as set forth in House Bill No. 1034, Act No. 786 of the 2004 Session.

3.3.4 BIMP Projects

1. The 2006-2007 BIMP projects approved for implementation were the Bay Champagne Marsh Creation and Bay Champagne Sand Fencing projects. Bay Champagne is a 250-acre body of water just east of Port Fourchon in Lafourche Parish. Currently, only a narrow dune feature separates the bay from the Gulf, and a breach of this dune would expose interior marsh to increased erosion. These restoration projects would create 70 acres of marsh in the bay, as well as utilize sand fencing to stabilize the fore and back dune areas. The total combined cost of the projects was estimated at $2,820,000. These projects were discontinued due to a lack of sediment sources in close proximity. Additionally, the Caminada Headland project currently funded for construction should address the Bay Champagne area of need when it is constructed.
2. The 2007-2008 BIMP selections were the Sediment Bypassing at the Mermentau Jetties and the East Grand Terre Vegetative Plantings projects. The former project planned to add $1,387,688 in Cameron Parish CIAP funds with $2,750,000 in BIMP funds to hydraulically dredge sediment adjacent to the east Mermentau Jetty and move it to the west side. This would allow the littoral drift to disperse the sediment on the beach front. The goal of this project was to rebuild approximately 75-100 acres of gulf shoreline at Hackberry Beach. However, this project was deemed unfeasible because a preliminary investigation found there was insufficient sand to justify this project, and preliminary modeling showed that removing sediment adjacent to the east jetty could cause accelerated erosion and possible breaching of the shoreline at the north end of the jetty. The East Grand Terre Vegetative Plantings project will be implemented in the project area of the East Grand Terre Island Restoration (BA-30) CIAP project that was constructed in 2010. The total cost of the BIMP planting project is approximately $750,000.
3. The BIMP project approved for implementation in the 2008-2009 cycle was the 2009 Sand Fencing Project, which consisted of installation of 34,000 linear feet of sand fencing within the project areas of five constructed barrier island restoration projects in Terrebonne and Plaquemines Parishes. The construction contract amount was $198,200. The proposed sand fencing was installed on Trinity/East Islands in the eastern Isles Dernieres (TE-20 East Island, TE-24 Trinity Island, and TE-37 New Cut project areas); Timbalier Island (TE-40 Timbalier Island project area); and near Chaland Pass (BA-38 Chaland Headland project area). Installation of the sand fencing will facilitate the capturing of wind-blown sand and building of additional sand dunes on the islands. The work was completed in May 2010. No additional projects were selected this cycle, as the Sediment Bypassing at the Mermentau

Jetties and East Grand Terre Vegetative Plantings projects were expected to use funds from this funding cycle.

4. There were no new BIMP projects selected in the 2009-2010 cycle, because the Mermentau Jetties project's preliminary feasibility investigations continued through early 2010, and it was expected that the Jetties project would use funding from this cycle. When this project was deemed infeasible, it was hoped that another suitable project could be developed within Cameron Parish, so the funds from this BIMP funding cycle were set aside for this potential new project. However, another suitable project was not identified for this funding cycle in Cameron Parish.

3.4 Breach Management Program

A Breach Management Program is in development to identify, classify, and prioritize methodologies and recommendations for breach prevention (proactive) and response (reactive) measures. A detailed analysis of coastal restoration projects completed in 2014 quantified the effects of breaching on barrier islands and headland beaches, specifically computing the significant increases in shoreline erosion rates. The Breach Management Program has developed a methodology to classify breach potential along the Louisiana coastline between Raccoon Island to the west and Scofield Island to the east. Barrier islands classified as having the potential to breach within four years are classified as severe and breach prevention measures are being developed for those areas. Opportunities are being explored to strategically partner breach prevention measures with other barrier island projects scheduled in the near-term within the Coastal Master Plan or as Beneficial Use Projects for disposal of maintenance dredged sediments from federal navigation channels.

3.5 Borrow Area Monitoring and Maintenance (BAMM)

To ensure the efficient and effective use of limited sediment resources in Louisiana, a Borrow Area Monitoring and Maintenance (BAMM) project was initiated and funded through CIAP as a part of the Performance Evaluation and Science Monitoring Project. The BAMM project provides information to understand the evolution of the borrow pits (inland, riverine, and offshore) over time, especially the infilling characteristics (rate and types of sediment) and gradient and depth (depending upon hypoxic condition development) of the pit-slopes. Also a numerical modeling effort was undertaken to analyze and evaluate potential adverse impacts to wave climate and hydrodynamics if large inland borrow areas are dredged to mine about 50 MCY of sediment.

The goals of BAMM are to develop general guidelines for developing criteria for location, delineation, and design of potential borrow areas in inland, riverine and offshore environments for coastal restoration projects in Louisiana in a cost effective manner which will have minimal adverse impact on the adjoining coastal system. This included review of potential dredge impacts, existing wave analysis work and other related studies. Geophysical, geotechnical and water quality data were collected from several borrow areas. The combined information gathered during these efforts was analyzed and used to provide recommendations on borrow area location, depth of dredging, and design.

Additionally many of the current marsh creation and restoration projects in Louisiana specify that fill material be obtained from borrow areas designed within interior lakes and bays. The use of "inland" borrow areas is governed by numerous restrictions and/or regulations. Most of these regulations focus on vertical and horizontal dredging limits. The impacts of these aspects of borrow area design on wave heights and energies as well as on the surrounding marsh environment are not clearly understood. Therefore, the scientific basis of these restrictions and/or regulations needs to be investigated to determine whether these borrow area design constraints are justified.

The BAMM project is divided into four tasks and a cumulative final report. As of November 2014, the second draft Project Inventory and Literature Search (Task 1) has been submitted along with Draft Final Report. Task 2, the Bathymetric and Geophysical Collection and Analysis, was completed in May of 2013. The maps created from this data collection were analyzed/processed to assist in the calculation of infilling rates of the borrow areas and general bathymetric changes in elevation. The Hypoxia Monitoring (Task 3) involved the deployment of gauges that measure dissolved oxygen, salinity and temperature in six borrow area locations. One gauge was placed within each chosen borrow area and another was placed approximately 0.5 miles outside of the borrow area and acted as a control. The gauges were deployed for four consecutive months (June-October) with data collection occurring once a month. The gauges were collected for a final time in the last week of October 2013. Task 4's calibration report on Model Development was authored in October 2013. The Task 4 interim report was submitted and reviewed. The final report, currently being reviewed, includes recommendations on borrow area location, depth of dredging and design developed through analysis of the four subsequent tasks.

3.6 The Caminada – Moreau Subsidence Study (CMSS)

Marsh and barrier island restoration rely on placement of large quantities of sediment on existing substrate that is often highly compressible. Engineering design of restoration projects requires knowledge of background subsidence rates, the relationship between surface loading and subsurface compaction, and settlement of the fill after placement. The Caminada – Moreau Subsidence Study (CMSS) was conceptualized, planned, developed and undertaken to evaluate the existing geological profile of deltaic deposits at foreshore, dune, and backshore locations along the Caminada Moreau; evaluate subsidence in these areas; and monitor subsidence before (for baseline measurement) and after loading sediment for the restoration of Caminada Headland. This is a first-of-its-kind study as no direct measurement of subsidence and its partitioning has been previously attempted. Several challenges arose during the study, requiring changes to the scope and approach.

This study was funded by CIAP and formed a part of the Performance Evaluation and Science Monitoring Project. The study was conducted under three sequential major phases (Phase 1, 2, and 3) which included the evaluation of the existing geological profile, an evaluation of subsidence, and the installation of 10 subsurface monuments at three different stations. Anchors were placed at various depths in three locations along the Caminada headland to monitor variability in compactional subsidence associated with loading from the fill, including settlement plates. In addition, a primary benchmark was established outside the influence of the fill to record background subsidence for this region. These monuments are being monitored via 10

different surveys spread over next two years during Phase 4 to document subsidence trends throughout the period. High-accuracy leveling surveys were conducted for each anchor location relative to the control benchmark to an accuracy of ±0.03 feet. Preliminary results for the first 14 months of surveys document subsidence at all depths in the sediment column for sites where fill placement is complete. Although the first anchor below the surface recorded the greatest amount of subsidence (0.25 to 0.3 feet at about 20 feet deep), anchors at 60 to 80 feet deep recorded 0.09 feet of compactional subsidence as well. This quantity of settlement at depth is more than expected, and requires further evaluation of deeper sediment layers to identify the depth at which compactional subsidence due to loading from beach restoration is within measurement uncertainty. Background subsidence calculations from control benchmark measurements indicate a subsidence rate of about 0.03 ft/yr (9.2 mm/yr), very consistent with National Geodetic Survey relative sea level rise measurements at Grand Isle of 9.1 mm/yr. The final survey is scheduled to be completed by mid-July 2015 and the final deliverable will be submitted by 31 August 2015.

Further the final data in the spreadsheets will be invaluable for calibrating/validating compactional subsidence model (developed by Dr. Julie Rosati, ERDC) for use with future beach restoration projects along the barrier island shorelines of south Louisiana.

A copy of the report entitled "Caminada-Moreau Subsidence Study (Phases 1-3)" can be found in the CPRA Document Database at the following link:
http://sonris-www.dnr.state.la.us/dnrservices/redirectUrl.jsp?dID=4715311

4.0 Barrier Island Performance Assessment

4.1 Overall Barrier Shoreline Condition

Louisiana's barrier shoreline is one of the fastest eroding shorelines in the world. Due to the geologic setting and the predicted changes in sea level during coming decades, these shoreline habitats and the services they provide are some of the most vulnerable features of our coastal landscape. The CPRA's BICM Program has been established to assess and report on the changes of the coastal shoreline to help develop programmatic approaches to restoration and maintenance. In addition, the CPRA funded an interim study (CEC, 2012) to look at barrier island performance in the five years since BICM data were collected.

Current shoreline erosion data from BICM (Martinez et al., 2009) indicate that most of Louisiana's shoreline is eroding faster than ever before, with some short-term (1996 – 2005) erosion rates more than double the historic (1890s – 2005) averages (Figures 18 and 19). However, recent information from the post-BICM studies elucidate the benefits of recent restoration projects. This section presents the overall findings from BICM and then a more detailed discussion by geomorphologic delta complex follows.

The Chandeleur Islands have exhibited the largest changes in erosion rates. Historic erosion rates of approximately 27 ft/yr have increased within the past decade to over 125 ft/yr, predominantly due to storm activities. This has led to a decrease in the overall size of Breton Island by approximately 776 acres, or 95 percent (Table 2). Additionally, over 66 percent (85.1 acres) of the land area remaining in 2004 was removed by Hurricanes Katrina and Rita in 2005. When compared to the fact that only 18 percent (150.7 acres) of the land mass was lost between

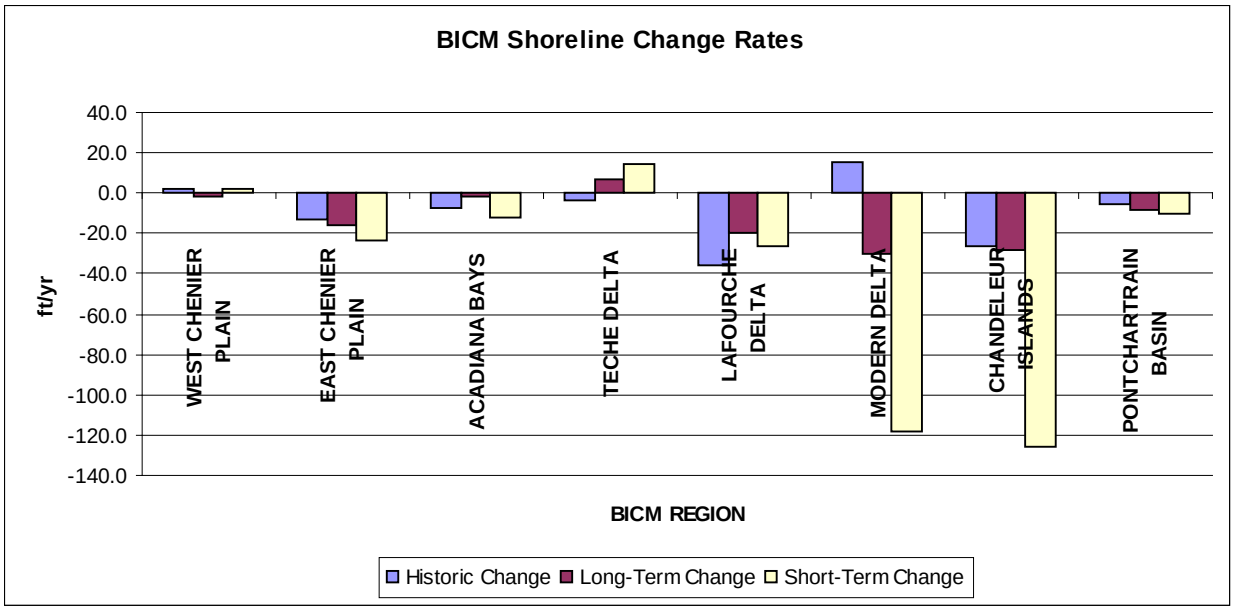


Figure 18. Average shoreline erosion rates for BICM Regions of the Louisiana Coast developed from aerial photography for Historic (1890s – 2005), Long-term (1930s – 2005), and Short-term (1996 – 2005) periods.

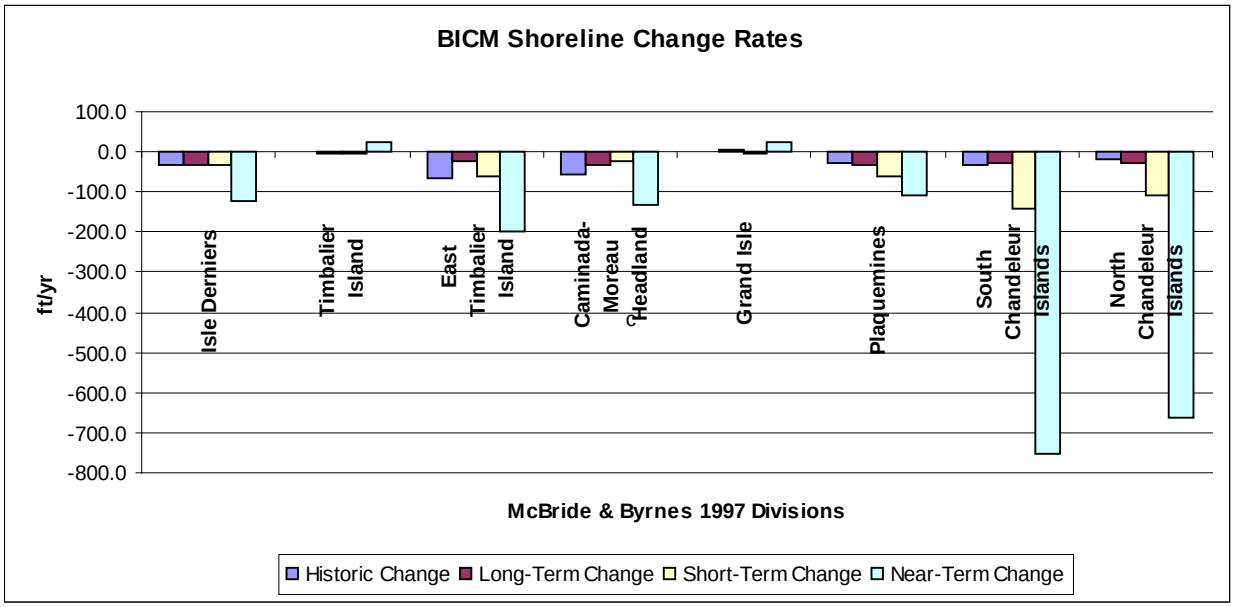


Figure 19. Average shoreline erosion rates for various sections of the Louisiana coast including the direct impacts of Hurricanes Katrina and Rita (Near-Term 2004 – 2005). Note that the Timbalier Island shoreline accreted due to the 2004/05 CWPPRA restoration project (TE-40) (McBride and Byrnes 1997).

Island	1800s	1922-30s	1996-98	2004	2005	Projected Year of Disappearance
Breton	820.4	669.7	212.3	128.7	43.6	2013
Chandeleur	6,827.50	6,140.60	4,333.10	2,789.60	913.9	2026
Grand Gossier/Curlew	1,119.40	71.7	595.5	75.2	0	
New Harbor	177.9	232.3	85.7	76.9	87	2135
North	1,455.50	966.2	125.8	77.1	79.7	2013
Freemason	538.7	247.1	28.8	17.6	4.8	2006
Isle Derniers	8,727.80	4,838.30	1,566.50	1,613.90	1,595.50	2033
Timbalier	3,669.50	2,646.50	1,147.40	1,028.40	1,069.40	2056
East Timbalier	476.9	229.8	311.7	311.4	245.3	2138
Grand Isle	2,616.80	2,347.50	2,439.50	2,232.00	2,286.00	2867
Grand Terre	4,198.30	2,614.40	1,093.40	1,021.10	997.7	2044
Shell Island	313.8	432.4	89.7	56.5	51	2029

Table 2. Historical (1800s-2005), long term (1930s-2005), and short term (1996-2005) barrier island changes in acres and the projected date of disappearance (Martinez et al., 2009).

1850 and 1920, this emphasizes the need to maintain the islands so that they are more sustainable during storm events. The data seem to indicate that there is a "tipping point" when an island breaches, beyond which erosion accelerates, restoration costs increase exponentially, and results may become less predictable.

The large reduction of Breton Island within the last decade, along with the extreme loss experienced from Hurricane Katrina, emphasizes the need to maintain flexibility in setting restoration priorities. McBride and Byrnes (1997) predicted that Breton Island would disappear in 2106 based on the land loss rates through the 1980s. When compared to other islands that were projected to be lost in the early 2000s, the restoration of Breton Island was a comparatively low priority. However, based on BICM data collected after Hurricanes Katrina and Rita, the projected disappearance for Breton Island based on the land loss rates through 2005 (does not include impacts from Hurricanes Gustav and Ike in 2008 or Hurricane Isaac in 2012) is now 2013 (Table 2). More dramatic than Breton Island are Grand Gossier and Curlew Islands which were predicted by McBride and Byrnes (1997) to last until 2174, yet these islands were both reduced to shoals by Hurricane Katrina in 2005.

The good news is that restoration efforts on other islands have shown benefits. McBride and Byrnes (1997) predicted Timbalier Island would disappear by 2046, based on data through the 1980s. However, restoration completed just prior to Hurricanes Katrina and Rita added approximately 10 years of life to the island. Also, McBride and Byrnes (1997) predicted that the Isles Dernieres would disappear by 2017; however, the CWPPRA barrier island restoration projects constructed on the islands have increased their life span by approximately 16 years. However, additional storms, increasing erosion rates, and predicted sea-level rise still need to be taken into account for designing future projects.

The *Deepwater Horizon* oil spill presented an entirely new challenge to coastal Louisiana. The state responded with a robust effort to safeguard its coast from the effects of the oil. In June 2010, the state began construction of barrier berms along the Chandeleur Islands east of the Mississippi River (East Barrier Berm) and from Shell Island to Scofield Island west of the river (West Barrier Berms). The construction of the Barrier Berm projects introduced a significant amount of sand into the state's barrier island systems. To maximize this opportunity, the state utilized the berm sand and approximately $100 million of the funds set aside for berm construction to convert the temporary berm features into the more resilient barrier island features that were designed as CWPPRA projects. Construction of the CWPPRA Scofield project (BA-40) and Shell Island East (BA-110) was funded by these Berm to Barrier funds.

Additional datasets and analysis, ongoing under BICM, are also beginning to show information which will hopefully increase our ability to forecast priority areas and better predict project outcome. Until final reports are concluded for all sections of the coast, the main indications are that:

1. Coastal shoreline erosion rates are increasing (Figures 18 and 19). Along the central coast barriers, interior wetland loss results in increasing tidal prism (volume of water that flows through the inlet during each tidal cycle) (Figure 20). Central coast sand is sequestered in expanding ebb tidal deltas as inlets widen and deepen and these processes occur at the expense of barrier island sand volume. This sequestering of sand volume offshore has dominated over relative sea level rise in reducing island area.
2. Hurricane impacts and subsequent recovery processes dominate Chandeleur Islands evolution, whereby sand is removed from the central portion of the island and distributed laterally, ultimately coming to rest in deepwater sinks at the flanks of the barrier island arc (Figure 21). This better understanding of the sediment transport pathways and scales allows efficient barrier island management strategies to be developed.
3. Seafloor change analysis results show that long-term sediment transport trends are about two orders of magnitude greater than calculated predictions of longshore sediment transport potential in the nearshore zone based on historical wave data (millions of cubic meters per year instead of tens of thousands) (Figure 22).
4. The identification and quantification of these sediment transport processes, pathways, and sinks is crucial for successful sediment budget management and sediment allocation and project prioritization.

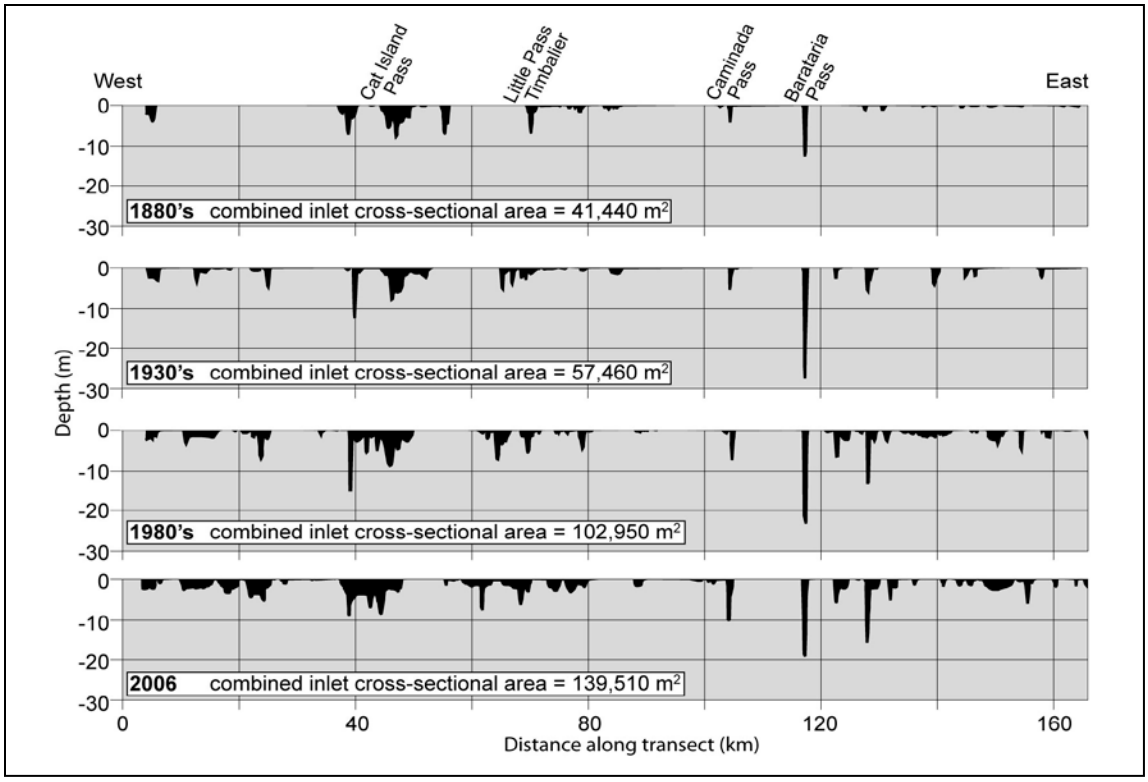


Figure 20. Combined tidal inlet cross-sectional area for Raccoon Point to Sandy Point for each time period covered by the study (1880–2006). Profiles trend along the barrier shoreline and intersect inlets at the location of minimum throat cross-sectional area for each time period. Note the widening and deepening at existing inlets as additional, stable inlets simultaneously form, resulting in a more than threefold increase in combined cross-sectional area during the past 125 years in response to an increasing tidal prism associated with interior marshland loss. The 1880s to 1980s bathymetry is from List et al. (1994) (from Miner et al., 2009).

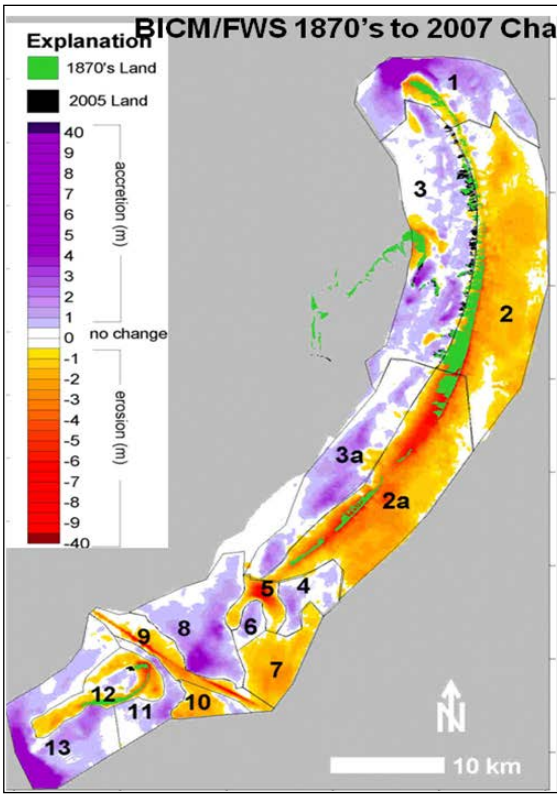
4.2 Teche Delta Barrier Islands (Raccoon Island to Wine Island)

The Teche Delta Barrier Islands (Isles Dernieres) benefitted from the first barrier island restoration projects funded through the CWPPRA program (Figure 23 and Table 3). In total, six projects have been constructed in this region.

According to the BICM data presented above through 2005, the Teche Delta barrier islands were projected to disappear by 2033. A more recent study including post-BICM data reports disappearance date by island and suggests that restoration projects may have extended the life expectancy of these islands.

4.2.1 Raccoon Island

The land area over time for Raccoon Island is plotted in Figure 24. It is noted that Raccoon Island underwent emergency restoration in 1994 which may have contributed to the upward trend between 1990 and 1998. Although no sediment was placed on the island, it has benefitted



Zone	Net Vol ($x10^6$ m^3)	Net vol Error +/-($x10^6$ m^3)
1. Hewes Point/ North Inlet	128.77	25.67
2. Northern Chandeleur Shoreface	-285.29	59.41
3. Northern Chandeleur Backbarrier	84.11	46.69
2a. Southern Chandeleur Shoreface	-405.14	45.78
3a. Southern Chandeleur Backbarrier	75.47	23.78
4. Updrift Curlew Pass Ebb Delta	12.68	6.94
5. Curlew Pass Inlet Scour	-33.61	5.30
6. Downdrift Curlew Pass Ebb Delta	7.39	2.61
7. Grand Gosier Shoreface	-55.99	11.37
8. Updrift MRGO	91.04	19.71
9. MRGO	-52.08	7.10
10. Downdrift MRGO shoreface	-19.62	4.45
11. Breton Pass Ebb delta and inlet fill	20.04	5.79
12. Breton Island Nearshore/Backbarrier	-47.58	11.06
13. Downdrift Breton Island	176.35	2.10
TOTAL	-303.47	296.66

Figure 21. 1870s to 2006-07 seafloor change from Breton Island to Hewes Point. Note the large magnitude of erosion on the center shoreface as well as the large deposition zones at each terminal end of the arc. (UNO/PIES)

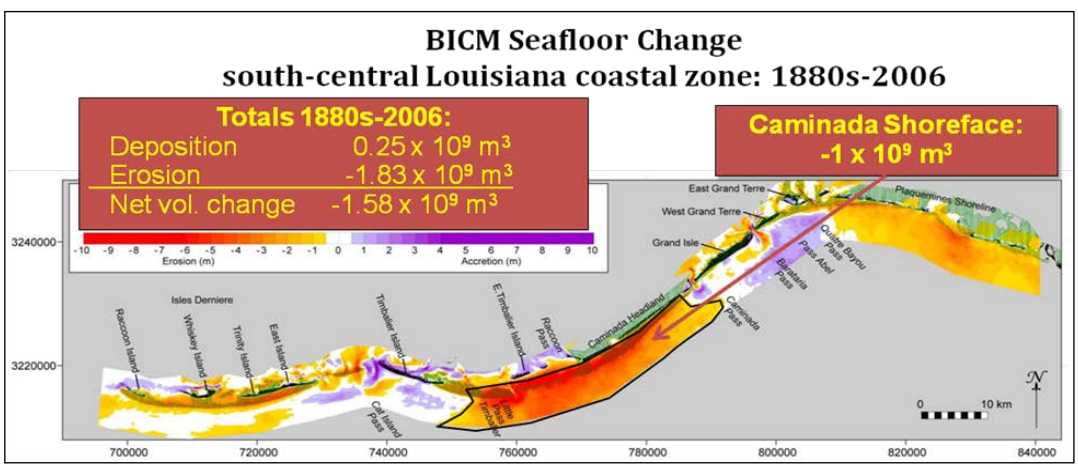


Figure 22. 1880s to 2006 seafloor change from Raccoon Point to Sandy Point. Note the large magnitude of erosion fronting the Caminada Headland and the Plaquemines barrier shoreline, as well as the deposition at ebb-tidal deltas in the coastal bights at Cat Island Pass and the Barataria Inlets. The map coordinate system is UTM Zone 15 N meters. The 1880s bathymetry is from List et al. (1994). Shoreline data are from Martinez et al. (2009). (Miner et al., 2009).

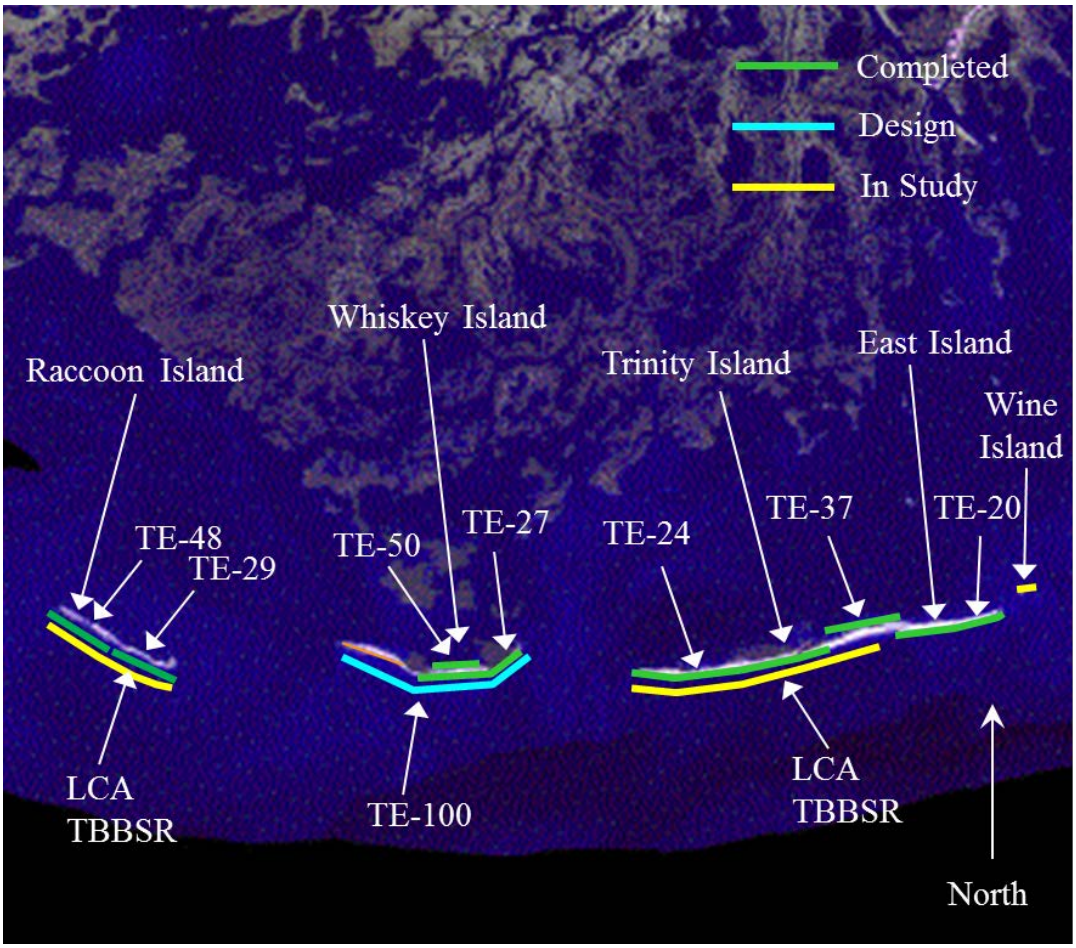


Figure 23. Location of barrier island restoration projects in Teche Delta Barrier System. (CEC, 2012).

Table 3. List of projects constructed, funded for construction, and for future implementation in the Teche Delta Barrier System.

Barrier Shoreline Restoration Projects	Funding Program	Construction Date
Teche Barrier System		
Constructed Projects		
Raccoon Island Breakwaters (TE-29)	CWPPRA	1997
Whiskey Island Restoration (TE-27)	CWPPRA	1999
Whiskey Island Back Barrier Marsh Creation (TE-50)	CWPPRA	2009
Isles Dernieres Restoration Trinity Island (TE-24)	CWPPRA	1999
New Cut Dune and Marsh Restoration (TE-37)	CWPPRA	2007
Isles Dernieres Restoration East Island (TE-20)	CWPPRA	1999
Raccoon Island Shoreline Protection/ Marsh Creation (TE-48)	CWPPRA	2007, 2013
Funded for Construction		
NRDA Caillou Lake Headlands (TE-100) (in design) (includes Ship Shoal: Whiskey West Flank Restoration (TE-47))	NRDA	TBD
Future Projects		
None		

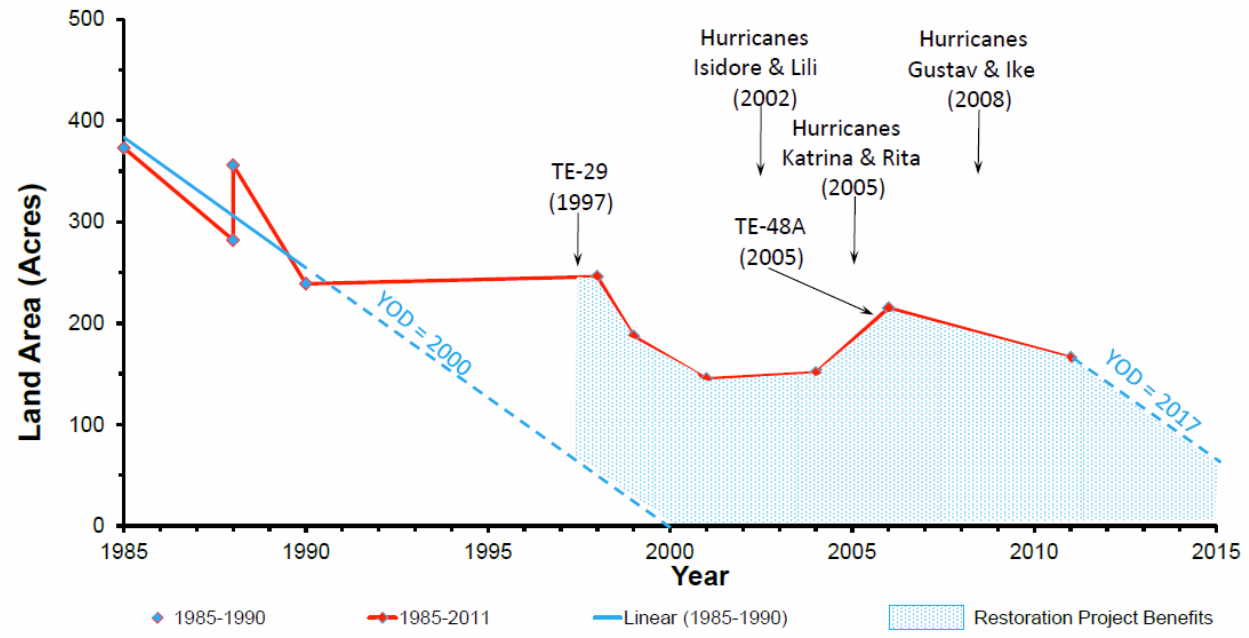


Figure 24. Raccoon Island Land Area Change Analysis (CEC, 2012).

from two CWPPRA projects, TE-29 and TE-48A, which included installing breakwaters, first in 1997 and again in 2007. These breakwaters re-oriented the wave climate/energy regime in such a way that sand from an adjacent, nearshore shoal was redistributed as inverted salients between the breakwaters and the island. The pre-breakwater Year of Disappearance (YOD) was projected to be 2000. Hurricanes Katrina and Rita caused significant land loss on Raccoon Island in 2005 (Martinez et al., 2006); however, post-breakwater installation, the YOD was projected to be 2017. The benefits of barrier shoreline restoration are evidenced by the post-breakwater increase in island longevity, projected to be 17 years, compared to the pre-breakwater projected rate of disappearance.

4.2.2 Whiskey Island

The land area over time for Whiskey Island is plotted in Figure 25. The island benefitted from two CWPPRA restoration projects, the first, TE-27, in 1999 and the second, TE-50, in 2009. The pre-restoration YOD was projected to be 2091. Post-restoration, the YOD was projected to be 2130. It is noted that Hurricanes Katrina and Rita caused significant land loss on Whiskey Island in 2005 (Martinez et al., 2006), reducing its acreage below the trend line. The benefits of barrier shoreline restoration are evidenced by the post-restoration increase in island longevity, projected to be 39 years, compared to the pre-restoration projected rate of disappearance.

4.2.3 Trinity-East Island

The land area over time for Trinity-East Island is plotted in Figure 26. It is noted that East Island was the site of a pilot study project in 1985, and received a breach repair project in 1996 which

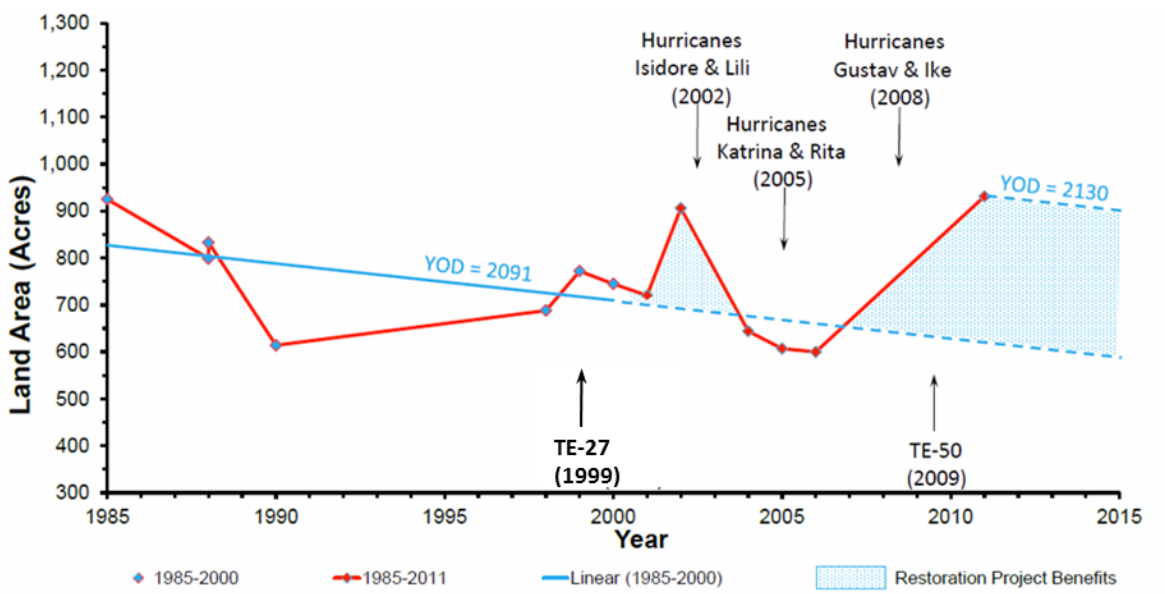


Figure 25. Whiskey Island Land Area Change Analysis (CEC, 2012).

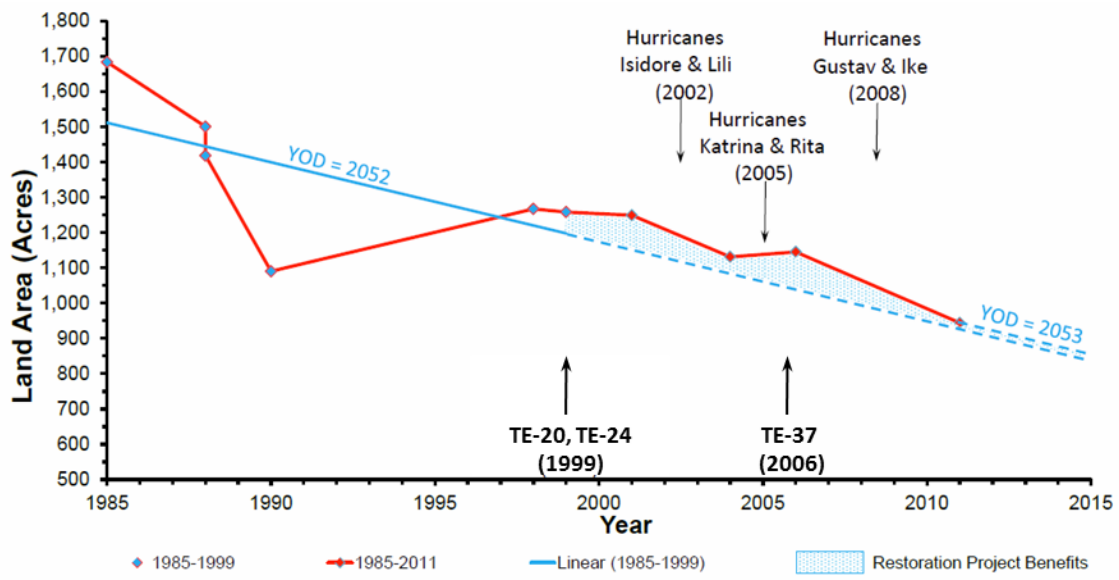


Figure 26. Trinity-East Island Land Area Change Analysis (CEC, 2012)

may have contributed to the upward trend between 1990 and 1998. The islands benefitted from the CWPPRA restoration projects, TE-20 and TE-24 in 1999, and TE-37 in 2007. The pre-restoration YOD was projected to be 2052. Post-restoration, the YOD was projected to be 2053. It is noted that Hurricanes Katrina, Rita, Gustav, and Ike caused significant land loss on Trinity-East Island between 2005 and 2008 (Doran et al., 2009; Martinez et al., 2006). As such, it is expected that the land loss rate would have accelerated, and in absence of the 1999 restoration project, Trinity-East Island would have disappeared significantly sooner than the 2052 projection.

4.3 Lafourche Delta Barrier Islands (Timbalier Island to Grand Isle)

The Lafourche Delta Barrier Islands have benefitted from a number of barrier island restoration projects, most recently the East Grand Terre Island Restoration project (BA-30) that was completed through CIAP (Figure 27 and Table 4). In total, five projects have been constructed in this region and several others are planned.

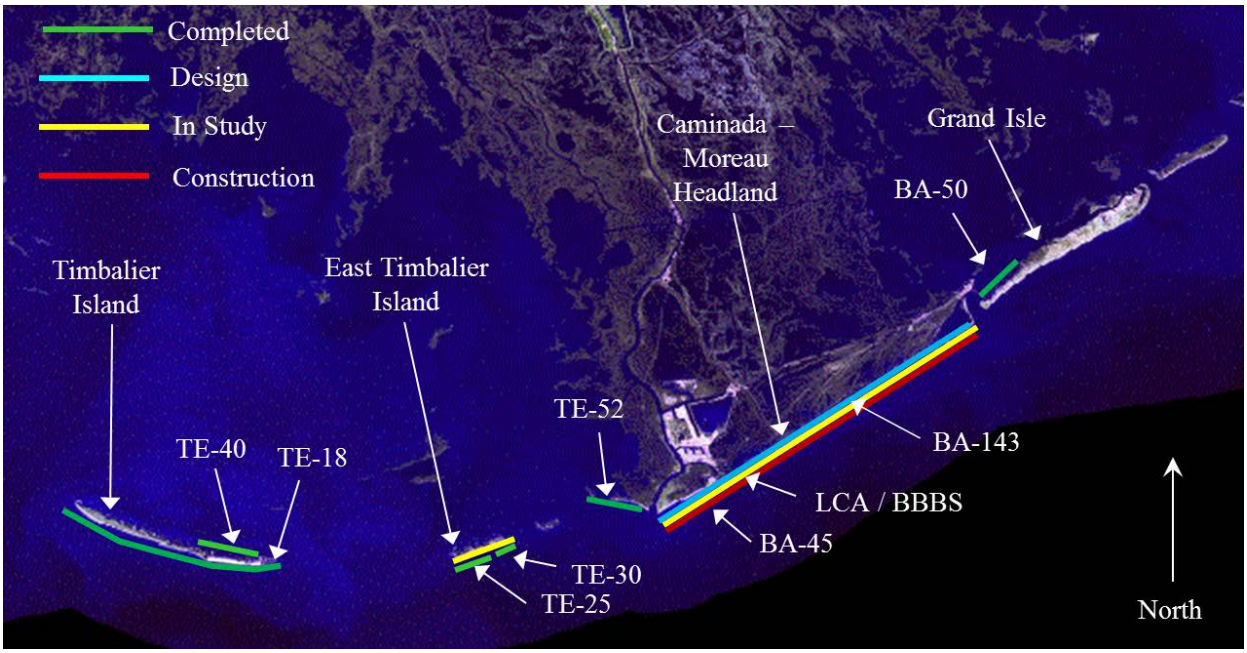


Figure 27. Location of barrier island restoration projects in Lafourche Delta Barrier System (CEC, 2012).

According to the BICM data through 2005, the projected years of disappearance for these islands are 2056 (Timbalier), 2138 (East Timbalier), 2867 (Grand Isle), and 2044 (Grand Terre). A more recent study including post-BICM data reports disappearance date by island and suggests much sooner rates of disappearance for Timbalier (2044) and East Timbalier (2018) islands.

4.3.1 Timbalier Island

The land area over time for Timbalier Island is plotted in Figure 28. It is noted that Timbalier Island was the site of a breach repair project in 1996, which may have contributed to the upward trend in land area between 1990 and 1998. The island was restored through CWPPRA project TE-40 in 2004. The pre-restoration YOD was projected to be 2043. Post-restoration, the YOD was projected to be 2044. It is noted that Hurricanes Katrina, Rita, Gustav, and Ike caused significant land loss on Timbalier Island between 2005 and 2008 (Rodrigue et al., 2011; Martinez et al., 2006). As such, it is expected that the land loss rate would have accelerated, and in absence of the 2004 restoration project, Timbalier Island would have disappeared significantly sooner than the 2043 projection.

Table 4. List of projects constructed, funded for construction, and for future implementation in the Lafourche Delta Barrier System.

Barrier Shoreline Restoration Projects	Funding Program	Construction Date
Lafourche Barrier System		
Constructed Projects		
Timbalier Island Planting Demonstration (TE-18)	CWPPRA	1996
Timbalier Island Dune and Marsh Creation (TE-40)	CWPPRA	2004
East Timbalier Island Sediment Restoration, Phase 1 (TE-25)	CWPPRA	2000
East Timbalier Island Sediment Restoration, Phase 2 (TE-30)	CWPPRA	2000
West Belle Pass Barrier Headland Restoration (TE-52)	CWPPRA	2012
Bayside Segmented Breakwaters at Grand Isle (BA-50)	CIAP	2012
Funded for Construction		
Caminada Headland Beach and Dune Restoration (BA-45) (under construction)	CIAP/ Surplus	2014
Caminada Headland Beach and Dune Restoration, increment 2 (BA-143) (headed to construction)	NFWF	TBD
Future Projects		
Barataria Basin Barrier Shoreline (BBBS) Restoration (BA-10) Eastern portion of Caminada	LCA	TBD
East Timbalier Island	NFWF	TBD

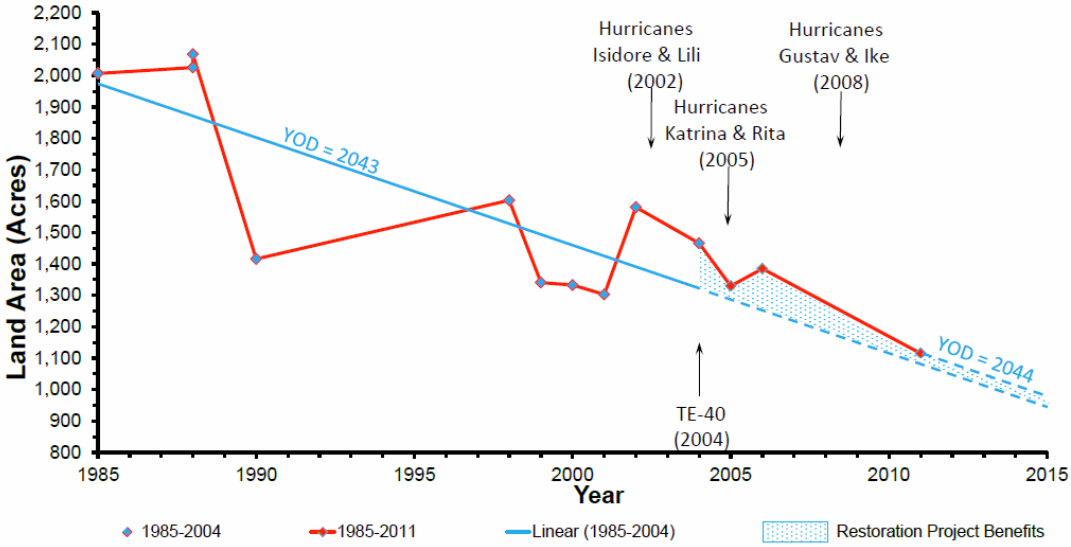


Figure 28. Timbalier Island Land Area Change Analysis (CEC, 2012)

4.3.2 East Timbalier Island

The land area over time for East Timbalier Island is plotted in Figure 29. The island was restored through CWPPRA projects TE-25 and TE-30 in 2000. The pre-restoration YOD was projected to be 2014. Post-restoration, the YOD was projected to be 2018. It is noted that Hurricanes Katrina, Rita, Gustav, and Ike caused significant land loss on East Timbalier Island

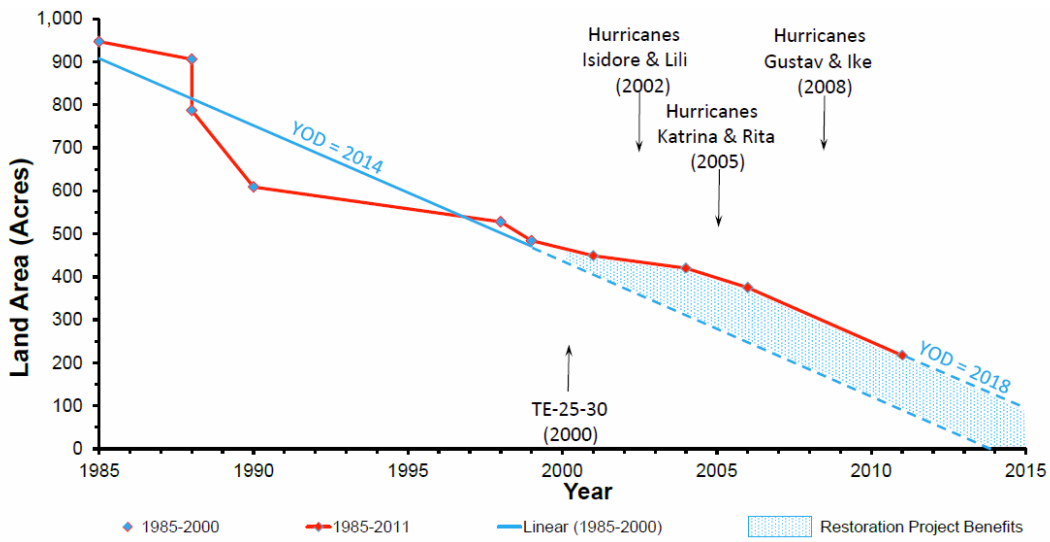


Figure 29. East Timbalier Island Land Area Change Analysis (CEC, 2012)

between 2005 and 2008 (Doran et al., 2009; Martinez et al., 2006). As such, it is expected that the land loss rate would have accelerated, and in absence of the 2000 restoration projects, East Timbalier Island would have disappeared significantly sooner than the 2014 projection.

4.4 Modern Delta Barrier Islands (Cheniere Ronquille to Scofield Island)

The Modern Delta Barrier Islands have benefitted from a number of very recent barrier island restoration projects, in addition to the Emergency Berms that were constructed as a part of the BP oil spill response (Figure 30 and Table 5).

Although BICM did not report estimated disappearance rates for all of these islands, the BICM data presented above through 2005 projected that Shell Island would have disappeared by 2029 (Table 2; Section 5.1). Recent assessment of shoreline erosion rates for the Modern Delta barrier islands suggest that the recent projects constructed by the CPRA have prograded the shoreline positions gulfward relative to their pre- hurricanes Katrina and Rita positions (Figure 31).

Pre-restoration average rates of shoreline erosion ranged from -4.5 ft/yr (Pelican Island) to -41.7 ft/yr (East Grand Terre Island). Post-restoration rates of shoreline erosion range from +12.7 ft/yr (Pelican Island) to +85.9 ft/yr (East Grand Terre Island) noting the higher value for East Grand Terre Island may be related to the fact the project was recently completed in 2010 and the analysis utilized the post-construction survey. For this same time period, the average erosion rate for Chenier Ronquille was -46.1 ft/yr. It is noted that the post-restoration period included the sand berms on Pelican and Scofield Islands, neither of which underwent full island restoration during this time period. These reversals of shoreline change rates, from erosion to accretion, are evidence that the restoration projects have benefitted not only the individual islands, but the system as a whole.

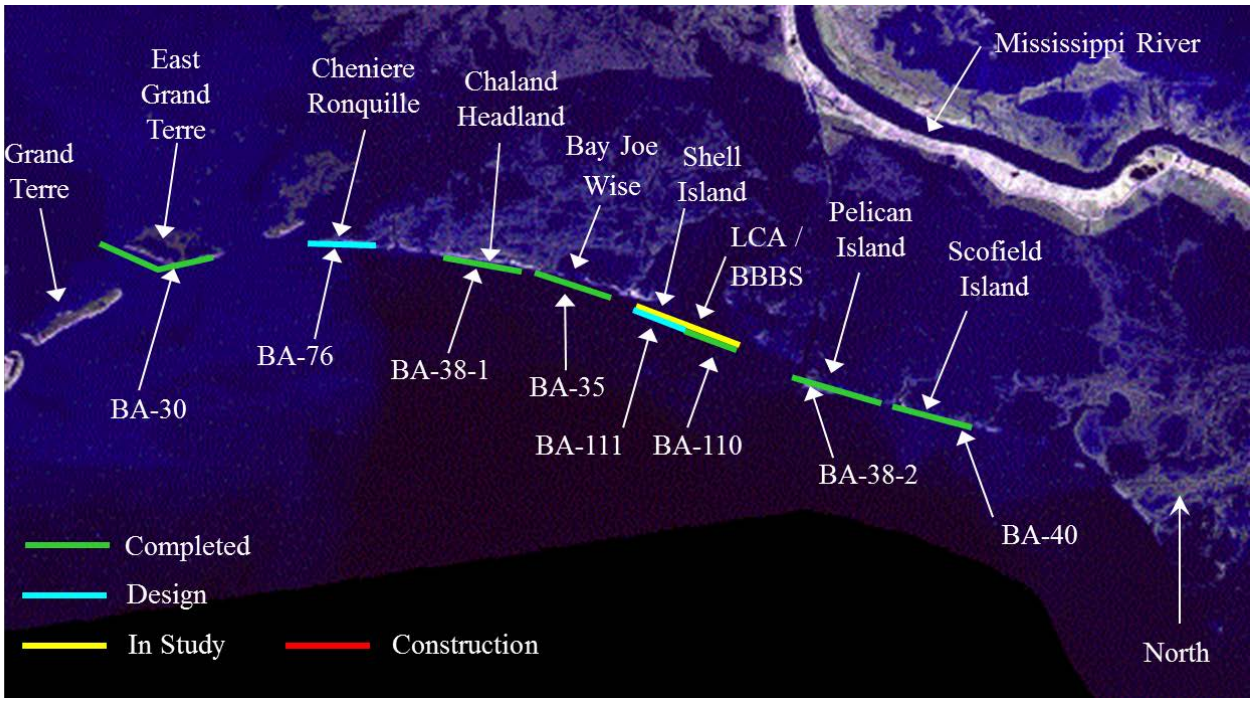


Figure 30. Location of barrier island restoration projects in Lafourche Delta Barrier System (CEC, 2012).

Table 5. List of projects constructed, funded for construction, and for future implementation in the Modern Delta Barrier System.

Barrier Shoreline Restoration Projects	Funding Program	Construction Date
Modern Barrier System		
Constructed Projects		
Vegetative Planting of a Dredged Material Disposal Site on Grand Terre (BA-28)	CWPPRA	2001
East Grand Terre Island Restoration (BA-30)	CIAP	2010
Pass La Mer to Chaland Pass (BA-38-1) also known as "Chaland Headland"	CWPPRA	2007
Pass Chaland to Grand Bayou Pass Barrier Shoreline Restoration (BA-35) also known as "Bay Joe Wise"	CWPPRA	2009
Barataria Barrier Island Complex Project: Pelican Island and Pass (BA-38-2)	CWPPRA	2012
Emergency Berms W8, W9, W10	Berm Funds	2010-2011
Riverine Sand Mining/Scofield Island Restoration (BA-40)	*CWPPRA/ Berm Funds*	*2013*
Shell Island Restoration East Berm (BA-110)	Berm Funds	2013
Funded for Construction		
Cheniere Ronquille Barrier Island Restoration (BA-76)	NRDA	TBD
Shell Island Restoration West NRDA (BA-111; in final design)	NRDA	TBD
Future Projects		
BBBS Restoration (BA-10)	LCA	TBD

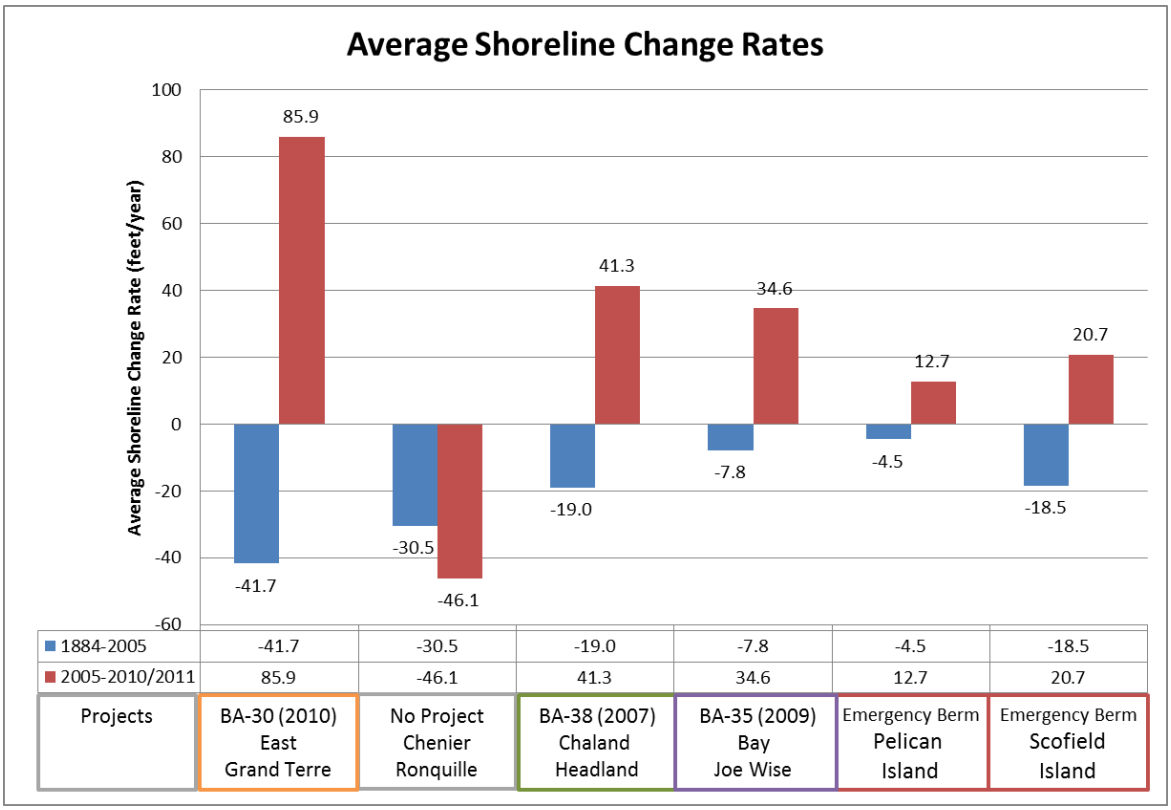


Figure 31. Barrier island average gulf-side shoreline change rates pre-restoration (1884-2005) and post-restoration (2005-2010/2011). Projects constructed (and years) are also listed in the data table.

4.4.1 East Grand Terre

East Grande Terre Island is part of the original Grand Terre Island which has divided into East and West Grand Terre Islands separated by Pass Abel. This island was restored in 2010 through the construction of the East Grand Terre Island Restoration Project (BA-30) by the CPRA with funding from CIAP (CPE, 2011). The East Grand Terre Island Restoration Project was part of the original East and West Grand Terre Island Restoration Project which was cooperatively designed and engineered by the CPRA and National Marine Fisheries Service through the CWPPRA program.

Presented in Figure 32 are the average shoreline change rates for East Grand Terre. The pre-restoration erosion rates ranged from -38.9 ft/yr (BICM short-term) to -48.3 ft/yr (BICM long-term) noting the BICM historical average was on the same order of magnitude equal to -41.7 ft/yr. East Grand Terre has experienced breaching throughout the long-term and short-term intervals. The island experienced net accretion in the near-term interval (+85.9 ft/yr on average) noting this period included the recently completed restoration project. The new historical average, equal to -34.7 ft/yr, is less than the BICM time period averages. Thus restoration of the

island's geomorphic form and function offset a significant percentage of the erosion experienced in the short-term period, returning the historical erosion rate to less than pre-restoration rates.

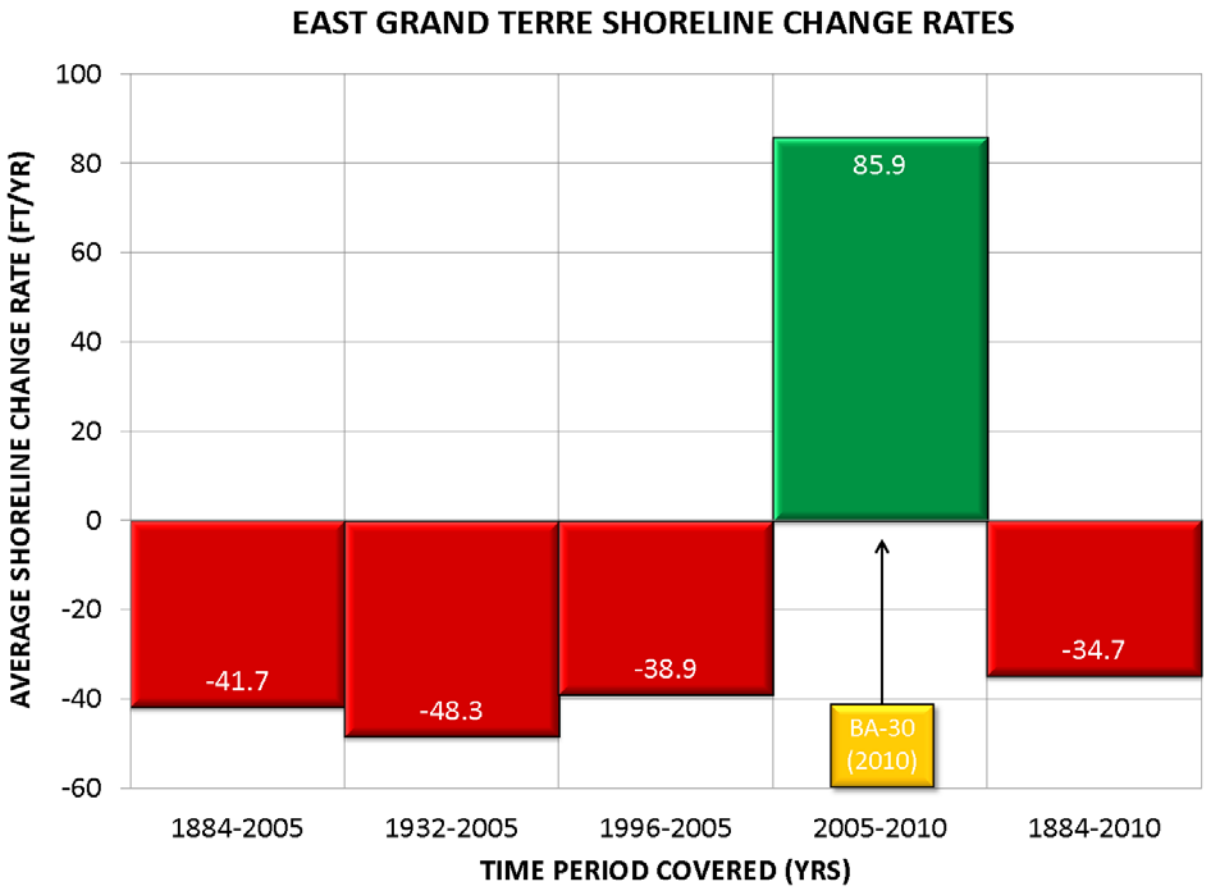


Figure 32. East Grand Terre Average Shoreline Change Rates (CEC, 2012).

4.4.2 Cheniere Ronquille

Presented in Figure 33 are the average shoreline change rates for Cheniere Ronquille. In general the erosion rates have accelerated over time, ranging from -30.5 ft/yr (BICM historical) to -46.1 ft/yr (near-term). Shell Island experienced multiple breaches between 2004 and 2006 attributed to Hurricanes Katrina and Rita. Cheniere Ronquille has not been restored to date, but future restoration projects are planned (BA-76). The new historical erosion rate average, equal to -30.7 ft/yr, is nearly identical to the BICM historical rate.

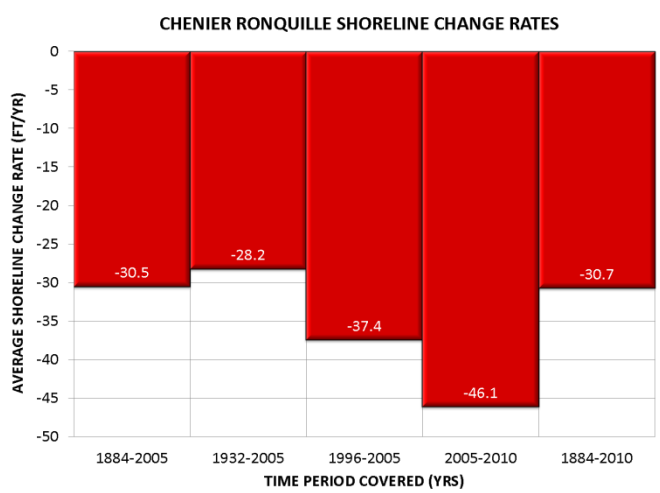


Figure 33. Cheniere Ronquille Average Shoreline Change Rates (CEC, 2012).

4.4.3 Chaland Headland

The Chaland Headland extends from Pass Chaland (now closed) on its eastern end to Pass La Mer on its western end. This headland was restored in 2006 under CWPPRA Project BA-38-2 (CPE, 2008). Presented in Figure 34 are the average shoreline change rates for the Chaland Headland. The pre-restoration erosion rates ranged from -17.4 ft/yr (BICM long-term) to -32.6 ft/yr (BICM short-term) noting the short-term average was over 1.5 times the long-term average and the BICM historical average equal to -19.0 ft/yr. The Chaland Headland first breached between 1998 and 2004 and experienced additional breaching in 2005 attributed to Hurricanes Katrina and Rita, all of which occurred during the short-term interval. This breaching correlates to the amplified shoreline erosion rate. The island experienced net shoreline progradation in the near-term interval (+41.3 ft/yr on average) noting this period included the restoration project. The new historical average shoreline erosion equaled -16.4 ft/yr, which was on the same order of magnitude as the BICM historical and long-term averages. Thus restoration of the island's geomorphic form and function offset a significant percentage of the erosion experienced in the short-term period, returning the historical erosion rate to pre-restoration rates.

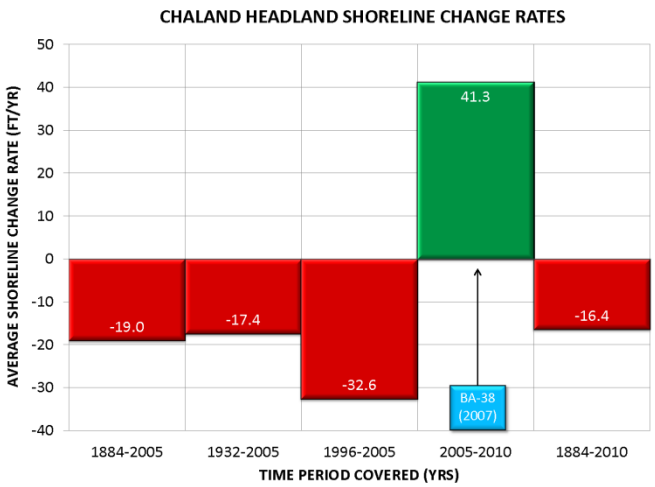


Figure 34. Chaland Headland Average Shoreline Change Rates (CEC, 2012).

4.4.4 Bay Joe Wise

This barrier shoreline extends from Grand Bayou Pass (now closed) on its eastern end to Pass Chaland on its western end. This headland was restored in 2008-2009 under CWPPRA Project BA-35 (CEC, 2010) entitled Pass Chaland to Grand Bayou Pass Barrier Shoreline Restoration. Presented in Figure 35 are the average shoreline change rates for the Bay Joe Wise Headland. The pre-restoration erosion rates ranged from -5.0 ft/yr (BICM long-term) to -27.1 ft/yr (BICM short-term) noting the short-term average was over 5 times the long-term average and over 3 times the BICM historical average equal to -7.8 ft/yr. Bay Joe Wise first breached between 1998 and 2004 and experienced additional breaching in 2005 attributed to Hurricanes Katrina and Rita, all of

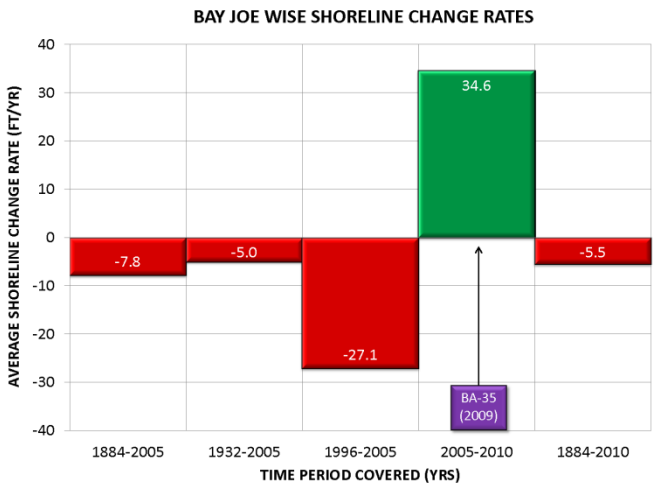


Figure 35. Bay Joe Wise Headland Average Shoreline Change Rates (CEC, 2012).

which occurred during the short-term interval. This breaching correlates to the amplified shoreline erosion rate. The island experienced net accretion in the near-term interval (+34.6 ft/yr on average) noting this period included the restoration project. The new historical average equaled -5.5 ft/yr, which was on the same order of magnitude as the BICM historical and long-term averages. Thus restoration of the island's geomorphic form and function offset a significant percentage of the erosion experienced in the short-term period, returning the historical erosion rate to pre-restoration rates.

4.4.5 Shell Island

Presented in Figure 36 are the average shoreline change rates for Shell Island. The erosion rates ranged from -74.9 ft/yr (BICM historical) to -355.6 ft/yr (BICM short-term) noting the short-term average was over 4.5 times the historical average and over 3.5 times the BICM long-term average equal to -94.8 ft/yr. Shell Island first breached between 1884 and 1922 and continued to divide into multiple islands as it disintegrated over time. Shell Island's high erosion rate is in part attributed to the Empire Waterway jetties which interrupt the natural alongshore transport from east to west.

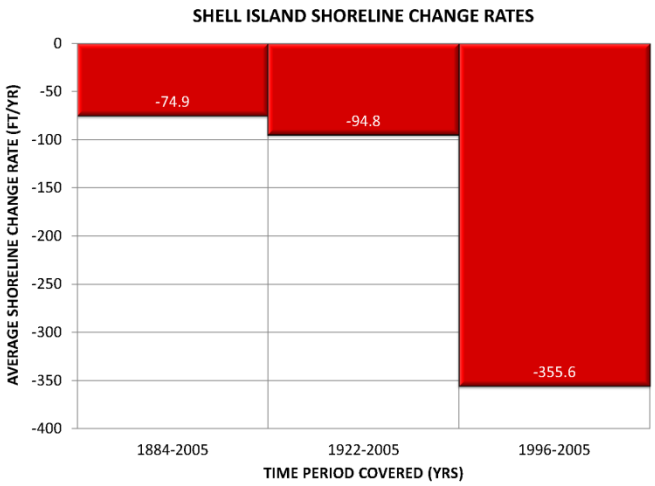


Figure 36. Shell Island Average Shoreline Change Rates (prior to Emergency Berm construction; CEC, 2012).

The initial template of emergency berm reach W8 was located within the footprint of the Shell Island restoration project which was proposed under the LCA – BBBS project. However, pre-construction surveys indicated that the island had receded, so the profile was shifted approximately 750 feet north (landward). The construction template for the W8 berm reach was identical to the templates used on the other berm reaches: a 20-foot crest width, +5 feet, NAVD 88 crest elevation, 1V:25H side slopes above -2.0 feet, NAVD 88 and 1V:50H below -2.0 feet, NAVD 88. Construction of approximately 9,000 linear feet of berm on Shell Island started on October 9, 2010 and was completed by November 23, 2010. Approximately 790,000 cubic yards of sand was placed along the island. Monitoring of emergency sand berm reach W8 indicates that 83% of the material had been retained after the first 360-day monitoring event.

4.4.6 Pelican Island

Presented in Figure 37 are the average shoreline change rates for Pelican Island. It is noted this island benefitted by emergency Sand Berm W9 (Thompson. 2012). The pre-berm erosion rates ranged from -4.5 ft/yr (BICM historical) to -40.5 ft/yr (BICM short-term) noting the short-term average was 9 times the historical average and over 2.5 times the BICM long-term average equal to -16.2 ft/yr. Pelican Island first breached between 1998 and 2004, which occurred during the short-term interval. This breaching correlates to the amplified shoreline erosion rate. The island experienced net shoreline progradation in the near-term interval (+12.7 ft/yr on average) noting this period included the sand berm construction. The new historical average equaled -3.8 ft/yr,

which was on the same order of magnitude as the BICM historical average. Thus placement of the sand berm restored some of the island's geomorphic form and function, returning the historical erosion rate to pre-breach rates.

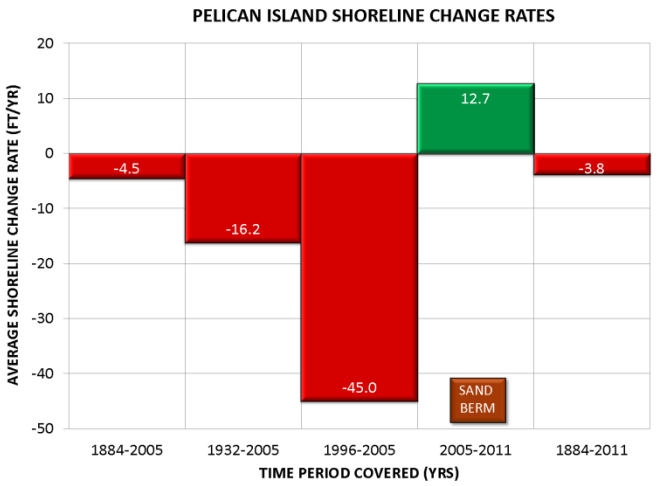


Figure 37. Pelican Island Average Shoreline Change Rates (CEC, 2012).

Construction of emergency berm reach W9 along Pelican Island started on July 18, 2010 and was completed by October 2, 2010. Sand was transported from re-handling area 35-E and emplaced within the construction template, which was identical to the template used for the other berm reaches. The template was superimposed on the existing island and within the footprint of the proposed CWPPRA Pelican Island Restoration Project (BA-38-2). A total length of 12,700 feet of berm was constructed and approximately 1,294,000 cubic yards of sand was emplaced within the berm along Pelican Island. Monitoring of emergency sand berm reach W9 indicates that 79% of the material had been retained after the first 360-day monitoring event.

4.4.7 Scofield Island

Presented in Figure 38 are the average shoreline change rates for Scofield Island. Similar to Pelican Island, it is noted this island was the site of emergency berm W10 as part of the Louisiana Berm Project (Thompson, 2012). The pre-berm erosion rates ranged from -11.7 ft/yr (BICM long-term) to -30.2 ft/yr (BICM short-term) noting the short-term average was over 2.5 times the long-term average and over 1.5 times the BICM historical average equal to -18.5 ft/yr. Scofield Island first breached between 1998 and 2004, which occurred during the short-term interval.

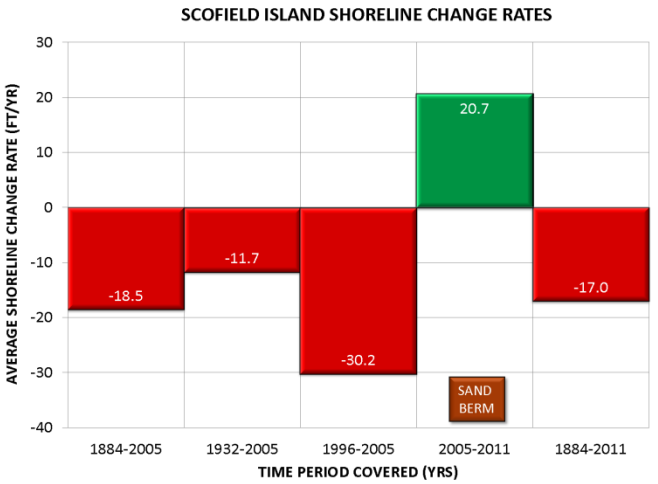


Figure 38. Scofield Island Average Shoreline Change Rates (CEC, 2012).

This breaching correlates to the amplified shoreline erosion rate. The island experienced net shoreline progradation in the near-term interval (+20.7 ft/yr on average) noting this period included the sand berm. The new historical average equaled -17.0 ft/yr, which was on the same order of magnitude as the BICM historical average. Thus placement of the sand berm restored some of the island's geomorphic form and function, returning the historical erosion rate to pre-breach rates.

Construction of berm reach W10 on Scofield Island started on September 13, 2010. Approximately 935,000 cubic yards of sand was transported from rehandling site 25-5 between September 13 and November 23, 2010 for constructing approximately 14,755 feet of berm. The construction template for berm reach W10 was identical to the other berm reaches. The berm was constructed within the footprint of the proposed CWPPRA Scofield Island Restoration Project (BA-40). Monitoring of emergency sand berm reach W10 indicates that 91% of the sand had been retained after the first 360-day monitoring event.

4.5 St. Bernard Delta Barrier Islands

Emergency Berm Reach E4 was constructed adjacent to the northern Chandeleur Islands. Dredging operations in the Hewes Point borrow site (Figure 39 and Table 6) commenced after the state received the notice to proceed on June 11, 2010 and ended by March 21, 2011. For the northern section of berm reach E4, sand was pumped directly by dredging from the approved borrow areas in Hewes Point. Once adjacent to the island, the sand was shaped into the final berm alignment using grader equipment. All work performed by the equipment at the berm site

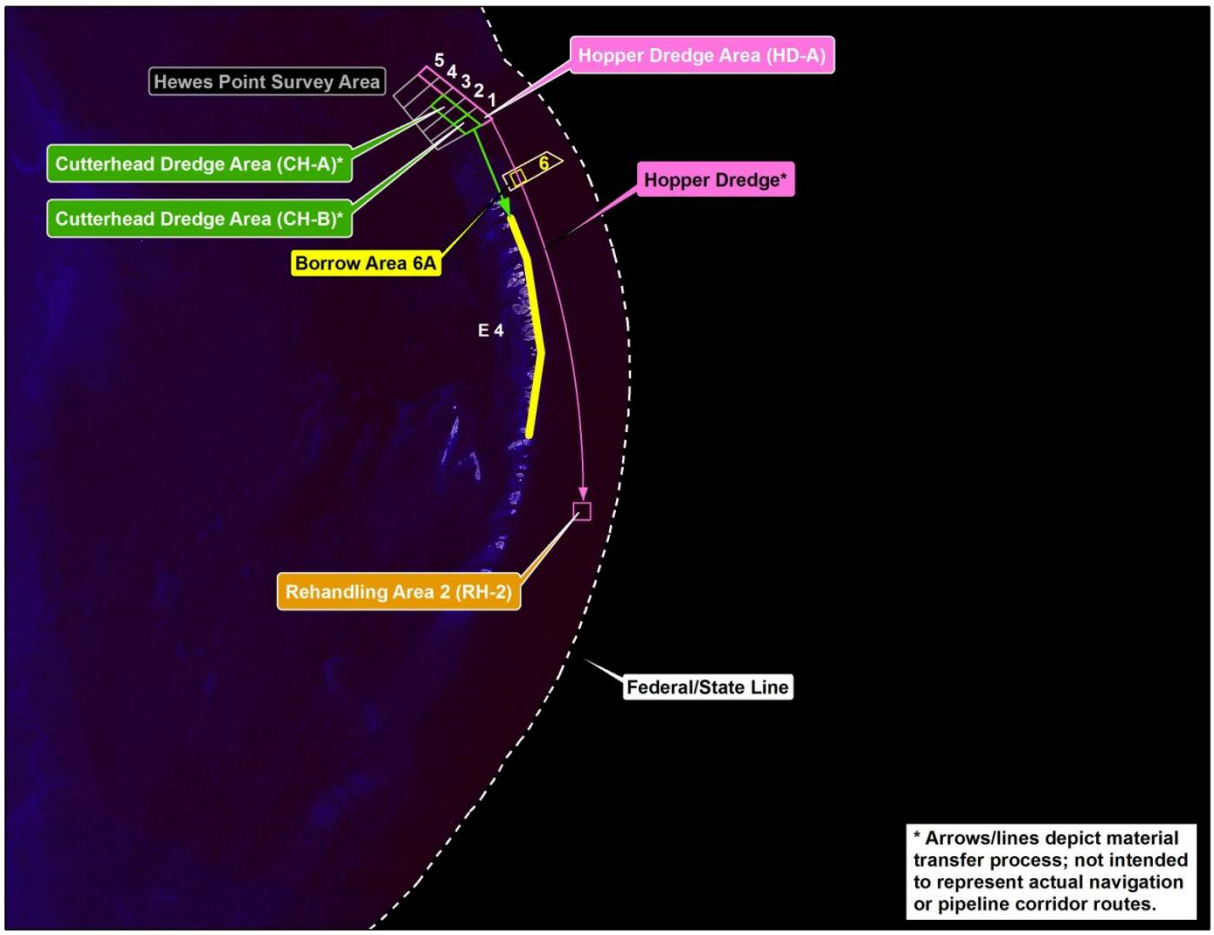


Figure 39. Location of emergency Berm E4 and surrounding features in the vicinity of the Chandeleur Islands.

Table 6. List of projects constructed, funded for construction, and for future implementation in the St. Bernard Delta Barrier System.

Barrier Shoreline Restoration Projects	Funding Program	Construction Date
St. Bernard Delta System		
Constructed Projects		
Chandeleur Islands Marsh Restoration (PO-27)	CWPPRA	2001
Emergency Berms E4		2010
Funded for Construction		
Louisiana Outer Coast Restoration: Breton Island	NRDA	TBD
Future Projects		
None		

remained within the footprint of the berm section or seaward of the berm. Sand for the southern portion of berm reach E4 was transported via hopper dredge from Hewes Point and emplaced in rehandling area RH-2 (Figure 39).

The berm template has a dune height of +5 feet, NAVD 88 with a crest width of 20 feet. Side slopes of 1V:25H were constructed above -2.0 feet, NAVD 88, while a construction slope of 1V:50H was applied below -2.0 feet, NAVD 88. Initially, the berm was constructed so that the landward toe of fill was located 100 feet seaward of the mean high water line. However, this requirement was adjusted starting at Station 187+11 so that the berm could be constructed along the shoreline. This reduced the fill density necessary to construct the berm template.

A total of 47,000 feet (8.9 miles) of berm was constructed along the Chandeleur Islands. Construction of the berm along Chandeleur Island (Reach E4) placed approximately 3,170,000 cubic yards of sandy material from Hewes Point. The shoreline was extended an average of 430 feet and numerous breaches were plugged.

Based on the 360-day monitoring survey, approximately 77% (2,450,000 cubic yards) of the sediment remains within the initial fill footprint. Although comparison of the as-built survey and the 360-day monitoring survey suggests that there has been a volumetric loss of 720,000 cubic yards, this anomaly could be at least partially attributed to survey error. The shoreline has remained stable such that the average shoreline position is roughly five feet seaward of the as-built shoreline position. It should be noted that as of the 360-day monitoring survey, the berm had not been subjected to a significant storm event with the exceptions of Tropical Storm Lee and Tropical Storm Debby. Shoreline recession and erosion are highest at the center of the constructed island where the largest landmass existed prior to construction.

There has been a measurable reduction in the berm crest elevation, likely due to overwash. It is estimated that more than 50% of the overwash occurred between the as-built and 30-day monitoring surveys. It is thought that this overwash is a result of nor'easter storm events and the island adjusting to an equilibrium elevation. Overwash is not considered a loss of sand as the sand stays within the system.

4.6 Factors affecting Barrier Island Stability

Figure 40 illustrates the major pathways for sand movement, which affect barrier island stability. These sediment pathways are discussed below.

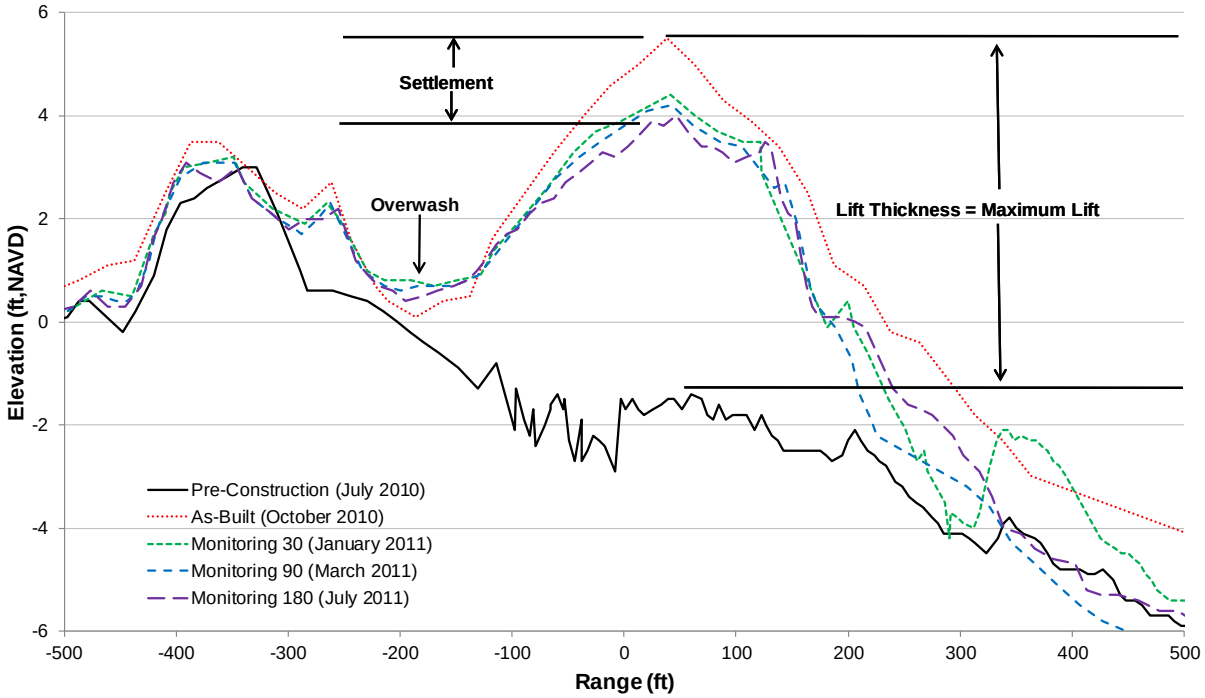


Figure 40. Illustration of various sediment movement pathways which contribute to barrier island stability.

4.6.1 Settlement

In addition to hydrodynamic processes, consolidation of the underlying substrate (settlement) lowers the profile elevation suggesting an apparent volumetric loss of material. This apparent loss is not the result of material leaving the placement area, but is the result of material sinking in place. It is critical to understand the extent of this process because ignoring it could attribute a greater volume change to other processes, such as longshore transport, than is actually occurring.

Rosati's (2009) research suggests that consolidation under the weight of a barrier island is a dominant process governing morphologic evolution and migration. Results indicate that the volume of sand that is sequestered through the consolidation process can be as large as 68 percent for a barrier island overlying a poorly consolidated substrate, such as would occur for new construction of a barrier island (or sand berm) over a compressible substrate.

4.6.2 Overwash

Overwash is a significant component of the sediment budget, although overwash is not considered a loss from the system. As it is a redistribution of sediment, it describes the performance of the project and explains observed sediment redistribution. Overwash can be calculated by measuring the volume change landward of the location of maximum elevation on

the as-built survey. The overwash density (and corresponding volume when calculating volumes using the average end area method) was obtained by calculating the volume change landward of the project between the as-built and monitoring profiles.

4.6.3 Offshore Loss of Fine Sediment

Fine-grained sediment (silt and clay) is more easily resuspended by waves and transported offshore than coarse-grained sediment (sand). Some barrier island projects are constructed with a mixture of sand, silt, and clay. Silts and clays can be used to effectively construct back-barrier marsh platforms, but are highly erosive on the shoreface of barrier islands. A distinction must be made within a sediment budget to account for the difference in sediment types. From a coastal engineering perspective, it is the volume of sand within the system that is important because the sand provides longer term protection from wave attack. When silt and clay are exposed they are more easily suspended in the water column and can be transported offshore.

4.6.4 Longshore Transport

The losses due to longshore transport (sediment moving along the shoreline) can be estimated by taking the total measured volume change between surveys and subtracting the offshore loss. Longshore transport is the process which typically results in sediment being deposited in navigation channels that bisect barrier islands. The slope of the longshore transport curve indicates whether erosion or accretion is occurring and the severity of this erosion or accretion. Areas of higher erosion (or accretion) will result in a steeper longshore transport curve. Stable areas will result in a flatter longshore transport curve.

4.6.5 Island Breaching

It is noted that the period of time when shoreline erosion rates increased dramatically above the historical averages corresponds with breaching of the barrier shorelines. These periods of time correlated with the passage of significant hurricanes and resultant breaching of shorelines. Often times these breaches occurred adjacent to canals which act as sediment sinks when the beach has overwashed and sediments deposited in the canals. The sediments are no longer available for transport and in essence are removed from the littoral system.

Recent studies have documented that breaching of islands contributes to accelerated shoreline erosion and island disintegration. Numerous barrier island breaches caused by hurricanes over the past seven years have benefitted by recent restoration projects, which in many cases, have returned islands to their historic shoreline positions. The CPRA is developing a Breach Management Program in response to this recommendation. Refer to Section 3.4 (above) for more information.

4.7 Minimized Design Template

The minimized design template is defined as a design template with minimal barrier island dimensions that restores the barrier shoreline's geomorphic form and ecologic function and retains this form and function after being subjected to the design storm events. There are several

components needed to construct the minimized design template for a barrier system including bathymetric/topographic data, sediment transport pathways, design storm criteria, subsidence and compaction, existing restoration project footprints, and site constraints (e.g., unique environmental habitats).

A minimized design template was developed for the Terrebonne Basin barrier shorelines extending from East Timbalier Island to Raccoon Island as part of the Louisiana Coastal Area program for the Terrebonne Basin Barrier Shoreline Restoration Project (TBBSR) (USACE, 2010). The design storms selected included a hypothetical 50-year design storm and historic storms, Hurricanes Katrina and Rita, which occurred in 2005, and Hurricanes Gustav and Ike, which occurred in 2008. Table 7 presents dimensions of the minimized restoration template developed for the Terrebonne Basin islands.

Table 7. Summary of Minimized Restoration Templates for TBBSR

Island	Raccoon	Whiskey	Trinity	East	Timbalier	East Timbalier
Gulf-side Beach Width (ft)	250	250	250	250	250	250
Dune Crest Width (ft)	100	100	100	100	100	100
Bay-side Beach Width (ft)	100	100	100	100	100	100
Marsh Width (ft)	1,000	1,000	1,000	1,000	1,000	1,000
Beach Elev. (ft, NAVD88)	4.2	4.0	4.0	4.0	4.0	4.0
Dune Elev. (ft, NAVD88)	6.4	6.2	6.2	6.2	6.2	6.2
Marsh Elev. (ft, NAVD88)	2.5	2.1	2.3	2.3	2.2	2.3

A number of barrier island projects have been constructed in the Teche, Lafourche, and Modern delta reaches since 1994. With the recent updating and adoption of the 2012 *Louisiana's Comprehensive Master Plan for a Sustainable Coast* (CPRA, 2012), it is timely to consider the status of the already-accomplished restoration projects. In order to improve the understanding of barrier system evolution and enhance the science behind barrier system restoration design, it is both essential and prudent to evaluate performance of the constructed projects as completed in the recently-commissioned barrier island performance study (CEC, 2012).

4.8 Benefits of BI Restoration on Longevity of System(s)

With several major restoration projects in place, the post-restoration estimated Year of Disappearance (YOD) for several barrier island systems in Louisiana have been extended by years to decades. This increase in island longevity throughout the system is a direct benefit of the restoration projects. Further, with the increase in both frequency and intensity of major hurricanes over the past 12 years (and similar projections into the future), in the absence of the

restoration and protection program, it is expected many of these islands would have disappeared much sooner than original projections.

5.0 Future Plans

Future plans for Louisiana's barrier islands include additional projects, continuation of system-wide monitoring, and the management of relevant sediment and geophysical data, and overall understanding of sediment management requirements to support the sediment needs of the 2012 Coastal Master Plan projects.

5.1 Projects

In addition to the "Future Projects" listed above in Section 2, the 2012 Coastal Master Plan identifies barrier island restoration projects in four main groupings. These projects are listed as: Isles Dernieres Barrier Island Restoration (from Raccoon Island to Wine Island); Timbalier Islands Barrier Island Restoration (from Timbalier Island to Belle Pass); Belle Pass to Caminada Pass Barrier Island Restoration; and Barataria Pass to Sandy Point Barrier Island Restoration. In addition to these projects, eight of the 13 NRDA Early Restoration Projects that Louisiana has submitted are barrier island projects:

1) Cheniere Ronquille
2) Grand Isle Bayside Breakwaters
3) West Grand Terre Beach Nourishment
4) West Grand Terre Stabilization
5) Barataria Basin Barrier Shoreline – Caminada Headland
6) Caillou Lake (Whiskey Island)
7) Chandeleur Island Restoration
8) Shell Island Restoration

These projects will be prioritized for development and for construction in the near future.

5.2 Monitoring

As discussed above in Section 3.1, the Barrier Island Comprehensive Monitoring (BICM) program has provided an extremely useful baseline of barrier island condition. Now that we have this tremendous tool, there is a need to continue this effort to assess how the islands continue to change over time. The CPRA will continue BICM with a second increment of data collection over the next five years, referred to as BICM2 (Figure 14). Also as discussed in Section 3.6 monitoring of subsidence (Phase 4) due to emplacement of sand during barrier island restoration will continue under Caminada-Moreau Subsidence Study.

5.3 Louisiana Sand Resources Database (LASARD)

The Coastal Protection and Restoration Authority developed the Louisiana Sand Resources Database (LASARD) to archive, populate, and maintain the geoscientific and related data acquired for ecosystem restoration on a GIS platform. The objective of LASARD is to centralize relevant data from various sources for better project coordination. That will facilitate future

planning for delineating and utilizing sediment resources for a sustainable ecosystem restoration in coastal Louisiana by streamlining access to existing data sources, which will minimize the cost and time required to identify appropriate resources. To keep pace with the large amount of data being delivered to the CPRA from ongoing projects, the current LASARD database will need to be updated to incorporate these new data sets. Keeping LASARD current will provide the benefit of real cost savings to upcoming projects by not only providing valuable data for planning, but also by reducing the potential for costly, redundant data collection efforts. This will include finalizing updates to the LASARD attribute formats, updating existing data to match these new formats, and processing additional data sets that are generated by ongoing implementation of coastal restoration projects. The data which has been collected during BICM 1 and which will be collected in future studies will ultimately reside in LASARD. The LASARD database, along with the mapping of surficial sediment distribution, is an important component of the Louisiana Sediment Management Plan (LASMP).

5.4 Louisiana Sediment Management Plan (LASMP)

To ensure the timeline as described in the 2012 Coastal Master Plan for reversing the trend of coastal land loss is realized, the state must depend upon sound environmental and fiscal management of sediment resources. As such, introduction of river sediment and freshwater nutrients to coastal marshes must be an integral component of restoration efforts, and sand deposits associated with ancient distributary channels and remnant shoals formed during the destructive phase of delta evolution should continue to be pursued as viable sources for barrier island and back-barrier marsh restoration. Moreover, sediment needs are likely to increase due to rapid subsidence in south Louisiana and potential increases in sea-level rise over the next century. Thus, the success of restoration efforts depends on locating, managing, and utilizing sediments in a cost-effective manner. One of the metrics the state has chosen to track their progress is average rate of land change for the next 50 years. The goal is to change the trajectory of land loss from net loss to one of net gain by the year 2042.

Khalil and Finkl (2009) and Khalil et al. (2010) stressed the importance of developing and implementing a sediment management plan for coastal Louisiana in support of coastal restoration efforts. Developing a clear understanding of the evolutionary processes controlling coastal sedimentation in deltaic environments is critical to any successful sediment management strategy. This involves direct knowledge of natural coastal processes (e.g., sea level change, subsidence, wave and current energy, sedimentation patterns, and geologic controls) and the impact of engineering activities (e.g., dredging/channels, levees/dams) on these processes.

Effective restoration efforts should be consistent with natural system evolution. Ultimately, one must understand the imbalance between sediment input and erosion (energy required to mobilize and transport sediment) to properly evaluate net sediment movement within wetlands to design effective restoration strategies. The CPRA is focused on long-term conservation and management of state natural resources. As part of this focus, the CPRA developed the Louisiana Sediment Management Plan (LASMP) framework that embraces a regional sediment management strategy upon which restoration projects are planned within a regional purview as opposed to merely a project-focused approach.

LASMP is a working model to incorporate the influence of scale on resource availability (river, in-shore, and continental shelf) and resource distribution for effective restoration. Although technical considerations associated with sediment borrow areas, river sediment, and engineering activities are critical for successful plan implementation, coastal policy/regulation requirements are expected to have significant influence on plan implementation.

The desired result of LASMP is a more cost-effective implementation of the Master Plan via comprehensive management of renewable and non-renewable sediment resources; a reduction in project costs and environmental impacts; and a long-term, safe and sustainable coast to protect Louisiana communities, national critical energy infrastructure, and state natural resources for future generations.

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Appendix D

Caernarvon & Davis Pond Operational Plans for 2015

CAERNARVON OPERATIONAL PLAN 2015

From December through May, the intent is to operate the diversion to maintain the seasonal average salinity at the 15 ppt line illustrated in the map below. A salinity gauge has not existed at the 15 ppt isohaline line, though one has been installed closer to the line in May 2014 (USGS gauge #073745275, Black Bay nr Stone Island). Salinities at the Stone Island gauge will be monitored in 2015, but December- May operations will continue to be based on data from the Black Bay gauge specified by the map (Figure 1) and graph below (Figure 2). From June through November, Caernarvon operations will be based on the monthly salinity range at the 5 ppt line specified by the map (Figure 1) and graph (Figure 3) below, utilizing the Crooked Bayou gauge. The structure will be operated when the 14-day moving average salinity is within or above the long term data range for the gauge(s) in use. When the moving average drops below the low trigger (the greater of the long term average minus 1SD or 5ppt) the diversion operations will be ceased until the moving average re-enters the operational range*. Operational settings are not to exceed 7500 cfs.

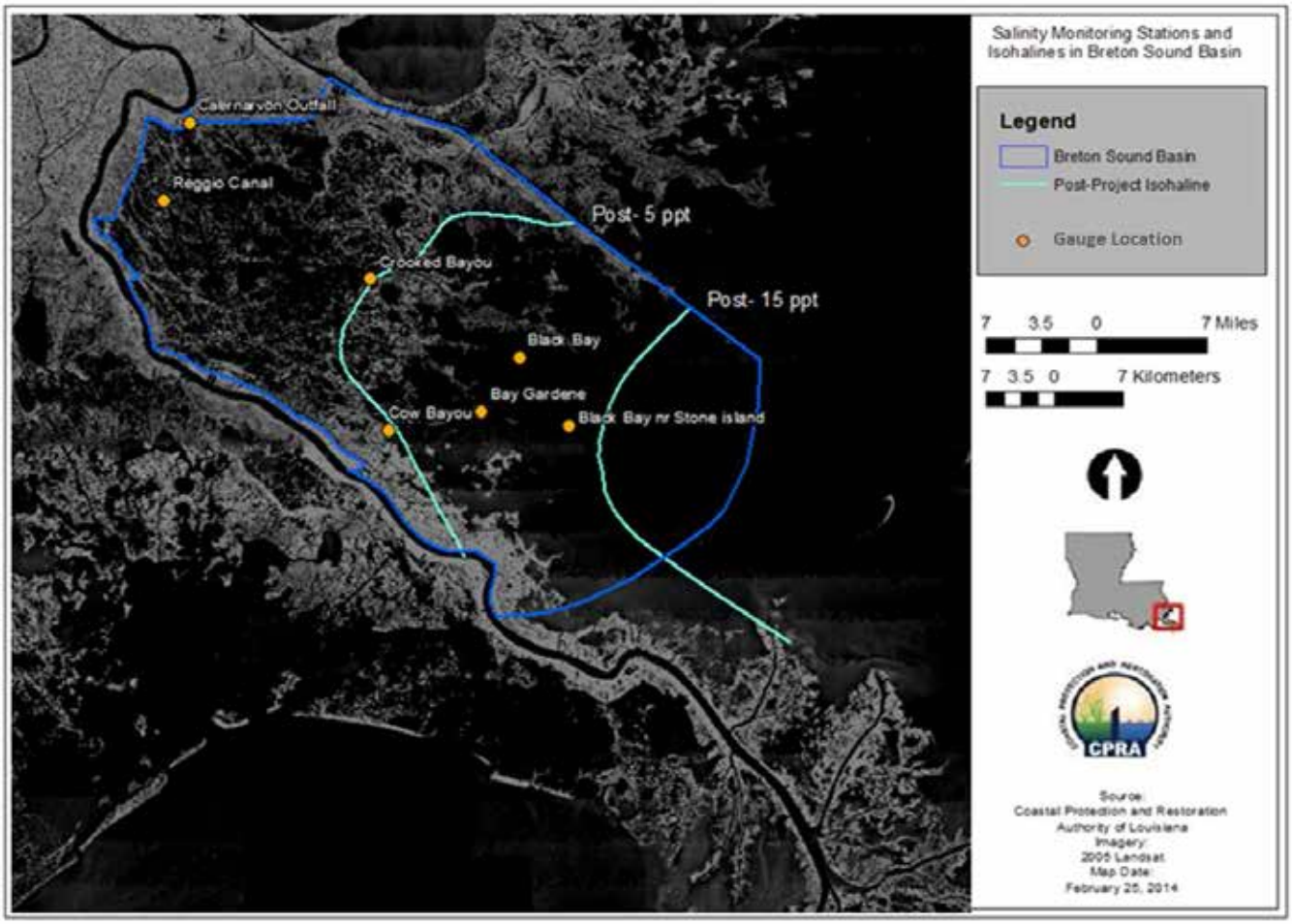

Figure 1. Map of salinity gauges and isohaline lines in Breton Sound basin to be used for guidance and operation of the Caernarvon Freshwater Diversion.

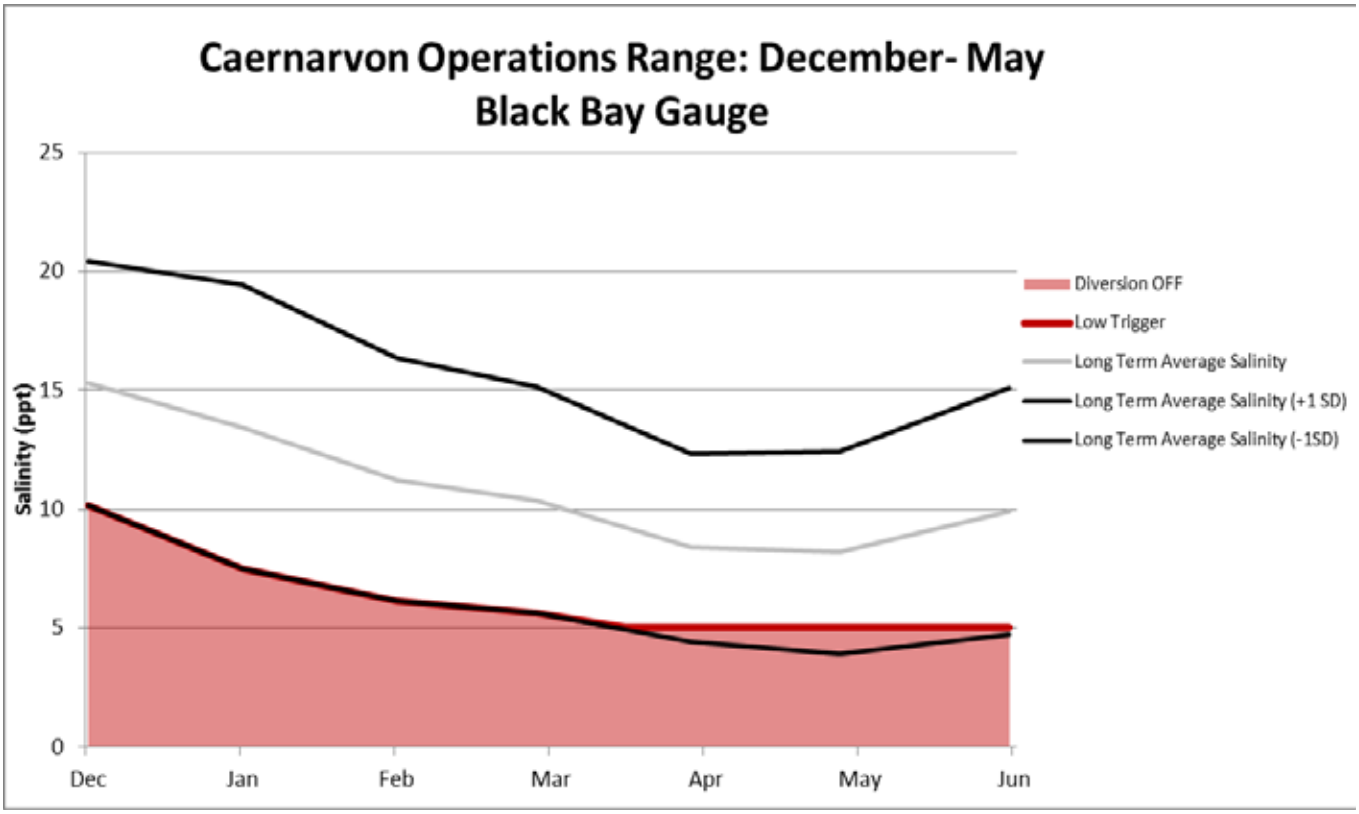

Figure 2. Long term average (+1 standard deviation) salinities from the Black Bay Gauge (USGS site 07374526). From December through May the Caernarvon Freshwater Diversion structure may be operated when the 14-day moving average salinity is within or above the data range. Operations will cease if the moving average drops below the low trigger.*

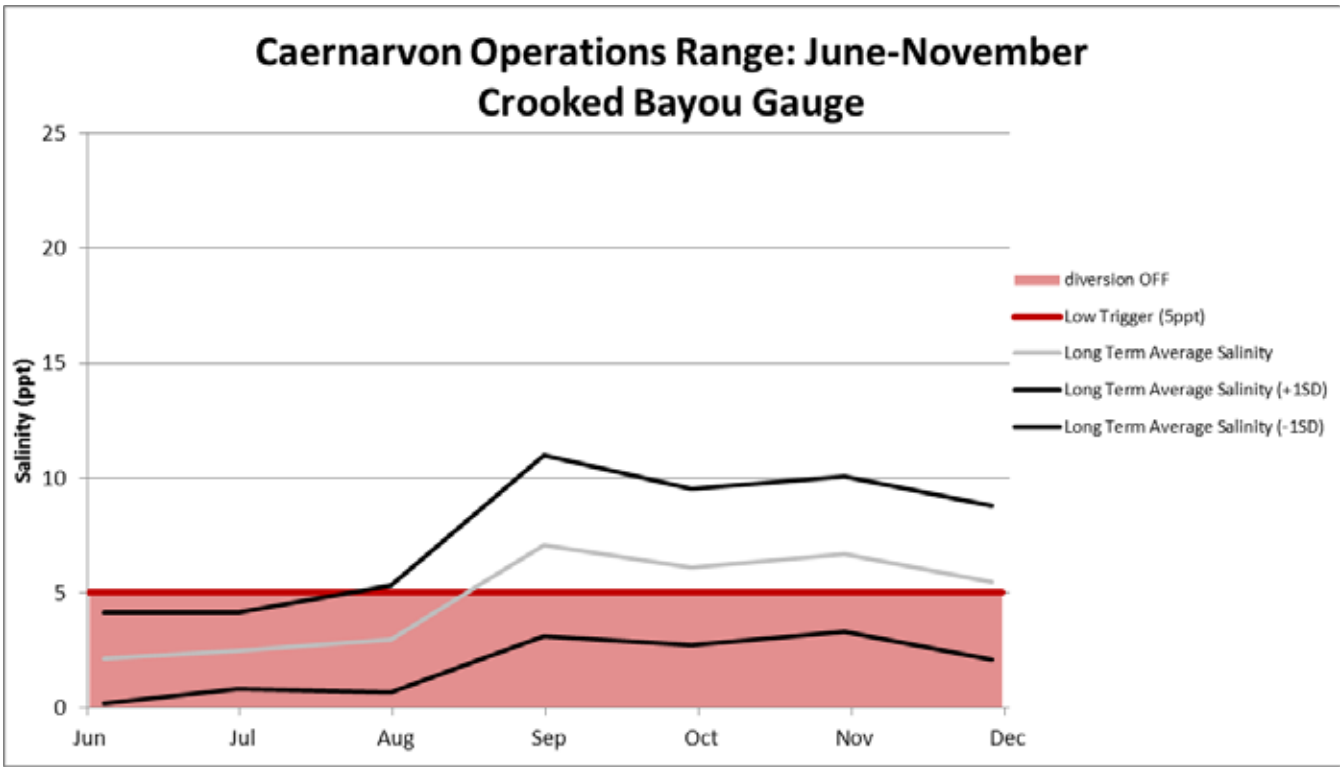

Figure 3. Long term average (+1 standard deviation) salinities from the Crooked Bayou (USGS site 073745257) and Cow Bayou (USGS site 073745258) gauges. From June through November the Caernarvon Freshwater Diversion structure may be operated when the 14-day moving average salinity is within or above the data range. Operations will cease if the moving average drops below 5ppt.*

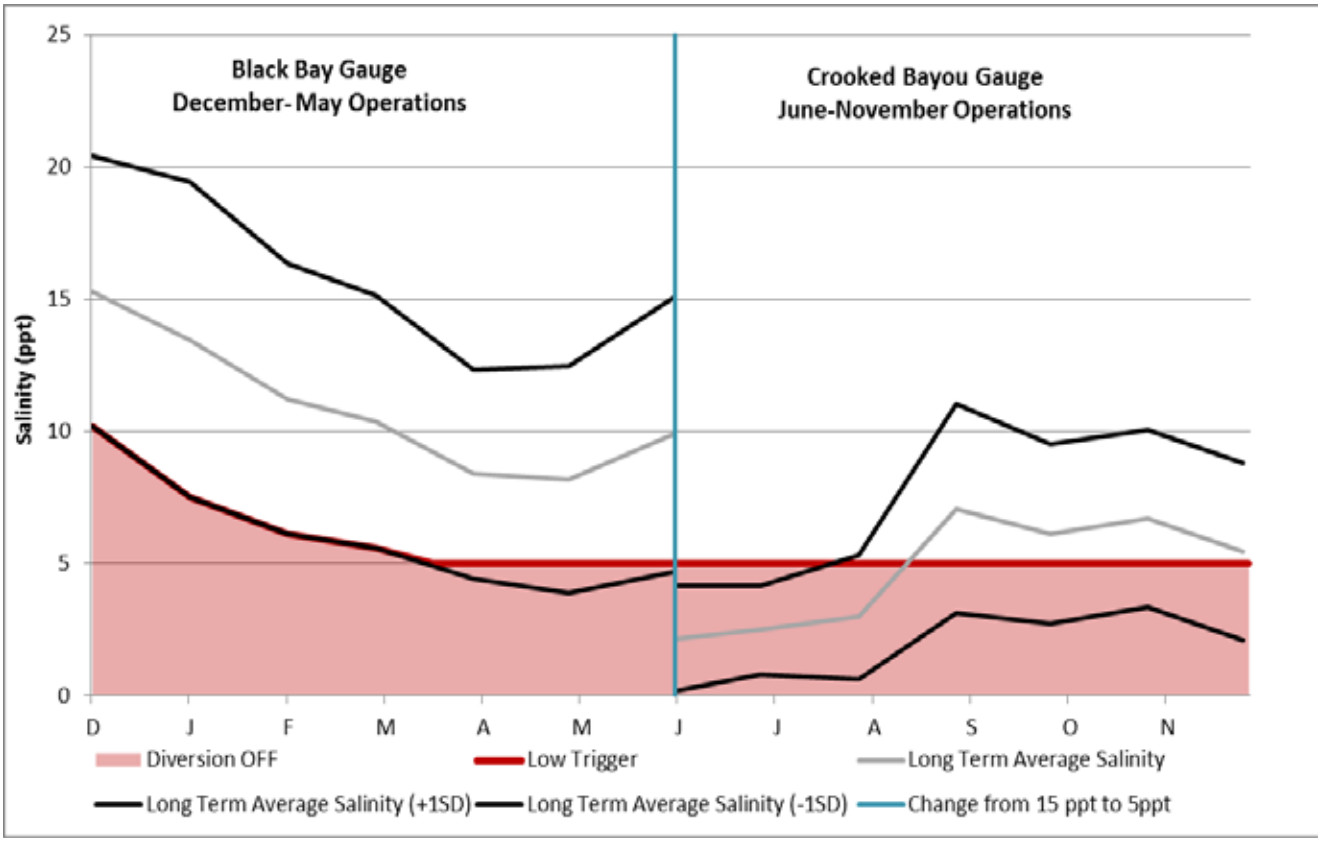

Figure 4. Long term average (+1 standard deviation) salinities from the Black Bay Gauge (USGS site 07374526). from December through May, and the Crooked Bayou (USGS site 073745257) gauge from June through November. The Caernarvon Freshwater Diversion structure may be operated when the 14-day moving average salinity is within or above the data range. Operations will cease if the moving average drops below the low trigger. *

* Discharges may deviate from operational plan as outlined below:

- Emergency, maintenance and local parish situations will be evaluated on a case-by-case basis to determine operational needs. The CIAC shall be notified if operations outside of the plan are required.

- Structure may be operated for public relations and/or educational purposes, though output is not to exceed 5000 cfs for a duration of no longer than 2 hours.

DAVIS POND OPERATIONAL PLAN 2015

From December through May, the intent is to operate the diversion to maintain the seasonal average salinity at the 15 ppt line illustrated in the map below. December- May operations will be based on data from the Barataria Bay N Grand Terre gauge specified by the map (Figure 1) and graph below (Figure 2). From June through November, operations will be based on the monthly salinity range at the 5 ppt line specified by the map (Figure 1) and graph (Figure 3) below, utilizing the Barataria Waterway S of Lafitte gauge as the primary gauge. Little Lake Bay Dos Gris will also be monitored, and utilized as a secondary gauge for the 5ppt line. The structure will be operated when the 14-day moving average salinity is within or above the long term data range for the gauge(s) in use. When the moving average drops below the low trigger (the greater of the long term average minus1SD or 5ppt) the diversion operations will be maintained at the minimum of 1000cfs until the moving average re-enters the operational range. Operational settings are not to exceed 10,000 cfs.

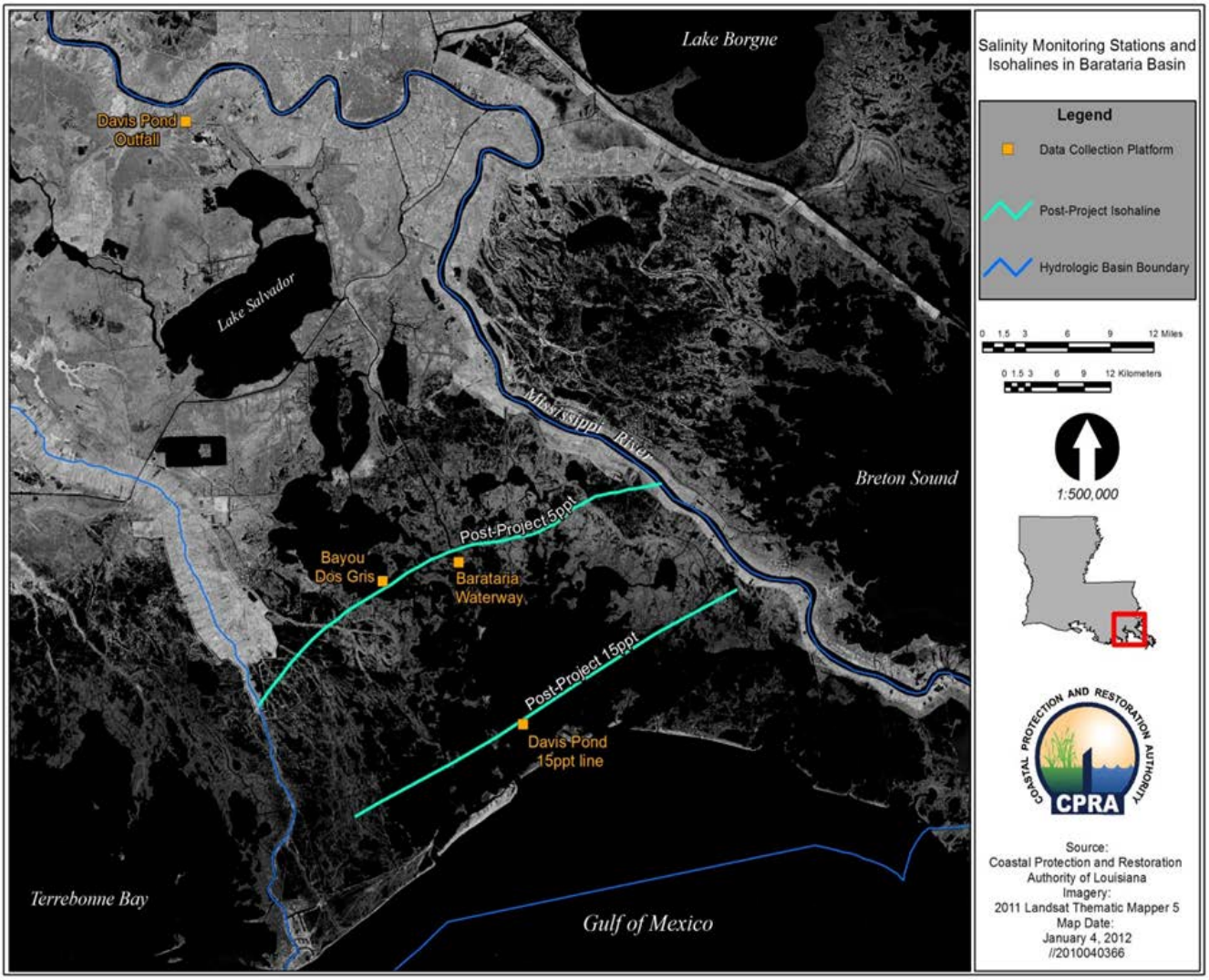

Figure 1. Map of salinity gauges and isohaline lines in Barataria Sound basin to be used for guidance and

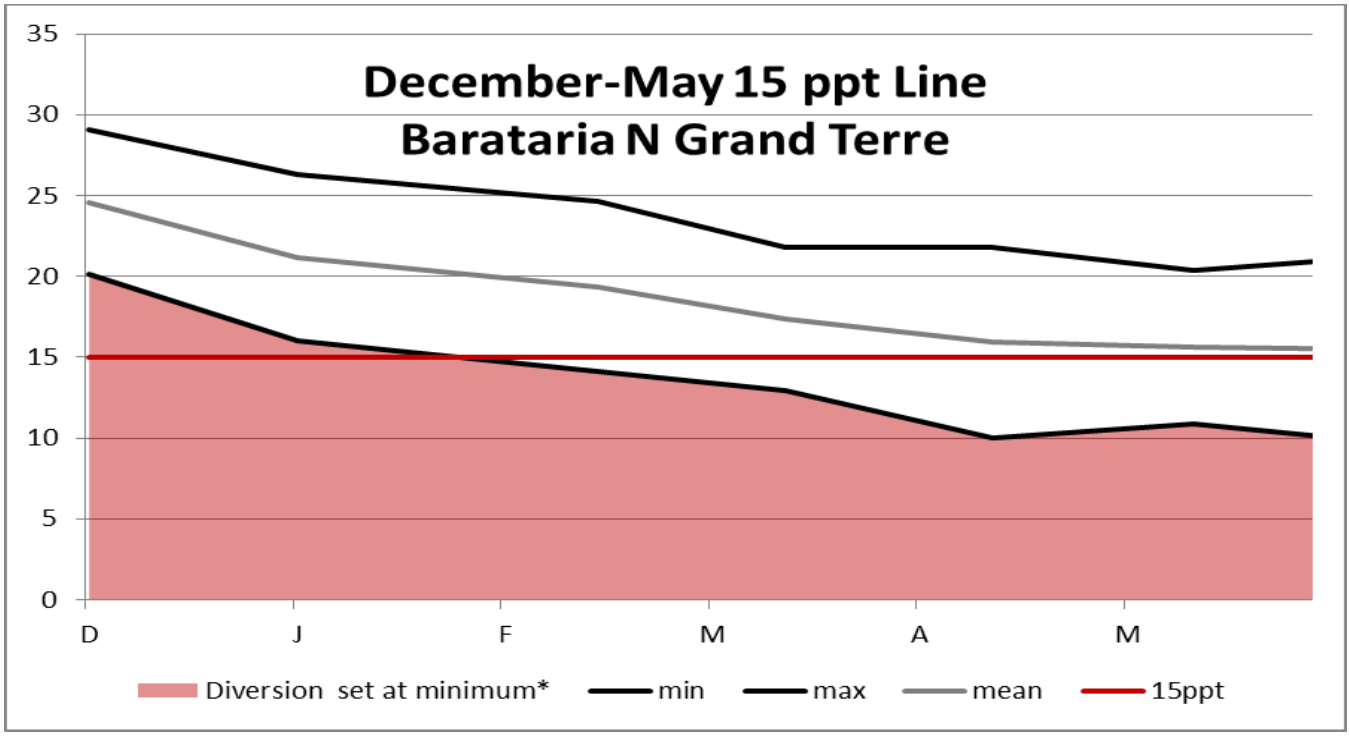

Figure 2. Long term average (+/- 1 standard deviation) salinities from the Barataria Bay N of Grand Terre Gauge (USGS site 291929089562600). From December through May the Davis Pond Freshwater Diversion structure may be operated when the 14-day moving average salinity is within or above the data range. Operations will be decreased to the minimum of 1000cfs if the moving average drops below the low trigger.*

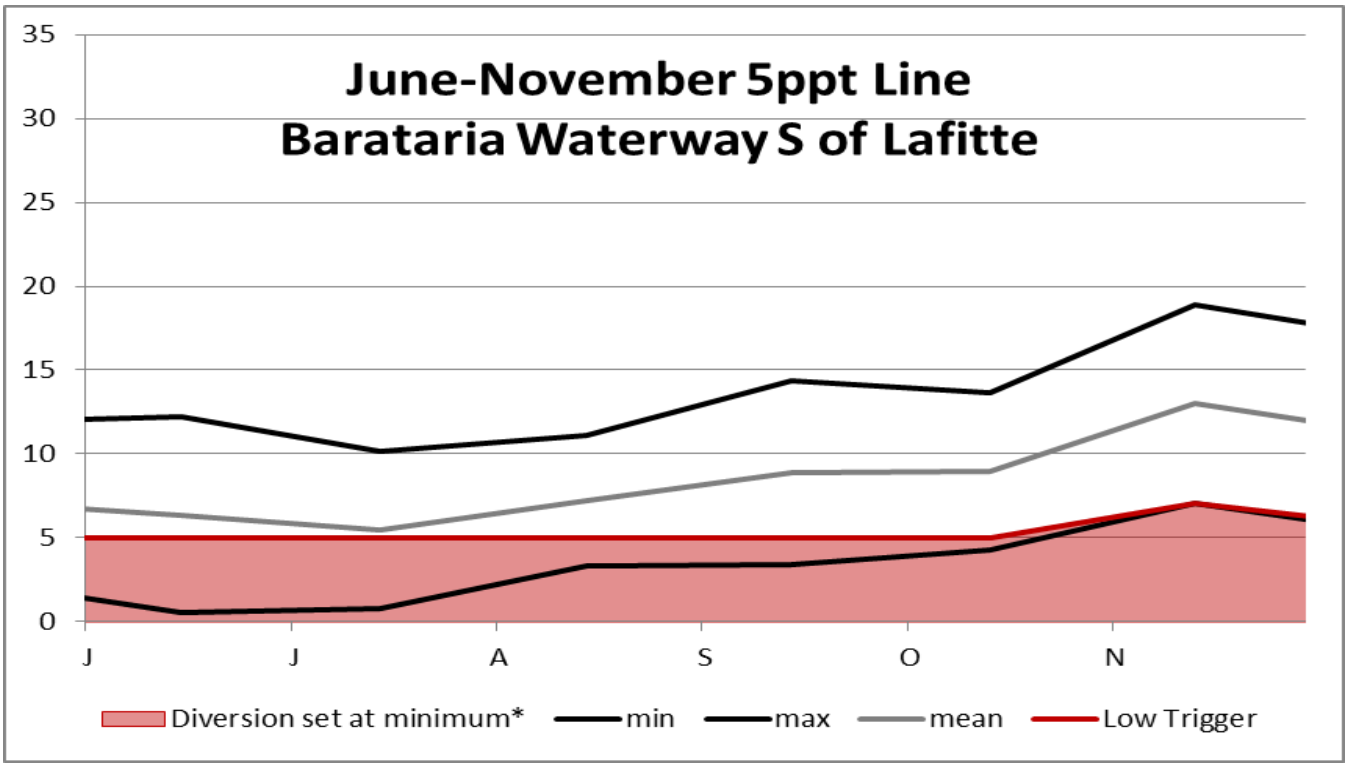

Figure 3. Long term average (+/- 1 standard deviation) salinities from the Barataria Waterway (USGS site 292859090004000). From June through November the Davis Pond Freshwater Diversion structure may be operated when the 14-day moving average salinity is within or above the data range. Operations will be decreased to the 100cfs minimum if the moving average drops below 5ppt.*

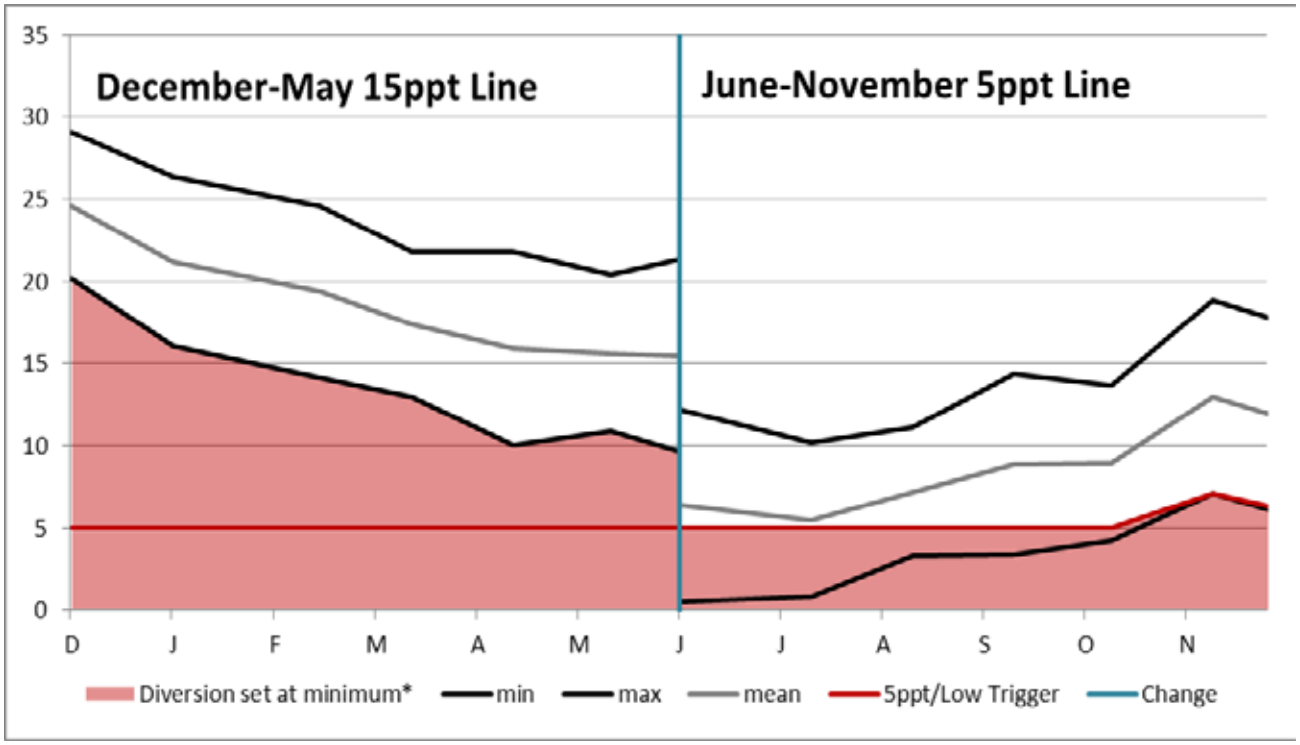

Figure 4. Long term average (+1 standard deviation) salinities from the Barataria Bay N Grand Terre Gauge (USGS site 291929089562600) from December through May, and the Barataria Waterway (USGS site 292859090004000) gauge from June through November. The Davis Pond Freshwater Diversion structure may be operated when the 14-day moving average salinity is within or above the data range. Operations will decrease to the minimum of 1000 cfs if the moving average drops below the low trigger. *

* Discharges may deviate from operational plan as outlined below:

- Emergency, maintenance and local parish situations will be evaluated on a case-by-case basis to determine operational needs. The DPAC shall be notified if operations outside of the plan are required.

- Structure may be operated for public relations and/or educational purposes, though output is not to exceed 5000 cfs for a duration of no longer than 2 hours.

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Appendix E

Inventory of Non-State Projects

A. Parish CIAP Projects

PARISH CIAP PROJECTS

Program	State Project Number (Federal)	Project Name	Project Type	Agency/Sponsor	Senate District	House District	Parish	Acres Benefited	Construction Completion Date	Feasibility Cost	Engineering, Design, & Landrights Cost	Construction Cost	Project Summary	Planning Unit
CIAP	BS-17	Lake Lery Rim Re-Establishment and Marsh Creation	MC	BOEMRE/ FWS	1	103	StB.	300	Pending	N/A	$497,417	$8,188,293	The project proposes to dredge a waterway through Lake Lery historically used for navigation. The waterway is located approximately along the St. Bernard and Plaquemines Parish line. The project will utilize the dredged material and borrow areas in Lake Lery to create marsh in the open water areas north and east of the lake. It will also re-establish the lake rim by armoring the northern and eastern shoreline of Lake Lery using a rock dike.	1
CIAP	PO-39	Bald Cypress/Tupelo Coastal Forest Protection	LA	BOEMRE/ FWS	18	88	Liv.	1,762	2011	N/A	$260,443	$2,774,290	The project location is within Livingston Parish, in the Maurepas Swamp of southeast Louisiana. The project area includes 2,590.4 contiguous acres of coastal wetland forest, specifically bald cypress-tupelo swamp, with roughly 200 acres fronting the western edge of Lake Maurepas.	1
CIAP	PO-40	Hydrologic Restoration in the West Lake Maurepas Swamps	HR	BOEMRE/ FWS	18	88	Liv.	6,458	Pending	N/A	$863,185	$2,594,680	The Amite River is located southwest of Lake Maurepas and east of I-10. The objective of this project is to allow floodwaters to introduce additional fresh water, nutrients, and sediment into the western Maurepas Swamp. The exchange of flow would occur during flood events on the river and from runoff of localized rainfall events, and would in turn provide nutrients and sediment to facilitate organic sediment deposition in the swamp, some fluctuation of water levels, improve biological productivity, and prevent further swamp deterioration.	1
CIAP	PO-41	Update of St. Bernard Parish Coastal Zone Management Plan	PL	BOEMRE/ FWS	1	103	StB.	N/A	N/A	N/A	$200,000	N/A	Funds will be used so that the St. Bernard Parish Coastal Zone Management Plan may be updated.	1
CIAP	PO-42	West LaBranche Shoreline Protection	SP	BOEMRE/ FWS	19	56	StC.	N/A	Pending	N/A	N/A	$3,600,000	This project involves the continuation of the rock shoreline protection project on the south shore of Lake Pontchartrain in St. Charles Parish. The project will consist of installing approximately 2,150 linear feet of rock dike on the existing shoreline and the construction of a 130-foot-long timber pile bridge at the mouth of Bayou LaBranche.	1
CIAP	PO-43	East LaBranche Shoreline Protection	SP	BOEMRE/ FWS	19	56	StC.	N/A	Pending	N/A	N/A	$930,917	This project involves the continuation of rock shoreline protection project on the south shore of Lake Pontchartrain in St. Charles Parish. The project will consist of installing approximately 15,300 linear feet of rock dike.	1
CIAP	PO-45	East Bank Wastewater Assimilation Plant	MM	BOEMRE/ FWS	18	57	StJa.	2,400	Pending	N/A	N/A	$1,600,000	This project will construct a wetland assimilation treatment plant which will collect wastewater from secondary treatment modules in Grand Point, Louisiana. It will pump the wastewater to the pond area that will discharge into seven acres of forested wetland areas that will directly affect 2,400 acres of wetlands.	1
CIAP	PO-46	Reserve Relief Canal Shoreline Protection Project	SP	BOEMRE/ FWS	19	57	StJo.	N/A	Pending	N/A	$283,015	$1,730,042	The proposed project will consist of approximately 1,400 linear feet of shoreline protection extending in an easterly and westerly direction in St. John the Baptist Parish, where the Reserve Relieve Canal enters Lake Maurepas and entrance protection lining. The proposed feature consists of a foreshore rock dike with gaps for fish and public access to the lake shoreline.	1
CIAP	PO-48	Green Property Preservation Project	LA	BOEMRE/ FWS	11	90	StT.	27	2011	N/A	N/A	$1,345,000	This project includes the acquisition of a 27.2 acre parcel to preserve a sensitive wetland composed of pristine cypress swamp and bottomland hardwoods from future commercial or residential development. It is located between Bayou Lacombe and the Tammany Trace linear park south of U.S. 190 in Lacombe, Louisiana within the Bayou Lacombe watershed.	1
CIAP	PO-49	French Property Preservation Project	LA	BOEMRE/ FWS	11	90	StT.	40	2009	N/A	N/A	$1,718,150	This project includes the acquisition of a 40 acre parcel composed of pine trees and mixed hardwoods with inclusion savannas, which lies between the I-12 Service Road and Bayou Liberty in Slidell, Louisiana. This project is to educate the public about the value of wetlands. Invasive plant species will be removed and nest boxes will be installed.	1
CIAP	PO-51	Mandeville Aquatic Ecosystem Restoration Project	MM	BOEMRE/ FWS	11	89	StT.	N/A	2010	N/A	N/A	$3,734,879	This project will include an upgrade of the existing wastewater treatment plant and construction of a discharge structure and piping system for wetland assimilation. It will construct 2.5 miles of force main for disbursement of treated effluent into 1.7 square miles of uninhabited wetland adjacent to the western border of the City of Mandeville.	1
CIAP	PO-52	Lake Pontchartrain Shoreline Protection	SP	BOEMRE/ FWS	6	73	Tang.	N/A	Pending	N/A	$699,400	$5,882,716	The project is located in Tangipahoa Parish between Pass Manchac and the mouth of the Tangipahoa River. The goal of the proposed project is to construct approximately 12,000 linear feet of foreshore protection.	1

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CIAP	PO-53	Wetland Wastewater Assimilation Process Planning	PL	BOEMRE/ FWS	18	58	StJa.	N/A	2009	N/A	$49,994	N/A	The study will develop a plan to allow wetland assimilation to provide tertiary treatment to wasterwater while improving wetland quality. The study will analyze potential sites and set project goals. The final report will provide preliminary characterizations of the parish's wetland systems, their suitability for wastewater assimilation, an analysis of the wetlands's loading and assimilation capacities, and capabilities of the wetlands and preliminary engineering and cost analyses.	1
CIAP	PO-70	Northshore Beach Marsh Creation/Restoration	MC	BOEMRE/ FWS	11	90	StT.	600	Pending	N/A	N/A	$1,860,558	This project is located in the Pontchartrain Basin in St. Tammany Parish. Project features include approximately 600 acres of marsh creation via hydraulic dredging and placement of 2 million cubic yards of material. The likely borrow location is Lake Pontchartrain, the Highway 11 Canal, and Bayou Bonfouca and associated canals. The objectives of this project are to create approximately 600 acres of intermediate marsh, reduce erosion of adjacent interior marshes, and maintain and support the integrity of the Lake Pontchartrain shoreline.	1
CIAP	PO-71	Waterline Booster Pump Station, East Bank	INF	BOEMRE/ FWS	18	58	StJa.	N/A	2011	N/A	N/A	$265,100	The project would construct a waterline booster pump along LA Highway 44 in Convent, Louisiana in St. James Parish. The construction includes housing a 40 hp motor with a 1,100 gallon/minute high-service pump and connecting to the existing 10 inch PVC waterline at two locations in order to establish a loop and by-pass system. The station will have a metal building with a concrete floor to enclose the pump and electrical equipment.	1
CIAP	BA-50	Bayside Segmented Breakwaters at Grand Isle	SP	BOEMRE/ FWS	8	105	Jef.	N/A	2012	N/A	$307,709	$2,989,653	The project is located in Jefferson Parish, Louisiana, along the bay side of Grand Isle, Louisiana. The purpose of this project is to reduce erosion on the bay side of Grand Isle. Twenty-four 300 foot breakwaters (approximately 1.5 miles) will be constructed on the back-bay side of Grand Isle.	2
CIAP	BA-51	Goose Bayou Ridge Creation and Shoreline Protection	PL	BOEMRE/ FWS	8	105	Jef.	1,200	2011	N/A	$165,935	N/A	This project located in Lafitte, Jefferson Parish Louisiana, will improve shoreline protection by creating over 8,000 linear feet of additional shoreline through the use sediment from the Mississippi River, and vegetative planting, along the west side of Goose Bayou. This project will help establish a wetland ridge which will function as habitat for native species of plants and animals.	2
CIAP	BA-52	Lower Lafitte Shoreline Stabilization at Bayou Rigolettes	SP	BOEMRE/ FWS	8	105	Jef.	N/A	Pending	N/A	$387,986	$7,642,385	This project located within Lafitte, Louisiana will help protect the integrity of wetlands within the Barataria Basin and reduce saltwater intrusion and deterioration of interior marsh. Over 10,600 linear feet of foreshore rock revetment will be constructed, along with a water control structure in order to protect the interior marshes.	2
CIAP	BA-53	Maritime Forest Ridge Restoration	VP	BOEMRE/ FWS	20	54	Laf.	60	N/A	N/A	$700,000	N/A	Distributary ridges and chenier ridges along the coast of Louisiana are disappearing at an alarming rate. Projects such as these help establish ridge habitats and associated wetlands which are extremely important for millions of migrating Neo-tropical songbirds that cross the Gulf of Mexico, in addition to providing wetland habitat for coastal plant and animal species.	2
CIAP	BA-54	Northwest Little Lake Marsh Creation and Enhancement	DM MC VP	BOEMRE/ FWS	20	54	Laf.	100	2011	N/A	$222,430	$2,209,910	This project, located in Lafourche Parish, will use dedicated dredge material to create 30-40 acres of wetlands in interior open water bodies (enhancing 70-100 acres of marsh) and plant 2 rows of smooth cordgrass along approx. 7,500 linear feet of the lake shoreline.	2
CIAP	BA-56	Update of the Plaquemines Parish Coastal Management Plan	PL	BOEMRE/ FWS	1	105	Plaq.	N/A	N/A	N/A	$300,000	N/A	Funds will be allocated to the Parish so that they may update their coastal management plan.	2
CIAP	BA-57	Tidewater Road Flood Protection	INF	BOEMRE/ FWS	1	105	Plaq.	N/A	2010	N/A	N/A	$3,364,310	Tidewater Road is subject to heavy inundation from directional winds that elevate tides over the roadway. Wetland loss in the area is severe, and along much of Tidewater Road's length there is open water in canals and ponds that abut the road shoulder. Tidewater Road is an important access point for the oil and gas industry. This project also proposes to create flood protection along the entire length of Tidewater Road.	2

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CIAP	BA-59	Waterline Booster Pump Station, West Bank	INF	BOEMRE/ FWS	18	58	StJa.	N/A	2009	N/A	N/A	$256,700	This project would construct a waterline booster pump station in Welcome, Louisiana. The proposed site is located near Section 43, T-11-S, R-3-E, along LA Highway 18. The proposed construction includes the installation of a 40 hp electric motor with a 1,100 gpm high-service pump. The booster pump will be built along the existing waterline and be tied in at two places in order to establish a loop and by-pass system with 10-inch in-line valves. The station will a have metal building with a concrete floor to fully enclose and protect the pump and electrical equipment.	2
CIAP	BA-61	West Bank Wetland Conservation and Protection	LA	BOEMRE/ FWS	18	58	StJa.	235	2010	N/A	N/A	$718,620	The St. James Parish Council would like to purchase several large tracts of existing wetlands to prohibit the destruction of, and aid in the protection of, the parish's coastal wetland areas. This project proposes to purchase approximately 235 acres of existing wetlands from the Bayou Chevreuil Land Co., LLC.	2
CIAP	BA-62	West Bank Wastewater Assimilation Plant	MM	BOEMRE/ FWS	18	58	StJa.	2,400	Pending	N/A	N/A	$1,757,026	The St. James Parish Council plans to construct a wetland assimilation treatment plant on property owned by the Parish Council in Vacherie, Louisiana. The plant will collect wastewater from secondary treatment modules and pump the wastewater to a sediment pond area. The nine acre pond will discharge into 2,400 acres of forested wetland areas that will directly affect the swamp's composition and structure.	2
CIAP	BA-63	Small Dredge Program	DM MC	BOEMRE/ FWS	20	54	Laf.	175	2010	N/A	$160,250	$2,789,031	This program involves the use of a small dredge to hydraulically dredge borrow canals and other open water areas to restore approximately 175 acres of marsh apron along levees, cheniers and roadways in Lafourche Parish.	2
CIAP	BA-64	Jump Basin Dredging and Marsh Creation	MC	BOEMRE/ FWS	1	105	Plaq.	7	Pending	N/A	N/A	$800,000	The proposed project is located in the Venice area of Plaquemines Parish, and more specifically in the Jump Basin Marina and along the west side of Tidewater Road. The proposed project would use material dredged from the marina to create marsh on the west side of Tidewater Road. Based on preliminary surveys, it is predicted that approximately 65,000 cubic yards of material could be dredged from the marina. Based on water depths in the target area, an initial estimate of 4 to 7 acres of marsh could be created.	2
CIAP	BA-65	Fifi Island Restoration Extension	BI	BOEMRE/ FWS	8	105	Jef.	6	Pending	N/A	$208,251	$2,338,605	The project is located at the eastern tip of Fifi Island, adjacent to Bayou Rigaud, on the northern side of Grand Isle. The project would provide approximately 2,200 linear feet of rock dike protection and create approximately 6 acres of marsh. Additionally, the project will provide protection to the bay side of Grand Isle.	2
CIAP	NA	Culvert Installation Through Existing Berms and Board Roads	LA	BOEMRE/ FWS	18	58	StJa.	N/A	Pending	N/A	N/A	$90,686	The St. James Parish Council will install 24 inch plastic pipe through existing spoil banks and earthen berms to allow water exchange through these man-made barriers. The culvert installations will allow present ingress and egress into these areas to continue and enhance the water quality and nutrient exchange in the project area. It is estimated that approximately 100 sites would each need three sets of culverts to be installed along this 20 mile stretch of canal.	2
CIAP	PO-90	West Lac Des Allemands Shoreline Protection	SP	BOEMRE/ FWS	18	58	StJo.	N/A	Pending	N/A	$507,369	$3,313,183	The proposed project will consist of 7,535 feet of shoreline protection, extending from "Pleasure Bend" westward to Pointe Aux Herbes, along the western shore of Lac des Allemands, St. John the Baptist Parish, Louisiana. The proposed feature consists of foreshore rock dike with gaps for fish and public access to the lake shoreline.	2
CIAP	CS-36	Shoreline Protection at Intracoastal Park	SP	BOEMRE/ FWS	27	36	Cal.	3	Pending	N/A	N/A	$1,000,000	This is a two phase project that is located on the south side of the Gulf Intracoastal Waterway at LA Highway 27 south. The goal of the project is to restore the existing rock shoreline protection and stabilization for approximately 1,000 feet by placing cellular concrete block revetment along the existing shoreline.	4
CIAP	CS-37	South GIWW Restoration	HR SP	BOEMRE/ FWS	30	36	Cal.	2,500	Pending	N/A	$83,074	$525,459	This project features include the relocation of two existing water control structures (48 inch culverts) that are currently not functioning as designed; the installation of a new water control structure (two 36 inch culverts); and the refurbishment of three miles of adjacent levees.	4

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CIAP	CS-41	Horseshoe Lake Marsh Restoration	HR SP	BOEMRE/ FWS	30	33	Cal.	1,200	Pending	N/A	$350,000	$1,650,000	The project is a 1,200 acre marsh restoration/protection project located in Calcasieu Parish, Louisiana, approximately 3.0 miles northwest of Hackberry. This project proposes four different components: 1. Two water control structures; 2. Four miles of new levee construction; 3. Repair of 1 mile of existing levee on the eastern and western boundaries; and 4. Placement of approximately four miles of rip rap rock dike along the Gulf Intracoastal Waterway (GIWW).	4
CIAP	CS-42	South Johnson Bayou Restoration	HR MM	BOEMRE/ FWS	25	47	Cam.	N/A	Pending	N/A	$54,000	$618,700	This proposal refers to the Chenier Plain portion of Coast 2050, Region 4, Johnson's Bayou Ridge mapping unit. The project features include the replacement of existing water control structures (two 24 inch culverts) that are currently not functioning as designed, and the refurbishment of one mile of adjacent levees.	4
CIAP	CS-43	Dreary Island Restoration	HR MM	BOEMRE/ FWS	25	47	Cam.	600	2012	N/A	$48,000	$514,850	This project features include: 1) the replacement of one existing 24 inch water control structure that is currently not functioning due to storm impacts and 2) the refurbishment of approximately 4,000 linear feet of adjacent levees. The new structures will reduce saltwater intrusion into the project area and restore historic salinity and hydrologic regimes. Without this project the 600-acre intermediate and brackish marsh will experience extensive interior marsh loss.	4
CIAP	CS-44	Rabbit Island	DM MC SP	BOEMRE/ FWS	25	47	Cal. Cam.	200	Pending	N/A	$440,540	$1,559,460	The project is located in the Calcasieu-Sabine Basin, in the West Cove of Calcasieu Lake. The goal of the project is to restore approximately 200 acres of pelican nesting and marsh habitat to Rabbit Island by adding sediment, through the beneficial use of sediment dredged from the Calcasieu Ship Channel, and 2,500 linear feet of small limestone shoreline protection to the west corner of Rabbit Island.	4
CIAP	CS-48	Bank Stabilization: Dugas Cut to Kelso Bayou	PL	BOEMRE/ FWS	25	47	Cam.	N/A	N/A	N/A	$580,000	N/A	This project will provide the engineering and design in order to continue the construction of approximately two miles of rip-rap dike from Dugas Landing to Kelso Bayou and reclaim eroded channel bank utilizing spoil material from dredging activities when more funding becomes available to the parish.	4
CIAP	CS-50	East Little Pecan Bayou Restoration	HR	BOEMRE/ FWS	26	47	Cam.	1,500	2010	N/A	$37,611	$638,030	This project is located along Little Pecan Bayou in the south central portion of Cameron Parish. Project features include the installation of one bulkhead with four 48 inch water control structures at the location of an existing plug. The objective of the proposed project is to repair the water control structures so that pre-Hurricane Rita salinity and water levels can be restored to approximately 1,500 acres of marsh.	4
CIAP	CS-51	Little Chenier Road	HR INF	BOEMRE/ FWS	25	47	Cam.	N/A	2010	N/A	$16,493	$262,888	This project is located on the east end of Little Chenier Road and south of the Big Burn Marsh. Approximately 2,700 linear feet of roadway needs to be raised approximately two feet to an elevation of +4 feet NAVD, to prevent excessive flooding south of the Little Chenier Road by stopping water from overtopping the road during abnormally heavy rain events and flooding the marshes south of Little Chenier Road.	4
CIAP	CS-52	Clear Marais Bank Protection	SP	BOEMRE/ FWS	30	36	Cal.	1,500	Pending	N/A	$175,000	$1,825,000	The project is located north of the Gulf Intracoastal Waterway (GIWW) approximately 10 miles northwest of Hackberry in Calcasieu Parish, Louisiana. The goal of this project is to extend the rock armored shoreline stabilization by one mile adjacent to the GIWW to prevent continued erosion of the GIWW levee and to prevent the encroachment of the GIWW into the marshes north.	4
CIAP	ME-26	West Big Burn Bridge Restoration	HR MM	BOEMRE/ FWS	25	47	Cam.	10,000	2010	N/A	$52,572	$970,138	This proposal refers to the Chenier Plain portion of Coast 2050, Region 4, Big Burn mapping unit. Project features include the replacement of one existing water control structure (three 8-foot bays) that is currently not functioning as designed.	4
CIAP	ME-27	South Little Pecan Bayou Restoration	HR MM	BOEMRE/ FWS	25	47	Cam.	24,600	Pending	N/A	$133,641	$1,735,121	This proposal refers to the Chenier Plain portion of Coast 2050, Region 4, Little Pecan mapping unit. Project features include the replacement of three existing water control structures (three 4 inch culverts) that are currently not functioning as designed, one new water control structure (that includes three 48 inch culverts), and the refurbishment of portions of three miles of existing levees (adding in some locations 2 feet of material to return the levees to +3 feet NAVD).	4

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CIAP	ME-30	North Mermentau Restoration	HR MM	BOEMRE/ FWS	25	47	Cam.	10,000	2011	N/A	$211,141	$3,006,631	This project will replace 12 existing water control structures that are not currently functioning as designed and also refurbish 1.5 miles of adjacent levees. Cameron Parish will purchase the structures that will be installed by the local gravity drainage district. The objective is to restore the pre-Hurricane Rita salinity and water levels to approximately 10,000 acres of marsh.	4
CIAP	NA	Calcasieu Parish Administrative Assistance	PL	BOEMRE/ FWS	27	36	Cal.	N/a	N/A	N/A	$20,000	N/A	This project will provide necessary financial assistance to Calcasieu Parish Government to manage and implement the CIAP program.	4
CIAP	TE-59	Attakapas Canal Hydrologic Restoration	DM HR	BOEMRE/ FWS	21	60	Asu.	12	Pending	N/A	$48,000	$977,000	This project will remove excessive accumulated sediment from Attakapas Canal at its intersection with Lake Verret in Assumption Parish for a distance of approximately 2,000 feet improving water quality, fisheries habitat, and sport fishing access. The removed sediment will be beneficially used to restore approximately 12 acres of bald cypress habitat along the shoreline of Lake Verret. As part of the project, cypress trees will be planted at the rate of 302 trees per restored acre.	3a
CIAP	TE-60	Lake Verret Swamp and Lake Rim Restoration	DM MC	BOEMRE/ FWS	21	60	Asu.	40	Pending	N/A	$115,000	$4,634,146	Located in west-central Assumption Parish, Lake Verret accumulates sediment in its shallow areas. The proposed project will use a hydraulic dredge to remove material that will be used beneficially. The project objective is to remove accumulated sediment from Lake Verret and improve the condition of 40 acres of deteriorating lake rim and adjacent swamp habitat.	3a
CIAP	AT-06	Point Chevreuil Shoreline Protection	MC SP	BOEMRE/ FWS	21	50	StM.	25	Pending	N/A	$204,461	$1,655,704	The project is located in Region 3, Atchafalaya River Basin, St. Mary Parish, along the southeastern shoreline of East Cote Blanche Bay, around Point Chevreuil and the northwestern shoreline of Atchafalaya Bay. The eroding shoreline was caused by the open water fetch and resulting wave energy from East Cote Blanche and Atchafalaya Bays. Project features will protect the natural ridge functions of the Bayou Sale Ridge and protect the adjacent marshes.	3b
CIAP	AT-07	Deer Island Pass Realignment	DM HR MC	BOEMRE/ FWS	21	51	StM.	50	Pending	N/A	$313,413	$2,440,352	Located in St. Mary Parish, this project near the mouth of Deer Island Bayou will dredge a 5,280 foot long, 280 foot wide channel to improve water and sediment flow into northeast Atchafalya Bay. The dredged material will be beneficially used to reduce shoreline erosion and to create about 30 acres of marsh.	3b
CIAP	AT-08	Bayou Amy Boat Launch and Educational Pavilion	PA	BOEMRE/ FWS	22	46	StMt.	N/A	Pending	N/A	$47,950	$342,050	This project located in St. Martin Parish will construct an open-air pavilion and a 1,235 foot long nature trail adjacent to an existing wilderness canoe trail. This project will serve as a gateway to the Atchafalaya Basin providing public access, information and educational opportunities. It will ultimately tie into Lake Fausse Point State Park.	3b
CIAP	AT-09	Stephensville Wastewater Assimilation and Facility Restoration	MM	BOEMRE/ FWS	21	50	StMt.	5	Pending	N/A	N/A	$2,200,002	This project will include an upgrade of the existing wastewater treatment plant infrastructure and construction of a discharge structure and piping system into the adjacent wetlands for wetland assimilation. Stephensville's wastewater facility is located in Stephensville along Bayou Milhomme in Lower St. Martin Parish.	3b
CIAP	AT-10	Beau Bayou Water Quality and Sediment Reduction	HR SNT	BOEMRE/ FWS	22	46	StMt.	23,000	Pending	N/A	$340,960	$3,360,461	This project consists of a combination of multiple actions including dredging, gapping and creating inline-sediment traps in and adjacent to Beau Bayou in St. Martin Parish. This will correct existing sediment overload and lack of oxygen (hypoxia) improving fisheries habitat as well as the overall health of the system.	3b
CIAP	TV-24	Weeks Bay/Commercial Canal Marsh Creation and Shoreline Protection	PL	BOEMRE/ FWS	22	49	Ibe. Ver.	N/A	N/A	$200,000	N/A	N/A	Feasibility Study of methods of marsh creation to build landmass and create vegetated wetlands. Project will evaluate various methods to create a sediment deposition field and protect the existing shoreline. This will enhance natural processes to create landmass between Weeks Bay and the GIWW and protect it.	3b
CIAP	TV-25	Port of Iberia Bridge Replacement - Port Road over Rodere Lateral	INF	BOEMRE/ FWS	22	49	Ibe.	N/A	2012	N/A	$66,465	$391,807	The project is located in Iberia Parish, and will aid the Port of Iberia in its day-to-day operations. This project will replace the bridge on Port Road over Rodere Lateral. The existing bridge is approximately 28 feet wide and 60 feet long. The Port of Iberia handles a substantial amount of OCS produced products and the large equipment used in transporting these products take a major toll on the port¿s bridges and roadways.	3b

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CIAP	TV-32	Lake Sand Terracing	MC SP VP	BOEMRE/ FWS	22	49	Ibe.	55	2013	N/A	$66,500	$1,094,130	The project is located in Iberia Parish on the Marsh Island State Wildlife Refuge, and will construct approximately 55 acres of shallow bay bottom terraces planted with native vegetation. The construction of the terraces will result in the direct creation of 34 acres of marsh and it is anticipated that construction of the terraces will result in a 50% reduction in the erosion of the neighboring shoreline.	3b
CIAP	TV-33	Lake Tom Terracing	MC SP VP	BOEMRE/ FWS	22	49	Ibe.	55	2013	N/A	$66,500	$645,554	The project is located in Iberia Parish on the Marsh Island State Wildlife Refuge, and will construct approximately 55 acres of shallow bay bottom terraces planted with native vegetation. The construction of the terraces will result in the direct creation of 55 acres of marsh and it is anticipated that construction of the terraces will result in a 50% reduction in the erosion of the neighboring shoreline.	3b
CIAP	TV-35	Vermilion Bay Shoreline Restoration	SP VP	BOEMRE/ FWS	22	49	Ibe.	132	2012	N/A	$330,000	$4,662,196	The project is located along the Vermilion Bay Shoreline south of Tigre Lagoon; it will establish approx. 8,300 linear feet of shoreline using the wave dampening structure determined to be most feasible. These structures will also allow for sediment trapping and accretion.	3b
CIAP	TV-36	Planning Assistance and Administration (St. Mary Parish)	PL	BOEMRE/ FWS	21	50	StM.	N/A	N/A	N/A	$25,000	N/A	This project will provide necessary financial assistance to St. Mary Parish Government to manage and implement the CIAP program.	3b
CIAP	TV-37	Burns Point Recreation Park Improvements	SP	BOEMRE/ FWS	21	50	StM.	N/A	2011	N/A	N/A	$1,010,000	This project in St. Mary Parish at the Burns Point Recreation Park adjacent to East Cote Blanche Bay, will provide a 600 foot sheet bulkhead and walkway along the park's shoreline. This will stop the rapid erosion that is occurring at the park's shoreline and provide access for inspection.	3b
CIAP	TV-38	Thorguson Road Improvements	INF	BOEMRE/ FWS	21	50	StM.	N/A	2012	N/A	$134,000	$1,018,761	The project is located in Berwick and extends to Morgan City in St. Mary Parish. This project will upgrade Thorguson Road from Hwy 90 to the River Road, as a result it, the project will increase capacity, and improve safety and efficiency durin normal operations. The road improvement feature includes the widening of the existing road. The preliminary project benefit is to provide improved traffic flow and safety while increasing roadway access to the industrial and commercial facilities located in Berwick, Louisiana.	3b
CIAP	TV-40	Vermilion Parish CZM Planning and Development	PL	BOEMRE/ FWS	26	47	Ver.	N/A	N/A	N/A	$100,000	N/A	Funds will be available to assist Vermilion Parish in improvements to the Coastal Zone Management plan for the parish.	3b
CIAP	TV-41	Shoreline Protection on Southwest Point at Southwest Pass	PL	BOEMRE/ FWS	26	47	Ver.	N/A	N/A	N/A	$217,782	N/A	This project is located in Vermilion Parish. The goal of the project is to armor the shoreline via 8,759 linear feet of onshore revetment for the south shoreline of Vermilion Bay at Southwest Point. The funds allocated in the current project would be used to initiate surveying, geotechnical investigation, engineering, design and permit development so that when additional funds become available this project will be able to proceed to construction in a more-timely manner.	3b
CIAP	TV-44	Henry Hub Acess Improvements - Highway 331 Realignment	INF	BOEMRE/ FWS	26	49	Ver.	N/A	Pending	N/A	$39,500	$272,299	This project will realign approximately 2,000 linear feet of LA Hwy. 331, at a location approximately 3 miles south of LA Hwy.14. This segment of the roadway has a reverse curve that represents a safety hazard for traffic traveling this highway to the Henry Hub.	3b
CIAP	TV-45	Shoreline Protection and Marsh Creation at Tiger Point	SP	BOEMRE/ FWS	26	47	Ver.	N/A	Pending	N/A	$186,455	$1,199,130	This project will install 1,500 feet of cement bags at Tiger Point in Vermilion Parish to slow erosion rates by half.	3b
CIAP	TV-46	Henry Hub Access Improvements - Charlie Field Road Bridge Replacement	INF	BOEMRE/ FWS	26	49	Ver.	N/A	2011	N/A	$67,000	$371,201	This project will replace an existing three span timber bridge with a four span concrete deck bridge for the Charlie Field Road Bridge across a tributary of Bayou Tigre. The bridge is located approximately 2,300 feet south of LA Hwy. 14, in eastern Vermilion Parish.	3b
CIAP	TV-49	Intracoastal City Street Improvements	INF	BOEMRE/ FWS	26	47	Ver.	N/A	2011	N/A	$51,400	$469,416	This project provides for the reconstruction of several roadways in the Intracoastal City area to mitigate the damage caused by heavy oilfield support truck traffic over the years. The streets to be improved are as follows: Offshore Road (4,700 linear feet), M. I. Liquid Road (850 linear feet), Barge Road (1,450 linear feet), Teal Road (1,200 linear feet).	3b

PARISH CIAP PROJECTS

Program	State Project Number (Federal)	Project Name	Project Type	Agency/Sponsor	Senate District	House District	Parish	Acres Benefited	Construction Completion Date	Feasibility Cost	Engineering, Design, & Landrights Cost	Construction Cost	Project Summary	Planning Unit
CIAP	TV-50	Henry Hub Access Improvements - Charlie Field Road Improvements	INF	BOEMRE/ FWS	26	49	Ver.	N/A	2012	N/A	$87,270	$442,000	This project provides for the widening and reconstruction of Charlie Field Road, a vital link between LA 14 and the Henry Hub, from LA Hwy. 14 to LA Hwy. 331 in eastern Vermilion Parish. The project will widen the existing 18-foot wide roadway to a 20-foot surface for approximately 4,100 feet to provide room for the truck traffic to utilize this stretch of the roadway to access the Henry Hub.	3b
CIAP	TV-51	Oyster Reef Parallel to Cheniere au Tigre	SP	BOEMRE/ FWS	26	47	Ver.	N/A	Pending	N/A	$209,800	$1,229,184	This project will create a one mile oyster reef 1,300 feet from shore by using approved available materials. Oyster spat are plentiful in this area; therefore, creating this base will establish a living sustainable reef. This project will reduce th shoreline loss rate by half. It will slow down wave energy, attract fish and shellfish habitat, slow coastal erosion, and increase recreational fishing opportunities.	3b
CIAP	TV-53	North Prong Schooner Bayou	FD SP	BOEMRE/ FWS	26	49	Ver.	N/A	2010	N/A	$54,277	$1,595,723	This project is located on the east bank of the North Prong of Schooner Bayou, from the GIWW to the Schooner Bayou Locks. With several breaches to contain, the project will employ culverts with flap gates to allow the freshwater flow to continue into the marshes to the east, while preventing uncontrolled saltwater intrusion into the Mermentau Basin.	3b

Program: CIAP= Coastal Impact Assistance Program

Project Type: BI=Barrier Island; DM=Beneficial Use of Dredged Material; FD=Freshwater Diversion; HP=Hurricane Protection; HR=Hydrologic Restoration; INF=Infrastructure; LA=Land Acquisition; MC=Marsh Creation; MM=Marsh Management; OM=Outfall Management; PA=Public Access; PL=Planning; SD=Sediment Diversion; SNT=Sediment and Nutrient Trapping; SP=Shoreline Protection; VP=Vegetation Planting.

Agency/Sponsor: BOEMRE= Bureau of Ocean Energy Management, Regualtion, and Enforcement; FWS= US Fish and Wildlife Service. The administration of CIAP was transferred from BOEMRE to FWS on Oct. 1, 2011.

Parish: Asc.=Ascension, Asu.=Assumption, Cal.=Calcasieu, Cam.=Cameron, Ibe.=Iberia, Jef.=Jefferson, Laf.=Lafourche, Liv.=Livingston, Orl.=Orleans, StC.=St. Charles, StJa.=St. James, StJo.=St. John the Baptist, StM.=St. Mary, StMt.=St. Martin, StT.=St.Tammany, Tan.=Tangipahoa, Ter.=Terrebonne, Plaq.=Plaquemines, Ver.=Vermilion

Appendix E

Inventory of Non-State Projects

B. Federal Protection Projects

EAST JEFFERSON LEVEE DISTRICT LEVEE ALIGNMENTS & STRUCTURES

Legend

Levee Construction Type

- Earthen Levee
- I-Wall
- Sheet Pile
- Control Structure
- Control Structure
- Flood Gate
- Pump Station
- Water Bodies

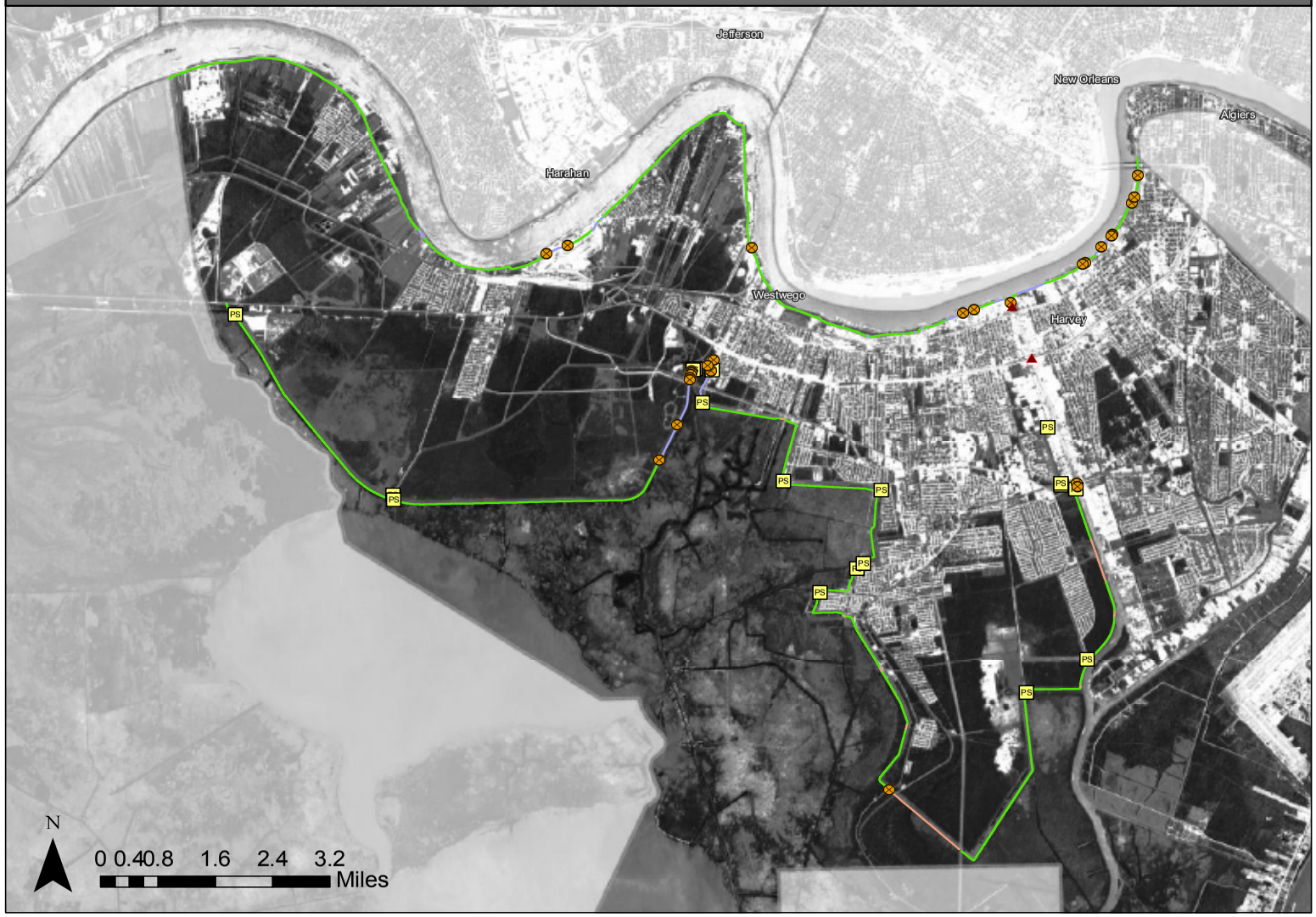
Map by: Louisiana Office of Coastal Protection & Restoration

Date: April 28, 2009

Imagery: 2000 SPOT

Data Sources:
USACE
LA OCPR

WEST JEFFERSON LEVEE DISTRICT LEVEE ALIGNMENTS & STRUCTURES



Legend

Levee construction types

- Earthen Levee
- I-Wall
- Sheet Pile
- Control Structure
- Flood Gate
- Pump Station
- Water Bodies

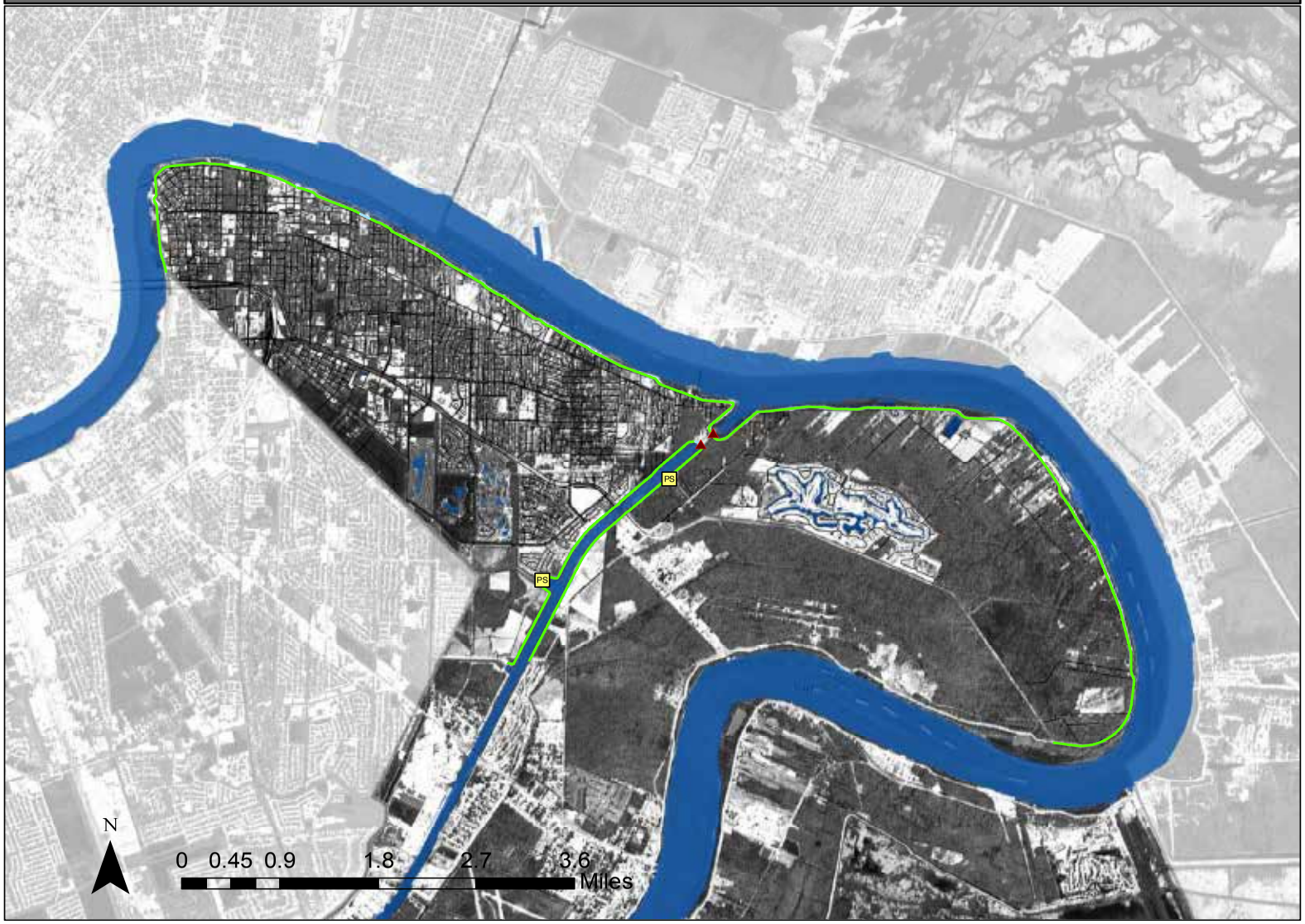
Map by: Louisiana Office of Coastal Protection & Restoration

Date: April 28, 2009

Imagery: 2000 SPOT

Data Sources:
USACE
LA OCPR

ALGIERS LEVEE DISTRICT LEVEE ALIGNMENTS & STRUCTURES



Legend

Levee Construction Type

- Earthen Levee
- I-Wall
- Control Structure
- Control Struture
- Pump Station
- Water Bodies

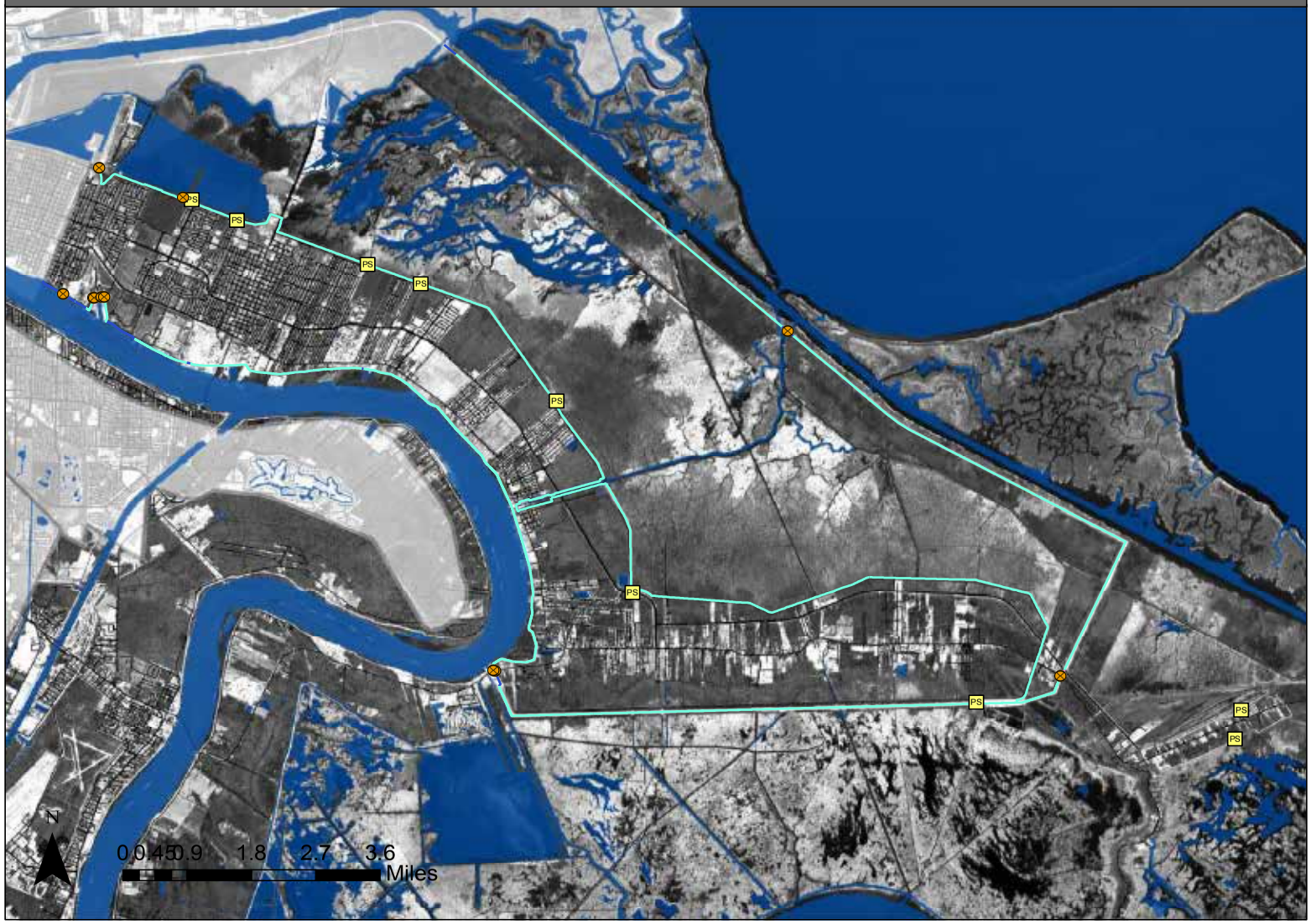
Map by: Louisiana Office of Coastal Protection & Restoration

Date: April 28, 2009

Imagery: 2000 SPOT

Data Sources:
USACE
LA OCPR

LAKE BORGNE BASIN LEVEE DISTRICT LEVEE ALIGNMENTS & STRUCTURES



Legend

Levee Construction Type

- Earthen Levee
- I-wall
- Control Structure
- Flood Gate
- Pump Station
- Water Bodies

Map by: Louisiana Office of Coastal Protection & Restoration

Date: April 28, 2009

Imagery: 2000 SPOT

Data Sources:
USACE
LA OCPR

ORLEANS LEVEE DISTRICT LEVEE ALIGNMENTS & STRUCTURES

Legend

- Earthen Levee
- I-Wall
- T-Wall
- L-Wall
- Sheet Pile
- Control Stucture
- Flood Gate
- Pump Station
- Water Bodies

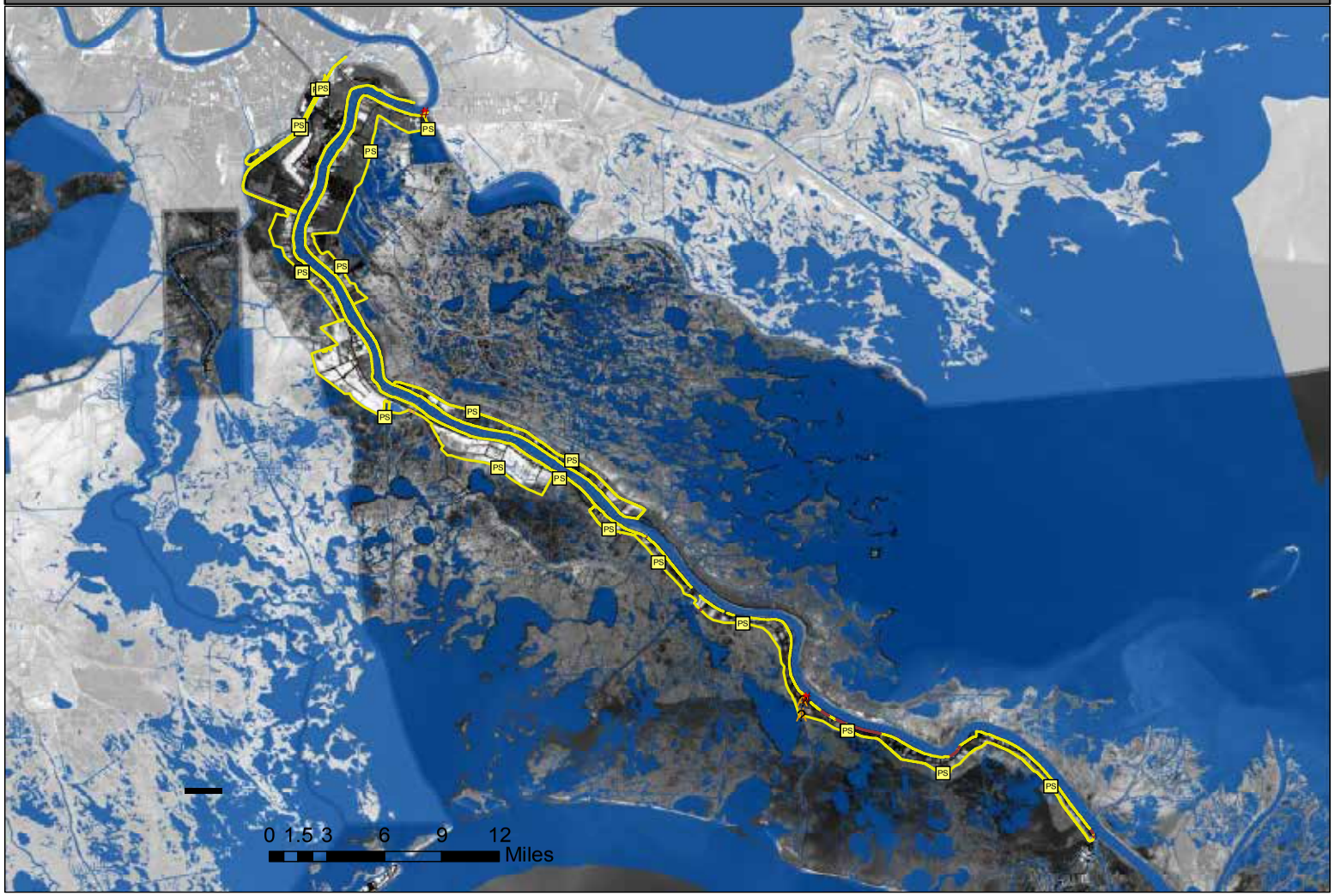
Map by: Louisiana Office of Coastal Protection & Restoration

Date: April 28, 2009

Imagery: 2000 SPOT

Data Sources:
USACE
LA OCPR

PLAQUEMINES PARISH GOVERNMENT LEVEE ALIGNMENTS & STRUCTURES



Legend

Levee Construction Type

- Control Structure
- Earthen Levee
- I-Wall
- Sheet Pile
- T-Wall
- # Control Structure
- Flood Gate
- PS Pump Station
- Water Bodies

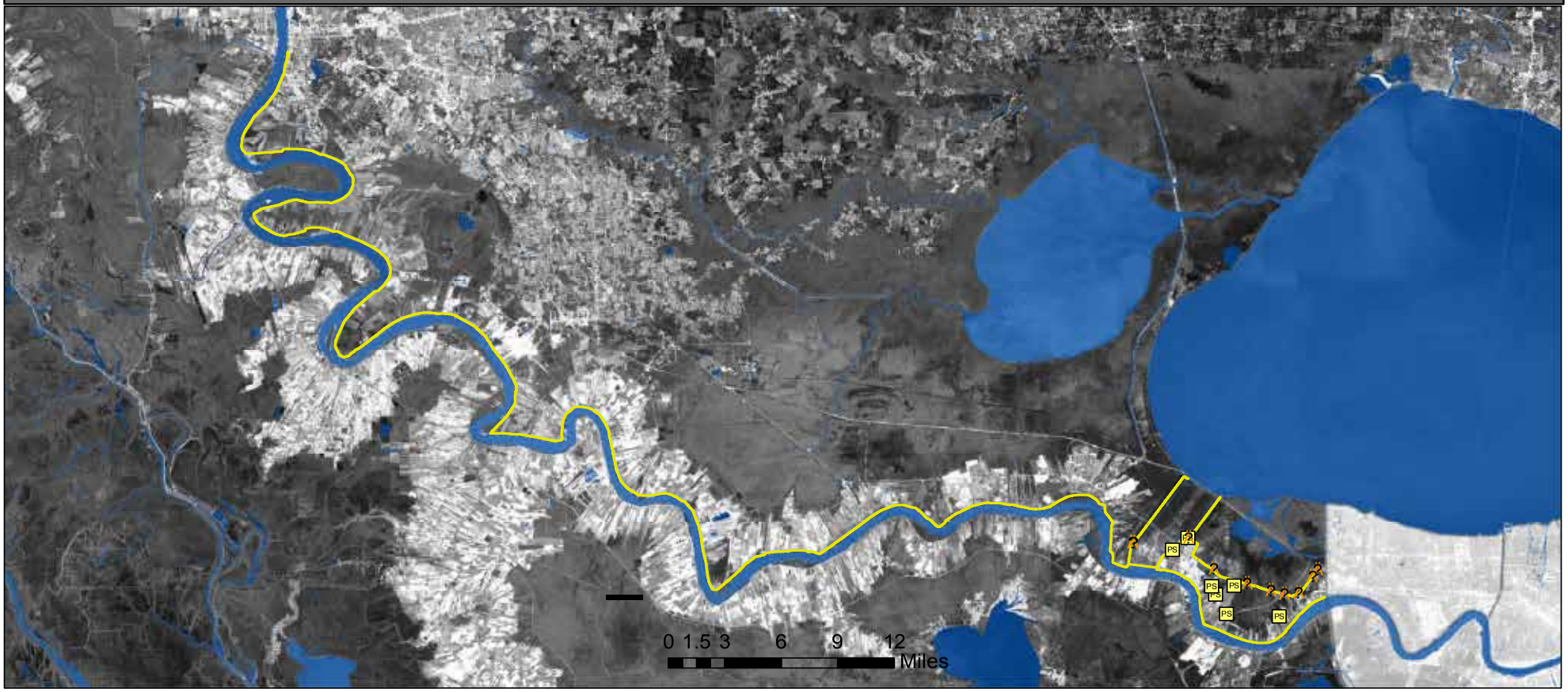
Map by: Louisiana Office of Coastal Protection & Restoration

Date: April 28, 2009

Imagery: 2000 SPOT

Data Sources:
USACE
LA OCPR

PONTCHARTRAIN LEVEE DISTRICT LEVEE ALIGNMENTS & STRUCTURES



Map by: Louisiana Office of Coastal Protection & Restoration

Date: April 28, 2009

Imagery: 2000 SPOT

Data Sources:
USACE
LA OCPR

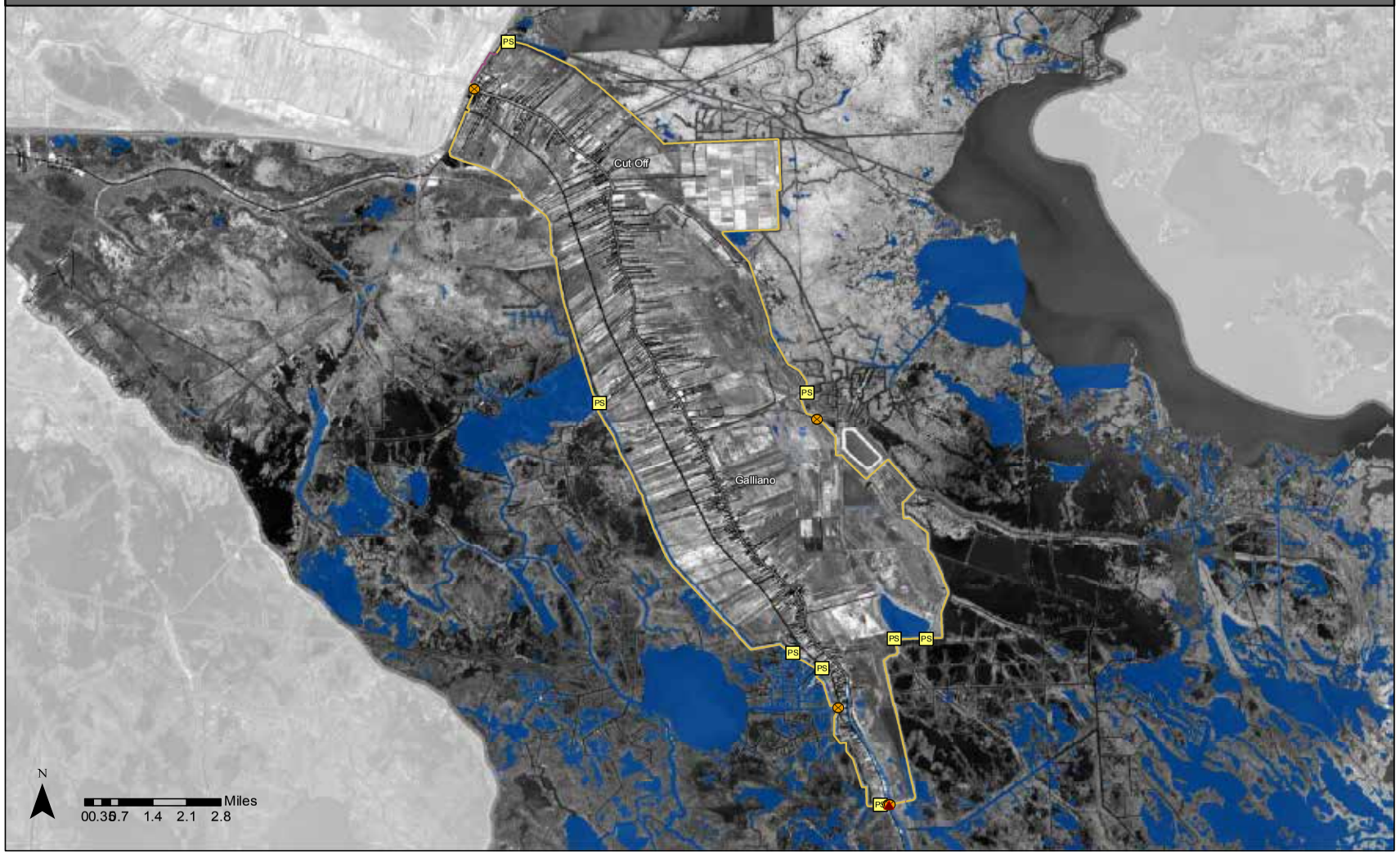
Legend

Levee Construction Type

- I-Wall
- Earthen Levee
- Control Structure

- Flood Gate
- Pump Station
- Water Bodies

SOUTH LAFOURCHE LEVEE DISTRICT LEVEE ALIGNMENTS & STRUCTURES



Legend

Levee construction types

- Earthen Levee
- I-Wall
- Sheet Pile
- Control Structure
- Flood Gate
- Pump Station
- Water Bodies

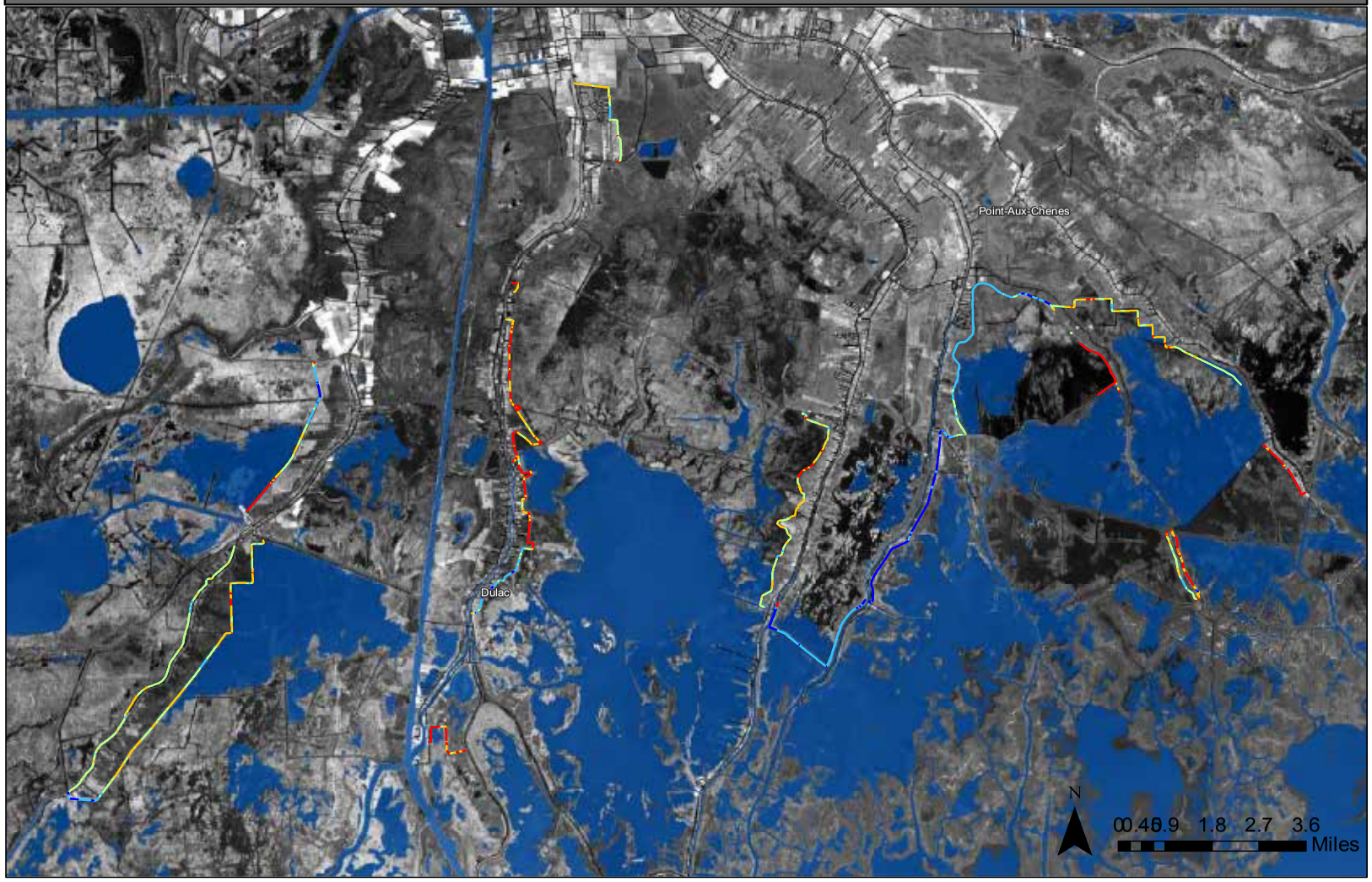
Map by: Louisiana Office of Coastal Protection & Restoration

Date: April 28, 2009

Imagery: 2000 SPOT

Data Sources:
USACE
LA OCPR

TERREBONNE LEVEE & CONSERVATION DISTRICT LEVEE ELEVATIONS



Legend

Levee Elevation (Ft)

- 2.4 - 5.5
- 5.6 - 6.8
- 6.9 - 8.2
- 8.3 - 10.0
- 10.1 - 12.7
- Water Bodies

Map by: Louisiana Office of Coastal Protection & Restoration

Date: April 28, 2009

Imagery: 2000 SPOT

Data Sources:
USACE
LA OCPR

Appendix E

Inventory of Non-State Projects

C. Projects and Project Concepts in Coastal Parish Master Plans

PROJECT CONCEPTS FROM COASTAL PARISH MASTER PLANS

Program	Local Project Number	Project Name	Project Type	Senate District	House District	Parish	Project Costs	Project Summary	Planning Unit
State and Local	JE-1	LaBranche Wetlands Drainage Diversion	FD	8	105	Jef.	$855,000	Storm water drainage from the northwest corner of Jefferson Parish (Kenner, LA area) now enters the Parish Line Canal and flows north, directly into Lake Pontchartrain. The proposed project would include the construction of a water control structure to divert storm water drainage into the LaBranche Wetlands for hydrologic restoration. The storm water would be diverted at the northernmost feasible location to maximize the wetland area benefitted and the level of water quality enhancement.	1
N/A	N/A	Breton Sound	MC	1	105	Plaq.	Not provided	Breton Sound Fringe Marsh Barriers.	1
N/A	N/A	Baptiste Collete	MC	1	105	Plaq.	Not provided	Baptiste Collette and Surrounding Marshes.	1
N/A	N/A	American/California bay	FD	1	105	Plaq.	Not provided	American/California bay/Bohemia Diversion.	1
N/A	N/A	Bayou Lamoque	FD	1	105	Plaq.	Not provided	Bayou Lamoque Diversion.	1
N/A	N/A	Caemarvon	FD	1	105	Plaq.	Not provided	Caernarvon Diversion.	1
N/A	N/A	Fort St. Phillip	FD	1	105	Plaq.	Not provided	Fort St. Phillip Diversion.	1
N/A	N/A	Grand Bay	FD	1	105	Plaq.	Not provided	Grand Bay Diversion.	1
N/A	N/A	White Ditch	FD	1	105	Plaq.	Not provided	White's Ditch Diversion.	1
N/A	N/A	Breton Land bridge	MC	1	105	Plaq.	Not provided	Breton Sound Land Bridge.	1
N/A	N/A	Baptiste Collete-Fort St. Phillip	RR	1	105	Plaq.	Not provided	Baptiste Collette to Fort St. Phillip Ridge Reforestation.	1
N/A	N/A	Bohemia-White's Ditch	RR	1	105	Plaq.	Not provided	Back Levee Canal-Bohemia to White's Ditch Ridge Reforestation.	1
N/A	N/A	Caemarvon	RR	1	105	Plaq.	Not provided	Unnamed Ridges South of Caernarvon Ridge Reforestation.	1
N/A	N/A	Caemarvon	RR	1	105	Plaq.	Not provided	Unnamed Ridges South of Caernarvon Ridge Reforestation.	1
N/A	N/A	Fort St. Phillip-Ostrica	RR	1	105	Plaq.	Not provided	Fort St. Phillip to Ostrica Lock Ridge Reforestation.	1
N/A	N/A	Ostrica-Bayou Lamoque	RR	1	105	Plaq.	Not provided	Ostrica Lock to Bayou Lamoque Ridge Reforestation.	1
N/A	N/A	River aux Chenes	RR	1	105	Plaq.	Not provided	River Aux Chenes Ridge Reforestation.	1
N/A	N/A	Breton Sound	SP	1	105	Plaq.	Not provided	Breton Sound Fringe Marsh.	1
N/A	N/A	Violet	FD	1	103	StB.	Not provided	Violet Diversion.	1
N/A	N/A	Lake Borgne	SP, OR	1	103	StB.	Not provided	Lake Borgne surge breaker/reef.	1
N/A	N/A	Bayou Terre aux Boeufs/ La Loutre	MC	1	103	StB.	Not provided	Marsh Creation-Bayou Terre aux Boeufs to Bayou la Loutre Land Bridge.	1
N/A	N/A	Biloxi Marsh	MC	1	103	StB.	Not provided	Biloxi Marsh Creation.	1
N/A	N/A	Central Wetlands	MC	1	103	StB.	Not provided	Central Wetlands Marsh Creation.	1
N/A	N/A	Lake Borgne/MRGO	MC	1	103	StB.	Not provided	MRGO/Lake Borgne Landbridge Marsh Creation.	1
N/A	N/A	Orleans Landbridge	MC	1	103	StB.	Not provided	Orleans Landbridge Marsh Creation.	1
N/A	N/A	Biloxi Marsh	SP, OR	1	103	StB.	Not provided	Biloxi Marsh Oyster Reefs/Shoreline Protection.	1
N/A	N/A	Lake Borgne	SP	1	103	StB.	Not provided	Lake Borgne Shoreline Protection-MRGO Land Bridge.	1
N/A	N/A	Orleans Landbridge	SP	1	103	StB.	Not provided	Orleans Landbridge shoreline protection.	1
N/A	N/A	St. Bernard Parish	OR	1	103	StB.	Not provided	Develop Oyster reefs as shoreline barrier-Biloxi Marsh.	1
CWPPRA	NA-9	Bayou Dupont Sediment Delivery Expansion	MC	8	105	Jef.	$25,000,000	This project would supplement a sediment delivery project now being developed by extending the sediment deposition areas to the north (Phase I) and south (Phase II) to restore these wetlands and enhance Land Bridge integrity. Phase I would restore the bounding shorelines and restore approximately 1,800 acres of wetlands. Phase II would restore approximately 2,000 acres of wetlands.	2
CWPPRA	PR-1	Bayou Rigolettes, Bayou Perot, and Harvey Cut Channel Management	HR	8	105	Jef.	$2,770,000	This project would restore hydrologic conditions at the critical Land Bridge area by plugging several oil and gas canals, restricting channel dimensions at Harvey Cut, and restricting channel dimensions at the Bayou Perot/ Little Lake intersection.	2
CWPPRA	MG-3	Dupre Cut Project (BA-26) Wetland Restoration	MC	8	105	Jef.	$45,880,000	The project includes the development of an area-wide sediment delivery system. This system would utilize sediments that are hydraulically-dredged from the Mississippi River, and transported via slurry pipelines to the targeted marsh sites. The existing rock dikes at Dupre Cut will act as a retention feature to ensure that the sediments are successfully distributed into the target areas.	2

PROJECT CONCEPTS FROM COASTAL PARISH MASTER PLANS

Program	Local Project Number	Project Name	Project Type	Senate District	House District	Parish	Project Costs	Project Summary	Planning Unit
CWPPRA	MG-5	South Shore of The Pen Shoreline Protection/ Stabilization	MC, SP	8	105	Jef.	$34,800,000	The project would be conducted in three phases. Phase I would involve placing a dedicated dredge in the Barataria Bay Waterway that would retrieve sediments from the bottom of the waterway and place them behind the existing rock armor along the eastern shore. Phase II would include constructing a rock dike along the southeastern shoreline of The Pen and using a dedicated dredge to place materials behind it. Phase III would consist of reinforcing the existing protection along the southwestern shore of The Pen and filling the area behind the protection with dredged material.	2
CWPPRA	PR-2	Dupre Cut/ Barataria Bay Waterway Channel Management	HR	8	105	Jef.	$7,600,000	This project proposes to strategically place four sheetpile barriers in the Barataria Bay Waterway as a means of reestablishing historic levels of hydrologic exchange within the area. This project would help protect the integrity of the shorelines of the Dupre Cut portion of the Barataria Bay Waterway. The project would also restrict channel dimensions to limit saltwater intrusion, tidal prism, and enhance freshwater retention.	2
CWPPRA	BS-1	PPL 3 (XBA-1c) Grand Pierre Island Restoration	SP	8	105	Jef.	N/A	The project would reconstruct breached shorelines, then restore interior marsh elevations and sand dune features.	2
CWPPRA	PR-7	Land Bridge Shoreline Protection Extension and Wetland Restoration	MC, SP	8	105	Jef.	$39,000,000	This project is designed to fortify the region on the southern side of a portion of the Land Bridge Project - Phase 3. The wetland area is being hydrologically degraded by interior exposure from the oilfield canal breaches and shoreline erosion along surrounding water bodies. The project would construct approximately 28,000 feet of shoreline protection interspersed with viable oilfield canal closures, followed by the placement of dedicated dredge material to restore elevations of degraded wetland areas. The final identification of viable canal closure and wetland fill targets would be established during project design to maximize project effectiveness and minimize oil and gas impacts.	2
CWPPRA	NA-3	Goose Bayou to Cypress Bayou Shoreline Protection	SP	8	105	Jef.	$5,000,000 - $25,000,000	Approximately 8,000 linear feet of additional shoreline protection would be added along the west side of Goose Bayou to its intersection with Cypress Bayou. A dedicated dredge would the move sediment from the bottom of The Pen to the area behind the shoreline protection. The deposited material would be built into a topographic ridge to restore the historic function of ridges in the project area. The artificial ridge would be planted with woody vegetation.	2
CWPPRA	BI-4	Elmer's Island and West Grand Terre Oak Ridge Restoration	BI	8	105	Jef.	$3,000,000	This project will restore the natural ridges that historically sustained the growth of Oak Trees. The restored ridges would then be vegetated.	2
CWPPRA	FN-1	Caminada Chenier Restoration	BI	8	105	Jef.	$19,000,000	This project will restore the areas natural chenier plain morphology by restoring the elevation and integrity of approximately seven deteriorated ridges. Existing ridges would be followed and breaches would be plugged to interconnect remaining ridge features. The project would also provide for the restoration of former borrow pits along LA Highway 1. Restoration of the former borrow pits would include the degradation of pit levees, followed by the placement of fill. Future dedicated dredging projects could be initiated for the purpose of restoring basin areas between the restored ridges to restore natural elevation and hydrologic gradients.	2
CWPPRA	MG-1	Myrtle Grove Natural Ridge Restoration	RR	8	105	Jef.	$6,230,000	This project will restore the natural ridges that historically sustained the area's complex hydrology. Existing banklines will be followed and breaches will be plugged to interconnect existing land masses, and would thus create a series of ridges. The northern ridge would be constructed along a portion of the north bank of Bayou Dupont that lies between its intersection with oil and gas canals in the Sea Deuce area, westward from the intersection with the southeast bank of Chenier Traverse Bayou. The southern ridge would be constructed from the intersection of the Barataria Bay Waterway with the historical Bayou Barataria ridge, north of Dupre Cut, and would then veer southeastward, along the north bank of the historical ridge, crossing the Texaco Canals, and then intersecting with the north bank of Bayou Maurice, to terminate at the west bank of the Barataria Bay Waterway, south of Dupre Cut.	2
CIAP	MG-2	Lafitte Oil and Gas Field (East) Restoration	HR	8	105	Jef.	$2,230,000	This project is to restore natural hydrology by eliminating avenues for saltwater intrusion and sediment loss. The Texaco Canals are a maze of existing oil and gas canals which now breach the natural ridges. After an evaluation of production activities within the field, several canals will be eliminated and plugged off to re-connect existing land masses. Future dedicated dredging can be utilized to fill the abandoned canals to reduce saltwater intrusion and enhance freshwater and sediment retention.	2
CIAP	PR-5	Shoreline Stabilization at North Bank of Bayou Rigolettes near Bayou Barataria	SP	8	105	Jef.	$1,040,000	This project would protect the integrity of the north shoreline of Bayou Rigulettes at its intersection with Bayou Barataria near Lafitte, and would provide protection for the foundation and site of an existing water tank facility that provides potable drinking water to the coastal community of Grand Isle. The project would also eliminate further erosion of the north bank of Bayou Rigolettes directly at its intersection with Bayou Barataria, and by restricting any further widening of the channel, would help to limit unrestricted tidal prism exchange and saltwater intrusion.	2
CIAP	PR-6	Delta Farms Oil and Gas Field Restoration	SP	8	105	Jef.	$1,300,000	This project would plug redundant oilfield access canals to enhance freshwater retention, improve hydrology, and to reduce pathways for saltwater intrusion and extreme tidal exchange.	2

PROJECT CONCEPTS FROM COASTAL PARISH MASTER PLANS

Program	Local Project Number	Project Name	Project Type	Senate District	House District	Parish	Project Costs	Project Summary	Planning Unit
CIAP	BI-5	Grand Isle Oil and Gas Pipeline Corridor Shoreline Protection - Alternative 1	SP	8	105	Jef.	$2,400,000	The project is designed to protect Grand Isle's southern shoreline from erosion which may eventually affect the integrity of an offshore pipeline corridor. This alternative would construct a rock dike along an approximately 2-mile section of Grand Isle shoreline to directly protect the beach by armament.	2
CIAP	BI-5	Grand Isle Oil and Gas Pipeline Corridor Shoreline Protection - Alternative 2	SP	8	105	Jef.	$1,600,000	The project is designed to protect Grand Isle's southern shoreline from erosion which may eventually affect the integrity of an offshore pipeline corridor. This alternative would construct approximately 1.25 miles of rip-rap breakwater segments to extend an existing breakwater alignment eastward. This would indirectly protect the beach by reducing wave energy.	2
CIAP	LAF-3	Leeville Bridge Preliminary Design	INF	8	105	Jef.	$1,750,000	This project would complete the preliminary design for the construction of a replacement for the Leeville Bridge. The preliminary design phase would include survey, geotechnical testing, mitigation, permits, and the preparation of a preliminary design.	2
CARA	PR-11	Bayou Perot/ Rigolettes Peninsula Restoration	MC, SP	8	105	Jef.	$125,000,000	The project would construct approximately 22,000 feet of restored shoreline to reconnect remaining landmasses of the peninsula. Dedicated dredge material would then be placed to fill open water areas, then to restore overall wetland elevations. The sequencing and limits for the filling of target areas would be established during project design to maximize effectiveness.	2
CARA	NA-8	Goose Bayou to Lafitte Levee	HP	8	105	Jef.	N/A	This project would construct flood protection from the Town of Jean Lafitte southward to Goose Bayou. The flood protection system would be constructed east of LA Highway 45 at the wetland/non-wetland interface.	2
CARA	BI-3	Elmer's Island Acquisition and Preservation	LA	8	105	Jef.	$6,000,000	This project recommends the public purchase and preservation of 1,700 acres of Elmer's Island as a publicly accessible primitive area.	2
CARA	CS-4	Wetland Harbor Activities Recreational Facility (WHARF)	LA	8	105	Jef.	$28,000,000	The project involves the development of multi-use facilities to provide individuals of all physical capabilities with onsite recreational opportunities. The development will also afford them access to the adjacent wetlands, nearby State and Federal parks, and the abundant natural and cultural experiences offered by Louisiana's wetlands.	2
CARA	BB-1	North Barataria Bay Shoreline Wave Breaks	SP	8	105	Jef.	$42,600,000	This project would provide basin-wide protection to insure the integrity of the affected wetland shorelines south of Bay Jimmy and Wilkerson Bayou in the eastern portion of the project, north of Barataria Bay in the middle portion of the project, and adjacent to Bayou Cholas, Bayou Defond, and Creole Bay in the western portion of the project. The project would restrict channel dimensions at various locations in order to limit saltwater intrusion, tidal prism, and enhance freshwater retention.	2
State and Local	NA-1	Naomi Siphon Sediment Enrichment	FD	8	105	Jef.	$330,000	This project involves using a dedicated dredge, during high water levels in the river, to pump river-bottom sediment into the discharge stream of the siphon. The enriched effluent would continue its course over land, depositing the sediments along its route.	2
State and Local	NA-6	Rosethorne Wetlands Sewage Effluent Diversion	WA	8	105	Jef.	$90,000	The proposed project envisions re-routing the Rosethorne wastewater treatment plant effluent from the Intracoastal Canal to an area of adjacent wetlands. The project would consist of upgrading the capacity of the existing sewerage effluent pumping station and installing approximately 1,300 feet of force main. Water control structures and a flow distribution system would also be constructed to channel the flow through the wetlands. The outlet of the discharge line would be placed at the most hydrologically upstream point of the target wetland feasible to ensure that the maximum area of wetlands is benefited and the highest contaminant removal possible is achieved.	2
State and Local	CS-3	Bayou Segnette Wetlands Sewage Effluent Diversion	WA	8	105	Jef.	$350,000	The proposed project envisions re-routing the Westwego wastewater treatment plant effluent from the local drainage canal network to an area of adjacent wetlands. The project would consist of constructing an effluent pumping station and installing approximately 4200 feet of force main. Water control structures and a flow distribution system would also be constructed to channel the flow through the wetlands. The outlet of the discharge line would be placed at the most hydrological upstream point of the target wetland feasible to ensure that the maximum area of wetlands is benefited and the highest contaminant removal possible is achieved.	2
State and Local	BI-6	Grand Isle Plan, Part I - NW Grand Isle Breakwater Enhancement	SP	8	105	Jef.	$650,000	This project will modify existing ineffective breakwater segments on the northwest side of Grand Isle to close gaps which prevent sediment accretion.	2
N/A	N/A	Bay Coquette Barrier Island	BI	1	105	Plaq.	Not provided	Barrier island fronting Bay Coquette east of Scofield Island.	2
N/A	N/A	Chaland Headland	BI	1	105	Plaq.	Not provided	Chaland Headland.	2
N/A	N/A	Chenier Ronquille	BI	1	105	Plaq.	Not provided	Cheniere Ronquille.	2
N/A	N/A	E. Grand Terre	BI	1	105	Plaq.	Not provided	East Grande Terre.	2
N/A	N/A	Pass Chaland to Grand Bayou	BI	1	105	Plaq.	Not provided	Pass Chaland to Grande Bayou Pass.	2
N/A	N/A	Pelican Island	BI	1	105	Plaq.	Not provided	Restoration enhancement including elevating dunes and widening islands and planting a mangrove fringe on the backside of the islands across 2.4 miles, approximately 10 feet high and 2000 feet wide.	2
N/A	N/A	Sandy Point Barrier Island	BI	1	105	Plaq.	Not provided	Barrier Island E of Bay Coquette to Sandy Point.	2

PROJECT CONCEPTS FROM COASTAL PARISH MASTER PLANS

Program	Local Project Number	Project Name	Project Type	Senate District	House District	Parish	Project Costs	Project Summary	Planning Unit
N/A	N/A	Sandy Point	BI	1	105	Plaq.	Not provided	Sandy Point/Bay Coquette.	2
N/A	N/A	Scofield Island	BI	1	105	Plaq.	Not provided	Restoration enhancement including elevating dunes and widening islands and planting a mangrove fringe on the backside of the islands approximately 10 feet high and 2000 feet wide.	2
N/A	N/A	Shell/Lanaux Island	BI	1	105	Plaq.	Not provided	Shell/Lanaux Island.	2
N/A	N/A	Baptiste Collete	DE	1	105	Plaq.	Not provided	Baptiste Collete sub-delta.	2
N/A	N/A	Venice	FD	1	105	Plaq.	Not provided	Venice: Tiger Pass to West Bay.	2
N/A	N/A	Bastian Bay/Buras	FD	1	105	Plaq.	Not provided	Buras/Bastian Bay Diversion.	2
N/A	N/A	Myrtle Grove	FD	1	105	Plaq.	Not provided	Myrtle Grove Diversion.	2
N/A	N/A	Naomi	FD	1	105	Plaq.	Not provided	Naomi Siphon.	2
N/A	N/A	Spanish Pass/Venice Diversion	FD	1	105	Plaq.	Not provided	Spanish Pass Freshwater Diversion.	2
N/A	N/A	West Point a la Hache	FD	1	105	Plaq.	Not provided	West Pointe a la Hache Siphon.	2
N/A	N/A	Empire-Triumph Fringe Marsh	MC	1	105	Plaq.	Not provided	Fringe Marsh Construction.	2
N/A	N/A	Myrtle Grove-Naomi	MC	1	105	Plaq.	Not provided	Myrtle Grove to Naomi Fringe Marsh.	2
N/A	N/A	Port Sulphur-West Pointe a la Hache	MC	1	105	Plaq.	Not provided	Port Sulphur to West Pointe a la Hache Fringe Marsh.	2
N/A	N/A	Venice-Triumph Fringe Marsh	MC	1	105	Plaq.	Not provided	Fringe Marsh Construction.	2
N/A	N/A	West Point a la Hache-Myrtle Grove	MC	1	105	Plaq.	Not provided	West Pointe a la Hache to Myrtle Grove Fringe Marsh.	2
N/A	N/A	Bayou Long/ Bayou Fontanelle	RR	1	105	Plaq.	Not provided	Empire Channel Islands, Bayou Long/Bayou Fontanelle.	2
N/A	N/A	Lake Hermitage	RR	1	105	Plaq.	Not provided	Bayou Grand Cheniere/Lake Hermitage.	2
N/A	N/A	Nairn	RR	1	105	Plaq.	Not provided	Ridge North of Bay de la Cheniere (West of Nairn).	2
N/A	N/A	Bastian Bay	SP	1	105	Plaq.	Not provided	Bastian Bay.	2
N/A	N/A	Bay Coquette	SP	1	105	Plaq.	Not provided	Bay Coquette.	2
N/A	N/A	Bay Joe Wise	SP	1	105	Plaq.	Not provided	Bay Joe Wise.	2
N/A	N/A	Bay Long	SP	1	105	Plaq.	Not provided	Bay Long.	2
N/A	N/A	Bayou Grand Liard/Buras	SP	1	105	Plaq.	Not provided	Bayou Grande Liard/Buras Fringe Marsh.	2
N/A	N/A	Bayou Long	SP	1	105	Plaq.	Not provided	Empire Waterway/ Bayou Long.	2
N/A	N/A	Grand Terre (West)	SP	1	105	Plaq.	Not provided	North of West Grande Terre Island.	2
N/A	N/A	Venice	RR	1	105	Plaq.	Not provided	Ridge West of Venice along banks of Spanish Pass.	2
N/A	N/A	Highway 82/ Schooner Bayou Control Structure	SP	26	47	Ver.	Not provided	Install a barrier along the south bank of Schooner Bayou from LA Hwy 82 to the Schooner Bayou structure. These measures would halt saltwater intrusion into the basin, preserving the integrity of the Mermentau Basin and create surge protection for the communities, agricultural economy and act as another line of defense against storm surges caused by tropical storms and hurricanes.	4
N/A	FD 8	South-West Shore Lake Decade	MC	20	51	Ter.	Not provided	Description not provided.	3a
N/A	FD 42	East Island Dune and Marsh Restoration	BI	20	53	Ter.	Not provided	Description not provided.	3a
N/A	FD 6	Marsh Creation to the North of Lost Lake	MC	20	51	Ter.	Not provided	Description not provided.	3a
N/A	FD 7	West Shore Lake Decade	MC	20	51	Ter.	Not provided	Description not provided.	3a
N/A	FD 9	Lake Decade Marsh Creation and Nourishment	MC	20	51	Ter.	$21,000,000	Sediment would be dredged from Lake Decade and placed in a semi-confined manner in strategic locations along the lake shoreline to create and nourish intertidal intermediate and fresh marsh. Approximately half of the created marsh would be planted with appropriate wetland vegetation. The borrow area in Lake Decade would be located and designed in a manner to avoid and minimize potential environmental impacts to the maximum extent practicable.	3a
N/A	FD 10	North Shore Lake Mechant	MC	20	51	Ter.	Not provided	Description not provided.	3a
N/A	FD 28	Marsh Creation East of Lake Boudreaux	MC	20	53	Ter.	Not provided	Description not provided.	3a

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Program	Local Project Number	Project Name	Project Type	Senate District	House District	Parish	Project Costs	Project Summary	Planning Unit
N/A	FD 11	Marsh Creation North Raccourci Bay	MC	20	51	Ter.	Not provided	Description not provided.	3a
N/A	FD 35	Bayou Dularge to Grand Pass Ridge Restoration	RR	20	51	Ter.	Not provided	Description not provided.	3a
N/A	FD 36	Bayou Decade Ridge Restoration from Lake Decade to Raccourci Bay	RR	20	51	Ter.	Not provided	Description not provided.	3a
N/A	FD 12	Marsh Creation Bush Canal	MC	20	53	Ter.	Not provided	Description not provided.	3a
N/A	FD 13	Lake Boudreaux-Lake Quitman Shoreline Protection and Marsh Creation	MC, SP	20	53	Ter.	Not provided	Description not provided.	3a
N/A	FD 15	Marsh Creation North Shore Lake Tambour	MC	20	53	Ter.	Not provided	Description not provided.	3a
N/A	FD 16	Terrebonne Bay Shoreline Protection/Marsh Creation Comprehensive Plan Project	MC, SP	20	51/53	Ter.	Not provided	Description not provided.	3a
N/A	FD 27	Marsh Creation East of Felix Lake	MC	20	53	Ter.	Not provided	Description not provided.	3a
N/A	FD 34	Bayou Terrebonne Ridge Restoration - Below Bush Canal	RR	20	53	Ter.	Not provided	Description not provided.	3a
N/A	FD 87	Lake Mechant South-West Shoreline Protection and Bayou Dularge Ridge Protection	SP, RR	20	51	Ter.	Not provided	Description not provided.	3a
N/A	FD 88	HNC Beneficial Use of Dredge Material (Bay Tambour and Terrebonne Bay)	MC	20	51/53	Ter.	Not provided	Description not provided.	3a
N/A	FD 89	Madison/Terrebonne Bays Marsh Creation	MC	20	53	Ter.	Not provided	Description not provided.	3a
N/A	FD 14	Marsh Creation North Shore Lake Chien	MC	20	53	Ter.	Not provided	Description not provided.	3a
N/A	FD 19	Bay Raccourci Marsh Creation and Terracing Project	MC, SNT	20	51	Ter.	Not provided	Description not provided.	3a
N/A	FD 20	Rebuild the East Bank of the Bayou Terrebonne - Integrity for Freshwater Conveyance	MC	20	53	Ter.	$5,000,000 - $20,000,000	Marsh creation on the east bank of Bayou Terrebonne from Madison Canal to Grand Bayou to improve the integrity of the channel to convey freshwater.	3a
N/A	FD 25	Marsh Creation North Deep Saline	MC	20	53	Ter.	Not provided	Description not provided.	3a
N/A	FD 26	Marsh Creation West of Four Point Bayou	MC	20	51	Ter.	Not provided	Description not provided.	3a
N/A	FD 31	Lost Lake Shoreline Protection and Hydrologic Restoration	SP, HR	20	51	Ter.	$26,000,000	The proposed project consists of several features to protect the marsh, create marsh and extend the land bridge function of the North Lost Lake Mechant Landbridge Project to the west. Marshes north, east, and west of Lost Lake serve an important function as an intermediate zone buffering fresh marshes to the north from higher salinities to the south. Features include 160 acres marsh nourishment along the northern and western shoreline of Lost Lake, 30 acres terracing to reduce fetch in the northeast of Lost Lake, 300 acres of marsh creation between Lake Paige and Bayou Decade, removal of weirs and installation of more open structures to increase the flow of freshwater and sediment delivery.	3a
N/A	FD 63	Marsh Creation South-West of Four League Bay (Phased Implementation)	MC	20	51	Ter.	$5,000,000 - $20,000,000	Use of material dredged from the Atchafalaya River to create marsh of Point Au Fer Island.	3a
N/A	FD 69	North Lake Boudreaux Basin Freshwater Introduction and Hydrologic Management	FI	20	53	Ter.	Not provided	Description not provided.	3a
N/A	FD 84	Bank Stabilization along Bush Canal and Bayou Terrebonne	SP	20	53	Ter.	Not provided	Description not provided.	3a
N/A	FD 17	DULAC Bayou - Marsh Terracing	SNT	20	51/53	Ter.	Not provided	Description not provided.	3a
N/A	FD 18	South Montegut - Marsh Terracing	SNT	20	53	Ter.	Not provided	Description not provided.	3a

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Program	Local Project Number	Project Name	Project Type	Senate District	House District	Parish	Project Costs	Project Summary	Planning Unit
N/A	FD 37	Sediment Introductions at South Shore Sister Lake	MC	20	53	Ter.	Not provided	Description not provided.	3a
N/A	FD 21	Marsh Creation North Stump Canal	MC	20	51	Ter.	Not provided	Description not provided.	3a
N/A	FD 22	Marsh Creation School Board Property South of Swing Bayou	MC	20	51	Ter.	Not provided	Description not provided.	3a
N/A	FD 23	Marsh Creation North-East of Toilet Bowl Canal	MC	20	51	Ter.	Not provided	Description not provided.	3a
N/A	FD 24	Marsh Creation North East of Bayou Penchant	MC	20	51	Ter.	Not provided	Description not provided.	3a
N/A	FD 70	Brandy Canal Hydrological Restoration Project	HR	20	51	Ter.	Not provided	Description not provided.	3a
N/A	FD 57	Dredge Bayou Terrebonne from Company Canal to Humble Canal	HR	20	53	Ter.	$5,000,000 - $20,000,000	Dredging Bayou Terrebonne will result in an increase in the amount of freshwater available to eastern Terrebonne Parish marshes.	3a
N/A	FD 58	Dredge Minors Canal (GIWW to Lake Decade)	HR	20	51	Ter.	Not provided	Description not provided.	3a
N/A	FD 62	Dredge Company Canal to Convey Freshwater Flow to Terrebonne Marshes	HR	20	53	Ter.	$5,000,000 - $20,000,000	Dredging Company Canal between the GIWW and Bayou Terrebonne will result in an increase in the amount of freshwater available for eastern Terrebonne Parish marsh sustainability.	3a
N/A	FD 59	Connect St. Louis Canal to Petit Caillou	HR	20	53	Ter.	Not provided	Description not provided.	3a
N/A	FD 65	Large Pump Station at Bayou Terrebonne	HP	20	53	Ter.	$500,000	Storm water drainage will be used to introduce freshwater to an area of marsh west of Bayou Terrebonne currently experiencing saltwater intrusion and a high rate of subsidence.	3a
N/A	FD 66	Pump Station at Bayou Petit Caillou for Freshwater Diversion to Ward 7	HP	20	53	Ter.	Not provided	Description not provided.	3a
N/A	FD 79	Bayou Terrebonne Freshwater Diversion Project	FD	20	53	Ter.	$2,000,000 - $5,000,000	Through the use of an existing drainage ditch, removal of an earthen plug between the Montegut and Point aux Chenes drainage systems, construction of 3 small pump stations, and construction of a screw gate water control device near the removed plug location, increased volumes of freshwater can be made available to the marshes of Montegut and Point aux Chenes within the wildlife Management Areas. Over 9,000 acres of brackish and intermediate marsh will be benefitted.	3a
N/A	FD 68	South Lake Decade Freshwater Enhancement and Shoreline Protection	HR, SP	20	51	Ter.	$5,800,000	Proposed project components include installing three control structures along the rim of the lake and enlarging Lapeyrouse Canal to allow the controlled diversion of the Atchafalaya River water, nutrients, and sediments south into project area marshes. Outfall management structures are planned in the marsh interior to provide better distribution of river water. In addition, approximately 1.6 miles of foreshore rock dyke is planned to protect the critical areas of the south lake shoreline from breaching.	3a
N/A	FD 71	Ashland Freshwater Introduction and Wetland Assimilation Project	WA	20	53	Ter.	$5,000,000	This freshwater introduction project will incorporate wastewater treatment effluent and freshwater from the GIWW by way of St. Louis Canal to Terrebonne Marshes north of Lake Boudreaux. Nutrients added to the system will enhance and promote plant growth and the sediment introduced will promote accretion to an area at risk for further deterioration.	3a
N/A	FD 77	Woodlawn Ranch Road	HR	20	53	Ter.	$500,000	This pump station project is the largest among those considered at 1350 cfs. Utilizing stormwater drainage from the Houma area, freshwater will be introduced to the marshes north of Lake Boudreaux in an area currently impacted by saltwater intrusion and subsidence. This project works in conjunction with Ashland Freshwater Introduction and Wetland Assimilation.	3a
N/A	FD 85	Reconnect Grand Bayou to GIWW	HR	20	53	Ter.	$5,000,000 - $20,000,000	Installation of a water control structure between GIWW and Grand Bayou and dredging of Grand Bayou will be added in order to increase the amount of water available to this region of Terrebonne Parish. Increased sheet flow of freshwater and nutrients will assist in vegetation enhancement and accretion in an area of marsh that is rapidly deteriorating.	3a
N/A	FD 33	Freshwater Introduction via Blue Hammock Bayou	FD	20	51	Ter.	Not provided	Description not provided.	3a
N/A	FD 67	Falgout Canal Freshwater Enhancement (Phase I)	HR	20	51	Ter.	$10,000,000	Saltwater intrusion and hydrologic isolation have led to rapid deterioration of marsh within the marshes located adjacent to Falgout Canal, between Bayou Dularge and the Houma Navigation Canal. This project will allow for re-establishment of Atchafalaya River influence.	3a
N/A	FD 80	Freshwater Diversion using the Bayou Terrebonne Flood Gate	FD	20	53	Ter.	Not provided	Description not provided.	3a
N/A	FD 72	Lower Bayou Dularge Pump Station	HR	20	51	Ter.	$500,000	Pump station D19 will divert approximately 200 cfs of freshwater east of Bayou Dularge into an area of marsh currently experiencing saltwater intrusion and a high rate of subsidence.	3a
N/A	FD 73	Upper Bayou Dularge	HR	20	51	Ter.	$500,000	Pump station D18 will be used to introduce approximately 200 cfs of freshwater to the marshes north of Falgout Canal. Marshes in this area are at risk of further deterioration due to saltwater intrusion.	3a
N/A	FD 74	Mayfield	HR	20	53	Ter.	Not provided	Description not provided.	3a

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Program	Local Project Number	Project Name	Project Type	Senate District	House District	Parish	Project Costs	Project Summary	Planning Unit
N/A	FD 75	Lower Grand Caillou	HR	20	53	Ter.	Not provided	Description not provided.	3a
N/A	FD 76	Upper Grand Caillou	HR	20	51	Ter.	Not provided	Description not provided.	3a
N/A	FD 78	Point-Aux-Chene	HR	20	53	Ter.	Not provided	Description not provided.	3a
N/A	FD 60	Remove Constrictions/Dredge GIWW from Bayou Black to Bayou Wallace	HR	20	51	Ter.	Not provided	Description not provided.	3a
N/A	FD 82	Installation of Flap Gated Culverts Under Highway 57 between Dulac and Highway 56	HR	20	53	Ter.	Not provided	Description not provided.	3a
N/A	FD 3	Plugs Leaks in GIWW (Bankline Protection for GIWW)	HR	20	51	Ter.	Not provided	Description not provided.	3a
N/A	FD 61	Break in Avoca Guide Levee, North of Horse Shoe to Convey Freshwater to Terrebonne Marshes	FD	20	53	Ter.	Not provided	Description not provided.	3a
N/A	FD 32	Chacahoula Basin Plan	HR	20	51	Ter.	Not provided	Description not provided.	3a
N/A	FD 64	Carencro Bayou Freshwater Introduction Project	HR	20	51	Ter.	Not provided	Description not provided.	3a
N/A	FD 43	Wine Island	BI	20	53	Ter.	Not provided	Description not provided.	3a
N/A	FD 44	West Timbalier Island	BI	20	53	Ter.	Not provided	Description not provided.	3a
N/A	FD 50	Beach and Back Barrier Marsh Restoration, East and Trinity Islands	BI	20	53	Ter.	Not provided	Description not provided.	3a
N/A	FD 56	Barrier Shoreline Restoration Point Au Fer Island	BI	20	51	Ter.	Not provided	Description not provided.	3a
N/A	FD 46	Wine Island Rookery	BI	20	53	Ter.	Not provided	Description not provided.	3a
N/A	FD 48	West Raccoon Island Shoal Enhancement and Protection	BI	20	53	Ter.	Not provided	Description not provided.	3a
N/A	FD 38	Rock (Breakwaters) for Whiskey Island	BI	20	53	Ter.	Not provided	Description not provided.	3a
N/A	N/A	Franklin Canal Closure and Levee Improvements	HP	21	50	StM.	$5,775,000	Under normal circumstances, the Franklin Canal funnels stormwater from urban areas in and around Franklin to low lying outfall marshes and bays of the Gulf of Mexico along Louisiana's central coast. However, the Franklin Canal also serves as a conduit for reverse flows generated by storm surge from the Gulf. In this capacity, the canal has carried elevated water levels northward resulting in flooding in Franklin and along US Hwy 90 (an evacuation route) during Hurricanes Rita and Ike. A closure and levee improvements are proposed to prevent backflow through the canal during surge events. The proposed project uses a floating barge to close the canal and includes sheet pile, earthwork embankment, and levee improvements.	3b
N/A	N/A	Morgan City Levee Improvements	HP	21	50	StM.	$16,000,000 - $20,000,000	The need for levee improvements in Morgan City was brought to the forefront by FEMA's issuance of new preliminary Digital Flood Insurance Rate Maps (DFIRMs) in 2009, recent levee profile surveys, and a subsequent appeal to FEMA issued by the City of Morgan City. Being proactive in flood protection, the citizens within Consolidated Gravity Drainage District No. 2 (Morgan City and vicinity) passed a bond election in late 2009. Proposed levee and pump station improvements indicate upgrades to existing levees to elevations ranging from 8 feet to 10 feet MSL. The improvements address vulnerability caused by water levels arising from Lake Palourde. The proposed upgrades will provide backwater protection from Atchafalaya riverine events and storm surge from the Gulf as well as from stormwater runoff in the Terrebonne Basin north of the city. Upon completion of this project, backwater protection levees in Morgan City will be suitable for certification by the City and FEMA accreditation.	3b
N/A	N/A	Amelia Flood Protection Improvements - Initial Phase (Partial Miller Plan Alternative 2E)	HP	21	50	StM.	$2,260,350	Amelia flood protection presently consists of a somewhat disparate, non-certifiable levee system which offers minimal backwater protection from Bayou Boeuf and Lake Palourde. Drainage District No. 6 applied for Statewide Flood Control Program funds to increase the height of the levee to a consistent 7 feet MSL. Partial funding was granted. However, this initial phase is but a fraction of the proposed comprehensive levee system needed for the Amelia vicinity as proposed by the drainage district and state and federal authorities.	3b

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N/A	N/A	Hanson Canal and Yellow Bayou - Flood Control Structures	HP	21	50	StM.	$6,200,000	Hanson Canal and Yellow Bayou, both similar to the Franklin Canal, were designated to serve as conduits for removal of stormwater following normal rainfall events. However, during hurricanes and related events, both serve as a means for reverse flow generated by storm surge. Hurricanes Rita and Ike are recorded example events. Closures and levee improvements are needed to prevent surge flows from moving inland during surge events.	3b
N/A	N/A	Yokely Levee Improvements	HP	21	50	StM.	$5,000,000	During Hurricane Ike, the Charenton Navigational Canal overflowed its banks and inundated the Yokely drainage area with storm surge. Levee improvements and construction of a berm parallel to Industrial Road and the Charenton Navigational Canal south of US 90 are needed to prevent damages from storm surge inundation.	3b
N/A	N/A	Charenton Canal - Flood Control Structure and Levee Improvements - Alternative 1	HP	21	50	StM.	$114,000,000	This alternative is presented as a flood control structure with embankment improvements along both sides of the Charenton Canal. Embankment improvements are needed to prevent overtopping of the canal along its length near urban areas. These improvements will connect to existing levees that are planned from upgrading and proposed federal and/or State funded levees. The timeframe for the construction of these federal/State levees was indefinite at this writing. Nonetheless, the general consensus at the local, regional, State, and federal levels is that the major new levee improvements are decades away, dependent upon state and federal funding appropriations. The functional success of this alternative is directly dependent upon completion of proposed federal and state alignments west of the Charenton Canal to and beyond the Cypremort Ridge tying in to highlands of the Teche Ridge near the parish line.	3b
N/A	N/A	Charenton Canal - Flood Control Structure and Levee Improvements - Alternative 2	HP	21	50	StM.	$14,000,000	Alternative 2 proposes the construction of a flood control structure in Bayou Teche east of its intersection with Charenton Canal. This alternative is less costly than the previous option as it is not dependent on future new federal or state levee construction west of the Charenton Canal or along or west of the Cypremort Ridge. A short levee extension extending northward from the westernmost end of the Bayou Yokely Levee reach will be required.	3b
N/A	N/A	Berwick Levee Improvements - Reach W-124 South	HP	21	50	StM.	$200,000	Reach W-124 near Turtle's Corner south of the city limits of Berwick has a height deficient section approximately 75 feet wide and 1.5 feet deep. The proposed project, which is a federal responsibility, is to fill and compact the area to ensure levee height and design consistency with the surrounding system.	3B
N/A	N/A	West of Wax Lake Outlet to Charenton Canal - Continued Levee Improvements	HP	21	50	StM.	$117,000,000	Within the area defined by Drainage District No. 1, this project requires the elevation of 43 miles of levee to no less than 18 feet MSL. The current levee heights range from 3.5 feet to 20 feet MSL, and some reaches of the existing levee system have been breached by storm surge.	3b
N/A	N/A	Amelia Area - Continuation of Miller Plan Alternative 2E	HP	21	50	StM.	$50,000,000	Alternative 2E follows the existing levee alignments in the northwestern section of Amelia and then create an internal levee ring to protect most of the residential areas of Amelia. This alternative excludes much of the industrial area along Bayou Boeuf.	3b
N/A	N/A	Berwick Lock Elevation	HP	21	50	StM.	$1,000,000 - $100,000,000	The Berwick Lock is currently below the elevation of the surrounding Atchafalaya River levee and seawall protection system. This situation creates vulnerability for all urban and agriculture land situated between Berwick and Calumet as a direct function of Atchafalaya River flows, both riverine and surge. The USACE is aware of the lock elevation deficiency and has the responsibility to elevate the height as needed.	3b
N/A	N/A	WHLO East, Wax Lake East, and W-124 Levee Reach Improvements	HP	21	50	StM.	$22,000,000	The reaches currently protect the municipalities of Berwick and Patterson and the community of Bayou Vista from storm surge. Currently, the levee reaches range from 9-19 feet MSL. The proposed project would elevate the levees to a consistent 18 feet MSL.	3b
N/A	N/A	SMLD Backwater Plan Reconnaissance and Feasibility Analysis	HP	21	50	StM.	$100,000	Reconnaissance Study and possible feasibility analysis	3b
N/A	N/A	Amelia Area - Miller Plan Alternative 3E	HP	21	50	StM.	$171,650,000	This alternative is presented in the Miller Plan, begins in Assumption Parish on the east side of Bayou Boeuf near its intersection with Lake Palourde, continues southward east and inclusive of existing urban areas, crosses the Intracoastal Waterway with a control structure, continues westward in St. Mary Parish south of the Intracoastal Waterway along the higher ground of Avoca Island in a generally northwest direction, and ties into the Avoca Levee near the Bayou Boeuf Locks south of Morgan City.	3b
N/A	N/A	Amelia Area - Louisiana State Master Plan Alignment 1E	HP	21	50	StM.	$400,000,000	The Louisiana State Master Plan Alignment begins east of St. Mary Parish coming westward from Terrebonne Parish to the east bank of Bayou Boeuf, crosses Bayou Boeuf south of the railroad track via a control structure, follows Bayou Boeuf on the Amelia side southward then turns northwest along the bank, proposes a lock in Bayou Boeuf connection to Avoca Island levee near the Bayou Boeuf Locks at Morgan City.	3b
N/A	N/A	Amelia Area - SMLD Backwater Prevention Plan 4E	HP	21	50	StM.		An additional alternative was presented during the planning process (4E) involving the construction of a backwater protection flood control structure in Bayou Chene south of the GIWW with associated new levee alignments. This alternative is in the conceptual stage of planning and requires additional analysis, comparison, and contrast to the other eastern St. Mary and regional backwater protection alternatives. Once reasonable feasibility is established, a detailed evaluation of this alternative may be warranted as a suitable alternative in the state master plan. An initial investigation generally following the guidelines of a USACE reconnaissance study would be in order in an effort to determine the basic feasibility of the alternative. A more detailed feasibility will follow should the project prove feasible with benefits and cost comparable to Alternatives 1E and 3E.	3b

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N/A	N/A	Bayou Choupique - Levee Improvements and Flood Control Structure	HP	21	50	StM.	$40,000,000	Bayou Choupique functions as a conduit for storm surge much like the canals noted previously. A flood control structure and associated levee improvements are proposed to ensure adequate flood protection for the west end of the parish.	3b
N/A	N/A	Bayou Sale - Levee Improvements	HP	21	50	StM.	$32,700,000	The levees along Bayou Sale are proposed for elevation to 18 feet MSL to ensure adequate storm surge protection. Gordy and Ellerslie reaches are included.	3b
N/A	N/A	West of Chareton Drainage Canal - Levee Construction - Miller Plan (SMLD Alternative 2W)	HP	21	50	StM.	$66,250,000	This Miller Plan alternative proposes a levee alignment west of the Charenton Canal that generally follows the 5 foot contour extending westward to the Ivanhoe Canal, turns southward along the east side of the Cypremort Ridge, crosses Bayou Cypremort with a minor control structure, then generally follows the 5 foot contour along the west side of the ridge to appropriate connecting elevations of the Teche Ridge.	3b
N/A	N/A	West of Chareton Drainage Canal - Levee Construction - Louisiana State Master Plan (SMLD Alternative 1W)	HP	21	50	StM.	$35,000,000	The Louisiana State Master Plan proposes a levee alignment which generally follows the alignment of the Miller Plan's western levee routing, but instead of turning south at the Cypremort Ridge, it continues westward crossing the ridge and extends to and beyond the parish line into Iberia Parish.	3b
N/A	N/A	Scott Canal - Flood Control Structure	HP	21	50	StM.	$500,000	Scott Canal acts as a conduit for storm surge much link the Franklin Canal. A flood control structure is proposed to ensure adequate flood protection for the west end of the parish.	3b
N/A	N/A	Kelley Canal - Flood Control Structure	HP	21	50	StM.	$500,000	Kelley Canal acts as a conduit for storm surge similar to others noted. A flood control structure is proposed to ensure adequate flood protection for the west end of the parish.	3b
N/A	N/A	Vacherie Canal - Flood Control Structure	HP	21	50	StM.	$500,000	The Vacherie Canal acts as a conduit for storm surge similar to others noted. A flood control structure is proposed to ensure adequate flood protection for the west end of the parish.	3b
N/A	N/A	Bayou Tirge Watershed/Flood Protection	HP	26	49	Ver.	Not provided	Provide protection to the watershed from storm events by construction of a levee system and water control structures that would link to similar measures in Iberia Parish.	3b
N/A	N/A	Flood Control Structure at Boston Canal	HP	26	50	Ver.	Not provided	Construct a flood control structure at the intersection of Boston Canal and the GIWW that could be closed in the event of a hurricane or tropical storm that would aid in stemming the rise of flood waters.	3b
N/A	N/A	Four Mile Canal Structure	HP	26	47	Ver.	Not provided	A reduction in the cross-sectional area of the channel by installing a structure at the terminal end which could be closed during storm events. An opening in the structure would allow the passage of marine vessels and barges. This would be in conjunction with other measures proposed for the GIWW whereby spoil elevation and armoring along the south side of the GIWW is proposed.	3b
N/A	N/A	Hebert Canal Watershed/Storm Protection	HP	26	47	Ver.	$3,000,000	Install control structure on the Hebert Canal at the marsh/upland interface and raise the level of existing protection levees that will afford increased protection to communities from saltwater intrusion damage and flooding from storm surges. A previous plan created by the USDA NRCS has been completed and has engineering and design data.	3b
N/A	N/A	Protection Levee on the Marsh/Upland Interface	HP	26	47/50	Ver.	Not provided	By raising the height of an existing system of agricultural levees, an additional line of defense from tidal surges could be recognized. These existing levees would serve as a sound base for increasing the elevation.	3b
N/A	N/A	LA Hwy. 330 Hurricane Protection	HP	26	50	Ver.	Not provided	Armor the south side of the east/west side of LA 330.	3b
N/A	N/A	Flood Control Structure at Oaks Canal	HP	26	50	Ver.	Not provided	Construct a flood control structure at the intersection of Oaks Canal and the GIWW that could be closed in the even of a hurricane or tropical storm that would aid in stemming the rise of flood waters and protect surrounding wetlands.	3b
N/A	N/A	Freshwater Bayou Bank Stabilization	SP	26	47	Ver.	Not provided	Provide protection to the eastern spoil banks along Freshwater Bayou by repairing existing breaches and subsequently armoring the existing spoil bank. This would create a sound boundary which would protect surrounding fragile wetlands and also provide protection from storm surges during a tropical storm or hurricane. Measures also would be undertaken to reduce the cross-sectional area of the intersection where Bayou Chene intersects Vermilion Bay.	3b/4
N/A	N/A	Utilization of Existing Oil Field Canals	HP	26	47/50	Ver.	Not provided	Using existing oilfield canal spoil banks, raise existing elevation so that it would serve as a buffer that would intercept and minimize storm surge impacts and help reduce the amount of water borne floatsam and debris.	3b/4

Project Type: BI=Barrier Island; DM=Beneficial Use of Dredged Material; FD=Freshwater Diversion; HP=Hurricane Protection; HR=Hydrologic Restoration; INF=Infrastructure; LA=Land Acquisition; MC=Marsh Creation; MM=Marsh Management; OM=Outfall Management; PA=Public Access; PL=Planning; RR=Ridge Restoration; SD=Sediment Diversion; SNT=Sediment and Nutrient Trapping; SP=Shoreline Protection; VP=Vegetation Planting; WA=Wastewater Assimilation.

Parish: Asc.=Ascension, Asu.=Assumption, Cal.=Calcasieu, Cam.=Cameron, Ibe.=Iberia, Jef.=Jefferson, Laf.=Lafourche, Liv.=Livingston, Orl.=Orleans, Plaq.=Plaquemines, StB.=St. Bernard, StC.=St. Charles, StJa.=St. James, StJo.=St. John the Baptist, StM.=St. Mary, StMt.=St. Martin, StT.=St. Tammany, Tan.=Tangipahoa, Ter.=Terrebonne, Ver.=Vermilion.

Appendix E

Inventory of Non-State Projects

D. Restoration Partnership Projects

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RESTORATION PARTNERSHIP PROJECTS

Program	Project Number	Project Name	Project Type	Project Sponsor	Parish	Project Costs	Project Summary	Planning Unit
Rest. Partnerships	N/A	Westwego WHARF	LA	City of Westwego	Jef.	$1,000,000 (State) $1,250,000 (TPL Match)	In 2008, the Trust for Public Land (TPL) helped the City of Westwego acquire a 92-acre tract of cypress/bottomland hardwood forest that will provide the residents of Westwego water access to the Jean Lafitte Historical Park, Bayou Segnette State Park, and Lake Salvador Game Management Preserve. This property will be developed into a wetlands park known as the WHARF – Wetlands Harbor Activities Recreational Facility. This facility will provide opportunities for the physically challenged to experience Louisiana's natural environment. The Partnership Fund will provide $1 million to the City of Westwego for repayment to TPL to help them recoup some of the costs of the acquisition.	2
Rest. Partnerships	N/A	Terrebonne Vegetative Plantings	VP	Terrebonne Parish Consolidated Government	Ter.	$40,000 (State) $30,000 (TPCG Match)	Terrebonne Parish, in partnership with the Barataria Terrebonne National Estuary Program (BTNEP) will conduct a series of four vegetative plantings on the newly created marsh cells at site of the recently completed CWPPRA Project TE-44 , North Lake Mechant Landbridge. Earthen plugs will also be planted. Terrebonne Parish will provide additional financial support, and the BTNEP will provide project implementation services, including logistical support and volunteer coordination. Terrebonne Parish and BTNEP also propose to conduct vegetative plantings at three additional sites: the marsh area adjacent to the Upper Petite Caillou (Bayou Neuf) pump Station near Chauvin, the toe of the non-federal levee near Dulac (Suzy Canal), and in the Caillou Marshes EMU on and adjacent to the Harry Bourg Corporation property.	3a
Rest. Partnerships	N/A	North Lake Mechant Landbridge Completion	MC	ConocoPhilips	Ter.	$30,000 (State) $5,000 (ConocoPhilips Match)	The project consists of dredging approximately 875 cubic yards of sediment to construct an earthen plug. The proposed earthen plug is needed to complete the CWPPRA Project TE-44, North Mechant Landbridge Restoration. The plug is will be planted with natural vegetation for this area.	3a
Rest. Partnerships	N/A	Christian Marsh Terraces Project	SNT, VP	Coalition to Restore Coastal Louisiana	Ver.	$454,720 (State) $298,000 (CRCL Match)	The project proposes to build terraces and plant vegetation within an area of shallow open water that was formerly vegetated marsh. The project will create 20,850 linear feet of terraces which will enhance and protect an additional 300 acres of adjacent marsh. To protect the shoreline of the new terraces and to help bind the newly placed soils, appropriate vegetation will be planted by volunteers recruited from the local communities and across South Louisiana.	3b
Rest. Partnerships	N/A	Calcasieu-Sabine Watershed Restoration	HR, SNT	Ducks Unlimited	Cal.	$1,780,805 (State) $966,214 (DU Match)	The objectives of this project are to 1) restore the historic flow of First Bayou, thereby providing fresh water to the surrounding marshes and preventing flooding to communities in the area; 2) create marsh terraces in the Gum Gove region to reduce wave fetch, prevent erosion, and promote the growth of emergent/submerged vegetation; and 3) restore the cross-sectional elevations of Oyster Bayou to help promote healthy marsh in the area. The proposed restoration would reroute drainage through First Bayou and associated roadside conveyances, under the First Bayou-Highway 27 Bridge and into Mud Lake. A total of 105,000 linear feet of marsh terraces are proposed to benefit approximately 1,200 acres of marsh and help restore habitats for commercial and recreational activities throughout the Calcasieu-Sabine region. Restoration of Oyster Bayou's cross-sectional elevations will return salinity patterns and variations to a semblance of their historical patterns, and thereby return more than 7,000 acres within the Oyster Bayou watershed to higher levels of primary productivity that should ultimately result in marsh recovery and the creation of land.	4
Rest. Partnerships	N/A	10,000 Trees for Louisiana	VP	Coalition to Restore Coastal Louisiana	Jef., Plaq., StT., Tan., Ver.	$84,475 (State) $335,790 (CRCL Match)	The Restoration Tree Trust has donated a total of 10,000 native trees for vegetative planting in the Coalition to Restore Coastal Louisiana's (CRCL) Community-Based Restoration Program. Over 25 species of trees are available and will be planted in densities ranging from 125 to 150 trees per acre. Tree protectors will be purchased to reduce predation. Multiple project sites have been identified across the coast from Southwest Louisiana to the Mississippi Delta.	Coastwide

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Appendix F

CPRA FY 2016 Capital Outlay Requests

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STATE OF LOUISIANA
DIVISION OF ADMINISTRATION
FACILITY PLANNING AND CONTROL
State Agency E-Corts Priority List

Agency Priority	Department Priority	Agency Number	Project Request Title	Funding Source	(Year 1) FY2016	(Year 2) FY2017	(Year 3) FY2018	(Year 4) FY2019	(Year 5) Outlying Years	Total by Project
1 of 14	1 of 14	109	CPRA Projects	IAT	$23,000,000					**$23,000,000**
				FED	$226,153,143					**$226,153,143**
				STAT DED	$42,155,620					**$42,155,620**
2 of 14	2 of 14	109	West Bank and Vicinity , New Orleans, LA Hurricane Protection (BA-66)	GO Bonds		$52,514,458	$52,514,458	$52,514,458	$1,417,890,358	**$1,575,433,732**
3 of 14	3 of 14	109	Lake Pontchartrain, LA & Vicinity Hurricane Protection Project (PO-63)	GO Bonds		$40,634,781	$40,634,781	$40,634,781	$1,097,139,085	**$1,219,043,428**
4 of 14	4 of 14	109	Morganza, LA to the Gulf of Mexico Hurricane Protection Project (TE-64)	GO Bonds	$53,000,000	$25,000,000	$32,000,000	$35,000,000	$80,345,000	**$225,345,000**
5 of 14	5 of 14	109	West Shore, Lake Pontchartrain, Louisiana Hurricane Protection Project (PO-62)	GO Bonds	$5,000,000	$10,000,000	$25,000,000	$25,000,000	$245,922,875.00	**$310,922,875**
6 of 14	6 of 14	109	Lafitte Area Tidal Protection (BA-75)	GO Bonds	$4,000,000					**$4,000,000**
7 of 14	7 of 14	109	Western St. Charles Flood Protection	GO Bonds	$5,000,000					**$5,000,000**
8 of 14	8 of 14	109	Larose to Golden Meadow, LA Hurricane Protection Project (TE-65)	GO Bonds	$8,000,000	$4,000,000	$1,000,000			**$13,000,000**
9 of 14	9 of 14	109	Lockport to Larose Hurricane Protection Levee	GO Bonds	$5,000,000	$10,000,000	$20,000,000	$20,000,000	$20,000,000	**$75,000,000**
10 of 14	10 of 14	109	North Shore, Lake Pontchartrain Flood Protection (PO-74)	GO Bonds	$5,000,000					**$5,000,000**
11 of 14	11 of 14	109	St. Mary Backwater Flooding Protection (AT-024)	GO Bonds	$5,000,000					**$5,000,000**
12 of 14	12 of 14	109	Delcambre-Avery Canal Storm Surge Protection (TV-57)	GO Bonds	$3,000,000	$15,000,000	$8,000,000			**$26,000,000**
13 of 14	13 of 14	109	Southwest Coastal Louisiana Project (LA-20)	GO Bonds	$650,000	$1,000,000	$10,000,000	$10,000,000	$878,350,000	**$900,000,000**
14 of 14	14 of 14	109	South Central Coastal Plan (TV-54)	GO Bonds	$2,000,000	$2,000,000				**$4,000,000**
				TOTALS:	**$386,958,763**	**$160,149,239**	**$189,149,239**	**$183,149,239**	**$3,739,647,318**	**$4,659,053,798**