



Office of the Governor
JOHN BEL EDWARDS

CHALLENGES MET. PROGRESS DELIVERED.

Louisiana Coastal Protection and Restoration Authority,
2016–2023

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01

Introduction

Message from CPRA Chairman Bren Haase

It is with great pride that I can say the state of our coast is stronger than ever, and there is no doubt that it is the direct result of the leadership and investments of Governor John Bel Edwards' administration. Over the last eight years, our state has invested more in coastal protection and restoration than any other previous administration, allowing us to not just dream big, but take bold action to deliver projects that protect the people who live in coastal Louisiana and the culture that you cannot find anywhere else in the world.

Since Gov. Edwards took office in 2016, Louisiana's Coastal Protection and Restoration Authority (CPRA) has implemented over \$11 billion in hundreds of projects that protect millions of Louisianans and preserve the rich and diverse habitats that make up our coast and serve as the home for an array of wildlife. These projects have benefitted over 40 square miles of irreplaceable wetlands along our coast, utilizing more than 108 million cubic yards of sediment, enough to fill the Superdome more than 23 times. CPRA has also restored more than 22 miles of barrier islands, Louisiana's first line of defense against tropical storm systems that threaten our coast. The investments made by this administration have allowed CPRA to implement and complete record-breaking restoration projects across our coast that get bigger and more resilient with each new design.

Transformational projects like the Mid-Barataria Sediment Diversion and the River Reintroduction into Maurepas Swamp have been envisioned for decades, and it is because of the unyielding support of this administration that they have gone from far off dreams to real projects with funding

secured and construction underway. The value of these restoration projects cannot be overstated. They provide nursery habitat for our fisheries, support long-standing and still thriving cultures; they support a tradition of recreational use and enjoyment of the outdoors and an appreciation of nature; they buffer storm surges, and provide many other benefits to our people and environment that are too many to name.

Across our coast, investments since 2016 have allowed CPRA to improve over 83 miles of levee which protect the homes, businesses, and way of life for almost a quarter of the state's population. Multiple large-scale projects taken on and completed during this administration also defend our coastal communities against hurricanes and other storms such as the Hurricane and Storm Damage Risk Reduction System (HSDRRS), the Bayou Chene Floodgate, and the Houma Navigation Canal Lock Complex.

This administration has also been key to the unanimous adoption of both the 2017 and 2023 Coastal Master Plans. Louisiana is the only state in the country with a dedicated, science-based, and publicly informed roadmap of this magnitude that paves the way for a more resilient coast. The credibility of CPRA, the effectiveness of our projects, the strength of our partnerships and our ability to attract new funding, comes from the quality and integrity of this plan. Each edition of the plan builds on the capabilities and the advancements of those before it, utilizing the best available science and engineering. The 2023 Coastal Master Plan is the most comprehensive to date, with the potential to provide Louisiana and our coastal communities less risk from tropical storms and hurricanes than we have today.

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Other states and countries from around the world are looking at Louisiana's successes along the coast and turning to us for guidance on how to combat their own coastal crises.



Prioritizing science above politics is paramount to preserving our coast for future generations. This administration recognized the important role climate change plays in the efforts to protect and restore our coast and responded by establishing the Climate Initiatives Task Force and making Louisiana the first state in the Deep South to develop a Climate Action Plan. This task force is working across sectors and engaging the public in developing policies, strategies, and incentives to achieve net zero by 2050 and ultimately improve the health and welfare of Louisianans and advance the state's economic and energy profile. Louisiana is poised to be a leader in green hydrogen, offshore wind, and solar just like it is on marsh creation and levee construction.

Year after year, Louisiana's coastal program proves its value and builds on its successes, ensuring future generations have a coast to call home. Louisiana's rich history and culture is born out of the coast and preserving it requires the disciplined, comprehensive approach we have been able to achieve in this administration. Other states and countries from around the world are looking at Louisiana's successes along the coast and turning to us for guidance on how to combat their own coastal crises. We must continue this momentum through future administration changes with science and evidence guiding our actions and leading us to a more sustainable coast.



Progress Delivered

02

2018

Deepwater Horizon Oil Spill Settlement

The Deepwater Horizon Oil Spill in 2010 was an unprecedented disaster that took 11 lives and resulted in irreparable damages to the coasts along the northern Gulf of Mexico. After almost six years of litigation, in April 2016 a federal judge in New Orleans granted the final approval of a \$18.7 billion dollar settlement to be paid out over a 16-year period to Louisiana, the four other Gulf states, and the federal government.

As the hardest hit state, Louisiana was awarded over \$10 billion to compensate for damages related to the disaster. Although nothing can bring back the lives lost or make up for the destruction to the Gulf Coast, the settlement presented an incredible opportunity for Louisiana to make meaningful progress in the fight against rapid coastal land loss.

Prior to the settlement, CPRA's funding came from a variety of federal and non-federal programs, each of which has different requirements, parameters and processes of implementation. Examples include federal grants, state surplus, revenue sharing via the Gulf of Mexico Energy Security Act, and the Coastal Wetlands Planning, Protection and Restoration Act.

Funds tied to the BP Oil Spill have become some of the largest, most dependable funds CPRA uses to continue implementing large-scale restoration projects that make a difference for coastal communities.

Completion of Caminada Headland Restoration

The restoration of the Caminada Headlands was completed in March 2017 and at the time stood as one of the largest restoration projects ever undertaken by CPRA. Using 8.4 million cubic yards of dredged sand from an ancient Mississippi River delta in the Gulf of Mexico, CPRA restored 1,060 acres of beach, the equivalent of nearly 1,047 football fields. It was barged 30 miles to the headland where it was used to build 13 miles of beach to a height of four and a half feet above sea level, with a dune elevation of seven feet, and a dune crest width of 290 feet. In total, the project cost \$216 million funded by the state (\$30 million in State Surplus), the federal Coastal Impact Assistance Program (\$40 million), and the National Fish and Wildlife Foundation's Gulf Environmental Fund (\$145.9 million) established in the wake of the Deepwater Horizon oil spill to manage funds resulting from the settlement of federal criminal charges against BP and Transocean.

Restoring the Caminada Headlands brought back a much needed buffer to Port Fourchon, where the shoreline has eroded and retreated over

the years as saltwater infiltrated the marsh ecosystem. The Caminada Headlands are what separate Port Fourchon from the Gulf of Mexico, and as the marsh died off, the Port became more exposed to ravaging storm surges from tropical storms and hurricanes. As the nation's largest energy port, Port Fourchon services more than 90 percent of all deepwater activity in the Gulf of Mexico, underscoring the need to ensure its long-term viability.

CPRA was recognized in 2019 by the American Shore and Beach Preservation Association (ASBPA) for the Caminada Headlands project, which declared it one of the best restored beaches in the nation. The ASBPA applauded the innovative measures taken to protect beach-nesting and migratory bird populations and create an improved environment for wildlife. In total, nearly 200 sea turtles were successfully relocated from the borrow area to adjacent foraging grounds. More than 195,000 native plants and nearly 72,500 linear feet of sand fencing were also installed to promote the conservation of sand on the island.

2016

2017

LSU Center for River Studies

In January 2018, Governor Edwards joined officials from Baton Rouge, Louisiana State University (LSU), CPRA, and the Baton Rouge Area Foundation (BRAAF) to open a state-of-the-art facility dedicated to studying coastal restoration and river management.

The LSU Center for River Studies (CRS) is home to the 10,000-square-foot Lower Mississippi River Physical Model, an invaluable tool that is managed by CPRA staff and operated by LSU. It flows water and sediment across the model's 14,000 square mile section of Southeast Louisiana including Terrebonne, Barataria, Breton Sound, and Pontchartrain Basins, depicted on the map as an area from Donaldsonville to the Gulf of Mexico. The model uses exact parameters of the river's physical and dynamic properties, and produces a degree of accuracy never before achieved in lower-river physical modeling at this scale.

Its primary goal is to help planners, scientists, and engineers obtain a better understanding of sediment management in the lowermost Mississippi River. The modeling data directly inform CPRA's planning and design of projects aimed at controlling flooding, sustaining and rebuilding land, and preserving communities and industries along the river.

Morganza to the Gulf MOU

CPRA, the U.S. Army Corps of Engineers, and the Terrebonne Parish Levee and Conservation District (TLCD) signed a memorandum of understanding in December 2019 allowing work accomplished and paid for by CPRA and TLCD to count toward the 35% local cost share for the Morganza to the Gulf Levee System. A local match is required for any federal appropriation to build projects associated with the multi-billion dollar project.

Authorized in 2004, the project was deemed financially infeasible by the Corps after Hurricanes Katrina and Rita when new standards dramatically increased the cost of constructing the system to a 100-year level of protection. Terrebonne Parish and the State of Louisiana, now represented by CPRA, chose to move forward without federal funding, partnering to provide as much protection as could be afforded. The Corps cooperated by advising on construction to keep the project within acceptable specifications should future federal funding be secured.

Morganza to the Gulf demonstrates the importance of state and local efforts to provide flood protection. In 2005 Hurricane Rita flooded 11,000 homes in the Terrebonne-Lafourche area. In 2019, with a similar storm surge from Hurricane Barry, only 12 homes in the area were flooded.

To date, a total of \$440 million has been spent by the state and the parish. Ultimately, the Morganza to the Gulf Levee system will include 98 miles of earthen levee, 22 floodgates on navigable waterways, 23 environmental water control structures, and a lock complex consisting of a lock in the Houma Navigation Canal measuring 110 feet wide by 800 feet long, an adjoining floodgate measuring 250 feet wide, and a dam closure.

In signing the MOU with CPRA and TLCD, the Corps agreed that work and expenditures on 33 increments of the system that have been completed, are under construction, or will be going to construction can count toward the local cost share if future federal funds get appropriated saving the State hundreds of millions of dollars.

Queen Bess

Standing on the shore of a remote island in Louisiana's Barataria Basin, Gov. John Bel Edwards declared the newly-restored Queen Bess Island, home of the brown pelican, officially reopened for nesting in March 2020. The traditional nesting season for pelicans and other colonial water birds begins in mid-to-late February.

CPRA oversaw the engineering, design, and construction of the \$18.7 million restoration project. The project was funded with the Deepwater Horizon oil spill Natural Resource Damages settlement administered by Louisiana's Trustee Implementation Group.

Queen Bess Island is located northeast of Grand Isle in Jefferson Parish. It is the fourth-largest brown pelican rookery in Louisiana, supporting 15-20 percent of the state's total pelican nesting activity. It is also a nesting habitat for at least eight other species of nesting colonial water birds such as Tri-colored Herons, Great Egrets, Roseate Spoonbills, and Royal Terns. The island provides a crucial nesting habitat for four species designated as Species of Greatest Conservation Need in Louisiana. This project will enable these species, among those most impacted by the Deepwater Horizon oil spill, to continue nesting here well into the future.

The restoration of Queen Bess Island involved enhancing an existing rock ring around the island to serve as containment and protection for the sand fill material placed to increase the island's elevation. On the southwestern

side of the island, a set of rock breakwaters just offshore create a lagoon-style nursery feature for the young birds to learn how to swim, preen, and feed. The island is now highest on its southwestern side, approximately four feet above sea level, gently sloping toward the northeast where intertidal marsh elevations and an enhanced tidal exchange gap will support the growth of black mangroves and other fish and wildlife habitat. A nearby breakwater reduces wave-driven erosion through the gap.

In the middle elevations, scrub-shrub vegetation was planted to support brown pelican and colonial wading bird nesting. The southwestern third of the island was designed as habitat for birds that prefer nesting on the ground. For such birds, including terns and skimmers, six inches of small limestone were placed on top of the sand fill to inhibit vegetation growth.

The scrub-shrub vegetation planted in the middle elevations has established well since initial plantings. Small limestone serving as bird ramps were placed around the island to provide flightless juvenile birds with safe and easy access to the water.

Climate Initiatives Task Force & Climate Action Plan

In August 2020, Governor Edwards established the Climate Initiatives Task Force with the charge of recommending policies and actions allowing Louisiana to achieve net zero greenhouse gas emissions by 2050 to both help avoid the worst impacts of climate change and maintain the state's economic competitiveness. The Task Force's inclusive, balanced approach to policy development was built on science and incorporated expertise from across government, academic institutions, major industries and utilities, and civil society, and included extensive public participation. This approach yielded the state's first Climate Action Plan in February of 2022 containing 28 strategies and 84 specific actions addressing greenhouse gas emissions from across the entire state economy.

With the Climate Action Plan as a guide, Louisiana has pursued billions in federal grants made available in the Bipartisan Infrastructure Law and the Inflation Reduction Act and also attracted over \$26 billion in private sector economic development in low or no-carbon industries.

Major implementation successes from the Climate Action Plan:

- \$435 million for clean energy and the power grid including progress on projects that will triple the amount of solar energy generated in LA.
- The first federal offshore wind lease sale in the Gulf of Mexico on August 29, 2023.
- The modification of state law and policy to accelerate offshore wind in state waters.
- \$148 million for electric vehicles and charging including the approval of state's National Electric Vehicle Infrastructure Plan and \$73 million for charging infrastructure and \$43 million for electric school buses.
- \$75 million in federal and state dollars for H2theFuture to help position Louisiana as a global leader in producing, storing, and deploying green hydrogen.
- \$37.5 million+ for remediation of orphaned wells as well as updates to the state's methane waste regulations.
- Adoption of 2021 Energy Code estimated to reduce energy use in new homes by 25% compared to the previous 2009 code; and \$1.6 million for education and training to help implement the codes.
- Adoption of 2021 building codes, among the toughest in the country for addressing wind and flood risk.
- Creation of the State Planning Manager and Chief Resilience Officer positions within state government.
- Grants and trainings to advance equity and enhance the workforce across climate action and infrastructure investments.
- Billions more in pending applications to the federal departments of Energy, Interior, Transportation, NOAA, USACE, and EPA for projects and programs to reduce greenhouse gas emissions and improve our resilience to the impacts of climate change.



2021

Rockefeller Shoreline Protection Project

CPRA completed the Rockefeller Shoreline Protection Project in March 2021, adding a new segmented rock breakwaters in the Gulf of Mexico at Rockefeller Wildlife Refuge in Cameron Parish. The project protects nearly 3,500 feet of shoreline, adding erosion protection to an area that has been retreating at an average of 70 feet per year.

The \$9.27 million project, a collaboration between CPRA and the Cameron Parish Police Jury, was funded by a combination of state surplus dollars and Cameron Parish Community Development Block grants.

The breakwater structures block wave energy from eroding the shoreline and contributing to the rapid land loss the area was experiencing. Combined with a state project and a project funded through the Coastal Wetlands Planning, Protection, and Restoration Act (CWPPRA), the total rock shoreline protecting the Rockefeller Refuge now stretches nearly five miles.

\$2.6 Billion Bipartisan Infrastructure Law (IIJA) Funding

On the heels of two back-to-back devastating hurricane seasons for Louisiana, in January 2022, Gov. Edwards announced the state would receive \$2.6 billion in U.S. Army Corps of Engineers (USACE) funding from the Infrastructure Investment and Jobs Act (IIJA) and the Extending Government Funding and Delivering Emergency Assistance Act (Supplemental Disaster Relief). This vital funding marked the first significant federal investments in critical projects for Louisiana's coastal program like Southwest Coastal, the Atchafalaya Basin, and Morganza to the Gulf.

The supplemental disaster relief bill provides resources for Louisiana to recover from Hurricanes Laura and Ida. Through the IIJA, Congress appropriated funds to USACE to increase coastal resilience by funding flood control, navigation, and ecosystem restoration projects.

The supplemental disaster relief bill included over \$2 billion in funding for coastal and other flood protection projects:

- \$783 million for New Orleans to Venice Hurricane Protection Project
- \$453 million for West Shore Lake Pontchartrain
- \$163 million for Atchafalaya Basin
- \$128 million for Comite River Diversion
- \$94.3 million for Southeast Louisiana
- \$8 million for Upper Barataria Basin
- \$3.8 million for Grand Isle and Vicinity
- \$3.5 million for Bayou Segnette Waterway
- \$3 million for Tangipahoa Parish

The IIJA included over \$643 million in funding for 21 Louisiana coastal and water management projects, including:

- \$378.5 million for Morganza to the Gulf
- \$125 million for Southwest Coastal
- \$52.9 million for Atchafalaya Basin
- \$23.2 million for the Gulf Intracoastal Waterway

USACE also dedicated a cumulative \$848 million across states bordering the Lower Mississippi River to reinforce levees and make improvements to the channel. Louisiana's economy relies on a well-maintained Mississippi River.

Over \$690 million in USACE supplemental disaster relief Flood Control and Coastal Emergencies (FCCE) funds have yet to be allocated. Eligible projects include Grand Isle and Vicinity, Lake Pontchartrain and Vicinity, West Bank and Vicinity, and New Orleans to Venice. Additional funding will be announced upon completion of the USACE Project Information Report that will detail necessary improvements.

2022

Bayou Chene Flood Protection Structure

In April 2022, CPRA and St. Mary Parish completed a permanent flood control structure that will prevent Atchafalaya River backwater flooding from impacting nearly 30,000 residents in St. Mary, Terrebonne, Lafourche, St. Martin, Assumption, and Iberville parishes.

The \$80 million floodgate is an investment from CPRA using funding from the Gulf of Mexico Energy Security Act (GOMESA) and was built in partnership with the St. Mary Levee District.

Since the 1970s, the region had relied on temporary measures like a barge floodgate, sheetpile floodwalls, rip rap, and hesco baskets to prevent backwater flooding. There were three previous emergency closures of the Bayou, but the events were costly and risky. The 446-foot-wide floodgate allows officials to close the Bayou in a timely manner, with minimal impacts to navigation interests, minimal risk to the team members, and with minimal environmental impacts to the region.

The floodgate will be used when the river is high, usually in the spring. Congress requires the Atchafalaya River basin and floodway to get 30% of the flow of the Mississippi River at the Old River Control Structure upriver of Baton Rouge; during high-river periods, that can result in backwater flooding that threatens 30,000 residents in St. Mary, Terrebonne, Lafourche, St. Martin, Assumption and Iberville parishes.

Hurricane and Storm Damage Risk Reduction System (HSDRRS) Completion

Gov. John Bel Edwards joined CPRA, the U.S. Army Corps of Engineers, and other state, local, and federal officials to celebrate the completion of the Hurricane and Storm Damage Risk Reduction System (HSDRRS) in May 2022 after two decades of hard work and collaboration at all levels of government. The HSDRRS is the largest civil works project in the Corps' history, and defends the Greater New Orleans area against severe storms, including those with a 1-percent chance of occurring in any given year.

Following Hurricane Katrina, Congress provided \$14.5 billion for the construction of a system to provide the Greater New Orleans area with a system that will defend against major storms. The full up-front funding allowed USACE to apply the most current and up-to-date science and engineering during design and construction.

The system was constructed to elevations necessary to provide the one-percent storm surge level of risk reduction by 2011. Since then, USACE and its partners focused on building sustainable features, such as the three Permanent Canal Closures and Pumps, and incorporating resiliency against larger storms through features like armoring. Armoring prevents erosion and scouring that could threaten the structural integrity of the system in the event of an overtopping.

Upon completion of construction, the federal government fully turned the completed system over to CPRA for operation and maintenance.

Terrebonne Basin Barrier Island Restoration and Beach Nourishment

CPRA completed its largest ever coastal restoration project by acreage in July 2022, the Terrebonne Basin Barrier Island Restoration and Beach Nourishment project. The project restored over 1,000 acres of barrier island habitat and almost 9 miles of beach in Terrebonne and Lafourche parishes.

The \$166 million project used funds from the Deepwater Horizon oil spill to restore 261 acres on Trinity-East Island, 252 acres on Timbalier Island, and 567 acres on West Belle Headland. Project funding was administered through the National Fish and Wildlife Foundation (NFWF), along with \$3 million in state funds. The project utilized over 8.8 million cubic yards of dredged sediment from Ship Shoal through a lease agreement with the Bureau of Ocean Energy Management (BOEM).

Reinforcing the barrier islands brought numerous benefits to the Terrebonne Basin ranging from storm surge protection for critical infrastructure like Port Fourchon and Highway 1 to preserving unique foraging and nesting areas for threatened, endangered and protected migratory species. The Terrebonne Basin barrier islands provide a buffer that reduces the full force and effects of wave action, saltwater intrusion, storm surge and tidal currents on associated estuaries and wetlands.

Bayou Lafourche Pump Station

In October 2022, Gov. Edwards joined CPRA, state and local officials in breaking ground on what is considered the key project in a series of efforts to restore Bayou Lafourche and its surrounding ecosystems. The \$96 million dollar pump station is located in Donaldsonville where Bayou Lafourche meets the Mississippi River. When completed in 2025, the pump station will protect nearly 10 percent of Louisiana's drinking water supply for Ascension, Assumption, Lafourche, and Terrebonne parishes. It will also combat saltwater intrusion in the Lafourche and Terrebonne estuaries, which experience some of the highest land loss rates in the world.

The Bayou Lafourche Fresh Water District (BLFWD) fought for years to get the funding and permits needed to build the sorely needed pump station, which will be one of its biggest tools in restoring the bayou, and a collaboration with state agencies finally made it happen.

CPRA, the Louisiana Department of Environmental Quality (LDEQ), and the BLFWD signed an agreement in 2019 to finance the project's

Mid-Barataria Sediment Diversion

After a years-long permitting and review process, in Dec. 2022, CPRA received the approval of permits and permissions to build and operate the Mid-Barataria Sediment Diversion from the U.S. Army Corps of Engineers (USACE).

The Mid-Barataria Sediment Diversion will utilize "engineering with nature" principles to re-establish a consistent flow of sediment and land building material from the Mississippi River into Barataria Basin. This basin is an area experiencing some of the highest rates of land loss in the world and is home to the estuary most impacted by the Deepwater Horizon oil spill.

CPRA submitted an application to USACE for permits and permissions in 2016, initiating an extensive environmental review process to study and document the potential beneficial and adverse impacts that the Mid-Barataria Sediment Diversion may have on the surrounding environment. This analysis encompassed a thorough assessment of measures, from basin salinity patterns and land building potential to local economic benefits and construction noise levels. It also compared the benefits and impacts of building the project to several other alternatives that vary in project capacity and design, as well as basin conditions in the future without the project. The Environmental Impact Statement (EIS) was developed by USACE in coordination with several other federal and state agencies. A Draft EIS was available for public comment in March 2021, and a Final EIS was published in September 2022. USACE's decision in December was based on a comprehensive evaluation of the information and data collected throughout the environmental review process, including substantial public input.

Following the Corp's Record of Decision, in February 2023, the Louisiana Trustee Implementation Group (LA TIG), the group of state and federal agencies responsible for overseeing and approving spending Deepwater Horizon natural resource damages oil spill settlement dollars in Louisiana, approved \$2.26 billion in funding for construction of the Mid-Barataria Sediment Diversion.

construction through a \$65 million U.S. Environmental Protection Agency (EPA) Clean Water State Revolving Fund loan administered by LDEQ. This EPA fund helps communities stay in compliance with the requirements of the Clean Water Act.

CPRA pledged over \$50 million toward repayment of the loan using a portion of future Gulf of Mexico Energy Security Act (GOMESA) revenues it will receive from offshore federal oil and gas leases. BLFWD will repay the balance of the loan with revenues from an existing property tax.

For construction costs in excess of the loan value, BLFWD will provide an additional \$5.5 million of its own funds, and CPRA will contribute a total of \$26 million through a combination of GOMESA revenues and Capital Outlay funds as approved by State lawmakers.

The new pump station is anticipated to be completed and in operation by June 2025.

The LA TIG evaluated the proposed Mid-Barataria Sediment Diversion, a range of alternatives, and a future without the project under the Oil Pollution Act to determine the project's effectiveness in restoring for injuries to the natural resources in the Barataria Basin caused by the oil spill.

As noted in their final Restoration Plan, the LA TIG believes that a sediment diversion is the only way to achieve a self-sustaining marsh ecosystem in the Barataria Basin.

Finally, in March 2023, the National Fish and Wildlife Foundation's (NFWF) Board of Directors approved CPRA's request to dedicate \$660 million toward construction of the Mid-Barataria Sediment Diversion. This funding represents the final increment needed to fully fund the project's construction phase, which includes mitigation measures.

As of summer 2023, CPRA is in negotiations with the project's Construction Manager at Risk (CMAR) contractor to finalize cost and begin construction, while simultaneously finalizing engineering and design activities and completing the administrative steps necessary to access funding. It is anticipated that construction activities will begin later this year and take at least five years to complete.

Water Resources Development Act (WRDA) of 2022

The National Defense Authorization Act of 2023 (NDAA) Federal lawmakers passed late in 2022, including the Water Resources Development Act (WRDA) of 2022, which carried enormous benefits for Louisiana's coastal program.

WRDA is the biannual oversight bill for the U.S. Army Corps of Engineers (USACE). It provides authorization for projects and makes policy changes, though it does not appropriate funding. As Louisiana's most critical federal partner for ecosystem restoration, flood control, and navigation projects, USACE policy changes enacted through WRDA carry enormous implications for the protection and restoration of Louisiana's Coast.

WRDA 2022 formally prioritizes coastal ecosystem restoration as a top USACE mission, authorizes two major federal coast restoration projects, extends the timeline for the state's final HSDRRS payment, and clarifies other major projects will be conducted at full federal expense. A key provision of WRDA 2022 clarifies that the ecosystem restoration of the Mississippi River Gulf Outlet (MRGO) will be funded at 100% federal expense. The restoration of this area had been stymied by a long-standing disagreement between the State of Louisiana and USACE on cost sharing.

Other key provisions for coastal Louisiana within WRDA 2022 include:

- Extending the deadline from 2023 to 2032 for the third and final HSDRRS payment, as well as providing more opportunity for using state-led coastal restoration projects for crediting.
- Facilitating the examination of providing 200-year level flood protection for Lake Pontchartrain and Vicinity, as well as other provisions that would keep HSDRRS effective into the future.
- Prioritizing coastal restoration as a main mission of USACE by including provisions of the SHORRE Act, which was sponsored by Senator Bill Cassidy and Congressman Garret Graves.
- Authorizing the Upper Barataria Basin Hurricane and Storm Damage Risk Reduction project, a \$1.8 billion risk reduction project in St. Charles, St. John, St. James, Jefferson, Ascension, Lafourche, and Assumption parishes.
- Authorizing the South Central Coast, Louisiana Hurricane and Storm Damage Risk Reduction project, a \$1.2 billion risk reduction investment in St. Mary, St. Martin, and Iberia parishes.
- Directing the expedited completion of the St. Tammany Parish, Louisiana study, which would allow the project to have pre-construction engineering and design occur upon the completion of a USACE Chief's Report currently anticipated for May 2024. The study identifies a \$4 billion plan to address both riverine and coastal storm risk and is designed to reduce risk to over 15,000 structures.
- Declaring that the Lower Mississippi River Comprehensive Management Study would be fully federally funded. Authorized WRDA 2020, the comprehensive study would examine the Lower Mississippi River Basin from Cape Girardeau, Missouri to the Gulf of Mexico to identify new actions for the improved management of the Mississippi River.
- Restoring the federal obligation to fully fund the Operation, Maintenance, Repair, Rehabilitation, and Replacement (OMRR&R) of the Algiers Canal Levees, a commitment that the federal government stopped fulfilling following Hurricane Katrina.
- Providing flexibility for USACE disaster recovery dollars to be used for project improvements if justified, instead of being limited to only restoring a project to its pre-disaster status.

River Re-introduction into Maurepas Selected As Mitigation for West Shore Lake Pontchartrain

In Jan. 2023, USACE, New Orleans District selected CPRA's River Reintroduction into Maurepas Swamp (MSP) as a mitigation feature for the West Shore Lake Pontchartrain Project (WSP), marking a first of its kind partnership.

The MSP is a 2,000 cubic foot per second (cfs) freshwater diversion located on the East Bank of the Mississippi River in St. John the Baptist Parish, just west of Garyville, Louisiana. The project will reconnect the Mississippi River to the Maurepas Swamp and revitalize over 45,000 acres with freshwater, sediment and nutrients.

The USACE identified the MSP in a 2022 Supplemental Environmental Impact Statement, and determined the MSP would satisfy the mitigation required for unavoidable wetland impacts caused by the construction of WSP. Typically, the USACE utilizes mitigation banks, and/or USACE constructed projects to compensate for unavoidable wetland impacts.

The MSP is the preferable mitigation option since it can be integrated with the implementation of the WSP project, it provides mitigation directly adjacent to the impacts, and it restores the ecosystem within the same watershed, and by doing so increases the resilience of the WSP project.

WSP is a joint effort of CPRA, the USACE, the Pontchartrain Levee District, and St. Charles, St. John the Baptist, and St. James parishes. The project consists of 17.5 miles of levees, one mile of T-wall, drainage structures, pump stations, and several non-structural protection measures spanning from the Bonnet Carré Spillway to the Mississippi River Levee near Garyville.

CPRA and other non-federal sponsors will be responsible for construction of MSP and all increased costs over the previously selected alternative. CPRA has been allocated over \$204 million in RESTORE funding to engineer and ultimately construct the project.

Spanish Pass

Gov. Edwards joined CPRA staff and officials with Plaquemines Parish in May 2023 to celebrate the new largest coastal restoration project ever completed by the state.

The Spanish Pass Increment of the Barataria Basin Ridge and Marsh Creation Project restored over six miles of ridge west of Venice, La. and built over 1,670 acres of marsh with nearly 11 million cubic yards of sediment, making it the largest marsh and ridge creation project by both acres built and volume dredged.

The project utilized a borrow source on the east bank of the Mississippi River. The project team coordinated closely with the USACE, the U.S. Coast Guard, and River Pilot organizations to lay the dredge pipe across the River and subsequently the navigational canal to ensure there were no disruptions to navigation for the duration of the project.

The ridge habitat was planted with woody stemmed species of trees and shrubs native to Louisiana to mimic natural ridges. Native vegetation will also colonize the new marsh platforms and produce a healthy habitat over time.

The Spanish Pass Project was first identified as a priority project in the 2017 Coastal Master Plan. The total project cost is \$100.2 million, and it is funded with Deepwater Horizon Oil Spill settlement funds implemented through the Natural Resource Damage Assessment Act (NRDA) and distributed by the Louisiana Trustee Implementation Group (LA TIG).

Spanish Pass is a natural historic distributary of the Mississippi River, extending westward into the lower parts of Barataria Bay. The natural channel banks and adjacent marsh have degraded due to natural and manmade causes, including the 2010 Deepwater Horizon oil spill, which occurred about 50 miles from the project site. This project is one of many large-scale restoration projects that will work together to benefit thousands of acres of wetlands throughout the Barataria Basin.

Biloxi Marsh Living Shoreline

In June 2023, CPRA completed its largest ever living shoreline project in St. Bernard Parish. The Biloxi Marsh Living Shoreline project established a total of 58,571 linear feet of oyster barrier reef (approximately 11 miles) in the form of artificial reef breakwaters, in southeast St. Bernard Parish, Louisiana, along the shoreline of Bayou La Loutre. The project extends from Eloi bay to Morgan Harbor on the north side of the peninsula, and is open to the Chandeleur and Breton Sound.

In total, the project cost \$59 million with construction funded through the NRDA.

Overall the Biloxi Marshes consist of approximately 189 square miles of brackish and salt marshes that have been impacted by shoreline erosion from wind-driven waves. The goal of the Biloxi Marsh Living Shoreline project is designed to create bioengineered, marsh-fringing oyster reefs to promote the formation of self-sustaining living shoreline

protection structures. Bioengineered oyster reefs were created by placing manufactured products (WADs and Shorejax) off the shoreline to establish a living breakwater structure.

The project addresses and restores the important linkages among wetland, coastal, and nearshore habitats that were disrupted by injuries from the Deepwater Horizon disaster. This project also aligns with a feature recommended in the Mississippi River Gulf Outlet Ecosystem Restoration Federally Identified Plan, which called for 5.8 miles of artificial reef oyster development between Eloi Point and the mouth of Bayou La Loutre. The project is located within the Pontchartrain Basin, within which the coastal wetlands provide foundational habitat for the Pontchartrain Basin ecosystem, support resources within the Pontchartrain Basin, and are interconnected with other resources throughout the Gulf of Mexico that were among the most heavily oiled parts of the Gulf Coast shoreline.

2017 and 2023 Coastal Master Plans

During Governor Edwards Administration, the Louisiana Legislature unanimously adopted both the 2017 and 2023 Coastal Master Plans, a testament to the consistent credibility of the Governor's administration, CPRA, the effectiveness of our projects, and the strength of the state's partnerships.

CPRA is required by statute to update the Coastal Master Plan every six years. Each plan builds on the capabilities and advancements of previous plans, incorporating the best available science and engineering and community input to prioritize projects for implementation to further CPRA's mission to protect and restore Louisiana's coast.

The 2023 Coastal Master Plan identifies 77 projects worth \$50 billion that over a 50-year period can preserve, protect, and restore the vibrancy and the characteristics of the coast we call home and depend on. The plan builds on years of investment and planning and it adds to the \$21.4 billion of investment in coastal protection and restoration projects, 55,807 acres of habitat (87.2 square miles) benefitted, 369 miles of levee improvements, and 71.6 miles of barrier islands and headlands that the state has accomplished since 2007.

Beginning in 2018, CPRA involved coastal communities during the development and drafting process of the 2023 Coastal Master Plan. CPRA's Coastal Master Plan team engaged a diverse group of stakeholders to form the Coastal Advisory Team (CAT) and created Regional Workgroups (RW) across five coastal regions. The CAT and RWs worked with CPRA to identify issues, priorities, and possible solutions.

In addition to CAT and RW input, CPRA and its partners hosted 10 community conversations throughout coastal Louisiana where residents and community leaders had the opportunity to engage with the Master Plan Team and each other ahead of the release of the 2023 Draft Coastal Master Plan.

During a public comment period from January 6 through March 25, CPRA received 209 comments pertaining to the 2023 Draft Coastal Master Plan, which were used to refine the draft plans before submitting them for final approval.

The 2023 Coastal Master Plan is the most comprehensive plan to date. There is no other state in the country with a plan like ours, and it sets the precedent for providing a path to respond to the loss of our coastal land and the threats from storm surges.

8 Annual Plans Passed

Over the course of the Governor's administration, Louisiana lawmakers also unanimously passed a total of eight annual plans assembled by CPRA, and grew the state's investment into the coast almost every single year.

Since 2016, Louisiana has secured more than \$11 billion for coastal projects that have benefitted over 26,000 acres. The state has also improved more than 83 miles of levees and restored more than 22 miles of barrier islands.

The recently approved Fiscal Year 2024 Annual Plan calls for \$1.62 billion, the largest investment Louisiana has ever made in the coast. This level

of spending will fund 147 projects across our coast over the next year, including 21 dredging projects that will nourish over 14,500 acres of land across the coast. Beyond that, this level of spending will contribute nearly 9,000 jobs to our economy.

Year after year, CPRA has brought monumental projects to construction and completed some of the largest marsh creation efforts ever. CPRA continues to build robust and sustainable projects that bring more land, more innovative infrastructure, and more protection to communities across the entire coast.

Challenges Met



COVID-19 Pandemic

The COVID pandemic required CPRA to adapt and improvise to meet the challenges posed in responding to this public health event while maintaining progress on the state's coastal program.

Despite pivoting to work from home, CPRA staff maintained operational tempo with our partners and advanced coastal projects that were in planning, design, and implementation.

When COVID restrictions forced limiting public access to state buildings, CPRA ensured that our Board could continue to hold meetings with public visibility and participation by pivoting to virtual meeting options. Additionally, CPRA used virtual meetings for the first time to conduct public bid openings.

As we have emerged from the COVID pandemic, the longer-term challenge has been the impact on construction costs resulting from supply chain challenges, inflation, and higher labor and material costs.

To mitigate these impacts, CPRA engineers have optimized construction bids documents, primarily by utilizing alternative bid item provisions that would allow the award of optional project features if the bid prices were within budget. Additionally, to reduce perceived cost and schedule risks to bidders, CPRA has improved its outreach efforts to the construction industry so that project bid advertisements can be strategically timed to take advantage of available equipment, materials, and labor force. The catastrophic storm of Hurricane Ida, which aggravated access to care.

Hurricane Laura and Hurricane Delta

- Seven storms impacted Louisiana during the 2020 Hurricane Season. CPRA fulfilled requests for 638 super sack sand totes, 95 pumps, and various other flood fighting assets to protect coastal communities ahead of anticipated storm impacts.
- CPRA worked with the TLCD Levee District to sink a barge at Grand Bayou leading up to Hurricane Delta to block storm surge.
- CPRA began an emergency beach nourishment project on the west end of Grand Isle that will rebuild nearly two miles of beach and dune, revitalizing a critical shoreline that sustained significant damage throughout the 2020 storm season. The project was completed prior to the 2021 Hurricane season.
- CPRA coordinated with Cameron Parish to dig a cut from the Mermentau River to the Gulf shoreline to drain the water after Laura made landfall. Hurricane Delta refilled the man-made waterway with sand and sediment, making dredging the channel necessary for drainage. Construction of the Mermentau Cut in conjunction with strategic placement of pumps accelerated drainage in hard-hit communities of southern Cameron Parish.
- Following the storms, CPRA began construction on a permanent floodgate on Bayou Chene below Morgan City. The completed \$80 million project now provides flood protection for portions of six parishes.

Hurricane Ida

- Following landfall of the Category 4 storm, CPRA helped coordinate state, local and federal entities in deploying—and then redeploying—116 pumps in 9 parishes.
- CPRA monitored 692 flood gates across the entire coastal area, closing 459 of them at the height of the storm. CPRA verified that structure closures were recorded in the Levee Information Management System (LIMS).
- The agency requisitioned approximately 224,000 sandbags, over 1,500 super sacks that mostly went to Grand Isle, and 420 generators of varying size to areas of need for emergency use and to power the pumps.
- CPRA provided updates of the conditions in the Coastal Area due to Hurricane Ida to the Governor at the Unified Command Group Meetings and coordinated multi-agency Operation Plug to repair dune breaches on Grand Isle.
- CPRA assessed the damages due to Hurricane Ida and then conducted site visits once conditions were safe for personnel and coordinated the U.S. Army Corps of Engineers for rehabilitation assistance on impacted projects.
- The Trinity-East Island project that was completed by CPRA shortly before Hurricane Ida withstood the storm with minimal damage, reaffirming the necessity of protecting the barrier islands that serve as a first line of defense against storm surge.

04

Leaving Louisiana Better Than We Found It

Mid-Barataria Sediment Diversion

The Mid-Barataria Sediment will utilize engineering with nature principles to re-establish a consistent flow of sediment and land building material from the Mississippi River into Barataria Basin, an area experiencing some of the highest rates of land loss in the world and home to the estuary most impacted by the Deepwater Horizon oil spill.

This first-of-its-kind environmental infrastructure project has received all necessary permits and permissions from the USACE after an extensive environmental review process to study and document the potential beneficial and adverse impacts that the Mid-Barataria Sediment Diversion could have on the surrounding environment. This analysis encompassed a thorough assessment of measures, from basin salinity patterns and land building potential to local economic benefits and construction noise levels. It also compared the benefits and impacts of building the project to several other alternatives that vary in project capacity and design, as well as basin conditions in the future without the project.

CPRA submitted an application to USACE in 2016 and received approval of permits and permissions to build and operate the Mid-Barataria Sediment Diversion in December 2022.

Once operational, the Mid-Barataria Sediment will have the ability to build and sustain up to 26,000 acres of wetlands that will support a stronger, more resilient estuary. These wetlands will provide increased storm surge protection for communities in southeast Louisiana and create healthier habitats for the wide variety of aquatic species and wildlife in the basin. Other benefits include a substantial economic stimulus to the surrounding communities during project construction.

CPRA will begin construction activities for both the project and mitigation measures in 2023. The anticipated timeline for completion of the project is five years.

River Reintroduction into Maurepas Swamp

Located directly west of Lake Pontchartrain, the Maurepas Swamp is a prime example of Louisiana's iconic swamp habitat, providing a home to a wide range of wildlife species. With more than 100,000 acres of cypress tupelo swamp, bottomland hardwood forest, and fresh and intermediate marshes, the Maurepas Swamp is one of the largest forested wetlands in the nation and presents a wealth of eco-tourism and recreational opportunities, including fishing, hunting, birding, kayaking and more for local residents and out-of-state visitors alike.

As levees were constructed along the Mississippi River decades ago, the swamp was slowly cut off from a freshwater supply that provided it with nutrients, oxygen and sediment. This hydrologic isolation of the swamp from the river has led to continuing swamp degradation, which has been exacerbated by past high salinity in the Pontchartrain Basin and destructive logging practices.

The MSP will divert fresh water from the Mississippi River back into the swamp through a 5.5 mile controlled-flow diversion. The project will improve the health of the cypress-tupelo swamp through the addition of much-needed nutrients and the flushing of stagnant, low oxygen water. Additional benefits are anticipated from the delivery of fine river sediment and from the ability to freshen the swamp if salinity rises to unhealthy levels for the trees. Fresh water will revitalize trees, creating a more thriving habitat for wildlife and fisheries.

The MSP is projected to benefit about 45,000 acres of wetlands, or around one-third of the Maurepas Swamp. A gated intake structure on the Mississippi River near Garyville, LA, will control the flow of river water into a conveyance channel that extends from the river to the Maurepas Swamp, ending just north of Interstate 10. The diversion is expected to run less than 6 months annually.

Due to the fact that the project shares features and boundaries with the WSLP, the USACE has determined the MSP would satisfy the mitigation required for unavoidable wetland impacts caused by the construction of WSLP.

This is the first time the USACE has used a CPRA constructed restoration project as mitigation for a risk reduction system, which will save time and money while benefitting vulnerable communities and the ecosystems around them.

Typically, the USACE utilizes mitigation banks, and/or USACE constructed projects to compensate for unavoidable wetland impacts. The MSP is the preferable mitigation option since it can be integrated with the implementation of the WSLP project, it provides mitigation directly adjacent to the impacts, and it restores the ecosystem within the same watershed, and by doing so increases the resiliency of the WSLP project.

The current estimate for construction of the MSP is \$300 million.

CPRA anticipates beginning construction on the project in 2023. The anticipated timeline for completion of the project is four years.



Louisiana Climate Initiatives Task Force

In August 2020, Governor John Bel Edwards signed an Executive Order to create the Louisiana Climate Initiatives Task Force in response to the 2018 Intergovernmental Panel on Climate Change (IPCC) Special Report on greenhouse gas (GHG) emissions reduction pathways. The Task Force was established to develop strategies and actions to address the causes of climate change, identify strategies to improve resilience, and develop policies to reduce GHG emissions in an effort to help avoid the worst impacts of climate change as well as put Louisiana's efforts in line with the goals of the Paris Climate Agreement.

The Louisiana Climate Initiatives Task Force was a 2-year initiative to support the state achieving net zero GHG emissions by 2050. In order to achieve net zero emissions, the Task Force has set the following emission reduction goals:

- By 2025, reduce net GHG emissions by 26-28% of 2005 levels
- By 2030, reduce net GHG emissions by 40-50% of 2005 levels
- By 2050, reduce GHG emissions to net zero

More than 140 experts participated as members of the Task Force, its committees, or its advisory groups and engaged across nearly 50 public meetings held since November 2020. The Task Force includes scientists, state administrators, academics, oil industry representatives, and environmental advocates. The Task Force was supported by volunteers from diverse backgrounds organized into six sector committees, representing different sectors of the state's economy and four advisory groups focused on equity, science, legal, and financial considerations. The 23-member body set priorities for the overall planning process as well as an approved set of recommendations for the Climate Action Plan. The Task Force was chaired and staffed by the Governor's Office of Coastal Activities (GOCA). Under leadership of the Governor's Executive Assistant for Coastal Activities, GOCA served as the staff and managers of the Task Force, advisory groups, and sector committees in coordination with advisory and committee chairs.

Louisiana is among the most vulnerable states in the United States to the impacts of climate change. The state's hot and humid climate and location at the mouth of the Mississippi River and the edge of the Gulf of Mexico carry environmental challenges that have direct and indirect impacts on local communities. Throughout the state, whole communities are being displaced. Louisiana is home to people, critical industries, cultural resources, and tourism economies. The coastal plain and low-lying regions of the southeast are extremely vulnerable to climate change impacts. Flood frequencies, extreme rainfall events, and sea level rise affect property values and the viability of infrastructure. Extreme heat and changing seasonal climates are projected to have impacts on exposure-linked health and economic vulnerabilities in agricultural, timber, and manufacturing sectors.

The Louisiana Climate Action Plan contains 28 strategies and 84 specific actions to reduce GHG emissions across the state's economy. The report provides details from activities across the economy about where Louisiana's GHG emissions originate, where they are naturally absorbed from the atmosphere, and direction about how to approach GHG emissions reductions in a focused way. The planning process for developing the Final Climate Report was developed through the Structured Decision Making approach, which integrates science and policy to break down complex decisions and identify solutions that achieve the desired ends.

The LSU Center for Energy Studies conducted an update to Louisiana's GHG inventory using the United States Environmental Protection Agency's State Inventory Tool methodology to ensure consistency with the methodology used to prepare the state's previous inventory. A Science Advisory Group provided oversight and direction to guide the GHG inventory update process, including two rounds of comments. The inventory estimates and assesses the state's GHG emissions from all major sources, activity types, economic sectors, and pollutant types and provides an important updated snapshot in time of Louisiana's GHG baseline. Overall, the findings of this inventory suggest that industrial decarbonization is critical to achieve future GHG emission goals in Louisiana.

A presentation of draft findings was shared with the Task Force in its July 2021 meeting. The plan recommends strategies (high-level approaches) and actions (practical and implementable policy steps) to reduce GHG emissions to net zero by 2050 and avert the worst impacts of climate change.

The recommendations span eight sections and include the following:

- Clean energy transition
- Industrial decarbonization
- Actively managed methane emissions
- Transportation, development, and the built environment
- Natural and working lands and wetlands
- An inclusive, low-carbon economy
- Collaboration and partnership to ensure successful implementation
- Accountability and adaptability to ensure lasting success

The plan also includes three priority policy pillars

- Renewable electricity generation
- Industrial electrification
- Industrial fuel switching to low- and no-carbon hydrogen

The plan also offers strategies and actions that can improve health outcomes and the quality of life of Louisiana residents immediately. These actions include reducing the amount of fossil fuel combustion in the production of electricity and manufactured goods and from buildings and transportation while helping to slow the warming of the atmosphere that causes other climate impacts that harm health, safety, and quality of life.

The Climate Action Plan was approved on January 31, 2022, and sent to the Governor for his approval on February 1, 2022. The Task Force met again in March 2022 to move forward with the plan's implementation. As the state's first effort to address the root causes of climate change, the Climate Action Plan also contains a detailed description of the science of climate change and details how a warmer planet is impacting Louisiana people, environment, and economy with increasing severity and frequency.

Chandeleur Island Restoration

The Chandeleur Islands are a thin chain of uninhabited barrier islands located east of New Orleans in the Gulf of Mexico that have been shrinking rapidly for the last 200 years. The islands serve as a barrier between the Gulf of Mexico and parts of St. Bernard and Orleans parishes, representing a renowned sportfishing destination while losing nearly 90% of their landmass due to shoreline erosion from increasingly intense storms and hurricanes.

The Chandeleur Islands are incredibly significant to both the state of Louisiana and the entire country as part of the second established national wildlife refuge in the U.S., Breton National Wildlife Refuge, which supports an incredibly diverse group of wildlife and fisheries species. President Theodore Roosevelt established the island chain as the second national wildlife refuge in the country in 1904.

The 2010 Deepwater Horizon oil spill heavily oiled the Chandeleur Islands, causing many bird and aquatic species that inhabited the islands to suffer. The planned restoration project is an effort under the Regionwide Trustee Implementation Group.

In summer 2022, CPRA and the Louisiana Department of Wildlife and Fisheries (LDWF) monitored the Chandeleur Islands to inform a

Louisiana Chief Resilience Officer

During the 2023 Regular Session, House Bill 526 by Rep. Jerome Zeringue established and provided duties for the state's chief resilience officer in statute.

The bill defines "resilience" as a capability to anticipate, prepare for, respond to, and recover from significant multi-hazard threats with minimal damage to social well-being, the economy, infrastructure, and the environment.

Duties of the chief resilience officer include, but are not limited to, coordinating and providing strategic direction for governmental resilience initiatives in order to build long-term resilience for a robust, vibrant economic activity and a sustainable natural environment for Louisiana residents, working with agencies and local and regional jurisdictions to integrate statewide resilience goals into future projects, plans, and programs, pursuing federal and private funding for resilience initiatives, and coordinating with the Governor's Office of Homeland Security and Emergency Preparedness (GOHSEP) for emergency management and disaster response.

The bill also calls for the chief resilience officer to oversee development of an annual strategic statewide resilience report to protect the state from multiple threats, prioritizing the risks from inland and coastal flooding.

The bill also calls for each state government executive branch department, each presiding officer of the legislature, and the chief justice of the Louisiana Supreme Court to appoint a designated resilience officer who will coordinate activities with the chief resilience officer and serve on the Interagency Resilience Coordination Team.

The Interagency Resilience Coordination Team is established by the bill to maintain awareness, communication, and alignment with regard to the state's resilience and risk mitigation needs, progress, and priorities and to oversee development of the statewide resilience report. The team will meet upon the call of the chair, with a minimum of four meetings annually, to make recommendations to and render assistance and guidance to agencies in the development of strategic plans for resilience.

restoration strategy and project design for the islands. It had long been presumed that the Chandeleur Islands were no longer suitable for nesting sea turtles.

However, in July 2022, CPRA and LDWF discovered 53 sea turtle crawls, including Kemp's ridley turtle hatchlings. This was the first time Kemp's ridley hatchlings, the most endangered sea turtles in the world, to have been observed on the island in over 75 years.

In addition to the discovery of endangered sea turtles, brown pelicans, Royal and Sandwich Terns, Kelp and Herring Gulls, and more seabird species nest on the Chandeleurs.

Many marine species, including pregnant sharks, utilize the habitat provided by the seagrasses on the backside of the island chain.

Restoring the Chandeleur Islands would not only improve vital habitats for wildlife, but also protect coastal communities from storm surge. The islands serve as coastal buffer by reducing the size of waves that would erode marsh and providing a first line of defense against hurricane surge.

The restoration project design is anticipated to be complete in 2025, at which time construction activities may begin.

The bill also established a Louisiana Resilience Task Force to provide strategic direction to resilience efforts across the state and to make recommendations to the chief resilience officer.

The task force shall be composed of the following members:

- The chief resilience officer, who shall serve as chair and shall represent the views of the Interagency Resilience Coordination Team.
- The director of the Governor's Office of Homeland Security and Emergency Preparedness or his designee.
- The Governor's Executive Assistant for Coastal Activities or his designee.
- The commissioner of the division of administration or his designee.
- The commissioner of insurance or his designee.
- The secretary of the Department of Transportation and Development or his designee.
- The executive director of the Police Jury Association of Louisiana, Inc. or his designee.
- The executive director of the Parish Presidents of Louisiana Association or his designee.
- The speaker of the House of Representatives or his designee.
- The president of the Senate or his designee.
- The executive director or his designee of Louisiana Municipal Association.
- A member from the Public Service Commission.
- The commissioner of higher education or his designee.
- The secretary of the Department of Children and Family Services or his designee.

The task force shall meet quarterly and at the call of the chairman.

LSU Center for River Studies

Since opening in January 2018, the LSU Center for River Studies (CRS) has been an invaluable for studying the Lower Mississippi River.

The CRS has also become an important tool for outreach and advocacy. An exhibit area offers several distinct themes with illustrations and interactive features to help visualize and communicate the importance of the Mississippi River Delta, the ongoing coastal land-loss crisis, and CPRA's comprehensive Coastal Master Plan restoration and risk reduction program.

Since opening, the CRS has hosted more than 15,000 visitors, including federal and state politicians, scientists and engineers from around the world, coastal advocates, students and educators of all ages, artists, and many more.

Over the course of this administration, two new interactive features have been added to the CRS – virtual reality headsets and augmented reality sand tables – to help visitors visualize the issues and the work being done to protect and restore our coast. Visitors are encouraged to immerse themselves in footage from projects CPRA has begun or

Nicholls State University Coastal Center

In 2019, Gov. John Bel Edwards joined officials from Nicholls State University and CPRA to announce their intent to create a coastal center on the Nicholls campus to study the effects of land loss in the Terrebonne and Atchafalaya Basins.

Following a planning and programming effort in 2020 to help determine the location and conceptual design of the facility, Duplantis Design Group was hired in 2021 to design the 33,000-square foot coastal center.

The coastal center will be similar to the LSU Center for River Studies on the Water Campus in Baton Rouge, with research primarily focused on the Atchafalaya River and the Terrebonne Basin.

The Terrebonne Basin has the highest rate of coastal land loss in the state with more than 30,000 acres of wetlands lost since 1932. Meanwhile, the Atchafalaya Basin gained 4,000 acres of wetlands while every other basin in the state has lost land.

The center will include labs where Nicholls students and scientists from across the state, including those from CPRA, will collaborate and advance research to repair and rebuild the state's receding coastline.

completed along the coast using virtual reality headsets. Two augmented reality sand tables provide a hands-on experience that allows visitors to move sand, create flowing rivers, and produce rain to better understand how elevation and topography impact the way water moves.

The River Model itself can also be used as a tool to teach visitors about the work being done by CPRA. Twenty high-resolution digital projectors are utilized to project aerial photographs, project simulations, videos, and more onto the model, bringing the science to life for visitors.

The CRS is located just across the levee from the Mississippi River on the Water Campus, which is also home to the CPRA headquarters building and the Water Institute of the Gulf. The Water Campus was funded and built through a partnership between the State of Louisiana, the City of Baton Rouge, and BRAF with the goal of positioning the city and state as an epicenter for coastal restoration and sustainability research.

The CRS is open to visitors at no cost by appointment only (rivermodel@la.gov) or on the first Sunday of each month from 1:00 p.m. to 5:00 p.m.

In 2018, the legislature transferred responsibility for the Atchafalaya Basin Program from the Department of Natural Resources to CPRA. Since taking over the Program, CPRA has remained committed to continuing the important work benefiting the Basin while tying this Program into the state's larger coastal efforts.

In addition to research and development, the Nicholls Coastal Center will also house a 5,000-square foot, publicly accessible coastal exhibit area aimed at teaching visitors about the Atchafalaya Basin and the research that will inform decisions to restore coastal wetlands and protect our communities.

Nicholls officials plan for the coastal center to work with the Bayou Region Incubator to help create jobs and small business opportunities specific to the Bayou community and the Nicholls Farm to test the real-world application of the center's coastal research.

University officials also plan to raise funds to cover costs such as research opportunities, developing exhibits, and inviting visiting professors.

The state of Louisiana has allocated \$14.5 million for the coastal center's construction, which began in 2023.

Atchafalaya National Estuarian Research Reserve Designation

Governor Edwards began the process of establishing a National Estuarine Research Reserve (NERR) in coastal Louisiana with a letter to the National Oceanic and Atmospheric Administration (NOAA) in July 2019. Over twenty-four months, LSU and Louisiana Sea Grant assisted the state in evaluating three potential sites in the Atchafalaya, Barataria, and Pontchartrain Basins, engaging over 70 volunteers across state and federal agencies, universities, and non-governmental organizations on four committees. In addition, nine public town hall meetings were held to engage stakeholders and letters of support were collected from a cross-section of public and private interests.

NOAA's NERR sites serve as living laboratories for the study of estuaries and the natural and human changes that they experience. Enrollment in the NERR creates an opportunity for funding and community outreach that encourages and facilitates use by teachers, students, decision makers, and coastal residents.

NOAA has since accepted the nomination, and Governor Edwards designated the Louisiana Coastal Protection and Restoration Authority, the state's leading authority on coastal and estuarine issues, to collaborate with NOAA, with ongoing assistance from Louisiana State University and A&M College and Louisiana Sea Grant, in completing the remaining steps necessary to designate the Atchafalaya Basin as the preferred location of Louisiana's NERR. The Louisiana Universities Marine Consortium (LUMCON) has been selected as the managing entity of the State's NERR system.

Bayou Lafourche

In 2019, Gov. John Bel Edwards joined officials from Nicholls State In October 2022, Gov. John Bel Edwards, members of Louisiana's congressional delegation, and several elected officials celebrated the groundbreaking of a critically needed \$96 million pump station in Donaldsonville

The Bayou Lafourche Fresh Water District (BLFWD) fought for years to get the funding and permits needed to build the sorely needed pump station, which will be one of its biggest tools in restoring the bayou, and a collaboration with state agencies finally made it happen.

Work to restore Bayou Lafourche and build the pump station has been ongoing since Hurricane Gustav in 2008. The storm churned up muck and debris that not only blocked the mouth of the bayou, but contaminated it causing it to go septic; the waterway's flow was too weak to flush out the clogged bayou.

The new pump station will have a minimum pumping capacity of 1,000 cfs and be constructed beside the existing 450 cfs pump station which will remain in service. The production from the new pump station will triple the capacity for fresh water entering the bayou, combating the saltwater intrusion that is the leading cause of land loss in the region.

The Atchafalaya Basin would be a unique addition to the NERR System, which does not currently contain a large river-delta estuary as a site. The Atchafalaya Basin is the nation's largest freshwater swamp, and where it meets the Gulf of Mexico, there are two active, land-building coastal deltas -- the Atchafalaya River Delta and the Wax Lake Delta -- that represent river-delta estuaries.

The Atchafalaya Basin is home to critical habitats for the Louisiana black bear, neotropical migratory birds, American alligators, fish, and invertebrates. More than a dozen threatened or endangered species, including piping plover and other birds of concern, west Indian manatee, pallid sturgeon, and more than five species of turtles, live in the Basin. As a designated NERR site, this area will receive funding and assistance from NOAA to support research, monitoring, education, and community outreach initiatives.

The next steps involve Louisiana aiding NOAA in producing a preliminary environmental impact statement to assess the nominated location and its alternatives, as well as examining potential impacts of designating the location as a research reserve. Furthermore, the state will initiate preparations for a preliminary management plan. NOAA has issued pre-designation funds, matched by the state, to facilitate both tasks. These upcoming activities will ensure compliance with all relevant Federal and state environmental regulations. While NOAA accepts the state's nomination, federal designation is still contingent on successful completion of the EIS and management plan, as well as adequate appropriations to support a new reserve site in Louisiana.

In the years following Hurricane Gustav, an influx of state and federal funding have allowed the Bayou Lafourche Fresh Water District (BLFWD) to begin preparing the waterway for an increase of freshwater. BLFWD widened and deepened several miles of the bayou, raised a Donaldsonville railroad crossing, installed water control gates, and removed a weir in Thibodaux that restricted the flow of freshwater.

The BLFWD has also begun design and construction on several recreational projects, including parks, public docks, boat launches, and bayou-side trails, to make the bayou a more enticing place for residents.

Approximately 300,000 Louisiana residents in Ascension, Assumption, Lafourche, and Terrebonne parishes drink water drawn from the bayou. The reintroduction of fresh water will ensure that the drinking water supply is safe and reliable while also nourishing over 85,000 acres of marsh in some of the country's most land-starved areas that protect a large area of south Louisiana from hurricanes and sea level rise.

The new pump station is anticipated to be completed and operational by June 2025.

Stories of Our Success

05



The Restoration of Queen Bess Island and the Reintroduction of the Brown Pelican

Depending on the account you choose to believe, the use of the brown pelican as a symbol for our state can be traced all the way back to Captain Pierre Le Moyne d'Iberville's exploration of the Gulf Coast for France or to William Claiborne, the first governor of the territory following the Louisiana Purchase.

No matter where the idea originated, the Louisiana Legislature made it official in 1966, naming the brown pelican the state bird of Louisiana. Today, the distinctive birds are emblematic of Louisiana, immediately calling to mind the state's unique coastal beauty.

But the brown pelican's status as state bird was threatened when the population disappeared from Louisiana's coastal wetlands in the mid 1960's, primarily due to the now-banned pesticide DDT.

In 1968, the Louisiana Department of Wildlife and Fisheries (LDWF) began restocking brown pelicans to coastal Louisiana, choosing Queen Bess Island as the first reintroduction location.

By 1971, there was evidence that the birds were making a successful recovery when 11 nests were documented on the island.

Unfortunately, the Deepwater Horizon oil spill in 2010 decimated Queen Bess Island, severely impacting pelicans and other coastal bird species.

Following the oil spill, only five of the island's 37 acres were usable, greatly decreasing the nesting habitat for brown pelicans and at least eight other species of nesting colonial water birds such as Tri-colored Herons, Great Egrets, Roseate Spoonbills, and Royal Terns.

In 2020, the Louisiana Coastal Protection and Restoration Authority (CPRA) joined forces with the Louisiana Wildlife and Fisheries Commission (LDWF) and the US Fish and Wildlife Service (USFWS) to tackle an \$18.7 million restoration project on Queen Bess Island. The project was funded with the Deepwater Horizon oil spill Natural Resource Damages settlement administered by Louisiana's Trustee Implementation Group.

The restoration of Queen Bess Island involved enhancing an existing rock ring around the island to serve as containment and protection for the sand fill material placed to increase the island's elevation. On the southwestern side of the island, a set of rock breakwaters just offshore create a lagoon-style nursery feature for the young birds to learn how to swim, preen, and feed.

The island is now highest on its southwestern side, approximately four feet above sea level, gently sloping toward the northeast where intertidal marsh elevations and an enhanced tidal exchange gap will support the growth of black mangroves and other fish and wildlife habitat. A nearby breakwater reduces wave-driven erosion through the gap.

In the middle elevations, scrub-shrub vegetation was planted to support brown pelican and colonial wading bird nesting. The southwestern third of the island is designed as habitat for birds that prefer nesting on the ground. For such birds, including terns and skimmers, six inches of small limestone are being placed on top of the sand fill to inhibit vegetation growth. Small limestone serving as bird ramps will be placed around the island to provide flightless juvenile birds with safe and easy access to the water.

The efforts of CPRA, LDWF, and USFWS have proven successful with performance criteria for nesting birds surpassing expectations. In 2021, 3,400 brown pelicans were found on the island. Both Sandwich and Royal Tern colonies have been observed on the island, consisting of more than 5,300 nests.

The plants installed during the project are now large enough to support brown pelicans, egrets, and herons.

CPRA and LDWF continue efforts to track the return of the bird population. Over 1,200 brown pelicans have been banded on the island with a 35% return rate for breeding and nesting. The agencies will continue to maintain the restorative efforts made on the island, ensuring that our state bird and other native species will continue to thrive in Louisiana for generations to come.

06

BY THE NUMBERS

Since 2016...

40.8
square miles
WETLANDS
BENEFITED
(26,118 acres)

22.5
miles
BARRIER
ISLAND
BENEFITED

108
million cubic yards
SEDIMENT

*Enough to fill the
Superdome over 23 times*

Deepwater Horizon Funding to Date:

\$3.78 billion approved for **72** projects in Louisiana that will be funded through the Natural Resource Damage Assessment.

15 projects are approved to be funded through the National Fish and Wildlife Foundation for a total of **\$614 million**.

20 projects are approved to be funded through RETORE for a total of **\$484 million**.

FY 2024 Annual Plan

The FY24 Annual Plan projects revenues and expenditures of **\$1.62 billion**, which will be used to fund **147 projects** across our coast.

The plan outlines **21 dredging projects**, which will utilize **77.3 million cubic yards of sediment** to nourish over **14,500 acres of land** across coastal Louisiana in the coming year.

It is estimated that an investment in our coast at this level will create nearly **9,000 jobs** in the coastal sector.

Flood Protection

In 2005 Hurricane Rita flooded **11,000 homes** in the Terrebonne-Lafourche area. As a result of projects implemented by the federal, state and local governments related to the Morganza to the Gulf Levee System, in 2019, with a similar storm surge from Hurricane Barry, only **12 homes** in the area were flooded.

Bird Habitat Restoration

- CPRA has completed three projects utilizing Deepwater Horizon funding that create habitat for nesting birds. These include Rabbit Island, Queen Bess, and North Breton Island.
- Between 2002-2010, Louisiana lost 20 of our brown pelican colonies on Queen Bess Island, going from 30 to 10. There was also a 68% decrease in suitable nesting habitat for the remaining colonies. Since restoring Queen Bess Island, we have surpassed performance criteria for nesting birds and anticipate a record year in 2023 for Brown pelicans.

2021 Nesting Numbers:

- 3,400 Brown pelicans
- 2,600 Sandwich Terns
- 2,700 Royal Terns
- Louisiana holds 83% of the GOM population of Sandwich Terns, 51% of Royal Terns, and 47% of the GOM population of brown pelican.
- CPRA AND LDWF have banded brown pelicans yearly at Queen Bess since 2019. A total of 1,251 pelicans have been banded so far and CPRA has witnessed a return rate of 35% back on the island.

Coastal Master Plan

The 2023 Coastal Master Plan, which is the most comprehensive plan to date, provides a path to respond to the loss of our coastal land and the threats from storm surges.

Highlights of the plan include:

- Calls for 77 projects that can preserve, protect, and restore the vibrancy and the characteristics of the coast we call home and depend on.
- The projects identified in the 2023 Coastal Master Plan will restore and maintain over 300 square miles of Louisiana's coastal wetlands and reduce expected annual damage by up to \$15 billion compared to a future without action.
- Dedicates \$25 billion to 65 restoration projects, including marsh creation, diversions, landbridges, ridge restorations, and hydrologic restoration projects.

\$19 billion - Dredging Projects
(Marsh Creation and Landbridge projects)

\$2.5 billion - Programmatic Restoration

\$2.7 billion - Diversions

\$230 million - Hydrologic Restoration

\$110 million - Ridge Restoration

\$640 million - Integrated

- Identifies 12 structural risk reduction projects, including new levees and improving existing structures to withstand greater storm surges, to reduce flood damage by an estimated \$7.7 billion.
- Allocates \$11.2 billion to nonstructural risk reduction activities, such as residential elevations, commercial floodproofing, and voluntary acquisition of properties.
- \$2.5 billion is allocated to programmatic restoration efforts and small-scale strategies, such as bank stabilization and barrier island maintenance.

If we implement every project in this master plan over a 50-year period, Louisiana and our coastal communities will have less risk from tropical storms and hurricanes than we have today.

Social Media

- Since 2022, CPRA has reached an audience of over 486,000 on Facebook and increased our performance over the year by 46.2%.
- Since 2022, CPRA has reached an audience of over 29,000 on Instagram and have multiplied our performance over the year by 854.9%

- In the first week of June 2023, CPRA received over 22,000 impressions on Twitter, which was an increase of 13% over the month.
- Over the month of May, CPRA received over 46,000 impressions on LinkedIn Posts, a 40% increase over the month. It also gained 166 new followers, which was a 47% increase over the month.



Office of the Governor
JOHN BEL EDWARDS
2016–2024