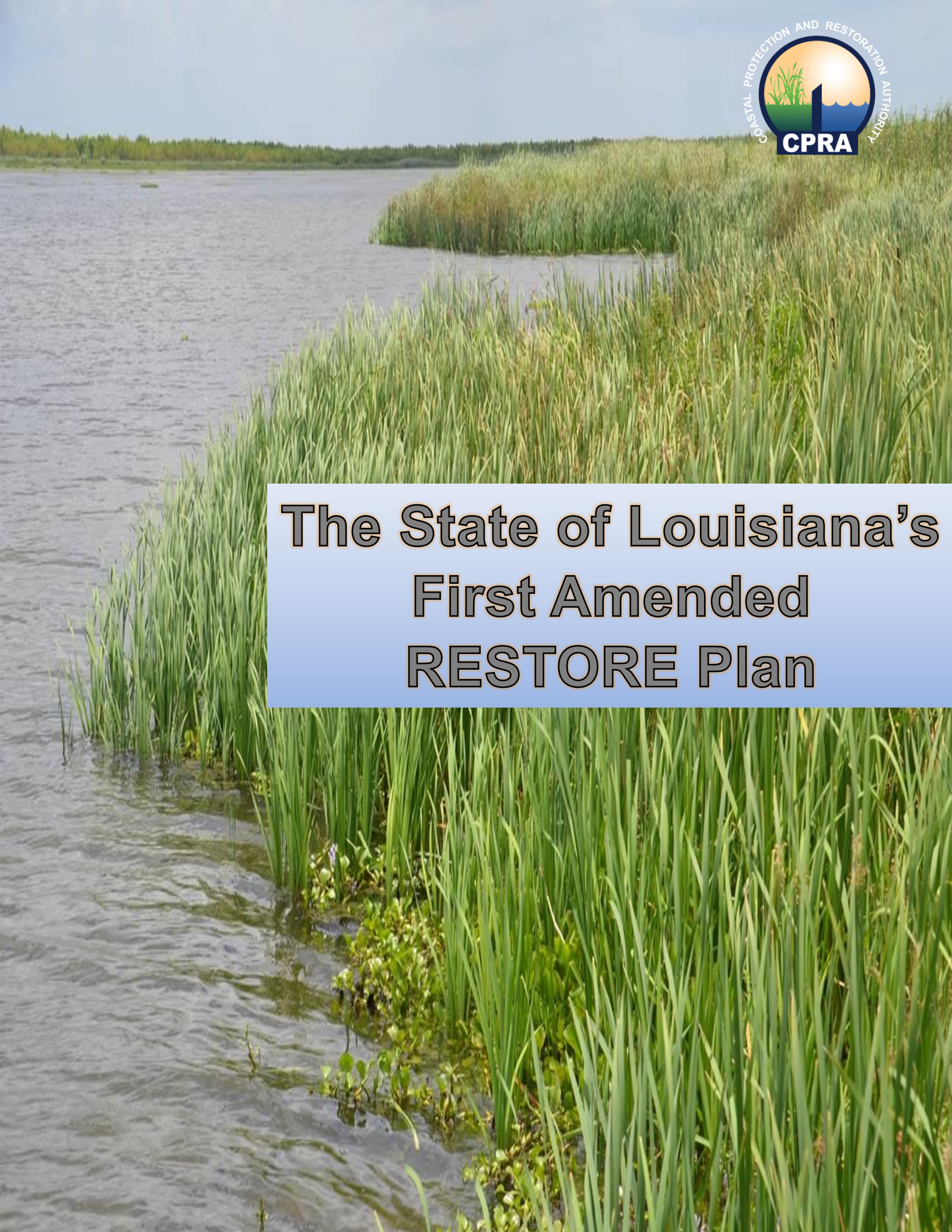

The State of Louisiana's First Amended RESTORE Plan

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The State of Louisiana's First Amended RESTORE Plan

I. EXECUTIVE SUMMARY

The Resources and Ecosystems Sustainability, Tourist Opportunities, and Revived Economies of the Gulf Coast States Act of 2012 ("RESTORE Act") requires the State of Louisiana, through the Coastal Protection and Restoration Authority ("CPRA"), to publish (i) a Multiyear Implementation Plan detailing its plan to expend funds under the Direct Component of the RESTORE Act, subject to review by the U.S. Department of Treasury ("Treasury"); and (ii) a State Expenditure Plan detailing its plan to expend funds under the Spill Impact *Component of the RESTORE Act, subject to approval by the Gulf Coast Ecosystem Restoration Council* ("RESTORE Council"). Because the activities eligible for funding under the Direct Component and Spill Impact Component are nearly identical, and the requirements for both the Multiyear Implementation Plan and the State Expenditure Plan are similar, the State of Louisiana has elected to combine these two plans into a single document entitled the State of Louisiana's RESTORE Plan ("RESTORE Plan" or the "Plan"). The State's initial RESTORE Plan was approved by the CPRA Board for submission to Treasury on July 15, 2015 for expenditure of then-available Direct Component funds from the 2013 Transocean Deepwater Inc. ("Transocean") settlement.[1] On September 21, 2015, Treasury formally notified the State that Louisiana was the first state to have a Plan accepted by Treasury for expenditure of Direct Component funds. This updated Plan is the State's First Amended RESTORE Plan.

The RESTORE Act dedicates eighty percent of the Clean Water Act civil and administrative penalties associated with the *Deepwater Horizon* oil spill to the Gulf Coast Restoration Trust Fund ("RESTORE Trust Fund"). The three parties whose Clean Water Act penalties are subject to the RESTORE Act are: Transocean, Anadarko Petroleum Corporation ("Anadarko") and BP Exploration & Production Inc. ("BP"). On January 3, 2013, Transocean agreed to pay a $1 billion civil penalty under the Clean Water Act for its role in the *Deepwater Horizon* oil spill. Pursuant to the RESTORE Act, eighty percent of these amounts plus interest, or approximately $816 million was deposited into the RESTORE Trust Fund in three installments paid in full by February 2015. On December 16, 2015, a final judgment was issued against Anadarko for Clean Water Act penalties in the amount of $159.5 million for its role in the Deepwater Horizon oil spill. Eighty percent of these funds plus interest, or approximately $127.6 million, was deposited into the RESTORE Trust Fund through a single payment in March 2016. Accordingly, the Transocean and Anadarko settlement payments have been deposited in full into the RESTORE Trust Fund and are currently available.

On April 4, 2016, the United States District Court for the Eastern District of Louisiana entered a final consent decree among the United States, the five Gulf Coast States and BP in MDL No. 2179 (United States District Court for the Eastern District of Louisiana) ("Consent Decree") in which BP agreed to pay $5.5 billion plus

[1] The State's initial RESTORE Plan identified two projects and two programs for funding under the State's then-available Direct Component funds: the Houma Navigation Canal Lock Complex ($16 million), the Calcasieu Ship Channel Salinity Control Measures ($16 million), Adaptive Management ($2.4 million) and the CPRA-Parish Matching Opportunities Program (up to $3.9 million).

interest under the Clean Water Act for its role in the *Deepwater Horizon* oil spill. Eighty percent of these funds, or approximately $4.4 billion, will be deposited into the RESTORE Trust Fund in fifteen annual installments beginning no later than one year after entry of the Consent Decree on April 4, 2017, and ending by April 4, 2031, with a penalty interest payment being deposited in 2032. Entry of the BP Consent Decree also triggered the effective date of the Spill Impact Allocation Final Rule at 40 C.F.R. Part 1800, which allocates 34.59% of the total Spill Impact Component funds to the State of Louisiana.

Total Clean Water Act Civil Penalty and RESTORE Funds		
Party	**Total Clean Water Act Civil Penalty**	**RESTORE Trust Fund (80%)**
Transocean	$1.0B	~$816.7M[2]
Anadarko	$159.5M	~$127.6M
BP	$5.5B	~$4.4B
Totals	**$6.66B**	**~$5.34B**

On September 2, 2016, Treasury published an estimated allocation for the funds to be deposited in the Trust Fund from the BP final judgment. As estimated by Treasury and adjusted for sequestration pursuant to section 251A of the Balanced Budget and Emergency Deficit Control Act of 1985, the full totals the State of Louisiana, through CPRA, can anticipate receiving under the RESTORE Act from the Transocean, Anadarko and BP deposits over a 15 year period into the RESTORE Trust Fund are approximately $260.4 million, plus interest, under the Direct Component and approximately $551.5 million, plus interest, under the Spill Act Component.[3] Accordingly, this Plan updates and amends the State's September 21, 2015 RESTORE Plan and contains the projects and programs identified for funding by the CPRA with both the currently available and estimated anticipated funds under the Direct Component, as well as the currently available and estimated anticipated funds from the Spill Impact Component, for a total of approximately $811.9 million over a 15 year period ending in 2031.

On October 1, 2016, Treasury published an updated RESTORE Trust Fund allocation for the currently available funds from the Transocean settlement and the Anadarko settlement. Based on this information, the total amount currently available to the State of Louisiana, through CPRA, in the RESTORE Trust Fund from the

[2] This number includes interest on the Transocean payments and is based on Treasury's October 1, 2015 RESTORE Trust Fund Allocation, *available at* *https://www.treasury.gov/services/restore-act/Documents/Allocations/Trust%20Fund%20Allocations%20as%20(10.01.2015%20Revision).pdf*.

[3] Please note that these numbers come from Treasury's "Projected BP Annual Deposits Into the Gulf Coast Restoration Trust Fund" document dated June 30, 2016, and are adjusted for sequestration, pursuant to section 251A of the Balanced Budget and Emergency Deficit Control Act of 1985, as amended, by withholding the year-one sequestration for the succeeding 15 years due to the uncertainty of sequestration in future years. This document is *available at* https://www.treasury.gov/services/restore-act/Documents/BP_Estimated_Deposits_Schedule_June302016.pdf.

Anadarko and Transocean payments is approximately $46.2 million under the Direct Component[4], and approximately $97.9 million under the Spill Impact Component.[5]

RESTORE Act Direct Component and Spill Impact Component Funds Directed to CPRA ***BP funds to be paid in annual installments over a 15 year period ending in 2031***			
Party	**Direct Component – CPRA**	**Spill Impact Component – CPRA**	**Total Funds Allocated in this RESTORE Plan**
Transocean	$ 39.99M	$ 84.68M	
Anadarko	$ 6.25M	$ 13.24M	
BP	$ 215.60M	$456.59M	
Estimated Full Totals	**$261.84M**	**$554.51M**	
Estimated Totals less sequestration[6]	**~$260.4M**	**~$551.5M**	**~$811.9M**

It is also important to note that while this RESTORE Plan describes how CPRA will use its Direct Component and Spill Impact Component funds, neither Treasury nor the RESTORE Council may award a project grant until sufficient deposits are available for distribution based on the amount of funds shown in the Gulf Coast Restoration Trust Fund Allocation Tables on Treasury's RESTORE Act website.

This Plan updates and amends the State's September 21, 2015 RESTORE Plan to redirect funding for the Houma Navigation Canal Lock Complex, Adaptive Management and the CPRA-Parish Matching Opportunities Program from the Direct Component to the Spill Impact Component and increases the funding for this project and these programs. Additionally, this Plan increases the funding for the Calcasieu Ship Channel Salinity Control Measures project under the Direct Component. The projects and programs proposed for funding in this Plan include a total of approximately $811.9 million, over a 15 year period, in identified expenditures as follows:

- Direct Component ($260.4M):
  - The Calcasieu Ship Channel Salinity Control Measures (~$260.4 million)
- Spill Impact Component ($551.5M):
  - The Houma Navigation Canal Lock Complex (~$366 million)
  - Adaptive Management (~$60.9 million)
  - The CPRA-Parish Matching Opportunities Program (~$100 million)
  - Contingency funds (~$24.6 million)

Contingency funds identified in the Spill Impact Component represent a portion of the funds that will not become available to CPRA under the Consent Decree until 2031, and will therefore remain available for future allocation to eligible activities.

[4] This number includes the $16 million grant that was awarded to CPRA on July 15, 2016, for the Calcasieu Ship Channel Salinity Control Project, consistent with the State's RESTORE Act Multiyear Implementation and Expenditure Plan approved by Treasury on September 21, 2015.

[5] Please see Treasury's October 1, 2016 RESTORE Trust Fund Allocation, *available at* https://www.treasury.gov/services/restore-act/Documents/Allocations/Trust%20Fund%20Allocations.pdf.

[6] *See footnote* 3, supra.

The projects and programs selected for inclusion in this Plan are the result of years of planning and the information developed through the state's *Comprehensive Master Plan for a Sustainable Coast* (the "Coastal Master Plan") process. More specifically, as explained in further detail in Sections IV and V, the Calcasieu Ship Channel Salinity Control Measures project and the Houma Navigation Canal Lock Complex represent two of the most critical large-scale projects identified in the Coastal Master Plan. Additionally, the Adaptive Management Program and the CPRA-Parish Matching Opportunities Program are programs that are designed to provide foundational support the state's overall coastal program. The selection of the projects and programs described in this Plan will be finalized after the public comment period described herein has concluded.

II. BACKGROUND AND PURPOSE

The RESTORE Act was signed into law on July 6, 2012. The RESTORE Act creates the RESTORE Council and the RESTORE Trust Fund and dedicates 80% of the administrative and civil penalties paid after the enactment of the Act under the Clean Water Act in connection with the *Deepwater Horizon* oil spill to the RESTORE Trust Fund for restoring the long-term health of the natural ecosystems and economy of the Gulf Coast region. The RESTORE Act contains five different funding components, one of which directs 35% of the funds deposited into the RESTORE Trust Fund to each of the five Gulf Coast States in equal shares for expenditure for ecological and economic restoration of the Gulf Coast region (the "Direct Component") and one of which directs 30% of the funds deposited in the RESTORE Trust Fund to each of the five Gulf Coast States to address the ecological and economic impacts from the oil spill based on a formula established by the Council by regulation (the "Spill Impact Component"). In order for a Gulf Coast State to receive funding under the Direct Component or the Spill Impact Component of the RESTORE Act, the States must first develop a plan for the expenditure of RESTORE Trust Fund monies under those funding components.

On December 14, 2015, Treasury published the Final Rule for the RESTORE Act at 31 C.F.R. Part 34 which became effective on February 12, 2016. The Final Rule specifies that the duties of the State of Louisiana for the development and submission of the Multiyear Implementation Plan under the Direct Component and the State Expenditure Plan under the Spill Impact Component will be carried out by the CPRA, subject to approval by the CPRA Board.[7] Because the purposes for which funds may be used under the Direct Component and the Spill Impact Component are similar and because the plans which the state must develop in order to receive these funds have similar requirements, the state has elected to create a single document that may serve the purposes of both plans – a RESTORE Plan – which will be guided by the state's Coastal Master Plan. Treasury's Final Rule requires each of the Gulf Coast States to make the plans available for public review and comment for a minimum of 45 days in a manner calculated to obtain broad-based participation from individuals, businesses, Indian tribes, and non-profit organizations. (31 C.F.R. §§ 303(a)(8) and 503(g)).

Louisiana law also applies to the funds provided to the state under the RESTORE Act. Specifically, according to La. R.S. 49:214.5.4(I)(1), any monies received by the state pursuant to the RESTORE Act, shall be deposited and

[7] On December 9, 2015, the RESTORE Council formally approved the Spill Impact Allocation Final Rule at 40 C.F.R. Part 1800, which allocates 34.59% of the Spill Impact Component funds to the State of Louisiana. This rule became effective on April 4, 2016 upon entry of the BP Consent Decree.

credited by the treasurer to the Coastal Protection and Restoration Trust Fund for integrated coastal protection efforts, including coastal restoration, hurricane protection, and improving the resiliency of the Louisiana Coastal Area affected by the *Deepwater Horizon* oil spill. Additionally, because RESTORE Act funds will be deposited into the Coastal Protection and Restoration Trust Fund, under La. R.S. 49:214.5.4(G), these funds must be used for the purposes of integrated coastal protection and may be used only for those projects and programs which are consistent with the statement of intent, La. R.S. 49:214.1, and the master and annual plans for integrated coastal protection, La. R.S. 49:214.5.3.

Accordingly, this RESTORE Plan will describe how the state intends to use RESTORE Trust Fund money under the Direct Component and Spill Impact Component and how the proposed activities in the Plan are contained in, or consistent with, Louisiana's Coastal Master Plan and:

A. Eligible for funding under the RESTORE Act, and
B. Consistent with the goals and objectives of the RESTORE Council's Comprehensive Plan

A. Eligible Projects under the RESTORE Act

As explained in the Council's 2016 Comprehensive Plan Update ("Comprehensive Plan"), the Gulf Coast region is vital to the Nation by providing abundant seafood, valuable energy resources, numerous recreational activities, a rich cultural heritage, and serving as the location for ten out of fifteen of the United States' largest ports, accounting for close to a trillion dollars in trade each year. (Comprehensive Plan p. 1). Despite this region's critical importance to the Gulf Coast region, the health of the Gulf Coast ecosystem has suffered significant environmental challenges and natural disasters, including major hurricanes such as Katrina, Rita, Gustav and Ike. Not only were these natural disasters each independently devastating to the region, but they have occurred in an environment that is "continually degraded and lost due to development, infrastructure, sea-level rise, altered riverine processes, ocean acidification, salinity changes and other human-caused factors." (*Id.*) Most recently, on April 20, 2010, the Gulf Coast region was subjected to the Deepwater Horizon oil spill, resulting in the loss of 11 lives and the largest oil spill in American history. In response to this disaster, and in light of the on-going ecosystem stressors faced by the Gulf Coast region, the RESTORE Act was passed in July 2012 to support a regional approach to restoring the long-term health of the valuable natural ecosystems and economy of the Gulf Coast region.

Consistent with the purpose of the RESTORE Act's objective of restoring the Gulf ecosystem and economy, the RESTORE Act contains eleven categories of activities eligible for funding under the Direct Component and the Spill Impact Component ("Eligible Activities"):

(1) Restoration and protection of the natural resources, ecosystems, fisheries, marine and wildlife habitats, beaches and coastal wetlands of the Gulf Coast region.
(2) Mitigation of damage to fish, wildlife, and natural resources.

(3) Implementation of a federally-approved marine, coastal, or comprehensive conservation management plan, including fisheries monitoring.

(4) Workforce development and job creation.

(5) Improvements to or on State parks located in coastal areas affected by the *Deepwater Horizon* oil spill.

(6) Infrastructure projects benefiting the economy or ecological resources, including port infrastructure.

(7) Coastal flood protection and related infrastructure.

(8) Planning assistance.

(9) Administrative costs of complying with the Act.

(10) Promotion of tourism in the Gulf Coast region, including recreational fishing.

(11) Promotion of the consumption of seafood harvested from the Gulf Coast region.

As discussed in Section V of this RESTORE Plan, the projects selected for funding under this Plan are eligible for funding under the Direct Component and the Spill Impact Component of the RESTORE Act.

B. Consistencies between the Goals and Objectives of the RESTORE Council's Comprehensive Plan and Louisiana's Coastal Master Plan

Similar to the problems faced by the larger Gulf Coast region, the State of Louisiana and its citizens have suffered catastrophic human, economic and social harm due to various factors that have generated significant impacts along its coast. These impacts include the fact that Louisiana is annually losing between twenty-five and thirty-five square miles of coastal area to the Gulf of Mexico, has suffered a devastating loss of hundreds of square miles resulting from Hurricanes Katrina, Rita, Gustav, and Ike, as well as enormous detrimental impacts from the 2010 Deepwater Horizon oil spill. As a result, the State has recognized under La. R.S. 49:214.1 *et seq.*, that hurricane protection and coastal restoration must be integrated to achieve a long-term solution of coastal protection. Accordingly, the State has committed to develop, implement, and enforce a comprehensive coastal protection plan that incorporates a systems approach to integrate hurricane protection and coastal restoration efforts in order to achieve long-term and comprehensive integrated coastal protection. (*Id.*) The State has also recognized that comprehensive integrated coastal protection must proceed in a manner that recognizes that the proper functioning of each protective element is critical to the overall success of the plan and that without such proper functioning, the safety of the state and its citizens and the viability of the entire plan are threatened. (*Id.*)

As a result of the State's commitment to act with respect to comprehensive integrated coastal protection, the Louisiana Legislature has declared that it is the public policy of the state to develop and implement, on a comprehensive and coordinated basis, an integrated coastal protection program to reduce, if not eliminate, the catastrophic rate of coastal land loss in Louisiana. (*Id.*) Consistent with this goal, it is the policy of this state to achieve a proper balance between development and conservation and encourage the use of coastal resources. (*Id.*)

Consequently, the declared public policy of the State of Louisiana with respect to its Coastal Master Plan has strong correlation with the policy goals and objectives of the RESTORE Council's Comprehensive Plan.

The RESTORE Council adopted five goals in its Comprehensive Plan. Those goals are:

(1) Restore and Conserve Habitat – Restore and conserve the health, diversity, and resilience of key coastal, estuarine, and marine habitats.

(2) Restore Water Quality and Quantity – Restore and protect water quality and quantity of the Gulf Coast region's fresh, estuarine, and marine waters.

(3) Replenish and Protect Living Coastal and Marine Resources – Restore and protect healthy, diverse, and sustainable living coastal and marine resources.

(4) Enhance Community Resilience – Build upon and sustain communities with capacity to adapt to short- and long-term changes.

(5) Restore and Revitalize the Gulf Economy – Enhance the sustainability and resiliency of the Gulf economy.

The RESTORE Council also adopted seven objectives in its Comprehensive Plan. Those objectives are:

(1) Restore, Enhance, and Protect Habitats – Restore, enhance, and protect the extent, functionality, resiliency, and sustainability of coastal, freshwater, estuarine, wildlife, and marine habitats. These include barrier islands, beaches, dunes, coastal wetlands, coastal forests, pine savannahs, coastal prairies, submerged aquatic vegetation, oyster reefs, and shallow and deepwater corals.

(2) Restore, Improve, and Protect Water Resources – Restore, improve, and protect the Gulf Coast region's fresh, estuarine, and marine water resources by reducing or treating nutrient and pollutant loading; and improving the management of freshwater flows, discharges to and withdrawals from critical systems.

(3) Protect and Restore Living Coastal and Marine Resources – Restore and protect healthy, diverse, and sustainable living coastal and marine resources including finfish, shellfish, birds, mammals, reptiles, coral, and deep benthic communities.

(4) Restore and Enhance Natural Processes and Shorelines – Restore and enhance ecosystem resilience, sustainability, and natural defenses through the restoration of natural coastal, estuarine, and riverine processes, and/or the restoration of natural shorelines.

(5) Promote Community Resilience – Build and sustain Gulf Coast communities' capacity to adapt to short- and long-term natural and man-made hazards, particularly increased flood risks associated with sea-level rise and environmental stressors. Promote ecosystem restoration that enhances community resilience through the re-establishment of non-structural, natural buffers against storms and flooding.

(6) Promote Natural Resource Stewardship and Environmental Education – Promote and enhance natural resource stewardship efforts that include formal and informal educational opportunities, professional development and training, communication, and actions for all ages.

(7) Improve Science-Based Decision-Making Processes – Improve science-based decision-making processes used by the Council.

Louisiana's Coastal Master Plan, on which this RESTORE Plan is based, is guided by a mission which is comprehensive in scope and based on a broad range of objectives, principles, decision drivers and decision criteria, which are consistent with the policy goals and objectives of the RESTORE Council's Comprehensive Plan. (*See* Coastal Master Plan pp. 44-63). This mission represents the result of a broad-based collaboration among local, state and national stakeholders and uses cutting edge technical analysis to "think big and evaluate the needs of the entire coast". (*Id.* at 45). To anchor this mission in more detail, the Coastal Master Plan orients its efforts around five objectives which seek to improve flood protection for families and businesses, re-create the natural processes that built Louisiana's delta and coastal habitats, and ensure the protection of the state's working coast. (*See* Section VI). Accordingly, this RESTORE Plan and the Coastal Master Plan by which this Plan is guided are based on a common mission that is clearly consistent with the goals and objectives of the RESTORE Council's Comprehensive Plan. (*Id.*).

III. PUBLIC PARTICIPATION STATEMENT

This RESTORE Plan was published and made available for public review and comment for a minimum of forty five (45) days, from November 30, 2016 – January 14, 2017, in a manner calculated to obtain broad-based participation from individuals, businesses, Indian tribes, and non-profit organizations in accordance with 31 C.F.R. §§34.303(b)(8), 34.503(b)(4) and 34.503(g), and adopted after consideration of public input in accordance with 31 C.F.R. §§34.303(b)(9) and 31 C.F.R. §34.802(c). Information summarizing the public input received during the public comment period is available in Section XII.

As additional projects and programs, such as projects proposed under the CPRA-Parish Matching Opportunities Program, are proposed under this Plan, or as allocations among these projects and programs may be updated over time, this Plan will be amended. Amendments to the Plan will undergo the same procedure for public comment as outlined above.

IV. OVERVIEW OF LOUISIANA'S INTEGRATED COASTAL PROTECTION AND RESTORATION PLANNING EFFORTS

A. Brief Overview of the CPRA's Planning Strategy for Coastal Restoration

The projects selected for inclusion in this RESTORE Plan are the product of decades of planning and have been identified using the information gathered and developed through the Coastal Master Plan process. This process is based on a well-established understanding of the inevitability of land loss and subsidence in the Mississippi River Delta following the construction of levees along the river.[8] This natural subsidence and

[8] "The effect of the withholding by the levees from the great areas of the delta of the annual contributions of sedimentary matters, and the steady, though slow, subsidence of these areas, is one which should be taken into account in deciding the important question of how to protect the people from the flood waters of the river. No doubt the great benefit to the present and two or three following generations accruing from a complete system of absolutely protective levees, excluding the flood waters entirely from the great areas of the lower delta country, far outweighs the disadvantages to future generations from the subsidence of the gulf delta lands below the level of the sea and their gradual abandonment due to this cause. While it would be generally conceded that the present generation should not be selfish, yet it is safe to say that the development of the delta country during the twentieth century by a fully protective levee system, at whatever cost to the riparian states and the Federal Government, will be so remarkable that

wetland loss, accelerated by human action, and exacerbated by sea level rise, storm damage, salt water intrusion, and other processes over time has not only depleted Louisiana's coast of vibrant habitat, but has also increased the vulnerability of its communities and industries established along the coast. To match this building crisis the State of Louisiana has been planning and implementing restoration and protection projects for almost two decades.

A variety of reports and partnerships were initiated by the passage of the Coastal Wetlands Planning, Protection and Restoration Act ("CWPPRA") in 1990. The state of Louisiana completed the first iteration of its official *Comprehensive Master Plan for a Sustainable Coast* ("Coastal Master Plan") in 2007. This plan was the first major product of the newly formed Coastal Protection and Restoration Authority ("CPRA"). The CPRA was conceived in the aftermath of Hurricanes Katrina and Rita in 2005 to comprehensively pursue the long-term sustainability of coastal Louisiana through the implementation of large scale projects capable of addressing the problems faced across the entire coast. The Coastal Master Plan was ordered by law to be updated every five years in order to take into account the best available science and the ever-changing conditions on the ground.

After 2007, state and federal investments in the protection and restoration of Louisiana's coast picked up dramatically, allowing for the implementation of improvements to our coastal communities' hurricane protection systems, as well as shoreline protection, marsh creation, barrier island repairs and other projects that have taught the engineers and planners involved in this effort many lessons and allowed them to begin to contemplate truly landscape scale changes.

The second edition of the Coastal Master Plan was unanimously adopted by the Louisiana State Legislature in 2012, two years after the *Deepwater Horizon* oil spill. This plan looks fifty years into Louisiana's future and, relying on world class science and engineering, presents large-scale actions that best match the needs of the coast with the resources available. The 2012 Coastal Master Plan effort included the development of rigorous planning tools and prioritization methods to evaluate hundreds of projects, a process which will be more fully explained in Section VI of this Plan, in order to clearly identify the state's priorities for achieving sustainability.

Since the creation of the CPRA in 2007, the agency has been extremely effective in implementing projects. Not counting the $15 billion investment on the Hurricane and Storm Damage Risk Reduction System in the New Orleans area, the CPRA has coordinated the implementation of $2.4 billion in protection projects and infrastructure projects in coastal Louisiana. It has also implemented $2.3 billion in restoration projects such as barrier island and headland restoration, marsh creation, hydrologic restoration, oyster reef creation and other projects. Now, in the aftermath of the *Deepwater Horizon* oil spill the state is well-positioned to identify and advance projects aligned to the funding opportunities and restrictions created through the civil and criminal penalties associated with that disaster. With regard to the RESTORE Act in particular, the State of Louisiana has committed to using all RESTORE funds toward integrated coastal protection efforts as guided by the State's Coastal Master Plan, a commitment that is codified in state law at La. R.S. 49:214.5.4(I).

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people of the whole United States can well afford, when the time comes, to build a protective levee against the Gulf waters, as the city of New Orleans has done on a small scale against the sea waters of Lake Pontchartrain, and as Holland has done for centuries . . .." (National Geographic Magazine December, 1897. Vol. VIII, No. 13, page 354).

This history of planning and implementing projects will inform the state's position with regard to supporting large-scale projects with the greatest potential to impact the Gulf Coast ecosystem in its participation on the RESTORE Council and in this RESTORE Plan to implement those funds received by the state under the Direct Component and the Spill Impact Component of the RESTORE Act. Accordingly, this document aims to meet the established requirements for both the Multiyear Implementation Plan (required for allocations from the Direct Component) and the State Expenditure Plan (required for allocations from the Spill Impact Component).

B. Louisiana's Coastal Master Plan Public Process

The CPRA established a strategic outreach and engagement framework for the State of Louisiana's 2012 Coastal Master Plan, which helped guide communications and interactions with diverse audiences throughout the planning process. (*See* 2012 Coastal Master Plan at pp. 120, 122, 126 & 160-163). These audiences included key citizen groups and organizations, non-governmental organizations, local and state officials, business groups and the general public. CPRA's outreach and engagement framework provides a variety of ways for stakeholders and citizens to learn about and participate in the master planning process, including small group gatherings, web offerings, direct communication with local and state government, and through monthly public meetings.

The CPRA's public outreach efforts for the 2012 Coastal Master Plan began with a meeting of 40 state legislators as well as coastal parish officials to gain their perspective about how coastal action affects communities. CPRA also met with community groups including rotary clubs, advocacy organizations, and school groups across the coast. Other groups were established to provide structured and ongoing advice from key businesses and industries, federal agencies, non-profits, Native American groups, and local organizations as well as coastal scientists and planning experts. These groups provided recommendations and guidance as the plan was developed so that the finished product would reflect broad perspectives and the best possible technical approach. These groups included a framework development team, focus groups of key coastal industries, a science and engineering board, and technical advisory committees.

Ten regional community meetings were held from July through September of 2011, where further input was received from residents. Approximately 600 citizens attended those regional community meetings. Together with online input, a total of 800 citizens expressed their views concerning coastal priorities. Once the draft plan was compiled, it was made available on the CPRA website, and three open house public hearings were held to receive feedback on the draft plan in Houma, New Orleans, and Lake Charles. All told, more than 2,200 comments were received at public hearings, via email, the website, and mail.

The 2012 Coastal Master Plan was also published on CPRA's website and made available for public comment from January 12, 2012 through February 25, 2012 (45 days). The comments were reviewed and considered with great care in order to incorporate them into the final 2012 Coastal Master Plan. Project-specific comments were further evaluated to determine the implications of each proposed change. In some cases, significant changes were made to the draft plan regarding project location and design. The final plan was submitted and approved by the CPRA Board in a public meeting before proceeding to the legislature for final approval. During the legislative process, the Coastal Master Plan was considered, debated, and open to further public input before receiving final approval by four committees: the House Transportation Committee, the

House Natural Resources Committee, the Senate Transportation Committee, and the Senate Natural Resources Committee. Following approval by all four committees, the plan moved to the floor of the respective houses of the legislature where it was unanimously passed. All comments received on the plan as well as transcripts from the town hall meetings and other information related to the public outreach effort are available in Appendix G of the 2012 Coastal Master Plan.[9] The 2012 Coastal Master Plan was formally approved by the Louisiana Legislature on May 22, 2012.

Both the Calcasieu Ship Channel Salinity Control Measures and the Houma Navigation Canal Lock Complex projects that are proposed for funding in this RESTORE Plan are included in the 2012 Master Plan. (*See* 2012 Master Plan at pp. 92, 113, 122, 128, & 162-165). With respect to the two programs, the Adaptive Management Program is included in the Master Plan (pp. 160-165), and the CPRA-Parish Matching Opportunities Program is designed to include projects or programs that are either included with the Master Plan or are consistent with the Master Plan.[10]

The Coastal Master Plan is implemented each year through an annual spending plan ("Annual Plan") that is also subject to extensive public comment and legislative approval. Since 2007, the CPRA has presented an Annual Plan for public comment and legislative approval that contains the expected revenues and expenditures for the coming fiscal year as well as projections for the next three years.

Both projects and the adaptive management and matching programs are included in the FY 2017 Annual Plan: (1) the Calcasieu Ship Channel Salinity Control Measures, (2) the Houma Navigation Canal Lock Complex, (3) Adaptive Management, and (4) CPRA-Parish Matching Opportunities Program. (*See* 2017 Annual Plan pp. 42, Table 3-8 & Table B-15). All of these projects and programs will be included in future Annual Plans as a prerequisite to expenditure of any funds on those projects and programs.

These projects were prioritized for RESTORE Direct Component and Spill Impact Component purposes due to their regional nature and far-reaching benefits to the overall ecological and economic recovery of the Gulf. In addition, these projects were identified as top performers through the Coastal Master Plan's Planning Tool. For example, the Planning Tool's modeling results showed that in certain cases, the sustainability of marsh creation projects increased from being completely unsustainable to being sustainable for more than 50 years when modeled as part of a group of projects including hydrologic restoration and salinity control structures. (*See* 2012 Master Plan p. 90).

The Coastal Master Plan is a living document that contains a suite of objectives and goals and lays out a non-exclusive set of specific projects allowing the state to reach those goals. However, for any coastal restoration or protection project that is undertaken by the state, Governor John Bel Edwards' Executive Order No. JBE 2016-09 (04/04/16) requires all state agencies to "administer their regulatory practices, programs, contracts, grants, and all other functions vested in them in a manner consistent with the Coastal Master Plan and public interest to the maximum extent possible." Therefore, according to La. R.S. 49:214.5.1 *et seq.*, and Governor Edwards' Executive Order No. JBE 2016-09 (04/04/16), the state may only expend funds received under the

[9] The 2012 Coastal Master Plan appendices may be accessed at http://coastal.la.gov/a-common-vision/2012-coastal-master-plan/cmp-appendices/.

[10] *See also* p. 128 of the draft 2017 Coastal Master Plan.

RESTORE Act for those projects or programs that are in the Coastal Master Plan or consistent with the Master Plan.

Below are additional details on current outreach and engagement opportunities CPRA provides and which have ultimately informed the development of this RESTORE Plan.

1. CPRA Board Monthly Public Meetings

The CPRA Board holds monthly meetings to provide the public with updates related to projects, programs, and policies. A public comment period is included at the close of each monthly meeting allowing the opportunity for citizens to ask questions or provide comments for the record. The Calcasieu Ship Channel Salinity Control Measures project, the Houma Navigation Canal Lock Complex, Adaptive Management and the CPRA-Parish Matching Opportunities Program, which are proposed herein for either Direct Component or Spill Impact Component funding, have been identified and discussed specific to RESTORE Act funding at numerous CPRA Board meetings over the past four years. Specifically, these projects and programs were discussed at the following meetings: November 28, 2012, May 15, 2013, July 17, 2013, August 20, 2014, October 15, 2014, November 12, 2014, February 11, 2015, April 15, 2015, August 19, 2015, December 16, 2015, August 31, 2016, October 19, 2016 and November 30, 2016. Moreover, at each of these meetings, there was also a public comment period dedicated to comments related to the RESTORE Act.

The CPRA Board officially approved Louisiana's initial RESTORE Plan for funding under the Direct Component on July 15, 2015 and the plan was submitted to Treasury. On September 21, 2015, Treasury formally accepted Louisiana's initial RESTORE Plan and congratulated the state on being the first state to have a Direct Component plan accepted by Treasury. On November 30, 2015, the state submitted its first grant application to Treasury for $16 million to achieve the 30% design milestone for the Calcasieu Ship Channel Salinity Control Measures project.

CPRA staff regularly attends these meetings and are available before and after to discuss agency initiatives with members of the public. Meeting details, including itemized agendas, are posted to CPRA's online calendar which is located at www.coastal.la.gov.

2. National Environmental Policy Act / Permitting Project-Specific Opportunities

Throughout project development there are a number of project-specific opportunities for public engagement and comment incorporated into the National Environmental Policy Act ("NEPA") and permitting processes.

3. Community Meetings

As the projects progress, the state will be available to meet with local groups and leaders to provide information. CPRA also has staff available to meet with citizens in smaller groups, so that we can answer questions and share updates. To request a meeting on the status of projects listed in this RESTORE Plan, or to be added to our mailing list, please send an email to: coastal@la.gov.

4. 2017 Coastal Master Plan

The state is currently in the process of updating the 2012 Coastal Master Plan. The 2017 Coastal Master Plan will present a much more detailed path forward for integrated coastal protection and restoration projects, as well as for nonstructural project recommendations, funding sources, and grant procedures.

- CPRA is also expanding outreach through the creation of a new, interactive web-based tool to help residents better understand their flood risk now and in the future.
- The 2017 Coastal Master Plan considers an array of new project ideas not modeled in 2012; these new project ideas were submitted from across the coast by stakeholders and members of the public.
- Additionally, there will be significant advancements and improvement of the models based on the best available science.
- The 2012 Coastal Master Plan was founded on state-of-the-art science and analysis, and the 2017 effort builds upon this further.
- The modeling process provides a deeper understanding of our coastal environment today, as well as the changes we can expect over the next 50 years.
- Recent updates include advancing modeling tools, incorporating a larger geographic area, and increasing spatial detail of land loss and flood risk.

The draft of the 2017 Coastal Master Plan has been released to the public in January 2017. For purposes of continuity, this First Amended RESTORE Plan has been updated to include project references to the draft 2017 Coastal Master Plan. Any updates to this RESTORE Plan that occur after legislative approval of the 2017 Coastal Master Plan is in place will be guided by that plan.

V. PROPOSED PROJECT LIST

The goals and objectives of the RESTORE Council's Comprehensive Plan include large-scale projects that have a commensurate level of ecosystem benefits and far-reaching effects, particularly when combined with complementary projects as part of a coordinated program. The State of Louisiana, in response to an ongoing coastal land loss crisis, has identified a large number of projects in its 2012 Master Plan that align with the Council's goals and objectives for comprehensive restoration. These projects have been rigorously studied, analyzed using the best available science and publicly vetted; and will significantly contribute to the restoration and protection of the Gulf Coast region and the more inclusive Gulf of Mexico Large Marine Ecosystem.

While it is the state's position that the State's Coastal Master Plan and Annual Plans meet the broad objectives of the RESTORE Act and the goals and objectives of the Council's Comprehensive Plan, the individual projects and programs listed here for funding also meet the requirements of the Act as a whole and the Direct

Component grant program identified in 33 U.S.C. §1321(t)(1) and the Spill Impact Component grant program identified in 33 U.S.C. §1321(t)(3).

The following information provides a summary of the funding request for each project and additional details about these projects. Please note that the portion of the total funds referenced below that are payable from BP (~$215.6M to the Direct Component and ~$456.9M to the Spill Impact Component) will be paid in annual installments over a 15 year period ending in 2031.

Project Name	Funds Previously Applied for under the Direct Component[11]	Direct Component Funding Proposed Request[12]	Oil Spill Impact Component Funding Proposed Request	Total
Calcasieu Ship Channel Salinity Control Measures	$16 million	$244.4 million	$0	
Houma Navigation Canal Lock Complex	$0	$0	$366 million	
Adaptive Management	$0	$0	$60.9 million	
CPRA-Parish Matching Opportunities	$0	$0	$100 million	
Total Funds Requested	**$16 million**	**$244.4 million**	**$526.9 million**	
Contingency Funds	**-**	**-**	**$ 24.6 million**	
Estimated Totals Less Sequestration[13]	**$16 million**	**$244.4 million**	**$551.5 million**	**$811.9M**

**Note that the numbers in the above chart are estimates and are subject to revision as projects and program budgets are refined over time*.

Calcasieu Ship Channel Salinity Control Measures – Direct Component (see also Appendix A):

- Need: The project is contained in the 2012 Coastal Master Plan as a hydrologic restoration project (Project 004.HR.06) and the 2017 Annual Plan (Project CS-0065)[14] and is needed to address modifications to hydrology that have caused an increase in salinity levels within the project area, resulting in degradation of the integrity of the surrounding marsh area and increased rates of wetland loss. This project will also mitigate damage to fish, wildlife and natural resources which rely on freshwater inputs and will limit the intrusion of salt water into freshwater marsh systems, thereby allowing for the maintenance of thousands of acres of wetlands which serve as critical wildlife habitat and nurseries for fisheries.

[11] On July 15, 2016, the State was awarded a $16 million grant from the U.S. Department of Treasury for the Calcasieu Ship Channel Salinity Control Project, consistent with the State's RESTORE Act Multiyear Implementation Plan accepted by Treasury on September 21, 2015.

[12] Note that this amount includes the remaining currently available Transocean and Anadarko funds, and the estimated anticipated BP funds.

[13] *See footnote 2*, supra.

[14] This project is also included in the draft 2017 Coastal Master Plan as a hydrologic restoration project (Project 004.HR.06) at pp. 40, 108, 110 & 128 and the draft 2018 Annual Plan (Project CS-0065) at pp. 46 & 60.

- Purpose: The purpose of the project is to manage salinities being introduced through the Calcasieu Ship Channel into adjacent water bodies to reduce the rate of wetland loss in the surrounding wetlands. Restoring this coastal ecosystem and lowering the risk associated with sea level rise, subsidence, and tropical events along the coast will also improve the long-term economic health of the region.
- Objectives: Design, construction, and operation of measures designed to limit the intrusion of saline water into Calcasieu Lake through the Calcasieu Ship Channel. These measures would control salinity spikes, provide storm surge benefits, 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. By allowing for the maintenance of thousands of acres of critical marsh environment which provide essential fish and wildlife habitat, the primary eligible activity of this project is to restore and protect the natural resources, ecosystems, fisheries, marine and wildlife habitats and coastal wetlands of the Gulf Coast region. (Eligible Activity (1)). The project also protects the wetlands of the Chenier Plain, which provide storm surge protection to communities and ports in the Lake Charles area. The ports of Lake Charles and Cameron are key parts of the economy of Southwest Louisiana and include critical infrastructure. The loss of wetlands reduces the viability of the ports because of the increased exposure to storm surge. In sum, this project will contribute to the overall ecological and economic recovery of the Gulf by saving an anticipated 21,000 acres of marsh environment from degradation over 50 years. (*See* Appendix A). Additionally, the project will be carried out in the Gulf Coast Region as defined in 31 C.F.R. §34.2 because it is located in the Calcasieu Ship Channel, and is anticipated to influence hydraulic conditions within the Calcasieu-Mermentau basin, which is in the coastal zone defined under section 304 of the Coastal Zone Management Act of 1972 that border the Gulf of Mexico. (*See* Appendix A for a map of the approximate boundaries of the project influence area).
- Funds Requested: The estimated total cost of the project is $441.1 million. This includes an estimated $36.4 million[15] for engineering, design and permitting, an estimated $262.8 million for construction and an estimated $141.9 million for operations, maintenance, monitoring, and adaptive management. This cost estimate is based on preliminary design that utilized professional judgment of an interdisciplinary team of engineers and existing data on the topography, bathymetry and geotechnical characteristics of the project sites. Cost estimates for design and operations, monitoring, maintenance and adaptive management are based on percentage estimates of the construction cost. Construction cost estimates reflect preliminary planning-level estimates of construction costs and schedules. As design advances these cost estimates will be revisited and are subject to change. All costs are reported in present dollar values and do not represent inflation or escalation.

  CPRA has previously been awarded funds in the amount of $16 million from the Direct Component to support engineering and design up to at least the 30% design milestone. The funds that will be currently requested for this project from the Direct Component are $30.2 million. The requested funds

[15] Please note that estimates for engineering, design and permitting have been updated and refined in the time period since the State's Initial RESTORE Act Plan was accepted by Treasury on September 21, 2015, to take into consideration land rights and permitting support which were not fully factored into the earlier estimates.

will support engineering and design, permitting, and real estate research needed to move the project into construction and be leveraged to support future construction. The total estimated funds that will be requested for this project from the Direct Component are $260.4 million, which includes the previously awarded funds, the currently requested funds and approximately $214.2 million which will be paid into the RESTORE Trust Fund over a 15 year period and is therefore not currently available. The information learned through the design process of this project will help inform the construction sequence and methodology that may ultimately be used for this project and will help determine the approach to funding the project through completion. Additional funds for this project may be provided in the future from funds in the State's Coastal Protection and Restoration Fund, including without limitation revenues from the Gulf of Mexico Energy Security Act (GOMESA), and/or funds from other RESTORE funding components.

Previously awarded Direct Component funds will support 30% Engineering and Design as described below. Currently available Direct Component funds in the amount of $20.4 million will support completion of Engineering and Design, Permitting and work needed to acquire land rights. The remaining balance will be combined with future Direct Component funds and other third party funds to support construction.

- 15% and 30% Engineering and Design: An initial amount of $16 million has been awarded from Direct Component funds to fund the project development up to at least the 30% design milestone. This work corresponds to milestones and Measures of Success 1 and 2 below. (*See* p. 18 for Measures of Success). Tasks required in order to reach these milestones include, but are not limited to:
    - Conduct a data gap analysis to identify the field data needed to design the project to the 15% and subsequently to the 30% level.
    - Collection of field data.
    - Tax assessment research and title research will be conducted to identify the ownership of land rights that may need to be acquired for construction.
    - Application of planning and engineering models to support design, refine cost estimation and support environmental documentation.
    - Engineering and Design.
    - Preparation and submittal of a permit application for construction of the project
    - Activities in support of the permit application, including wetland delineations, agency consultations, etc.

  The estimated timeframe for completing 30% design is March 2018. The outcome of this phase will be a 30% design package. At the 15% design milestone, the project will be developed with sufficient detail to submit a permit application for construction.

- 60% Engineering and Design, Permitting and Final Design: The remaining funds needed for the E&D phase, or approximately $20.4 million, will support the completion of engineering and design, permitting, and all other tasks required to take the project into construction. Tasks included in this expanded scope of work include, but are not limited to:

- Permitting and associated reviews and permissions (e.g. 404/10 permit, Section 408 review, National Environmental Policy Act). Permitting activities may be started in parallel with the 30% design work as opportunity allows.
- Independent Technical Review.
- 60% Design.
- Development of an operations, maintenance, monitoring and adaptive management plan.
- Land Rights research, including parcel surveys, abstracting, title opinions, title insurance, appraisals, and all other activities leading up to acquisition of land rights.
- 95% Design.
- Final Plans and Specifications.
- Preparation of a bid package for construction.

During this phase of E&D, permitting and design proceed iteratively, with adjustments made to the design based on feedback received through the USACE public interest review process. Once the permit application has been submitted, USACE will review the application and determine whether an Environmental Assessment (EA) or Environmental Impact Statement (EIS) will be required to satisfy National Environmental Policy Act (NEPA) review of the Project.

The scope of this work corresponds to Milestones 3-5 and Measures of Success 3-6, and will be defined concurrently with completion of the 30% design. (*See* pp. 17-18 for Milestones and Measures of Success). This scope of work will be submitted to Treasury for approval as a grant amendment. It is estimated that the final permit reviews and final plans and specifications can be completed by December 2019.

- Construction: The balance of the currently requested funds, $9.8 million, will be used to complete any outstanding design and permitting due to changes in scope or budget that are unforeseeable at this preliminary stage in project development, or may be combined with future funding sources to support construction. Potential future funding sources include the balance of the total funds to be requested from the Direct Component of an estimated $214.2 million, which will be paid into the RESTORE Trust Fund over a 15 year period and is therefore currently unavailable. Milestones 6-8 and Measures of Success 7-9 relate to the construction phase and are presented here for completeness and to demonstrate the full process to implementation of the project. (*See* pp. 17-18 for Milestones and Measures of Success). Construction is estimated to take at least two years and could be complete as soon as mid-2022.

CPRA has worked with the Chenier Plain Coastal Restoration and Protection Authority, the Cameron Parish Police Jury and Calcasieu Parish Police Jury throughout the plan selection process. All parties regularly communicated about the project status and important decision-making. It is anticipated that this collaboration will continue throughout the project life.

- High Level Milestones:
    1. 15% Design Package: Project development to the 15% design level.
    2. 30% Design Package: Development of the project to the 30% design level.
    3. Obtaining environmental permits to implement the Project: Work on this task will begin following completion of 15% engineering and design and will continue concurrently with the 30%, 60% and 95% design milestones. This high-level milestone corresponds to Measures of Success 2, 4, 6 and 7 below.
    4. 60% Design Package: development of the project to the 60% design level.
    5. 95% Design Package.
    6. Award of Construction Contract.
    7. Mobilization for Construction.
    8. Completion of Construction.
- Measures of Success: *See also* Section VII.
    1. Achieving the 15% design level milestone.
    2. Submittal of a permit application for construction.
    3. Completion of 30% design package.
    4. Completion of a draft Environmental Impact Statement.
    5. Completion of 60% design package.
    6. Section 408 Review.
    7. Completion of a final Environmental Impact Statement.
    8. Completion of 95% design package.
    9. Advertisement of a Bid Package.
    10. Award of Construction Contract.
    11. Mobilization for Construction.
    12. Completion of Construction.
- Estimated Start and Completion Dates:

    15% design milestone: June 30, 2017.
    1. 30% design milestone: March 30, 2018.
    2. Completion of draft Environmental Impact Statement: July 23, 2018.
    3. 60% design milestone: September 4, 2018.
    4. Completion of Final Environmental Impact Statement: January 21, 2019.
    5. 95% design milestone: February 11, 2019.
    6. Award of Construction Contract: March 1, 2020.
    7. Construction Mobilization: April 1, 2020.
    8. Completion of Construction: April 1, 2022.

The estimated construction timelines referenced above reflect an aggressive schedule which is driven by CPRA's sense of urgency for implementing large scale restoration projects. Given that RESTORE funds are subject to a 15 year payout, CPRA anticipates that it may need to access alternative funding streams through its Coastal Protection and Restoration Fund which would be reimbursed with RESTORE funds as those become available over time. CPRA is also exploring available accelerated financing options in order to meet the

estimated timelines described herein. CPRA is evaluating alternative funding streams and accelerated financing options because, as explained in the Executive Summary above, Treasury cannot award a project grant for Direct Component funds until sufficient deposits are available for distribution based on the amount of funds shown in the Gulf Coast Restoration Trust Fund Allocation Tables on Treasury's RESTORE Act website.

Additionally, CPRA recognizes that operations and maintenance of this project is reflected in the overall budget estimate; however the funding source for that phase of this project will be identified in the future.

Houma Navigation Canal Lock Complex - Spill Impact Component (see also Appendix B):

- Need: The project is contained in the 2012 Master Plan as a hydrologic restoration project (Project 03a.HR.10) and in the 2017 Annual Plan (Project TE-113)[16] and is needed to reduce salt water intrusion and distribute freshwater within the Terrebonne Basin, an area which is experiencing one of the highest rates of land loss in coastal Louisiana. Accordingly, this project will help to limit the intrusion of salt water into freshwater marsh systems allowing for the maintenance of thousands of acres of wetlands which serve as critical wildlife habitat and nurseries for fisheries. The Houma Navigation Canal ("HNC") Lock Complex will also provide crucial flood protection by blocking storm surge as a key component of the Morganza to the Gulf Hurricane Protection Project.
    - The history of this project as a multipurpose project providing both coastal flood protection and ecosystem restoration benefits can be traced to 1985 when Hurricane Juan caused extensive flooding in Terrebonne and Lafourche parishes.
    - Subsequently, in 1992 a Reconnaissance Study of Morganza to the Gulf was authorized and in 1994 the U.S. Army Corps of Engineers ("USACE") completed the Morganza to the Gulf reconnaissance report (USACE, 1994).
    - Two years later, Section 425 of the Water Resources Development Act of 1996 ("WRDA") (PL 104-303) required the USACE to develop a study of the HNC lock as an independent feature of the Morganza to the Gulf project.
    - In 1997 USACE completed the HNC lock study, which recommended a 200-ft wide lock in the HNC south of Bayou Grand Caillou and concluded that a lock structure would provide direct and indirect benefits to the environmental (marsh) habitat in the study area (USACE, 1997) including maintenance of salinity regimes favorable to area wetlands[17] which would then provide enhanced protection from storm surge inundation over time. (USACE, Morganza to the Gulf Feb. 2015).
    - In 1998 Congress authorized the USACE to initiate detailed design of the multipurpose HNC lock.
    - In 2000, the Preconstruction Engineering and Design phase for the HNC lock was initiated.

[16] This project is also included in the draft 2017 Coastal Master Plan as a hydrologic restoration project (Project 03a.HR.10) and identified at pp. 128 & 140, and at Attachment A, Table 1, and in the draft 2018 Annual Plan (Project TE-0113) at pp. 46 & 60.

[17] Louisiana Coastal Wetlands Conservation and Restoration Task Force and the Wetlands Conservation and Restoration Authority. 1998. Coast 2050: Toward a Sustainable Coastal Louisiana. Louisiana Department of Natural Resources. Baton Rouge, La. 161 pp. 106-107.

- The Morganza to the Gulf Feasibility Study, which includes the HNC Lock Complex, was completed and received a Chief of Engineer's Report in 2002 and supplemental report in 2003.
- Subsequently, the project was authorized under the Water Resources Development Act ("WRDA") in 2007 and received reauthorization for construction in the Water Resources Reform and Development Act ("WRRDA") of 2014.

- Purpose: The HNC Lock Complex is a hydrologic project that will provide several critical purposes in the Terrebonne Basin. One purpose of the project is to reduce salt water intrusion and distribute freshwater within the Terrebonne Basin. An additional purpose of the project is to provide storm surge protection as a part of the Morganza to Gulf system.
- Objectives: Operations to control freshwater distribution will be a key part of the project for the Increase Atchafalaya Flow to Terrebonne project (listed in the Master Plan as 03b.DI.04 and the 2017 Annual Plan as TE-110), a large-scale ecosystem restoration project funded by the National Fish and Wildlife Foundation's Gulf Environmental Benefit Fund. More specifically, the lack of freshwater inputs has contributed to increased saltwater intrusion in this area which has been a significant factor in generating the highest rates of land loss in coastal Louisiana. This project is a hydrologic restoration project which will help to address those problems by reducing salinity in this area. As such, for purposes of Section 4.1.1 of the RESTORE Council's State Expenditure Guidelines ("SEP Guidelines"), the primary eligible activity of the project is to restore and protect the natural resources, ecosystems, fisheries, marine and wildlife habitats and coastal wetlands of the Gulf Coast region. (Eligible Activity (1)). The structure is also a part of the Morganza to the Gulf of Mexico (TE-64) hurricane protection system. Consequently, an additional eligible secondary activity is to provide coastal flood protection by providing storm surge protection. (Eligible Activity (7)). Construction and Operation of the structure will be important to the success of the project purposes and a detailed operations and maintenance (O&M) plan will be included in the design of the project. The O&M of the project will aim to maximize environmental benefits while also making navigation and flood control a priority. Accordingly, this project will contribute to the overall ecological and economic recovery of the Gulf by helping to restore historic salinity regimes in the mid-Terrebonne basin. (*See* Appendix B). Additionally, this project will be carried out in the Gulf Coast Region as defined in 31 C.F.R. §34.2 because it is located in the Terrebonne Basin which is in the coastal zone defined under section 304 of the Coastal Zone Management Act of 1972 that border the Gulf of Mexico. (*See* Appendix B for map for the approximate boundaries of the project influence area).

- Funds Requested: The funds that will be requested for this project from the Spill Impact Component are $366 million over a 15 year period. The estimated project costs are based on the Preliminary Design Report prepared by CB&I, and consist of an estimated Engineering and Design cost of approximately $34 million, an estimated construction cost of approximately $350 million, and an estimated Operations and Maintenance cost of approximately $128.8, million. Importantly, the State will be turning this project over to the local sponsor upon completion of construction; therefore the local sponsor will be responsible for all Operations and Maintenance. Cost estimates for design and operations, monitoring, maintenance and adaptive management are based on percentage estimates of the construction cost. Construction cost estimates reflect preliminary design-level estimates of

construction costs and schedules. As design advances these cost estimates will be revisited and are subject to change. All costs are reported in present dollar values and do not represent inflation or escalation.

Of the estimated engineering and design costs, $18 million is being provided by CPRA State Surplus funds. A remaining amount of approximately $16 million is required to complete the engineering and design effort and will be requested from the RESTORE Council under the Spill Impact Component. The balance of the funds required to complete construction, or approximately $350 million, will be requested from the Council under the Spill Impact Component over a 15 year period. The project costs may change and will be optimized as the project proceeds through the completion of the engineering and design phase.

- High Level Milestones:
    1. 15% Design Package: Project development to the 15% design level.*
    2. Section 404/10 coordination.*
    3. Obtaining environmental permits to implement the Project: Work on this task will begin during the first phase of engineering and design and will continue concurrently with the 15%, and 60% design milestones. This high-level milestone maps to Measures of Success numbers 2 and 4 below.*
    4. 60% Design Package: development of the project to the 60% design level, including Section 408 coordination.
    5. 95% Design Package.
    6. Final Plans and Specs/100% Design
    7. Award of Construction Contract.
    8. Mobilization for Construction.
    9. Completion of Construction.
- Measures of Success: (See also Section VII)
    1. Achieving the 15% design level milestone.*
    2. Completion of a draft Environmental Impact Statement.*
    3. Completion of 60% design package.
    4. Completion of a final Environmental Impact Statement.
    5. Completion of 95% design package.
    6. Completion of Final Plans and Specs/100% Design
    7. Award of Construction Contract.
    8. Mobilization for Construction.
    9. Completion of Construction.
- Estimated Start and Completion Dates:
    1. Project dates assume a start date of January 31, 2016.
    2. 15% design milestone November 30, 2016.*
    3. Completion of draft Environmental Impact Statement August 31, 2017.*
    4. 60% design milestone March 30, 2018.
    5. Completion of Final Environmental Impact Statement July 1, 2018.

6. 95% design milestone January 31, 2019.
7. Completion of Final Plans and Specs/100% Design March 30, 2019
8. Award of Construction Contract July 1, 2019.
9. Construction Mobilization December 31, 2019.
10. Completion of Construction December 31, 2022.

* It is anticipated that these milestones will be funded with State-only funds.

The estimated construction timelines referenced above reflect an aggressive schedule which is driven by CPRA's sense of urgency for implementing large scale restoration projects. Given that RESTORE funds are subject to a 15 year payout, CPRA anticipates that it may need to access alternative funding streams through its Coastal Protection and Restoration Fund which would be reimbursed with RESTORE funds as those become available over time. CPRA is also exploring available accelerated financing options in order to meet the estimated timelines described herein. CPRA is evaluating alternative funding streams and accelerated financing options because, as explained in the Executive Summary above, the RESTORE Council cannot award a project grant for Spill Impact Component funds until sufficient deposits are available for distribution based on the amount of funds shown in the Gulf Coast Restoration Trust Fund Allocation Tables on Treasury's RESTORE Act website.

Adaptive Management – Spill Impact Component (see also Appendix C):

- Need: Adaptive Management is a significant strategy employed at the program level in the 2012 Coastal Master Plan and is contained in the 2017 Annual Plan.[18] Managing complex environments in which the natural and socio-economic systems are highly integrated is inherently difficult. In addition, deltaic environments are uniquely challenged due to the interdependence and delicate balance of water, land and economic systems and future uncertainties regarding the magnitude and rate of climate change impacts. Adaptive Management in deltaic environments encourages an integrated and flexible approach to land and water management that considers risk and uncertainty. It promotes solutions that are sustainable even if conditions change by providing a mechanism for robust decision-making.
- Purpose: Adaptive Management is a key feature of the 2012 Coastal Master Plan process as a business operation strategy and has been presented in the subsequent Annual Plans. As required by state law, the Coastal Master Plan uses an iterative process and must be updated at least every five years to reflect what the state learns over time through monitoring, modeling and the development of new project concepts. As such Adaptive Management is not a project that can be constructed, but a new program being implemented to streamline the implementation of the Coastal Master Plan by maximizing its long-term benefits through institutionalization of the learning process, providing a structured process for resolving uncertainties and integrating new knowledge into the construction

[18] *See* 2012 Coastal Master Plan at pp. 162-165 and 2017 Annual Plan at 42, 68, 69 & Table B-15. This program is also included in the draft 2017 Coastal Master Plan and identified at pp. 128 & 146-151 and Appendix F, and in the draft 2018 Annual Plan at pp. 36-38 & 46.

and operations of projects, and providing adaptation pathways to allow maximum flexibility for future management decisions.

  - Adaptive Management is a strategy that allows for flexibility in implementation as conditions change, allows for resolution of uncertainties to improve future decision-making, and enables the modification of constructed projects while informing the development of future projects.
  - By allowing flexibility in implementation as conditions change, the Adaptive Management program is also essential to the long-term performance of these projects and the achievement of the greatest amount of positive ecosystem improvement.

- Objective: CPRA's Adaptive Management program supports the entire coastal restoration and protection program and transcends individual projects to provide consistency and transparency within and across hydrologic basins. Adaptive Management includes a number of activities that fall into one of the following categories: 1) future project development; 2) focused applied research; 3) science and advisory boards; 4) model development and improvement; 5) system-wide assessment and monitoring program (SWAMP); 6) data management and analysis; and 7) communicating and messaging. These activities are funded by a number of different sources; however RESTORE funds will be utilized for data collection under SWAMP (#5), and data management and analysis (#6). This includes the development and implementation of future SWAMP monitoring plans (exclusive of Barataria Basin), which will be incrementally designed by coastal hydrologic basin, and for data collection activities which transcend basin boundaries. SWAMP parameters fall into the following categories: Weather and Climate; Biotic Integrity (plants and animals); Water Quality; Hydrology; Physical Terrain (LiDAR, bathymetry, land area, etc.); and a number of additional Human Dimension parameters.

  The SWAMP program will provide much of the data (but not all of the data) that will be used to evaluate and manage large-scale projects, such as the HNC Lock Complex and the Calcasieu Ship Channel Salinity Control Measures project. Although these projects may also have project-specific Operations, Maintenance, Monitoring and Adaptive Management plans developed which will draw on the SWAMP program (SWAMP will serve as the backbone of any project-related monitoring needs), there may be additional project-specific monitoring added at the project level (for example, additional variables, or increased frequency of existing variables). However, data management, data availability/sharing, decision-support tool refinement, uncertainty-resolution activities, and other supporting functions will be governed by CPRA's Adaptive Management strategy at the programmatic scale. Accordingly, this Adaptive Management strategy will play a large role in terms of fulfilling the objectives of the HNC Lock Complex and the Calcasieu Ship Channel Salinity Control Measures projects of maintaining thousands of acres of critical marsh environment which provide essential fish and wildlife habitat. This is because the Adaptive Management strategy will enhance the state's ability to monitor, at the program-level scale, how successfully these projects, as well as other large-scale projects included in the CPRA's Master Plan, are restoring and protecting the natural resources,

ecosystems, fisheries, marine and wildlife habitats and coastal wetlands of the Gulf Coast region. (Eligible Activity (8)[19]).

This program will also contribute to the overall ecological and economic recovery of the Gulf because understanding the trajectory of land loss in coastal Louisiana, the causes of that loss, and the effects of efforts to improve this trajectory towards stability and long term sustainability are of critical importance to the state, the Gulf region, and to the nation. Application of Adaptive Management principals to the management of our coast will improve decision-making, will build institutional knowledge and capacity to continually improve our understanding of the system, and will facilitate the informed adjustment of management actions to best achieve long-term sustainability. Long-term restoration and protection, specifically in Louisiana's dynamic coastal environment, must be an ongoing series of management decisions based upon a growing knowledge base of research information, updated measurements of ecosystem responses, and evaluations of degrees of progress in reaching goals and targets. Additionally, this project will be carried out in the Gulf Coast Region as defined in 31 C.F.R. §34.2 because it is located in Louisiana's coastal zone defined under section 304 of the Coastal Zone Management Act of 1972 that borders the Gulf of Mexico. (*See* Appendix C for map for the approximate boundaries of the project influence area).

- Funds Requested: The estimated funds that will be requested for this program from the Spill Impact Component are: approximately $60.9 million over a 15 year period, which is approximately 7.5% of the total estimated funding under the Direct Component and the Spill Impact Component.
    - Adaptive Management Costs include those activities fitting into one or more of the 7 adaptive management activities listed in the Objectives section (above). The ratio, expressed as a percentage, of CPRA's total adaptive management costs (numerator) to its direct cost base (denominator) averaged 7.5% for fiscal years 2011-2014.
    - These funds will be utilized for future data collection under SWAMP, and future data management and analysis as described above. This includes the development and implementation of new SWAMP monitoring plans (exclusive of Barataria Basin), which will be incrementally designed by coastal hydrologic basin, and for new data collection activities within and those which transcend basin boundaries. This is inclusive of contract and CPRA personnel time necessary to manage and administer data collection, management, and analysis activities. These costs are exclusive of any project-specific administrative costs or project-specific monitoring costs that may be necessary for the HNC Lock Complex or the Calcasieu Ship Channel Salinity Control Measures projects.
- High Level Milestones: Major milestones include the collection of data and enhanced data management.
- Measures of Success: CPRA will be implementing adaptive management strategies to increase the body of scientific and technical knowledge about Louisiana's coast and its interaction with natural and human systems. Louisiana's Coastal Master Plan has articulated 5 objectives with which will be used to

[19] The eligible activity for Adaptive Management is Eligible Activity (8) - Planning Assistance, which supports Eligible Activity (1) - Restoration and protection of the natural resources, ecosystems, fisheries, marine and wildlife habitats, beaches and coastal wetlands of the Gulf Coast region.

evaluate success: 1) Flood Protection: Reduce economic losses from storm surge based flooding to residential, public, industrial, and commercial infrastructure; 2) Natural Processes: Promote a sustainable coastal ecosystem by harnessing the natural processes of the system; 3) Coastal Habitats: Provide habitats suitable to support an array of commercial and recreational activities coast wide; 4) Cultural Heritage: Sustain, to the extent practicable, the unique cultural heritage of coastal Louisiana by protecting historic properties and traditional living cultures and their ties and relationships to the natural environment; and, 5) Working Coast: Promote a viable working coast to support regionally and nationally important businesses and industries. Additionally, as discussed above, CPRA's development of SWAMP as a component of its adaptive management framework will orchestrate the collection and management of natural and human system information to evaluate these criteria. *See also* Section VII.

- Projected Start and Completion Dates: Adaptive Management will be an on-going strategy at the program-level scale. However, some key timelines for the program as a whole include the implementation of SWAMP in Barataria Basin in 2015, the development/design of SWAMP on the east side of the Mississippi River in 2016, followed by implementation of new SWAMP activities on the east side of the Mississippi River beginning in 2017. In addition, further development of SWAMP monitoring plans for other coastal basins (west of Bayou Lafourche) will occur, followed by implementation of those plans as they are developed. The SWAMP and data management and analysis components of CPRA's Adaptive Management Program will be ongoing and will provide critical information to support CPRA's restoration and protection efforts.
- References:

Hijuelos, A.C. & Hemmerling, S.A. 2015. Coastwide and Barataria Basin Monitoring Plans for Louisiana's System-Wide Assessment and Monitoring Program (SWAMP), Version II. The Water Institute of the Gulf. Prepared for and funded by the Coastal Protection and Restoration Authority (CPRA) under Task Order 6, Contract No. 2503-12-58. Baton Rouge, LA.

The Water Institute of the Gulf. 2013. Adaptive Management Framework for Coastal Louisiana. The Water Institute of the Gulf. Produced for and funded by the Coastal Protection and Restoration Authority under Task Order 9, Contract No. 2503-12-58. Baton Rouge, LA.

CPRA-Parish Matching Opportunities Program – Spill Impact Component (see also Appendix D):

- Need: The CPRA recognizes (i) the importance of parish-state partnerships in working together to achieve comprehensive integrated coastal protection as identified in Louisiana's Coastal Master Plan, as well as (ii) the fact that because Louisiana's Coastal Master Plan is a resource-limited approach to coastal restoration and protection, it is not possible to include every beneficial project in the Coastal Master Plan.
- Purpose: This CPRA-Parish Matching Opportunities Program is designed to help coastal parishes who will receive RESTORE funds under the Direct Component prioritize Coastal Master Plan projects with those funds, while also recognizing and responding to the needs of parishes to implement projects that

may not be specifically contained in the Coastal Master Plan but are nevertheless consistent[20] with the Coastal Master Plan and are included in Parish RESTORE Act Multiyear Implementation Plans. *See* La. R.S. 49:214.1 *et seq.*[21] This approach will allow the CPRA to connect large scale projects with strategic local projects in a way that can maximize efficiencies and the impact of RESTORE Act funds in accordance with La. R.S. 49:214.5.4(G).

- Objective: The CPRA intends to allocate a total of up to $100 million, over a 15 year period, from the Spill Impact Component of the RESTORE Act for project and program matching opportunities for eligible parishes (i.e. those identified in 33 U.S.C. §1321(t)(1)(D)(i)(II)) to conduct one or more eligible activities as defined by the RESTORE Act (i.e. those identified in 33 U.S.C. §1321(t)(B)(i)).
- Funds Requested: The total funds that will be requested for the matching program are estimated to be up to approximately $100 million from the Spill Impact Component over a 15 year period, with an initial solicitation in the summer of 2017 of up to $20 million for parish matching projects. This RESTORE Plan will be updated and amended, as approved by the CPRA Board, as projects proposed under the CPRA-Parish Matching Opportunities Program are selected for funding. Any projects selected for funding under the CPRA-Parish Matching Opportunities Program as an amendment to this Plan will be subject to a forty five (45) day public comment period in accordance with Section III of this Plan before their selection is finalized by CPRA. Funds will be formally requested from the RESTORE Council through the grant process after specific matching projects have been solicited, identified, publicly reviewed and selected and the amendment to this Plan including those specific projects has been approved by the RESTORE Council.
- Projected Start and Completion Dates: The projected start and completion dates will be determined based on the projects or programs selected.

The project-specific information provided above for the Calcasieu Ship Channel Salinity Control Measures project will be provided to Treasury using its RESTORE Direct Component Matrix (*see Appendix E*) and its RESTORE Act Direct Component Narrative (*see Appendix F*). The project-specific information provided above for the HNC Lock Complex, Adaptive Management and the CPRA-Parish Matching Opportunities projects will be provided to the RESTORE Council using the project information templates available on the Council's website, including the Project Narrative Template and Milestones Template.

VI. PROCESS FOR PRIORITIZING AND SELECTING PROJECTS

The CPRA developed a robust decision-making process to ensure that formulation of the 2012 Coastal Master Plan was based on the best science and technical information available, while still incorporating an extensive public outreach campaign. This same process also informed the prioritization and selection of projects for funding under the Annual Plan and this RESTORE Plan specific to the RESTORE Act. More specifically, the

[20] To be considered consistent with the goals and objectives of the Coastal Master Plan, the proposed project must strive to achieve one or more of the Coastal Master Plan's objectives and must not detrimentally affect, significantly diminish or otherwise conflict with integrated coastal protection projects or the benefits of projects intended to protect, conserve or enhance coastal areas. This consistency determination will be made by CPRA on a case by case basis and at the sole discretion of CPRA.

[21] This program is also included in the draft 2017 Coastal Master Plan at p. 128, and in the draft 2018 Annual Plan at p. 46.

process was guided by clearly-articulated objectives developed for the 2007 Master Plan and by planning principles developed to aid in meeting those objectives. The objectives were clearly defined to reflect key issues affecting communities in and around Louisiana's coast:

1. Reduce economic losses from storm surge flooding,
2. Promote a sustainable coastal ecosystem by harnessing the natural processes of the system,
3. Provide habitats suitable to support an array of commercial and recreational activities coast wide,
4. Sustain the unique cultural heritage of coastal Louisiana, and
5. Promote a viable working coast to support regionally and nationally important businesses and industries.

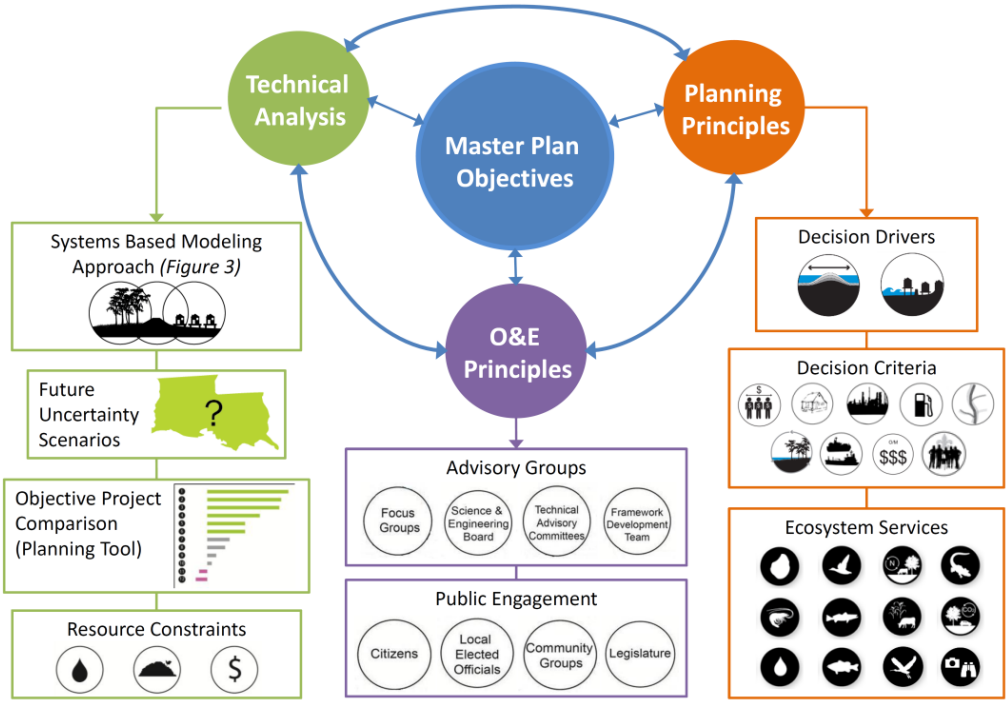


Figure 1. The decision-making process is a complex interaction of input and feedbacks between a technical analysis, outreach and engagement (O&E) and planning principles. The overall goal of the Master Plan is defined by the objectives. The systems-based modeling approach, future uncertainty scenarios, planning tool and resource constraints all contribute to the technical data needed for the decision-making process. The planning principles and formulation involve decision drivers, decision criteria and ecosystem services metrics, as described in the methods section, which help determine the [Coastal Master] plan's ability to meet the objectives. The O&E strategy was designed to ensure public input and acceptance throughout the decision-making process and multiple groups were involved in defining and reviewing the technical analysis and plan formulation (Peyronnin et al. 2013).

Evaluating Projects

The purpose for the 2012 Coastal Master Plan was to identify coastal protection and restoration projects that would improve the lives of coastal residents by creating a more resilient south Louisiana. Achieving this goal

required new tools that helped us better understand our coast and how projects could provide benefits. The coast is a complex system. We needed to better understand how it is changing today and the kinds of changes we can expect in the future. We also had hundreds of project ideas and different views about how to move forward, and needed a way to sort through our many options and find those that would work best for us.

To meet these needs, CPRA used a systems approach to coastal planning and a science-based decision making process that resulted in a plan that was both funding- and resource- constrained. These tools helped us understand the practical implications of different project options and how gains in one area might create losses in another. Based on the preferences we wanted to explore, our tools helped identify strategies for investing in coastal protection and restoration projects. This analysis improved our understanding of how projects were affected by: our budget and the river water and sediment that we have to work with. We also used the tools to consider possible future coastal conditions that could affect the way our projects operate, along with other factors such as construction time.

The Predictive Models

The 2012 Coastal Master Plan analyzed both protection and restoration measures, which influenced the models we selected and how they work. To estimate risk reduction outcomes, we used models that evaluated storm surge and the risk of expected annual damages. To estimate restoration outcomes, the models looked at how land changes throughout the coast—where land is building and where it is disappearing. These models examined how water moves through the coastal system as well as how salt and fresh water affect vegetation and habitats for key species and ecosystem services.

The integrated suite of Predictive Models developed for the Coastal Master Plan assessed how Louisiana's coastal landscape may change and how much damage communities may face from storm flooding over the next 50 years if we take no further action and for comparison then assessed how the coastal ecosystem and our level of risk could change if certain risk reduction and restoration projects are constructed. The models incorporated what we know about the way the coast works, and they made it easier to identify projects that best achieve our objectives.

Ecosystem services are benefits that the environment provides to people. In Louisiana, these range from providing the right habitats for oysters and shrimp to nature-based tourism. We could not detail the economic aspect of ecosystem services in our analysis. Instead, we focused on proxy characteristics of the coast, such as provision of habitat (i.e. habitat suitability indices) and other factors that can support ecosystem services.

The Predictive Models used in the Coastal Master Plan were organized into seven linked groups (Figure 2), involving the work of over 60 scientists and engineers. Each group worked on a different aspect of how the coastal system changes over time. Our effort was based on existing models where they were appropriate. New models were developed for vegetation, nitrogen uptake, barrier shorelines, flood risk, and to reflect potential for nature based tourism, fresh water availability, and support for agriculture/ aquaculture.

The models were designed to work together, following the precedent set by earlier state planning efforts, such as the Coastal Louisiana Ecosystem Assessment and Restoration ("CLEAR") work conducted for the Louisiana Coastal Area Study (Nuttle et al., 2004; USACE, 2004). We also found new ways to link the expanded

set of models to more fully capture how the coast works as a system. The level of modeling in the 2012 Coastal Master Plan was a significant technical achievement in the systems approach, the linked nature of the models, and in the breadth of subjects evaluated.

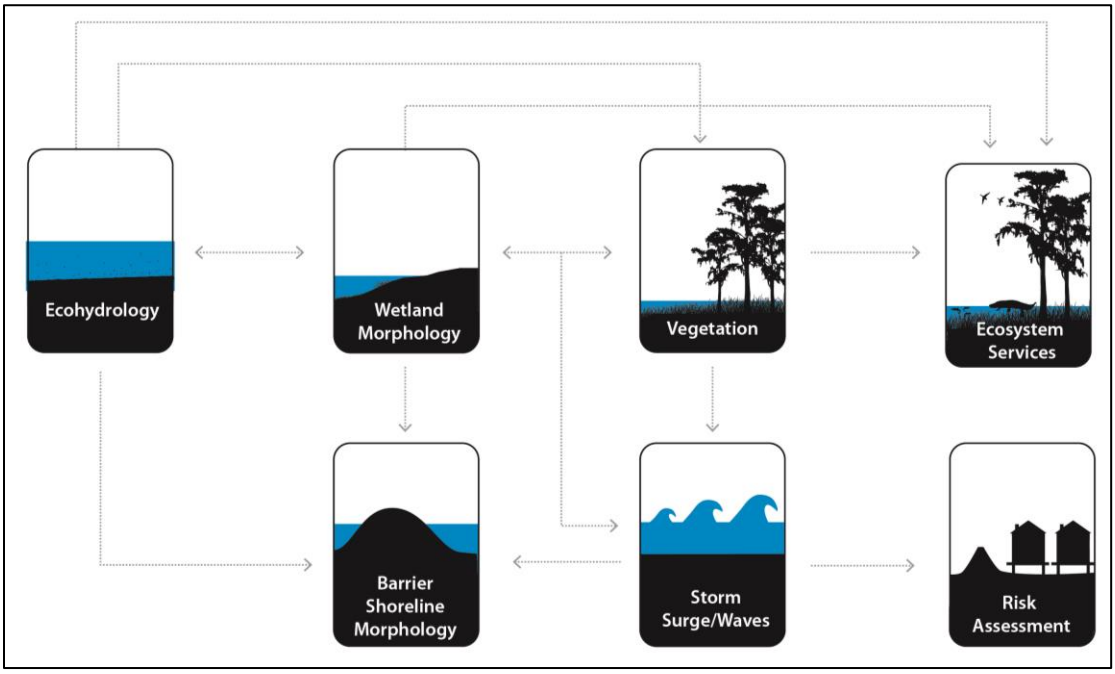


Figure 2. 2012 Master Plan predictive model groups (Meselhe et al. 2013, Couvillion et al. 2013, Visser et al. 2013, Nyman et al. 2013, Cobell et al. 2013, Johnson et al. 2013).

Future Environmental Scenarios

Many factors that will have a profound effect on the future of Louisiana's coast cannot be easily predicted or are outside of our control. These include factors such as subsidence and the levels of nutrients in the river, as well as the effects of climate change, such as sea level rise, changes in rainfall patterns, and storm frequency and intensity. Climate change was central to our analysis, given coastal Louisiana's vulnerability to increased flooding and the sensitivity of its habitats.

To account for these factors when developing the Coastal Master Plan, we worked with experts to develop two different sets of assumptions or scenarios. These scenarios reflect different ways future coastal conditions could affect our ability to achieve protection and build land:

- **Moderate scenario - assumed limited changes in the factors on the facing page over the next 50 years.**
- **Less optimistic scenario - assumed more dramatic changes in these factors over the next 50 years.**

The Planning Tool

The Planning Tool, in concert with the modeling effort, offered a way to examine projects. The model results, represented by terabytes of data, are the building blocks of the 2012 Coastal Master Plan. We needed a user-friendly way to sort and view these results so that we could identify groups of projects to examine in greater

detail. The Planning Tool is a decision support system that helps the state choose smart investments for the coast. The tool integrates information from the models with other information such as funding constraints, compares how different coastal restoration and risk reduction projects could be grouped, and allows us to systematically consider many variables (e.g., project costs, funding, landscape conditions, and stakeholder preferences). These science-based tools help us understand the practical implications of different project options. Based on the outcomes, our tools suggested a strategy for investing in coastal flood risk reduction and restoration projects. As part of this strategy, the tools considered the constraints, such as the limited money, water, and sediment that we have to work with. The tools also considered possible future conditions that will affect the way our projects operate, along with other important factors such as construction time and how combinations of projects will work together. These results were translated so that citizens and state leaders could understand the projects' real world effects.

We used predictive models and the Planning Tool to help us select 109 high-performing projects that could deliver measurable benefits to our communities and coastal ecosystem over the coming decades. The Planning Tool was designed to translate the models' scientific output and show the practical implications of different options. Decision making for the plan followed directly from this analysis.

VII. EVALUATION OF THE SUCCESS OF THE SELECTED ACTIVITIES

At the project-level scale, performance measures will track the progress towards meeting management goals and objectives. Establishment of detailed monitoring requirements will be finalized for the Calcasieu Ship Channel Salinity Control Measures and the Houma Navigation Canal Lock Complex projects upon completion of the engineering and design phase of these projects. Monitoring for the Calcasieu Ship Channel Salinity Control Measures will likely include surface and marsh porewater salinity, which can use previous studies, including work done as part of the Southwest Coastal Louisiana Study to establish background conditions for comparison of project effects. Other monitoring parameters for these projects could include water level conditions in emergent marshes, local hydrodynamics near project features, and fish and wildlife monitoring. Monitoring parameters for the Houma Navigation Canal Lock Complex project are in development and will likely also include surface and marsh porewater salinity, water level conditions, and local hydrodynamics near project features.

The monitoring requirements for the CPRA-Parish Matching Opportunities Program will be tailored to the specific projects and programs ultimately selected for funding.

Adaptive Management will be conducted at both the project-scale and at the larger program-scale. At the project scale, adaptive management will also guide operations and/or modifications to specific projects to make these projects more effective. At the program-scale, it will allow CPRA (as an agency) to monitor agency projects over time and tailor performance measures to help reduce uncertainty surrounding predictive models and inform whether intended results are being achieved or if additional actions are needed to fulfill program expectations. As a program, Adaptive Management will help us learn from our experiences, learn from the responses to management actions that we see, learn from new and relevant science that may become available, and build institutional knowledge that will transcend the careers of individuals. At the program

scale, Adaptive Management could affect the projects that CPRA selects as well as the implementation sequence for projects to improve the collective effectiveness of the entire program.

As part of its Adaptive Management program, CPRA is currently working with The Water Institute of the Gulf to more fully develop a System-Wide Assessment and Monitoring Program ("SWAMP") that will bring existing monitoring and assessment programs under one comprehensive umbrella in an effort to avoid duplication and improve efficiency. SWAMP is envisioned to be a scalable program that will allow for data assessments to be completed at the project-, basin-, and program-scales. Individual projects will generate monitoring plans which will nest within the larger SWAMP framework and will allow for periodic assessment of project performance against performance expectations. Concurrent with this effort, existing monitoring programs, such as Coastwide Reference Monitoring System ("CRMS") and Barrier Island Comprehensive Monitoring ("BICM") programs are being incorporated into the SWAMP design framework, and projects that require monitoring strategies are being informed and nested within this overall framework. That is not to say that some projects will not require additional monitoring to supplement SWAMP; however, SWAMP will provide the backbone to facilitate comprehensive programmatic performance assessment.

VIII. CONFLICTS OF INTEREST AND FINANCIAL INTEGRITY

The State of Louisiana maintains rigorous conflicts of interest standards which apply to the CPRA, any subgrantee who receives funds for a project or program described in this RESTORE Plan and any contractor who performs work on a project described in this Plan. Accordingly, the CPRA, which has developed this Plan and will be responsible for the implementation of the projects and programs described herein, and any subgrantee or contractor who performs work on a project described in this Plan shall comply with all applicable requirements of Chapter 15 of Title 42 of the Louisiana Revised Statutes (La. R.S. 42:1101 *et seq.,* Code of Governmental Ethics) Louisiana's dual employment prohibitions, La. R.S. 42:61 *et seq.*, 2 C.F.R. §200.318(c), and shall use best practices to guard against conflicts of interest in accordance with Louisiana and Federal law. The CPRA, any subgrantee who receives funds for a project or program described in this Plan and any contractor who performs work on a project described in this Plan shall also comply with all applicable provisions of the U.S. Department of Treasury's RESTORE Act regulations, 31 C.F.R. Part 34, Treasury's RESTORE Act Financial Assistance Standard Terms and Conditions and Program-Specific Terms and Conditions, the RESTORE Council's Financial Assistance Standard Terms and Conditions, and any applicable project- or program-specific Special Award Conditions from Treasury or the RESTORE Council.

The CPRA transitioned to a new accounting system called LaGov on July 1, 2014. LaGov is Louisiana's financial and procurement system that integrates financial, human resources/payroll, procurement and logistics, and brings multiple benefits to CPRA, most importantly, system-generated project accounting. Other important advantages are increased visibility for management of federal grants and other funding sources, improvements in managing vendor relationships, improved reporting, and more efficient business processes. The CPRA is very experienced with managing federal grants and fully complies with all applicable provisions of the Uniform Guidance (2 C.F.R. Part 200) related to administration, cost principles and audit requirements. The CPRA, any subgrantee who receives funds for a project or program described in this Plan and any contractor who performs work on a project described in this Plan shall also comply with all applicable

provisions of the Louisiana Public Bid Law, La. R.S. 38:2211 *et seq.* and the Louisiana Procurement Code, La. R.S. 39:1551 *et seq*.

The CPRA, any subgrantee who receives funds for a project or program described in this Plan and any contractor who performs work on a project described in this Plan shall maintain all books and records pertaining to work performed under this Plan for a period of five (5) years after the date of final payment under a prime contract and any subcontract entered into for work performed under this Plan. Treasury, the Treasury Office of Inspector General, the Government Accountability Office, and the RESTORE Council will have the right to access any documents, papers or other records, including electronic records that are pertinent to the projects or programs described in this Plan in order to make audits of such documents. Additionally, the Legislative Auditor of the State of Louisiana, the auditors of the Office of the Governor, Division of Administration, and the Office of the Inspector General shall have the authority to audit all records and accounts of the state and any subcontractors which relate to work performed under this Plan. Any audit shall be performed in accordance with La. R.S. 24:513 *et seq*.

In accordance with 31 C.F.R. §34.803(a), any indication of fraud, waste, abuse, or potentially any criminal activity pertaining to grant funds shall be reported to Treasury and the Treasury Inspector General. Additionally, in accordance with La. R.S. 24:523.1, any actual or suspected misappropriation, fraud, waste or abuse of public funds shall be reported to one of the following:

Toll-Free Phone: 1-844-50-FRAUD (1-844-503-7283);

Or FAX to: 1-844-40-FRAUD (1-844-403-7283);

Or report via U.S. Mail: LLA Hotline
P. O. Box 94397
Baton Rouge, LA 70804

In assessing the capability of third party entities that will implement activities in the Plan as required under 31 C.F.R. §34.503(b)(2), the CPRA will follow all state standard procurement rules and regulations, including all applicable competitive bidding and audit requirements.

IX. STATE CERTIFICATION OF RESTORE ACT COMPLIANCE

In accordance with the Section 5.2.2 of the RESTORE Council's SEP Guidelines, the State of Louisiana hereby certifies that all projects, programs, and activities included in this Plan are eligible activities as defined by the RESTORE Act and meet the requirements listed in Sections 4.1 and 4.1.1 of the SEP Guidelines. Additionally, the process used to verify that the projects, programs, and activities meet these requirements is described in Sections II, V and VI of this Plan. The State of Louisiana further certifies that issues crossing Gulf State boundaries have been evaluated to ensure that a comprehensive, collaborative ecological and economic recovery is furthered by this Plan. Likewise, the State hereby certifies that: (i) this Plan complies with the RESTORE Council's SEP Guidelines, (ii) all activities in this Plan contribute to the overall economic and ecological recovery of the Gulf Coast, and (iii) all activities will be carried out in the Gulf Coast Region in

accordance with the requirements of 31 C.F.R. §§ 34.503(b)(5) and 34.203. The State also certifies that, pursuant to Section 4.2.2 of the SEP Guidelines and in accordance with 33 U.S.C. §1321(t)(3)(B)(ii)(I) and 31 C.F.R. § 34.503(f), no more than 25 percent of funding under the Spill Impact Component will be used to pay for infrastructure projects.

X. AMENDMENTS TO THE RESTORE PLAN

This RESTORE Plan will be updated and amended, as approved by the CPRA Board, as additional projects and programs, such as projects proposed under the CPRA-Parish Matching Opportunities Program, are proposed for funding under this Plan or as other material modifications are made to this Plan.

Any amendments to this Plan will be subject to a forty five (45) day public comment period in accordance with Section III of this Plan before their selection is finalized by CPRA.

XI. CONTACT INFORMATION

For any questions about this RESTORE Plan, please contact:

Chris Barnes
Legal Advisor
Governor's Office for Coastal Activities
225.342.9036 (office)
chris.barnes@la.gov

XII. PUBLIC COMMENT

Additional information about the public comment received during the public comment period referenced in Section III is attached in Appendix F, Question 2 and Appendix G.

APPENDIX A – CALCASIEU SHIP CHANNEL SALINITY CONTROL MEASURES

Project Scope and Elements

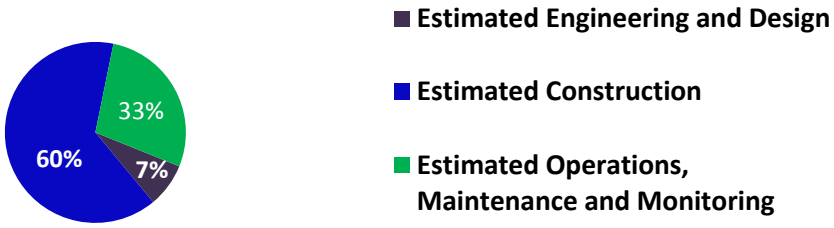
- The purpose of this project is to manage saline water being introduced through the Calcasieu Ship Channel into adjacent water bodies to reduce the rate of wetland loss in the surrounding wetlands and restore and protect this ecosystem.
- Earthen, rock and sheet-pile structures will be constructed along the Calcasieu River ship channel to reduce the exchange of saline water between the channel and adjacent waters.
- The project is expected to maintain over 21,000 acres of wetlands over 50 years compared to the Future Without Action.

Ecosystem Outcomes and Economic Impacts

- The Chenier Plain has been greatly impacted by the construction of navigation channels, which has raised salinity levels and increased erosion in marshes surrounding Calcasieu Lake.
- Salinity control will improve the integrity of marshes, which provide habitat to commercially important wildlife. Reducing wetland loss will preserve areas of National interest including Cameron Prairie and Sabine National Wildlife Refuges.
- Preserving wetlands will help to protect the communities and critical infrastructure along the ship channel.

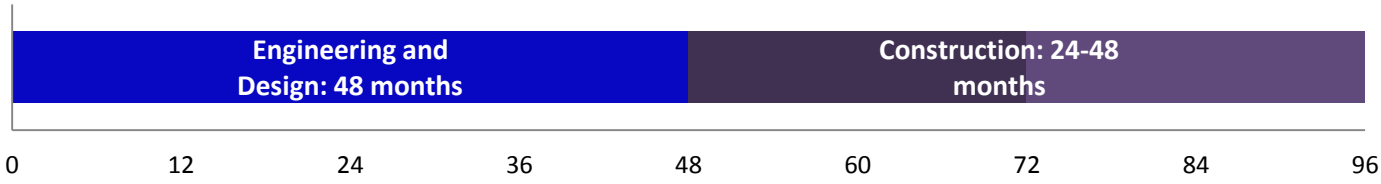
Costs

- Estimated Engineering and Design: $36.4 million
- Estimated Construction: $262.8 million
- Estimated Operations, Maintenance and Monitoring $141.9 million (50 years)

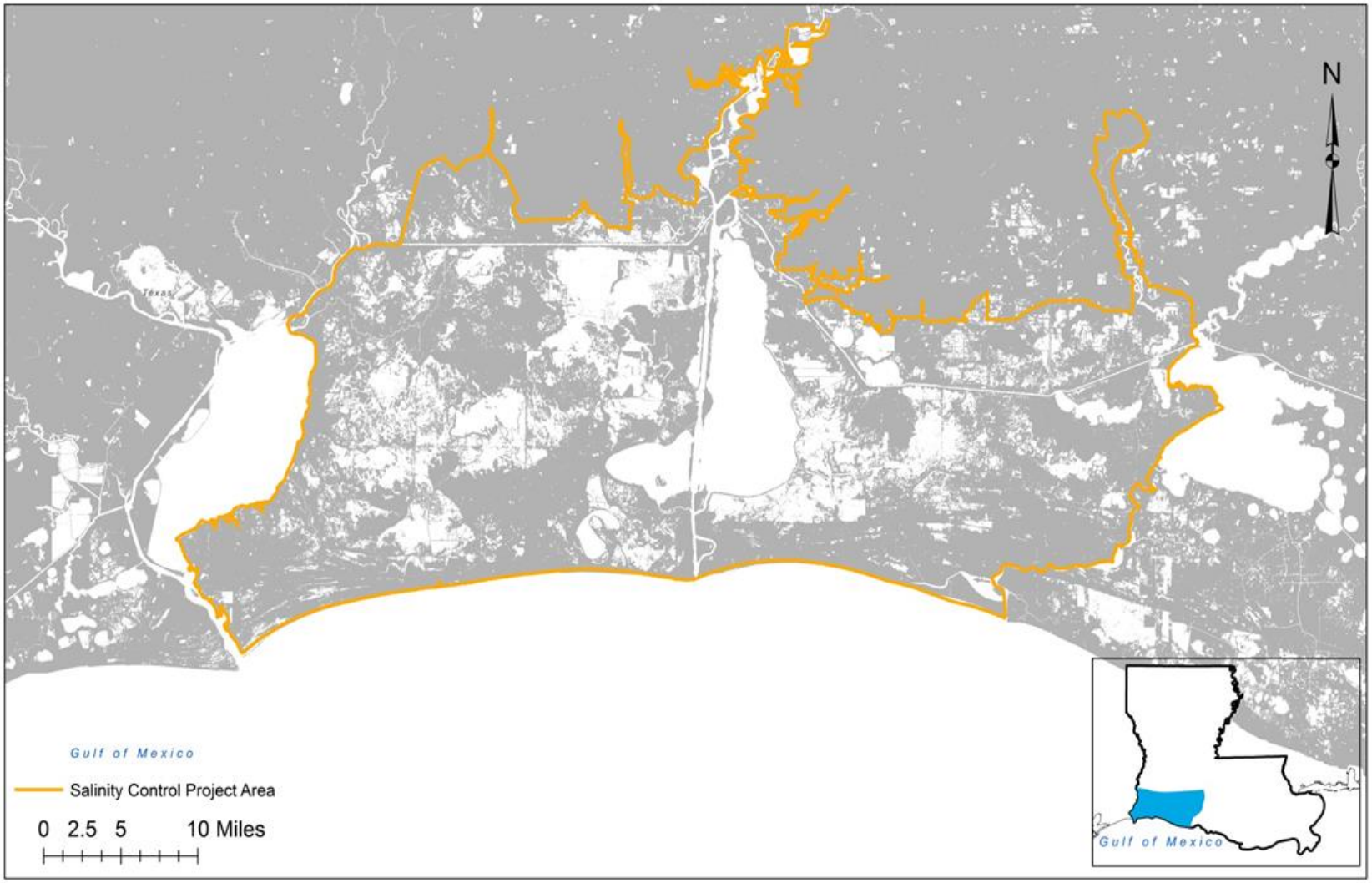


Implementation Timeline

Engineering and Design: 36-48 months
Construction: 24-48 months



Calcasieu Ship Channel Salinity Control Measures



APPENDIX B – HOUMA NAVIGATION CANAL LOCK COMPLEX

Purpose

The Houma Navigation Canal Lock Complex is a hydrologic project that will provide several critical purposes in the Terrebonne Basin:

- One purpose of the project is to reduce salt water intrusion and distribute freshwater within the Terrebonne Basin.
- The project will also provide storm surge protection as a part of the Morganza to Gulf system.
- The structure will consist of a lock for everyday traffic and a wider flood gate for larger vessels as needed. The flood gate will have the ability to be opened or closed as needed to maximize freshwater distribution within the basin.

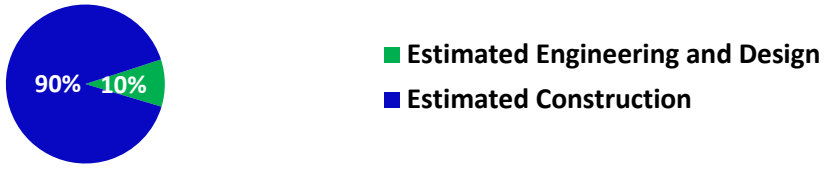
Ecosystem Outcomes and Economic Impacts

- The Terrebonne Basin is experiencing one of the highest rates of land loss in coastal Louisiana. By working synergistically with the TE-110 project this project will help to restore and protect this fragile ecosystem.
- This project will help to restore historic salinity regimes in the mid-Terrebonne basin.
- Operations to control freshwater distribution will be a key part of the project for the Increase Atchafalaya Flow to Terrebonne (TE-110) project.
- The structure is a part of the Morganza to the Gulf of Mexico (TE-64) hurricane protection system.
- Construction and Operation of the structure will be key to the success of the project purposes.

Costs[1]

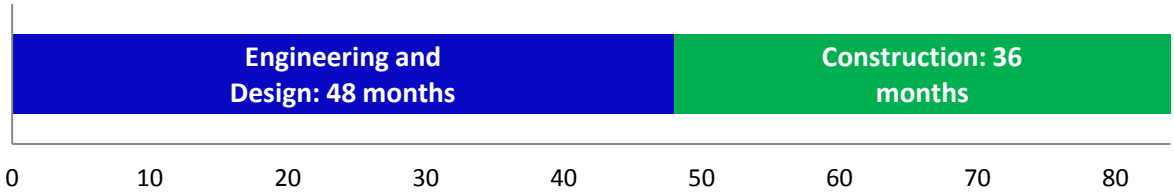
- Estimated Engineering and Design: $34 million
- Estimated Construction[2]: $350 million

1. estimate based off of alternative 3 from URS Optimization Study
2. construction costs do not include construction admin and inspection

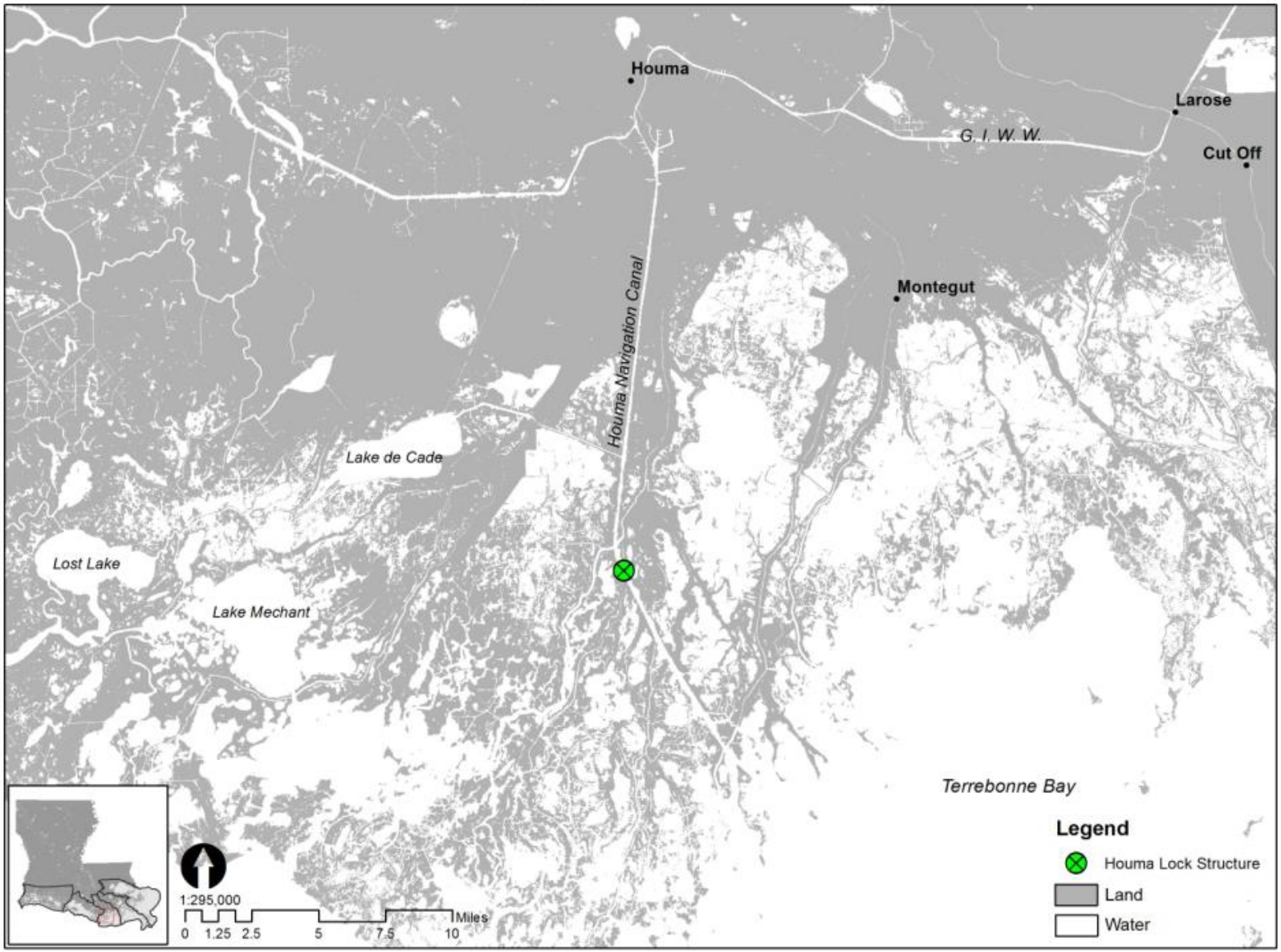


Implementation Timeline

Engineering and Design: Spring 2016 through spring 2019
Construction: Winter 2019 through winter 2022



Houma Navigation Canal Lock Complex



APPENDIX C – ADAPTIVE MANAGEMENT

Purpose

- Predicting the success of restoration projects is an inexact science and environmental systems are inherently complex and non-linear. The purpose of Adaptive Management is to systematically improve our knowledge base and our understanding of how the ecosystem responds to restoration and protection projects, enabling ongoing learning from outcomes and facilitating adjustments and improvements in future decision making capabilities. This will allow the CPRA to more effectively accomplish the restoration and protection of Louisiana's fragile ecosystems.
- Project and program assessment, communication, and feedback loops are critical to CPRA's Adaptive Management strategy and affect every step in project and program implementation. Therefore, supporting efforts, such as focused applied research, science advisory boards, and modeling tool development, are critical. CPRA's Adaptive Management Strategy includes the development of a System-Wide Assessment and Monitoring Program (SWAMP) which will help streamline the implementation of the Master Plan and maximize its long-term benefits by: institutionalizing the learning process; providing a process for resolving uncertainties and integrating new knowledge into the construction and operations of projects; and providing adaptation pathways to allow maximum flexibility for future management decisions.
- The SWAMP program will provide much of the data that will be used to evaluate and manage large-scale projects, such as the Calcasieu Salinity Control Measures and Houma Navigation Canal Lock Complex Projects.

Ecosystem Outcomes and Economic Impacts

- In a complex ecological and socio-economic system such as coastal Louisiana, uncertainties in future conditions due to the dynamics of riverine and marine processes, climate change, population growth, economic activity, and ongoing human reliance on the natural resources of the coast, make restoration and protection inherently challenging.
- Adaptive Management encourages the integrated and flexible approach to land and water management that considers risk and uncertainty. It promotes solutions that are sustainable even if conditions change by providing a mechanism for robust decision making. Adaptive Management provides a structured process for making decisions over time through active learning and enables adjustments in program implementation as new information becomes available, thereby allowing the flexibility to make adjustments to the implementation of the Master Plan as conditions change and knowledge increases about the environment and socio-economic conditions.

Costs

- The value that Adaptive Management provides to large-scale ecosystem programs is immeasurable. Building knowledge about ecosystems and how they respond to management actions, directing research to answer questions about uncertain ecological relationships, and communicating new knowledge and information to the resource managers that make decisions are all activities that will improve the success of ecosystem restoration and protection programs.
- CPRA generated a total annual cost for Adaptive Management activities from 2011 through 2014. The amount of funding required for these activities is projected to continue to rise until leveraging opportunities and economies of scale are fully developed. Expenditures related to Adaptive Management activities between 2011 and 2014 have averaged 7.5% of the project implementation cost. These program costs are exclusive of any project-specific administrative costs or project-specific

monitoring costs that may be necessary for the HNC Lock Complex or the Calcasieu Ship Channel Salinity Control Measures projects.

Implementation Timeline

- Adaptive Management does not lend itself to being characterized by a typical project timeline. Adaptive Management represents a lifestyle change where routine activities support and utilize a growing body of scientific and technical knowledge to assess and improve program effectiveness. Some aspects of Adaptive Management are already being implemented by CPRA; nevertheless, expansion of this capacity is contingent on available funding. Once initiated, however, there is no anticipated end date for Adaptive Management activities.

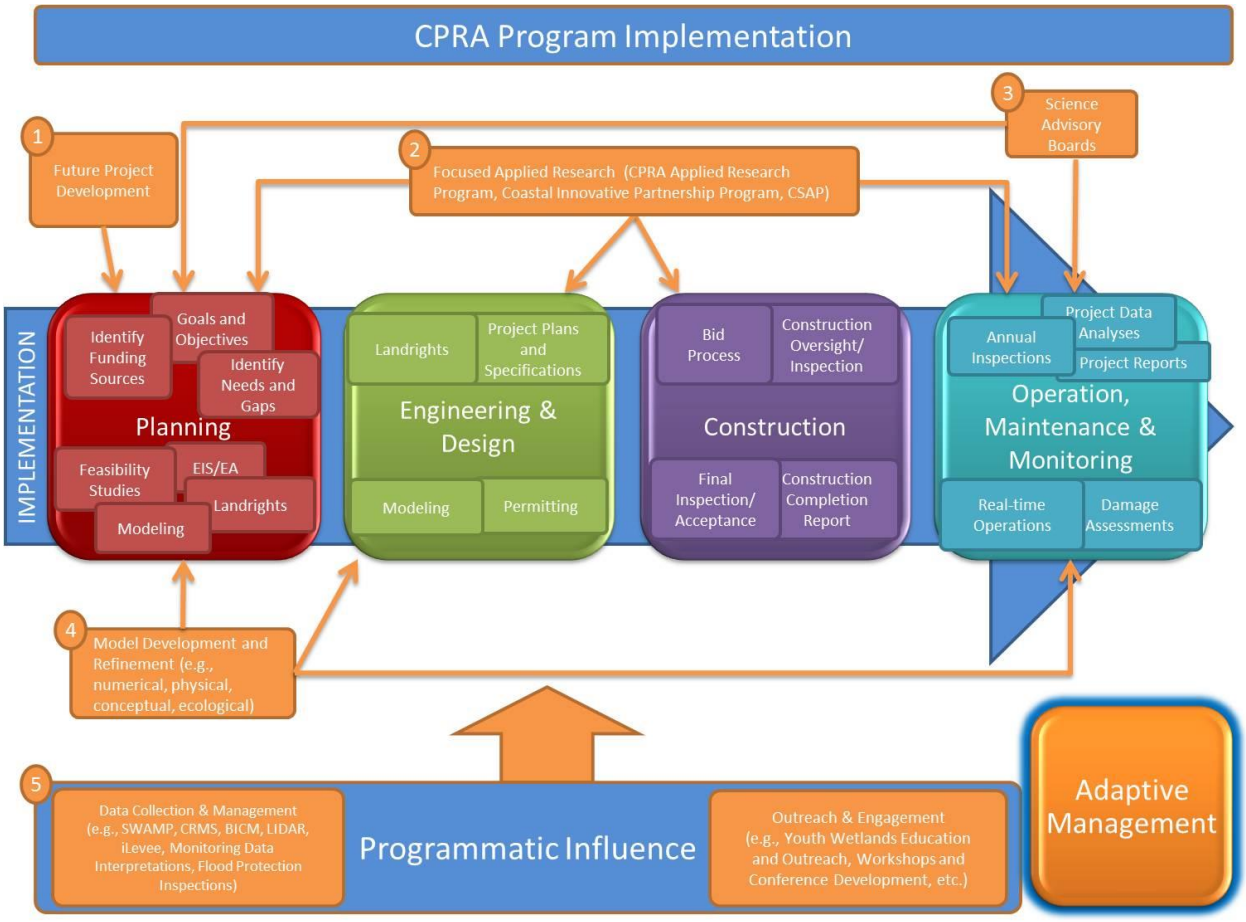
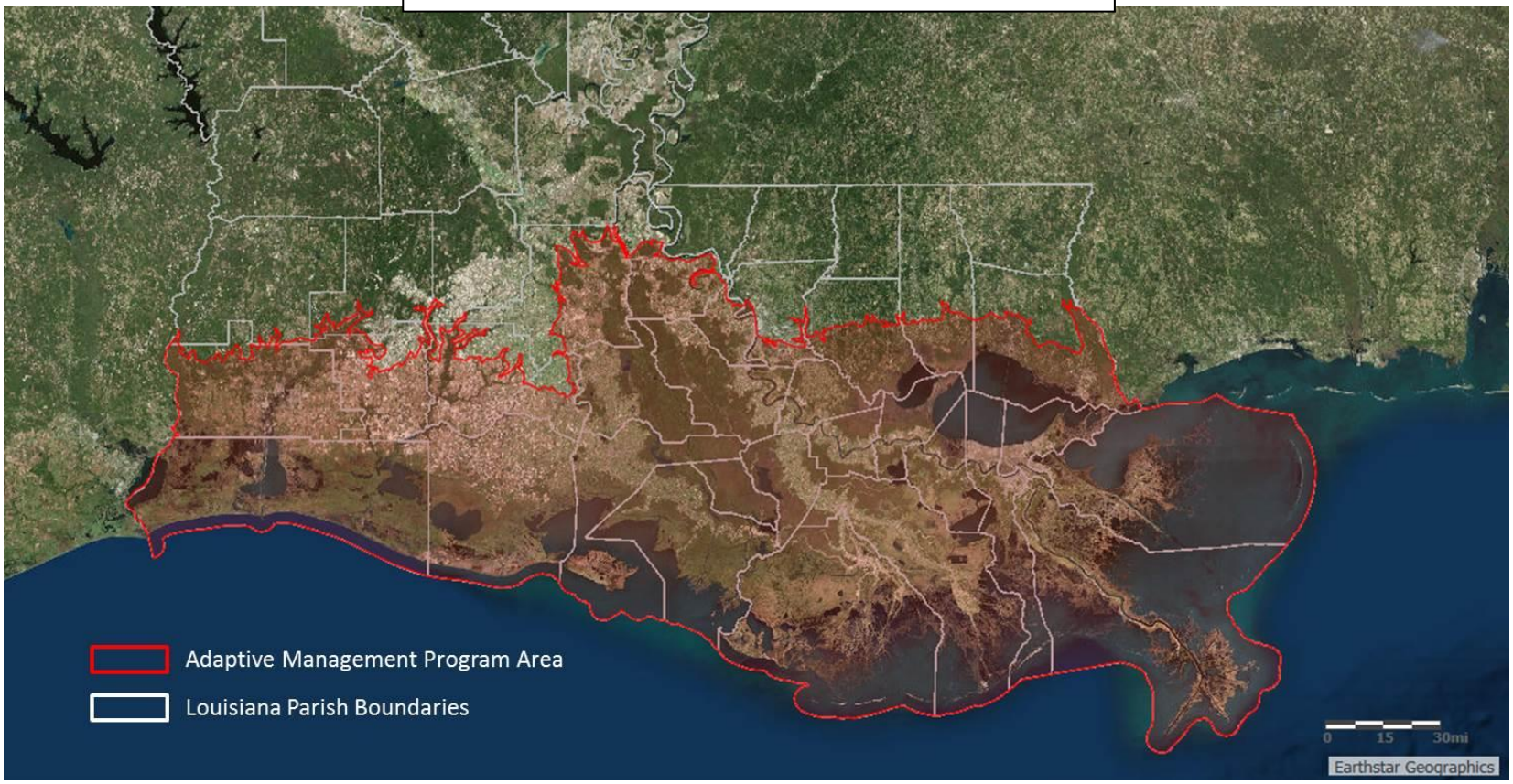


Figure 1. CPRA's program implementation process illustrating how Adaptive Management activities (shown in orange) support both projects and collective program implementation. Specific activities include: future project development, focused applied research, science advisory boards, model development, data collection and management, and outreach and engagement.

Adaptive Management Program Area



APPENDIX D – PARISH MATCHING PROGRAM

CPRA-Parish RESTORE Act Matching Opportunities Program

The Coastal Protection and Restoration Authority ("CPRA") has elected to allocate an amount of up to $100 million, over a 15 year period, from the Spill Impact Component of the RESTORE Act for project and program matching opportunities for coastal parishes who are receiving RESTORE funds under the Direct Component (i.e. those parishes identified in 33 U.S.C. §1321(t)(1)(D)(i)(II)).

The total funds anticipated to be used for the CPRA-Parish Matching Opportunities Program are up to $100 million over a 15 year period, with an initial solicitation in the summer of 2017 of up to $20 million for parish matching projects. Because each project and each eligible parish has its own unique set of circumstances there will be no predetermined match percentage. However, the CPRA anticipates that it will offer a higher match percentage for those projects or programs that are proposed by an eligible parish for matching by state funds from the Spill Impact Component of the RESTORE Act if that project or program is identified in Louisiana's Coastal Master Plan in effect at the time of the proposal, and a lower match percentage for those projects that are not identified in the Master Plan but are consistent with the Master Plan. To be considered consistent with the goals and objectives of the Coastal Master Plan, the proposed project must strive to achieve one or more of the Coastal Master Plan's objectives and must not detrimentally affect, significantly diminish or otherwise conflict with integrated coastal protection projects or the benefits of projects intended to protect, conserve or enhance coastal areas. This consistency determination will be made by CPRA on a case by case basis and at the sole discretion of CPRA.

This matching program is designed to help parishes that receive RESTORE funds under the Direct Component prioritize Coastal Master Plan projects with those funds while also recognizing and responding to the needs of parishes to implement projects that may not be specifically contained in the Master Plan, but are nevertheless consistent with the Coastal Master Plan and are included in Parish RESTORE Act Multiyear Implementation Plans. This approach will also allow the CPRA to connect large scale projects with strategic local projects in a way that can maximize efficiencies and the impact of RESTORE Act funds.

Project Solicitation and Selection for a CPRA-Parish RESTORE Act Match

Proposals for matching funds under the Spill Impact Component should be no more than ten (10) pages in length (i.e., 7-8 page description and 2-3 pages for maps or diagrams).

<u>Minimum Project Standards</u>

In order to be eligible for submission to the state for funding under this program, each project or program proposed for matching funds must meet the following minimum project standards:

- Meet the requirements of the RESTORE Act;
- Be consistent with the objectives of the Comprehensive Master Plan for a Sustainable Coast; and
- Be included for funding with Direct Component funds in the parish's RESTORE Act Multiyear Implementation Plan if the project is selected for funding under this matching program.

Project Information

For each proposed project or program, the proposal must contain the following information:

(1) A narrative description indicating the need for, purpose, and objectives of the activity as well as a conceptual design and project area map;
(2) How the activity is eligible for funding under 31 C.F.R. §34.201 and meets or will meet all requirements of 31 C.F.R. §34.303;
(3) Location description and project or program area map;
(4) Budget, including: (i) total budget amount, (ii) the funds to be provided by the proposing parish and/or any third parties, and (iii) the amount the parish is requesting from CPRA;
(5) Project or program Milestones;
(6) Projected start and completion dates;
(7) Criteria the applicant will use to evaluate the success of each activity in helping to restore and protect the Gulf Coast Region impacted by the *Deepwater Horizon* oil spill; and
(8) A description of how the proposed activity relates or contributes to the selection criteria below.

Selection Criteria

The following criteria will be used by CPRA to prioritize proposed activities for matching funds under the RESTORE Act. Information about these criteria should be included in any proposal submitted for consideration for funding.

(1) Consistency with the objectives of the Comprehensive Master Plan for a Sustainable Coast and the provisions of La. R.S. 49:214.5.4(I) in effect at the time of the proposal;
(2) The ability of the project to restore and protect coastal habitats suitable for ecologically and commercially important species or its ability to reduce economic losses from storm surge;
(3) The relative merits of the proposed activity, including the scope of project benefits based on the information contained in the proposal;
(4) Synergy with other integrated coastal protection and restoration efforts;
(5) Feasibility and/or constructability of the proposed project; and
(6) Funds made available by the parish for the proposed activity.

Solicitation and Selection Process

Proposals for an initial solicitation of funding totaling up to $20 million for parish matching projects will be solicited by CPRA from July 3, 2017 through August 31, 2017. CPRA will issue a solicitation for projects for the matching program through a formal announcement posted on CPRA's website and distributed via email to each eligible parish on July 3, 2017, with the solicitation period closing on August 31, 2017. Subsequent rounds of matching program solicitations will be announced in the future with dates to be determined.

Once proposals have been formally solicited and submitted to CPRA, a selection committee composed of CPRA staff will evaluate the proposals using the criteria listed above. The State's RESTORE Plan will be updated and amended, as approved by the CPRA Board, as projects proposed under the Parish Matching Program are selected for funding. Any projects selected for funding under the Parish Matching Program as an amendment

to this Plan will be subject to a forty five (45) day public comment period in accordance with Section III of this Plan before their selection is finalized by CPRA. CPRA will announce additional rounds of funding in the future for matching proposals.

RESTORE ACT Direct Component Multiyear Plan Matrix — Department of the Treasury									OMB Approval No. 1505-0250
Applicant Name:	Coastal Protection and Restoration Authority								
1. MULTIYEAR PLAN VERSION (INITIAL OR AMENDMENT NUMBER):		1	**2a. DATE OF INITIAL MULTIYEAR PLAN ACCEPTANCE (mm/dd/yyyy):**			9/21/2015	**2b. DATE OF LAST MULTIYEAR PLAN ACCEPTANCE:**		9/21/2015
3. CUMULATIVE DIRECT COMPONENT ALLOCATION AVAILABLE FOR DISTRIBUTION TO APPLICANT:			$30,248,255.59		**4. TOTAL ALLOCATIONS PLUS KNOWN FUNDS NOT YET DEPOSITED IN TRUST FUND FOR DIRECT COMPONENT:**				$260,396,588.99
5. Primary Direct Component Eligible Activity Further Described in Application (Static Field)	**6. Activity Title (Static Field)**	**7. Location (Static Field)**	**8. Estimated Total Funding Contributions For Proposed Activity(ies)(refer to Instructions)**				**9. Proposed Start Date mm/dd/yyyy**	**10. Proposed End Date mm/dd/yyyy**	**11. Status (refer to Instructions)**
			8a. Direct Component Contribution	**8b. Other RESTORE Act Contribution**	**8c. Other Third Party Contribution**	**8d. Total Contribution**			
Restoration and protection of the natural resources, ecosystems, fisheries, marine and wildlife habitats, beaches, and coastal wetlands of the Gulf Coast Region	Houma	Terrebonne Basin- see map attached in Appendix B to the Plan	$16,000,000.00		$18,389,521.00	$34,389,521.00	11-2016	04-2018	Initial MYP Activity - Deleted in Amendment #1
Restoration and protection of the natural resources, ecosystems, fisheries, marine and wildlife habitats, beaches, and coastal wetlands of the Gulf Coast Region	Calcasieu Ship Channel Salinity Control Measures	Calcasieu, Cameron and Vermilion Parishes - see map attached Appendix A to the Plan	$16,000,000.00		$15,000,000.00	$31,000,000.00	11-2015	05-2018	Initial MYP Activity - Funded Activity at $16,000,000 with no 3rd party contribution.
Planning assistance	Adaptive Management	Louisiana coastal area	$2,400,000.00			$2,400,000.00	11-2015	05-2018	Initial MYP Activity - Deleted in Amendment #1
	Houma	Terrebonne Basin- see map attached in Appendix B to the Plan	-$16,000,000.00		-$18,389,521.00	-$34,389,521.00			Amendment #1 - Deleted Activity
	Adaptive Management	Louisiana coastal area	-$2,400,000.00			-$2,400,000.00			Amendment #1 - Deleted Activity
Restoration and protection of the natural resources, ecosystems, fisheries, marine and wildlife habitats, beaches, and coastal wetlands of the Gulf Coast Region	Calcasieu Ship Channel Salinity Control Measures - Amended	Calcasieu, Cameron and Vermilion Parishes	$20,400,000.00		-$15,000,000.00	$5,400,000.00	06-2017	12-2019	Amendment #1 - Amended to add $20,400,000 in DC Funds for a total project amount of $36,400,000, and delete 3rd party contribution of $15,000,000 from project funded in initial MYP
Restoration and protection of the natural resources, ecosystems, fisheries, marine and wildlife habitats, beaches, and coastal wetlands of the Gulf Coast Region	Calcasieu - Construction	Calcasieu, Cameron and Vermilion Parishes - see map attached Appendix B to the Plan	$45,569,002.00		$217,226,998.00	$262,796,000.00	01-2020	12-2022	Admendment #1 - New Activity
	12. ESTIMATED TOTAL FUNDING CONTRIBUTIONS FOR ACTIVITY(IES) (refer to Instructions)		$81,969,002.00	$0.00	$217,226,998.00	$299,196,000.00	**Please note: Grant awards may reflect non-material changes in proposed dates and estimated funding.**		

According to the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number. The valid OMB control number for this information collection is 1505-0250. Comments concerning the time required to complete this information collection, including the time to review instructions, search existing data resources, gathering and maintaining the data needed, and completing and reviewing the collection of information, should be directed to the Department of the Treasury, Office of Gulf Coast Restoration, 1500 Pennsylvania Ave., NW, Washington, DC 20220.

RESTORE ACT Direct Component Multiyear Plan Narrative

Department of the Treasury

OMB Approval No. 1505-0250

Directions: Use this form for the Initial Multiyear Plan and any subsequent amendments to an accepted Multiyear Plan. For amendments, include only new and/or materially modified activities.

Multiyear Plan Version (Initial or Amendment Number):	First Amended Multiyear Plan
Date of Initial Multiyear Plan Acceptance:	September 21, 2015
Date of Last Multiyear Plan Acceptance:	September 21, 2015

Eligible Applicant Name:	The Coastal Protection and Restoration Authority of Louisiana
Name and Contact Information of the Person to be contacted (POC) on matters concerning this Multiyear Implementation Plan:	
POC Name:	Vida Carver
POC Title:	Project Manager
POC Email:	Vida.Carver@la.gov
POC Phone:	(225) 342-2799

NARRATIVE DESCRIPTION:

1. A description of each activity, including the need, purpose, objective(s), milestones and location. Include map showing the location of each activity.

As an update to the State's initial RESTORE Act Multiyear Implementation Plan which was accepted by Treasury on September 21, 2015, one project and two programs have been removed from funding under the Direct Component under this First Amended RESTORE Plan and will instead be funded under the Spill Impact Component: The Houma Navigation Canal Lock Complex, Adaptive Management and the CPRA-Parish Matching Opportunities Program. The project proposed for Direct Component funding in this First Amended RESTORE Plan is the Calcasieu Ship Channel Salinity Control Measures project (See The State of Louisiana's First Amended RESTORE Plan pp. 14-19 and Appendix A pp. 34-35.) The total estimated funds that will be requested for this project from the Direct Component are $260.4 million, which includes the previously awarded funds of $16 million, the currently available funds of $30.2 million and approximately $214.2 million which will be paid into the RESTORE Trust Fund over a 15 year period and is therefore not currently available. This project is described in more detail below.

(Please see attached sheet for the remainder of this information).

2. How the applicant made the multiyear plan available for 45 days for public review and comment, in a manner calculated to obtain broad-based participation from individuals, businesses, Indian tribes, and non-profit organizations, such as through public meetings, presentations in languages other than English, and postings on the Internet. The applicant will need to submit documentation (e.g., a copy of public notices) to demonstrate that it made its multiyear plan available to the public for at least 45 days. In addition, describe how each activity in the multiyear plan was approved after consideration of all meaningful input from the public and submit documentation (e.g., a letter from the applicant's leadership approving submission of the multiyear plan to Treasury or a resolution approving the applicant's multiyear plan).

The project selected for Direct Component funding in this RESTORE Plan is the result of decades of planning and the information developed through the Coastal Master Plan process. Louisiana's Coastal Master Plan, on which this First Amended RESTORE Plan is based, represents the result of a broad-based collaboration among local, state and national stakeholders and uses cutting edge technical analysis to think big and evaluate the needs of the entire coast. (See generally The State of Louisiana's First Amended RESTORE Plan pp. 8-13.)

(Please see attached sheet for the remainder of this information).

3. How each activity included in the applicant's multiyear plan narrative meets all the requirements under the RESTORE Act, including a description of how each activity is eligible for funding based on the geographic location of each activity and how each activity qualifies for at least one of the eligible activities under the RESTORE Act.

Under 31 C.F.R. §34.303(d)(1) activities proposed for Direct Component funding must meet the statutory requirements for eligibility. The Calcasieu Salinity Control Measures project proposed for Direct Component funding under this Plan is an eligible activity under 31 C.F.R. §34.201 because by allowing for the maintenance of thousands of acres of critical marsh environment which provide essential fish and wildlife habitat, the project's primary purpose is to restore and protect the natural resources, ecosystems, fisheries, marine and wildlife habitats and coastal wetlands of the Gulf Coast region. (Eligible Activity (1)).

(Please see attached sheet for the remainder of this information).

4. Criteria the applicant will use to measure the success of the activities included in the multiyear plan narrative in helping to restore and protect the Gulf Coast Region impacted by the Deepwater Horizon oil spill.

At the project-scale level, performance success measures will track the progress towards meeting management goals and objectives. (See The State of Louisiana's First Amended RESTORE Plan p. 30). Establishment of detailed monitoring requirements will be finalized for the Calcasieu Ship Channel Salinity Control Measures project upon completion of the engineering and design phase of the project. However, monitoring for the Calcasieu Ship Channel Salinity Control Measures project will likely include surface and marsh porewater salinity, which can use previous studies, including work done as part of the Southwest Coastal Louisiana Study to establish background conditions for comparison of project effects. Other monitoring parameters for this project could include water level conditions in emergent marshes, local hydrodynamics near project features, and fish and wildlife monitoring.

5. How the activities included in the multiyear plan narrative were prioritized and list the criteria used to establish the priorities.

The Calcasieu Salinity Control Measures project was prioritized for RESTORE Direct Component funding due to its regional nature and far-reaching benefits to the overall ecological and economic recovery of the Gulf. In addition, this project was identified as a top performer through the Coastal Master Plan's Planning Tool. For example, the Planning Tool's modeling results showed that in certain cases, the sustainability of marsh creation projects increased from being completely unsustainable to being sustainable for more than 50 years when modeled as part of a group of projects including hydrologic restoration and salinity control structures. (See 2012 Master Plan p. 90).

(Please see attached sheet for the remainder of this information).

6. If applicable, describe the amount and current status of funding from other sources (e.g., other RESTORE Act contribution, other third party contribution) and provide a description of the specific portion of the project to be funded by the RESTORE Act Direct Component.

CPRA has previously been awarded funds in the amount of $16 million to support engineering and design up to at least the 30% design milestone. The State of Louisiana currently has an available balance of $30.2 million in Direct Component funds, $20.4 million of which will be requested for the completion of engineering and design, permitting, and all other tasks required to move the project into construction. CPRA will then request approximately $45.6 million, which will be available in the Direct Component at the end of 2019, in order to initiate construction in 2020. The total estimated funds that will be requested for this project from the Direct Component are $260.4 million, which includes the previously awarded funds, of $16 million, the currently available funds of $30.2 million and approximately $214.2 million which will be paid into the RESTORE Trust Fund over a 15 year period and is therefore not currently available. The information learned through the design process of this project will help inform the construction sequence and methodology that may ultimately be used for this project and will help determine the approach to funding the project through completion. Additional funds for this project may be provided in the future from funds in the State's Coastal Protection and Restoration Fund, including without limitation revenues from the Gulf of Mexico Energy Security Act (GOMESA), and/or funds from other RESTORE funding components.

Additionally, CPRA recognizes that operations and maintenance of this project is reflected in the overall budget estimate; however the funding source for that phase of this project will be identified in the future.

Attachment to the RESTORE Act Direct Component Multiyear Plan Narrative

NARRATIVE DESCRITPION
1. A description of each activity, including the need, purpose, objective(s), milestones and location. Include map showing the location of each activity.

Question 1 (Continued)

- Need: The project is contained in the 2012 Coastal Master Plan as a hydrologic restoration project (Project 004.HR.06) and the 2017 Annual Plan (Project CS-0065)[1] and is needed to address modifications to hydrology that have caused an increase in salinity levels within the project area, resulting in degradation of the integrity of the surrounding marsh area and increased rates of wetland loss. This project will also mitigate damage to fish, wildlife and natural resources which rely on freshwater inputs and will limit the intrusion of salt water into freshwater marsh systems, thereby allowing for the maintenance of thousands of acres of wetlands which serve as critical wildlife habitat and nurseries for fisheries.
- Purpose: The purpose of the project is to manage salinities being introduced through the Calcasieu Ship Channel into adjacent water bodies to reduce the rate of wetland loss in the surrounding wetlands. Restoring this coastal ecosystem and lowering the risk associated with sea level rise, subsidence, and tropical events along the coast will also improve the long-term economic health of the region.
- Objectives: Design, construction, and operation of measures designed to limit the intrusion of saline water into Calcasieu Lake through the Calcasieu Ship Channel. These measures would control salinity spikes, provide storm surge benefits, 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. By allowing for the maintenance of thousands of acres of critical marsh environment which provide essential fish and wildlife habitat, the primary eligible activity of this project is to restore and protect the natural resources, ecosystems, fisheries, marine and wildlife habitats and coastal wetlands of the Gulf Coast region. (Eligible Activity (1)). The project also protects the wetlands of the Chenier Plain, which provide storm surge protection to communities and ports in the Lake Charles area. The ports of Lake Charles and Cameron are key parts of the economy of Southwest Louisiana and include critical infrastructure. The loss of wetlands reduces the viability of the ports because of the increased exposure to storm surge. In sum, this project will contribute to the overall ecological and economic recovery of the Gulf by saving an anticipated 21,000 acres of marsh environment from degradation over 50 years. (*See* Appendix A to The State of Louisiana's First Amended RESTORE Plan). Additionally, the project will be carried out in the Gulf Coast Region as defined in 31 C.F.R. §34.2 because it is located in the Calcasieu Ship Channel, and is anticipated to influence hydraulic conditions within the Calcasieu-Mermentau basin, which is in the coastal zone defined under section 304 of the Coastal Zone Management Act of 1972 that border the Gulf of Mexico. (*See* Appendix A to The State of Louisiana's First Amended RESTORE Plan for a

[1] This project is also included in the draft 2017 Coastal Master Plan as a hydrologic restoration project (Project 004.HR.06) at pp. 40, 108, 110 & 128 and the draft 2018 Annual Plan (Project CS-0065) at pp. 46 & 60.

map of the approximate boundaries of the project influence area).

- Funds Requested: The estimated total cost of the project is $441.1 million. This includes an estimated $36.4 million[2] for engineering, design and permitting, an estimated $262.8 million for construction and an estimated $141.9 million for operations, maintenance, monitoring, and adaptive management. This cost estimate is based on preliminary design that utilized professional judgment of an interdisciplinary team of engineers and existing data on the topography, bathymetry and geotechnical characteristics of the project sites. Cost estimates for design and operations, monitoring, maintenance and adaptive management are based on percentage estimates of the construction cost. Construction cost estimates reflect preliminary planning-level estimates of construction costs and schedules. As design advances these cost estimates will be revisited and are subject to change. All costs are reported in present dollar values and do not represent inflation or escalation.

  CPRA has previously been awarded funds in the amount of $16 million from the Direct Component to support engineering and design up to at least the 30% design milestone. The State of Louisiana currently has an available balance of $30.2 million in Direct Component funds, $20.4 million of which will be requested for the completion of engineering and design, permitting, and all other tasks required to move the project into construction. CPRA will then request approximately $45.6 million, which will be available in the Direct Component at the end of 2019, in order to initiate construction in 2020. The total estimated funds that will be requested for this project from the Direct Component are $260.4 million, which includes the previously awarded funds, the currently available funds and approximately $214.2 million which will be paid into the RESTORE Trust Fund over a 15 year period and is therefore not currently available. The information learned through the design process of this project will help inform the construction sequence and methodology that may ultimately be used for this project and will help determine the approach to funding the project through completion. Additional funds for this project may be provided in the future from funds in the State's Coastal Protection and Restoration Fund, including without limitation revenues from the Gulf of Mexico Energy Security Act (GOMESA), and/or funds from other RESTORE funding components.

  Previously awarded Direct Component funds will support 30% Engineering and Design as described below. Currently available Direct Component funds of $20.4 million will support completion of Engineering and Design, Permitting and work needed to acquire land rights. The remaining balance will be combined with future Direct Component funds and other third party funds to support construction.

  - 15% and 30% Engineering and Design: An initial amount of $16 million has been awarded from Direct Component funds to fund the project development up to at least the 30% design milestone. This work corresponds to milestones and Measures of Success 1 and 2 below. (*See also* The State of Louisiana's First Amended RESTORE Plan p. 18 for Measures of Success). Tasks required in order to reach these milestones include, but are not limited to:
    - Conduct a data gap analysis to identify the field data needed to design the project to the 15% and subsequently to the 30% level.
    - Collection of field data.

[2] Please note that estimates for engineering, design and permitting have been updated and refined in the time period since the State's Initial RESTORE Act Plan was accepted by Treasury on September 21, 2015, to take into consideration land rights and permitting support which were not fully factored into the earlier estimates.

- Tax assessment research and title research will be conducted to identify the ownership of land rights that may need to be acquired for construction.
- Application of planning and engineering models to support design, refine cost estimation and support environmental documentation.
- Engineering and Design.
- Preparation and submittal of a permit application for construction of the project
- Activities in support of the permit application, including wetland delineations, agency consultations, etc.

The estimated timeframe for completing 30% design is March 2018. The outcome of this phase will be a 30% design package. At the 15% design milestone, the project will be developed with sufficient detail to submit a permit application for construction.

- 60% Engineering and Design, Permitting and Final Design: The remaining funds needed for the E&D phase, or approximately $20.4 million, will support the completion of engineering and design, permitting, and all other tasks required to take the project into construction. Tasks included in this expanded scope of work include, but are not limited to:
  - Permitting and associated reviews and permissions (e.g. 404/10 permit, Section 408 review, National Environmental Policy Act). Permitting activities may be started in parallel with the 30% design work as opportunity allows.
  - Independent Technical Review.
  - 60% Design.
  - Development of an operations, maintenance, monitoring and adaptive management plan.
  - Land Rights research, including parcel surveys, abstracting, title opinions, title insurance, appraisals, and all other activities leading up to acquisition of land rights.
  - 95% Design.
  - Final Plans and Specifications.
  - Preparation of a bid package for construction.

During this phase of E&D, permitting and design proceed iteratively, with adjustments made to the design based on feedback received through the USACE public interest review process. Once the permit application has been submitted, USACE will review the application and determine whether an Environmental Assessment (EA) or Environmental Impact Statement (EIS) will be required to satisfy National Environmental Policy Act (NEPA) review of the Project.

The scope of this work corresponds to Milestones 3-5 and Measures of Success 3-6, and will be defined concurrently with completion of the 30% design. (*See also* The State of Louisiana's First Amended RESTORE Plan pp. 17-18 for Milestones and Measures of Success). This scope of work will be submitted to Treasury for approval as a grant amendment. It is estimated that the final permit reviews and final plans and specifications can be completed by December 2019.

- Construction: The balance of the currently available funds ($9.8 million) will be used as part of a larger request of approximately $45.6 million, which will be available in the Direct Component at the end of 2019, and will be combined with future funding sources to support construction starting in 2020. Potential

future funding sources include the balance of the total funds to be requested from the Direct Component of an estimated $214.2 million, which will be paid into the RESTORE Trust Fund over a 15 year period and is therefore currently unavailable. Milestones 6-8 and Measures of Success 7-9 relate to the construction phase and are presented here for completeness and to demonstrate the full process to implementation of the project. (*See* pp. 17-18 for Milestones and Measures of Success). Construction is estimated to take at least two years and could be complete as soon as mid-2022.

CPRA has worked with the Chenier Plain Coastal Restoration and Protection Authority, the Cameron Parish Police Jury and Calcasieu Parish Police Jury throughout the plan selection process. All parties regularly communicated about the project status and important decision-making. It is anticipated that this collaboration will continue throughout the project life.

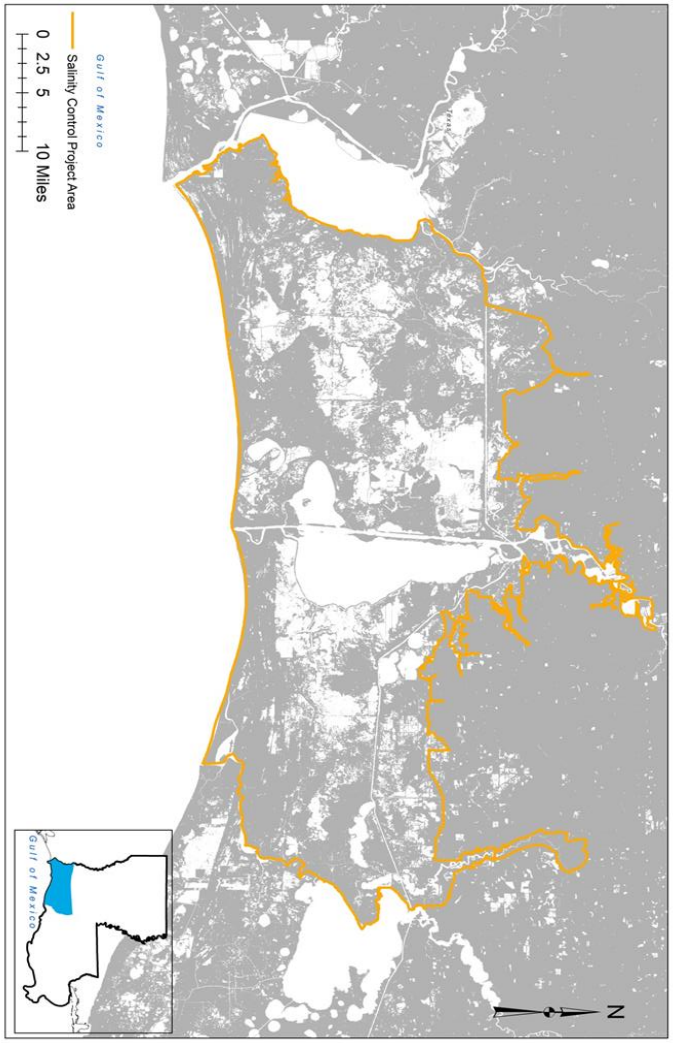
- High Level Milestones:
    1. 15% Design Package: Project development to the 15% design level.
    2. 30% Design Package: Development of the project to the 30% design level.
    3. Obtaining environmental permits to implement the Project: Work on this task will begin following completion of 15% engineering and design and will continue concurrently with the 30%, 60% and 95% design milestones. This high-level milestone corresponds to Measures of Success 2, 4, 6 and 7 below.
    4. 60% Design Package: development of the project to the 60% design level.
    5. 95% Design Package.
    6. Award of Construction Contract.
    7. Mobilization for Construction.
    8. Completion of Construction.
- Measures of Success: *See also* Plan Section VII.
    1. Achieving the 15% design level milestone.
    2. Submittal of a permit application for construction.
    3. Completion of 30% design package.
    4. Completion of a draft Environmental Impact Statement.
    5. Completion of 60% design package.
    6. Section 408 Review.
    7. Completion of a final Environmental Impact Statement.
    8. Completion of 95% design package.
    9. Advertisement of a Bid Package.
    10. Award of Construction Contract.
    11. Mobilization for Construction.
    12. Completion of Construction.
- Estimated Start and Completion Dates:

  15% design milestone: June 30, 2017.
    1. 30% design milestone: March 30, 2018.
    2. Completion of draft Environmental Impact Statement: July 23, 2018.
    3. 60% design milestone: September 4, 2018.
    4. Completion of Final Environmental Impact Statement: January 21, 2019.
    5. 95% design milestone: February 11, 2019.
    6. Award of Construction Contract: March 1, 2020.
    7. Construction Mobilization: April 1, 2020.

8. Completion of Construction: April 1, 2022.

The estimated construction timelines referenced above reflect an aggressive schedule which is driven by CPRA's sense of urgency for implementing large scale restoration projects. Given that RESTORE funds are subject to a 15 year payout, CPRA anticipates that it may need to access alternative funding streams through its Coastal Protection and Restoration Fund which would be reimbursed with RESTORE funds as those become available over time. CPRA is also exploring available accelerated financing options in order to meet the estimated timelines described herein. CPRA is evaluating alternative funding streams and accelerated financing options because, as explained in the Executive Summary above, Treasury cannot award a project grant for Direct Component funds until sufficient deposits are available for distribution based on the amount of funds shown in the Gulf Coast Restoration Trust Fund Allocation Tables on Treasury's RESTORE Act website.

Additionally, CPRA recognizes that operations and maintenance of this project is reflected in the overall budget estimate; however the funding source for that phase of this project will be identified in the future.



Calcasieu Ship Channel Salinity Control Measures

2. How the applicant made the multiyear plan available for 45 days for public review and comment, in a manner calculated to obtain broad-based participation from individuals, businesses, Indian tribes, and non-profit organizations, such as through public meetings, presentations in languages other than English, and postings on the Internet. The applicant will need to submit documentation (e.g., a copy of public notices) to demonstrate that it made its multiyear plan available to the public for at least 45 days. In addition, describe how each activity in the multiyear plan was approved after consideration of all meaningful input from the public and submit documentation (e.g., a letter from the applicant's leadership approving submission of the multiyear plan to Treasury or a resolution approving the applicant's multiyear plan).

Question 2 (Continued)

Louisiana's Coastal Master Plan Public Process

The CPRA established a strategic outreach and engagement framework for the State of Louisiana's 2012 Coastal Master Plan, which helped guide communications and interactions with diverse audiences throughout the planning process. (*See* 2012 Coastal Master Plan at pp. 120, 122, 126 & 160-163). These audiences included key citizen groups and organizations, non-governmental organizations, local and state officials, business groups and the general public. CPRA's outreach and engagement framework provides a variety of ways for stakeholders and citizens to learn about and participate in the master planning process, including small group gatherings, web offerings, direct communication with local and state government, and through monthly public meetings.

The CPRA's public outreach efforts for the 2012 Coastal Master Plan began with a meeting of 40 state legislators as well as coastal parish officials to gain their perspective about how coastal action affects communities. CPRA also met with community groups including rotary clubs, advocacy organizations, and school groups across the coast. Other groups were established to provide structured and ongoing advice from key businesses and industries, federal agencies, non-profits, Native American groups, and local organizations as well as coastal scientists and planning experts. These groups provided recommendations and guidance as the plan was developed so that the finished product would reflect broad perspectives and the best possible technical approach. These groups included a framework development team, focus groups of key coastal industries, a science and engineering board, and technical advisory committees.

Ten regional community meetings were held from July through September of 2011, where further input was received from residents. Approximately 600 citizens attended those regional community meetings. Together with online input, a total of 800 citizens expressed their views concerning coastal priorities. Once the draft plan was compiled, it was made available on the CPRA website, and three open house public hearings were held to receive feedback on the draft plan in Houma, New Orleans, and Lake Charles. All told, more than 2,200 comments were received at public hearings, via email, the website, and mail.

The 2012 Coastal Master Plan was also published on CPRA's website and made available for public comment from January 12, 2012 through February 25, 2012 (45 days). Comments were reviewed and considered with great care in order to incorporate them into the final 2012 Coastal Master Plan. Project-specific comments were further evaluated to determine the implications of each proposed change. In some cases, significant changes were made to the draft plan regarding project location and design. The final plan was submitted and approved by the CPRA Board in a public meeting before proceeding to the

legislature for final approval. During the legislative process, the Coastal Master Plan was considered, debated, and open to further public input before receiving final approval by four committees: the House Transportation Committee, the House Natural Resources Committee, the Senate Transportation Committee, and the Senate Natural Resources Committee. Following approval by all four committees, the plan moved to the floor of the respective houses of the legislature where it was unanimously passed. All comments received on the plan as well as transcripts from the town hall meetings and other information related to the public outreach effort are available in Appendix G of the 2012 Coastal Master Plan.[3] The 2012 Coastal Master Plan was formally approved by the Louisiana Legislature on May 22, 2012.

The State of Louisiana's First Amended RESTORE Plan Public Process

In addition to the above Coastal Master Plan public process, the CPRA Board holds monthly meetings to provide the public with updates related to projects, programs, and policies. A public comment period is included at the close of each monthly meeting allowing the opportunity for citizens to ask questions or provide comments for the record. The Calcasieu Ship Channel Salinity Control Measures project which is proposed herein for Direct Component funding, has been identified and discussed specific to RESTORE Act funding at numerous CPRA Board meetings over the past four years. Specifically, this project was discussed at the following meetings: November 28, 2012, May 15, 2013, July 17, 2013, August 20, 2014, October 15, 2014, November 12, 2014, February 11, 2015, April 15, 2015, August 19, 2015, December 16, 2015, August 31, 2016, and November 30, 2016. Moreover, at each of these meetings, there was also a public comment period dedicated to comments related to the RESTORE Act.

CPRA staff regularly attends these meetings and are available before and after to discuss agency initiatives with members of the public. Meeting details, including itemized agendas, are posted to CPRA's online calendar which is located at www.coastal.la.gov.

Further, the First Amended RESTORE Plan was published on November 30, 2016 and made available for public review and comment for a minimum of forty five (45) days in a manner calculated to obtain broad-based participation from individuals, businesses, Indian tribes, and non-profit organizations in accordance with 31 C.F.R. §34.303(b)(8). The First Amended RESTORE Plan was made available on CRPA's website and the CPRA issued a press release seeking public feedback until January 14, 2017, and directing anyone with comments to submit those via email to: coastal@la.gov, or via regular mail to: CPRA, Attn: Chuck Perrodin, P.O. Box 44027, Baton Rouge, LA 70804.

Advertisements to solicit public comment on the First Amended RESTORE Plan were also placed in the following press outlets across Coastal Louisiana during the public comment period:

Abbeville Meridional 12/7
Baton Rouge Advocate 12/7
Belle Chasse Plaquemines Gazette 12/13
Houma Daily Courier 12/7
Lafayette Daily Advertiser 12/7
Lake Charles American Press 12/7
Morgan City Daily Review 12/7

[3] The 2012 Coastal Master Plan appendices may be accessed at http://coastal.la.gov/a-common-vision/2012-coastal-master-plan/cmp-appendices/.

New Orleans Times-Picayune 12/7

In addition, letters were sent via email and certified mail/return receipt request to the following federally recognized Indian Tribes to inform them of the public comment period for the First Amended RESTORE Plan and inviting them to comment:

Chitimacha Tribe of Louisiana
Coushatta Tribe of Louisiana
Jena Band of Choctaw Indians
Tunica-Biloxi Indian Tribe

During the public comment period, CPRA received multiple public comments. All public comments submitted during the public comment period were reviewed and considered by CPRA before preparing the final First Amended RESTORE Plan. No negative comments were received about the Calcasieu Salinity Control Measures project and therefore no substantive changes were made to the project or the State's final First Amended RESTORE Plan relative this project. The public comments received are summarized below:

Comment: Commentor requested that CPRA consider extending the CPRA-Parish Matching Opportunities Program to entities that are not receiving Direct Component funds under the RESTORE Act such as levee districts.

Comment: Commentor requested additional information about how CPRA defines consistency with the Coastal Master Plan for the CPRA-Parish Matching Opportunities Program.

Comment: Commentor requested that Section 106 consultation occur with Tribes for all federal undertakings that will be implemented under this plan.

Comment: Commentors expressed strong support for sound science decision making, public transparency and engagement as the plan is implemented and the State's commitment to identifying and finding solutions to any obstacles to implementation, including funding and funding timelines. Commentors also requested that the plan describe potential additional sources of funding for the Calcasieu Ship Channel Salinity Control Measures project and include a budget allocation or commit a percent of overall funding to be spent on overhead versus on the ground data collection and analysis for the Adaptive Management program.

Comment: Commentor expressed strong support for supporting research on the interconnectedness of human health and ecosystem health.

Comment: Commentor expressed strong support for restoration projects in the Mississippi River Gulf Outlet (MRGO) ecosystem and the greater New Orleans areas.

CPRA acknowledges and appreciates all public comments received and is committed to addressing the issues raised in these comments where possible. In cases where comments were either generally supportive or pertained to activities or recommendations that (i) are outside of the purview of the First Amended RESTORE Plan, (ii) are outside of the CPRA's direct authority, or (iii) in cases where specific projects were recommended for funding under this plan which are consistent with the Coastal Master Plan and for which CPRA has secured or is planning to secure alternative funding sources other than the RESTORE Direct Component or Spill Impact Component, CPRA has considered and appreciates those

comments but has not revised the plan based on that input at this time. In cases where public input requested additional or clarifying information, the plan has been updated to address these requests where possible.

After comments on each activity in the State's First Amended RESTORE Plan, as applicable, were taken into consideration, provided to the CPRA Board and the CPRA Board was provided with an explanation for how the public comment was addressed, the CPRA Board approved each activity included in the State's First Amended RESTORE Plan and approved that plan for submission to Treasury (and the RESTORE Council) on January 18, 2017, in accordance with 31 C.F.R. §34.303(b)(9).

3. How each activity included in the applicant's multiyear plan narrative meets all the requirements under the RESTORE Act, including a description of how each activity is eligible for funding based on the geographic location of each activity and how each activity qualifies for at least one of the eligible activities under the RESTORE Act.

Question 3 (Continued)

Under 31 C.F.R. §34.303(d)(2), each activity designed to protect or restore natural resources proposed for funding under the Direct Component must be based on best available science. Under 31 C.F.R. 34.2, "best available science" is defined as "science that maximizes the quality, objectivity, and integrity of information, including statistical information; uses peer reviewed and publicly available data; and clearly documents and communicates risks and uncertainties in the scientific basis for such projects." Louisiana's Coastal Master Plan is required by law to be updated every five years in order to take into account the best available science and the ever-changing conditions on the ground. (See The State of Louisiana's First Amended RESTORE Plan p. 9). The Coastal Master Plan, on which the First Amended RESTORE Plan is based, is guided by a mission which is comprehensive in scope and based on a broad range of objectives, principles, decision drivers and decision criteria. (Coastal Master Plan pp. 44-63). This mission represents the result of a broad-based collaboration among local, state and national stakeholders and uses cutting edge technical analysis to "think big and evaluate the needs of the entire coast". (*Id.* at 45). The Calcasieu Salinity Control Measures project is contained in the 2012 Coastal Master Plan as 004.HR.06 and the 2017 Annual Plan as CS-0065, and as such is a project that is based on the best available science.

Additionally, the project will be carried out in the Gulf Coast Region as defined in 31 C.F.R. §34.2 because it is located in the Calcasieu Ship Channel, and is anticipated to influence hydraulic conditions within the Calcasieu-Mermentau basin, which is in the coastal zone defined under section 304 of the Coastal Zone Management Act of 1972 that border the Gulf of Mexico. (*See also* the map identified in response to Question 1 and in Appendix A to the State of Louisiana's First Amended RESTORE Plan).

5. How the activities included in the multiyear plan narrative were prioritized and list the criteria used to establish the priorities.

Question 5 (Continued)

More particularly, the CPRA developed a robust decision-making process to ensure that formulation of the 2012 Coastal Master Plan was based on the best science and technical information available, while

still incorporating an extensive public outreach campaign. This same process also informed the prioritization and selection of projects for funding under the Annual Plan and this RESTORE Plan specific to the RESTORE Act. More specifically, the process was guided by clearly-articulated objectives developed for the 2007 Master Plan and by planning principles developed to aid in meeting those objectives. The objectives were clearly defined to reflect key issues affecting communities in and around Louisiana's coast:

1. Reduce economic losses from storm surge flooding,
2. Promote a sustainable coastal ecosystem by harnessing the natural processes of the system,
3. Provide habitats suitable to support an array of commercial and recreational activities coast wide,
4. Sustain the unique cultural heritage of coastal Louisiana, and
5. Promote a viable working coast to support regionally and nationally important businesses and industries.

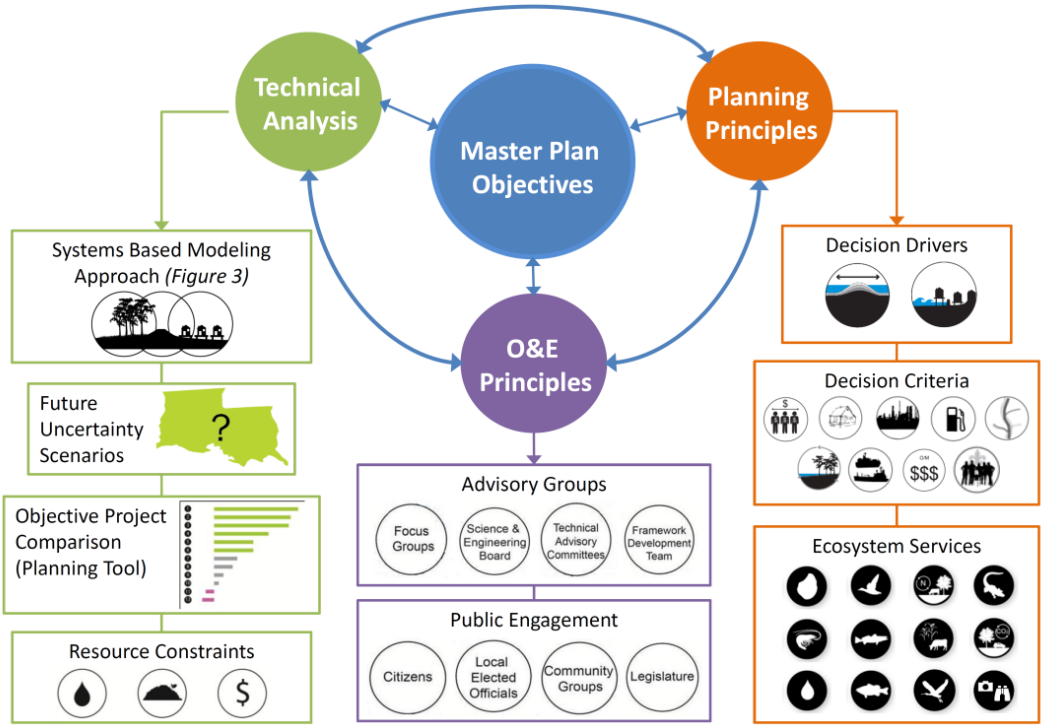


Figure 1. The decision-making process is a complex interaction of input and feedbacks between a technical analysis, outreach and engagement (O&E) and planning principles. The overall goal of the Master Plan is defined by the objectives. The systems-based modeling approach, future uncertainty scenarios, planning tool and resource constraints all contribute to the technical data needed for the decision-making process. The planning principles and formulation involve decision drivers, decision criteria and ecosystem services metrics, as described in the methods section, which help determine the [Coastal Master] Plan's ability to meet the objectives. The O&E strategy was designed to ensure public input and acceptance throughout the decision-making process and multiple groups were involved in defining and reviewing the technical analysis and plan formulation (Peyronnin et al. 2013).

Evaluating Projects

The purpose for the 2012 Coastal Master Plan was to identify coastal protection and restoration projects that would improve the lives of coastal residents by creating a more resilient south Louisiana. Achieving

this goal required new tools that helped us better understand our coast and how projects could provide benefits. The coast is a complex system. We needed to better understand how it is changing today and the kinds of changes we can expect in the future. We also had hundreds of project ideas and different views about how to move forward, and needed a way to sort through our many options and find those that would work best for us.

To meet these needs, CPRA used a systems approach to coastal planning and a science-based decision making process that resulted in a plan that was both funding- and resource- constrained. These tools helped us understand the practical implications of different project options and how gains in one area might create losses in another. Based on the preferences we wanted to explore, our tools helped identify strategies for investing in coastal protection and restoration projects. This analysis improved our understanding of how projects were affected by: our budget and the river water and sediment that we have to work with. We also used the tools to consider possible future coastal conditions that could affect the way our projects operate, along with other factors such as construction time.

The Predictive Models

The 2012 Coastal Master Plan analyzed both protection and restoration measures, which influenced the models we selected and how they work. To estimate risk reduction outcomes, we used models that evaluated storm surge and the risk of expected annual damages. To estimate restoration outcomes, the models looked at how land changes throughout the coast—where land is building and where it is disappearing. These models examined how water moves through the coastal system as well as how salt and fresh water affect vegetation and habitats for key species and ecosystem services.

The integrated suite of Predictive Models developed for the Coastal Master Plan assessed how Louisiana's coastal landscape may change and how much damage communities may face from storm flooding over the next 50 years if we take no further action and for comparison then assessed how the coastal ecosystem and our level of risk could change if certain risk reduction and restoration projects are constructed. The models incorporated what we know about the way the coast works, and they made it easier to identify projects that best achieve our objectives.

Ecosystem services are benefits that the environment provides to people. In Louisiana, these range from providing the right habitats for oysters and shrimp to nature-based tourism. We could not detail the economic aspect of ecosystem services in our analysis. Instead, we focused on proxy characteristics of the coast, such as provision of habitat (i.e. habitat suitability indices) and other factors that can support ecosystem services.

The Predictive Models used in the Coastal Master Plan were organized into seven linked groups (Figure 2), involving the work of over 60 scientists and engineers. Each group worked on a different aspect of how the coastal system changes over time. Our effort was based on existing models where they were appropriate. New models were developed for vegetation, nitrogen uptake, barrier shorelines, flood risk, and to reflect potential for nature based tourism, fresh water availability, and support for agriculture/ aquaculture.

The models were designed to work together, following the precedent set by earlier state planning efforts, such as the Coastal Louisiana Ecosystem Assessment and Restoration ("CLEAR") work conducted for the Louisiana Coastal Area Study (Nuttle et al., 2004; USACE, 2004). We also found new ways to link the expanded set of models to more fully capture how the coast works as a system. The level of modeling in the 2012 Coastal Master Plan was a significant technical achievement in the systems approach, the linked nature of the models, and in the breadth of subjects evaluated.

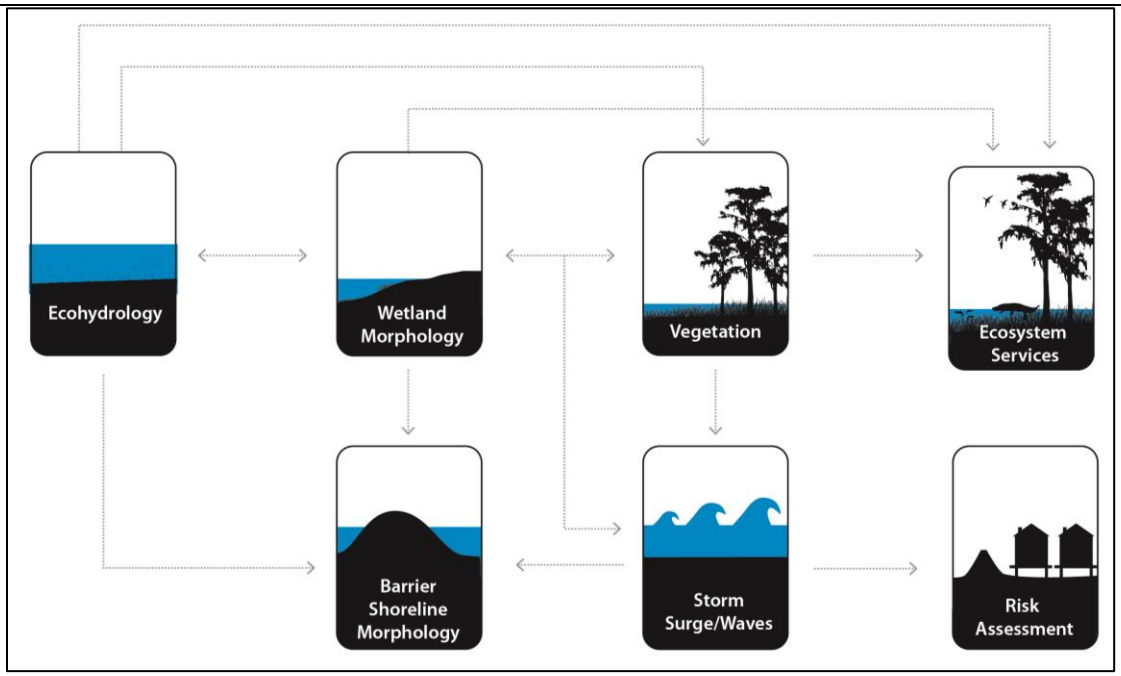


Figure 2. 2012 Master Plan predictive model groups (Meselhe et al. 2013, Couvillion et al. 2013, Visser et al. 2013, Nyman et al. 2013, Cobell et al. 2013, Johnson et al. 2013).

Future Environmental Scenarios

Many factors that will have a profound effect on the future of Louisiana's coast cannot be easily predicted or are outside of our control. These include factors such as subsidence and the levels of nutrients in the river, as well as the effects of climate change, such as sea level rise, changes in rainfall patterns, and storm frequency and intensity. Climate change was central to our analysis, given coastal Louisiana's vulnerability to increased flooding and the sensitivity of its habitats.

To account for these factors when developing the Coastal Master Plan, we worked with experts to develop two different sets of assumptions or scenarios. These scenarios reflect different ways future coastal conditions could affect our ability to achieve protection and build land:

- **Moderate scenario - assumed limited changes in the factors on the facing page over the next 50 years.**
- **Less optimistic scenario - assumed more dramatic changes in these factors over the next 50 years.**

The Planning Tool

The Planning Tool, in concert with the modeling effort, offered a way to examine projects. The model results, represented by terabytes of data, are the building blocks of the 2012 Coastal Master Plan. We needed a user friendly way to sort and view these results so that we could identify groups of projects to examine in greater detail. The Planning Tool is a decision support system that helps the state choose smart investments for the coast. The tool integrates information from the models with other information such as funding constraints, compares how different coastal restoration and risk reduction projects could be grouped, and allows us to systematically consider many variables (e.g., project costs, funding, landscape conditions, and stakeholder preferences). These science-based tools help us understand the practical implications of different project options. Based on the outcomes, our tools

suggested a strategy for investing in coastal flood risk reduction and restoration projects. As part of this strategy, the tools considered the constraints, such as the limited money, water, and sediment that we have to work with. The tools also considered possible future conditions that will affect the way our projects operate, along with other important factors such as construction time and how combinations of projects will work together. These results were translated so that citizens and state leaders could understand the projects' real world effects.

CPRA used predictive models and the Planning Tool to help us select 109 high-performing projects that could deliver measurable benefits to our communities and coastal ecosystem over the coming decades. One of the highest performers was the Calcasieu Salinity Control Measures project. The Planning Tool was designed to translate the models' scientific output and show the practical implications of different options. Decision making for the Coastal Master Plan followed directly from this analysis.

APPENDIX G – PUBLIC COMMENT

Public Comment on the Draft First Amended RESTORE Plan

During the public comment period, CPRA received multiple public comments. All public comments submitted during the public comment period were reviewed and considered by CPRA before preparing the final First Amended RESTORE Plan. The public comments received are summarized below.

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