



Coastal Protection and
Restoration Authority of Louisiana

Louisiana's 2012 Coastal Master Plan: *Planning to Implementation*

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committed to our coast

Louisiana's 2012 Coastal Master Plan Technical Analysis

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The Charge

2012 Coastal Master Plan

Five Key Objectives



Flood Protection

Reduce economic losses from storm-based flooding



Natural Processes

Promote a sustainable ecosystem by harnessing the processes of the natural system



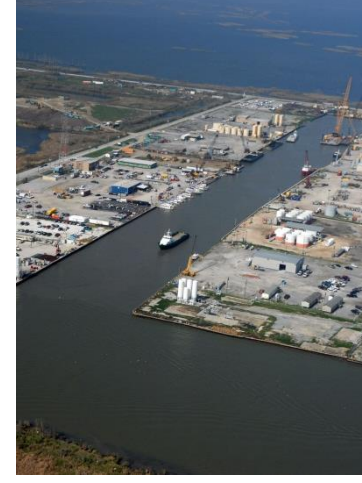
Coastal Habitats

Provide habitats suitable to support an array of commercial and recreational activities coast wide



Cultural Heritage

Sustain Louisiana's unique heritage and culture



Working Coast

Support regionally and nationally important businesses and industries

2012 Coastal Master Plan

Technically Sound and Objective Planning

Resource Limited Planning

Constraints



Water



Sediment



Funding

System-Based Planning



Levee



Wetland



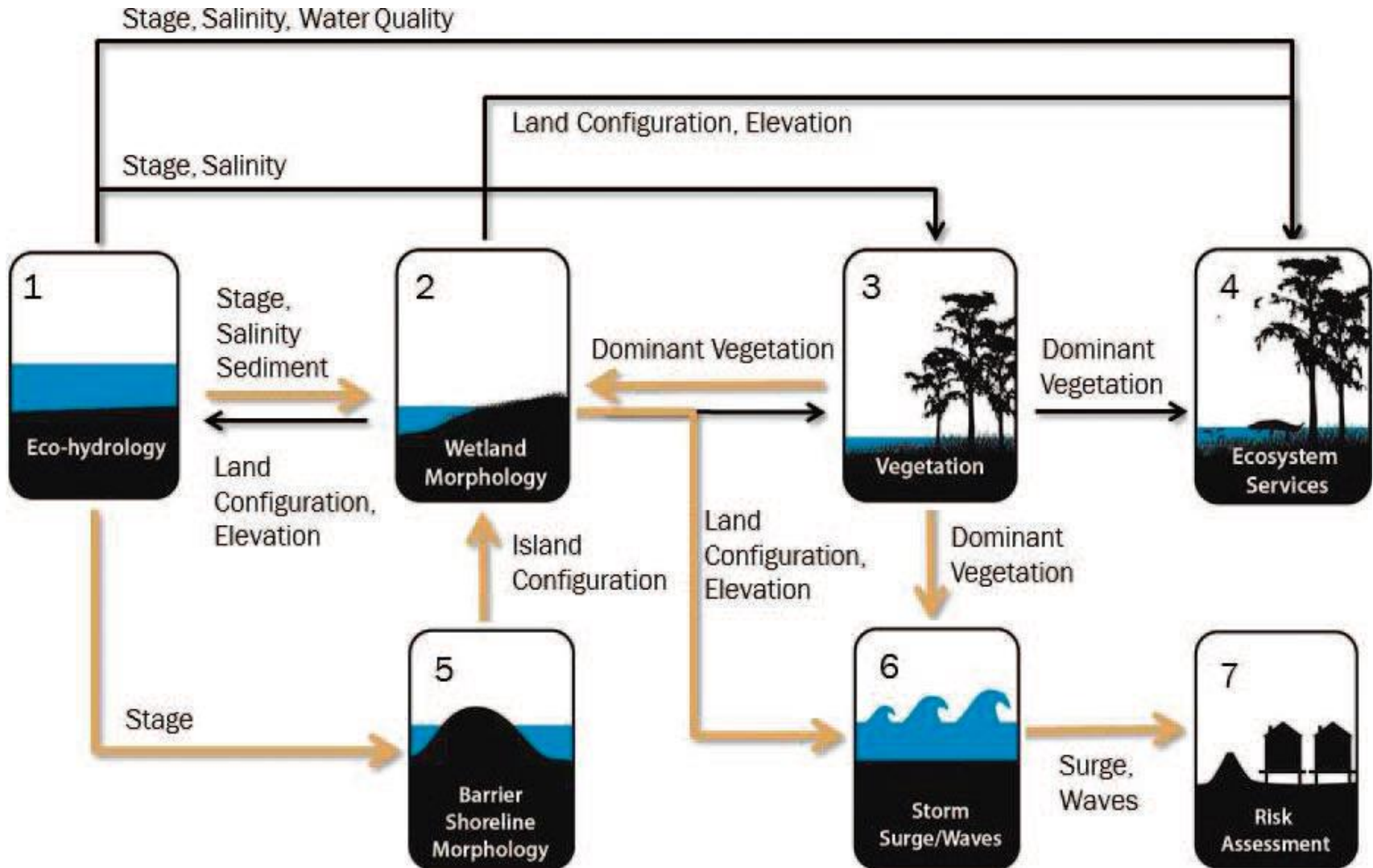
Non-Structural Protection



Integrated Planning

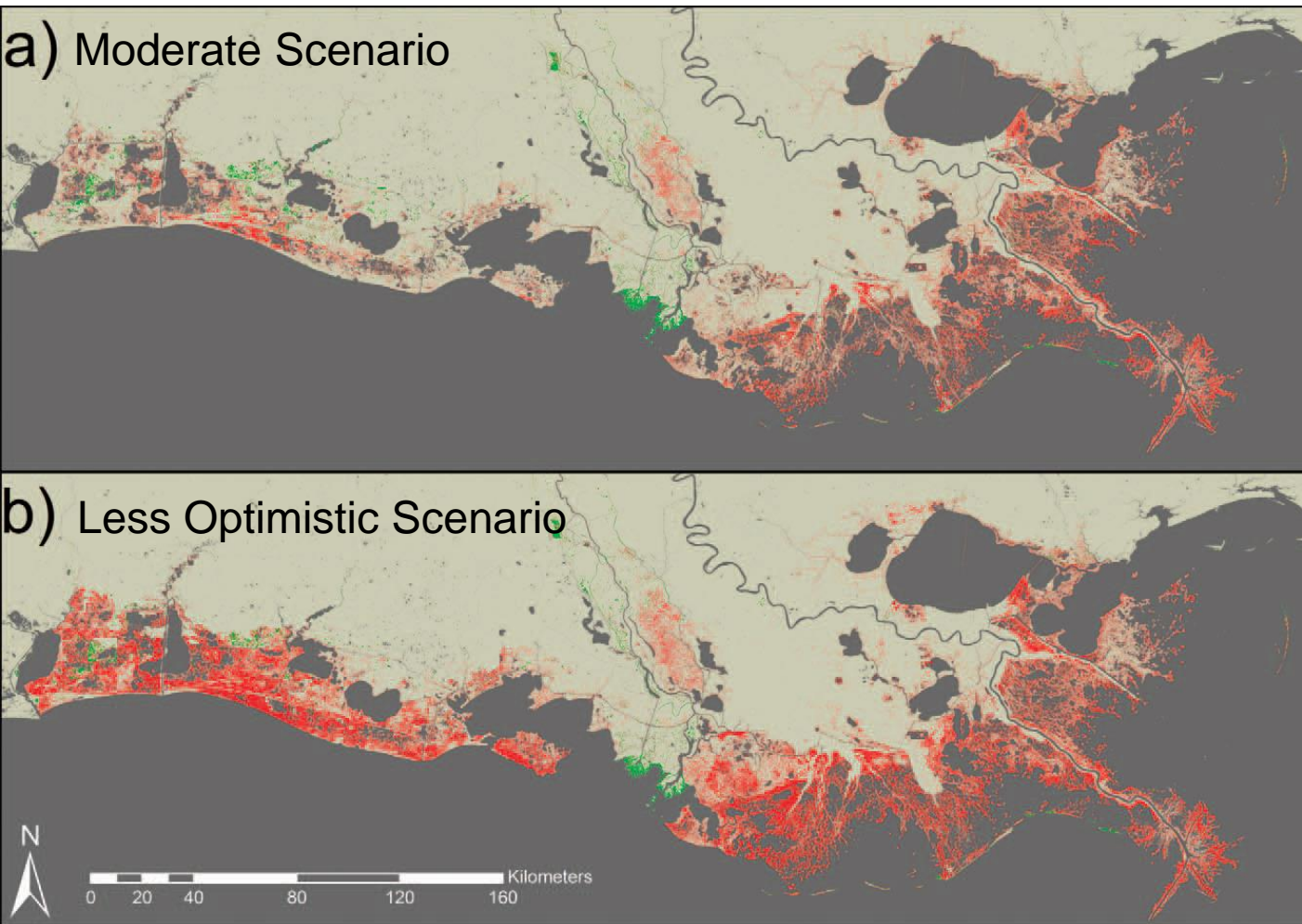
2012 Coastal Master Plan

Modeling in the Systems Context



2012 Coastal Master Plan

Understanding Future Scenarios



a) Moderate Scenario

b) Less Optimistic Scenario

Potential Wetland Loss 2010-2060

Potential Wetland Gain 2010-2060

Couvillion et al 2013

Coastal Protection and Restoration Authority of Louisiana

- ### Factors Accounted for by Our Scenarios
- ▶ Sea Level Rise
 - ▶ Subsidence
 - ▶ Storm Intensity
 - ▶ Storm Frequency
 - ▶ River Discharge / Sediment Load
 - ▶ River Nutrient Concentration
 - ▶ Rainfall
 - ▶ Evapotranspiration
 - ▶ Marsh Collapse Threshold

Grounded in Science...

Risk Reduction
























Expected Annual Damages

Land Restoration

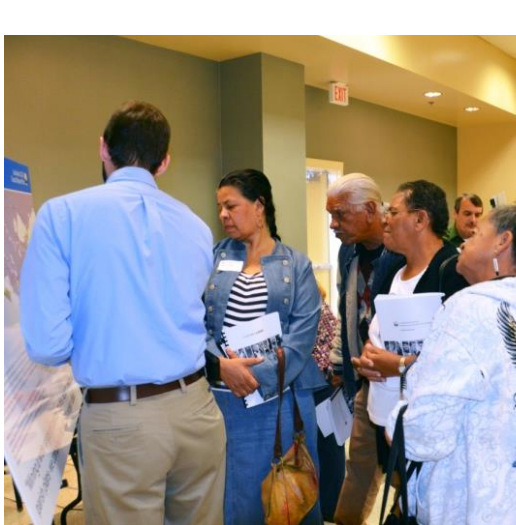


Land Area

Decision Criteria and Ecosystem Services

	Distribution of flood risk across socioeconomic groups		Oyster
	Flood protection of historic properties		Shrimp
	Flood protection of strategic assets		Freshwater Availability
	Operation and maintenance costs		Alligator
	Sustainability		Waterfowl
	Support for navigation		Saltwater Fisheries
	Use of natural processes		Freshwater Fisheries
	Support for cultural heritage		Carbon Sequestration
	Support for oil & gas		Nitrogen Removal
			Agriculture/Aquaculture
			Other Coastal Wildlife
			Nature-Based Tourism

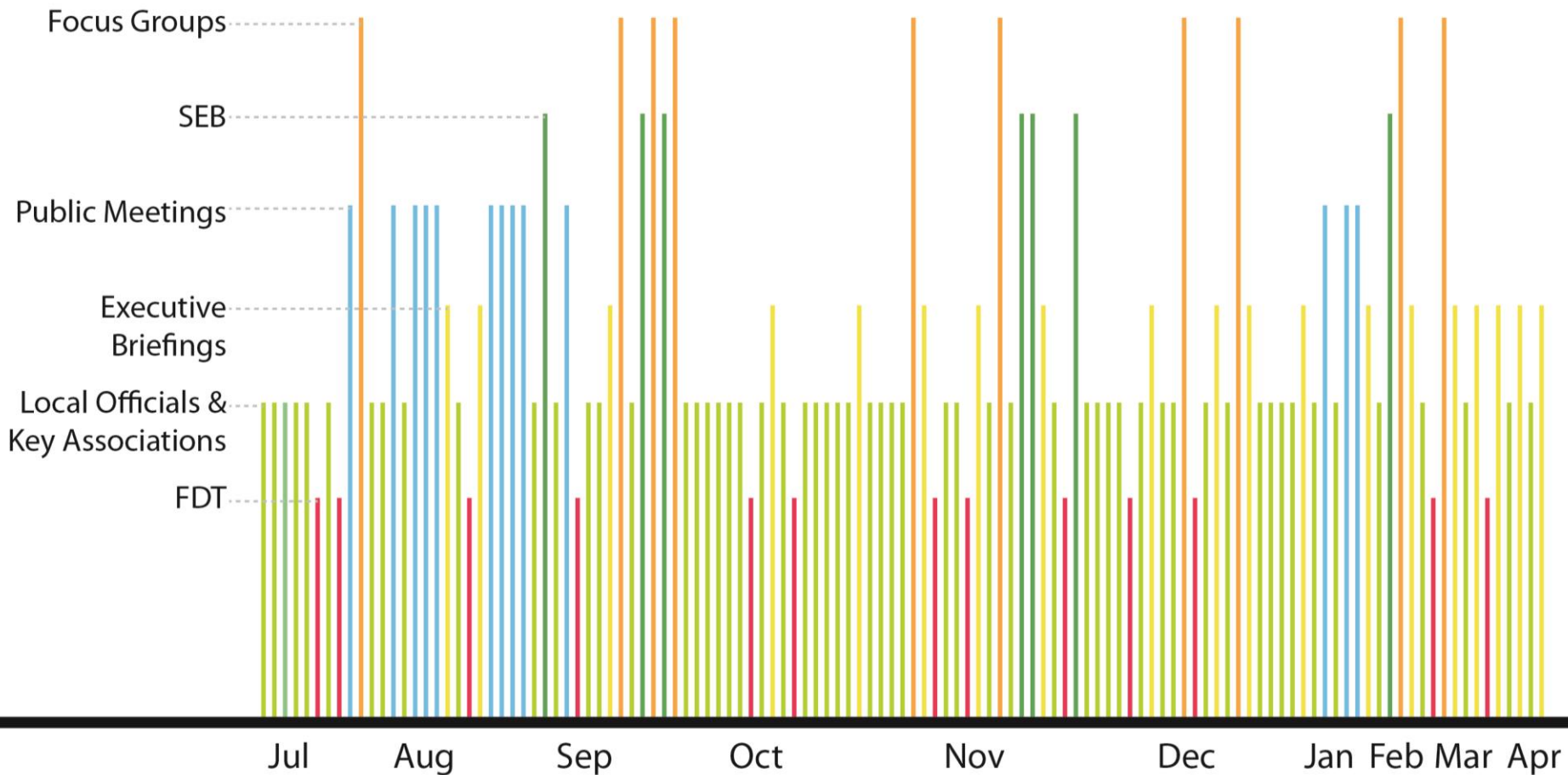
...and Responsive to the Needs of Our Coastal Communities



2012 Coastal Master Plan

Coordination and Collaboration

120+ meetings with citizens, focus groups, elected officials, stakeholders, & review teams



Future Without Action

Our Coastal Crisis Will Continue

Current

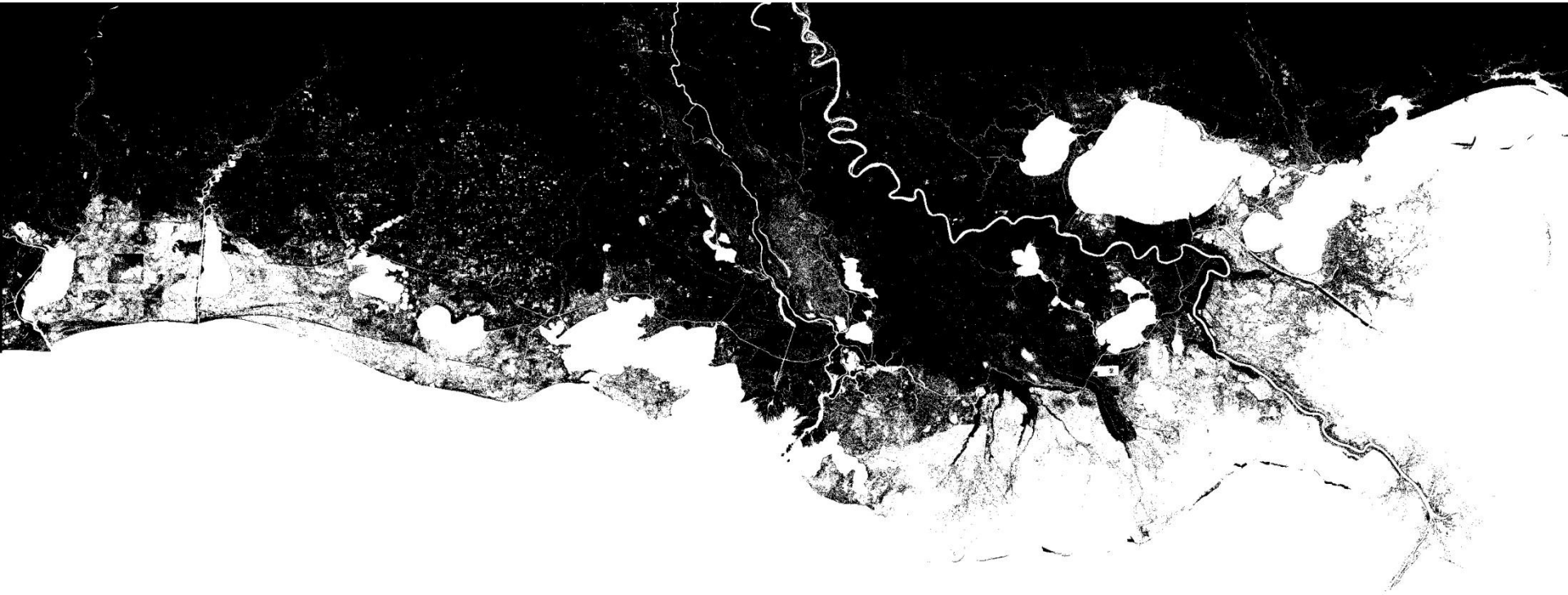
2020

2030

2040

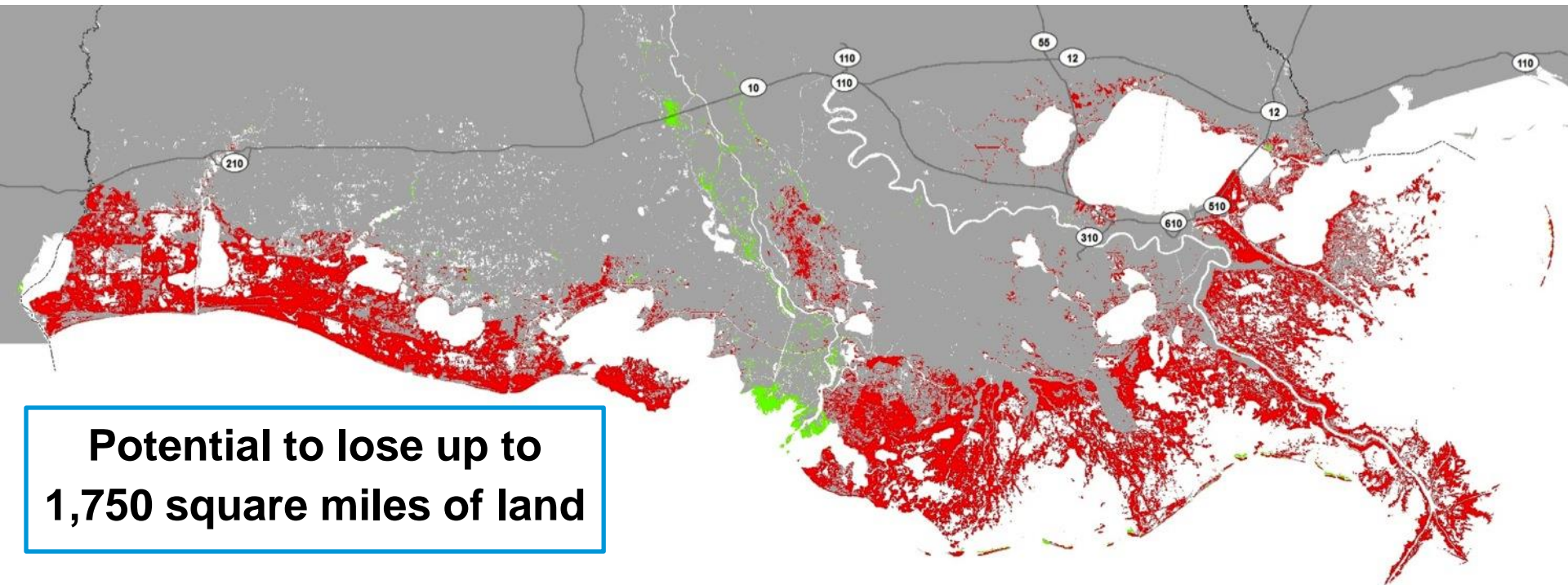
2050

2060



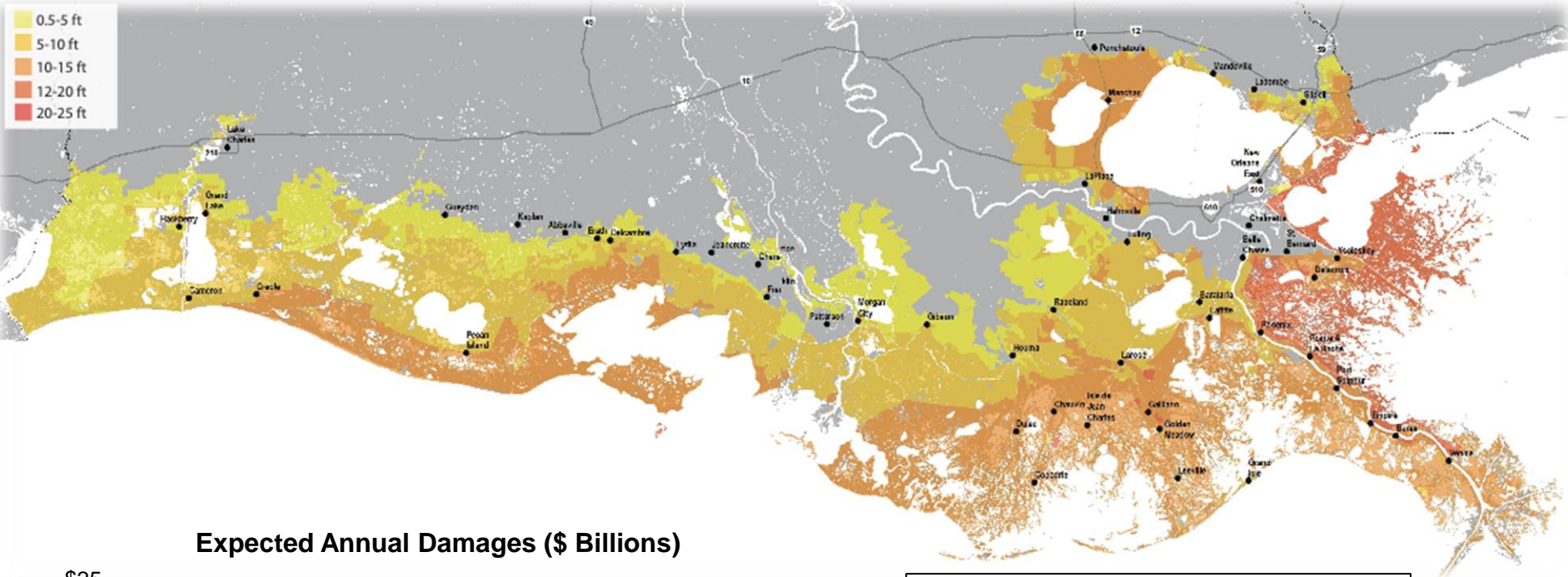
With No Action Over the Next 50 Years

Our Coastal Crisis Will Continue

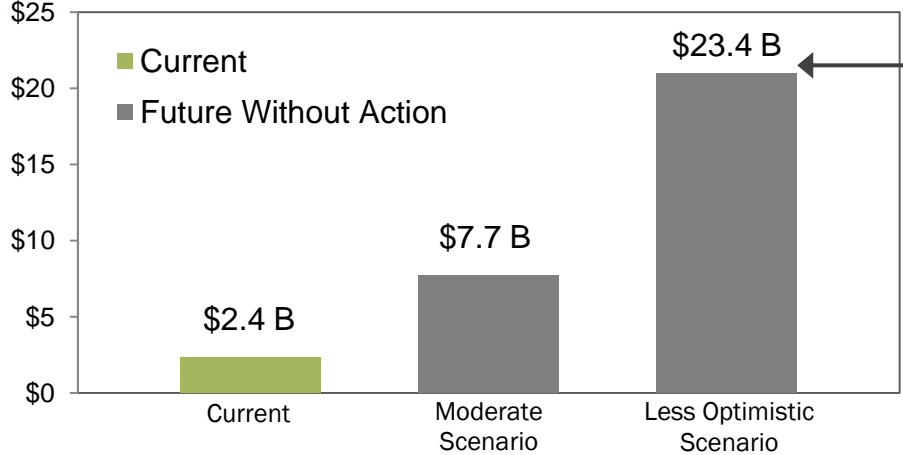


With No Action Over the Next 50 Years

Increasing Vulnerability to Livelihoods



Expected Annual Damages (\$ Billions)



Could experience 10x more damages than today

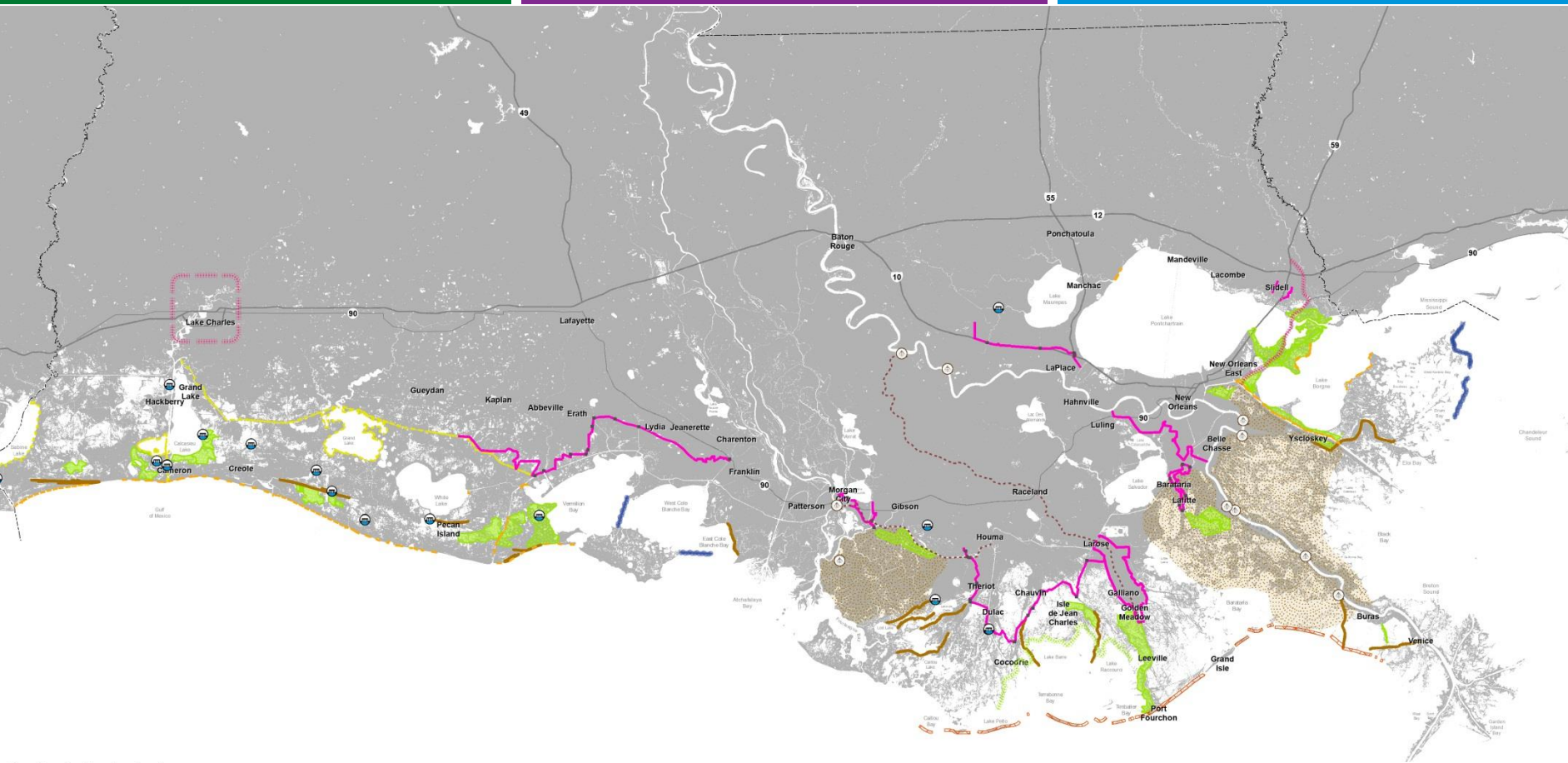
The Plan

Louisiana's 2012 Coastal Master Plan

Southwest Coast

Central Coast

Southeast Coast



Projects Included:

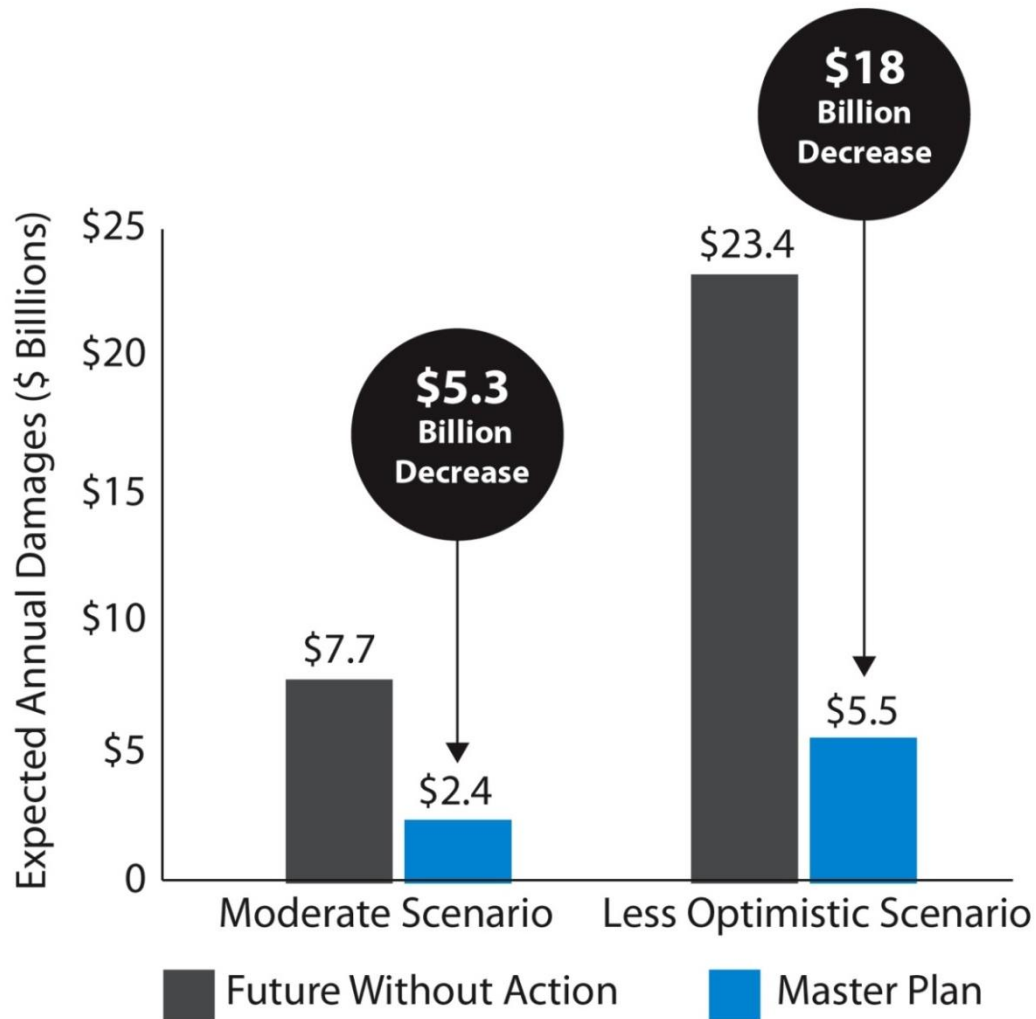
Structural Protection	Bank Stabilization	Oyster Barrier Reef	Ridge Restoration	Shoreline Protection	Barrier Island Restoration	Marsh Creation	Sediment Diversion	Hydrologic Restoration

Projects for Further Planning:

- Lake Pontchartrain Barrier
- Lake Charles Protection
- Terrebonne Bay Rim Marsh Creation
- Channel Realignment (Not Shown)

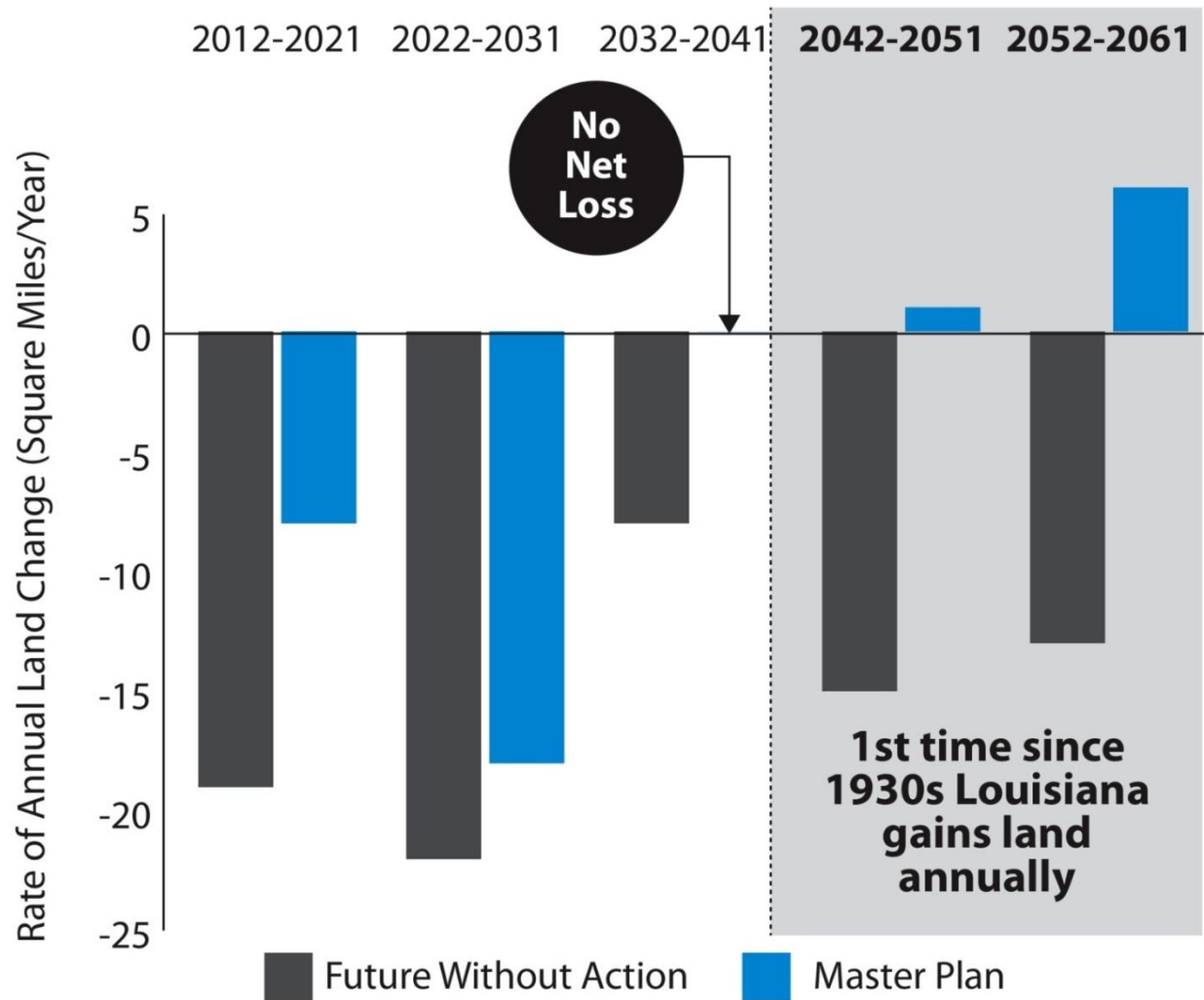
What the Master Plan Delivers

Expected Annual Damages at Year 50



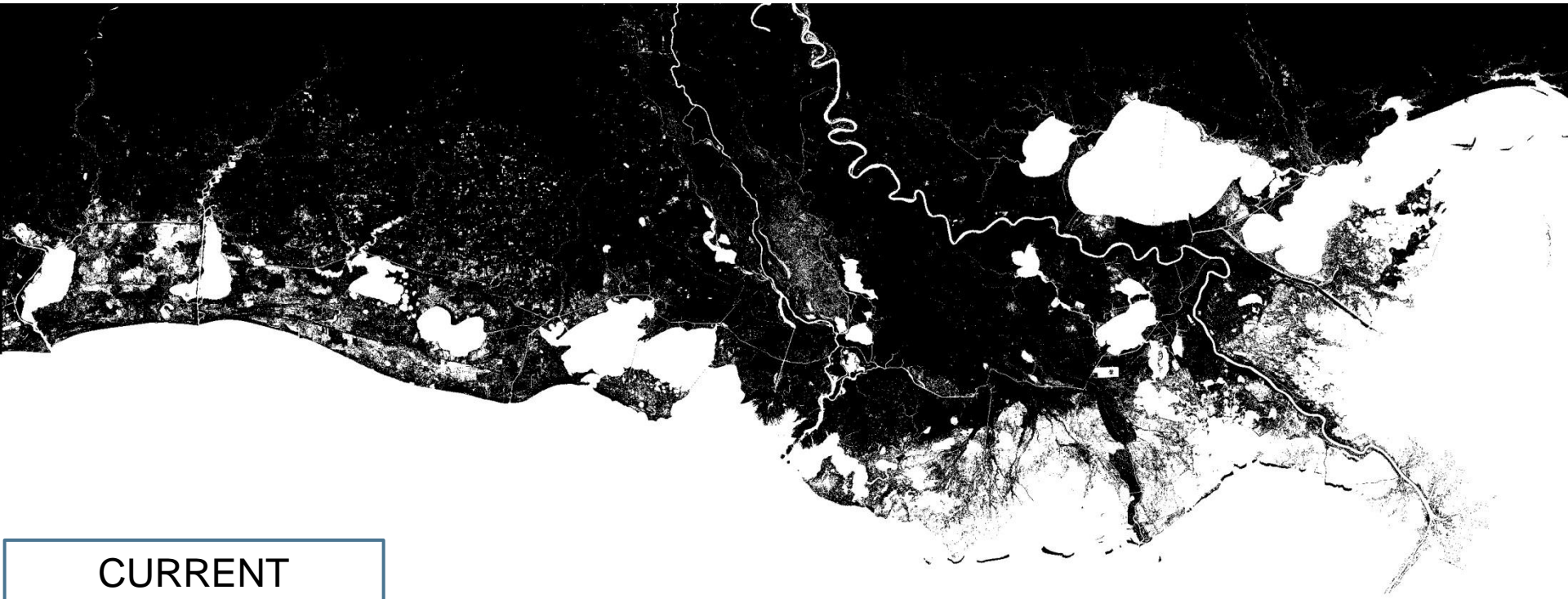
What the Master Plan Delivers

Annual Rates of Land Change Over 50 Years



What the Master Plan Delivers

Moderate Scenario



CURRENT

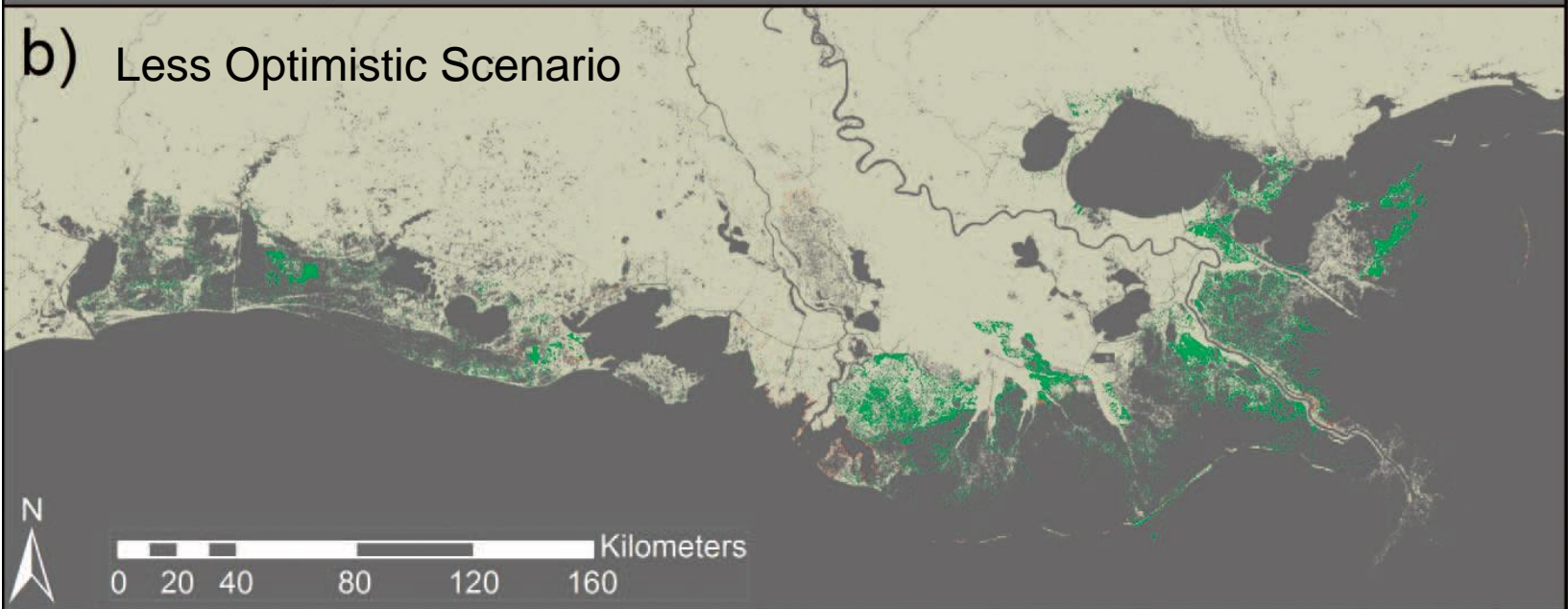
FUTURE WITHOUT ACTION
YEAR 50



FUTURE WITH MASTER PLAN
YEAR 50

a) Moderate Scenario



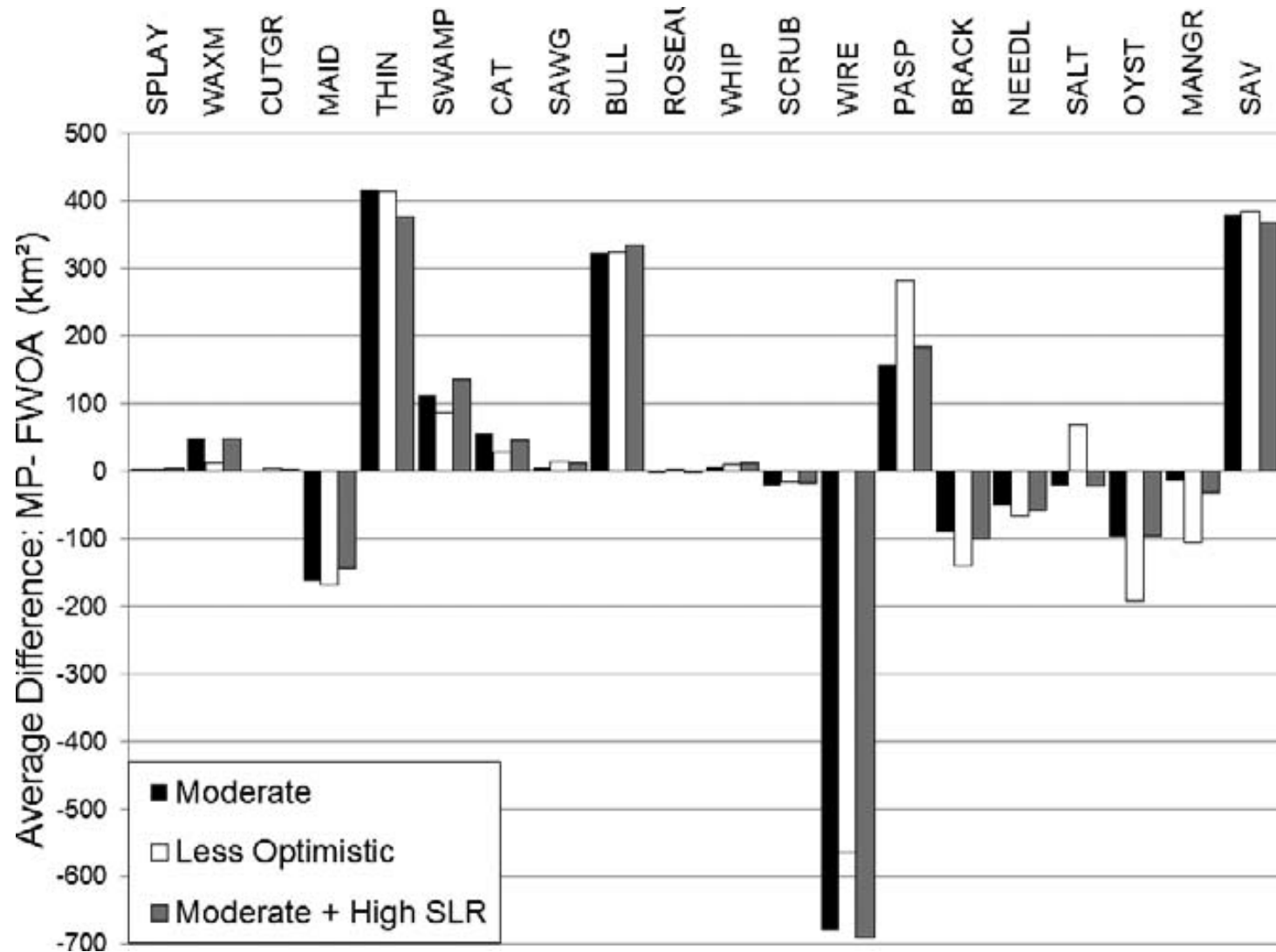
b) Less Optimistic Scenario



-  Land area increases as a result of Master Plan (2060)
-  Land area decreases as a result of Master Plan (2060)

What the Master Plan Delivers

Coastal Vegetation



What the Master Plan Delivers

Fish and Wildlife Habitats

Species	Moderate (%)		Less Optimistic (%)		Moderate with High Sea-Level Rise (%)	
	Without	With	Without	With	Without	With
Likely to increase with or without the master plan						
Eastern oyster	236	213	115	106	116	107
Largemouth bass	105	113	101	116	102	114
Likely to increase without the master plan but to decline with the master plan						
Brown shrimp	114	97	111	94	119	96
Spotted seatrout	106	87	112	94	115	93
White shrimp	105	93	103	97	106	98
Likely to decline without the master plan but increase with the master plan						
Gadwall (duck)	87	109	81	116	68	99
Crayfish	80	107	72	107	74	115
Likely to decline without the master plan but decline less with the master plan						
Mottled duck	83	96	84	105	67	88
Neotropical birds	83	96	64	80	66	84
Green-winged teal (duck)	80	77	70	77	49	61
Roseate spoonbill	72	86	59	70	54	66
American alligator	78	84	31	42	13	24
Muskrats	64	57	23	27	15	19

Percent (%) indicates a percent of current levels

Nyman et al 2013

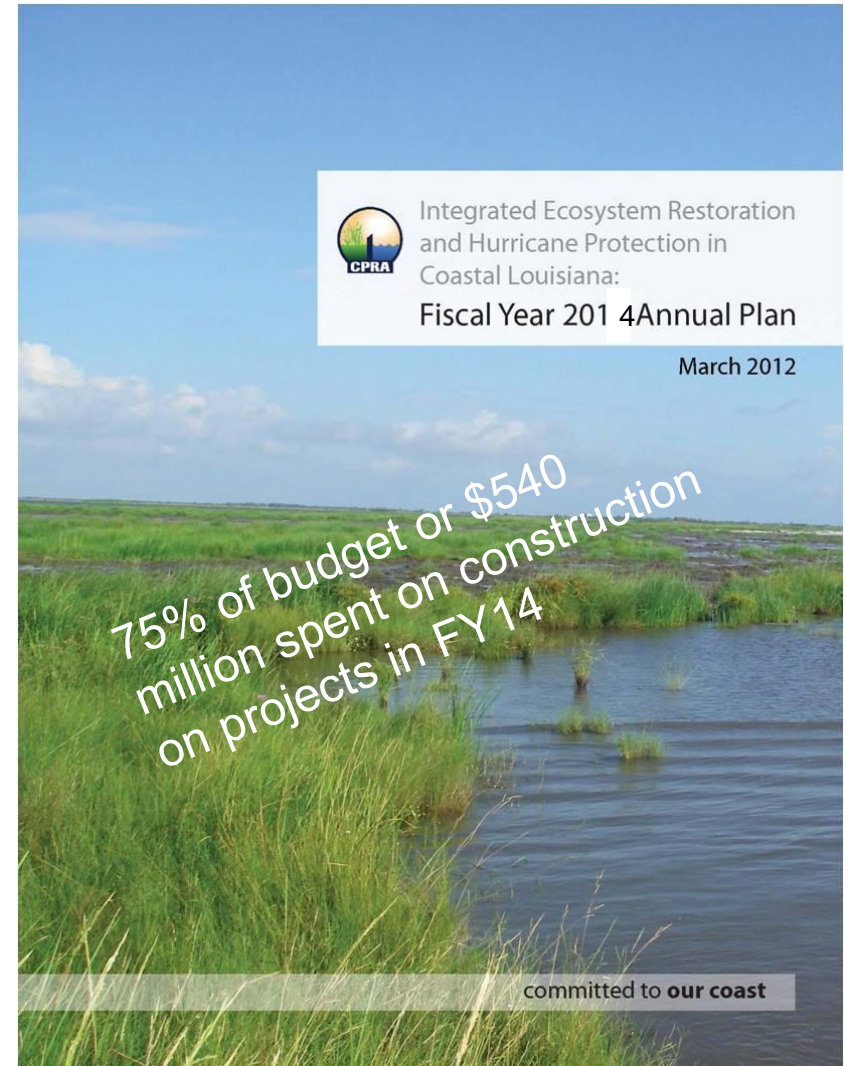


Implementation

Implementing the Master Plan

Annual Plan Expenditures

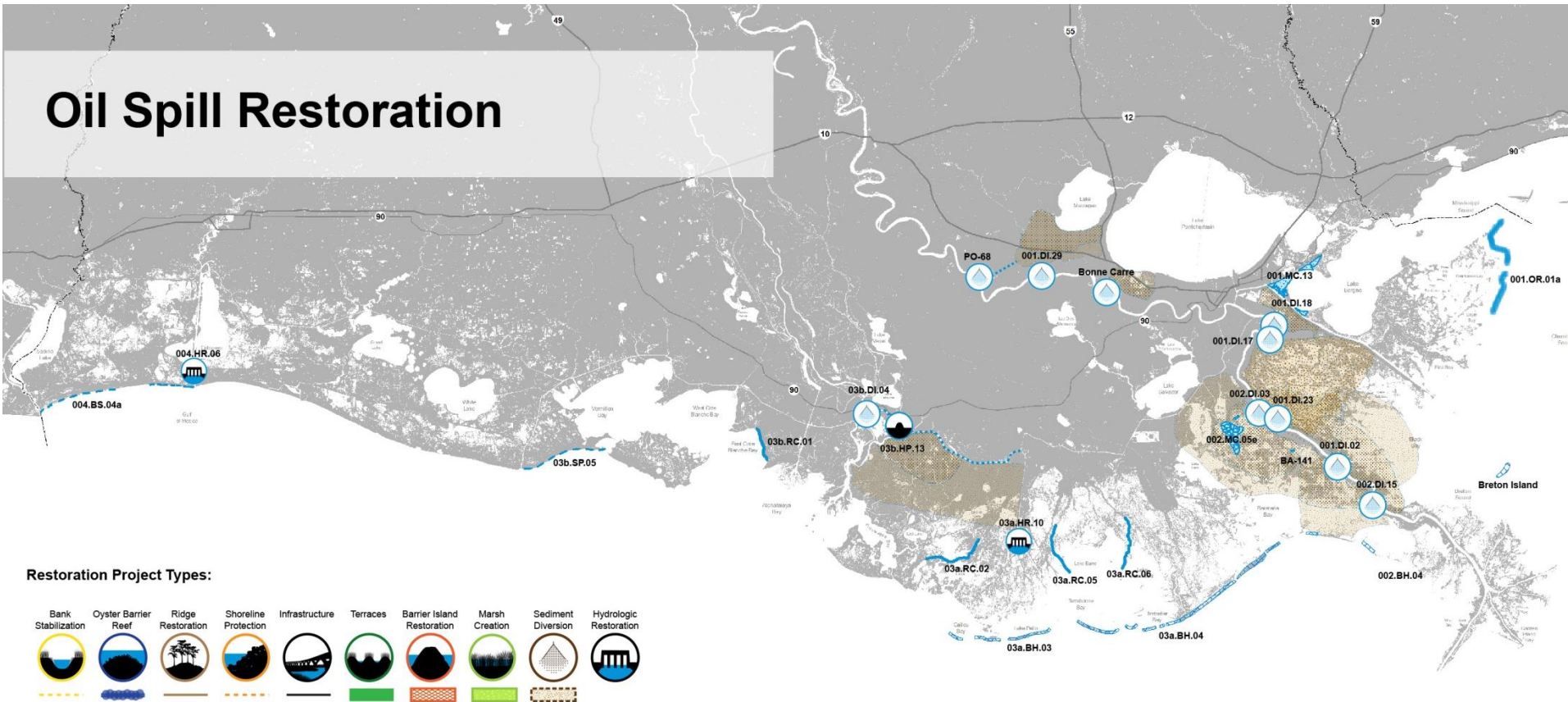
- ❖ CPRA, elected officials and partners are working diligently to **secure funding** needed to implement the Master Plan
- ❖ Preliminary engineering and design of some conceptual projects has begun and will continue in an effort to make as many projects as possible **“shovel-ready”**
- ❖ Project priorities will be outlined in the Annual Plan which **requires public comment and legislative approval.**



Implementing the Master Plan

Comprehensive Oil Spill Plan

Oil Spill Restoration



Implementing the Master Plan

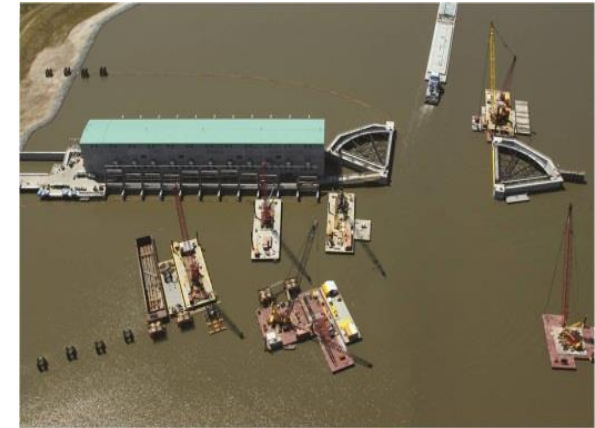
Comprehensive Oil Spill Plan

- ❖ NRDA Early Restoration: \$1 billion Gulf-wide
- ❖ Criminal penalties against BP: \$4 billion
 - \$1.2 billion designated for Louisiana restoration (barrier islands and sediment diversions)
- ❖ Civil & criminal penalties against Transocean: \$1.4 billion
 - \$1 billion to resolve Clean Water Act penalties
 - \$75 million designated for Louisiana restoration (barrier islands and sediment diversions)
 - Funds to be distributed via RESTORE Act
- ❖ To come...BP Clean Water Act fines (RESTORE Act)
...NRDA Restoration

Implementing the Master Plan

Learning as We Build

Projects	Protection	Restoration	
Greater New Orleans Hurricane Protection System (142 components)	2		
New Orleans to Venice (25 Components)	1		
Morganza to the Gulf (14 components)	1		
FEMA	2		
SELA	1		
3rd and 4th supplemental		5	
Berm to Barrier		2	
CDBG	7	2	
CIAP (Parish led 81)		17	
CWPPRA		57	
LCA		17	
HMGP	15		
NRDA		13	
State	11	16	
	40	129	169



We have learned a great deal from past projects and are continuing to learn from on-going efforts

Implementing the Master Plan

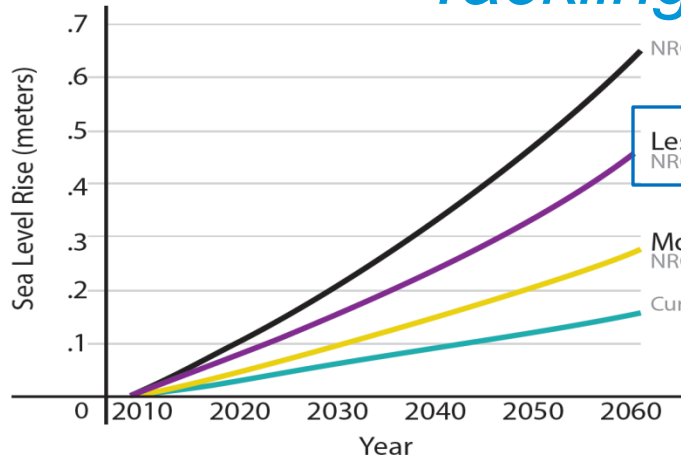
Monitoring and Reporting our Progress



- ❖ Continue and expand monitoring stations along the coast
- ❖ Modify tools based on on-going monitoring to help better predict future conditions
- ❖ Assess monitoring data, formalize feedback loops and triggers for modifications
- ❖ Expand monitoring to include Performance Measures that provide an indication of our progress toward achieving the objectives of the Master Plan
- ❖ Measure and report on project performance and system response

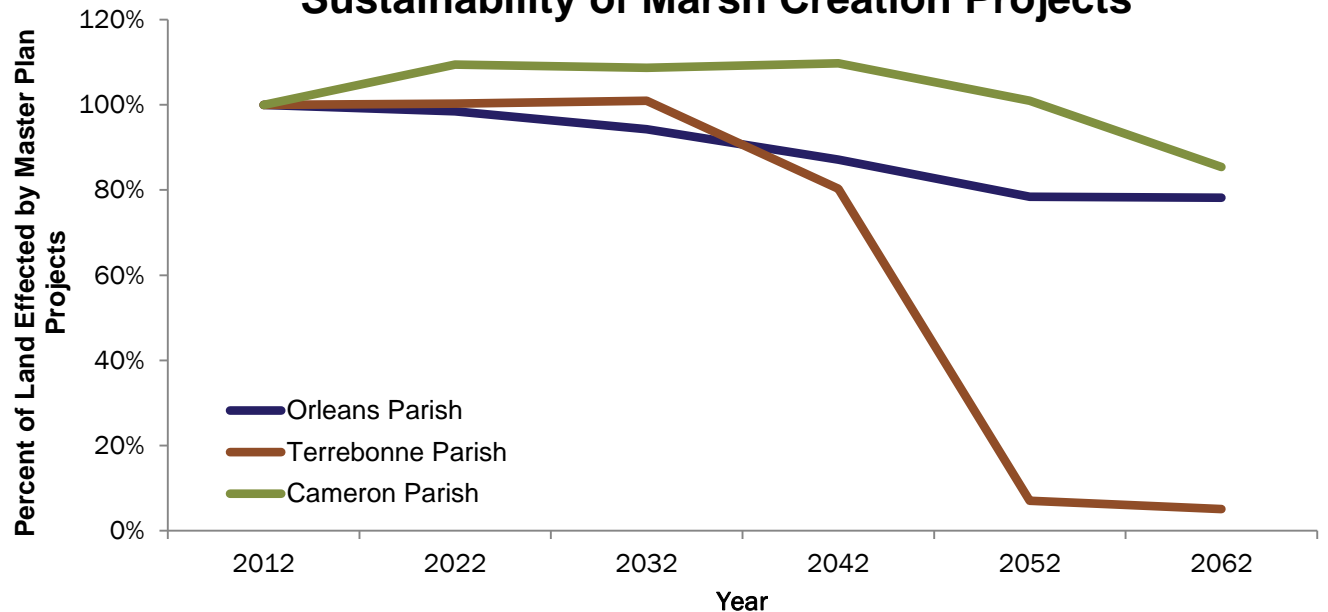
Implementing the Master Plan

Tackling Future Challenges



Climatic changes can challenge the sustainability of some proposed projects requiring adaptation

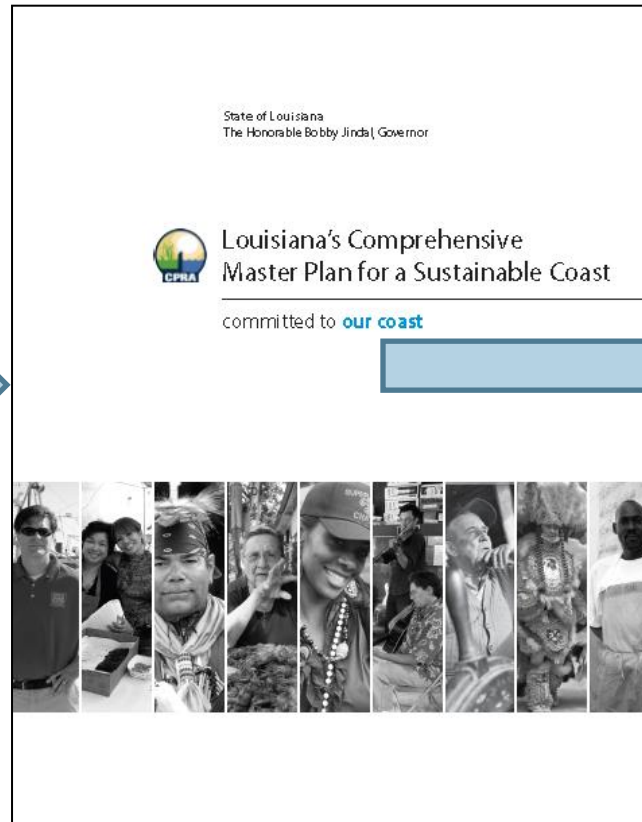
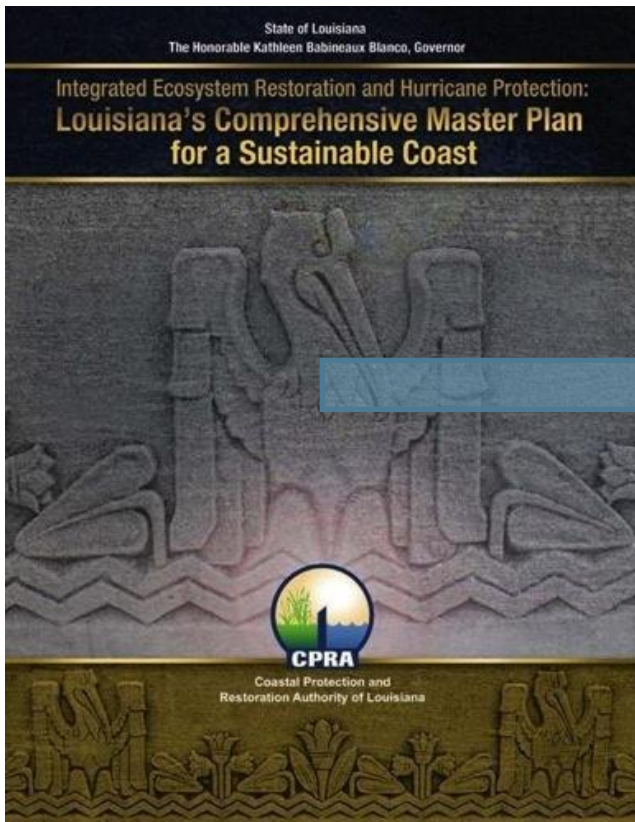
Sustainability of Marsh Creation Projects*



*Note: Unlike the Master Plan, this graph assumes all projects are implemented in 2012.

Implementing the Master Plan

Adaptive Planning Built In



2017
Coastal
Master
Plan

The Louisiana Legislature requires that the Master Plan be updated every five years with the latest science and technical information.

committed to our coast



Thank you!

