



# **2017 COASTAL MASTER PLAN** COMMITTED TO OUR COAST

**Overview Presentation** 



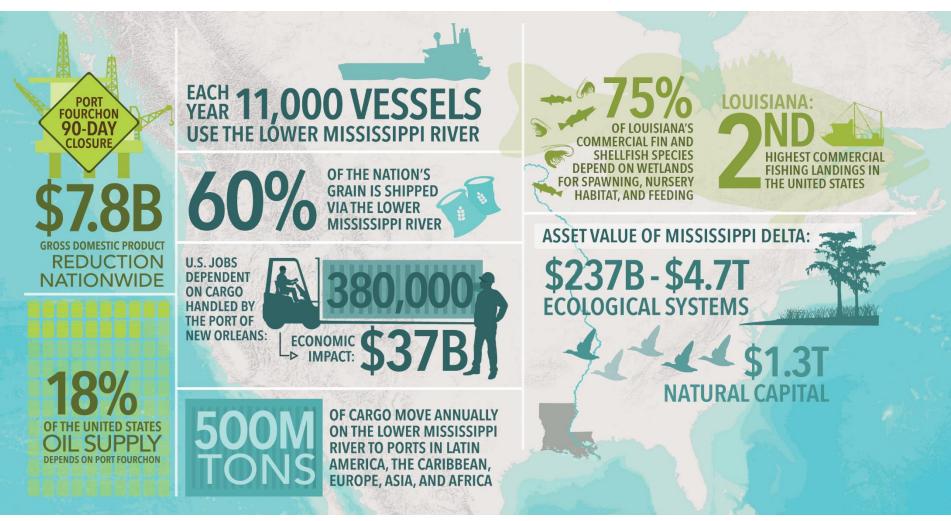


# committed to our coast

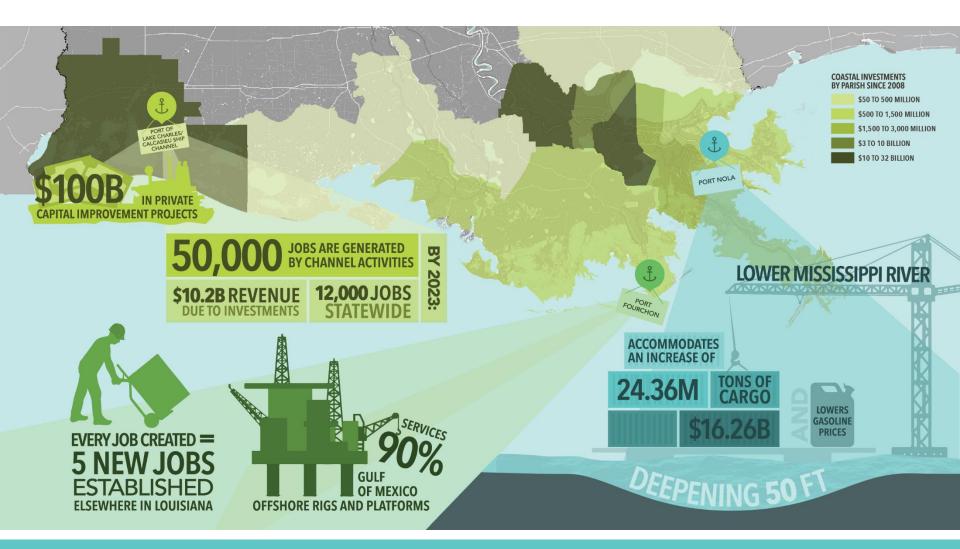
# LOUISIANA'S NATIONAL TREASURE



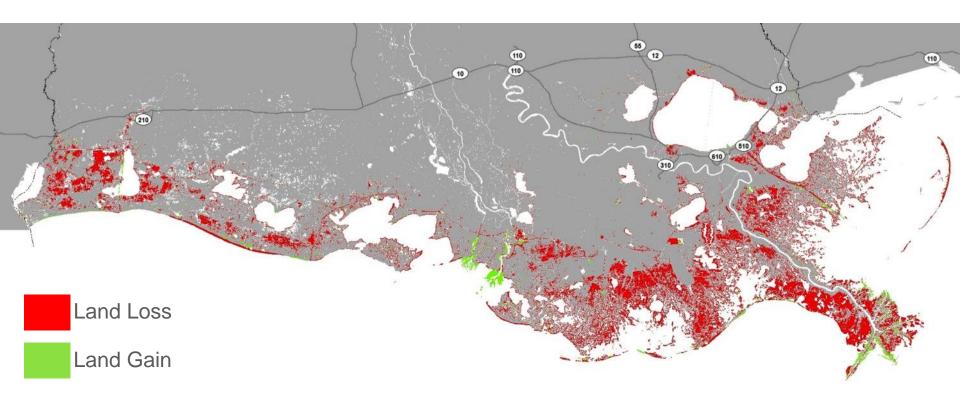
# NATIONAL SIGNIFICANCE OF COASTAL LOUISIANA RESOURCES



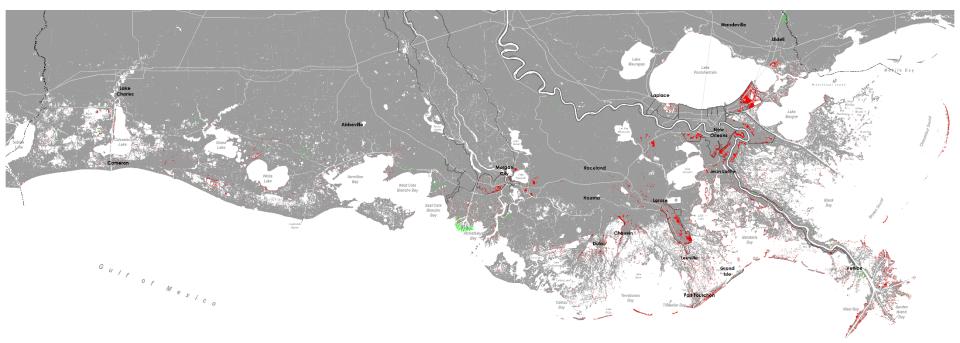
# **INVESTING IN OUR COASTAL ECONOMY**



# LOUISIANA IS FACING A COASTAL CRISIS

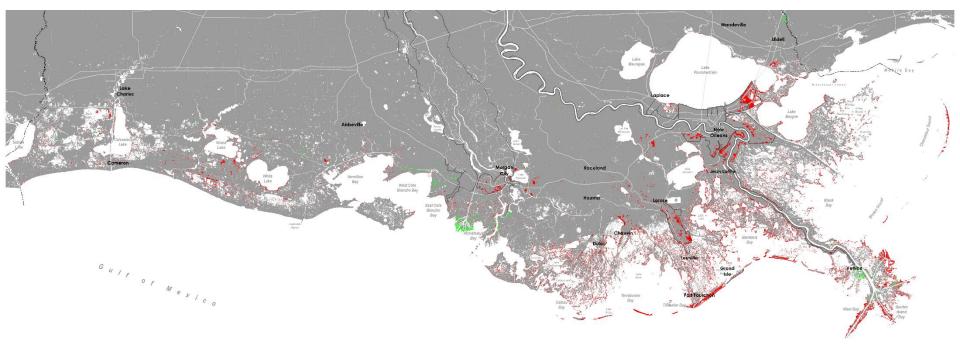


Historic Land-Water Change from 1932-2010 Approx. 1,900 sq. mi. Couvillion et al (USGS), 2011



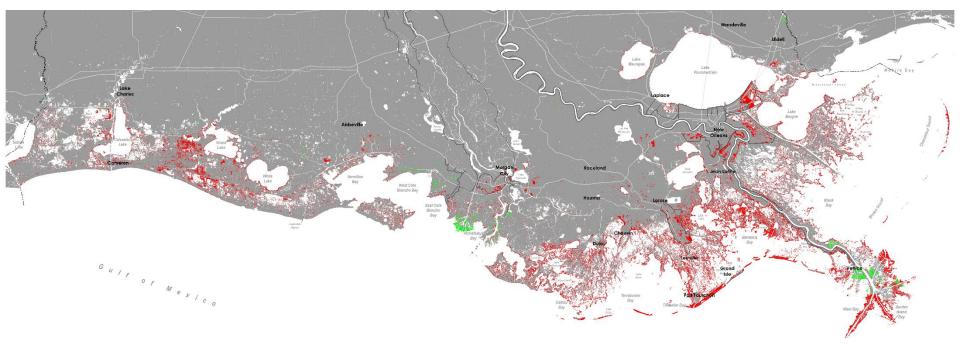






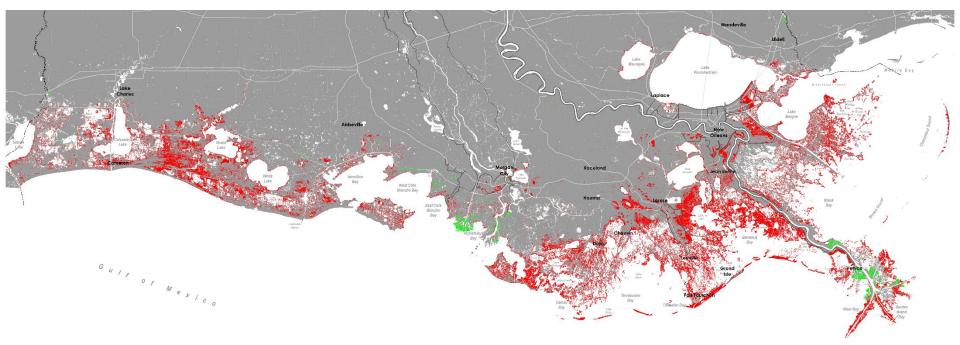






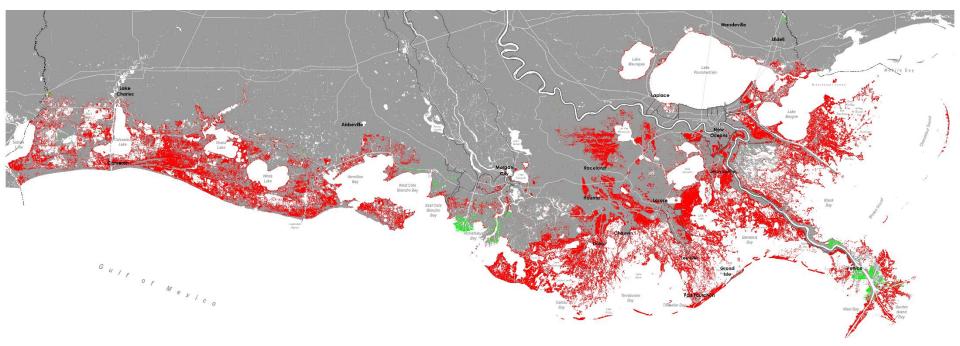








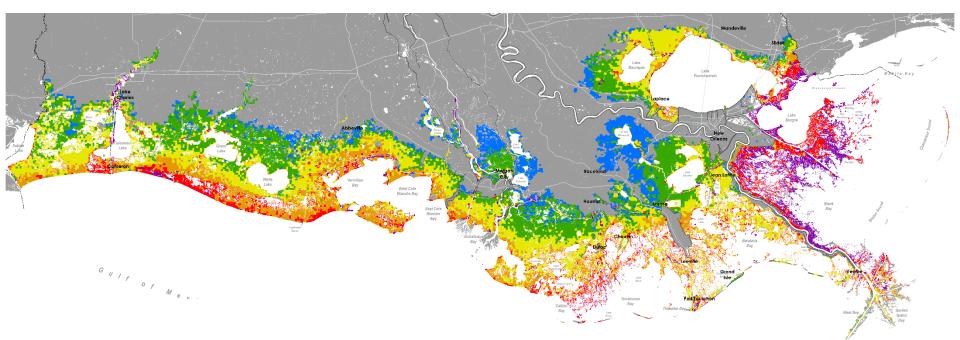






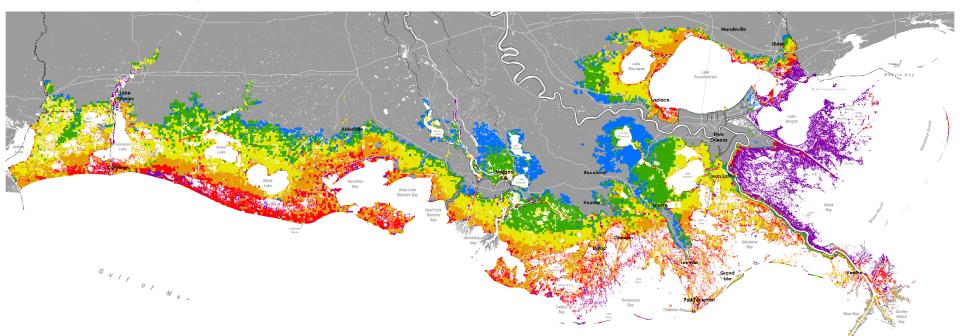


# PREDICTED FLOOD DEPTHS INITIAL CONDITION 100-YEAR EVENT



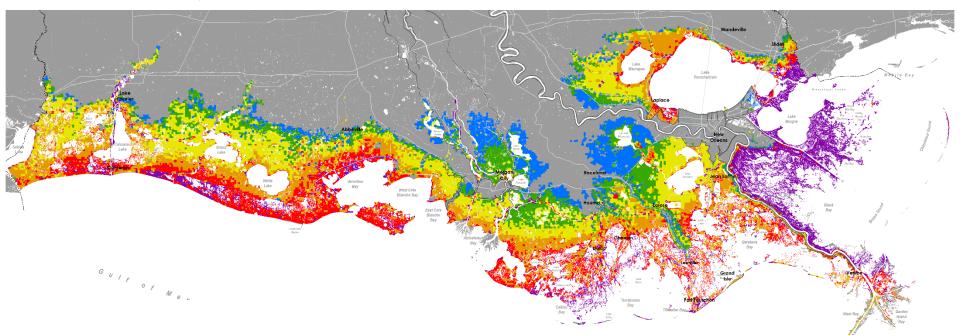


# PREDICTED FLOOD DEPTHS FUTURE WITHOUT ACTION YEAR 10, 100-YEAR EVENT



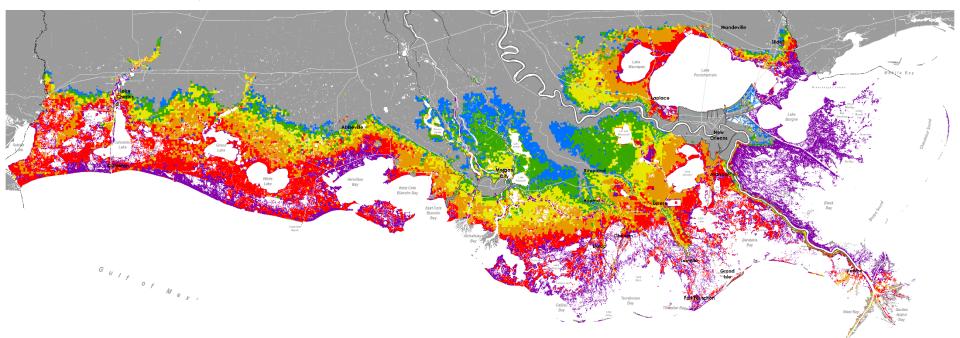


# PREDICTED FLOOD DEPTHS FUTURE WITHOUT ACTION YEAR 25, 100-YEAR EVENT





# PREDICTED FLOOD DEPTHS FUTURE WITHOUT ACTION YEAR 50, 100-YEAR EVENT





# LOUISIANA IS FACING A COASTAL CRISIS

# 1,900 2,250 Square miles of land have been lost in the last 80 years Square miles of additional land are at

risk of being lost in the next 50 years

WHAT'S AT STAKE?

# HOMES





# COASTAL PROTECTION AND RESTORATION AUTHORITY

Single state entity with authority to articulate a clear statement of priorities to achieve **comprehensive coastal protection and restoration** for Louisiana.

Mandate is to develop, implement, and enforce a comprehensive coastal protection and restoration master plan.



# **RESPONDING TO THE CRISIS:** LOUISIANA'S COASTAL PROGRAM SINCE 2007



# WE ARE TURNING DIRT TODAY... AND THERE'S MORE IN THE PIPELINE



# **OBJECTIVES OF THE COASTAL MASTER PLAN**



# SO WHY ANOTHER PLAN?

- It's required by law to be updated every five years
- Allows the state to respond to changes on the ground and public input as well as innovations in science, engineering, and policy
- Advances a comprehensive and integrated approach to protecting and restoring the communities of coastal Louisiana



# A FRAMEWORK TO MAKE DECISIONS

## THE ANALYTICAL CHALLENGE

- Complex Coastal Environment
- 50 Year Planning Horizon
- Uncertain Future Scenarios
- Multiple Project Types
- Diverse Community Needs

## NO OPTIMAL SOLUTIONS

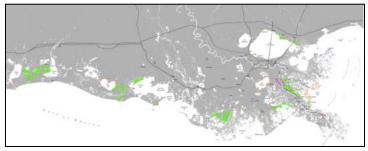
- Risk Reduction (Structural or Nonstructural) vs. Restoration
- Near-Term Benefits vs.
   Long-Term Sustainability
- Different Stakeholder
   Preferences

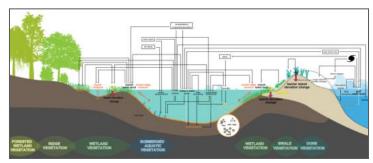


# WHAT'S DIFFERENT ABOUT THE 2017 COASTAL MASTER PLAN?

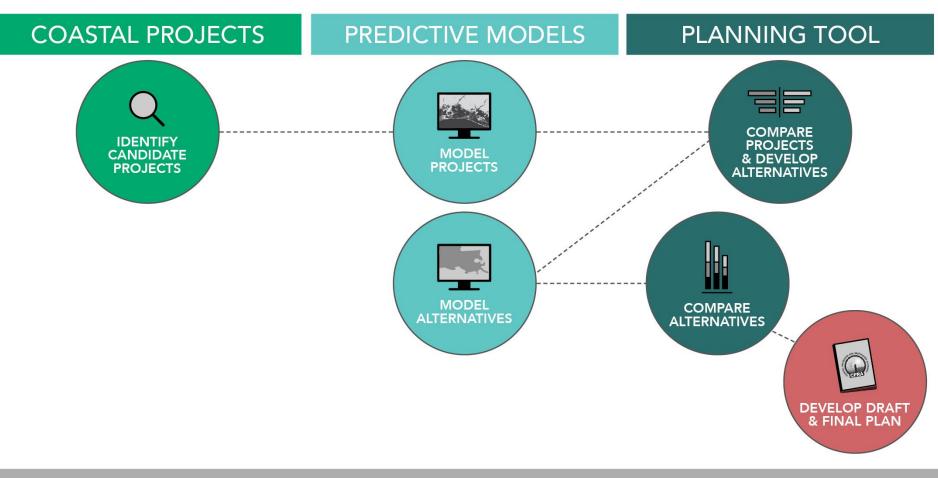
- Improved science and technical analysis
- New ideas and information
- Focus on flood risk reduction and resilience
- Emphasis on communities
- Expanded outreach and public engagement
- Earlier funding





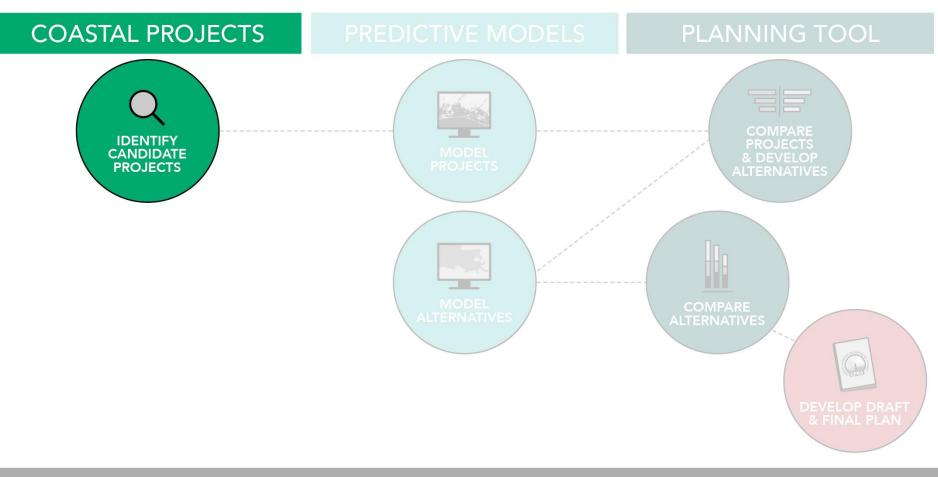


# **DEVELOPING THE COASTAL MASTER PLAN**



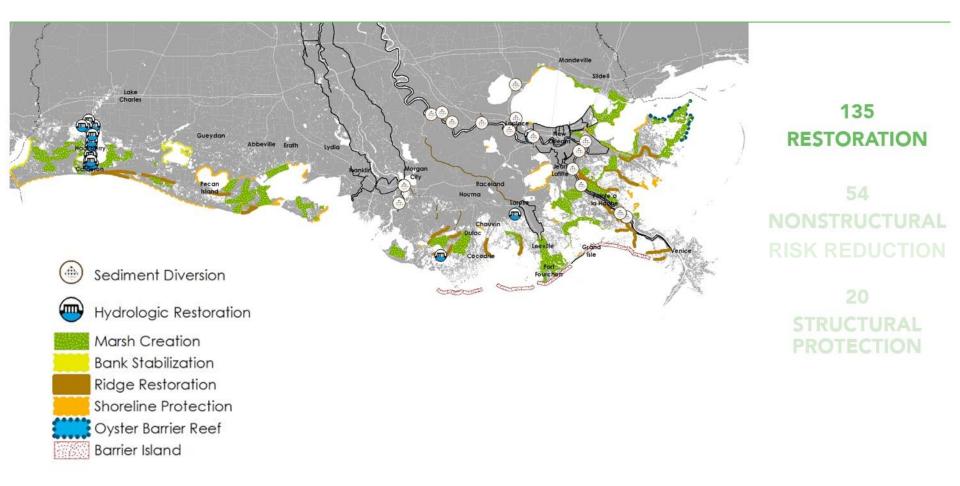
## OUTREACH & ENGAGEMENT

# **DEVELOPING THE COASTAL MASTER PLAN**

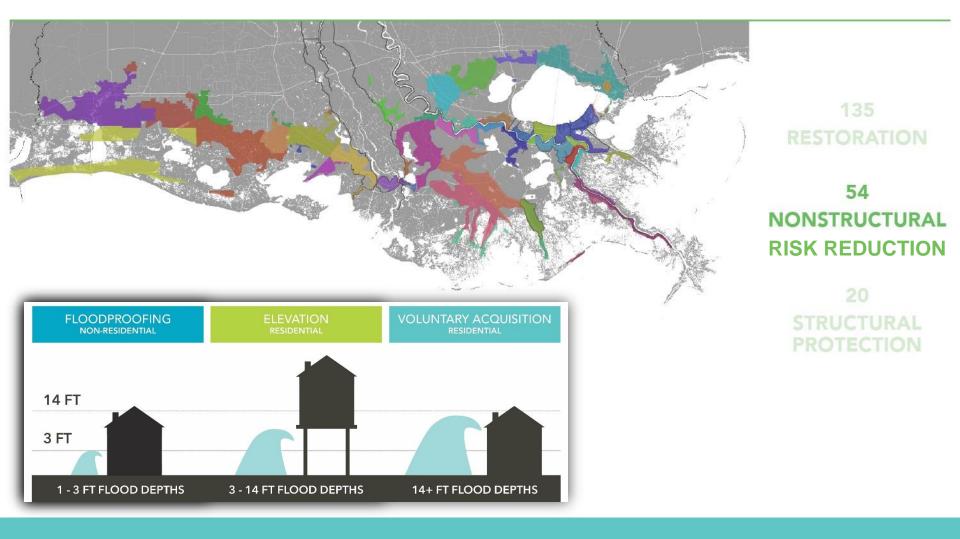


## OUTREACH & ENGAGEMENT

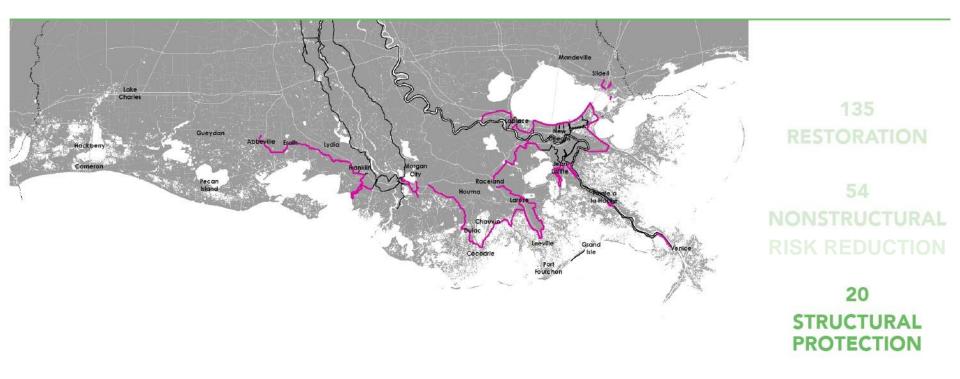
## OVER \$150 BILLION OF PROJECTS CONSIDERED RESTORATION PROJECTS



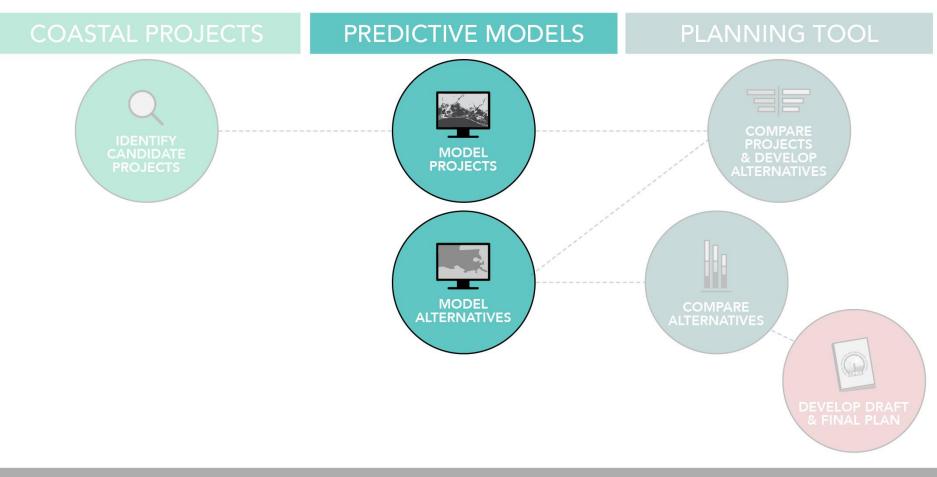
## **OVER \$150 BILLION OF PROJECTS CONSIDERED NONSTRUCTURAL RISK REDUCTION PROJECTS**



## **OVER \$150 BILLION OF PROJECTS CONSIDERED STRUCTURAL PROTECTION (LEVEES, FLOOD WALLS)**



# **DEVELOPING THE COASTAL MASTER PLAN**



## OUTREACH & ENGAGEMENT

# **ENVISIONING OUR FUTURE COAST**

## **PREDICTIVE MODELS**



#### SURGE/WAVES AND RISK ASSESSMENT MODEL

# STORM SURGE/ WAVES

#### ENVIRONMENTAL AND RISK SCENARIOS







PRECIPITATION

**EVAPOTRANSPIRATION** 

SUBSIDENCE







SEA LEVEL RISE

STORM FREQUENCY

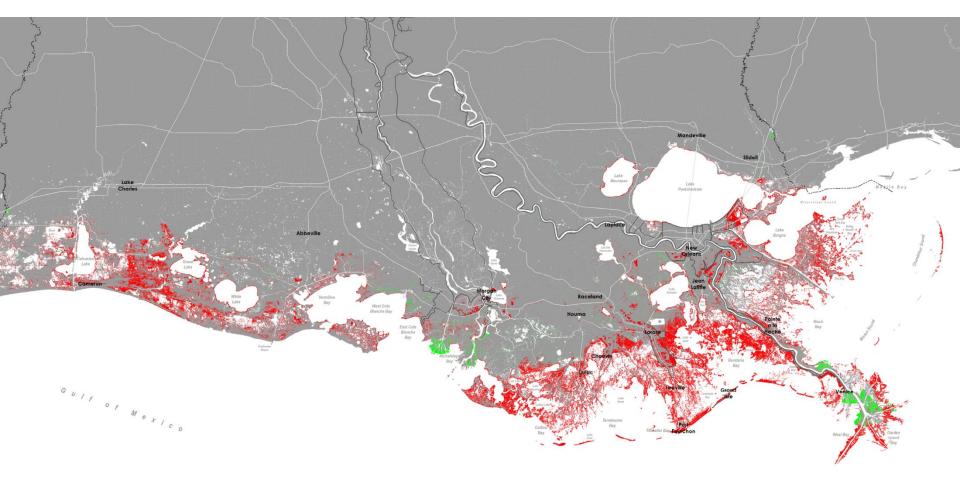
STORM INTENSITY

# PLANNING FOR AN UNCERTAIN FUTURE ENVIRONMENTAL SCENARIOS CONSIDERED

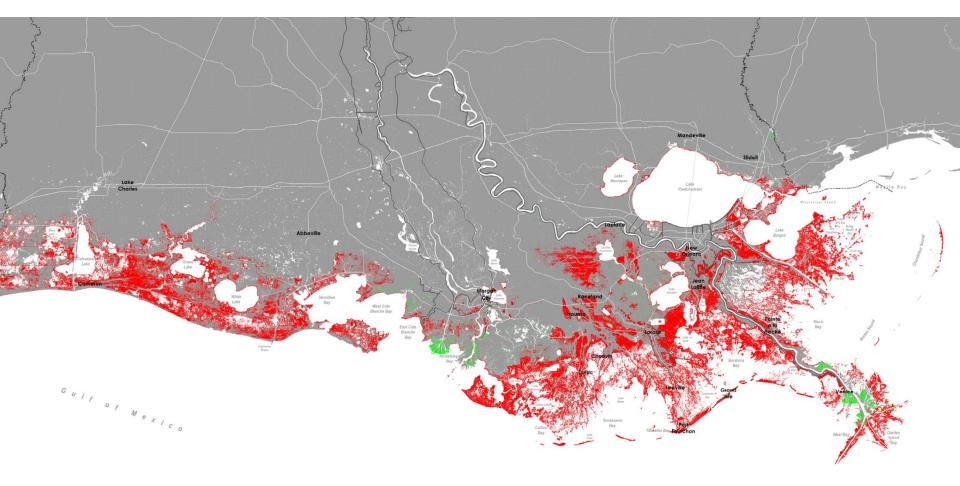
SCENARIO	PRECIP	ET	SEA LEVEL RISE	SUBSIDENCE	STORM FREQUENCY	AVG. STORM INTENSITY
2017 COASTAL MASTER PLAN						
LOW	>HISTORICAL	<historical< td=""><td>1.41'</td><td>20% OF RANGE</td><td>-28%</td><td>+10.0%</td></historical<>	1.41'	20% OF RANGE	-28%	+10.0%
MEDIUM	>HISTORICAL	HISTORICAL	2.07'	20% OF RANGE	-14%	+12.5%
HIGH	HISTORICAL	HISTORICAL	2.72'	50% OF RANGE	0%	+15.0%

(FEET/50 YEARS)

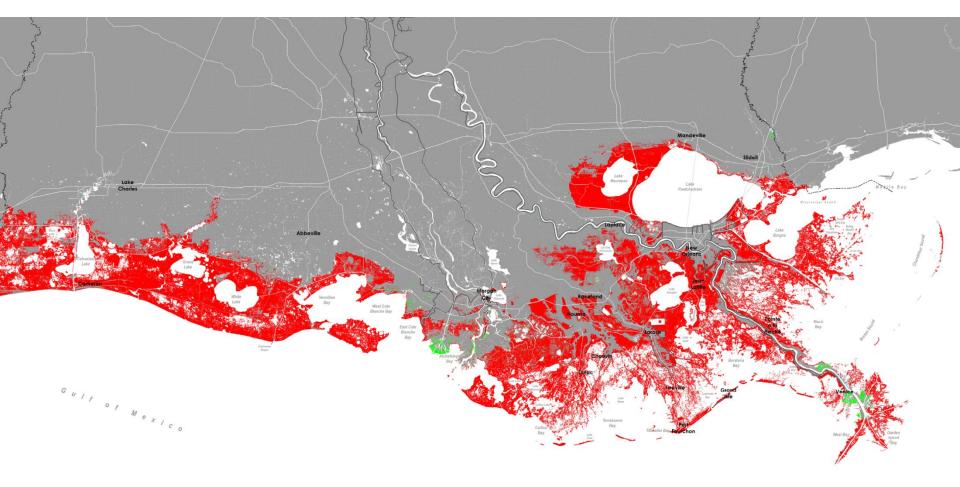
# PREDICTED LAND CHANGE FUTURE WITHOUT ACTION - YEAR 50, LOW SCENARIO



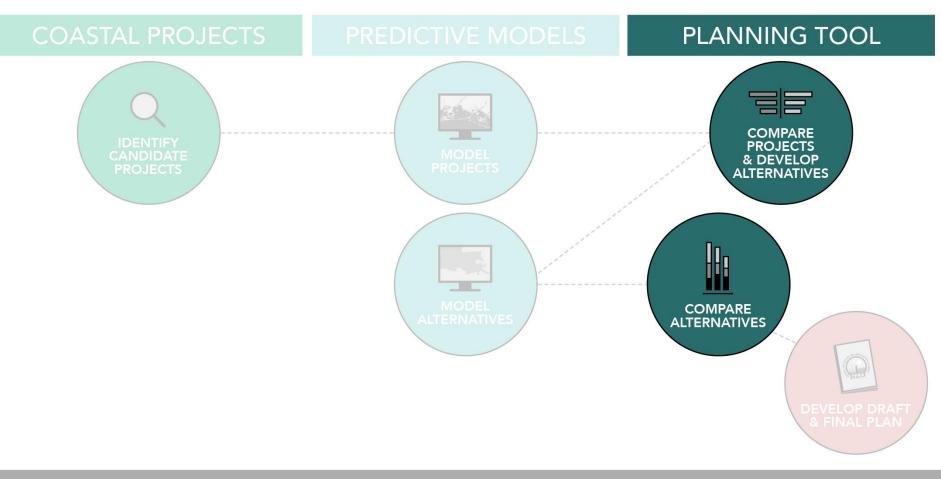
# PREDICTED LAND CHANGE FUTURE WITHOUT ACTION - YEAR 50, MEDIUM SCENARIO



# PREDICTED LAND CHANGE FUTURE WITHOUT ACTION - YEAR 50, HIGH SCENARIO



# **DEVELOPING THE COASTAL MASTER PLAN**



## OUTREACH & ENGAGEMENT

# **DECISION DRIVERS FOR PROJECT SELECTION**

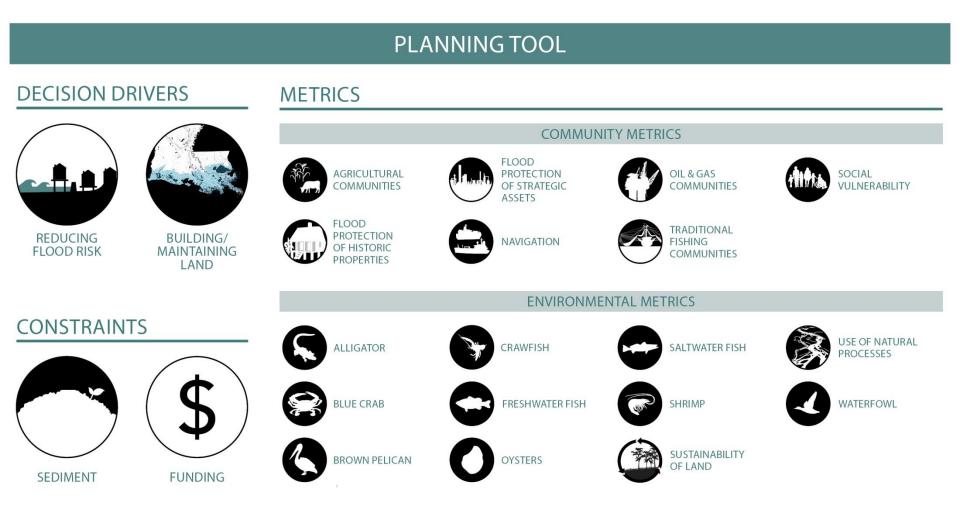


## REDUCING FLOOD RISK



BUILDING/ MAINTAINING LAND

# A PLAN BUILT ON THE BEST AVAILABLE SCIENCE...



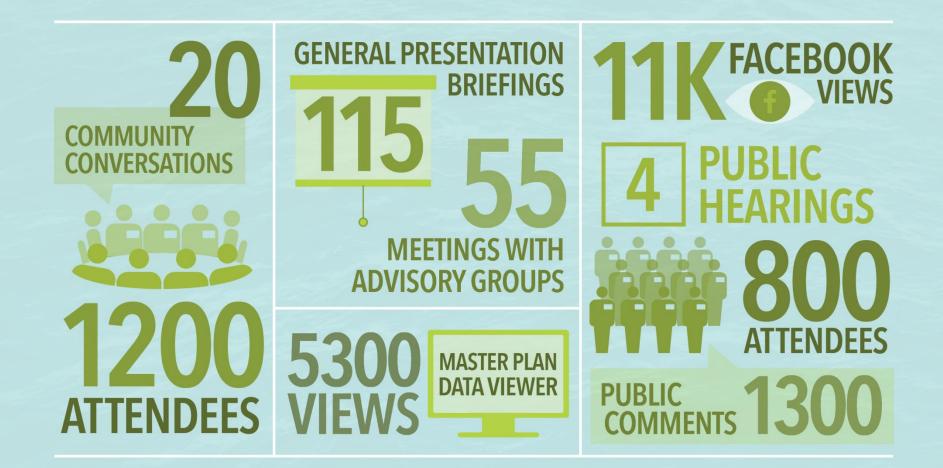
# ...BUT RESPONSIVE TO THE NEEDS OF OUR COMMUNITIES

**INPUT FROM CITIZENS, KEY STAKEHOLDERS, AND LOCAL/NATIONAL EXPERTS** 



#### OUTREACH & ENGAGEMENT

## UNPRECEDENTED OUTREACH BEFORE AND DURING THE DRAFT PLAN



## UNPRECEDENTED OUTREACH OFFICIAL PUBLIC HEARINGS



## HOUMA



## LAKE CHARLES



## MANDEVILLE

## **NEW ORLEANS**

# **PLANNING TEAM**



- Bren Haase
- Mandy Green
- Melanie Saucier
- Raynie Harlan

- Andrea Galinski
- Ashley Cobb
- Zach Rosen

#### SUPPORTED BY:



## **TECHNICAL TEAM** COLLABORATIVE TEAM OF OVER 70 EXPERTS







# FRAMEWORK DEVELOPMENT TEAM



# **FOCUS GROUPS**

- Key industries or stakeholder groups that are impacted by land loss and large scale protection and restoration efforts
- Focus Groups:
  - Community
  - Energy and Industry
  - Fisheries
  - Landowners
  - Navigation



# SCIENCE AND ENGINEERING BOARD

Name	Organization	Expertise
Carl Friedrichs	VIMS, William & Mary	Coastal Geoscience
Dan Childers	Arizona State University	Wetlands
Ed Houde	University of Maryland	Fisheries
Jen Irish	Virginia Tech	Risk
Len Shabman	Resources for the Future	Economics
Margaret Davidson	NOAA (deceased)	Natural Resource/Economic Policies
Marius Sokolewicz	Royal Haskoning	Coastal Modeling
Michael Orbach	Duke University	Socio-Economics
Sandra Knight	WaterWonks, LLC	Water Resources
William Fulton	Rice University	Urban Planning

# **TECHNICAL ADVISORY COMMITTEES**

## **Predictive Models**

- John Callaway, University of San Francisco
- Scott Hagen, Louisiana State University
- Courtney Harris, Virginia Institute of Marine Sciences
- Wim Kimmerer, San Francisco State University
- Mike Waldon, US Fish and Wildlife Services (retired)

## Resiliency

- Daniel Aldrich, Northeastern University
- Diane Austin, University of Arizona
- Gavin Smith, University of North Carolina
- Dan Zarrilli, City of New York, Mayor's Office of Recovery & Resiliency

# **KEY DECISION POINTS**

- **Overall Funding:** \$50 Billion, front-load dollars
- Funding Split: An equal split of \$25 billion each for restoration and risk reduction
- Scenario: Plan for the worst conditions (High) and hope for the best
- Near-Term/Long-Term Results: Equal emphasis was
  placed on the near term and the long term
- Public Input: Changes to the draft plan were made based on the feedback received

A Plan Based on Science, But Responsive to the Needs of Our Communities

# 2017 COASTAL MASTER PLAN

2017 Louisiana's Comprehensive Master Plan for a Sustainable Coast

State of Louisiana The Honorable John Bel Edwards, Governor



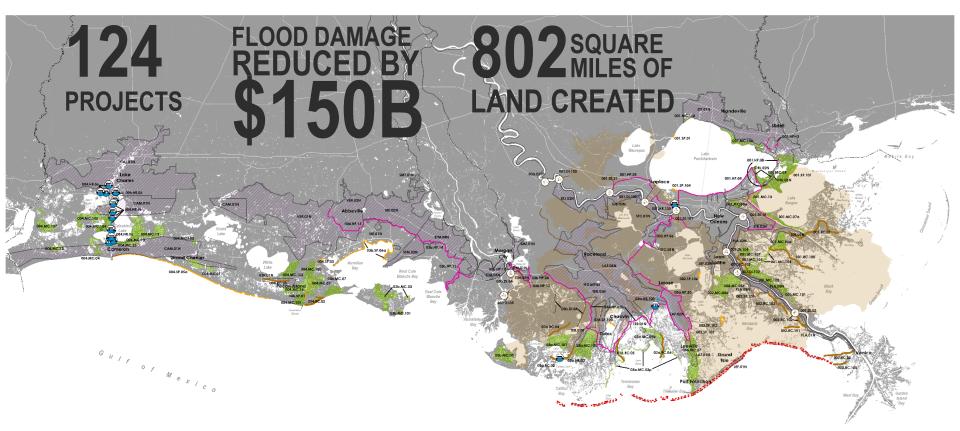
Louisiana's Comprehensive Master Plan for a Sustainable Coast

committed to our coast



Effective June 2, 2017

# LOUISIANA'S 2017 COASTAL MASTER PLAN



#### **PROJECT TYPES**

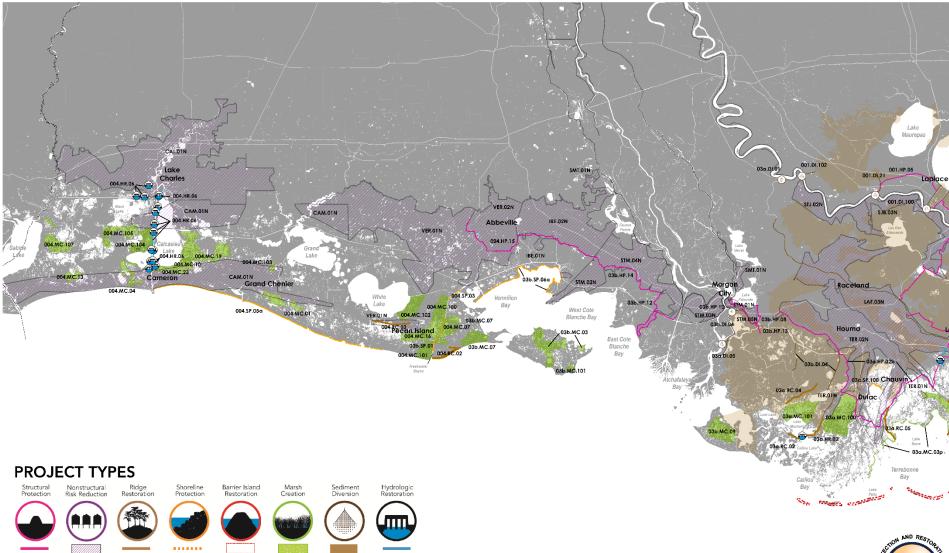


Small scale hydrologic restoration and oyster reef/living shoreline projects are included programmatically in the 2017 Coastal Master Plan. Consistency of individual projects will be determined on a case-by-case basis.





# A CLOSER LOOK: WEST



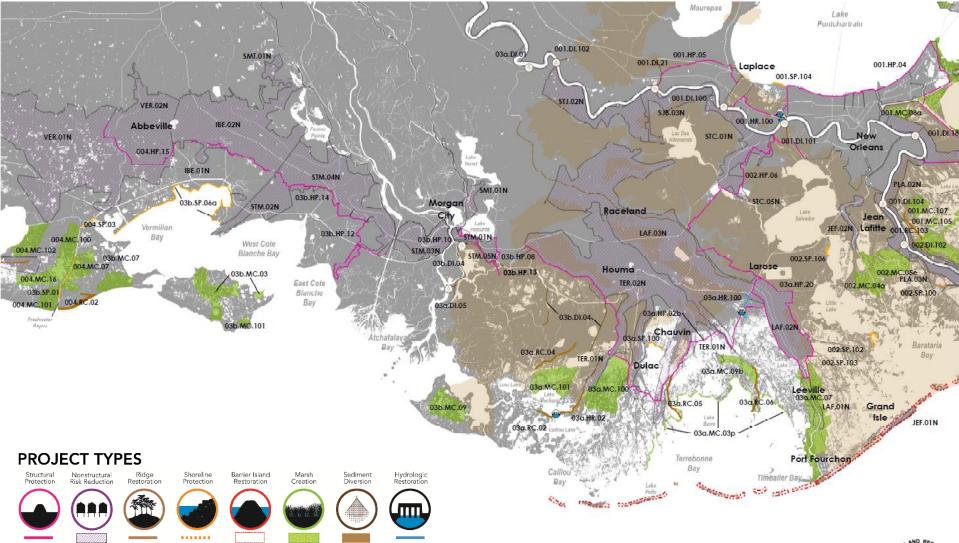
Small scale hydrologic restoration and oyster reef/living shoreline projects are included programmatically in the 2017 Coastal Master Plan. Consistency of individual projects will be determined on a case-by-case basis.

5 10

20 Miles

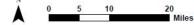


# A CLOSER LOOK: CENTRAL

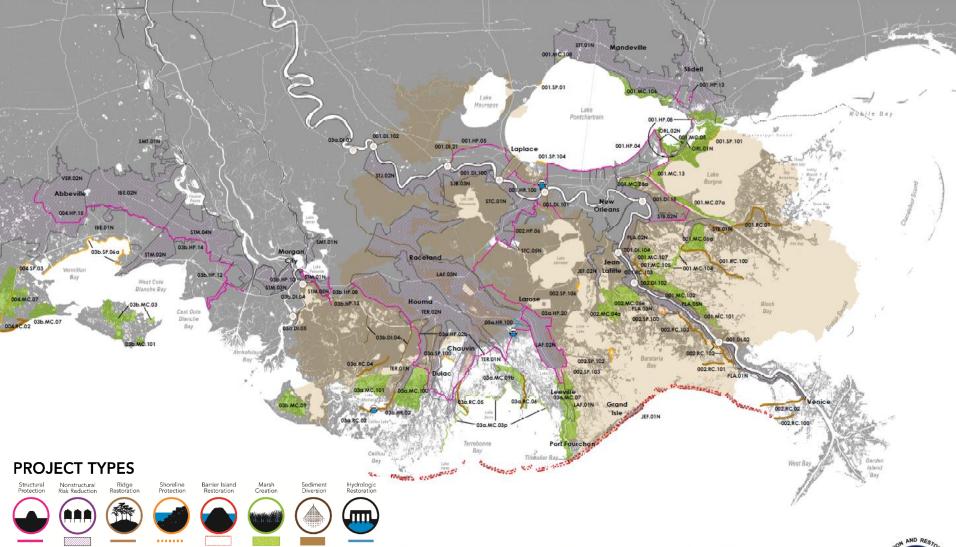


Small scale hydrologic restoration and oyster reef/living shoreline projects are included programmatically in the 2017 Coastal Master Plan. Consistency of individual projects will be determined on a case-by-case basis.





# A CLOSER LOOK: EAST



Small scale hydrologic restoration and oyster reef/living shoreline projects are included programmatically in the 2017 Coastal Master Plan. Consistency of individual projects will be determined on a case-by-case basis.

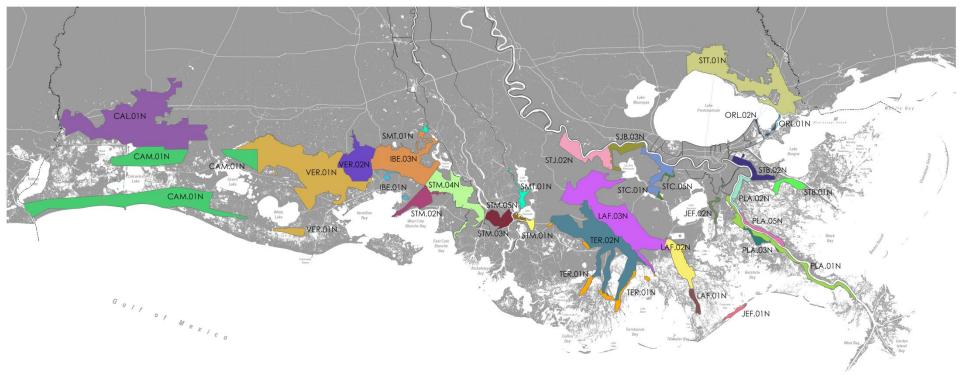
5 10

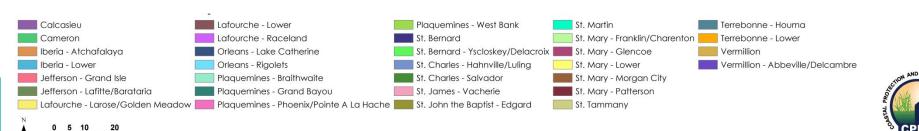
20 Miles



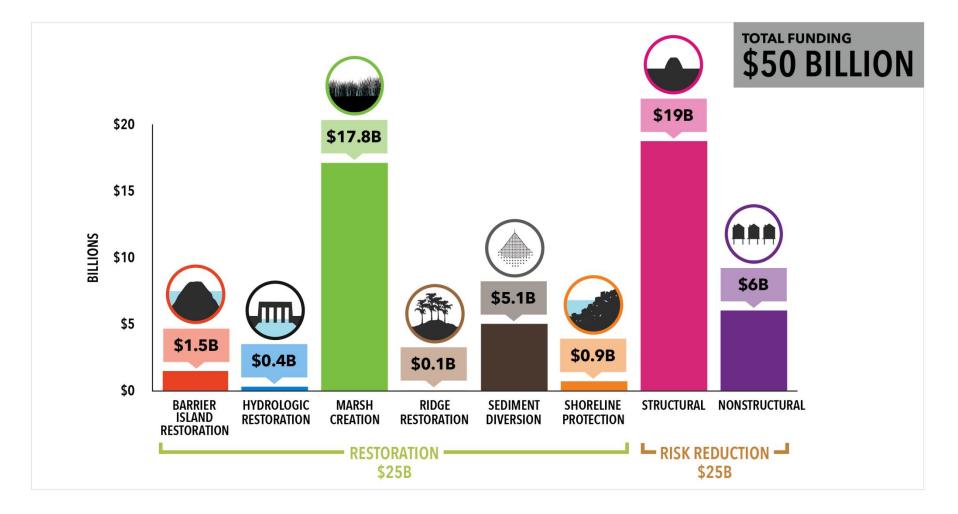
# **NONSTRUCTURAL PROJECTS**

Miles



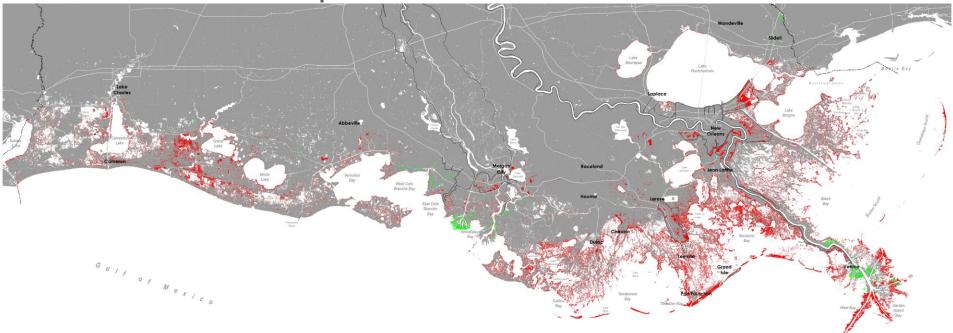


# FUNDING BY PROJECT TYPE



## FUTURE WITHOUT ACTION MEDIUM SCENARIO | YEAR 30

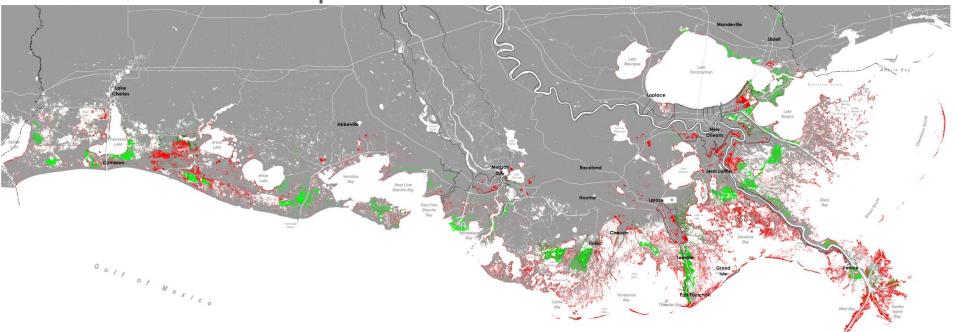








# WHAT THE PLAN DELIVERS: LAND CHANGE MEDIUM SCENARIO | YEAR 30



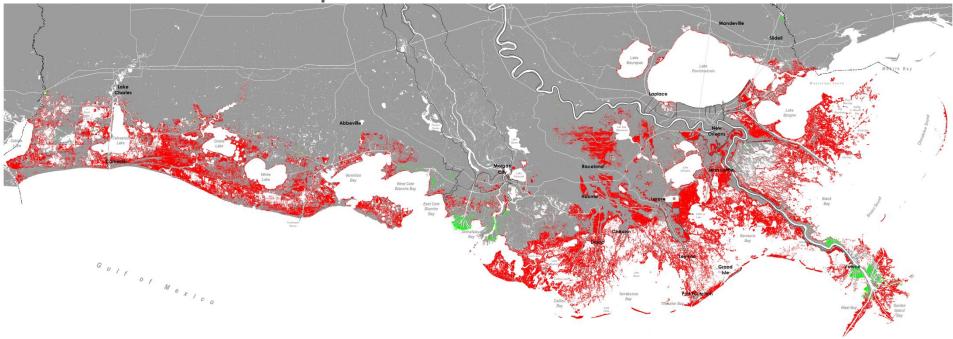
#### LAND CHANGE





## FUTURE WITHOUT ACTION MEDIUM SCENARIO | YEAR 50



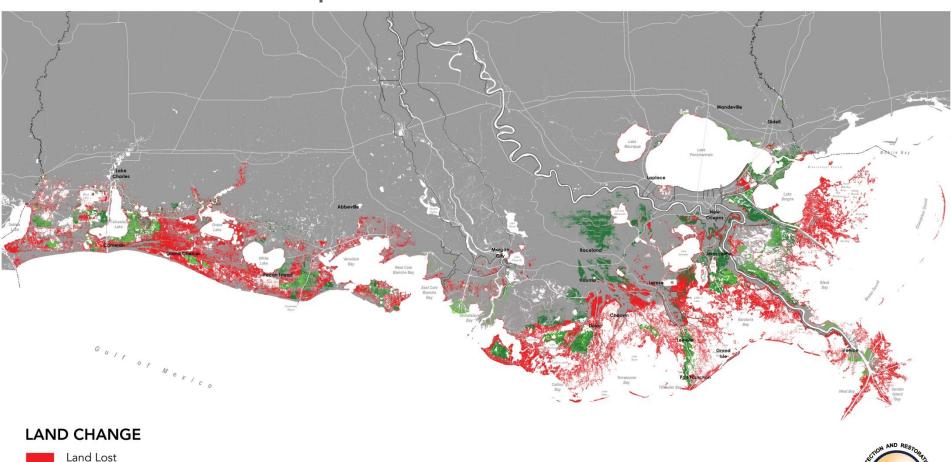






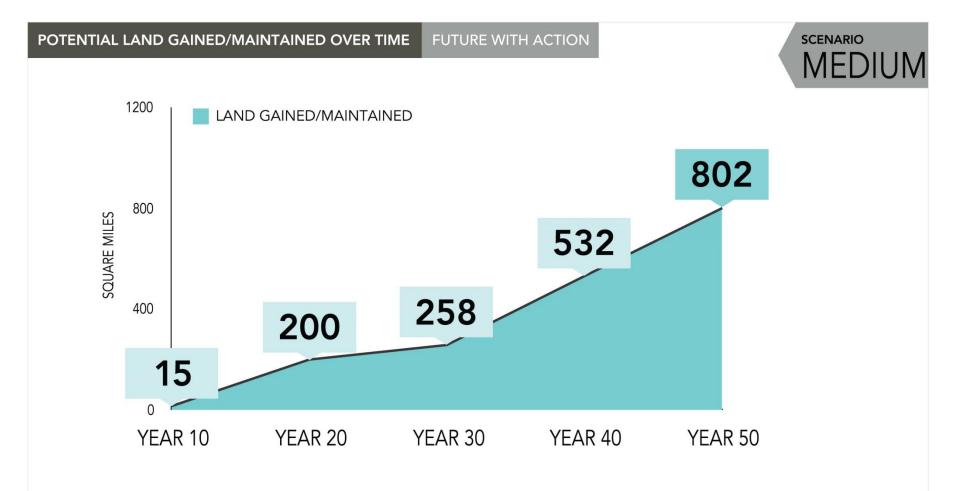
# WHAT THE PLAN DELIVERS: LAND CHANGE MEDIUM SCENARIO | YEAR 50



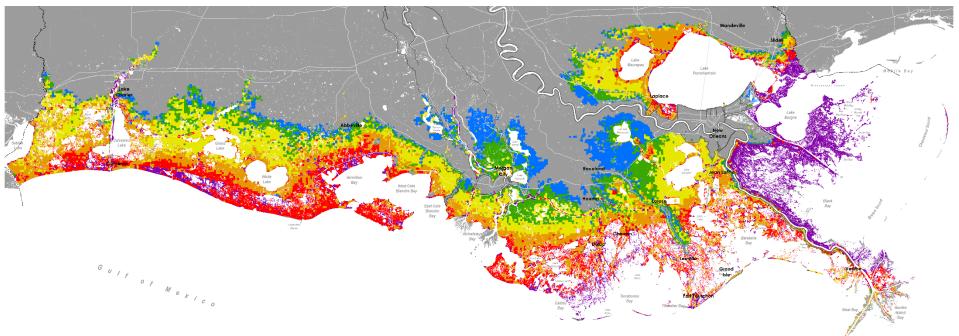


# WHAT THE PLAN DELIVERS LAND GAINED/MAINTAINED





### FUTURE WITHOUT ACTION: FLOOD DEPTHS MEDIUM SCENARIO | YEAR 25 | 100-YEAR EVENT

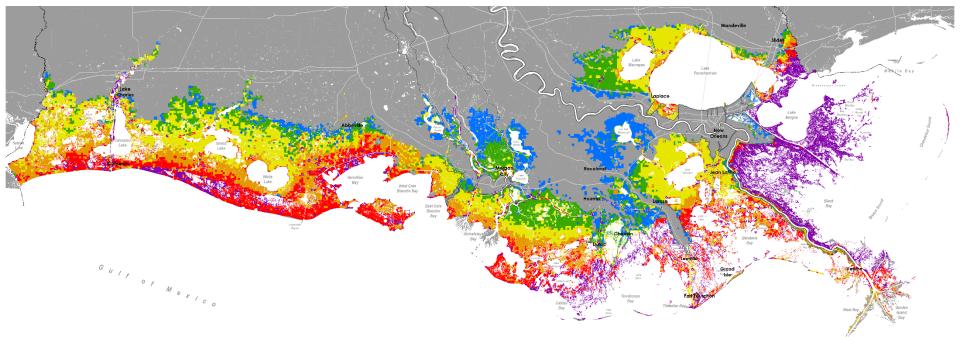


#### **Flood Depths**





### WHAT THE PLAN DELIVERS: FLOOD DEPTHS MEDIUM SCENARIO | YEAR 25 | 100-YEAR EVENT



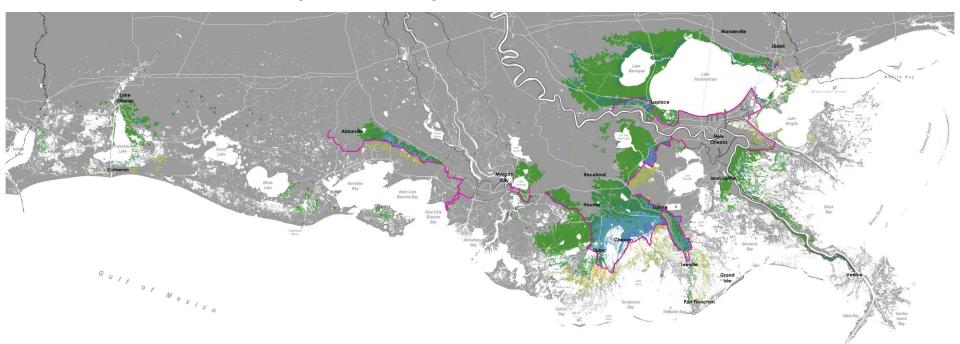
#### **Flood Depths**





### WHAT THE PLAN DELIVERS: FLOOD DEPTH DIFFERENCE MEDIUM SCENARIO | YEAR 25 | 100-YEAR EVENT

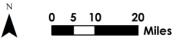




#### Flood Depth Difference

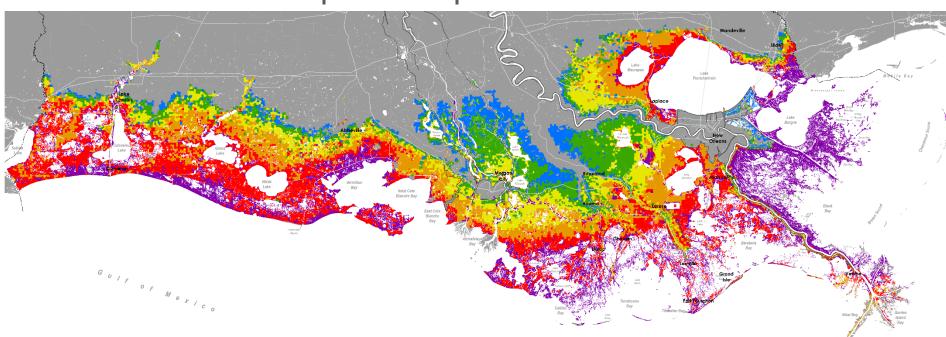








### FUTURE WITHOUT ACTION: FLOOD DEPTHS MEDIUM SCENARIO | YEAR 50 | 100-YEAR EVENT

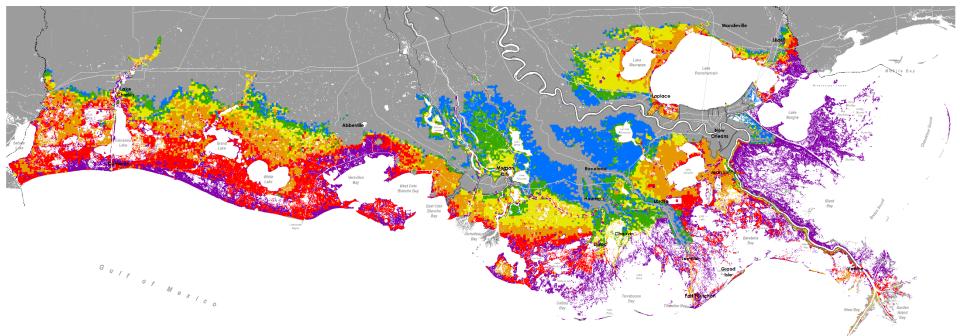


#### **Flood Depths**

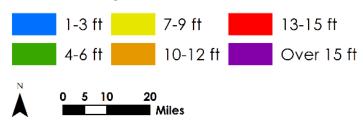




### WHAT THE PLAN DELIVERS: FLOOD DEPTHS MEDIUM SCENARIO | YEAR 50 | 100-YEAR EVENT



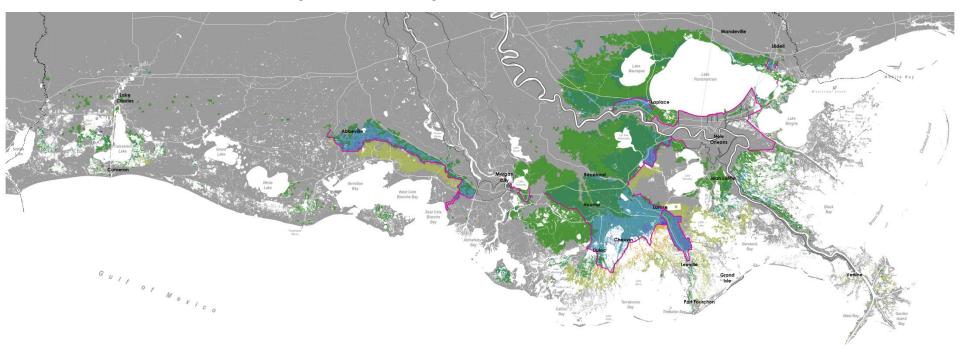
#### **Flood Depths**





### WHAT THE PLAN DELIVERS: FLOOD DEPTH DIFFERENCE MEDIUM SCENARIO | YEAR 50 | 100-YEAR EVENT

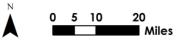




#### Flood Depth Difference



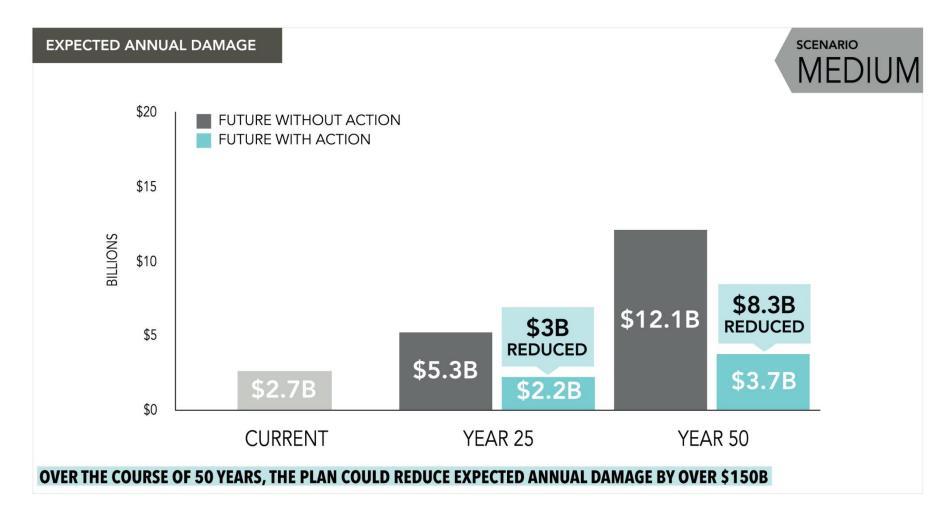






# WHAT THE PLAN DELIVERS REDUCTION IN EXPECTED ANNUAL DAMAGE





# WHAT THE PLAN DELIVERS



# MASTER PLAN & APPENDICES

	Protection and	Sign Up. Stay Informed. Email Zipcode Subscribe	Appendix A: Project Definition
CPRA Restora	tion Authority		Attachment A1: Projects to be in 2017 Future Without Action (FWOA)
			Attachment A2: Common Attributes
About CPRA What's At	Stake Our Plan Our Work News	room Resources Calendar	Attachment A3: Project-Specific Attributes by Project Type (Restoration)
			Attachment A4: Project-Specific Attributes by Project Type (Structural Protection
Our Plan	2017 Coastal Master Plan		Attachment A5: Cost and Duration Attributes
	To download a printable ver	rsion click here	Attachment A6: Available Sediment by Borrow Source and Implementation Period
017 Coastal Master Plan	Line and Competition     With the standing of the standin		Attachment A7: Project Uncertainty Factors
Overview			Attachment A8: Project Fact Sheets
Planning Process			Attachment A9: Parish Fact Sheets
<ul><li>Future Without Action</li><li>Projects</li></ul>			Appendix B: People and the Landscape
<ul> <li>Modeling</li> <li>Planning Tool</li> <li>Working Together</li> </ul>			Appendix C: Modeling
<ul> <li>Planning and Technical Teams</li> </ul>	2017 Coastal Master Plan App	andicas	Chapter 1 – Introduction
			Chapter 2 – Future Scenarios
Master Plan Data Viewer	To access the appendices to the 2017 Coastal any questions regarding the appendices, please	Master Plan, please click the links below. If you have e e-mail us at MasterPlan@la.gov.	Attachment C2-1: Eustatic Sea Level Rise
Get Involved!			Attachment C2-2: Subsidence
Flood Risk and Resilience	Attractivities Appoint Are Project Definition	Anna ar Isaanaan Anna 20 Isaanaan Anna 20 Ageersta Di Tarang Jool	Attachment C2-3: Precipitation and Evapotranspiration
Program	REOPLE AND THE		Attachment C2-4: Tropical Storm Intensity and Frequency
2012 Coastal Master Plan		ang	Attachment C2-5: Options for Sensitivity Analyses
2018 Annual Plan	Appendix A: Project Appendix B: People Appendi		Chapter 3 – Modeling Components and Overview
	Definition and the Landscape Modeling below)	g (by chapter Planning Tool Risk and Resilience Program Framework	Attachment C3-1: Sediment Distribution

#### coastal.la.gov

# **PARISH FACTSHEETS**

#### PARISH FACT SHEET

#### ST. TAMMANY PARISH

St. Tammany Parish lies to the northeast of Lake Pontchatrain's shores and includes the municipalities of Abits Springs, Covington (parish seat), Folsom, Mandeville, Pear River, and Slidell. The parish boasts a public school system that is consistently rated among the highest-performing in the state. St. Tammany Parish is a multi-faceted, culturally rich, and economically diverse area and is located at the crossroads of three Interstates and adjacent to the shores of Lake Pontchatrain.



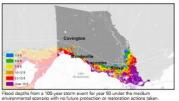
#### FUTURE WITHOUT ACTION LAND LOSS AND FLOOD RISK YEAR 50, MEDIUM ENVIRONMENTAL SCENARIO

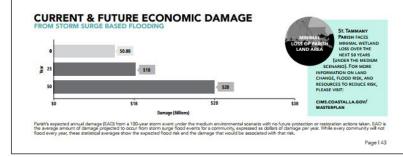


Land change (loss or gain) for year 50 under the medium environmental scenario with no future protection or restoration actions taken.

St. Tammany Parish faces minimal potential land loss over the next 50 years under the medium environmental scenario with no further coastal protection or restoration actions. However, with no future action, the southern portion of the parish faces increase of uture storm surge based flood risk. Over the next 50 years (under the medium environmental scenario). 100-year flood deptix increase substantially to 7-15 feet and above along the Northshore of Lake Pontchartrain. The towns of Mandeville, Lacombe, and Sildel all face increased risk.







#### WHAT'S IN THE 2017 COASTAL MASTER PLAN FOR ST. TAMMANY PARISH?

#### PROJECT TYPES



#### 2017 MASTER PLAN PROJECTS

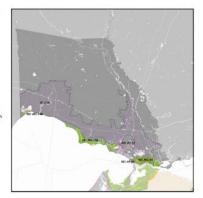
RISK REDUCTION PROJECTS: YEAR 1-30 + 001.HP.08: Lake Pontchartrain Barrier + 001.HP.13: Sildell Ring Levees + STL01N: St. Tammany Nonstructural Risk Reduction

RESTORATION PROJECTS: YEAR 1-10

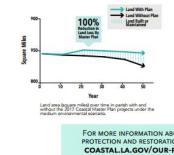
+ 001.MC.05: New Orleans East Landbridge Restoration\* + 001.MC.108: Guste Island Marsh Creation

RESTORATION PROJECTS: YEAR 11-30 + 001.MC.05: New Orleans East Landbridge Restoration\* + 001.MC.106: St. Tammany Marsh Creation

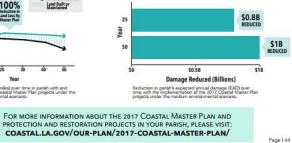
Note: Projects with a (\*) designate the implementation of a portion of a larger marsh creation project.



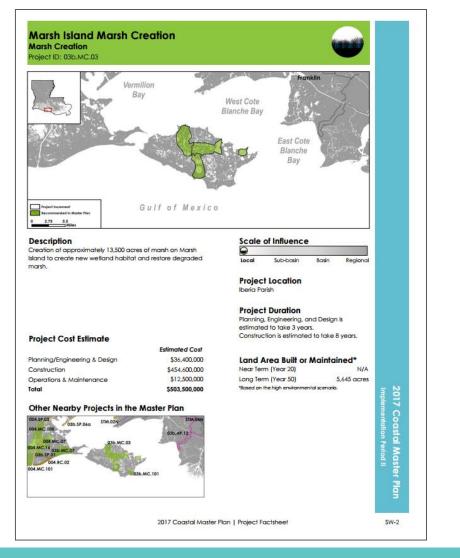
#### FUTURE LAND CHANGE

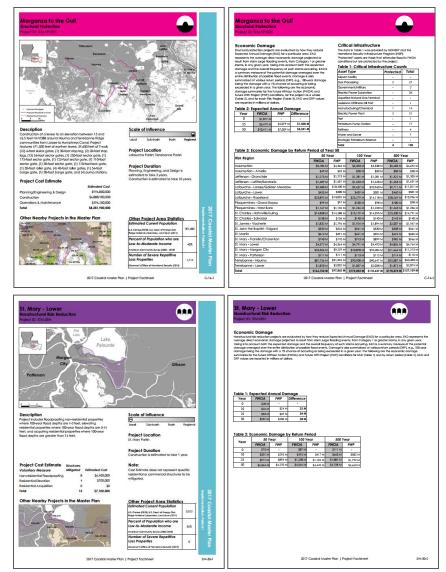


#### REDUCTION IN ANNUAL ECONOMIC DAMAGE



# **PROJECT FACT SHEETS**



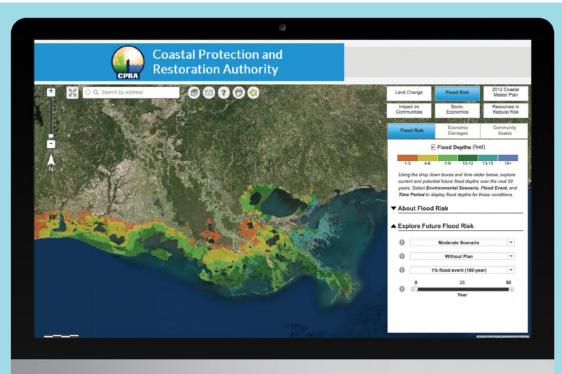


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# QUESTIONS?



