2017 COASTAL MASTER PLAN
BUILDING ON OUR COMMITMENT TO PROTECT AND RESTORE OUR COAST

Restoration Leadership Roundtables
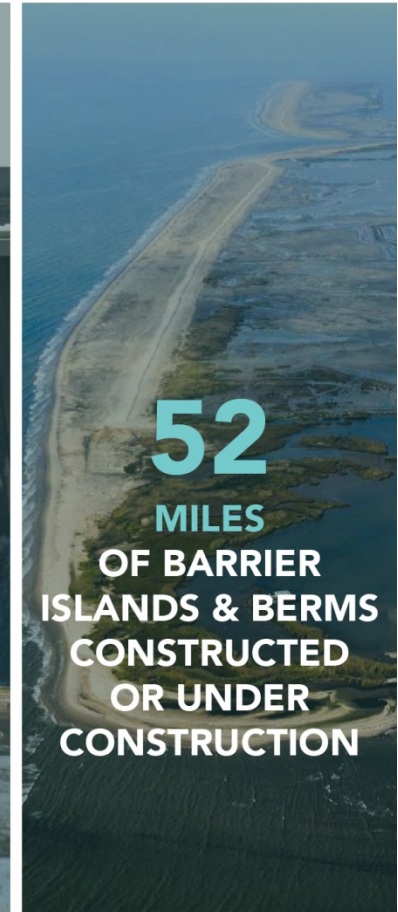
Bren Haase | October 2016

COASTAL PROTECTION AND RESTORATION AUTHORITY

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

Mandate is to develop, implement, and enforce a comprehensive coastal protection and restoration Master Plan.

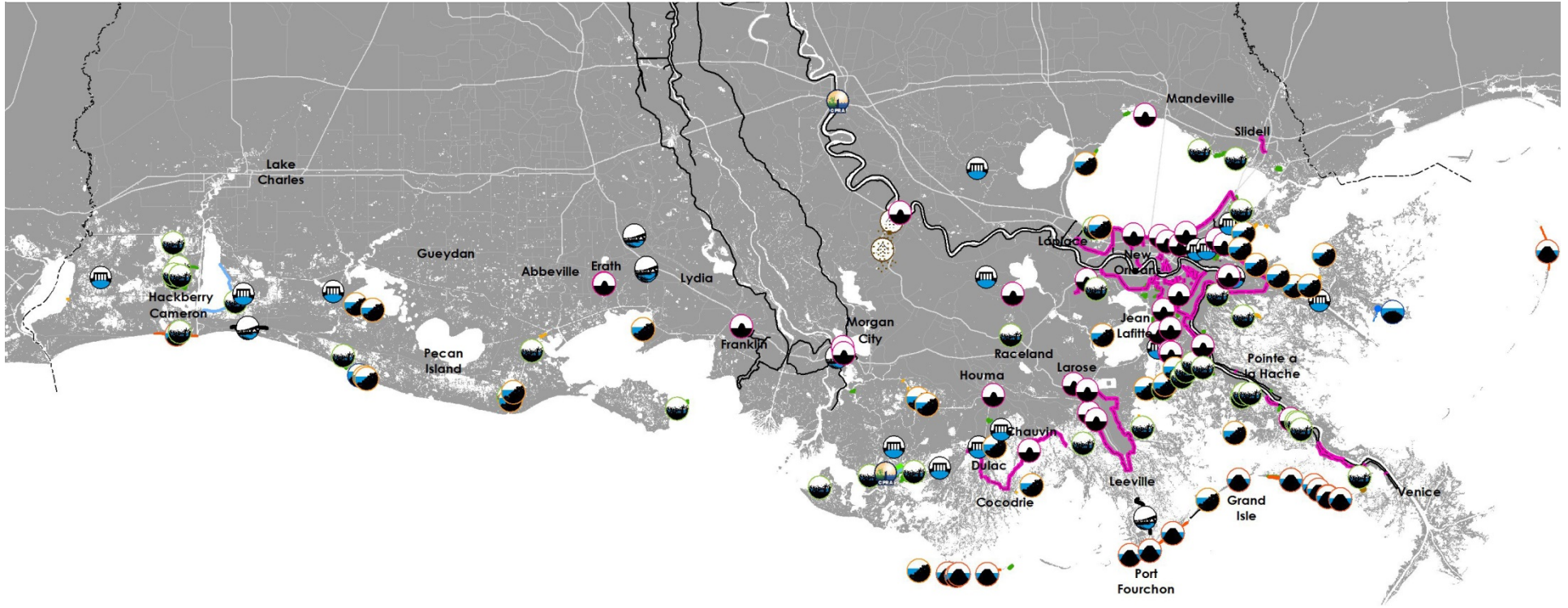# RESPONDING TO THE CRISIS: LOUISIANA'S COASTAL PROGRAM SINCE 2007

$18 BILLION SECURED FOR PROTECTION & RESTORATION PROJECTS IN 20 PARISHES

112 MILLION CUBIC YARDS OF FILL UTILIZED

30,637 ACRES OF LAND BENEFITED

274 MILES OF LEVEE IMPROVEMENT

52 MILES OF BARRIER ISLANDS & BERMS CONSTRUCTED OR UNDER CONSTRUCTION

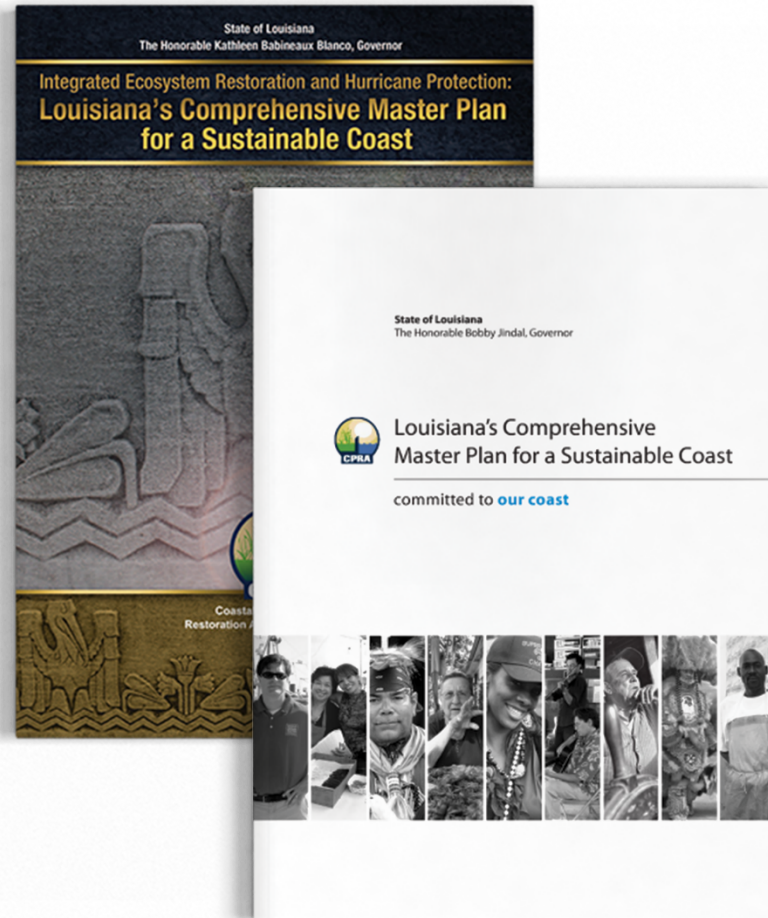# Projects Constructed / In Construction
## Coast wide
2007 – FY 2017

SO WHY ANOTHER PLAN?

- It is 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
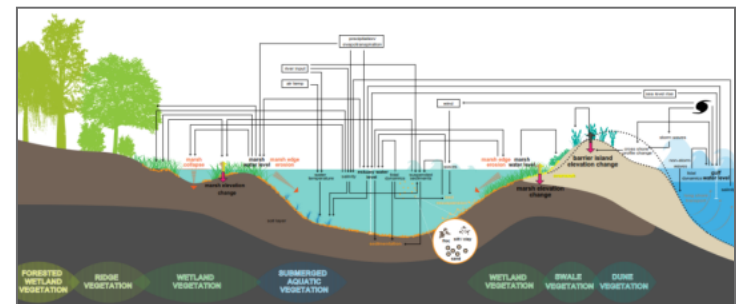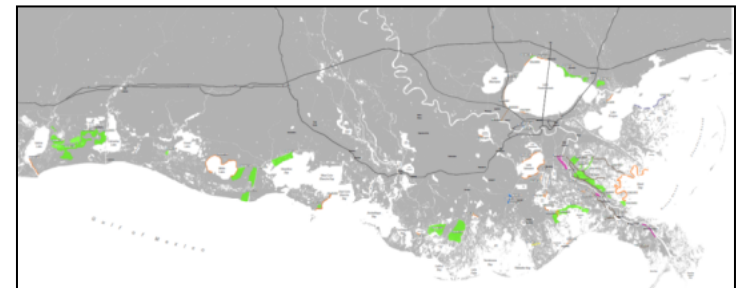
OBJECTIVES OF THE COASTAL MASTER PLAN

FLOOD PROTECTION

NATURAL PROCESSES

COASTAL HABITATS

**CULTURAL HERITAGE**

WORKING COAST
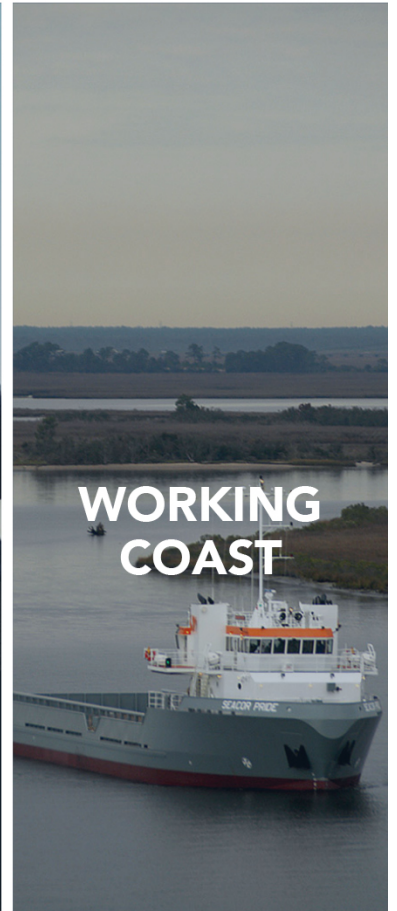
WHAT WILL BE DIFFERENT ABOUT THE 2017 COASTAL MASTER PLAN?

- Improved technical analysis
- Incorporating new ideas and information
- Focus on flood risk reduction and resilience
- Emphasis on communities

IMPROVED SCIENCE AND TECHNICAL ANALYSIS

- Major Improvements
  - Integrated landscape and ecosystem components
  - Increased spatial resolution/extent
  - Improved/added processes (sediment distribution and marsh edge erosion)
  - Enhanced fish/shellfish modeling
  - Improved asset data

- Primary Model Components
  - Landscape
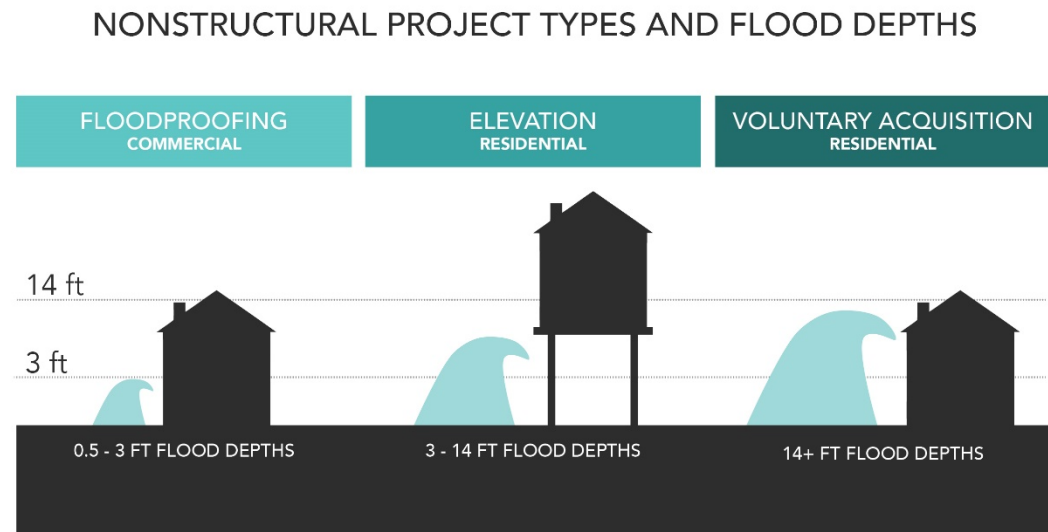 - Ecosystem
  - Risk reduction
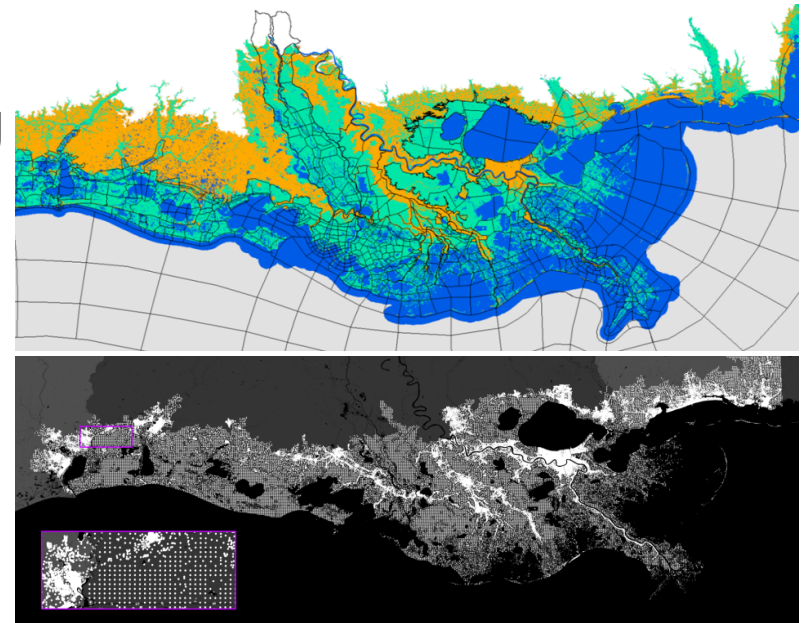
INCORPORATING NEW IDEAS AND INFORMATION

- 2012 Coastal Master Plan considered projects that were previously proposed and included in prior planning efforts
- In order to capture new project ideas, CPRA encouraged individuals and organizations to submit those ideas for consideration
    - 150 projects submitted
- Projects that met the required criteria are being evaluated for the 2017 Coastal Master Plan

FOCUS ON FLOOD RISK REDUCTION AND RESILIENCE

- CPRA is developing a framework to implement both nonstructural projects and programmatic measures to provide a comprehensive approach to flood risk reduction for homes, businesses, and community assets.

- Program Framework
  1. Develop Data and Tools
  2. Provide Information
  3. Provide Options
  4. Create Platforms for Collaboration and Action

NONSTRUCTURAL PROJECT TYPES AND FLOOD DEPTHS

| FLOODPROOFING COMMERCIAL | ELEVATION RESIDENTIAL | VOLUNTARY ACQUISITION RESIDENTIAL |

14 ft

3 ft

0.5 - 3 FT FLOOD DEPTHS | 3 - 14 FT FLOOD DEPTHS | 14+ FT FLOOD DEPTHS

EMPHASIS ON COMMUNITIES

- Reviewing long-term shifts in population

- Understanding the impacts of coastal land loss and flood risk on communities and resources

- Developing metrics to understand social vulnerability, flood protection of historic properties, and how best to support and maintain our traditional fishing, agricultural, and oil and gas communities

A FRAMEWORK TO MAKE DECISIONS

THE ANALYTICAL CHALLENGE	NO OPTIMAL SOLUTIONS

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

- Risk Reduction (Structural or Nonstructural) vs. Restoration
- Near-Term Benefits vs. Long-Term Sustainability
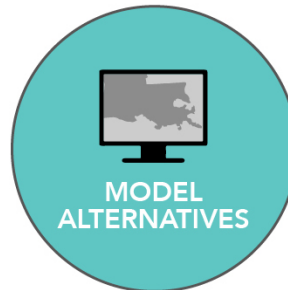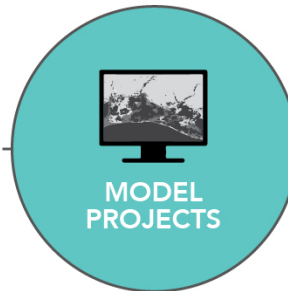- Different Stakeholder Preferences
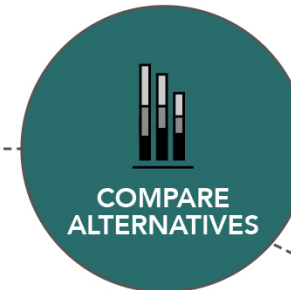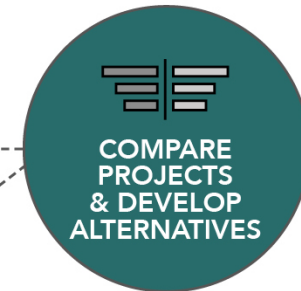
DEVELOPING THE COASTAL MASTER PLAN

COASTAL PROJECTS

IDENTIFY CANDIDATE PROJECTS

PREDICTIVE MODELS

MODEL PROJECTS

MODEL ALTERNATIVES

PLANNING TOOL

COMPARE PROJECTS & DEVELOP ALTERNATIVES

COMPARE ALTERNATIVES

DEVELOP DRAFT & FINAL PLAN
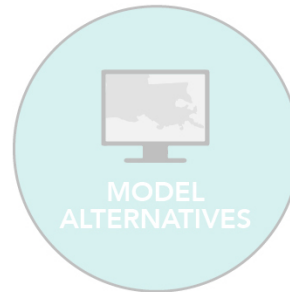
O U T R E A C H & E N G A G E M E N T

DEVELOPING THE COASTAL MASTER PLAN
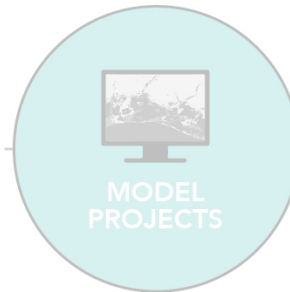
COASTAL PROJECTS

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OUTREACH & ENGAGEMENT

PLANNING FRAMEWORK

COASTAL PROJECTS

133 RESTORATION

54 NONSTRUCTURAL PROTECTION

20 STRUCTURAL PROTECTION
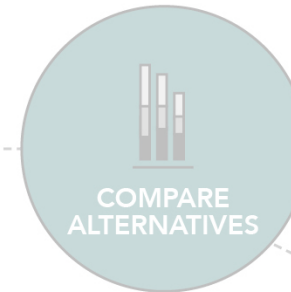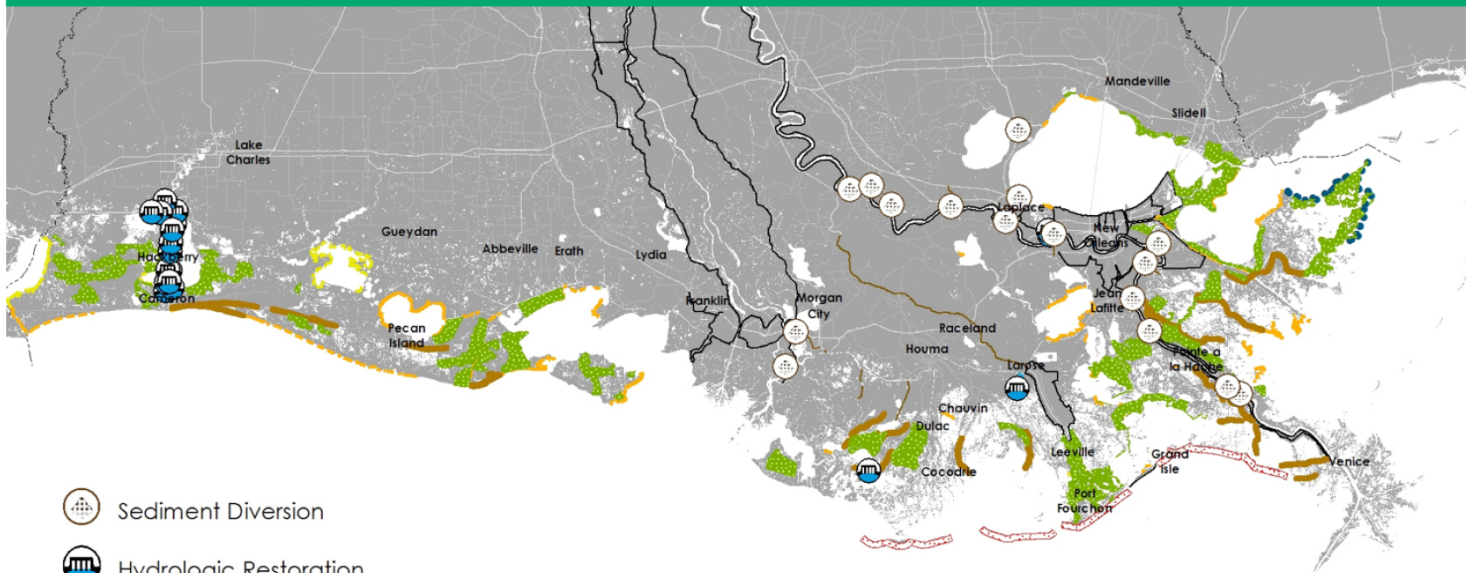
Legend:
- Sediment Diversion
- Hydrologic Restoration
- Marsh Creation
- Bank Stabilization
- Ridge Restoration
- Shoreline Protection
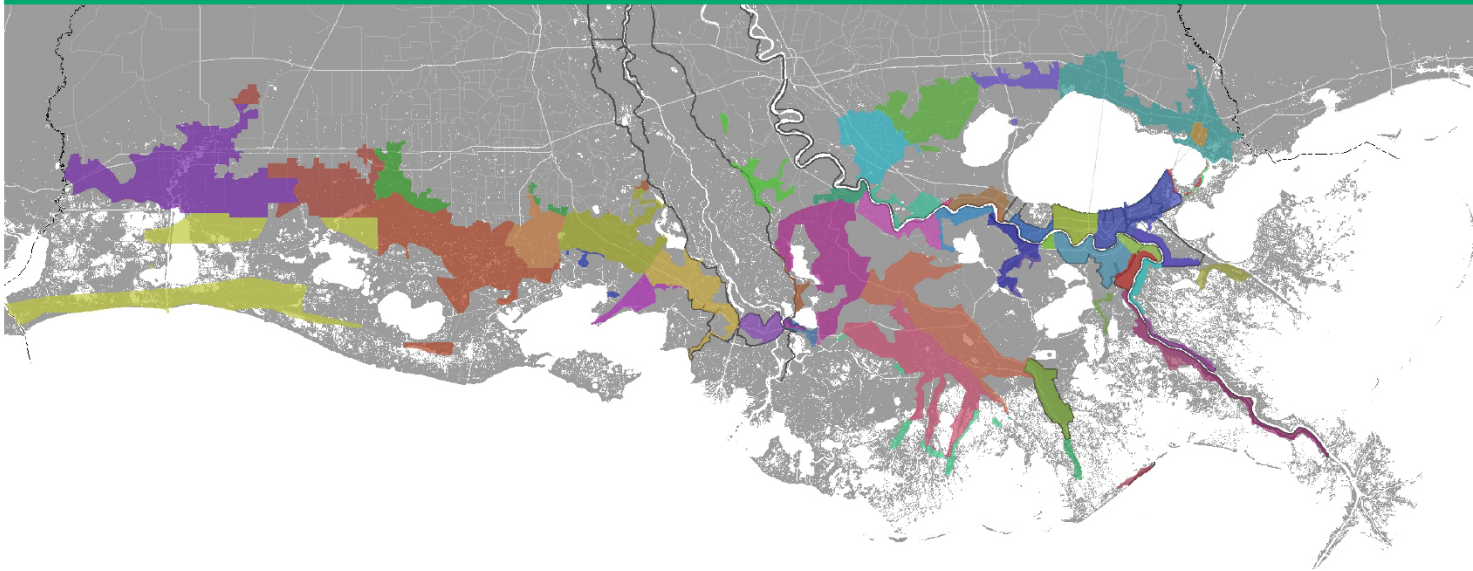- Oyster Barrier Reef
- Barrier Island
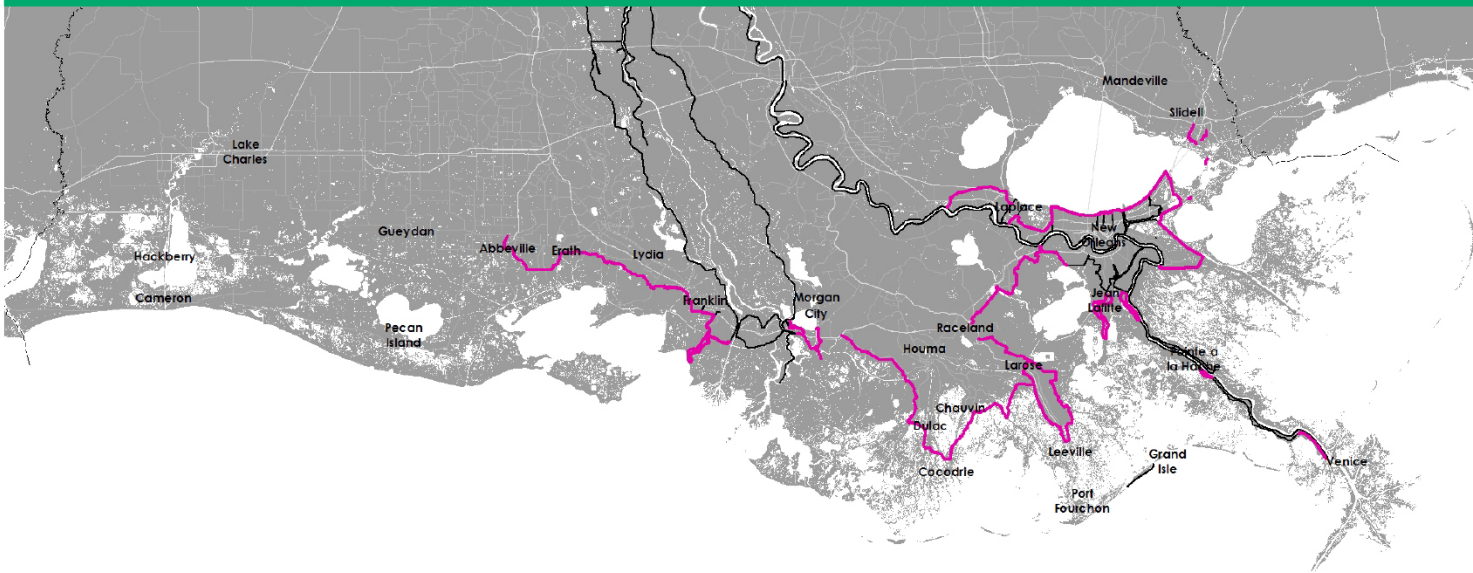
PLANNING FRAMEWORK

133 RESTORATION

54 NONSTRUCTURAL PROTECTION

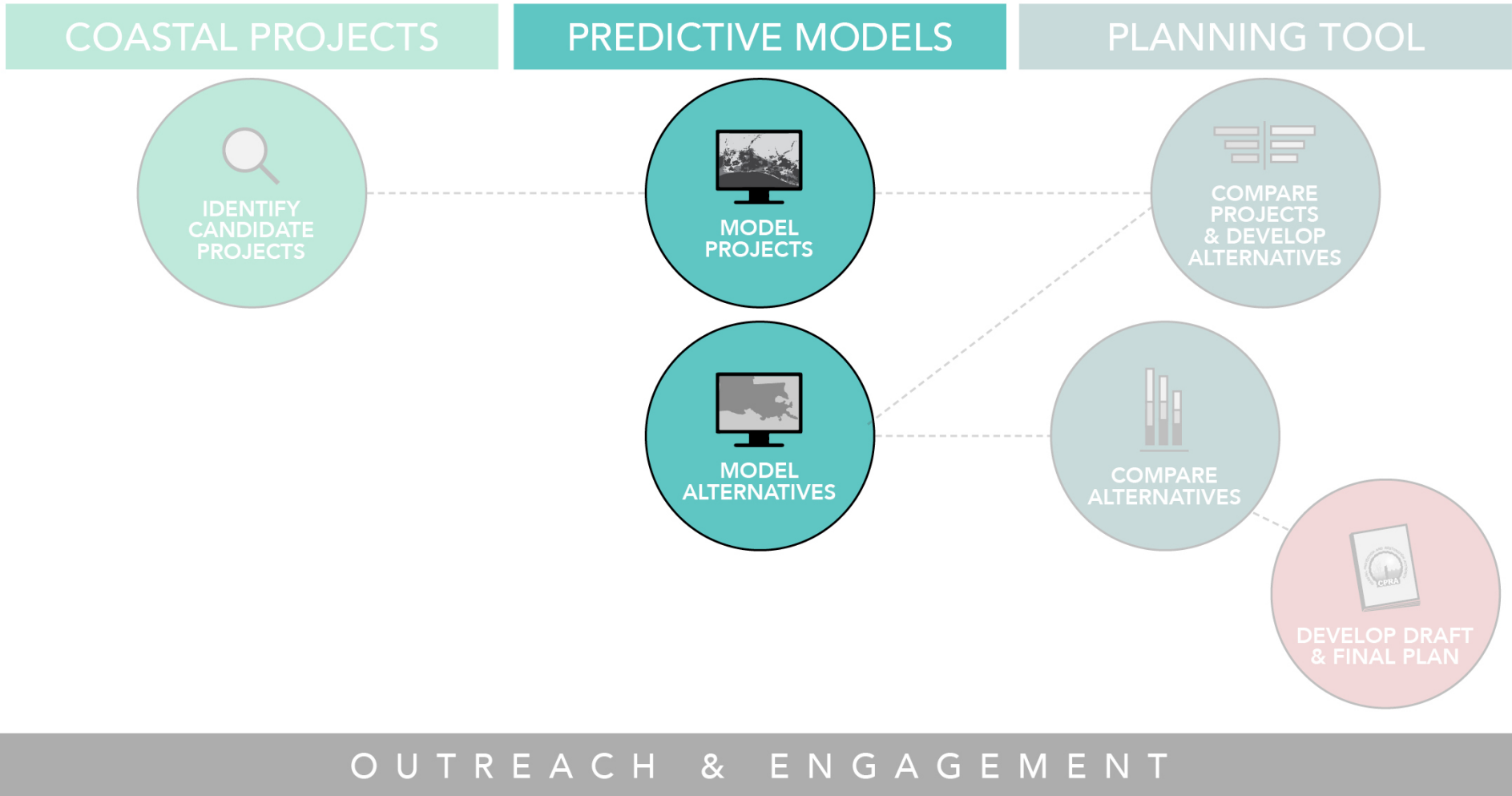**20** STRUCTURAL PROTECTION

PLANNING FRAMEWORK

COASTAL PROJECTS

133 RESTORATION

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O U T R E A C H   &   E N G A G E M E N T

PLANNING FRAMEWORK

PREDICTIVE MODELS

INTEGRATED COMPARTMENT MODEL

ECO-HYDROLOGY | BARRIER ISLAND MORPHOLOGY | WETLAND MORPHOLOGY | VEGETATION | ECOSYSTEM OUTCOMES
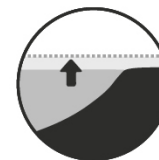
SURGE/WAVES AND RISK ASSESSMENT MODEL

STORM SURGE/ WAVES

RISK ASSESSMENT

ENVIRONMENTAL AND RISK SCENARIOS

PRECIPITATION

EVAPOTRANSPIRATION

SUBSIDENCE
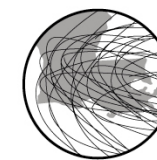
SEA LEVEL RISE

STORM FREQUENCY

STORM INTENSITY

## OUTREACH & ENGAGEMENT

ENVIRONMENTAL SCENARIOS

SCENARIO	PRECIP	ET	SEA LEVEL RISE	SUBSIDENCE	STORM FREQUENCY	AVG. STORM INTENSITY
2017 COASTAL MASTER PLAN						
LOW	>HISTORICAL	<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
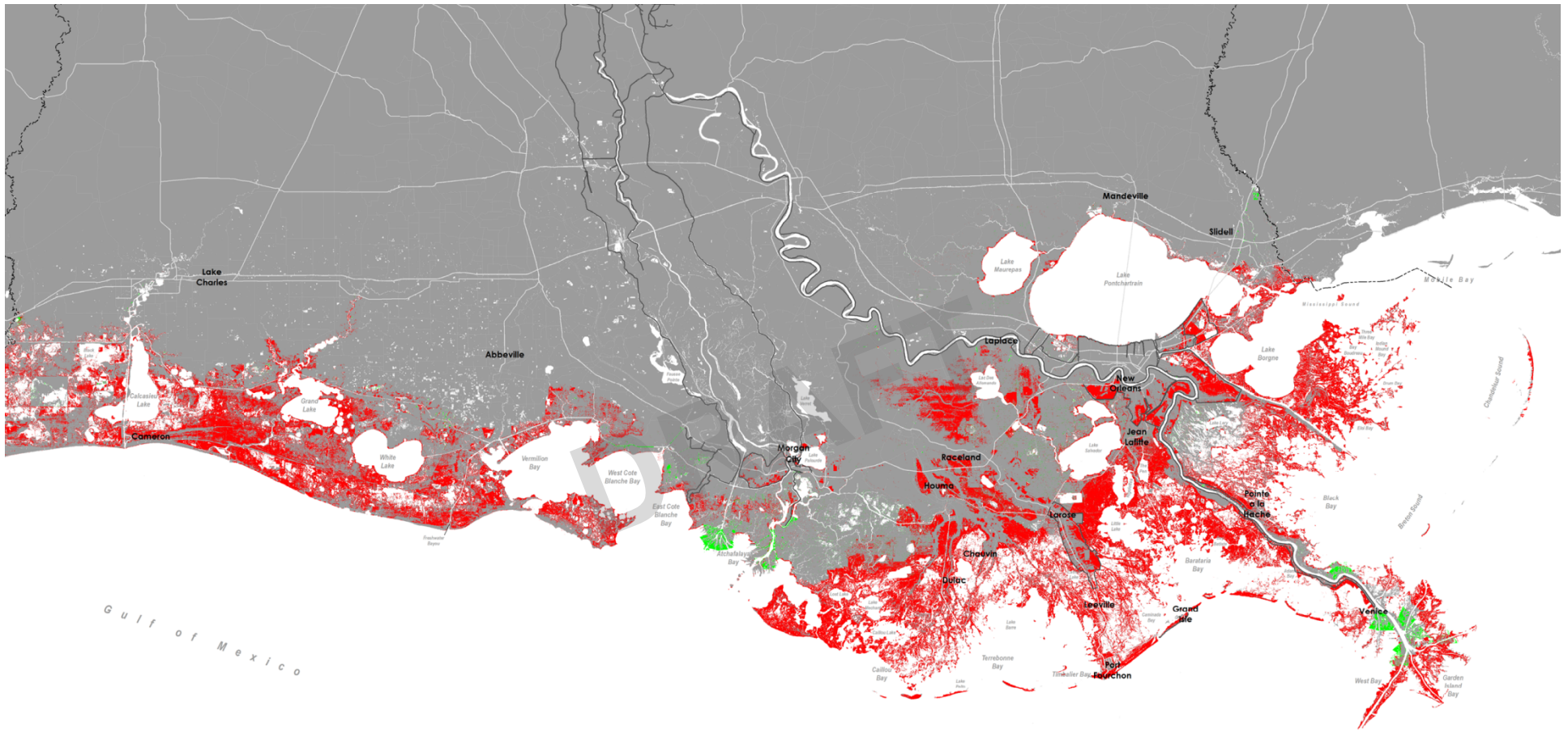
PREDICTED LAND CHANGE
FUTURE WITHOUT ACTION - YEAR 50
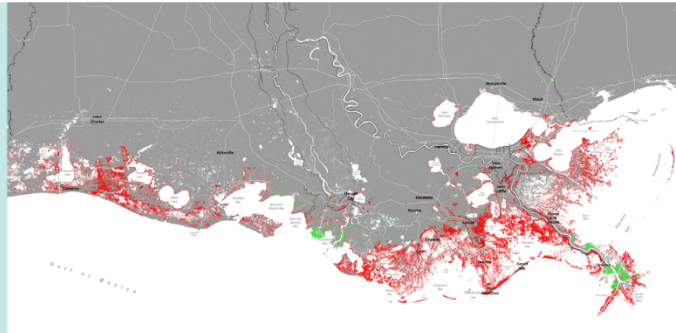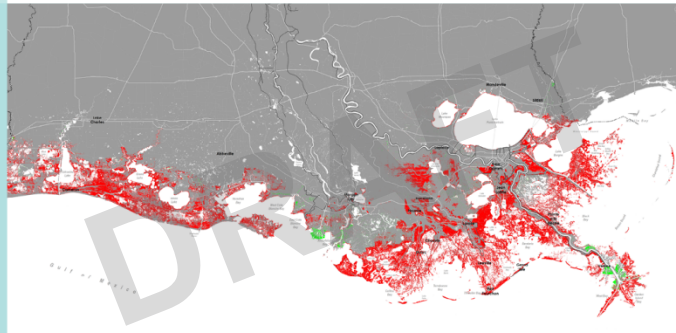
LOW

MEDIUM

HIGH

PREDICTED LAND CHANGE
FUTURE WITHOUT ACTION - YEAR 10, HIGH SCENARIO

PREDICTED LAND CHANGE
FUTURE WITHOUT ACTION - YEAR 20, HIGH SCENARIO

PREDICTED LAND CHANGE
FUTURE WITHOUT ACTION - YEAR 30, HIGH SCENARIO

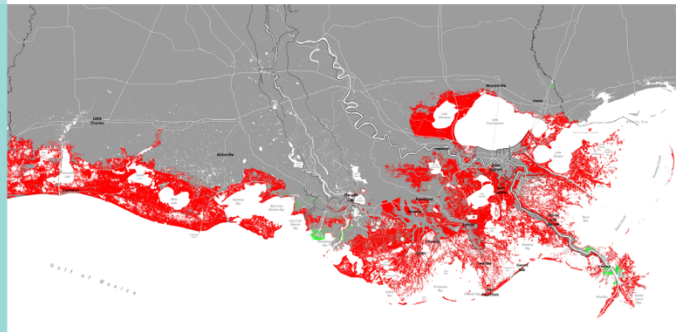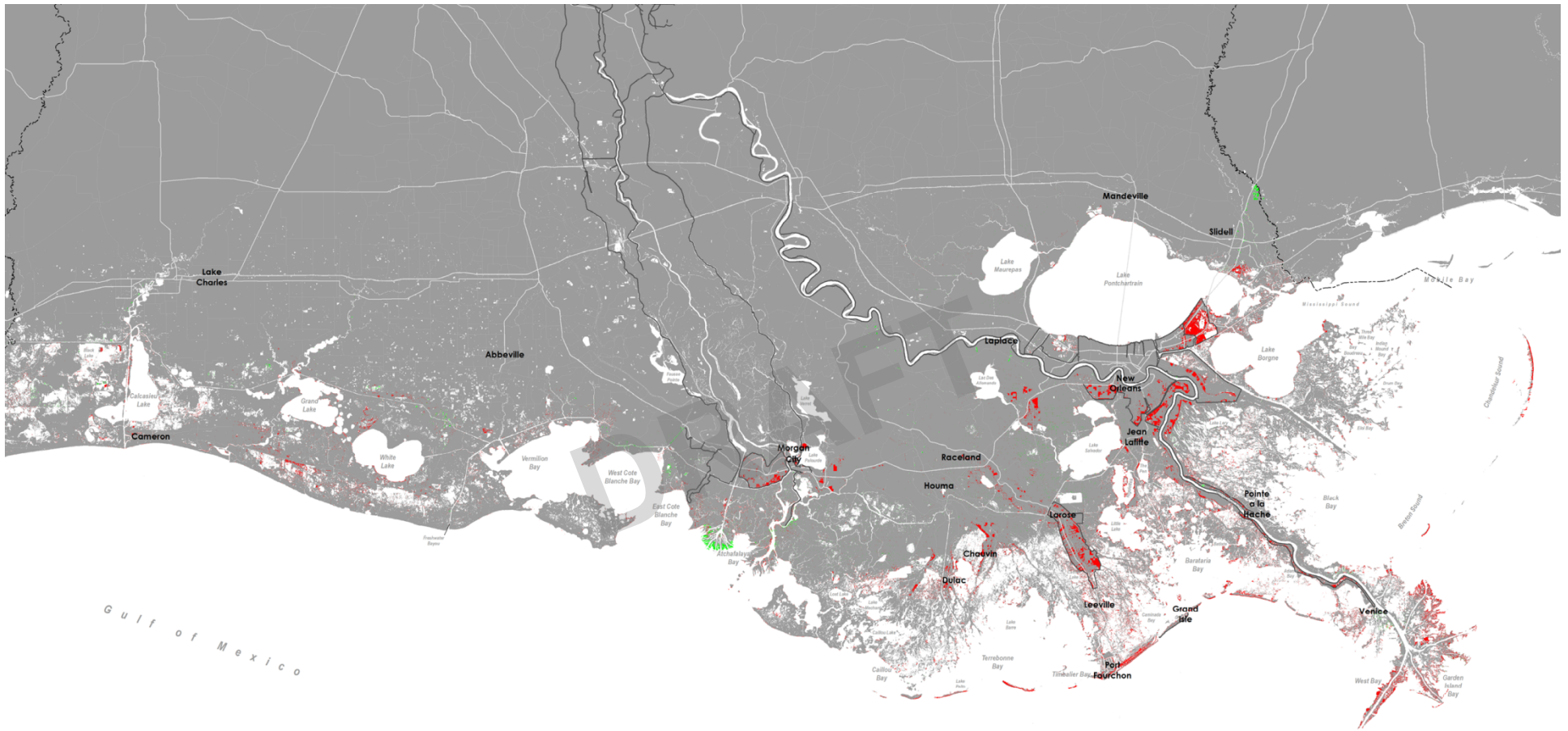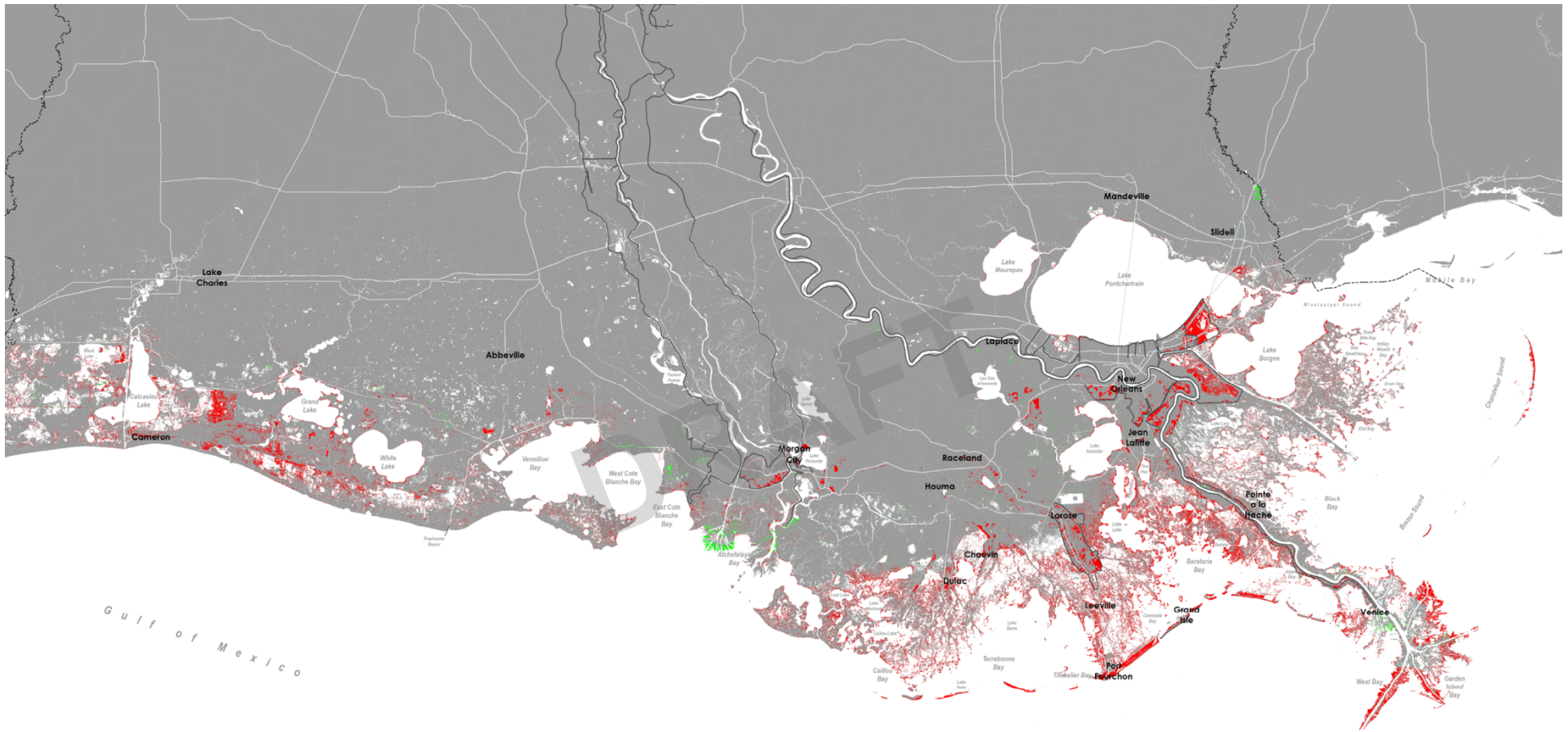# PREDICTED LAND CHANGE
FUTURE WITHOUT ACTION - YEAR 40, HIGH SCENARIO

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

PREDICTED FLOOD DEPTHS
INITIAL CONDITION
100-YEAR EVENT

Legend:
- 1' - 3'
- 4' - 6'
- 7' - 9'
- 10' - 12'
- 13' - 15'
- Over 15'
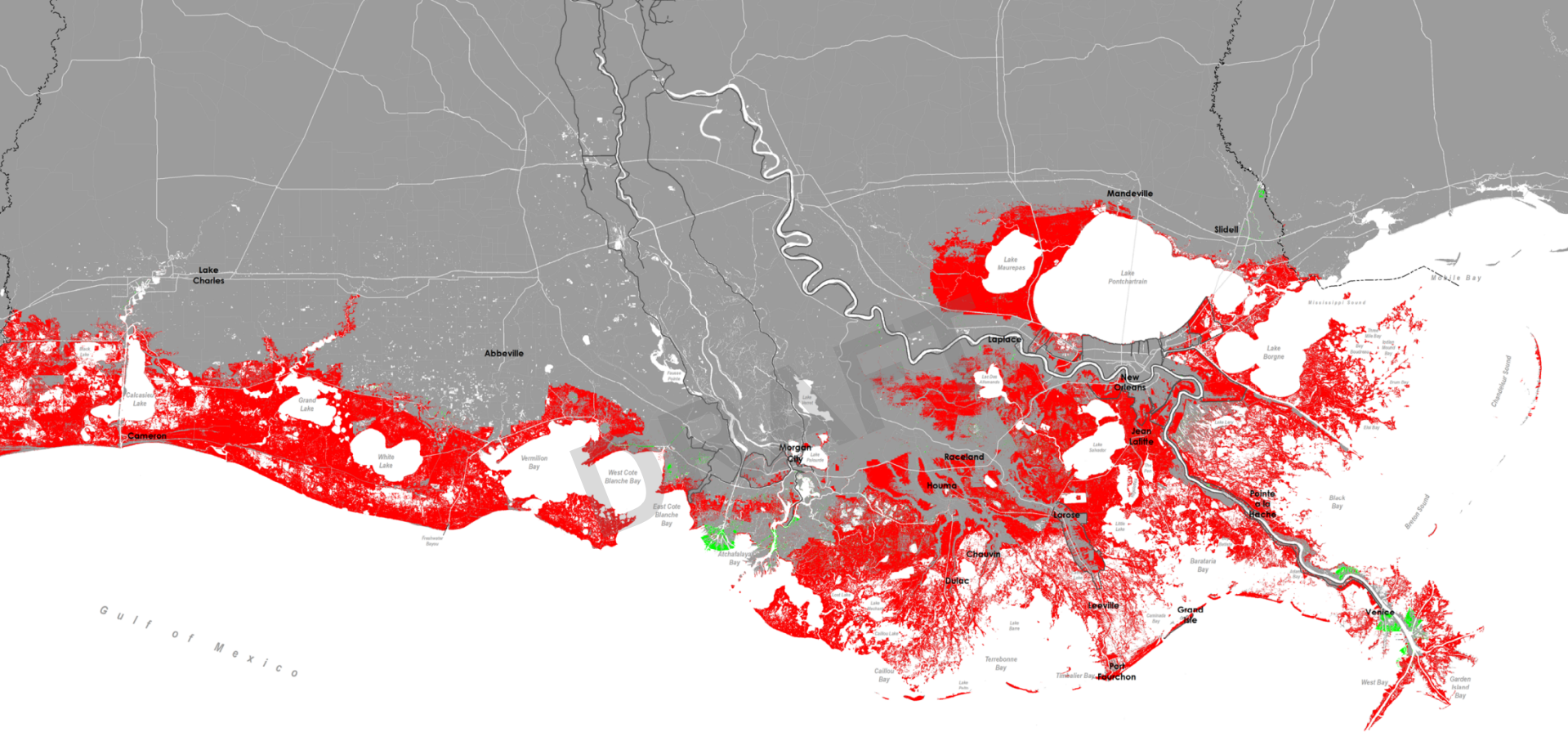
PREDICTED FLOOD DEPTHS
FUTURE WITHOUT ACTION
YEAR 10, LOW SCENARIO, 100-YEAR EVENT

LOW / YEAR 10 / 100-YEAR FLOOD DEPTHS

- 1' - 3'
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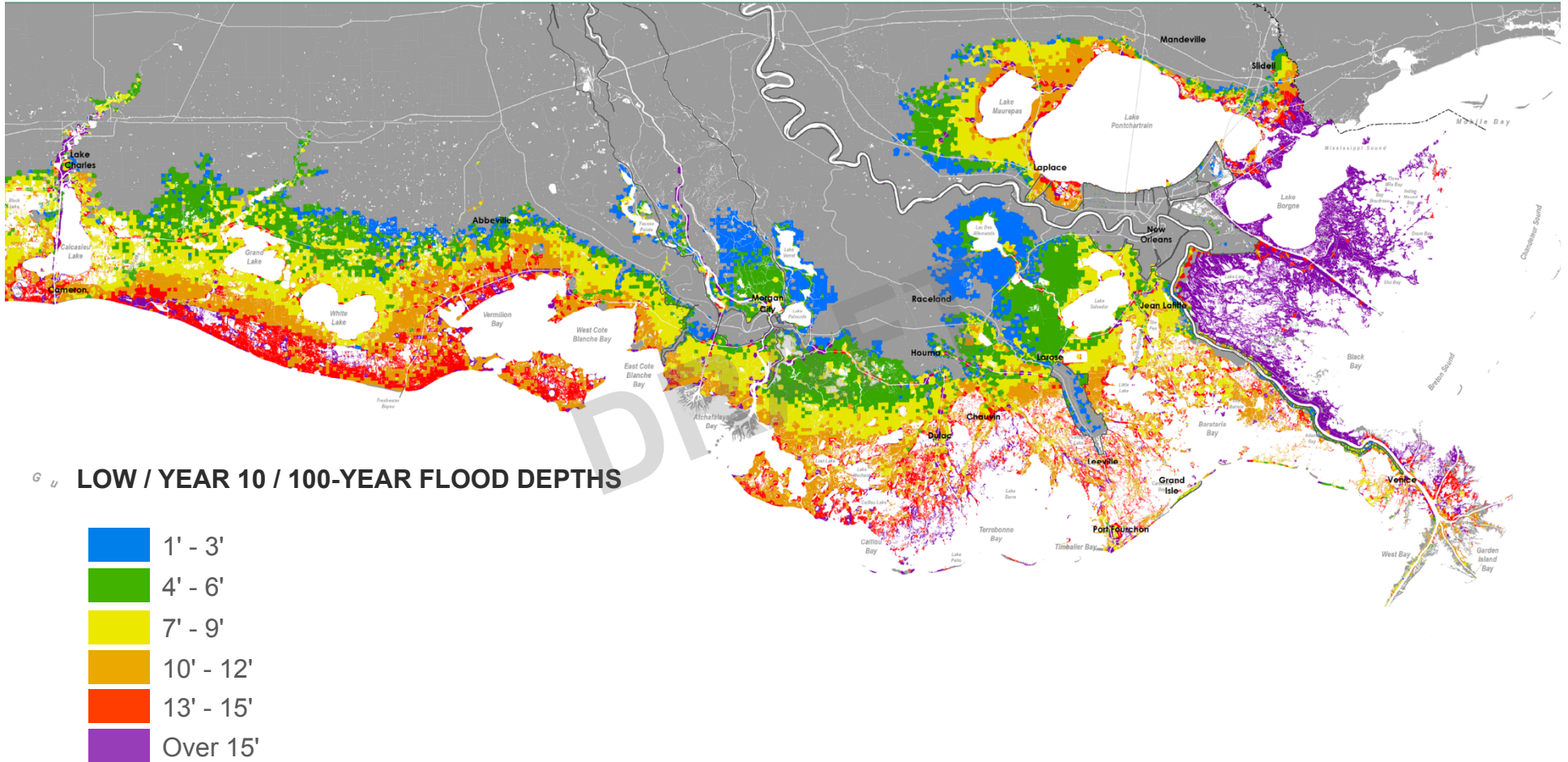
PREDICTED FLOOD DEPTHS
FUTURE WITHOUT ACTION
YEAR 25, LOW SCENARIO, 100-YEAR EVENT
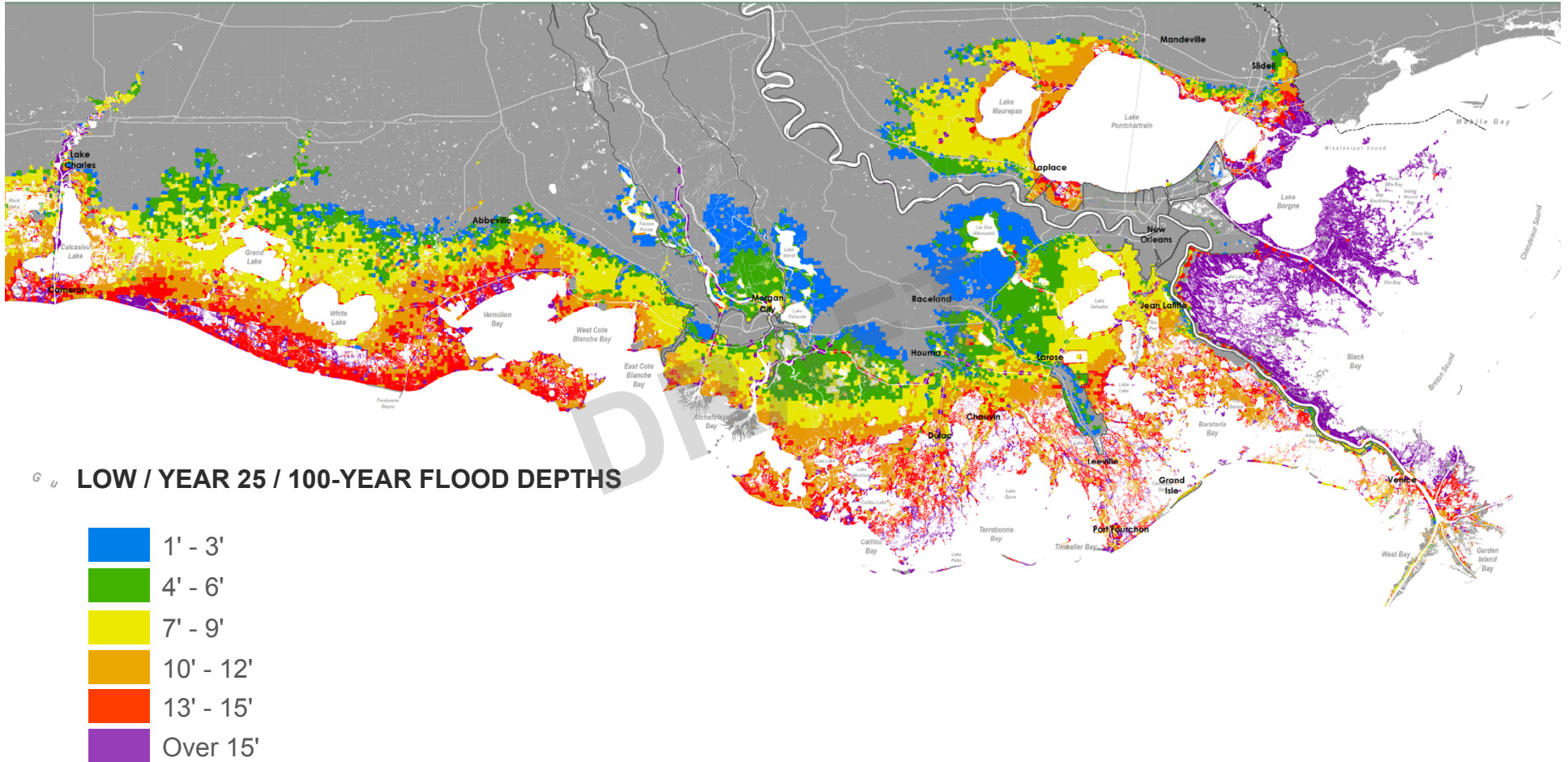
LOW / YEAR 25 / 100-YEAR FLOOD DEPTHS

- 1' - 3'
- 4' - 6'
- 7' - 9'
- 10' - 12'
- 13' - 15'
- Over 15'

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

LOW / YEAR 50 / 100-YEAR FLOOD DEPTHS

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- 7' - 9'
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PREDICTED FLOOD DEPTHS
INITIAL CONDITION
100-YEAR EVENT

Legend:
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PREDICTED FLOOD DEPTHS
FUTURE WITHOUT ACTION
YEAR 10, HIGH SCENARIO, 100-YEAR EVENT

HIGH / YEAR 10 / 100-YEAR FLOOD DEPTHS

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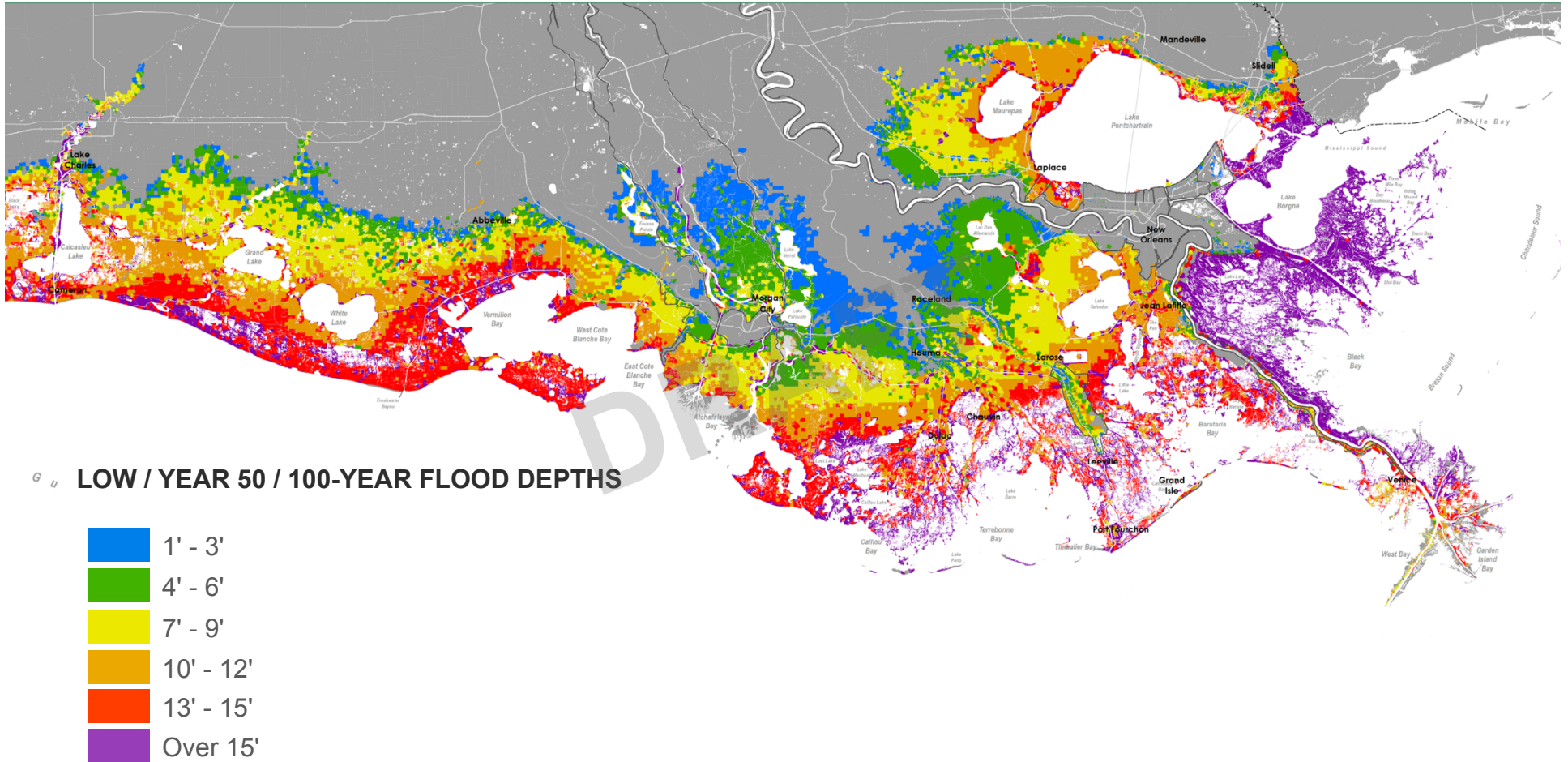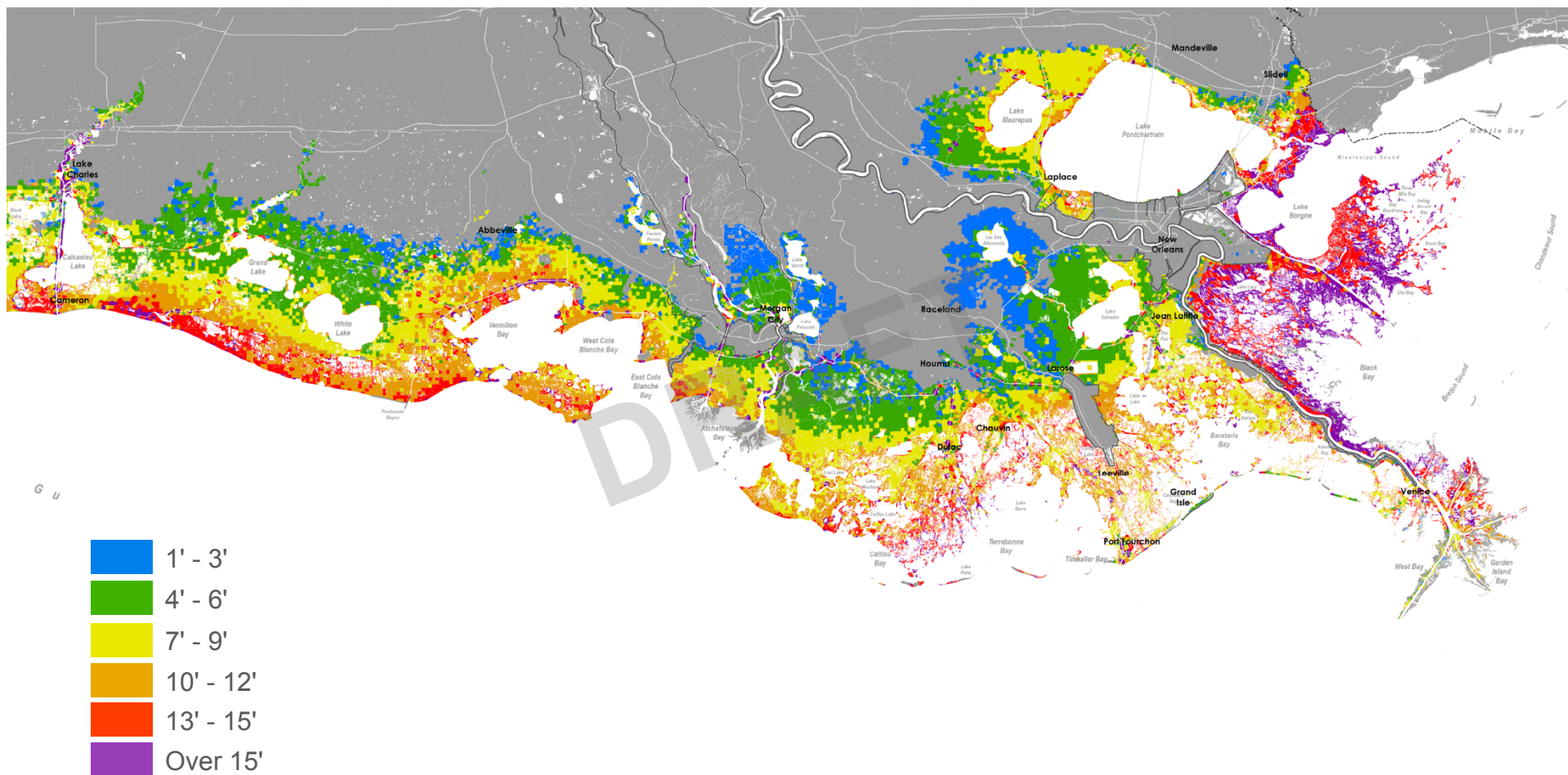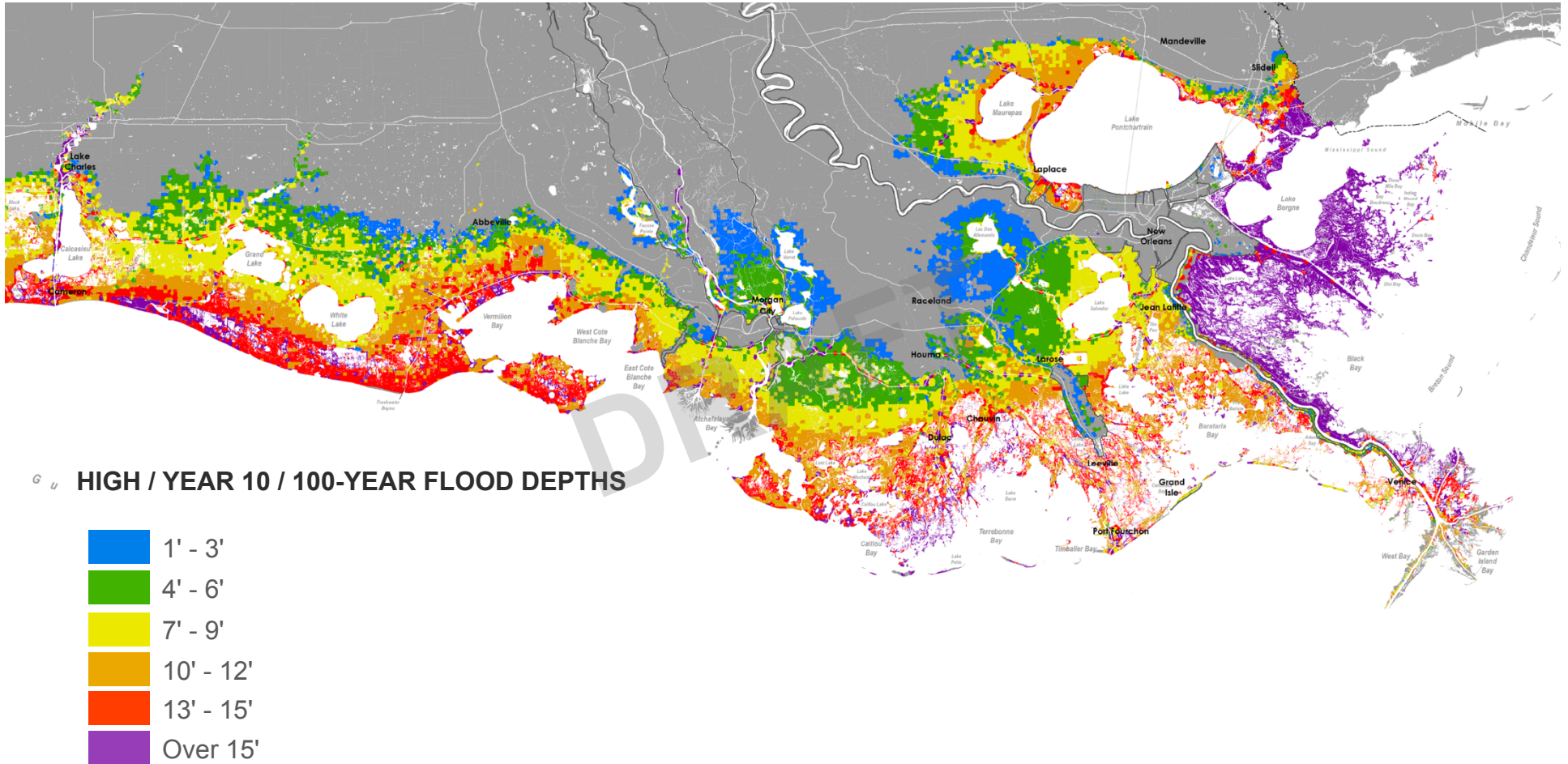
PREDICTED FLOOD DEPTHS
FUTURE WITHOUT ACTION
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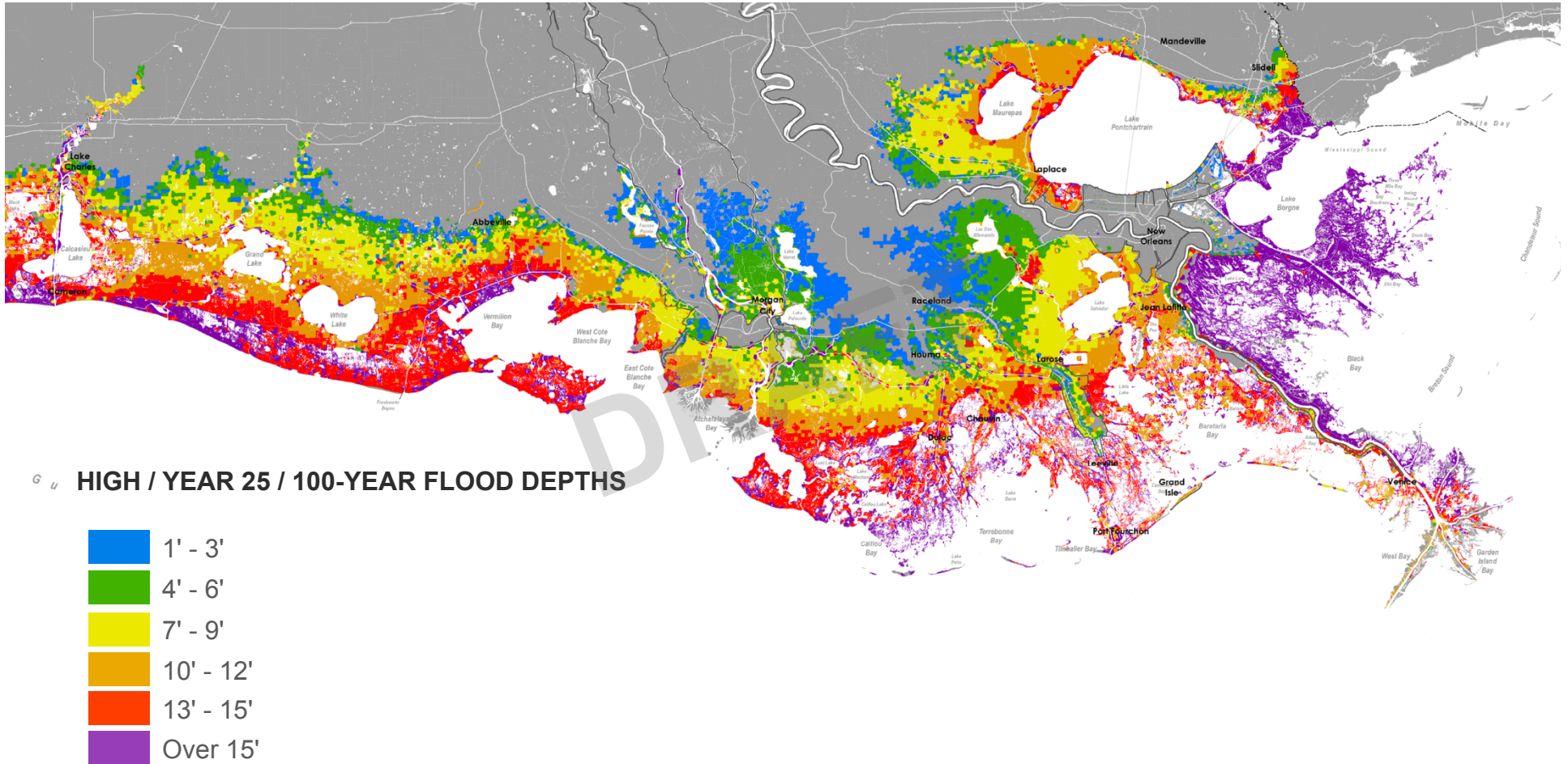
HIGH / YEAR 25 / 100-YEAR FLOOD DEPTHS

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

HIGH / YEAR 50 / 100-YEAR FLOOD DEPTHS

- 1' - 3'
- 4' - 6'
- 7' - 9'
- 10' - 12'
- 13' - 15'
- Over 15'

DEVELOPING THE COASTAL MASTER PLAN

COASTAL PROJECTS	PREDICTIVE MODELS	PLANNING TOOL

IDENTIFY CANDIDATE PROJECTS

MODEL PROJECTS

MODEL ALTERNATIVES

COMPARE PROJECTS & DEVELOP ALTERNATIVES

COMPARE ALTERNATIVES

DEVELOP DRAFT & FINAL PLAN

O U T R E A C H   &   E N G A G E M E N T
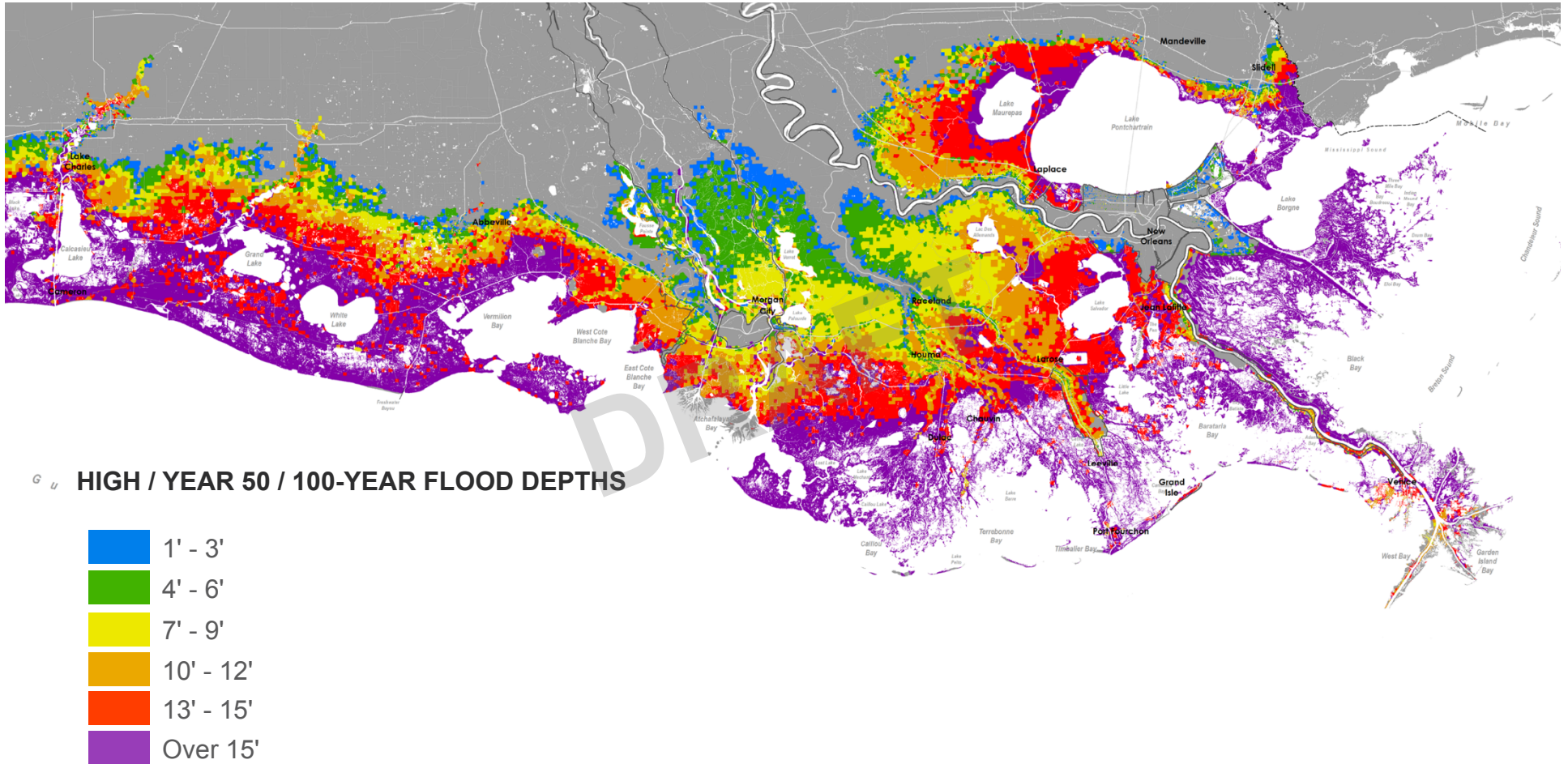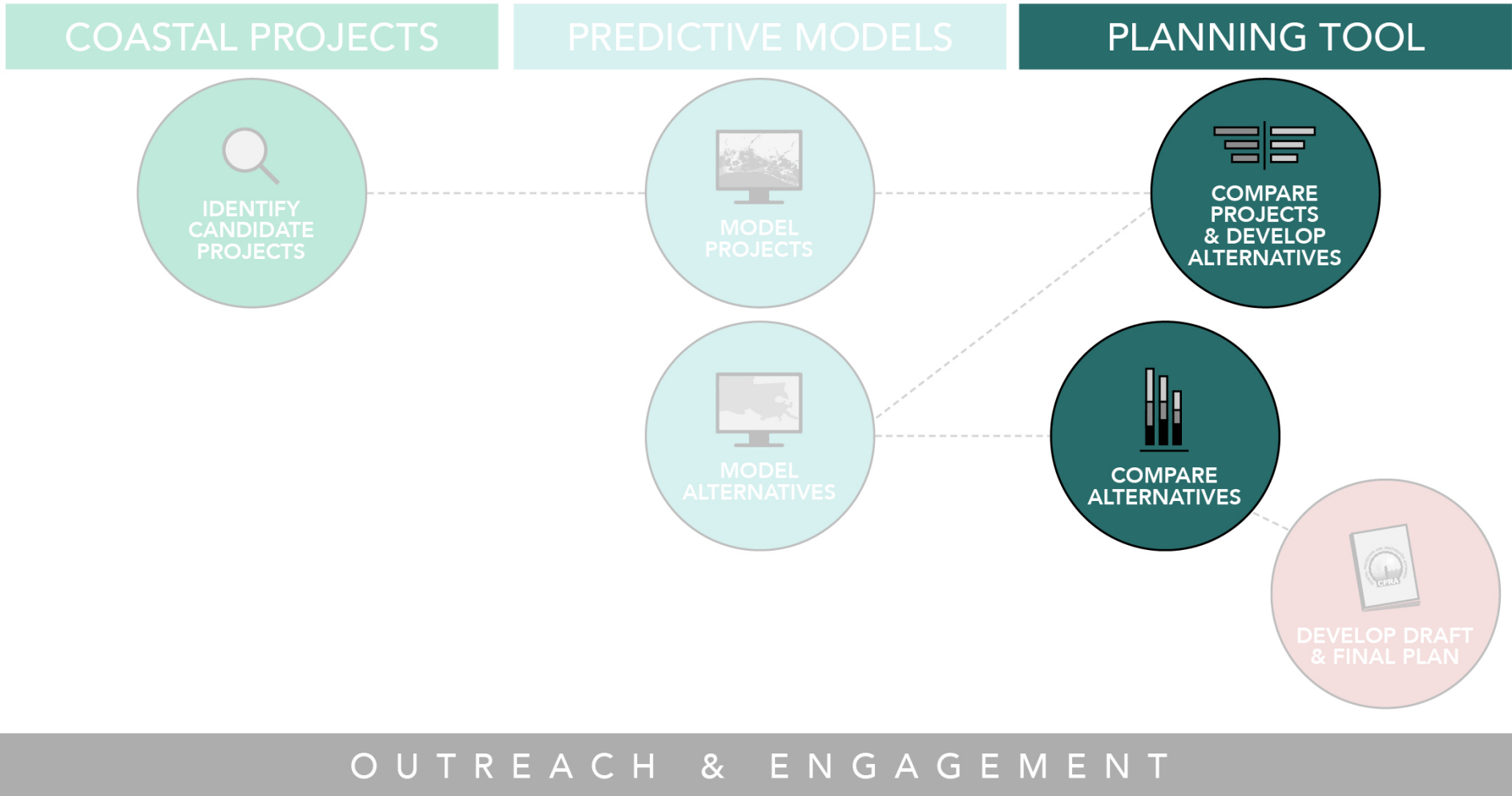
PLANNING FRAMEWORK

PLANNING TOOL

DECISION DRIVERS

REDUCING FLOOD RISK

BUILDING LAND

METRICS

COMMUNITY METRICS

AGRICULTURAL COMMUNITIES

FLOOD PROTECTION OF STRATEGIC ASSETS

OIL & GAS COMMUNITIES

SOCIAL VULNERABILITY

FLOOD PROTECTION OF HISTORIC PROPERTIES

NAVIGATION

TRADITIONAL FISHING COMMUNITIES

ENVIRONMENTAL METRICS

ALLIGATOR

CRAWFISH

OYSTERS

SUSTAINABILITY OF LAND

BLUE CRAB

FRESHWATER FISHERIES

SALTWATER FISHERIES

USE OF NATURAL PROCESSES

BROWN PELICAN

NITROGEN UPTAKE

SHRIMP

WATERFOWL
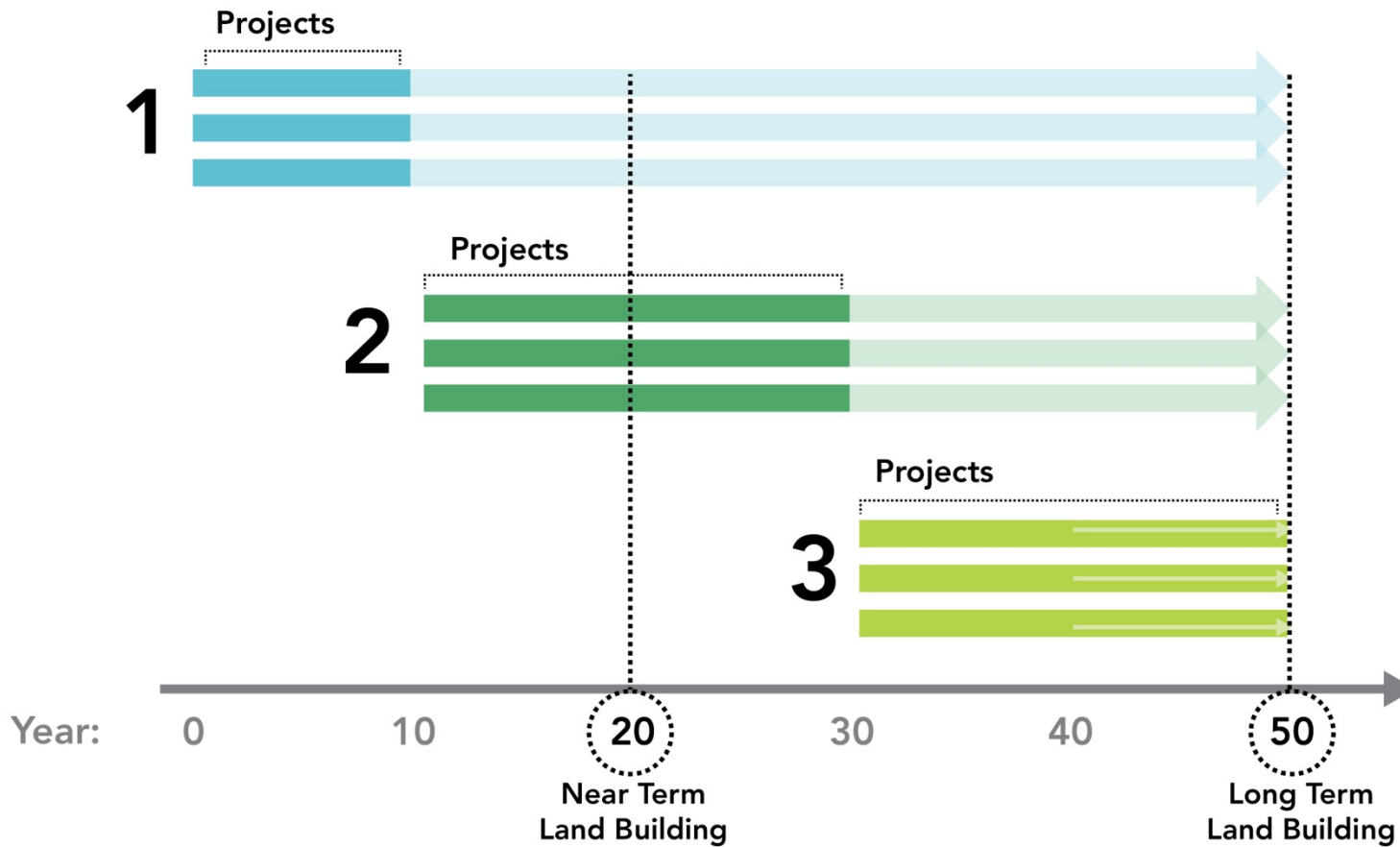
CONSTRAINTS

SEDIMENT

FUNDING

PLANNING TOOL IDENTIFIES GROUPS OF PROJECTS (ALTERNATIVES)

- Maximizes key **decision drivers**:
  - Near-term (year 20) Land Area
  - Long-term (year 50) Land Area
  - Mid-term (year 25) Expected Annual Damage Reduction
  - Long-term (year 50) Expected Annual Damage Reduction

- Consistent with key **constraints**:
  - Funding availability
  - Available sediment
  - Project compatibilities
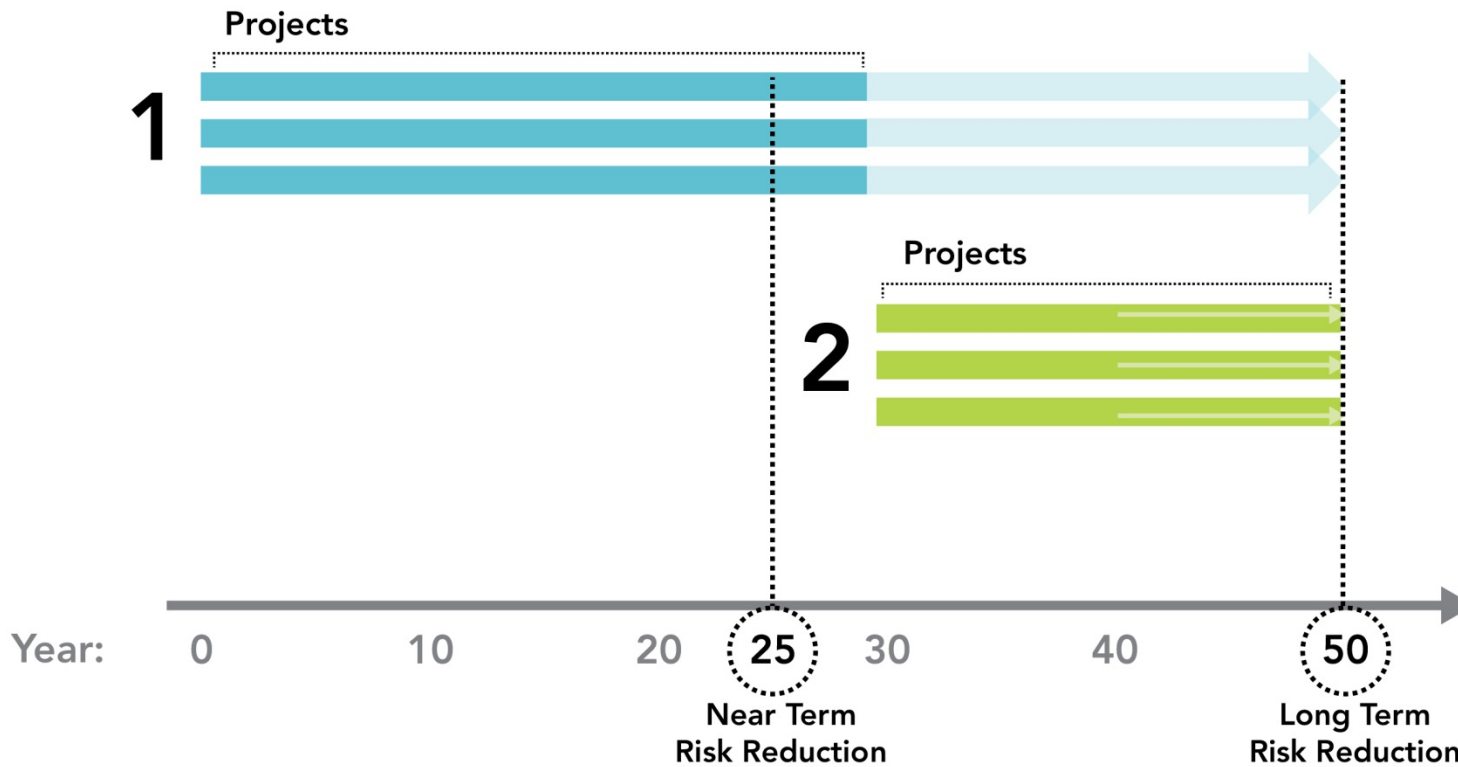
- For a specified **Environmental Scenario**

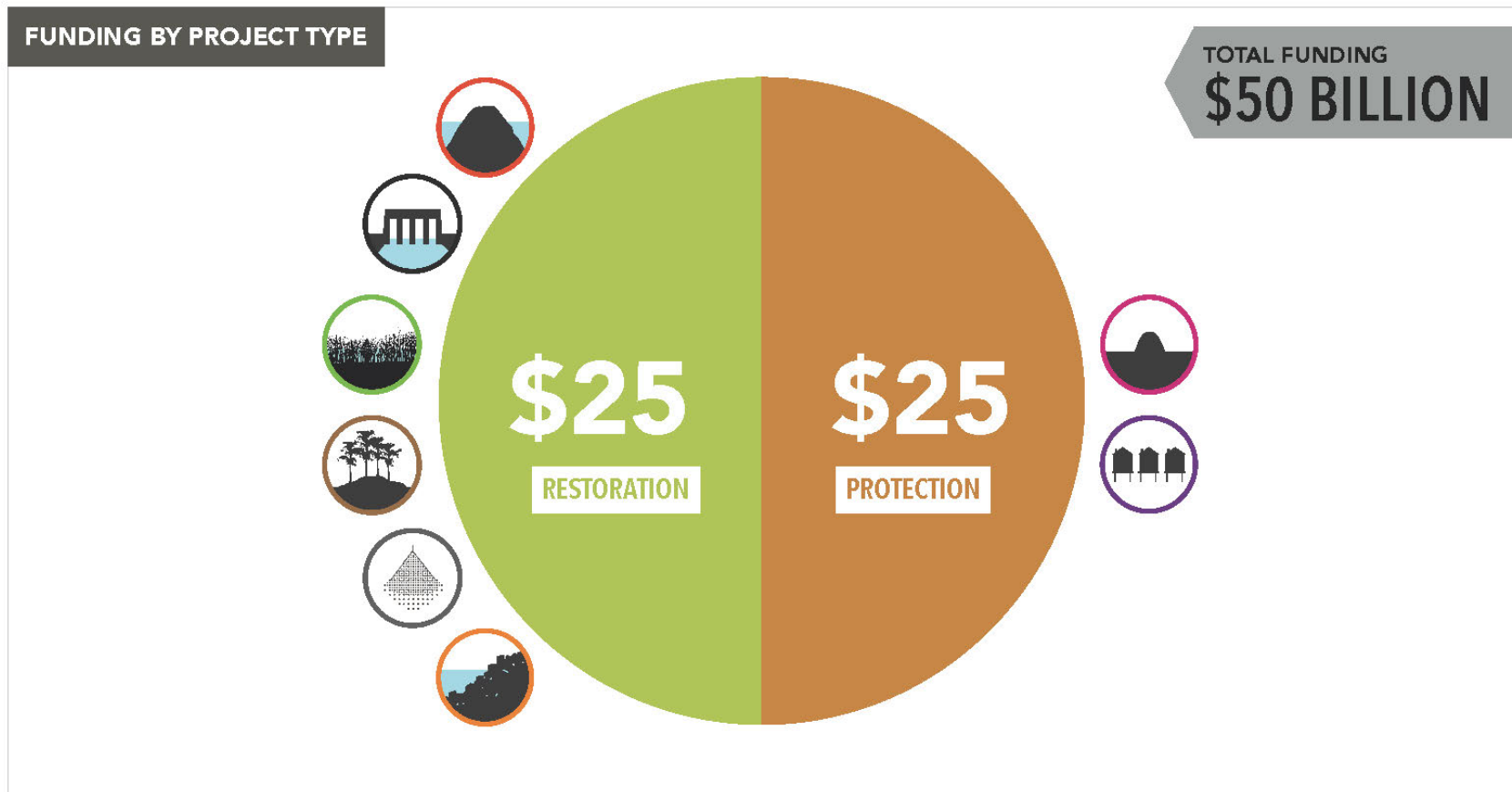Maximizes Outcomes

Within Constraints
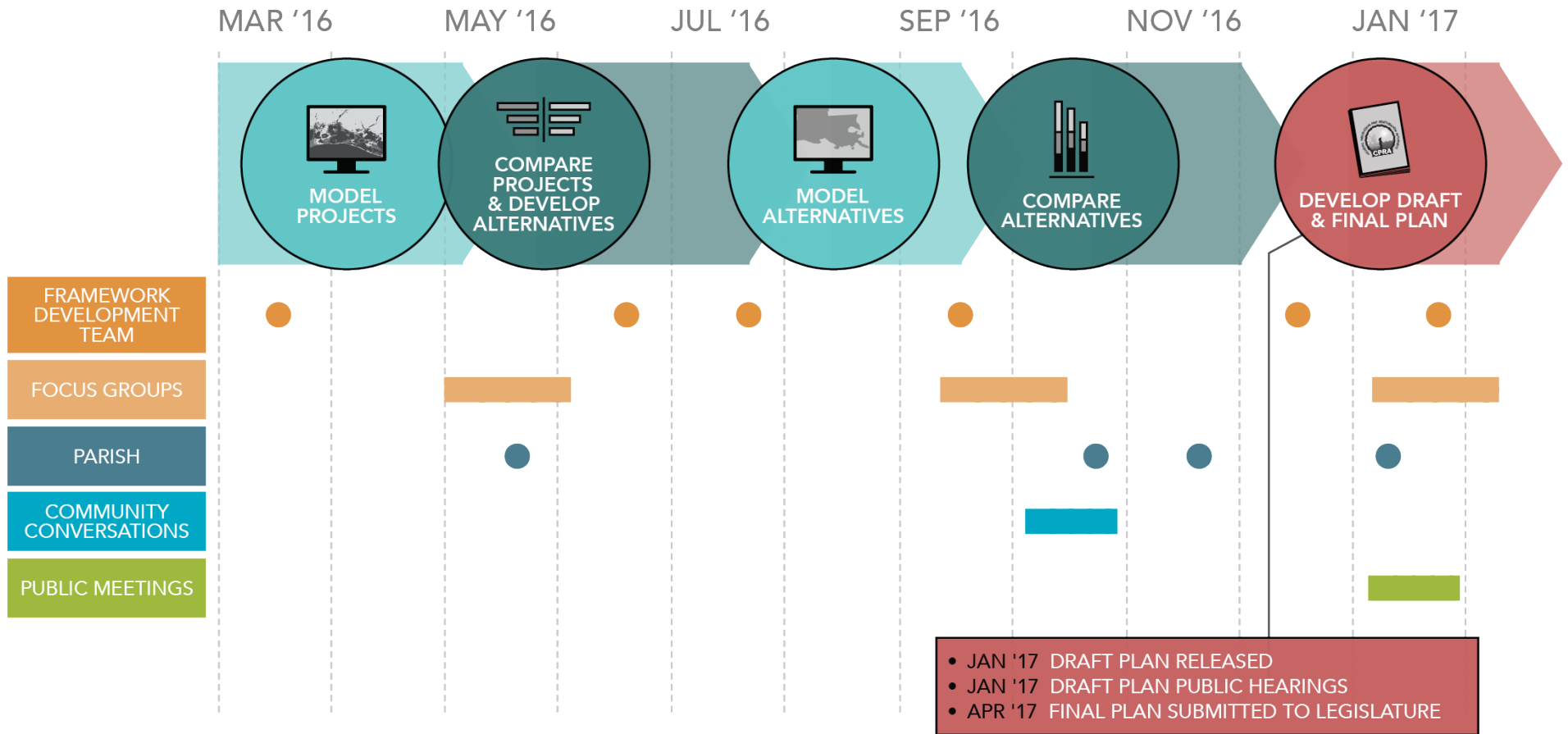
RESTORATION
IMPLEMENTATION PERIODS = 3

RISK REDUCTION
## IMPLEMENTATION PERIODS = 2

A $50 BILLION, 50 YEAR PLAN

MASTER PLAN TIMELINE

	MAR '16	MAY '16	JUL '16	SEP '16	NOV '16	JAN '17

MODEL PROJECTS — **COMPARE PROJECTS & DEVELOP ALTERNATIVES** — **MODEL ALTERNATIVES** — **COMPARE ALTERNATIVES** — **DEVELOP DRAFT & FINAL PLAN**

- FRAMEWORK DEVELOPMENT TEAM
- FOCUS GROUPS
- PARISH
- COMMUNITY CONVERSATIONS
- PUBLIC MEETINGS

- JAN '17 DRAFT PLAN RELEASED
- JAN '17 DRAFT PLAN PUBLIC HEARINGS
- APR '17 FINAL PLAN SUBMITTED TO LEGISLATURE

OUTREACH & ENGAGEMENT
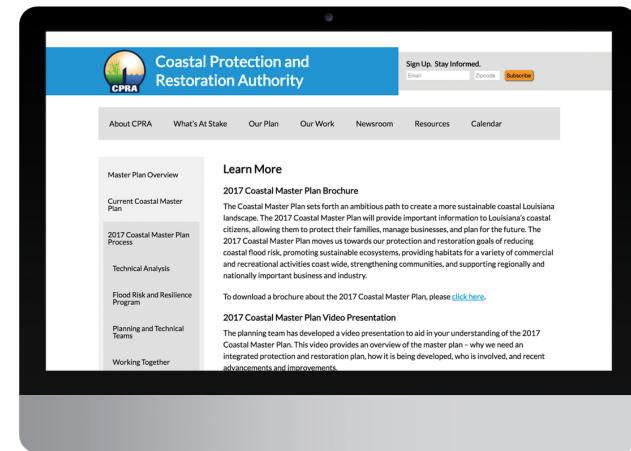
2017 Coastal Master Plan

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ONLINE RESOURCES

- **2017 Coastal Master Plan brochure**
- **2017 Coastal Master Plan videos in English and Vietnamese**
- **Frequently asked questions**
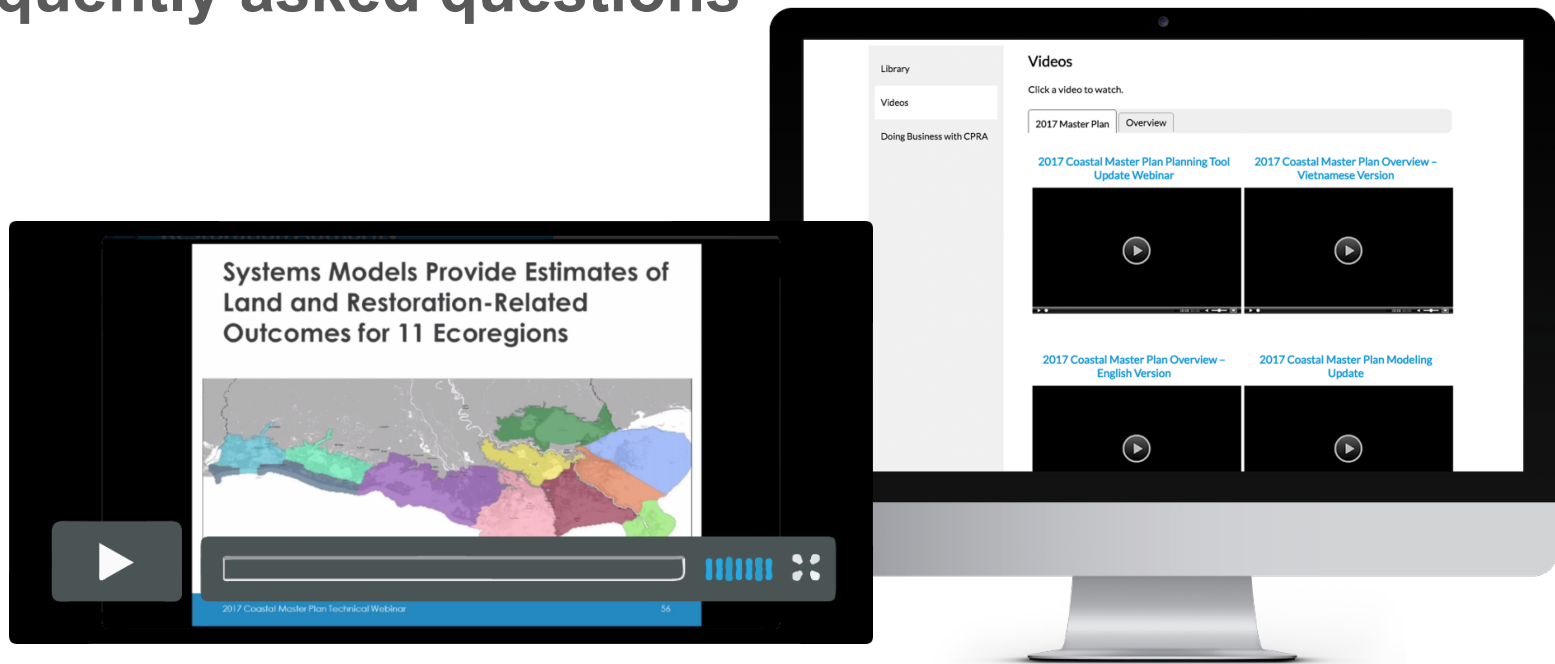
HOW TO GET INVOLVED?

- **Visit our website: coastal.la.gov**

- **Request a presentation or meeting: masterplan@la.gov**

- **Attend public and community meetings**

THANK YOU