UNDERSTANDING WHAT’S AT RISK
Sea-level rise and subsidence are common problems, and managing resources for both environmental and urban/industrial/agricultural purposes present major challenges.

Climate is changing and while the effects on some system components is well studied, understanding the interactive effects of climate stressors, e.g., drought, SLR, changing river flow on coastal ecosystems and communities is a matter of urgency.
NATURAL AND HUMAN ADAPTATION TO CLIMATE CHANGE:
UNDERSTANDING WHAT’S AT RISK

Predicted 100 Year Storm Inundation (2060)
High: 43.8 feet
Low: None

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NATURAL AND HUMAN ADAPTATION TO CLIMATE CHANGE: UNDERSTANDING WHAT’S AT RISK

Density of Tropical Storm Impacts
Weighted by Maximum Wind Speed

High: 1.6
Low: 0

Flood Hazard Zone
SFHA (FIRM Zones A and V)
Outside the 100-Year Floodplain
Percent African American
- Significant Population (> 1.5 Std. Dev.)
Percent Asian
- Significant Population (> 1.5 Std. Dev.)
Percent Hispanic
- Significant Population (> 1.5 Std. Dev.)
Percent Native American
- Significant Population (> 1.5 Std. Dev.)
NATURAL AND HUMAN ADAPTATION TO CLIMATE CHANGE: UNDERSTANDING WHAT’S AT RISK

Port Fourchon
- Provides 18% of the country’s oil supply
- Services 90% of Gulf of Mexico deepwater oil production

Port of Lake Charles
- 50,000 jobs
- $100 billion in private capital improvement projects

Source: 2017 Coastal Master Plan
I would think the only thing that would make them leave is if they can definitely not making a living shrimping, oystering, crabbing... Them being not able to make a living would be probably the only thing. Because we've seen people's houses be devastated and ... they still rebuilt.”

Terrebonne Parish resident, July 2018
ACTIONS: LOUISIANA’S COASTAL MASTER PLAN
NATURAL AND HUMAN ADAPTATION TO CLIMATE CHANGE: ACTIONS: LOUISIANA’S COASTAL MASTER PLAN

Source: 2017 Coastal Master Plan
NATURAL AND HUMAN ADAPTATION TO CLIMATE CHANGE: ACTIONS: LOUISIANA’S COASTAL MASTER PLAN

FUNDING BY PROJECT TYPE

TOTAL FUNDING $50 BILLION

BILLIONS

$20

$15

$10

$5

$0

$1.5B

$0.4B

$0.1B

$5.1B

$17.1B

$18.8B

$0.2B

$6.1B

BARRIER ISLAND RESTORATION

HYDROLOGIC RESTORATION

MARSH CREATION

RIDGE RESTORATION

SEDIMENT DIVERSION

SHORELINE PROTECTION

STRUCTURAL NONSTRUCTURAL

RESTORATION $25B

RISK REDUCTION $25B
DWH Funding Streams for Restoration

• $8.1 billion – Natural Resource Damages
  – Trustee Council

• $2.5 billion – Criminal Penalties
  – National Fish and Wildlife Foundation

• $5.3 billion – RESTORE Act
  – Gulf Coast Ecosystem Restoration Council

Total: Up to ~$16 billion available for restoration
ACTIONS: PARTNERSHIP FOR OUR WORKING COAST
P3+ OBJECTIVES

The Public-Private-NGO Partnership (P3+) will combine the resources and expertise of public, private, and non-governmental organizations to enhance coastal habitat and provide protection to critical infrastructure and communities.

MUTUAL BENEFITS

- Community
- Infrastructure
- Habitats
- \( \text{CO}_2 \) capture & sequestration
• Deepen Belle Pass to -50’
• Deepen Bayou Lafourche, Flotation Canal, Northern Expansion to -30’
• Purpose-built Deepwater Rig Repair and Refurbishment
• ~20M cubic yards of fill construction
NATURAL AND HUMAN ADAPTATION TO CLIMATE CHANGE: ACTIONS: PARTNERSHIP FOR OUR WORKING COAST

THREATS
- STORMS
- SUBSIDENCE
- LAND LOSS
- LOSS OF NATIONAL ENERGY RESILIENCE

HOLISTIC RESILIENCY
- INDUSTRY
- ECONOMY
- COMMUNITY
- ECO SYSTEM
- STORM PROTECTION
- DREDGING
- RE-FURBISHING FACILITY

ENERGY INDEPENDENCE

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ACTIONS: SOCIAL RETURN ON INVESTMENT
“Have you been to Grand Isle, LA? After every hurricane, it gets wiped out, but they come back with a fury rebuilding...So I don't know what to tell you. Our people are different that way. We're crazy people, we defy the norm in a lot of ways. It depends on what they put a value on, whether or not they'd be willing.”

Terrebonne Parish resident, July 2018
In fall 2016, the Water Institute and the Restore the Earth Foundation conducted research to 'ground test' the anticipated social change that would accompany the Pointe-aux-Chenes cypress reforestation project through qualitative and quantitative research with stakeholders.

This research explored the social impacts and outcomes experienced by stakeholders as they were described to The Water Institute through focus groups, meetings, and one-on-one interviews.

SOCIAL RETURN ON INVESTMENT (SROI) ON REFORESTATION PROJECTS IN THE MISSISSIPPI ALLUVIAL VALLEY
NATURAL AND HUMAN ADAPTATION TO CLIMATE CHANGE: ACTIONS: SOCIAL RETURN ON INVESTMENT

$5m → $15m → $168.3m*

1x
- Initial private investment.
- 1,000 acres restored.

x3
- Initial investment of $1 leverages $3 of public/private funding
- Allows 3x the amount of land to be restored
- 3000 acres

Revolving Fund → EcoMetrics

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For every $1 invested, community and funding stakeholders see a total social and market value creation of $15.76.

For every $1 invested by corporate funders, $14.10 in social (non-market) value is returned to community stakeholders.

An additional $1.66 in direct market value is created.

Community stakeholder benefits include: cleaner air and water, soil stabilization, storm protection, flood control, job creation, enhanced recreational opportunities, sustainable livelihood, identity culture and generational equity.
SOCIAL RETURN ON INVESTMENT (SROI) ON REFORESTATION PROJECTS IN THE MISSISSIPPI ALLUVIAL VALLEY
THANK YOU

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