

# Port Fourchon

## *Holistic Resiliency of Energy, Environment, Community and Culture*

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# Location, Location, Location

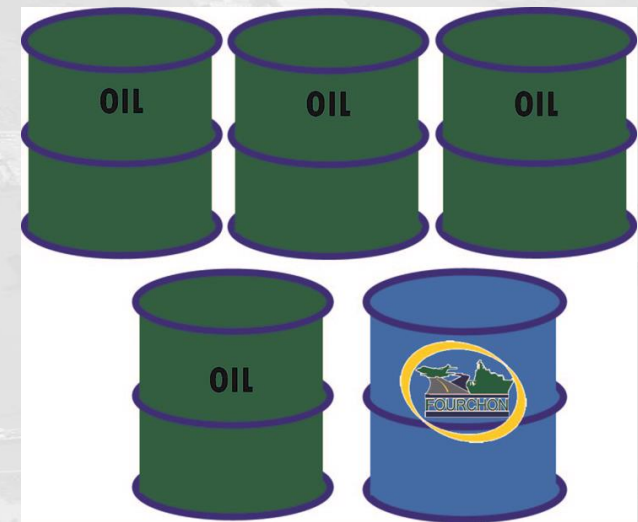


**Port Fourchon is the southern-most Port in Louisiana, and the central-most energy services port along the entire Gulf of Mexico coast**



# American Energy-Louisiana Based

- **2016 GoM Production 1.6M bbl/day**
- **30% of US Energy is Louisiana Based**
- **Billions of Energy Assets on Louisiana Coast**
- **35,000+ Energy Jobs in LA**
- **Port Fourchon currently services over 90% of all U.S. Gulf of Mexico deepwater activities.**
- **In total, Port Fourchon plays a strategic role in furnishing the nation with nearly 20% of its entire oil supply.**
- **All other US GoM ports combined can only service 25% of the infrastructure that Port Fourchon can service.**





# America's Energy Economy

- What the Nation would lose if Port Fourchon was out of service for a 21 day period

Impact on...	
Business Sales	\$11.2 Billion lost
Household Earnings	\$3.1 Billion lost
Jobs	65,502 Jobs lost

From the 2014 publication *The Economic Impacts of Port Fourchon on the National and Houma MSA Economies* prepared by Dr. Loren C. Scott and Associates





# Barataria and Terrebonne Estuaries





# Commercial and Recreational Fishing







1978



2017



Developing on the edge...

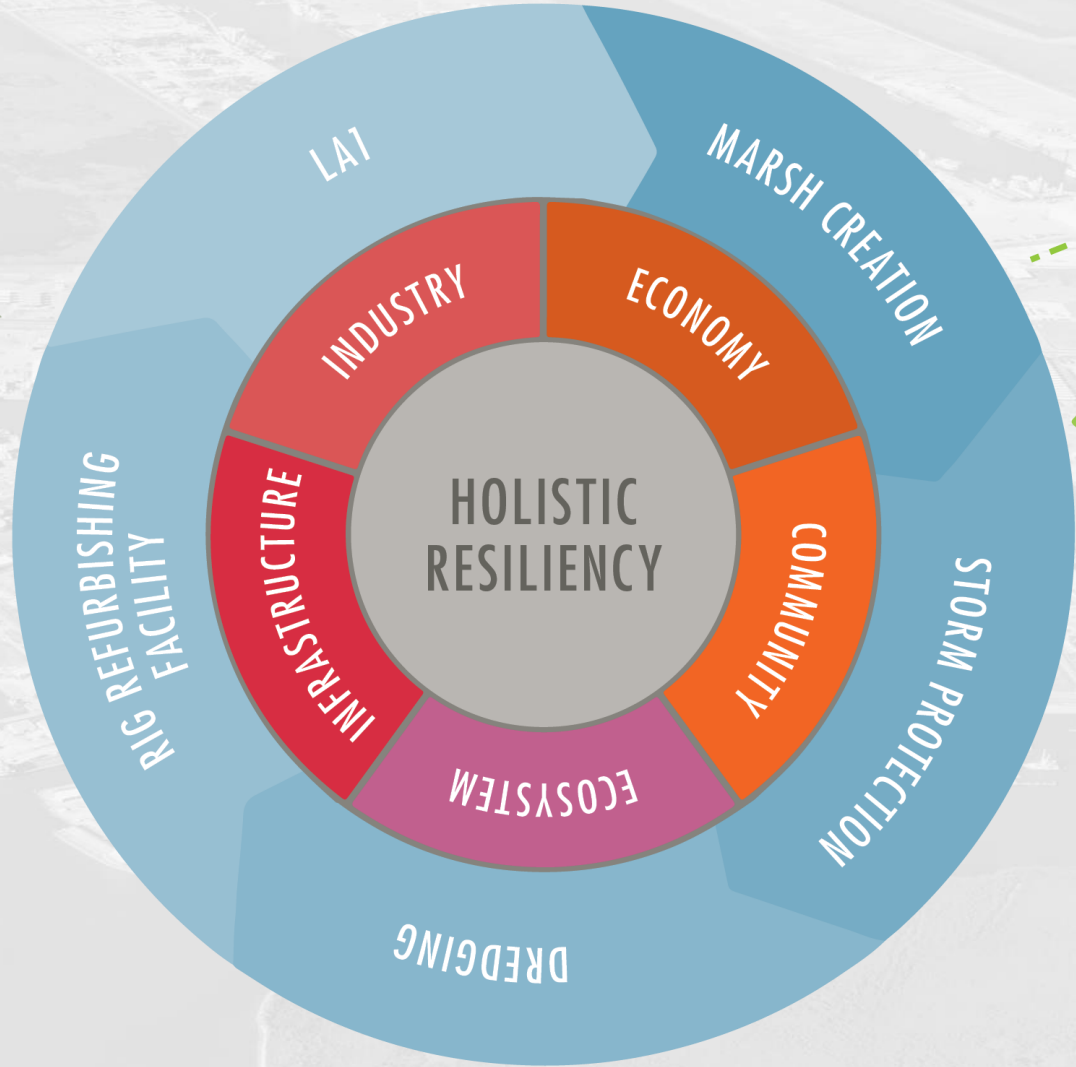




# Holistic Resiliency

**THREATS**

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





# Resilient By Design

- Facilities and Services Designed to a Higher Standard





# Evolution of Design



## Port Fourchon Continues Slip D Development, Focuses on Resilient Design

June 14, 2016 | TFMX | Port Commission, Port Fourchon, Press Releases

(PORT FOURCHON, LA) – Today the Greater Lafourche Port Commission (GLPC) announced the completion of the bucket dredging phase in Slip D, the latest development in Port Fourchon's Northern Expansion area. The initial dredging of Port Fourchon's new Slip D, which broke ground less than one year ago, is the most recent benchmark completed in the progression of the port's Northern Expansion development plan.

Bucket dredging is the first physical step in the creation of a new slip in a port development area. To carve out the footprint of Slip D, contractors used a barge-mounted bucket dredge and dragline to dig the outline of the 3,800 foot long and 1,000 foot wide slip, like scooping out the first shovelfuls of earth at a groundbreaking.

During this first phase of work, over 451,000 cubic yards of material were excavated. Every speck of dredged material is used beneficially in Port Fourchon, and in Slip D, initial dredged material is being used to form containment levees for the next phase of the project's construction. It took workers seven months to complete this first phase of excavation in Slip D.

GLPC is on schedule to start work on the next phase of the project – hydraulic dredging – by early 2017. The hydraulic dredging work will be done in two stages as part of Port Fourchon's unique focus on enhancing the resiliency of the port through continued development. The materials excavated in the first phase of hydraulic dredging will be used to construct over 60 acres of wetlands in the port area, which will not only fulfill the port's development permit obligations but also double as a natural protective buffer for the port from hurricanes and storm surge.

"Over the years, we have taken an increasingly holistic approach to our port's development," said Chett Chiasson, Executive Director of the Greater Lafourche Port Commission. "Since Hurricane Katrina, we have focused on making sure that our projects and infrastructure are built to a higher standard. We have increased the base elevation of our newer slips, our roads, bulkheads, you name it. In addition to building higher and harder, we have also continued to add hundreds of additional acres of wetlands through our own development to protect our tenants' assets in a natural way," he added.

This innovative "resiliency in design" approach to the continued evolution of Port Fourchon, the nation's premier oil and gas service port, demonstrates the vision of the forward-thinking Port Commission in its role as a partner in the strengthening and advancement of the oil and gas service industry. GLPC is also focused on a sustainable and affordable partnership with the tenants and users of Port Fourchon, highlighted by the Port Commission's willingness to work with

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# Resilient Connections

**Completing the LA1 connection from Port Fourchon to Golden Meadow is our top infrastructure challenge**



*This segment of elevated roadway from Leeville to Fourchon is a \$350 million investment in transportation infrastructure that leads to Port Fourchon.*





# Grey Infrastructure: Road Access

An aerial photograph of a coastal wetland area, likely a marsh or delta. The landscape is a complex network of dark blue water channels and green, vegetated land parcels. A prominent yellow line is drawn across the upper portion of the image, starting from a small cluster of buildings and extending southeast towards a larger industrial or residential area. The sky is a clear, pale blue.

**\$360 million more needed  
for Phase 2, Golden  
Meadow to Leeville**



# Mitigation and Restoration

An aerial photograph showing a vast wetland restoration project. The landscape is a mosaic of dark blue water bodies, including large ponds and narrow channels, interspersed with brownish-tan land parcels. The water bodies are interconnected, forming a complex network. The land parcels are irregular in shape and are separated by narrow strips of land or small channels. The overall appearance is that of a restored natural wetland environment.

**1999**

At Port Fourchon, mitigation is done in a way which restores the historic landscape.



# Green Infrastructure = Resiliency



This once vibrant marsh and cheniere ridge platform had degraded in to open water, and through the mitigation works completed in conjunction with the expansion of the Port, nearly 1,000 acres of wetlands have been restored to the landscape to date.

2017



# Maritime Forest Ridge: Beyond Mitigation



2008



2017

*Port Fourchon worked in conjunction with several public and private partners to complete this innovative restoration project, including:*

- Barataria-Terrebonne National Estuary Program
- Gulf of Mexico Program
- Gulf of Mexico Foundation
- National Oceanic Atmospheric Administration
- Louisiana Department of Natural Resources
- Shell
- USDA National Resources Conservation Service





# Restoration Partnerships



**2005-11 Maritime  
Forest Ridge Shaping,  
planting support:  
\$100,000+**

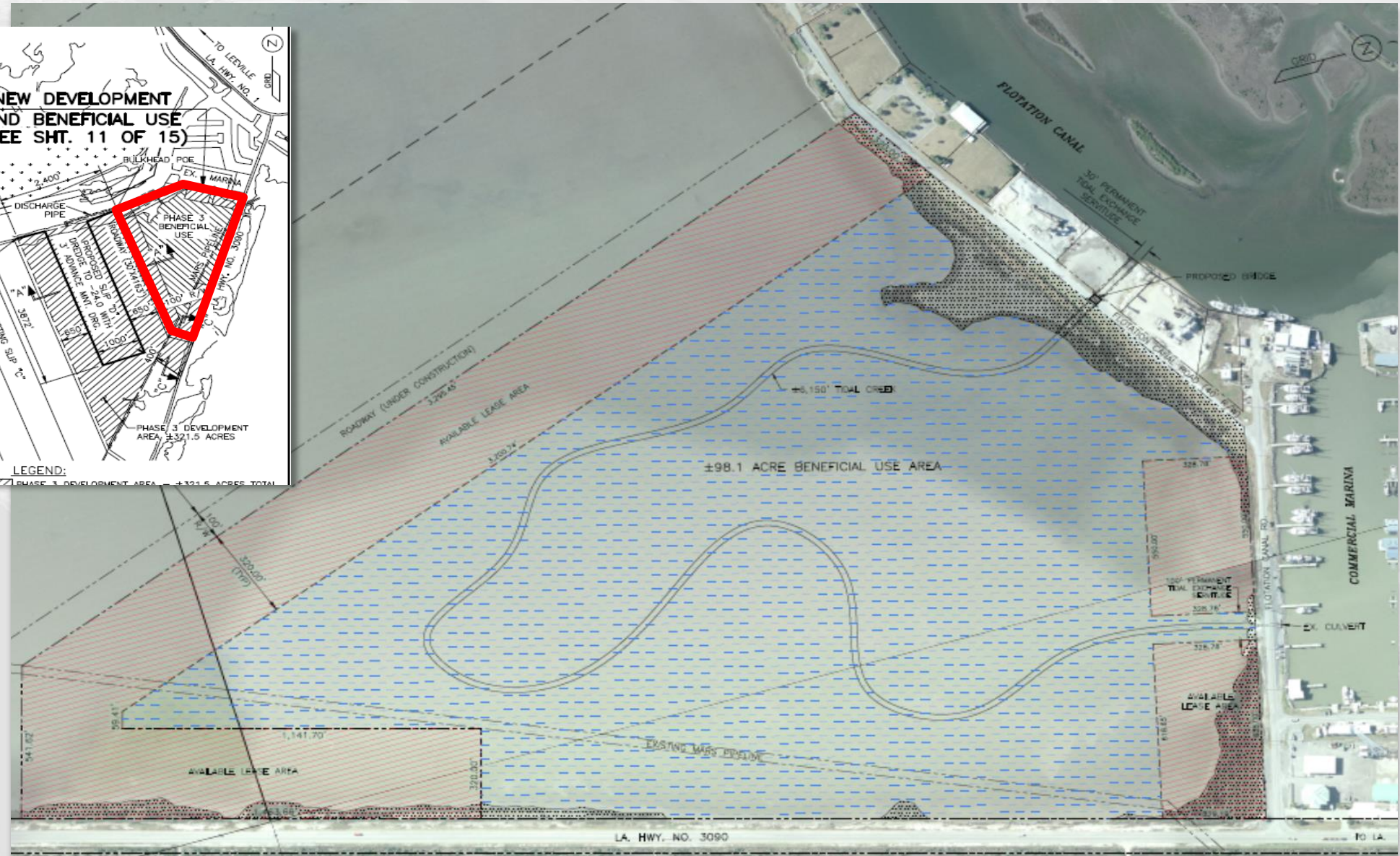
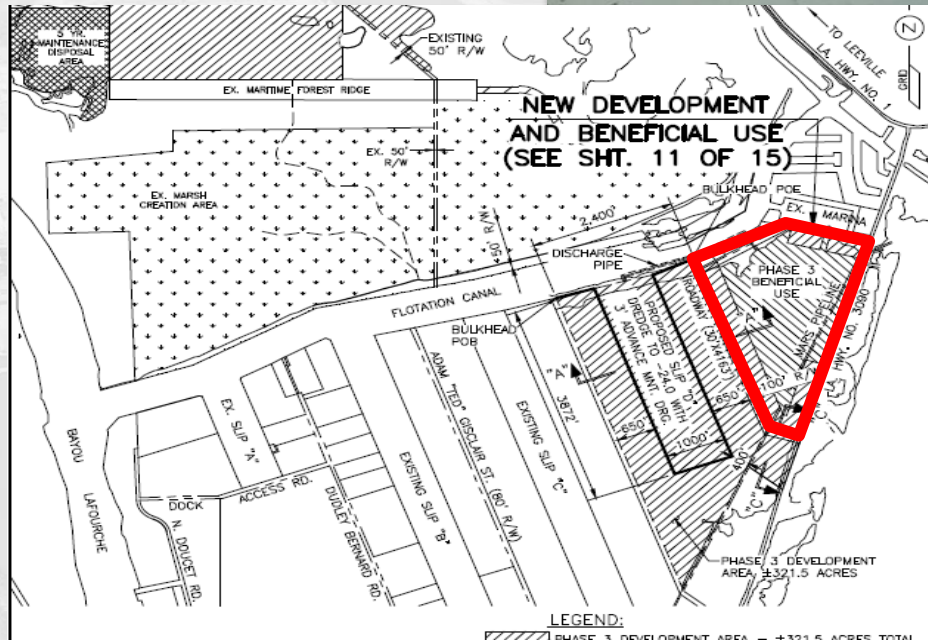
**2012 – Fourchon  
Beach Dune  
Restoration Geotube  
construction: \$500,000**

**Today - SMART  
initiative: Part of  
\$1,000,000  
*partnership between  
Shell and BTNEP***



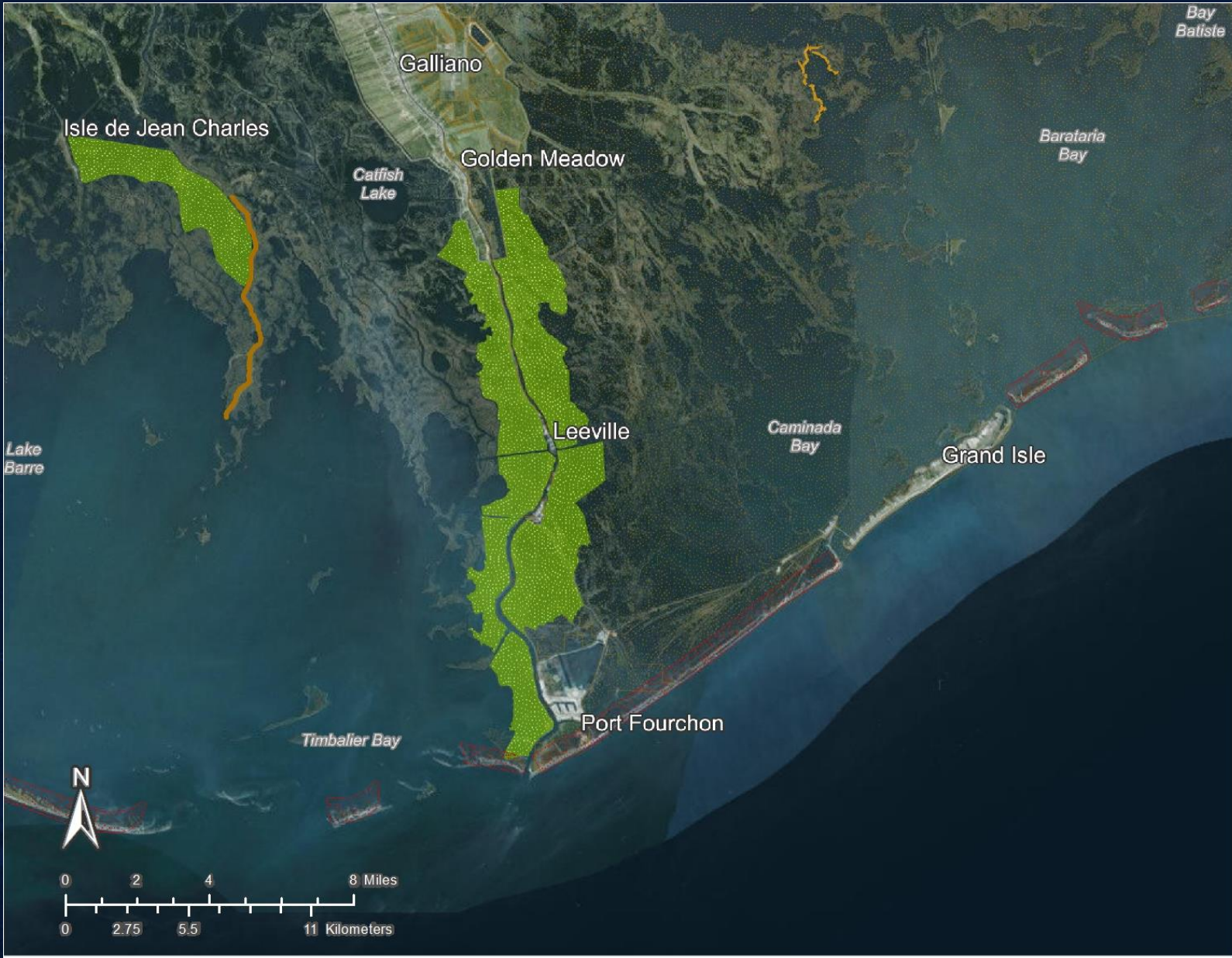


# Slip D Mitigation – Integrated Land Use





# It Takes a Village... or a Plan



## Louisiana's State Coastal Master Plan

- 50 year, \$50 Billion Ecosystem Level
- Over \$300 M committed or constructed in vicinity of Port Fourchon under 2012 plan
- Redrawn every 5 years
- Approved by Legislature
- All LA enviro \$ from Deepwater Horizon are dedicated to Master Plan projects



# Caminada Headlands Projects



- Phase I +\$70M (CPRA, CIAP, Surplus)
- Phase II +\$145M (NFWF)
- Borrow source – Ship Shoal
- First major project funded with BP spill fines
- Delivered by Louisiana CPRA
- *Taken together, Cam I and II represent the largest coastal project ever built.*



# Fourchon Beach Geotubes Project



5,300 Linear Feet  
30' diameter geotube  
10' completed dune height

**\$3,500,000 including funds from FEMA, Shell, and FRRRI**  
**\*\*Currently appealing FEMA decision not to fund repair work following March 2016 storms**





# Environmental Partnerships



The Greater Lafourche Port Commission  
was recognized by the  
American Association of Port Authorities  
with a  
**2015 AAPA Environment Award**  
For the GLPC's Geotube and Beach Dune  
Restoration Project at Fourchon Beach



The project featured a partnership with Nicholls State  
University's Biology Department to *vegetate* the  
newly rebuilt beach and dune.





# Future Development is Holistic Resiliency

- **Future development consistent with Holistic Resiliency principles**
- **Beneficial use of dredge materials in all things**
- **Leveraging Development Dredging for Ecosystem-level Restoration and Critical Infrastructure Protection**







[www.portfourchon.com](http://www.portfourchon.com)



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