



LASAFE

Louisiana's
Strategic Adaptations
for Future Environments

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CDBG Bootcamp // 3.20.19





Meet the winners.

Announced by President Obama in 2014, the **National Disaster Resilience Competition** was developed to help U.S. communities recover from prior disasters through innovative resilience projects.

67 disaster-affected communities

13 competition winners

1 billion dollars to rebuild *better*

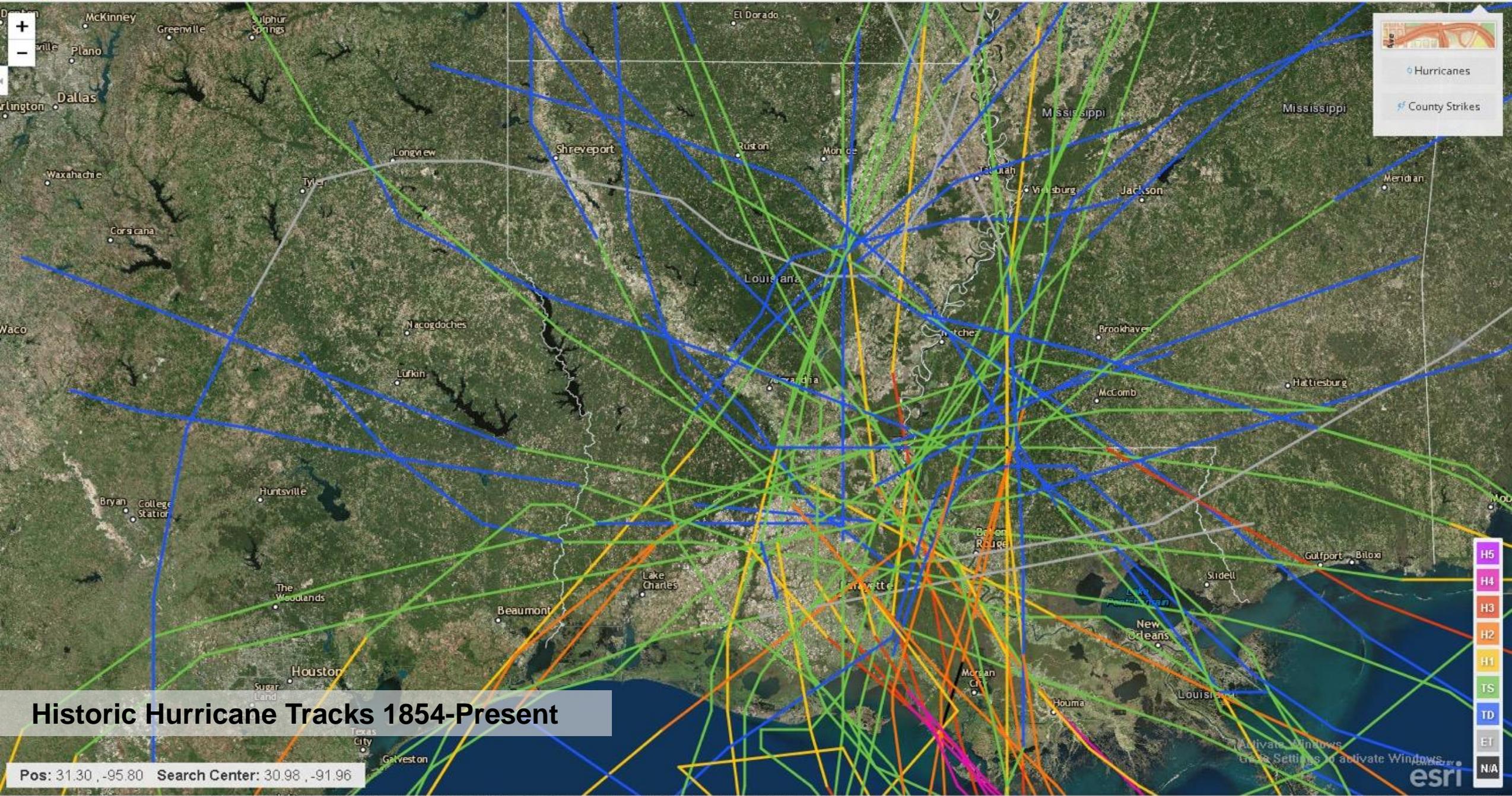
#RebuildBETTER

Louisiana: \$92.6 million

- \$40m LA SAFE
- \$48m Isle de Jean Charles Resettlement



Historical Hurricane Tracks

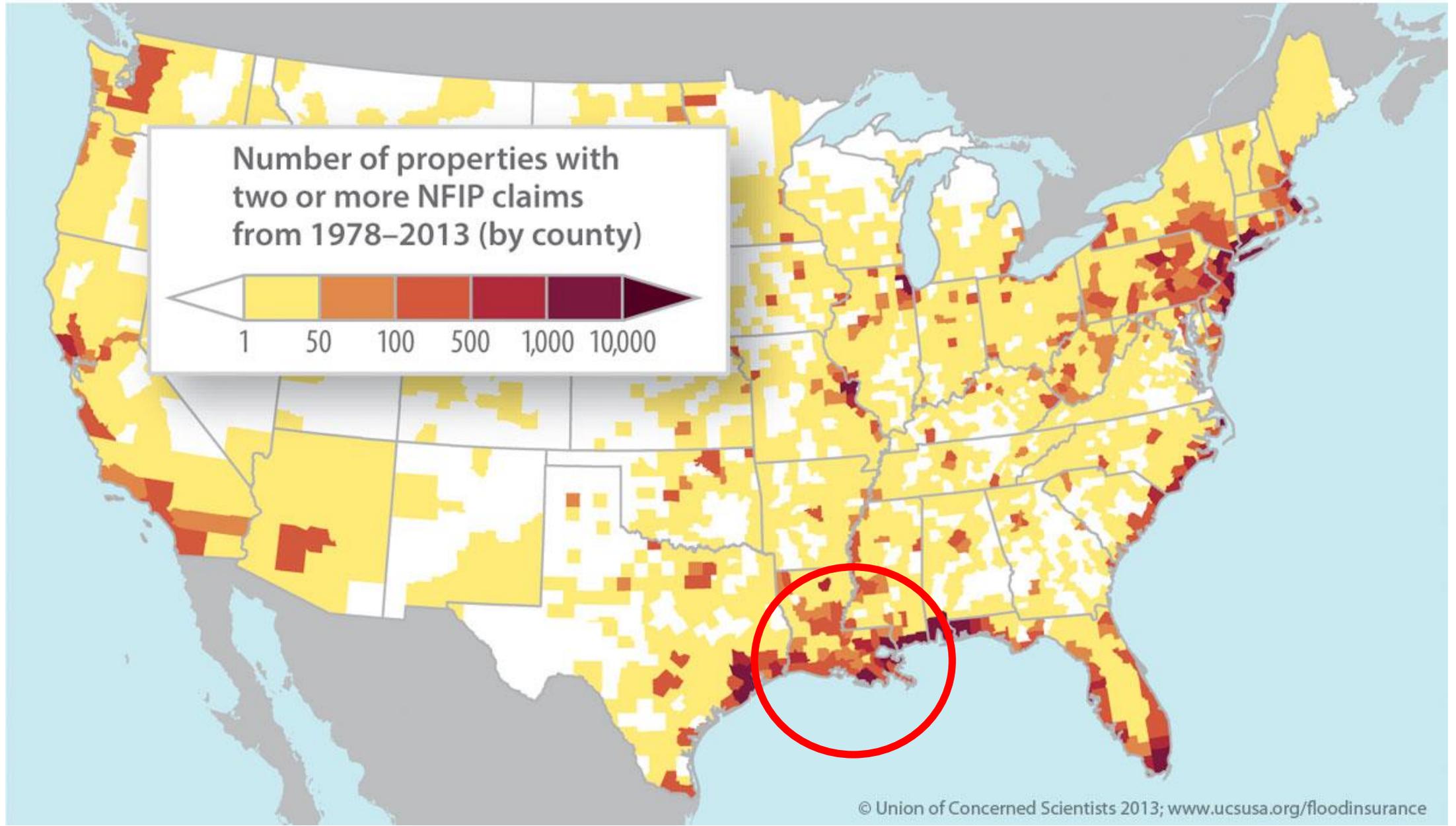


Historic Hurricane Tracks 1854-Present

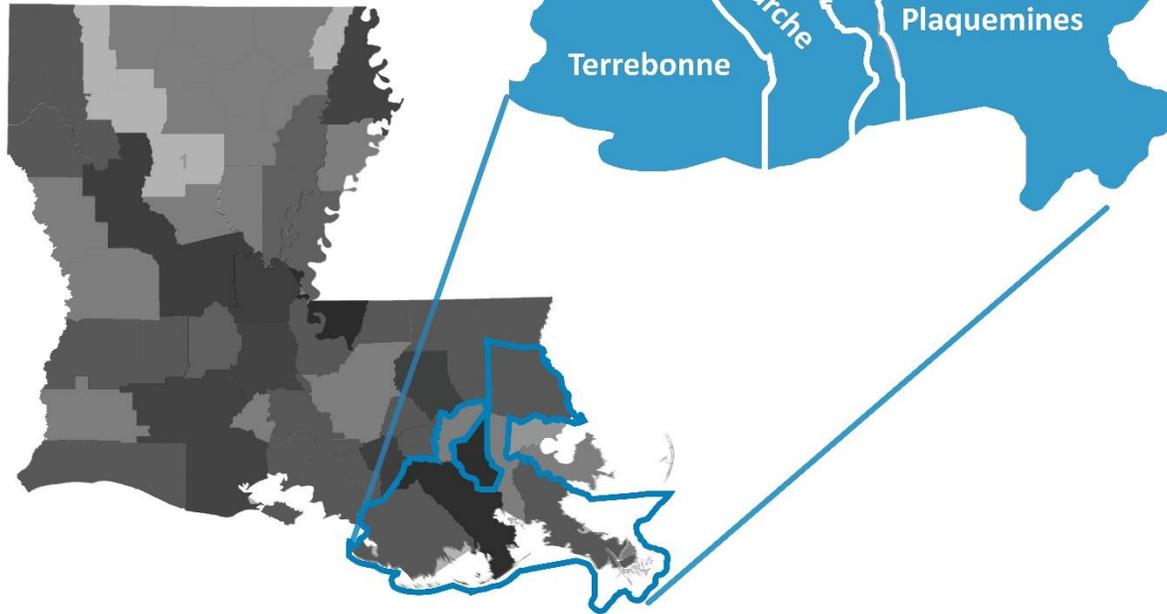
Pos: 31.30, -95.80 Search Center: 30.98, -91.96

- H5
- H4
- H3
- H2
- H1
- TS
- TD
- ET
- N/A

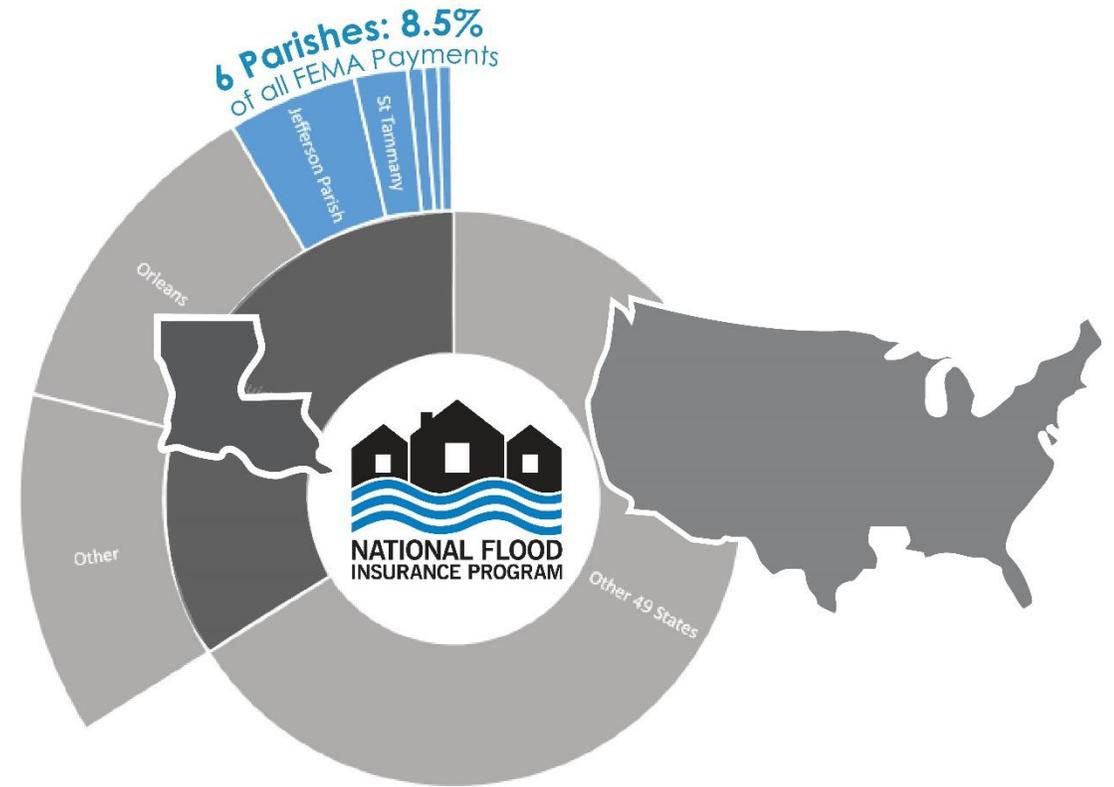
Repetitive-Loss Properties by U.S. County



FEMA DECLARED DISASTERS



Number of FEMA declared disasters since 2011 in each Parish. Source: FEMA



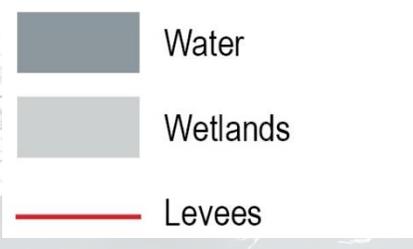
The average household in the six LA SAFE parishes has received over **28x the national average** in FEMA disaster recovery payments between 1978 and 2016.

In Plaquemines, its **268x the national average**.

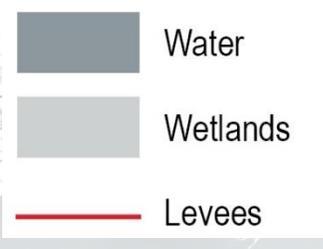
FEMA's NFIP PAYMENTS, 1978 - 2016

	U.S.	Louisiana	6 LA SAFE Parishes	Plaquemines Parish
Total NFIP Payments	\$57.3 B	\$19.4 B	\$4.9 B	\$361 M
Historic Payments per Household	\$490	\$11,260	\$13,920	\$131,564

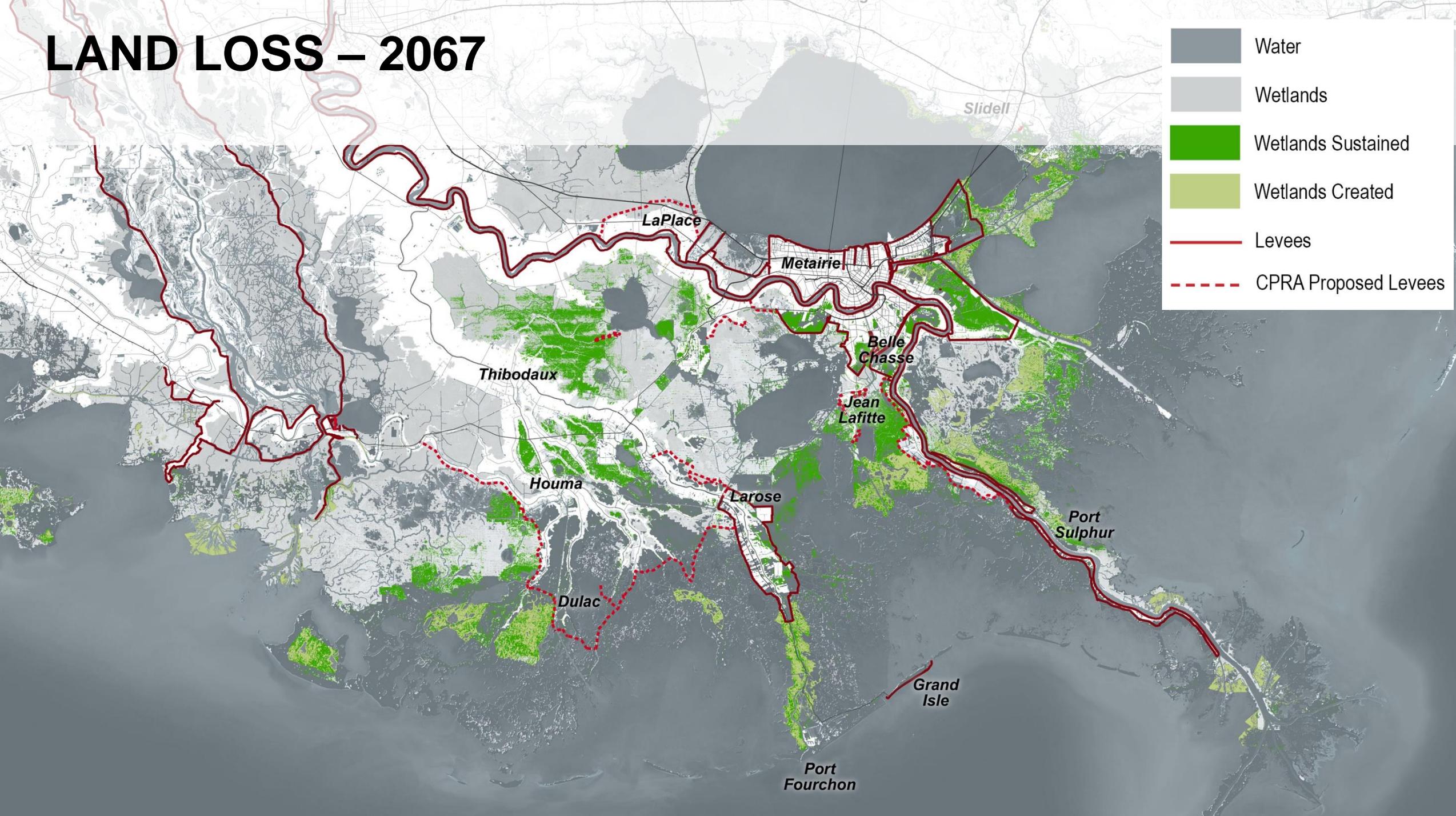
LAND & WETLANDS - 1960



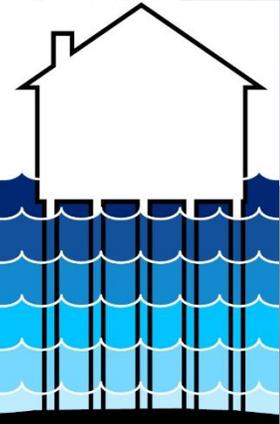
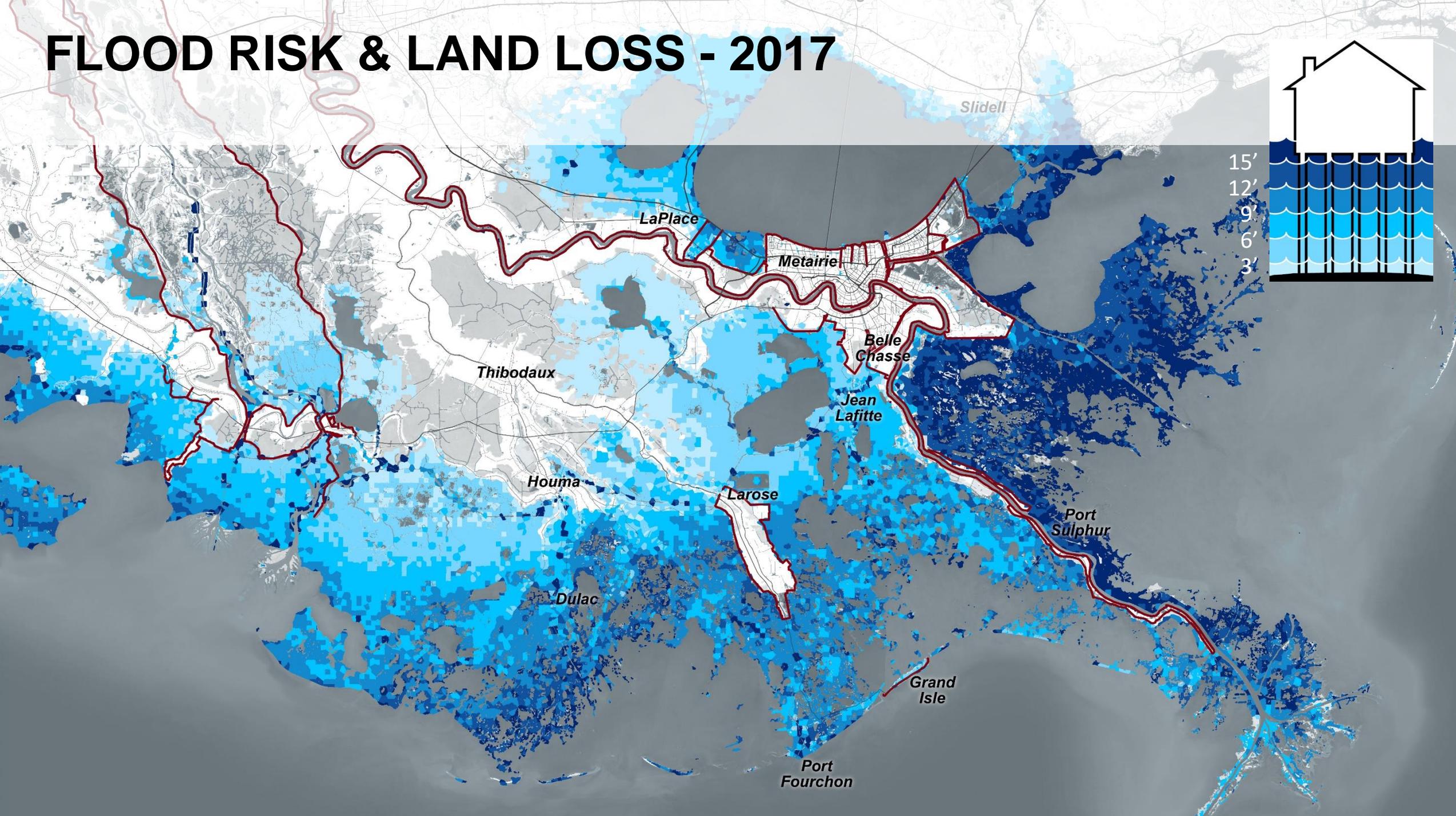
LAND & WETLANDS - 2017



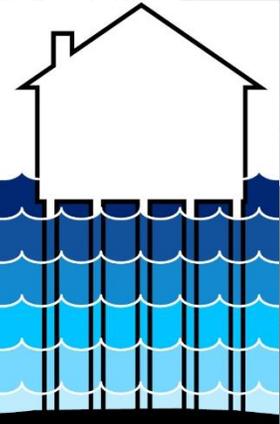
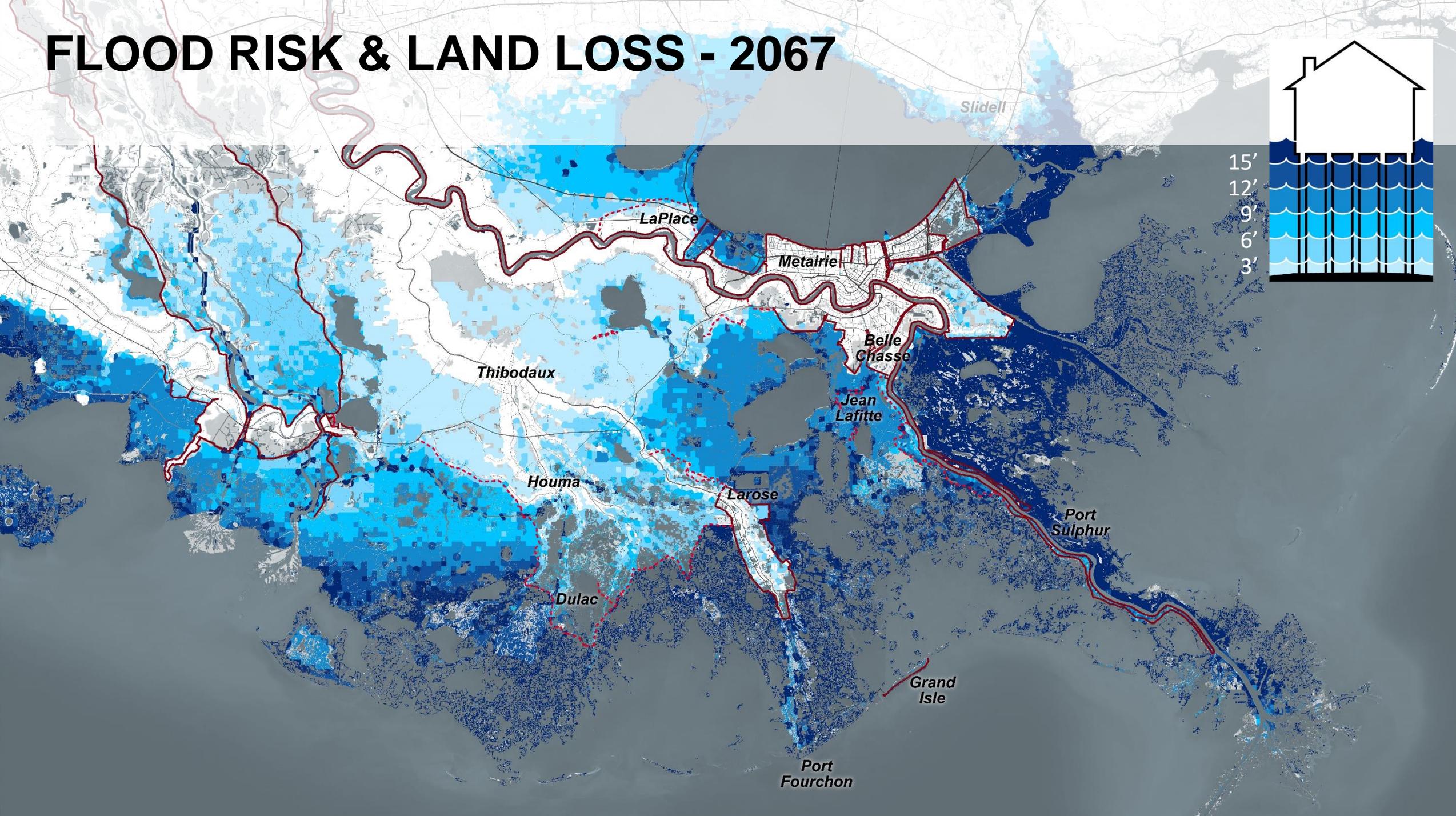
LAND LOSS – 2067



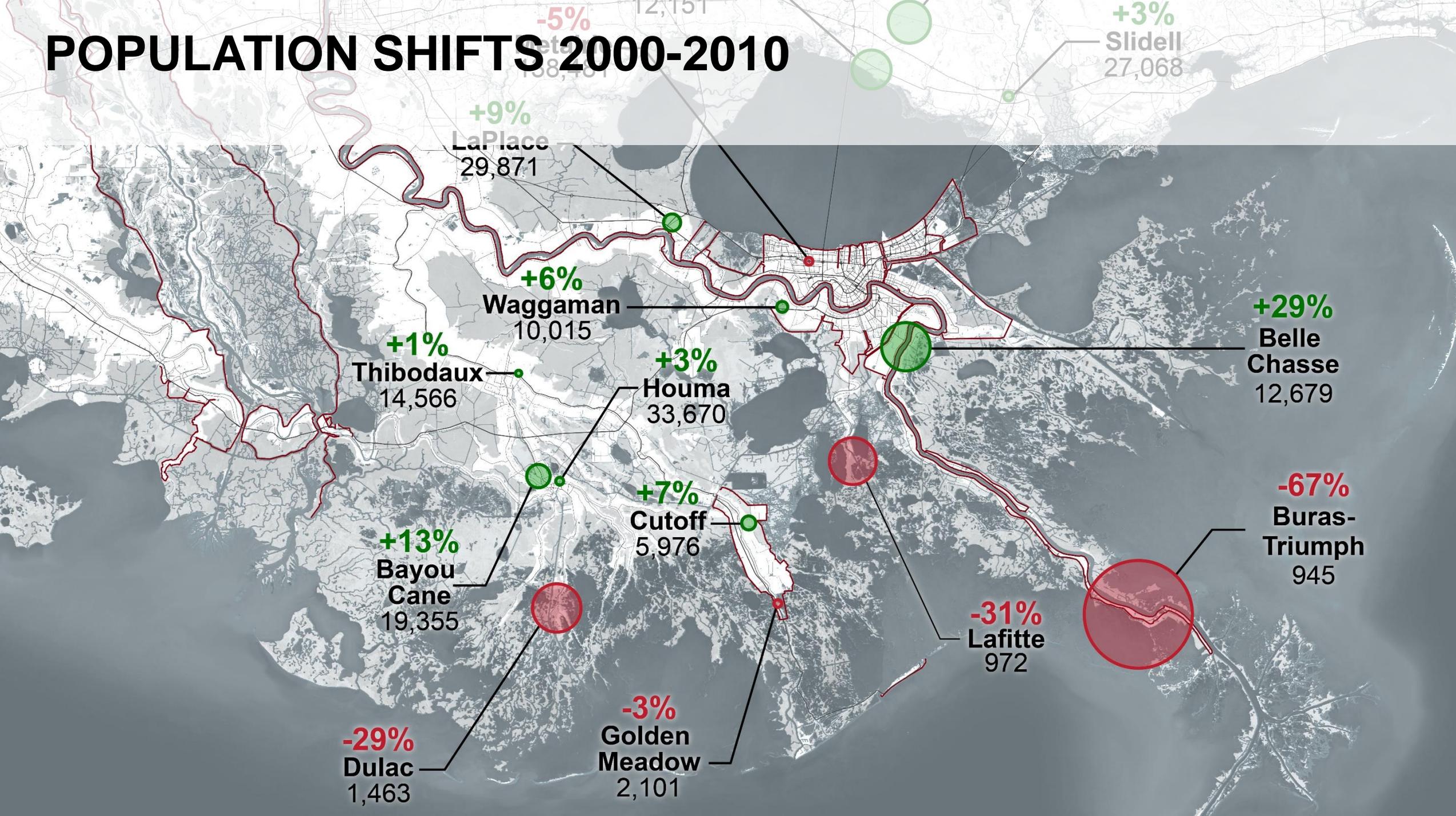
FLOOD RISK & LAND LOSS - 2017



FLOOD RISK & LAND LOSS - 2067



POPULATION SHIFTS 2000-2010



Open Ocean
Interior Water
Wetland



Alligator



Crawfish



Bivalves



Crab



Shrimp



Fish



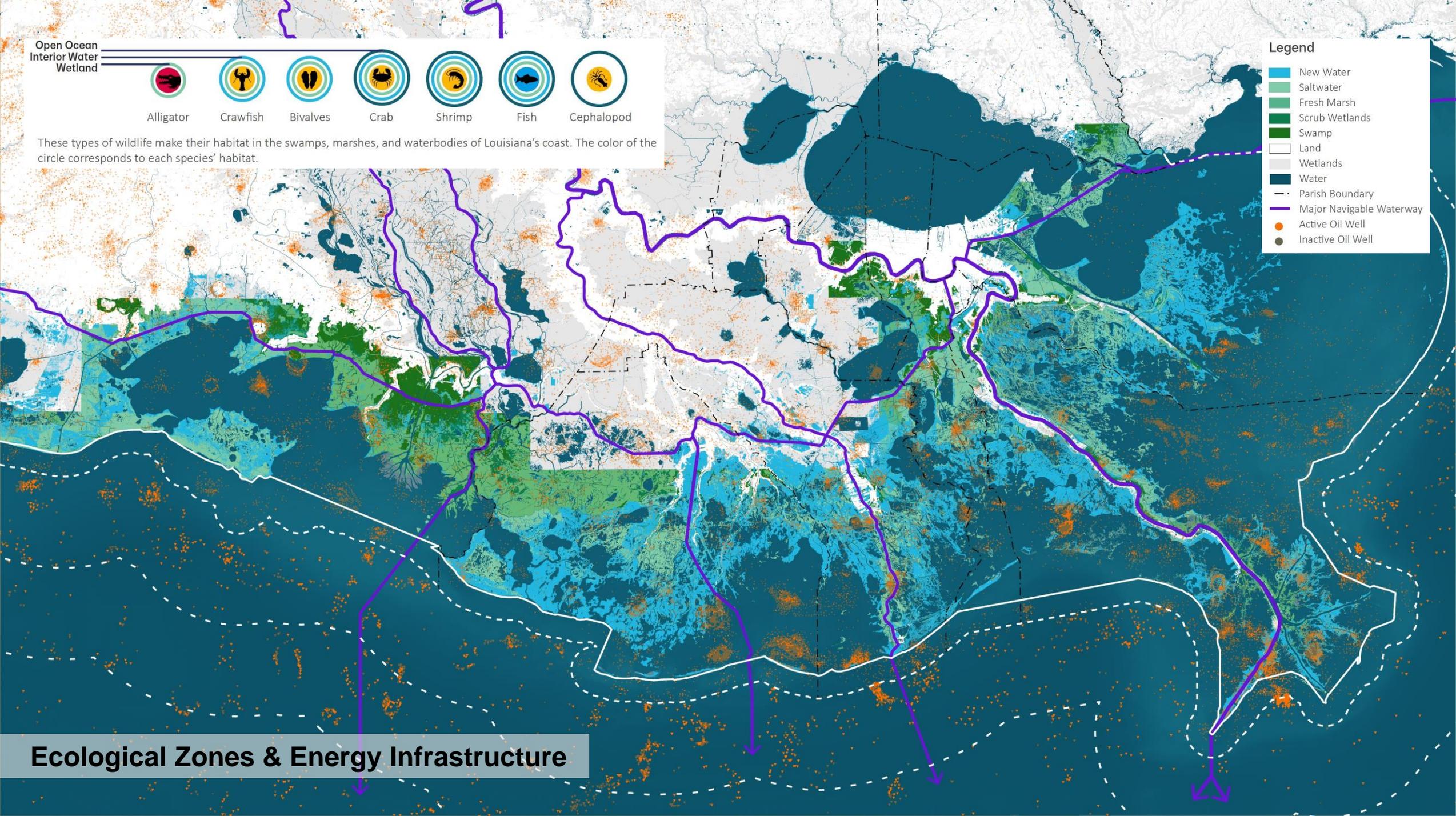
Cephalopod

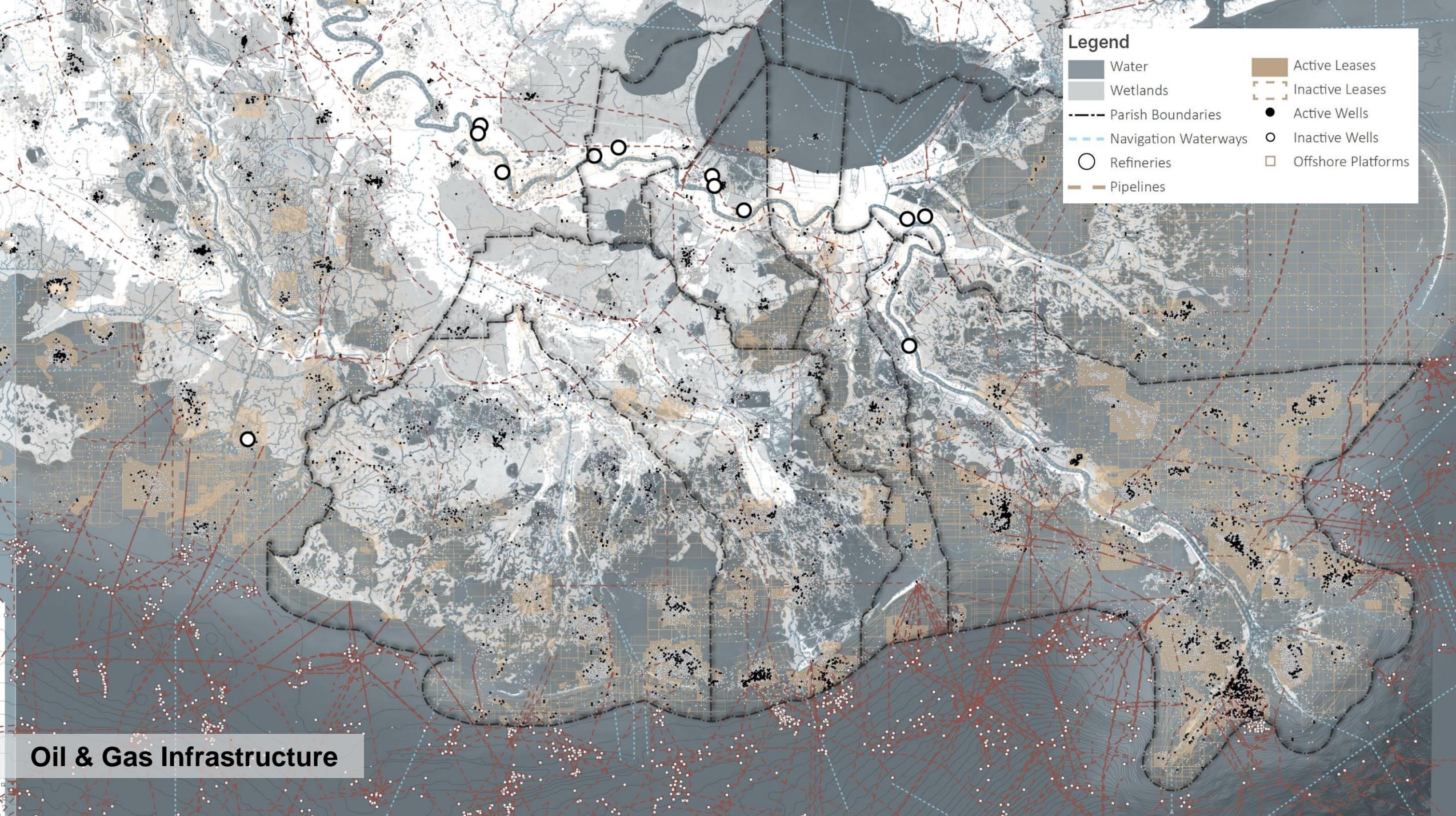
These types of wildlife make their habitat in the swamps, marshes, and waterbodies of Louisiana's coast. The color of the circle corresponds to each species' habitat.

Legend

- New Water
- Saltwater
- Fresh Marsh
- Scrub Wetlands
- Swamp
- Land
- Wetlands
- Water
- Parish Boundary
- Major Navigable Waterway
- Active Oil Well
- Inactive Oil Well

Ecological Zones & Energy Infrastructure

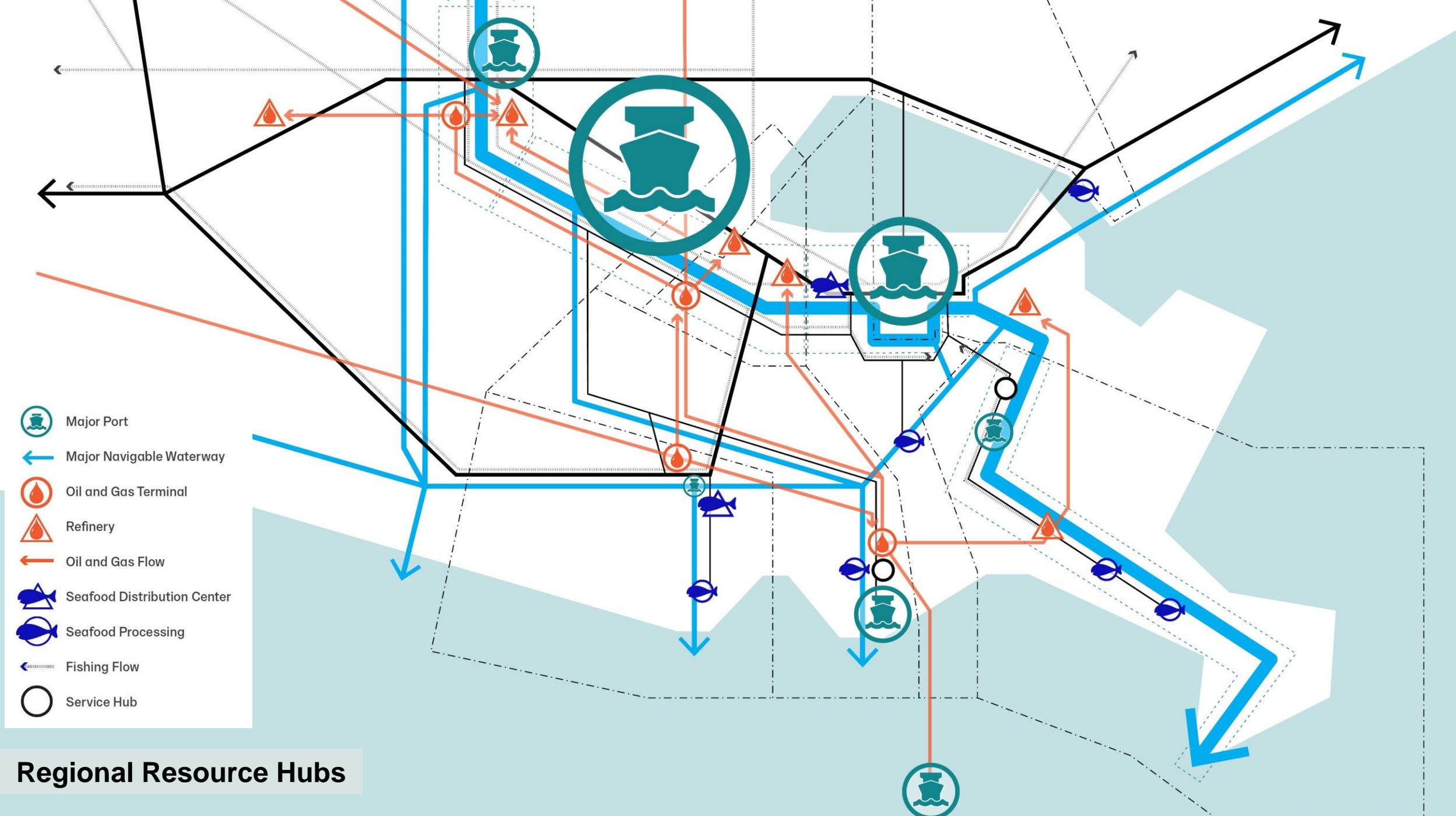




Legend

Water	Active Leases
Wetlands	Inactive Leases
Parish Boundaries	Active Wells
Navigation Waterways	Inactive Wells
Refineries	Offshore Platforms
Pipelines	

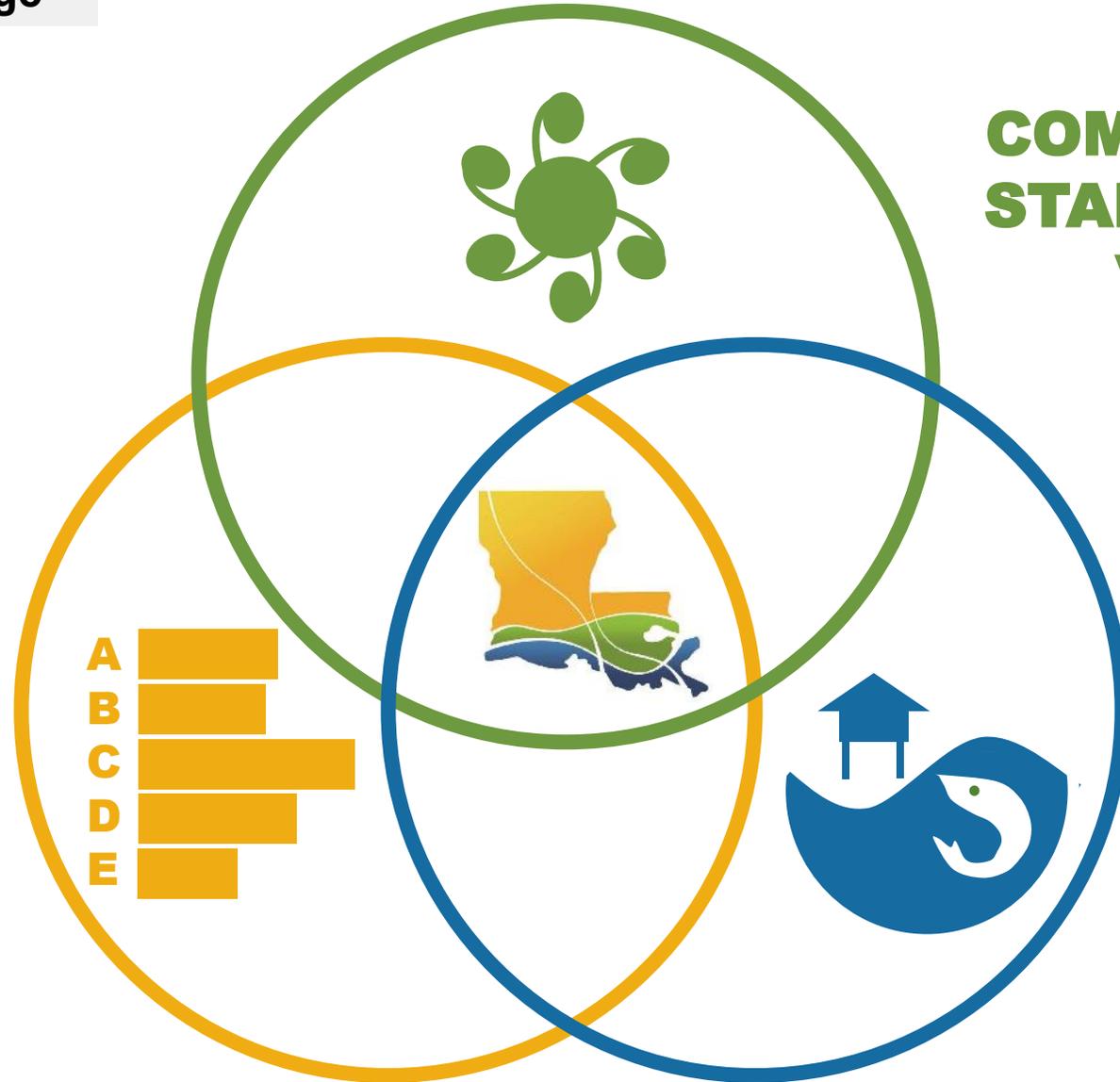
Oil & Gas Infrastructure



-  Major Port
-  Major Navigable Waterway
-  Oil and Gas Terminal
-  Refinery
-  Oil and Gas Flow
-  Seafood Distribution Center
-  Seafood Processing
-  Fishing Flow
-  Service Hub

Regional Resource Hubs

'3 Buckets of Knowledge'



**COMMUNITY &
STAKEHOLDER
VISION**

**BEST
PLANNING
PRACTICES
& EXPERTISE**

**CURRENT &
FUTURE
ENVIRONMENTAL
CONDITIONS**



COMBINED FLOOD RISK ZONES

Sources: CPRA Flood Risk Medium Scenario Modeling Data 2017; FEMA DFIRM 100-year floodplain data for Terrebonne Parish 2008

CPRA + FEMA

STORM SURGE



The map shows 2067 flood risk from storm surge for a medium scenario, or a 100-year storm.

RAINFALL

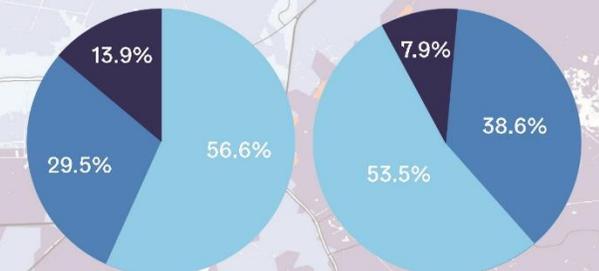
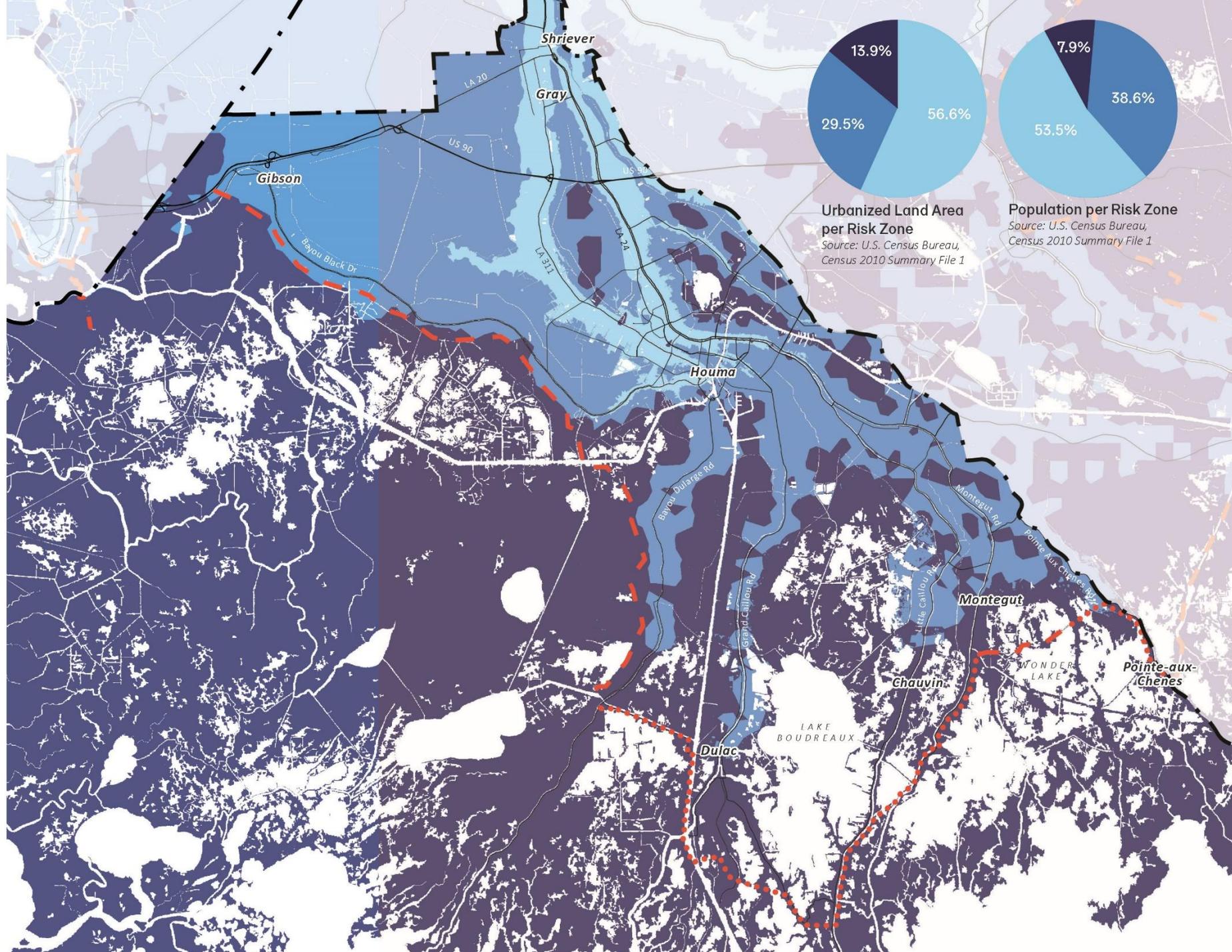


Additionally, areas within levees and in a 100-year floodplain are shown as a moderate risk zone, as these zones flood during heavy rainfall.

Legend

- Low Risk**
0' - 3' projected flood depths
- Moderate Risk**
3' - 6' projected flood depths
Within the 100-year floodplain
- High Risk**
6' + projected flood depths

- Non-Federal Levee
- - - CPRA Proposed Levee
- - - - Parish Boundary

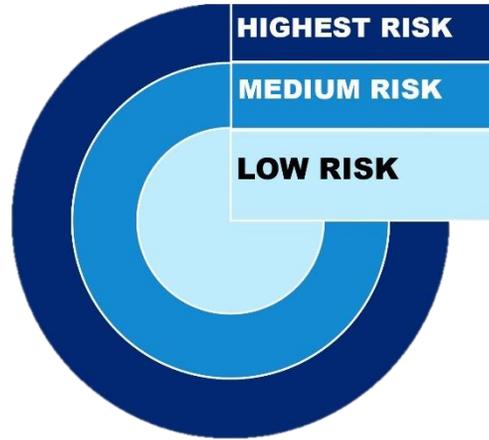


Urbanized Land Area per Risk Zone
Source: U.S. Census Bureau, Census 2010 Summary File 1

Population per Risk Zone
Source: U.S. Census Bureau, Census 2010 Summary File 1

PLAN DIMENSIONS

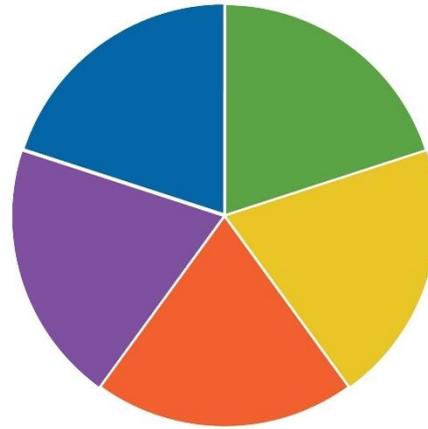
RISK LEVEL



STRATEGY TYPE

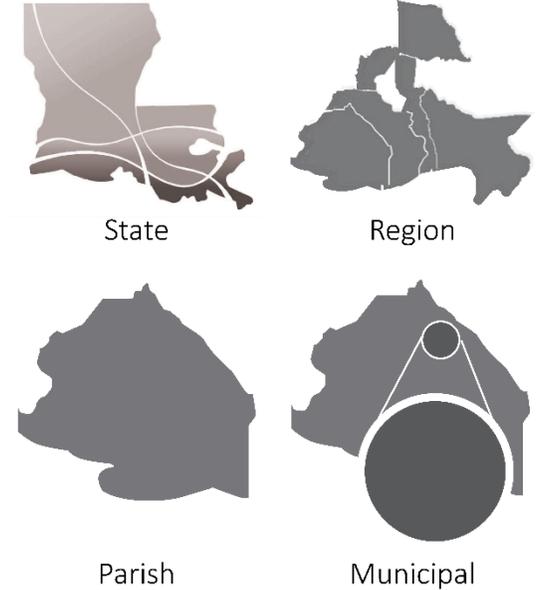


PLANNING CATEGORY

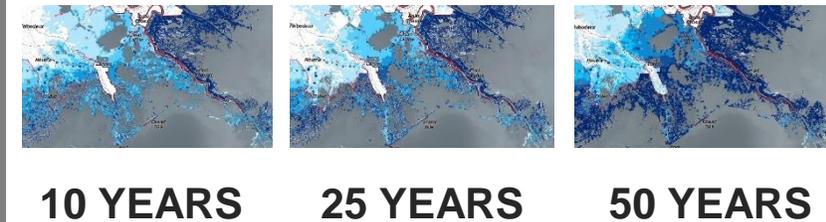


Stormwater Management
Housing and Development
Transportation
**Education, Economy,
and Jobs**
Culture and Recreation

SCALE



TIME



2017 Outreach & Engagement



2018 Plan Development & Implementation

March & April

Parishwide Meeting



Identify Challenges & Opportunities

May & June

Community Meetings



Propose Strategies

July & August

Parishwide Meeting



Evaluate Vision & Strategies

October

Stakeholder Round-tables & Open Houses



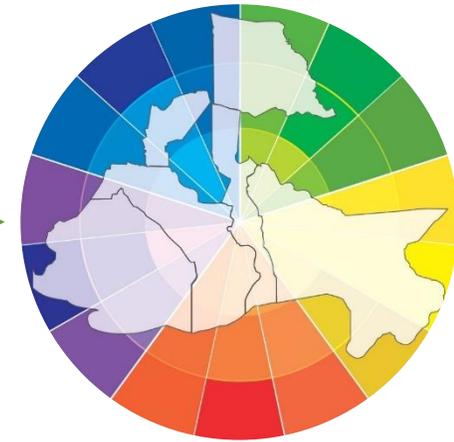
Policy, Program, & Project Development

December

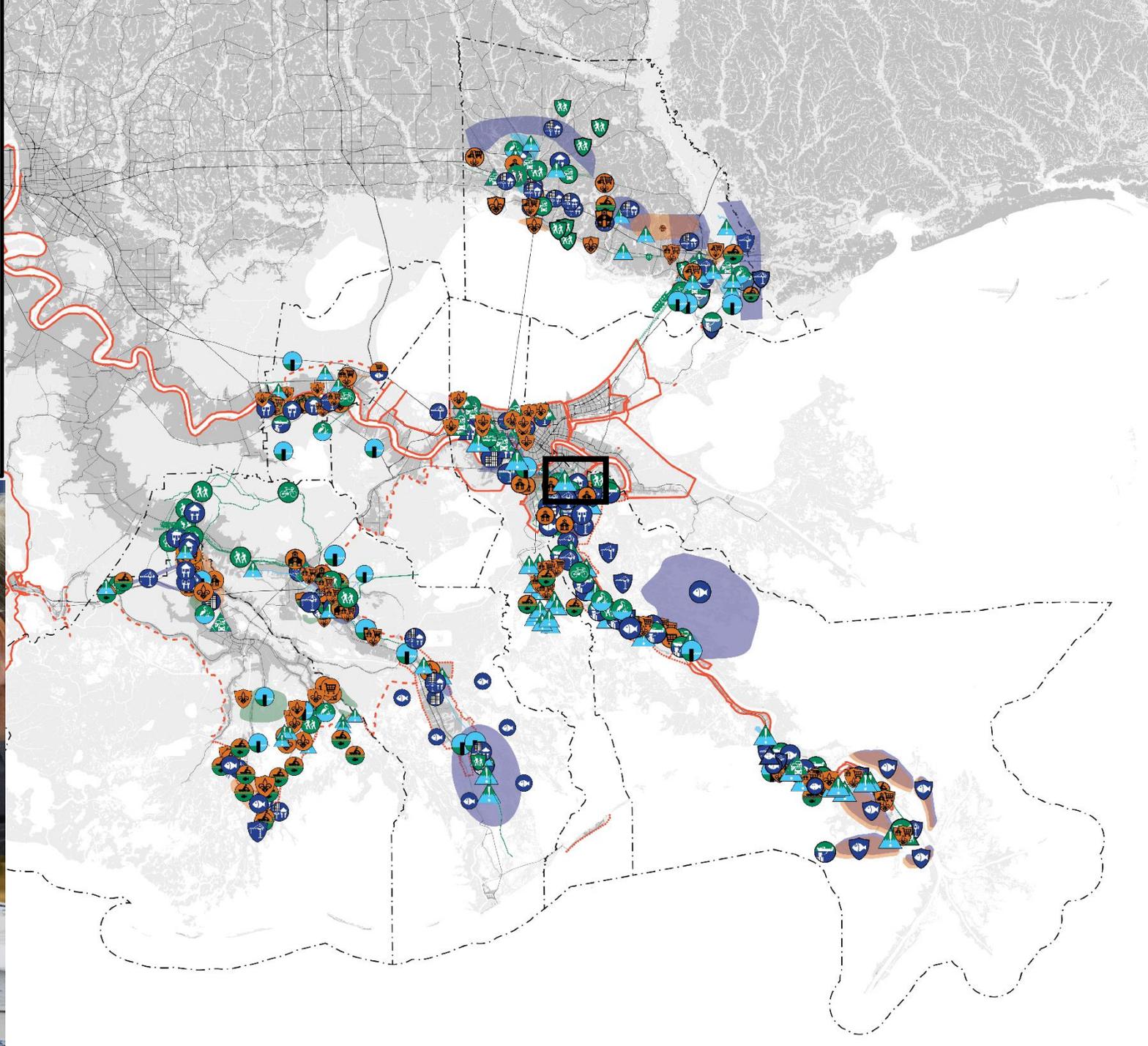
Parishwide Meeting

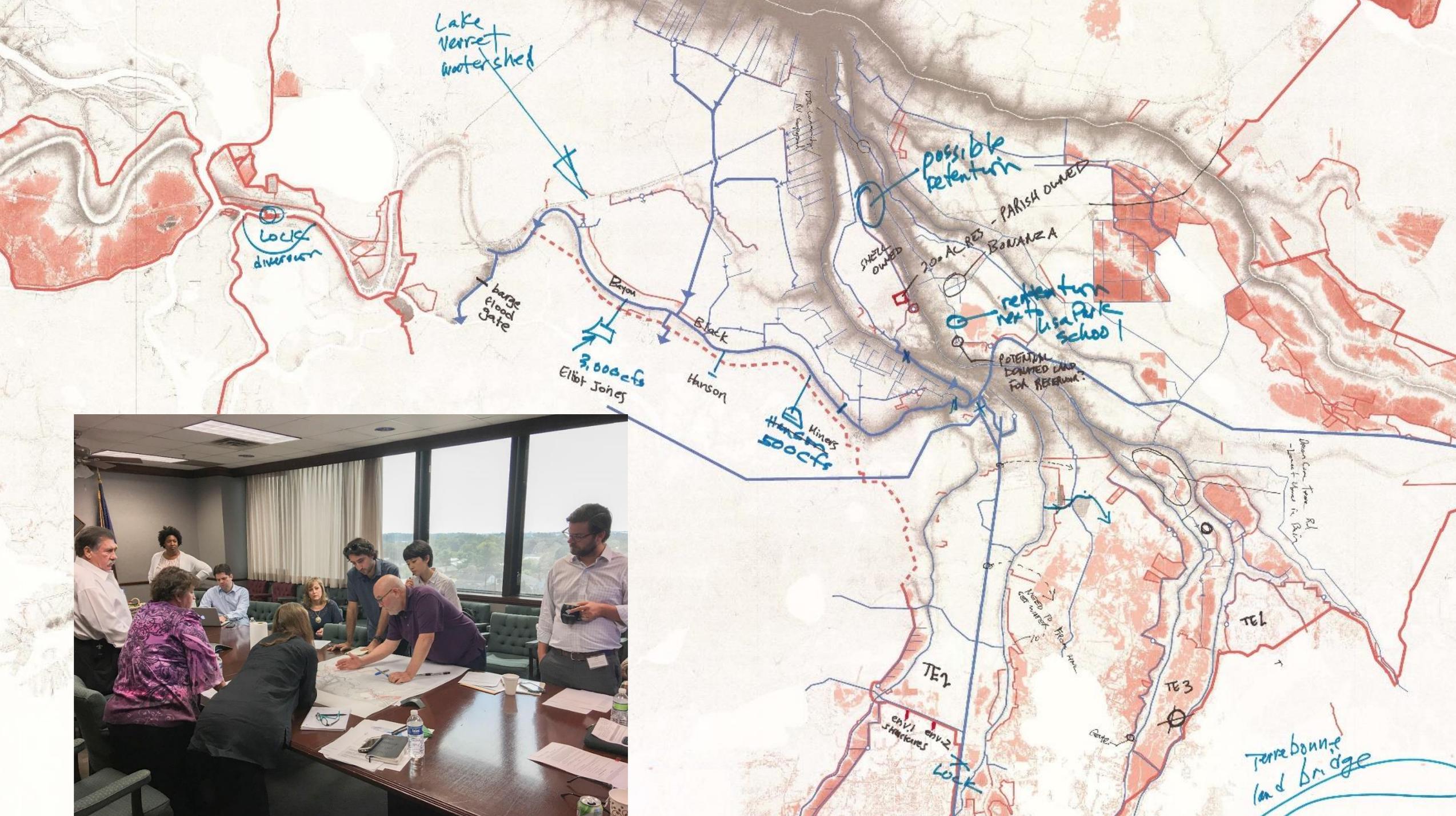


Project Evaluation

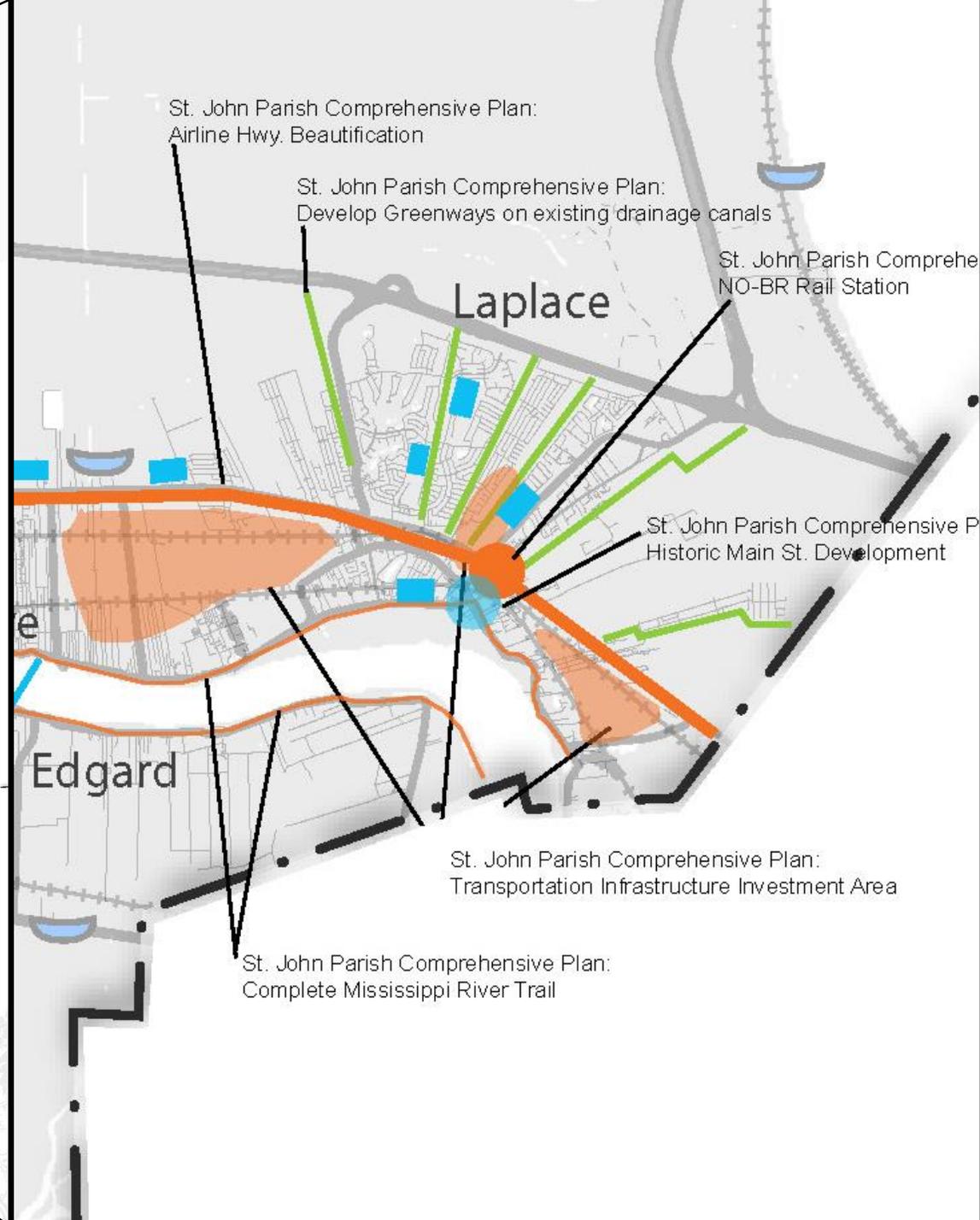
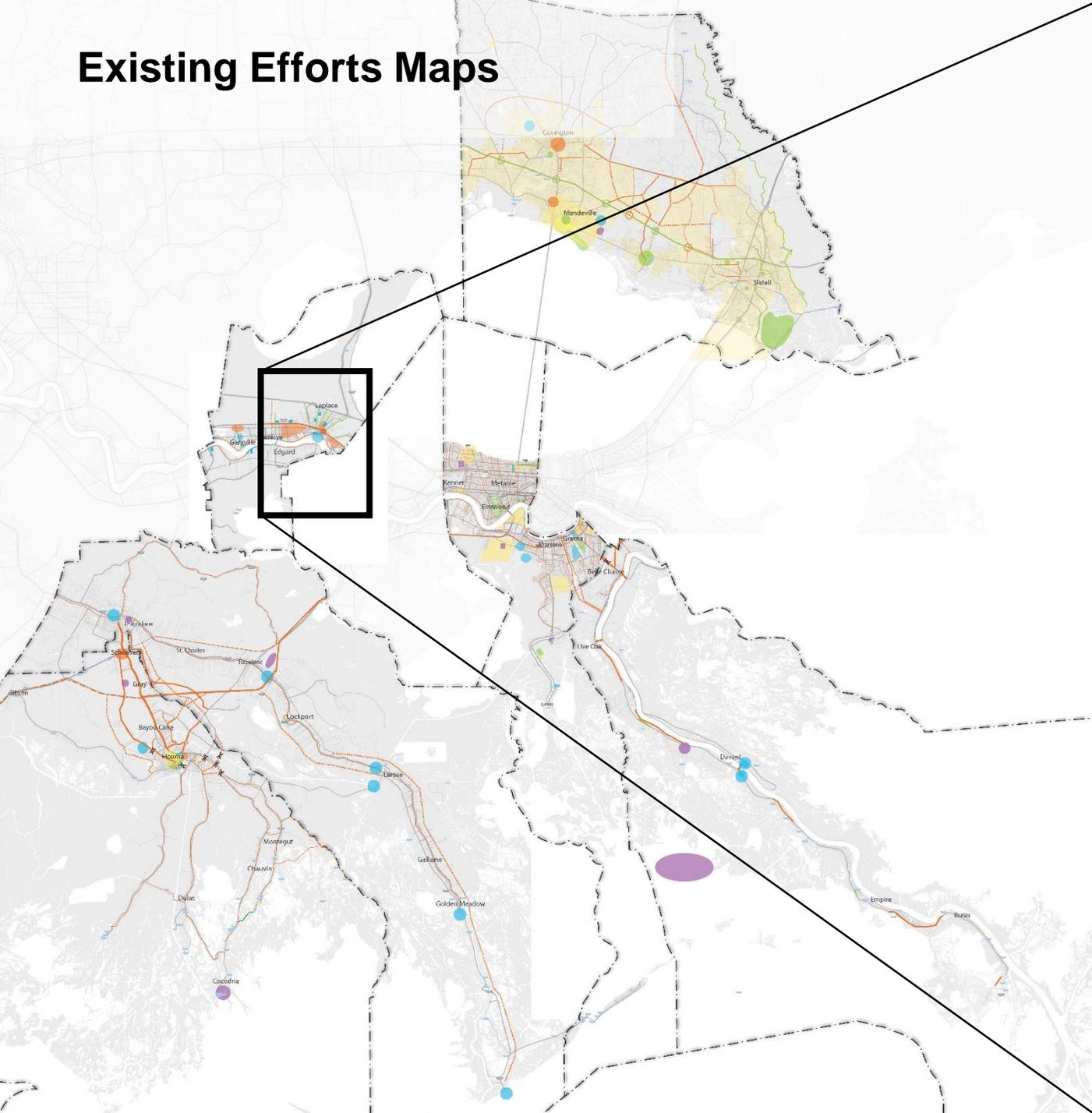


71 Community Meetings
2,835 Individual Participants

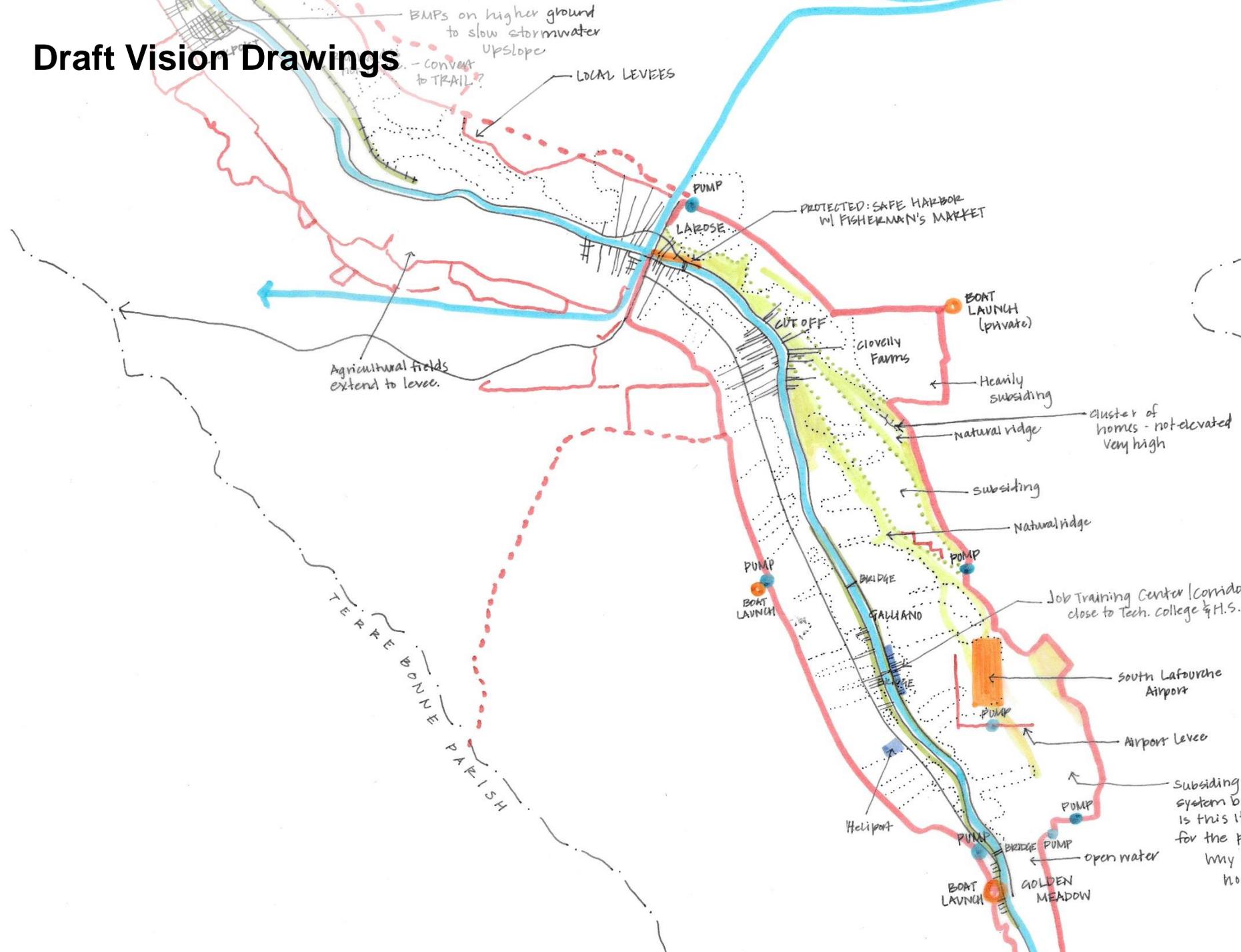




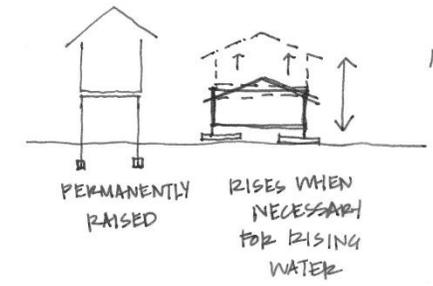
Existing Efforts Maps



Draft Vision Drawings



EXAMPLE OF ADAPTATION:



COMMUNITY CONCERNS:

1. Healthcare
2. Job Training



LA SAFE combined the highest rated **community strategies** with **future flood risk** and **existing efforts** in each parish to create draft projects. At round 4, parish officials and residents gave feedback and advice.



LAFOURCHE POTENTIAL PILOT PROJECTS

The project ideas shown here incorporate many of the top suggestions that we heard from residents over the course of the planning process. Which do you think make the most sense? What's missing? Leave us notes and comments!

LAFOURCHE BUSINESS INCUBATOR
Design and construction of a business incubator facility on the campus of Nicholls State University in Thibodaux aimed at assisting Lafourche residents and businesses develop new or expand existing businesses in an effort to provide a more diverse local economy not as vulnerable to the fluctuations of the petroleum industry.

MIXED INCOME HIGH DENSITY HOUSING PROTOTYPE
This potential project would be a precedent for resilient housing design in low to medium risk areas, this proposal would include roughly 30 units that are affordable for multiple income levels. This will include elevated units, on-site stormwater retention, and innovative construction techniques to serve as a model for future development.

SEAFOOD MARKET & SAFE HARBOR
A safe harbor that can be used full-time by fishers, with a public market area that can support direct sales and community events.

RUIN TO RETENTION PROGRAM
Purchase and clearing of abandoned properties to return areas to natural state, providing areas within neighborhoods where stormwater can be temporarily collected during rain events until able to be efficiently pumped through a traditional system.

COMPLETE & GREEN STREETS PILOT PROJECT
This would include sidewalks, street trees, stormwater retention features like bioswales and rain gardens. This would be a model for future street design that reduces flooding and promotes safe walking and biking.

STORMWATER MANAGEMENT PARK
Building in stormwater management features to a new or existing park would serve multiple benefits. Retention areas would keep other parts of the park dry and serve as an educational resource to learn about wetland ecosystems. Trails and boardwalks could provide access through wooded wet areas and connections to other nearby assets.

St. Tammany



St. John



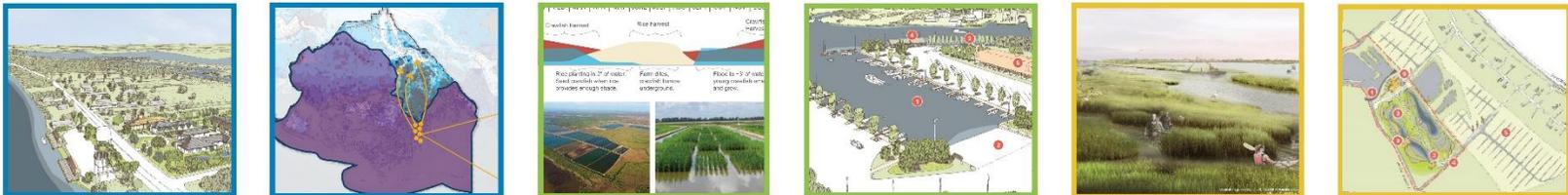
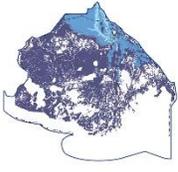
Plaquemines



Jefferson

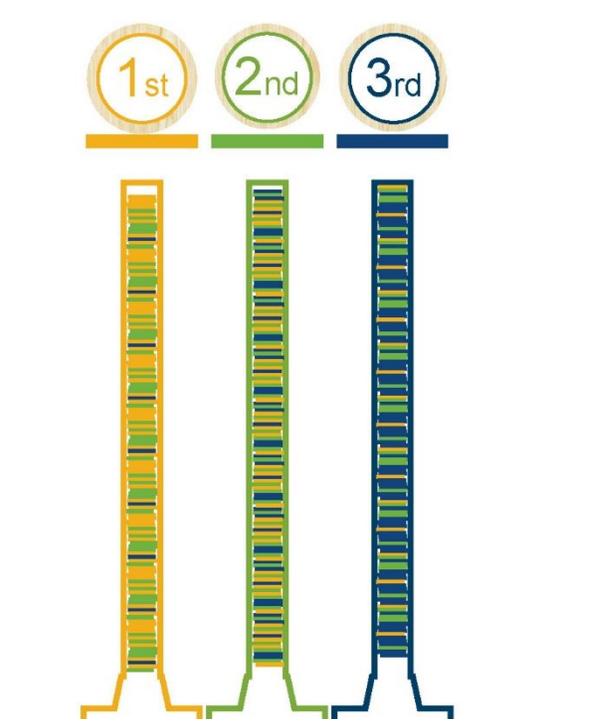


Terrebonne

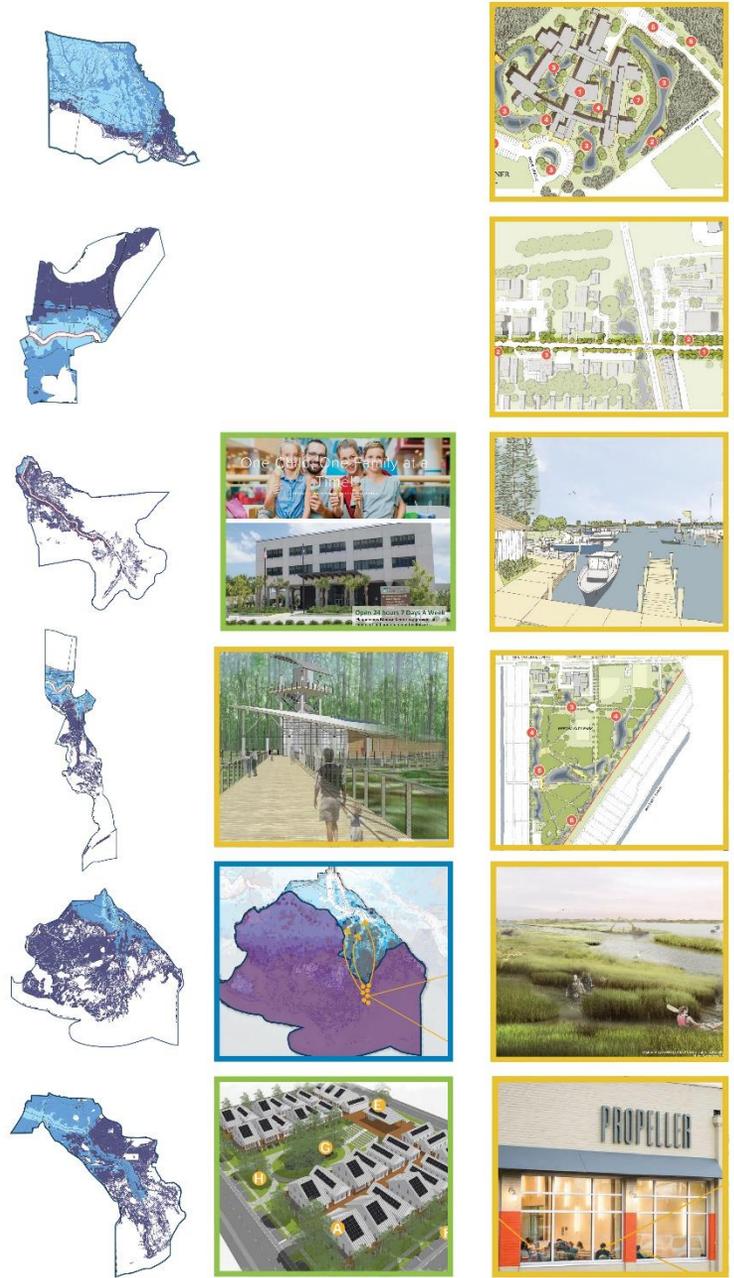


Lafourche





Selected Project Portfolio



- Safe Haven Blue-Green Campus & Trails
- Airline & Main Complete Streets
- Harbor of Refuge
- Mental Health & Substance Abuse
- Gretna Resilience District Kickstart
- Louisiana Wetland Education Center
- Buyouts for Permanent Resident Households Outside Morganza
- Lake Boudreaux Living Mitigation
- Emerging Industry Business Incubator
- Resilient Housing Prototype

Most popular strategies from M3

- Public Boat Docks
- Cross-Parish Stormwater Management
- Coastal Restoration and Jobs Training
- Improved Drainage System
- Job Training Programs
- Increased Affordable Housing Options
- Drainage Requirements for New Developments
- Cultural Camps & After School Programs
- Culvert & Ditch Maintenance
- Commuter & Regional Rail
- Complete Streets
- Community Gardens & Planting Programs
- Incentivize Essential Service Providers
- Medium Density Housing
- Improve Public Transit Across Parish Lines
- Create a full-time drain Maintenance Department
- Restore Abandoned Property to Natural Condition
- Expand Boat Harbors



Gretna Resilience District

LA SAFE - Jefferson Parish



Plaquemines Harbor of Refuge

LA SAFE - Plaquemines Parish



Lake Boudreaux Living Mitigation

LA SAFE - Terrebonne Parish



Original image courtesy of LSU Coastal Sustainability Studio,
edits by Waggoner & Ball

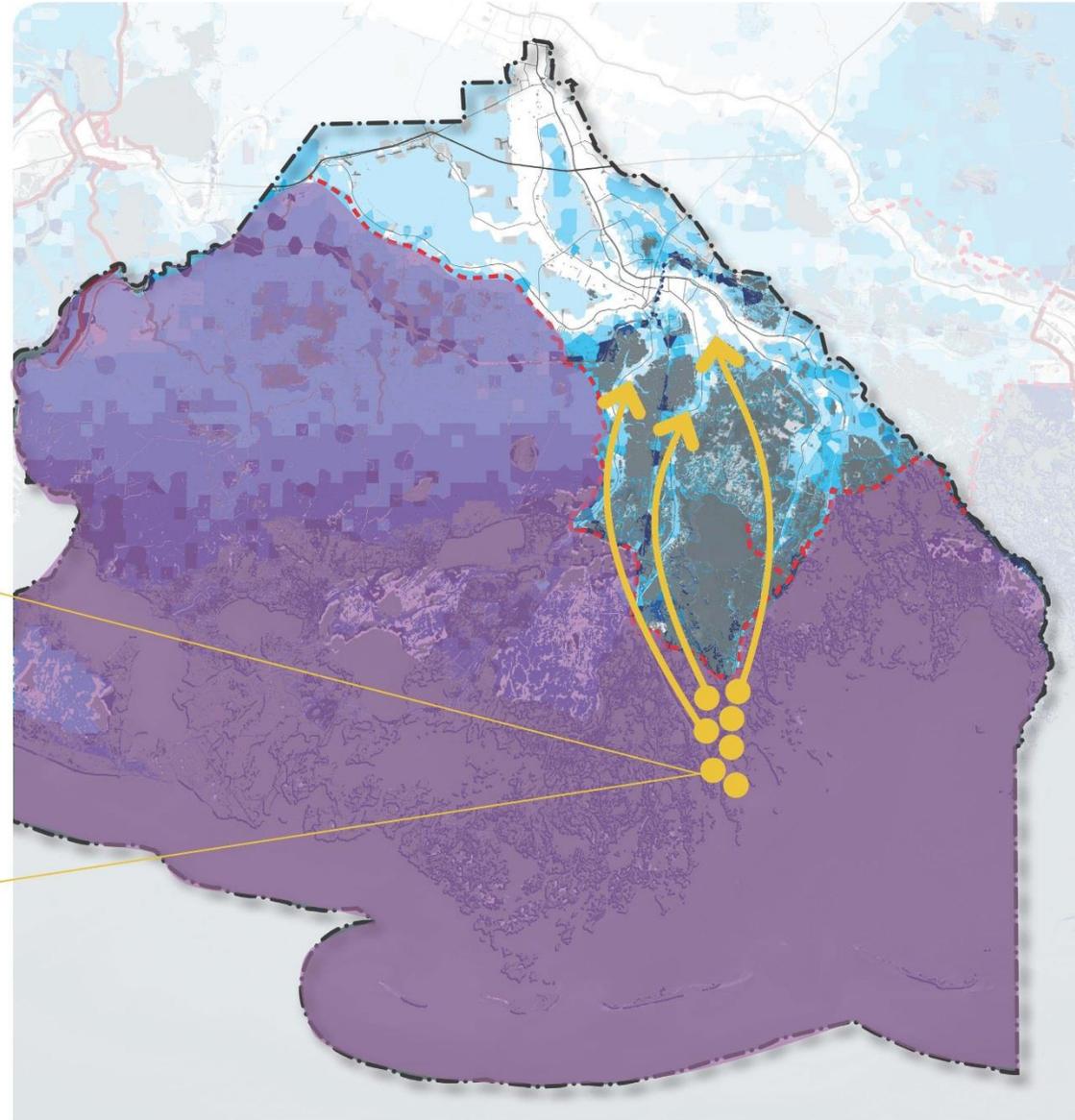


Buyouts for Permanent Residents

LA SAFE - Terrebonne Parish

Buyout program for permanent residents outside of Morganza to the Gulf

Residents who accept the voluntary buyout will receive funds to relocate to higher ground within Terrebonne Parish.



Even as residents leave land outside of protection systems, these areas can still serve a variety of economic and recreational purposes.

Lafourche Resilient Housing Prototype
LA SAFE – Lafourche Parish





THANK YOU! QUESTIONS?