



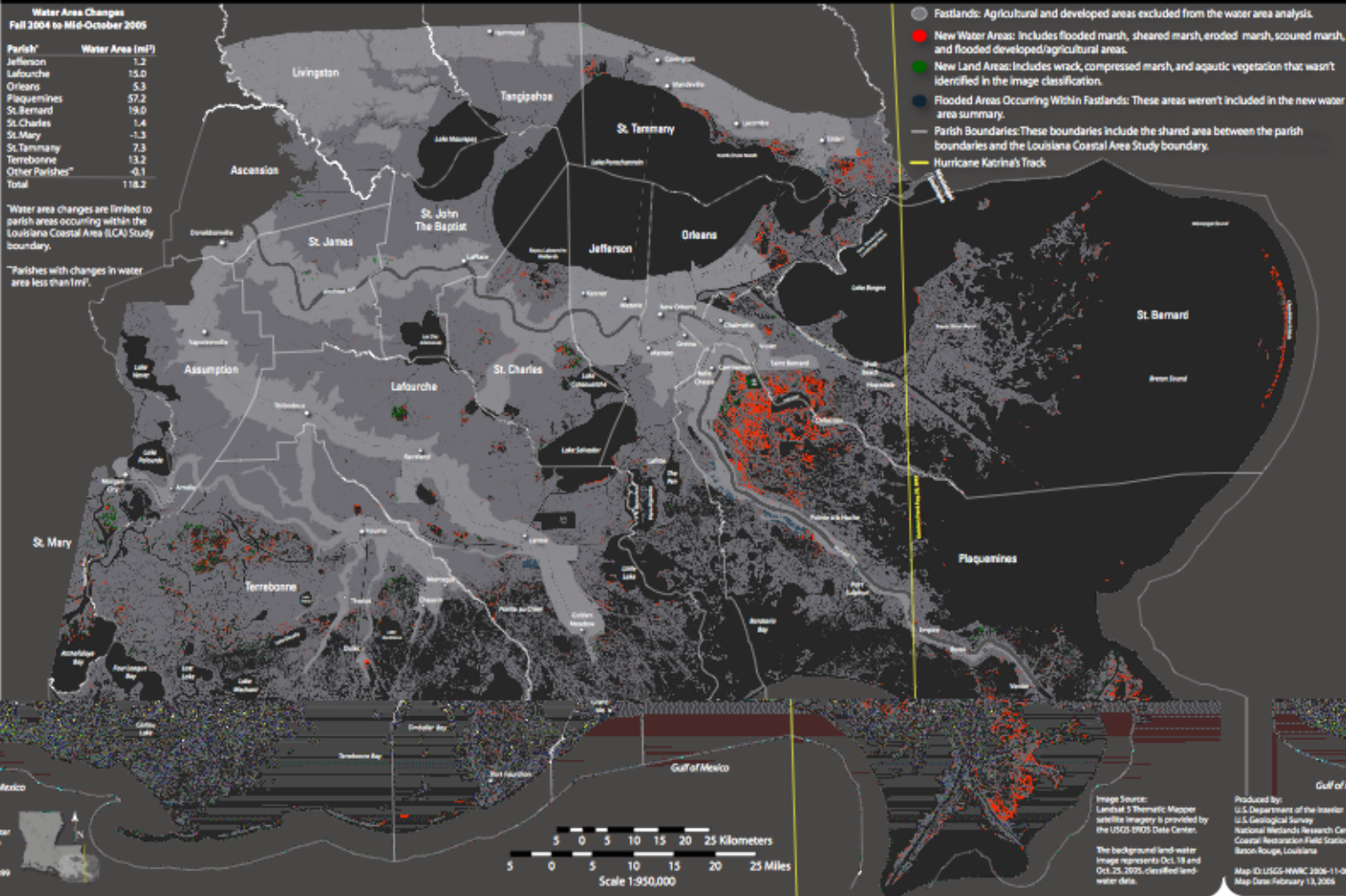
Facing Hurricanes: What Have We Learned?: A Hint of Room 4 “Changing the Game”

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Hurricane Science and Education Symposium
25 October 2010
New Orleans, LA



Water Area Changes in Southeastern Louisiana After Hurricanes Katrina and Rita Detected with Landsat Thematic Mapper Satellite Imagery



217 square miles (562 km²) of wetland to water conversion
 \$1.1 billion acute loss to commercial fisheries
 \$150 million near-term loss to oyster harvests



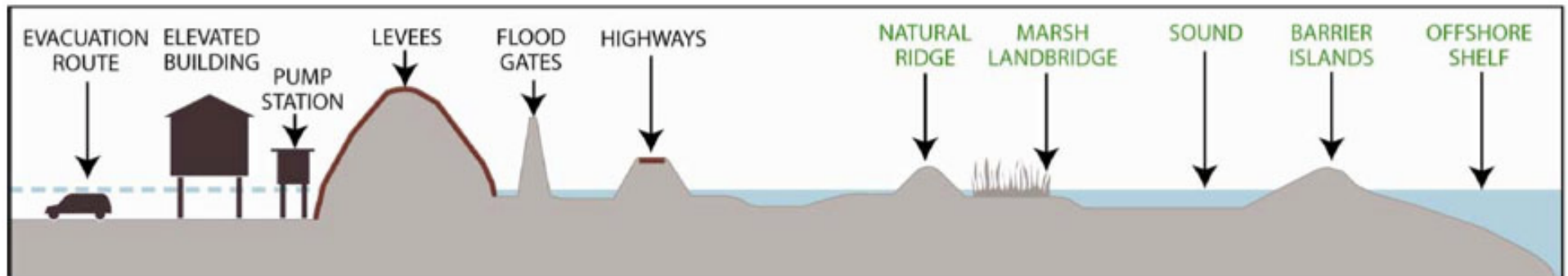
What residents care about:

1. Natural Systems
2. Buildings & Infrastructure
3. Public Health
4. Social & Political

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A Tulane Community Workshop Held in New Orleans,
November 2005

Cross-Section of Urban, Rural, and Natural Land Forms



Multiple Lines of Defense Concept (Courtesy of the Lake Pontchartrain Basin Foundation)

Holy Cross/Lower 9th Sustainable Restoration Planning



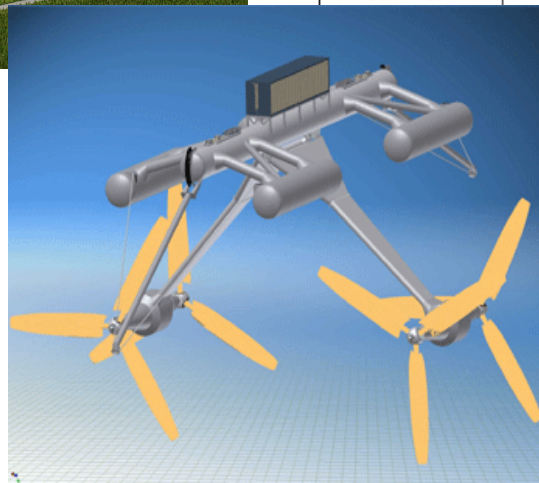
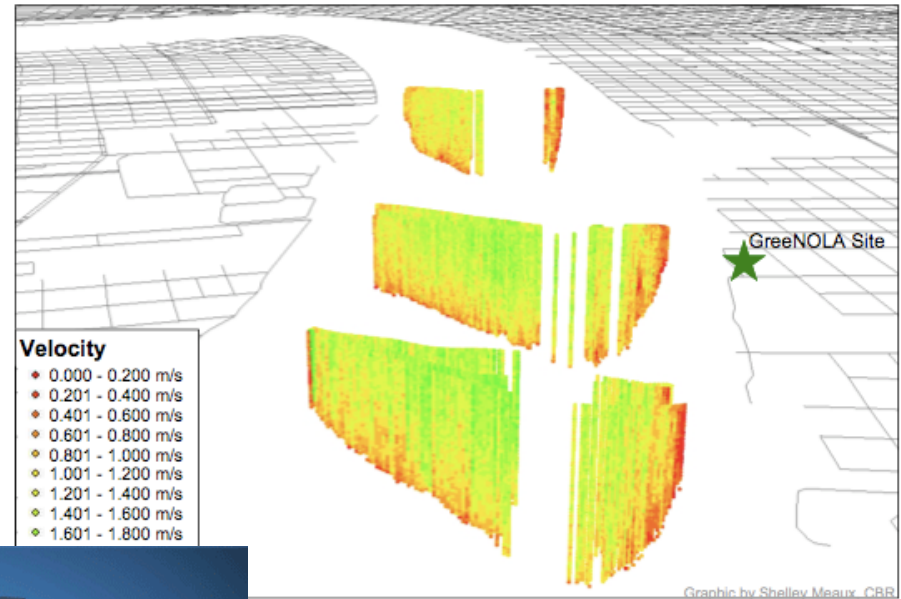
Community Planning Workshops:

- February 20-21, 2006
- April 28-29, 2006
- June - August, 2006
- October 2006- January 2007



Sustainable Built and Natural Systems

Models for Efficient/Renewable Energy



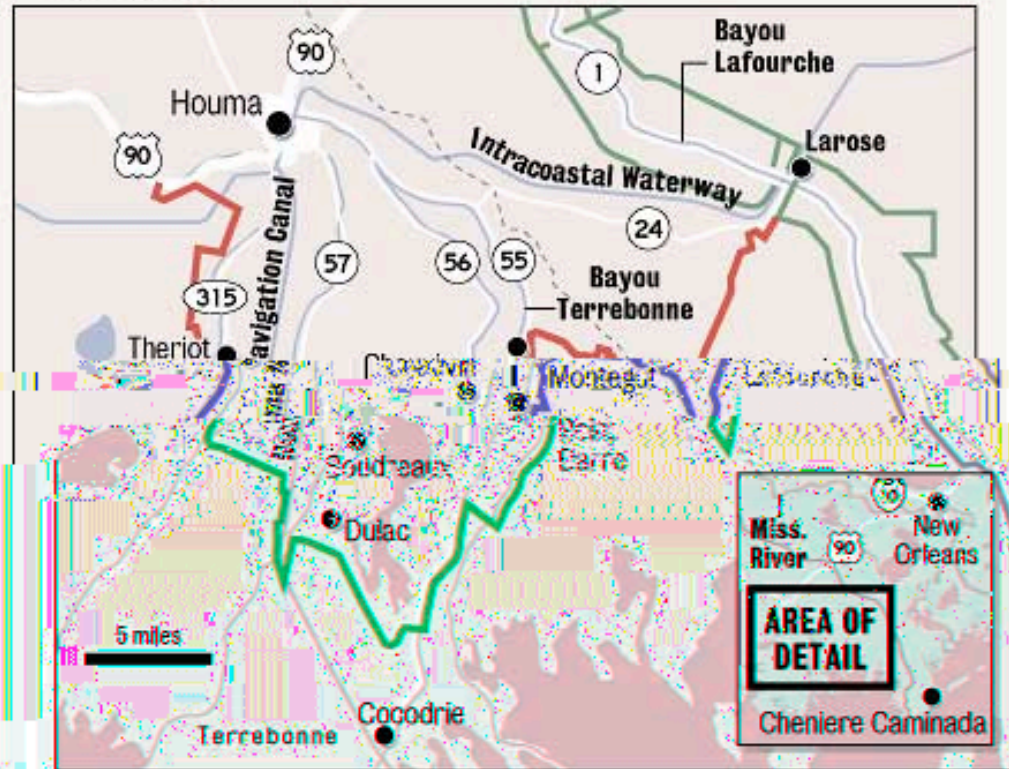
Proposed Morganza to Gulf Regional Levee



HURRICANE PROTECTION

The Army Corps of Engineers is restudying a Morganza-to-the-Gulf levee in Terrebonne and Lafourche parishes

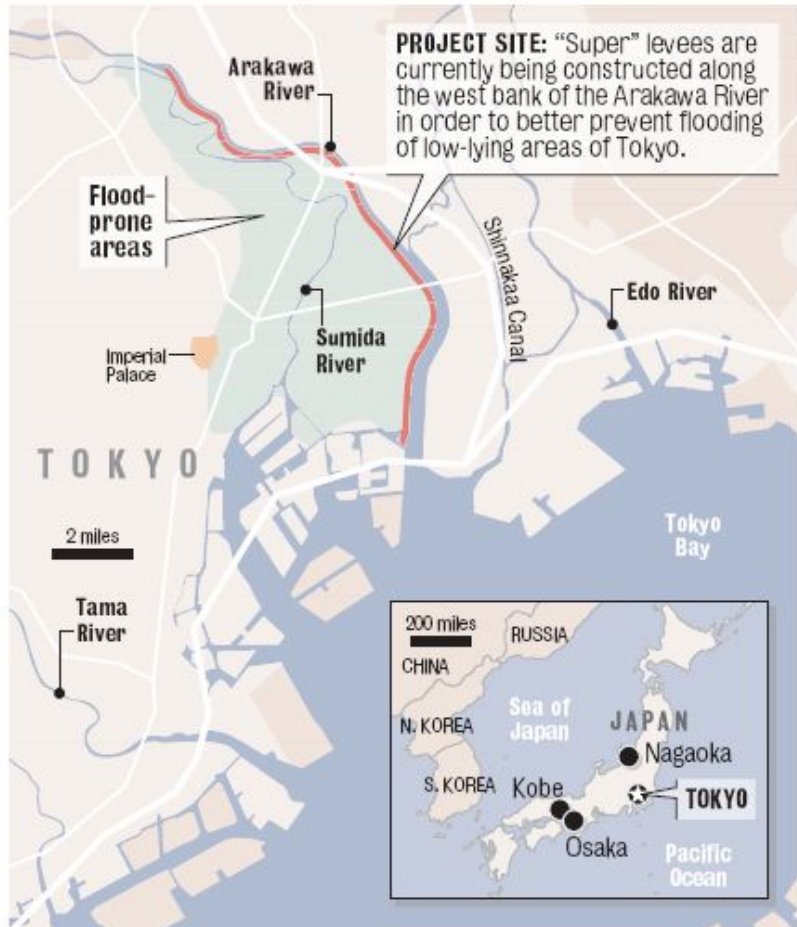
- Two height alternatives, 100-year and 25-year protection, are frontrunners
- Existing levees



Source: Army Corps of Engineers

TAMING TOKYO'S RIVERS

The Arakawa River used to follow the course of what's now called the Sumida River before a new channel was dug by the Japanese government in the early 1900s to ease flooding. "Super" levees are now planned for about 75 miles of Tokyo riverfront with about 10 percent of the work complete or under way.



Source: Arakawa-Karyu River Office – Ministry of Land, Infrastructure and Transport, staff research

STAFF GRAPHIC BY EMMETT MAYER III

TRADITIONAL EARTHEN LEVEE

Designed to prevent rising river water from heavy rains or storm surge from flooding parts of the city. Earthen levees can sometimes fail due to overtopping or seepage.



SUPERLEVEE

Roughly the same height as an earthen levee, but much wider, it slopes gradually back into the neighborhood. The Japanese government believes superlevees offer superior lateral strength that is more resistant to overtopping failure, seepage or earthquake damage.

Rebuilt neighborhood offers riverfront views and recreation areas







きけんですので
ゴルフの練習・ラジコン遊びは
やらないでください。

利用者へお願い
ゴミは持ち帰りましょう。

LONDON AVENUE CANAL



Dutch Dialogues



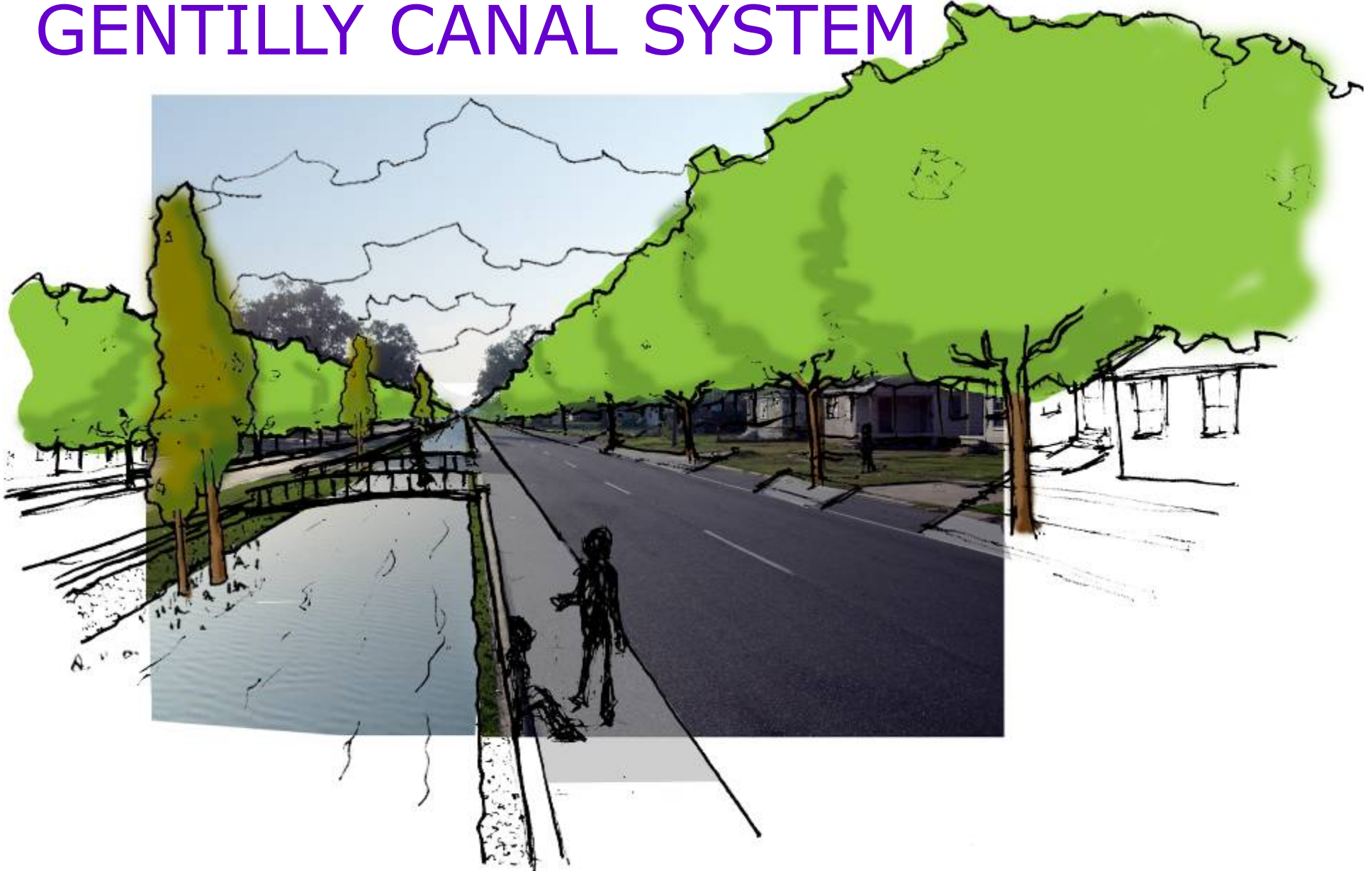
Ambassade van het
Koninkrijk der Nederlanden

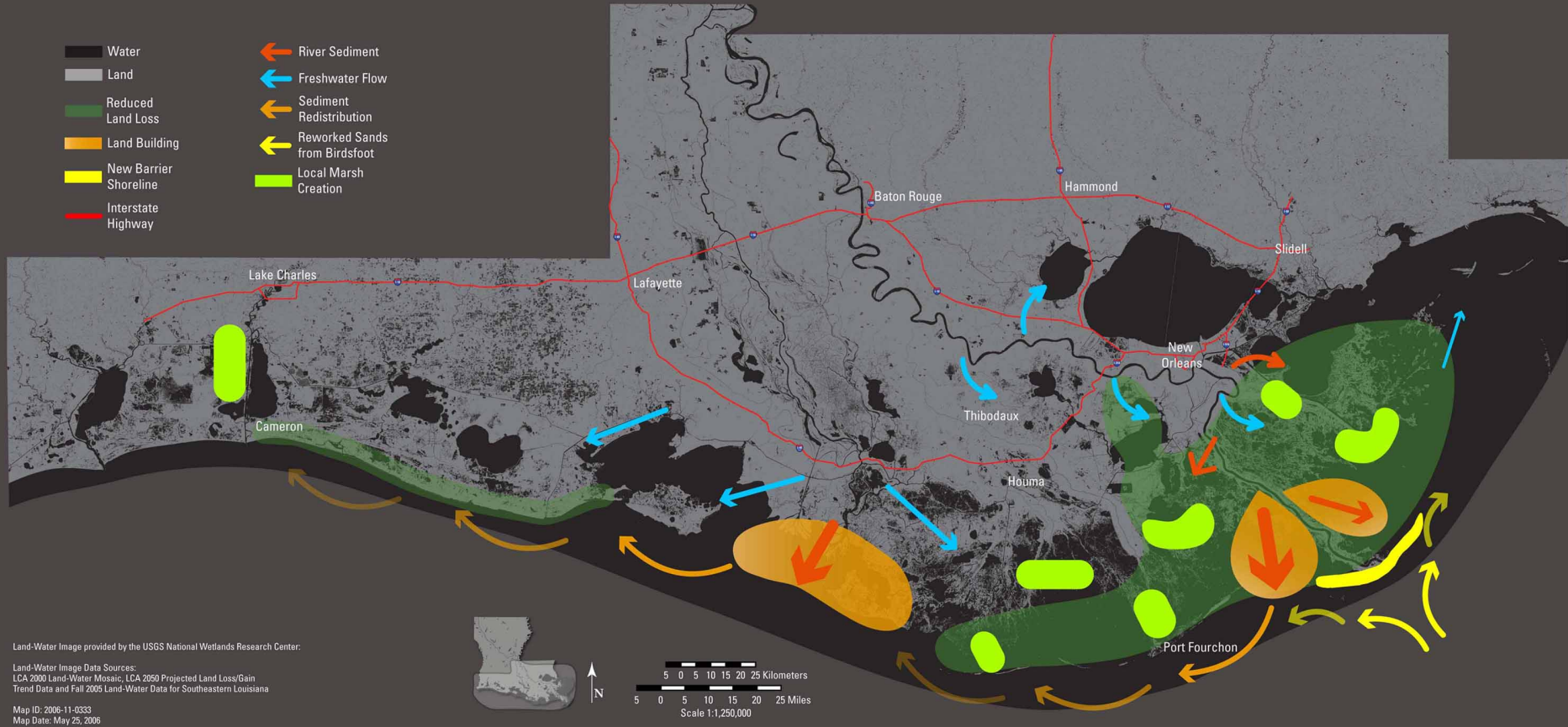


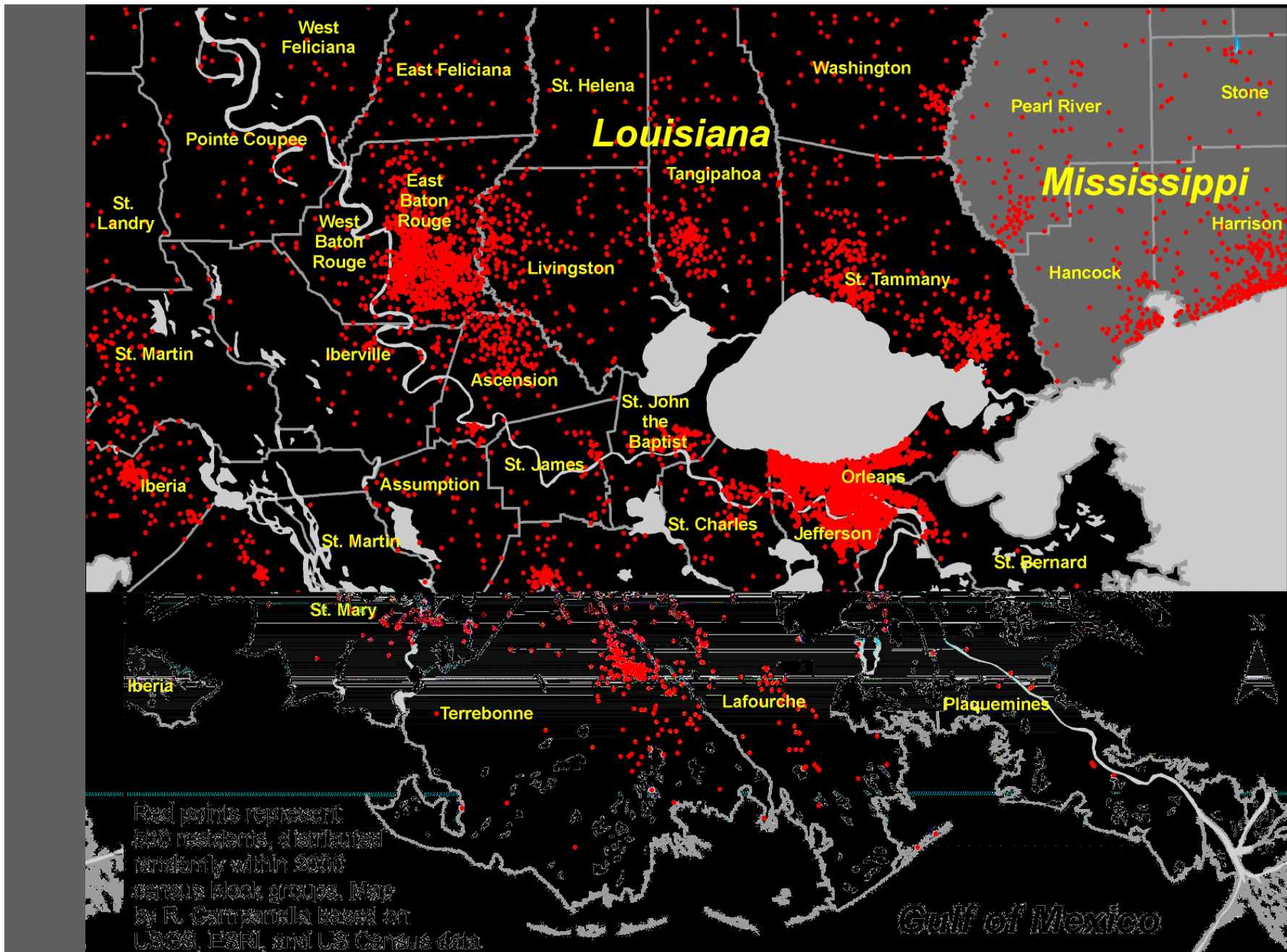
American Planning Association

Waggoner & Ball Architects

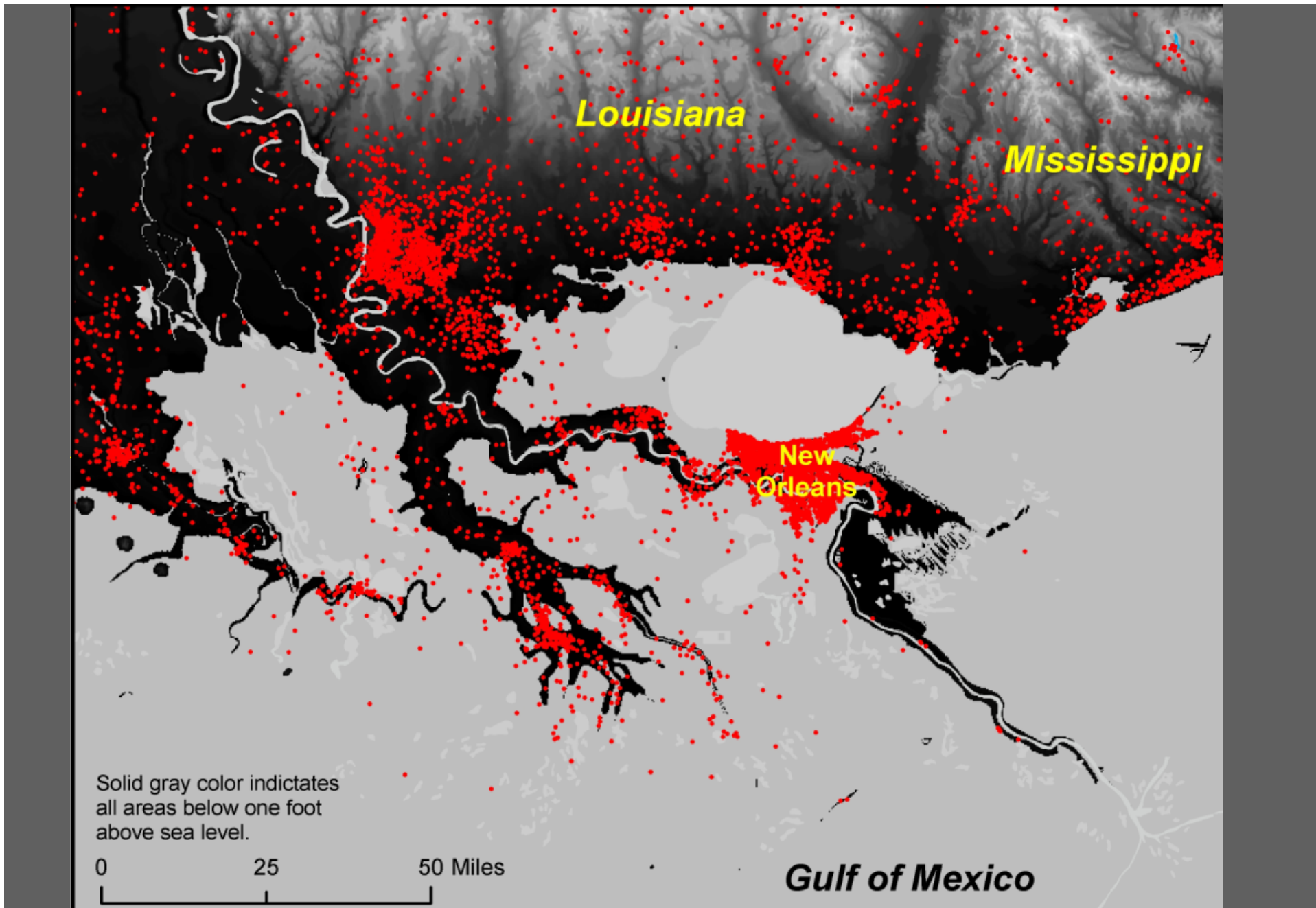
GENTILLY CANAL SYSTEM



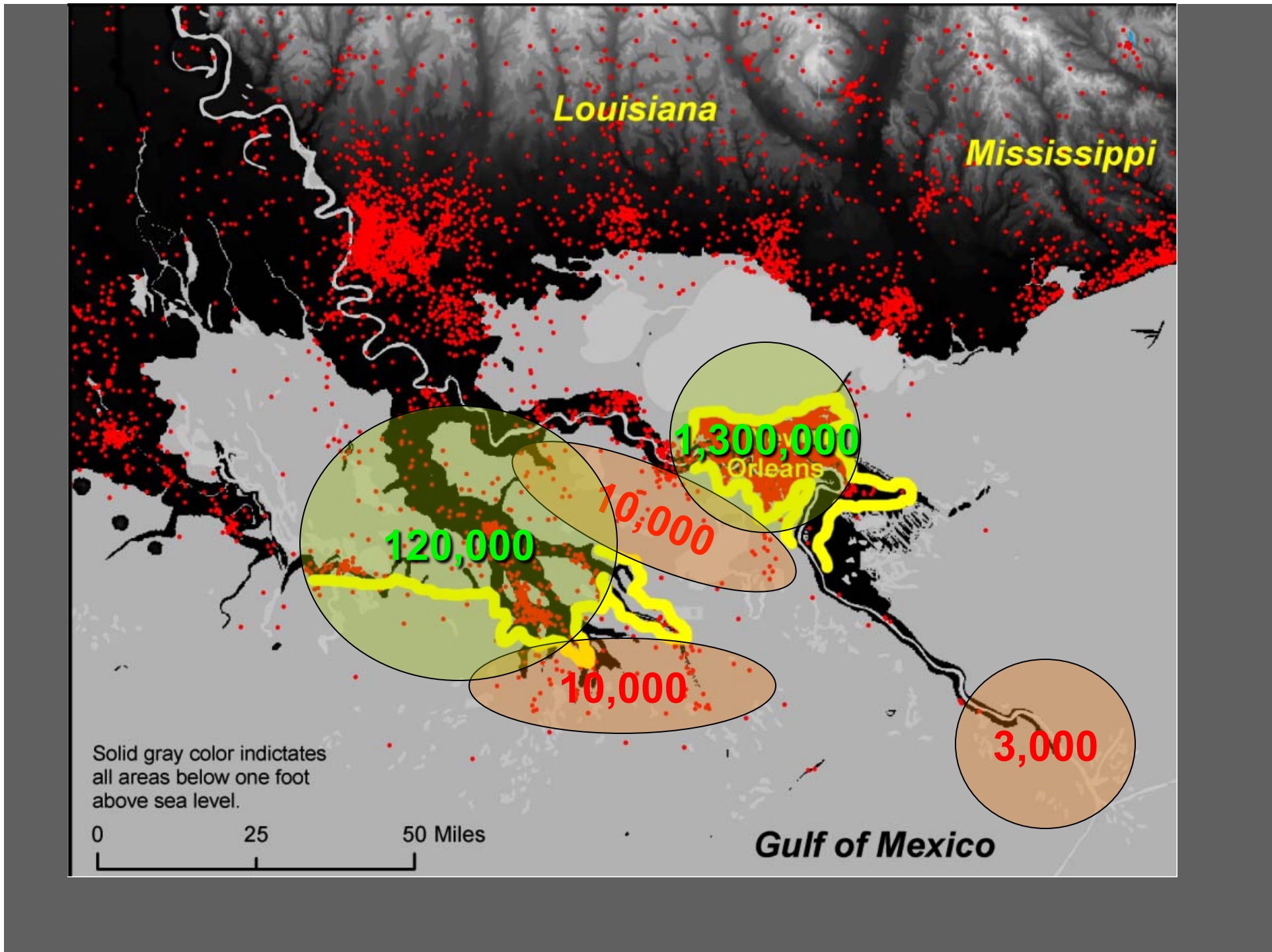




From Campanella, R. *Geographies of New Orleans: Urban Fabrics Before the Storm*. Center for Louisiana Studies, University of Louisiana at Lafayette, August 2006.



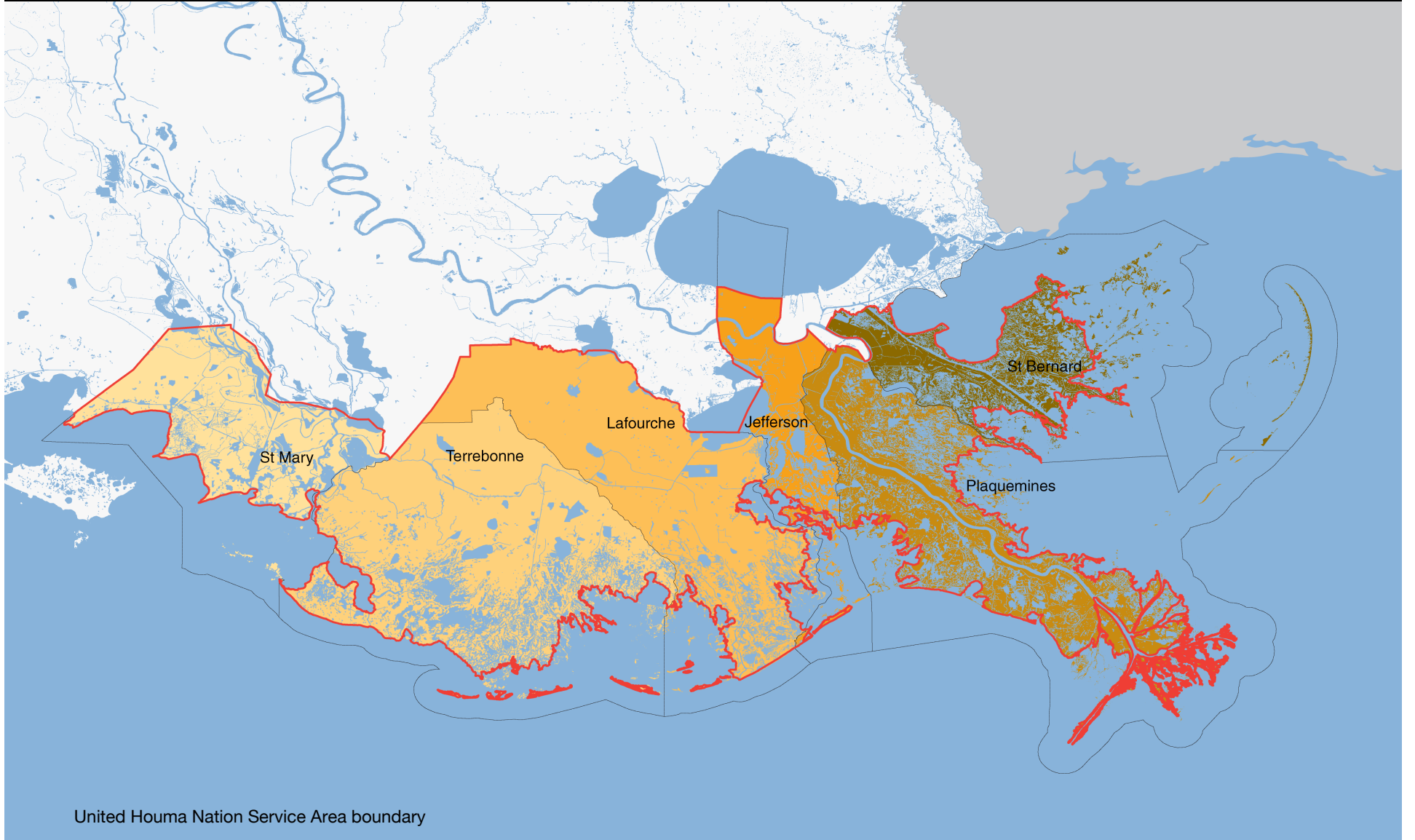
From **Campanella, R.** *Geographies of New Orleans: Urban Fabrics Before the Storm*. Center for Louisiana Studies, University of Louisiana at Lafayette, August 2006.



United Houma Nation, Louisiana Living With Water



Source: United Houma Nation



United Houma Nation Service Area boundary

United Houma Nation, Louisiana Relief Supplies following Hurricane Katrina



Source: United Houma Nation

United Houma Nation, Louisiana Dulac Community Center following Hurricane Gustav



Source: Douglas Meffert

United Houma Nation, Louisiana

Three-part Plan for Climate Change Adaptation

1. Evacuation: How do you implement frequent evacuations in an economically-sustainable and psychologically-sound method?
2. Hazard Mitigation: What are structural standards for residential and other use now and in the future?
3. Stabilization: How and where can the UHN adapt and relocate in the future to sustain their culture? (e.g. public or community land trusts?)

Concluding Remarks

- Delta systems have high dependency of urban inhabitants on ecosystems within and outside the urban region
- Delta systems depend on both natural systems and hard structures for adaptation and mitigation
- Adaptation/Mitigation priorities focus primarily on low-probability/high-impact and high-probability/moderate-impact

“Action speaks louder than words but not nearly as often.”

“Apparently there is nothing that cannot happen today.”

- *Mark Twain*



Image Source: Douglas Meffert