

Hurricane Protection: Where Do we Stand?

Panel Presentation by

John Lopez, Ph.D.

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Director – Coastal Sustainability Program
for the
Lake Pontchartrain Basin Foundation

To

Tulane Engineering Forum 2007

1. Comprehensive Habitat Management Plan for the Lake Pontchartrain Basin
2. The Multiple Lines of Defense Strategy to Sustain Coastal Louisiana
3. Pontchartrain Coastal Lines of Defense Program

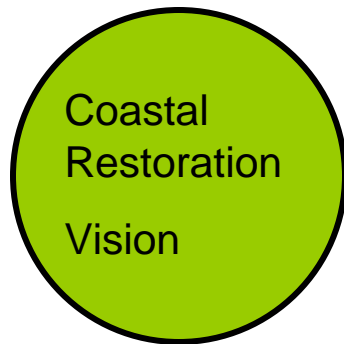
See SaveOurLake.org



Traditional Model Addressing Coastal Restoration and Flood Protection

Natural Resource Agencies

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Flood Protections Agencies

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Incompatible visions

equals

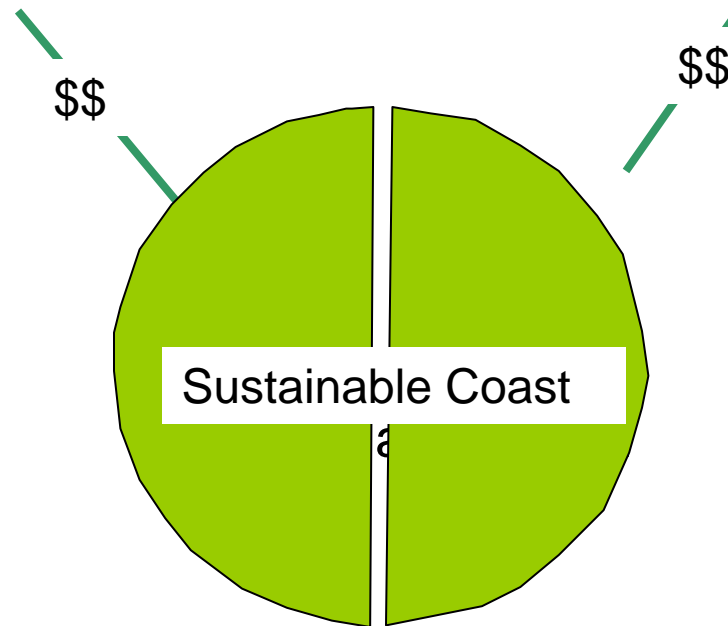
non- Sustainable Coast

Current Model: No Integration

Post-Katrina Model to Integrate of Coastal Restoration and Flood Protection

Natural Resource Agencies

Flood Protection Agencies

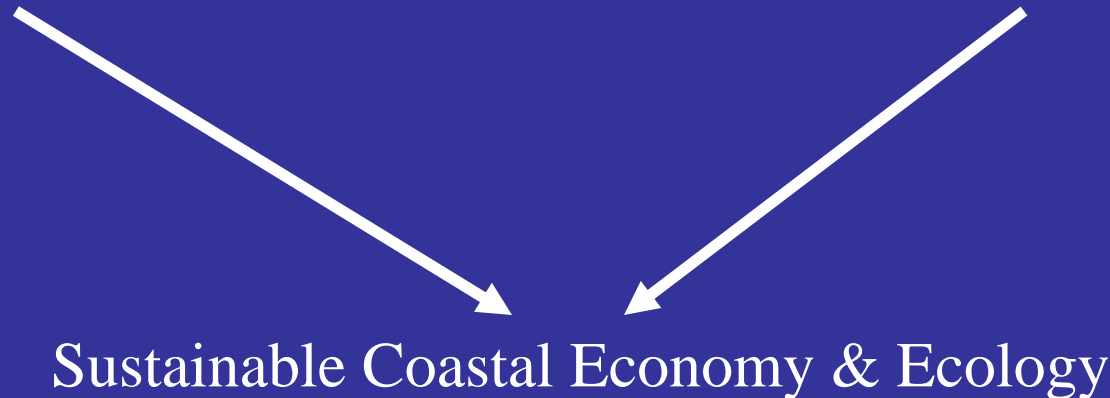


But how is it Done?

Multiple Lines Of Defense Strategy

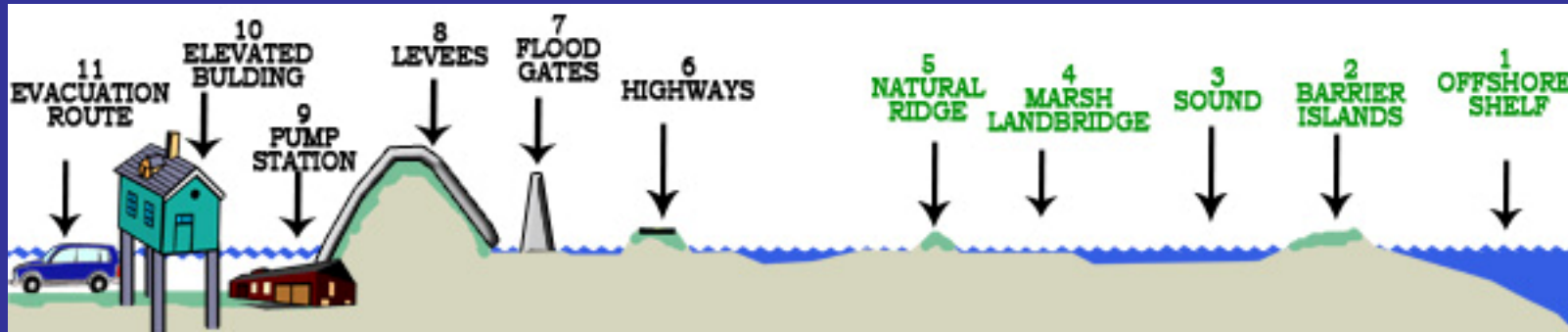
Lines of Defense

Habitat Goals



Prioritizes Restoration projects providing greatest restoration value and flood protection benefit. (See documents at SaveOurLake.org)

Multiple Lines Of Defense Strategy



Lines of Defense (LOD) are definable geographic areas in which certain natural or manmade features or activities are promoted or implemented, resulting in the reduction of impacts by tropical weather systems in the Louisiana coast.

(See documents at SaveOurLake.org)

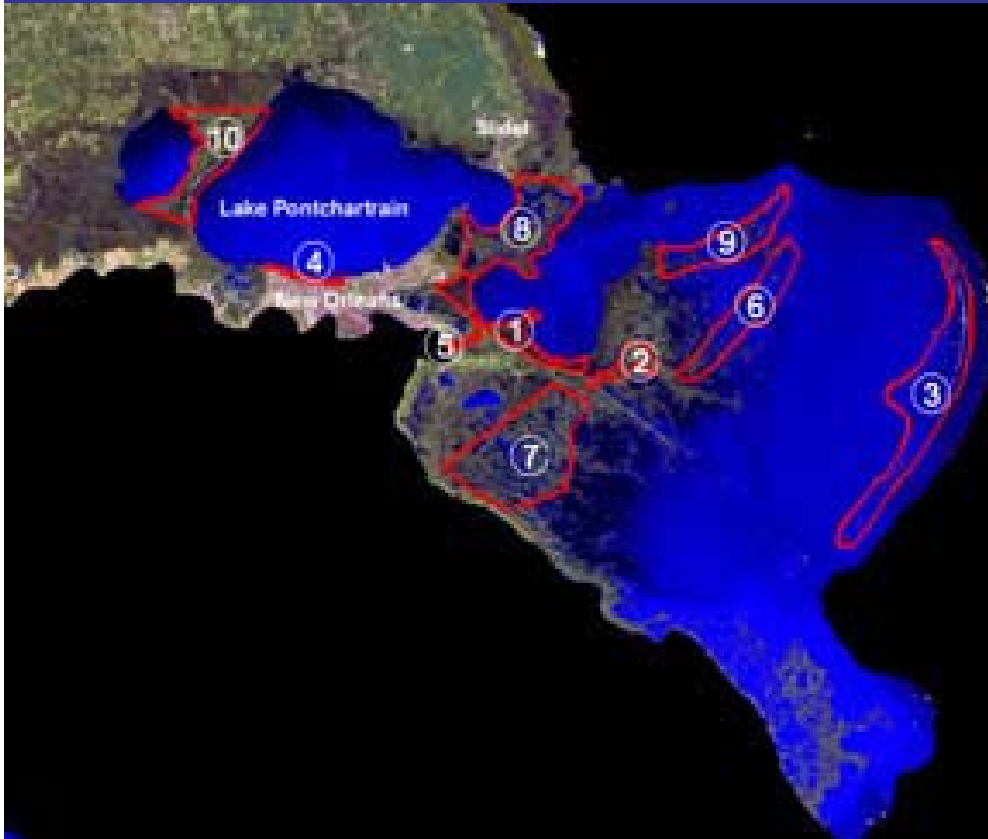
LPBF first presented 6 months prior to Hurricane Katrina

Now adopted:

- US Army Corps of Engineers for the LaCPR
- LA Department of Natural Resources for the “Master Plan”

Pontchartrain Coastal Lines of Defense Program

(See documents at SaveOurLake.org)



1. Lake Borgne Land bridge
2. Close MRGO
3. Chandeleur Islands
4. Jefferson Psh Levee Buffer
5. Violet Diversion
6. Biloxi Marsh Land Bridge
7. Breton Land Bridge
8. Orleans Land Bridge
9. Biloxi Land Bridge
10. Maurepas Land Bridge

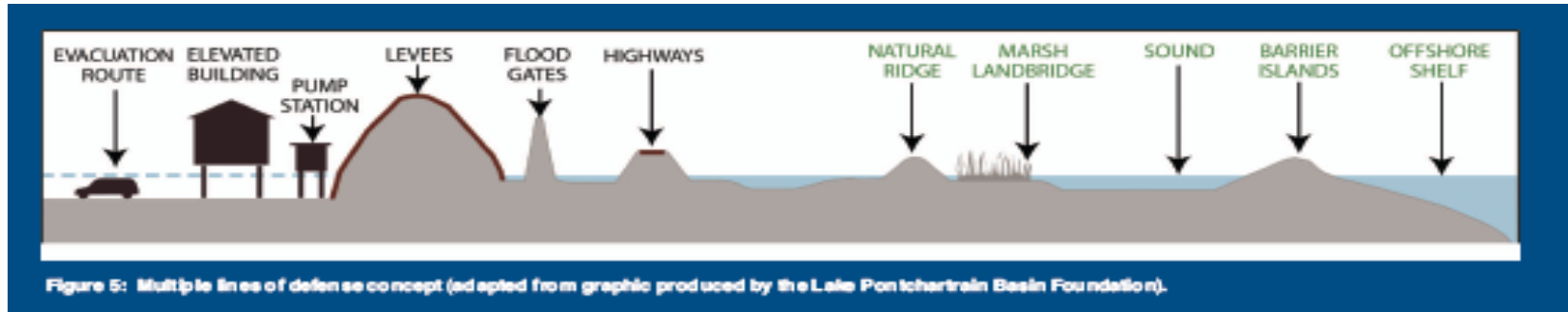
Preliminary Flood Protection Scorecard

Greater New Orleans Region – May 2007

Exceeds “Pre-Katrina” Condition*



Less than “Pre-Katrina” Condition*



* “condition” refers to the actual condition not the authorized specification

Preliminary Flood Protection Scorecard

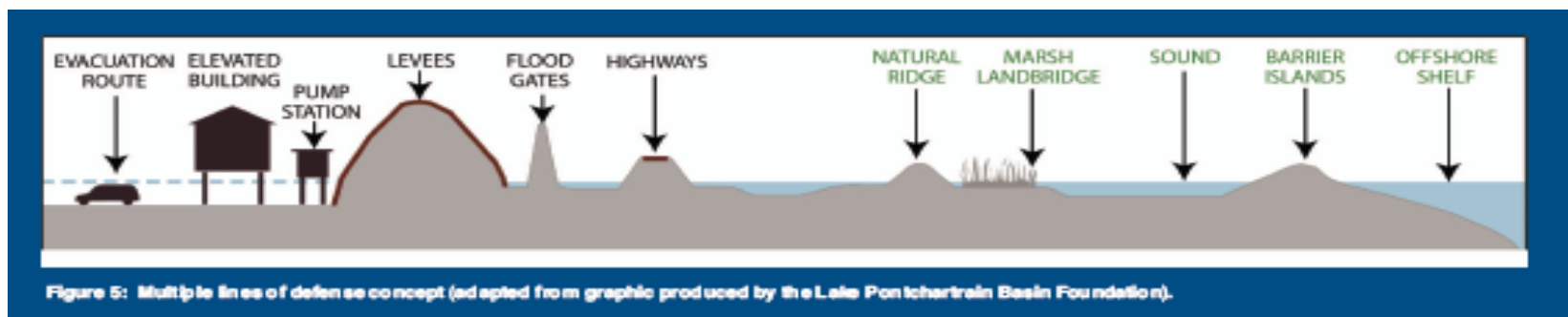
Greater New Orleans Region – May 2007

Exceeds “Pre-Katrina” Condition*

~60% to 70% of Chandeleur Islands are still lost

Less than “Pre-Katrina” Condition*

Erosion



* “condition” refers to the actual condition not the authorized specification



Chandeleur Islands January 2006- sand (white) has begun to be deposited along island remnants (green) which were all that remained after Hurricane Katrina

Preliminary Flood Protection Scorecard

Greater New Orleans Region – May 2007

Exceeds “Pre-Katrina” Condition*

Denuded Vegetation

Downed Trees on ridges



79 mi² of wetland loss in the Pontchartrain Basin

Less than “Pre-Katrina” Condition*

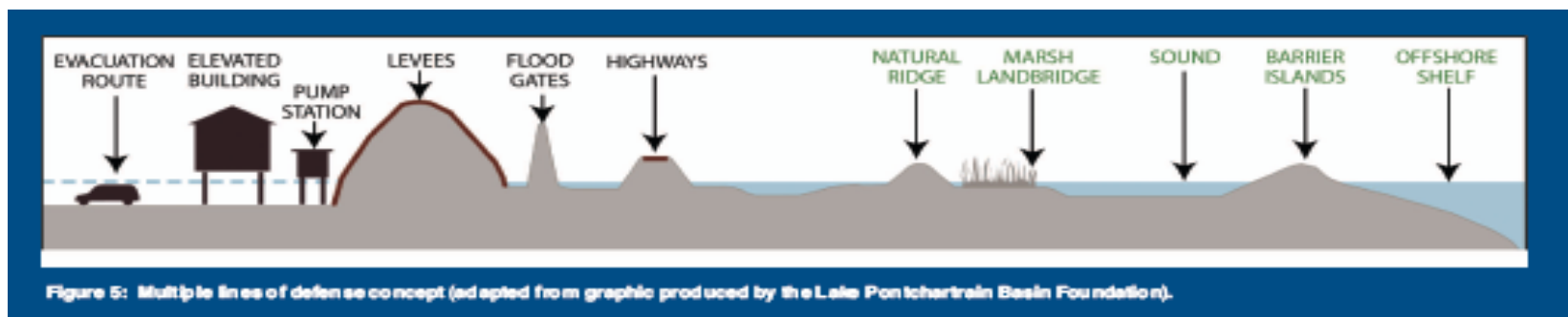
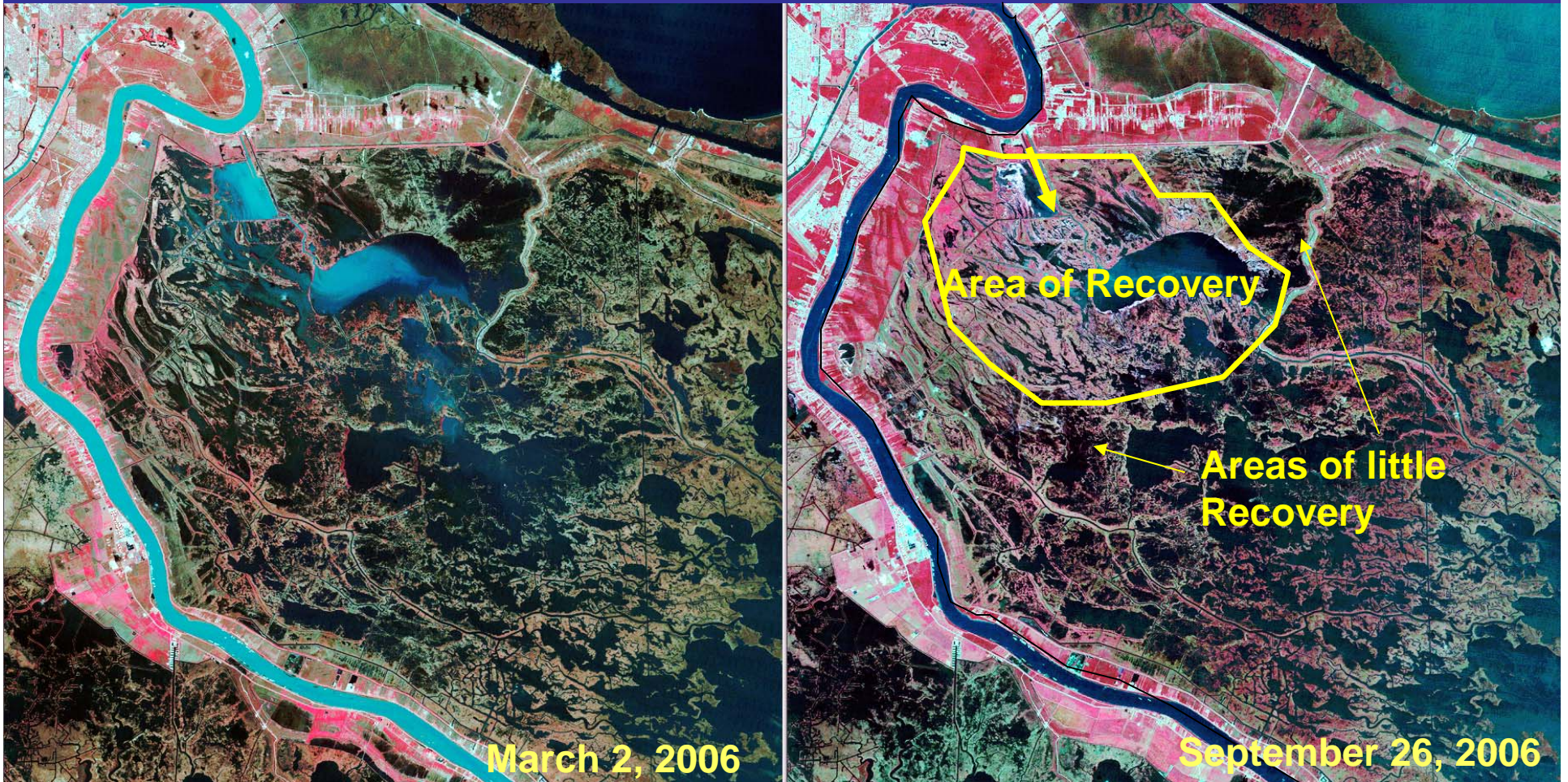


Figure 5: Multiple lines of defense concept (adapted from graphic produced by the Lake Pontchartrain Basin Foundation).

* “condition” refers to the actual condition not the authorized specification

Caernarvon Diversion Post-Katrina

Illustrating some recovery after spring flows from the Caernarvon Diversion



USGS National Wetlands Research Center Land Area
Changes in Coastal Louisiana After the 2005 Hurricanes
John A. Barras (modified)

Red = growing vegetation

Preliminary Flood Protection Scorecard

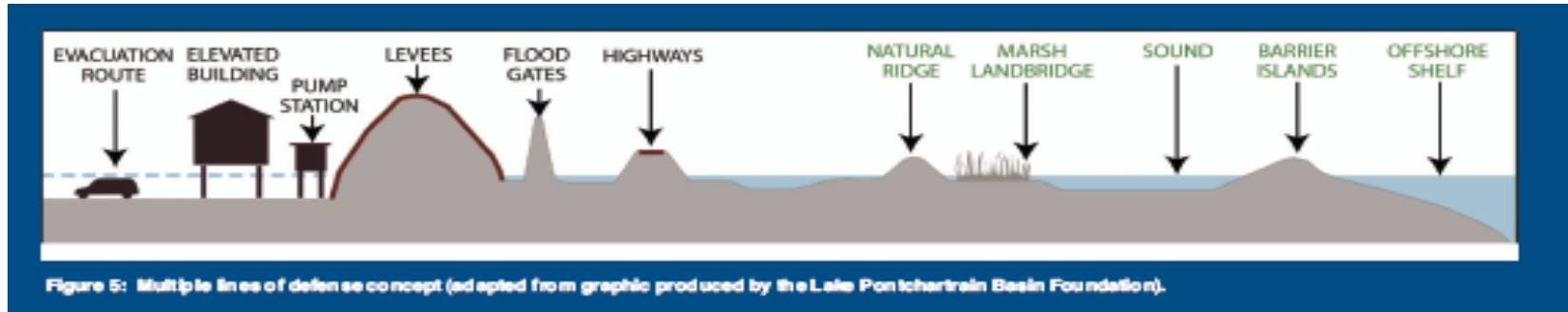
Greater New Orleans Region – May 2007

Exceeds “Pre-Katrina” Condition*

Repaired Railroad beds in East New Orleans



Less than “Pre-Katrina” Condition*



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Preliminary Flood Protection Scorecard

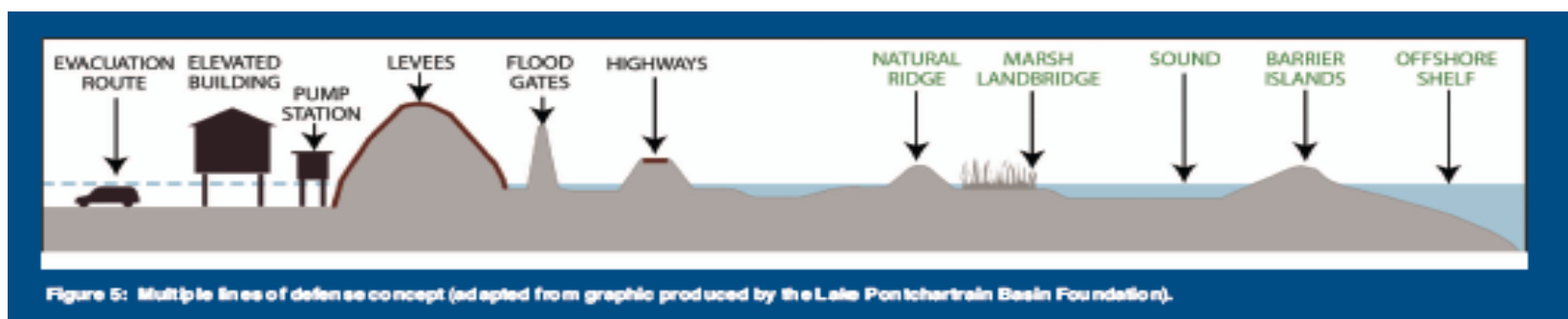
Greater New Orleans Region – May 2007

Exceeds “Pre-Katrina” Condition*

Repaired flood gates and closed outfall canals



Less than “Pre-Katrina” Condition*



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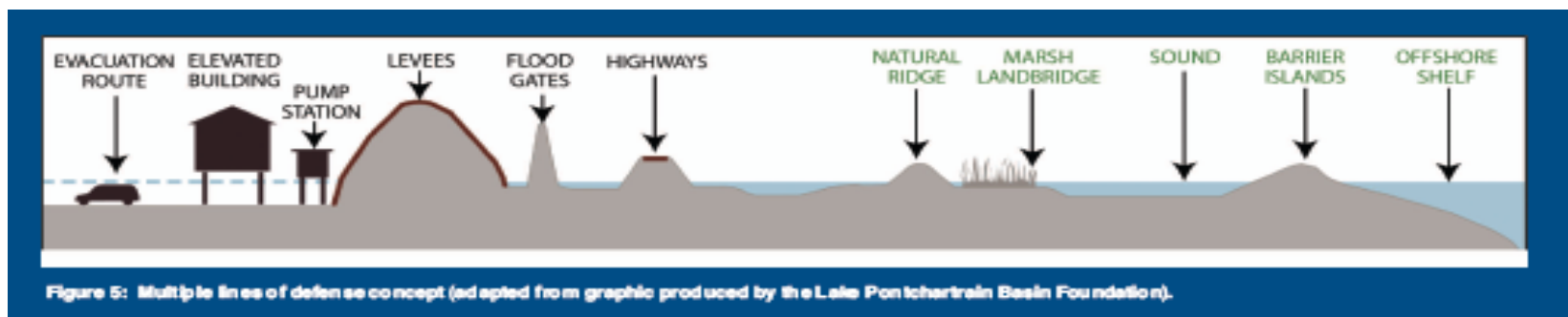
Preliminary Flood Protection Scorecard

Greater New Orleans Region – May 2007

Exceeds “Pre-Katrina” Condition*

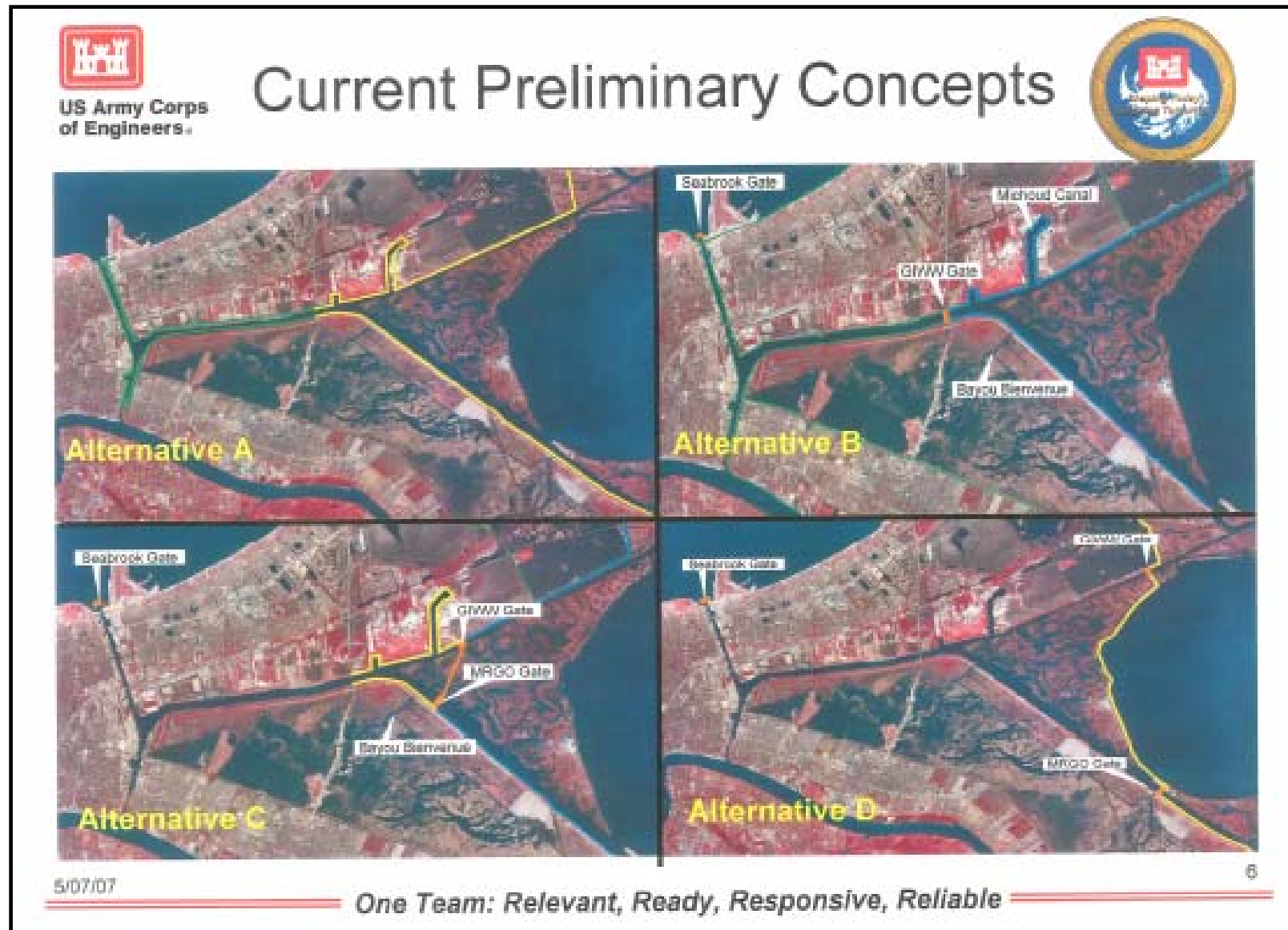
Mixed, Repaired generally, overall slight improvement

Less than “Pre-Katrina” Condition*



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IHNC / GIWW / MRGO Is still the “Achilles Heel” to New Orleans Flood Protection System and possibly to at least 2010



Preliminary Flood Protection Scorecard

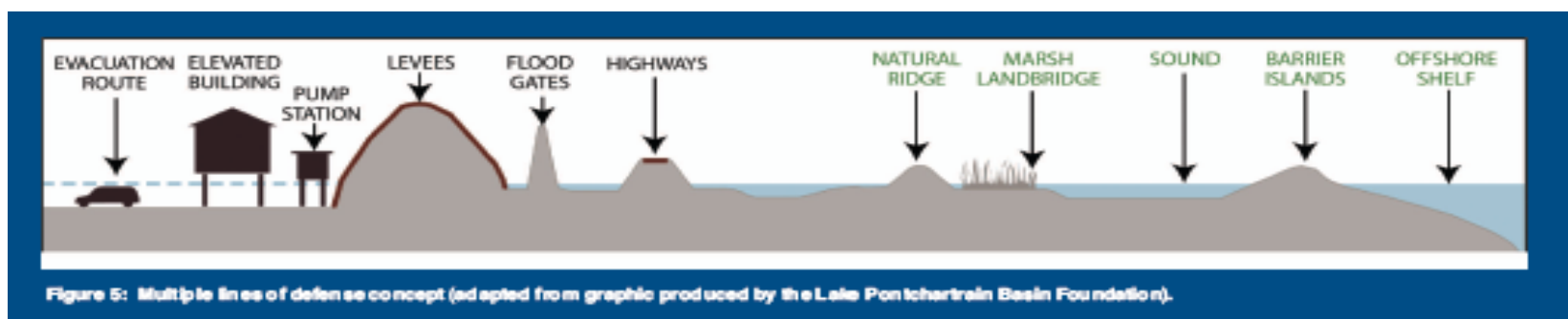
Greater New Orleans Region – May 2007

Exceeds “Pre-Katrina” Condition*

Pump capacity 50% to 75%



Less than “Pre-Katrina” Condition*



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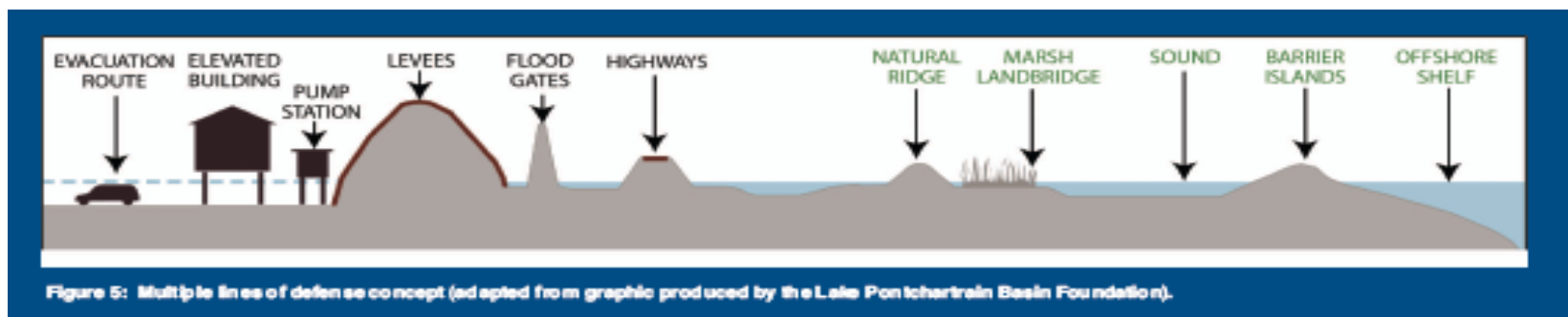
Preliminary Flood Protection Scorecard

Greater New Orleans Region – May 2007

Exceeds “Pre-Katrina” Condition*

New BFE's & Awareness of benefit of elevating immobile assets

Less than “Pre-Katrina” Condition*



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Preliminary Flood Protection Scorecard

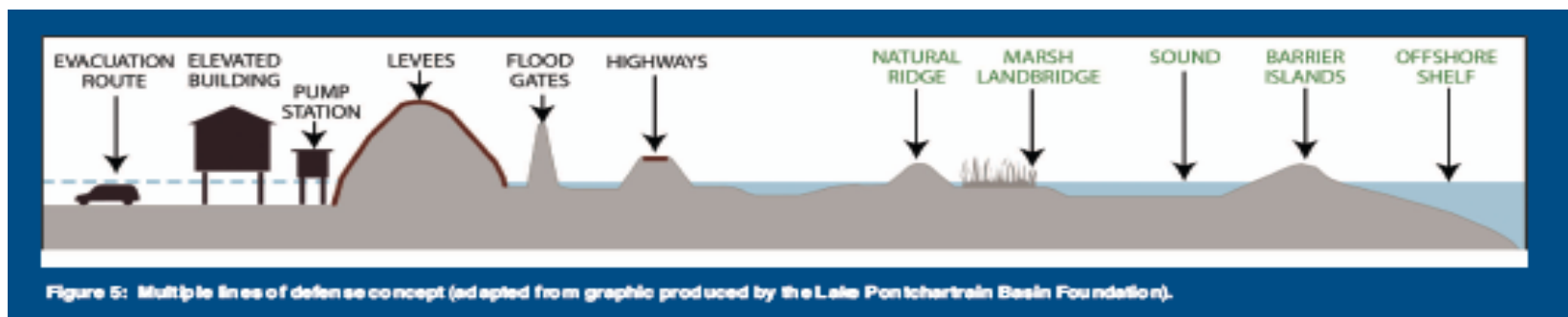
Greater New Orleans Region – May 2007

Exceeds “Pre-Katrina” Condition*



Interstate 10 twin-span is sub-standard & Ongoing Construction

Less than “Pre-Katrina” Condition*

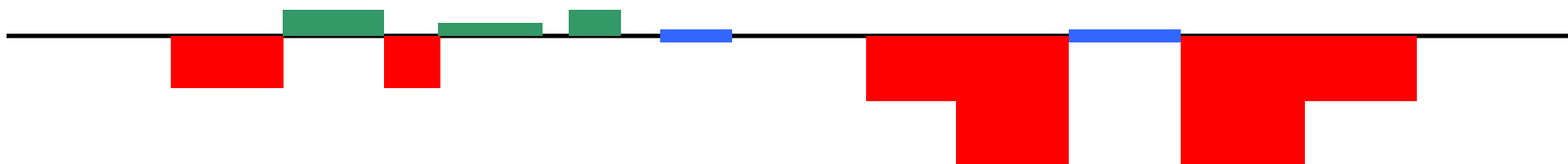


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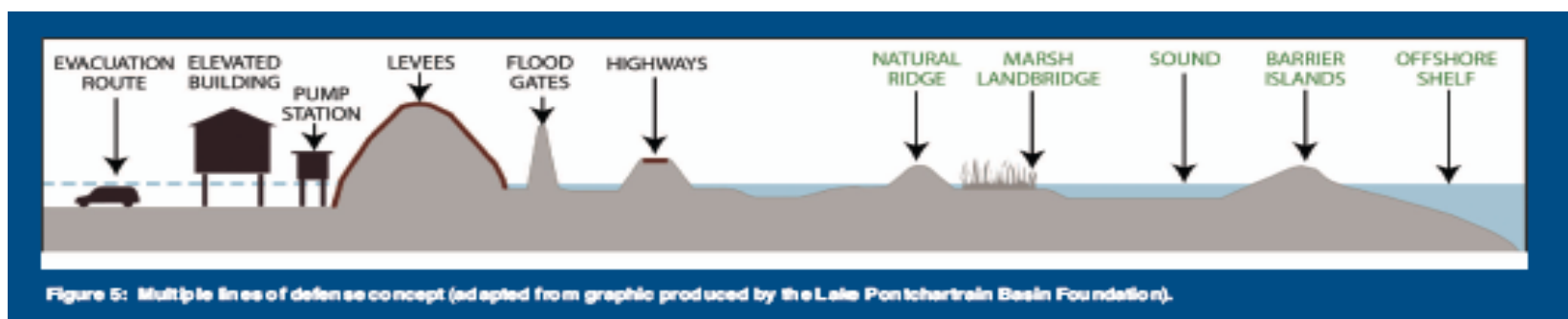
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*Exceeds “Pre-Katrina” Condition**



*Less than “Pre-Katrina” Condition**

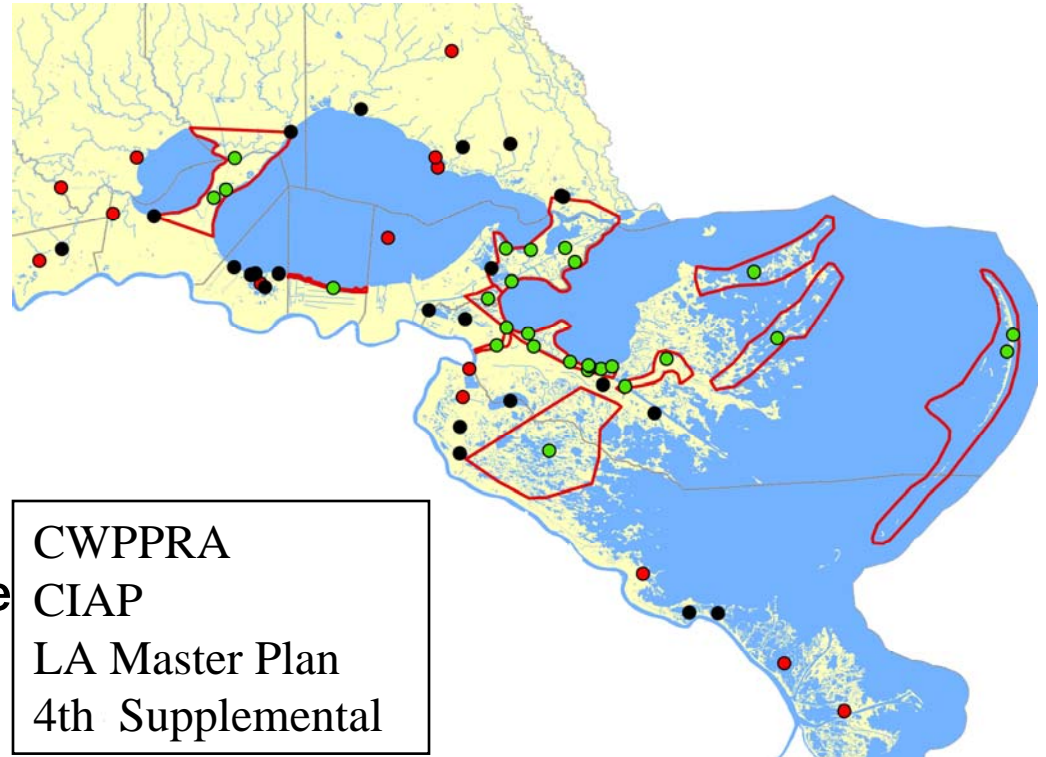


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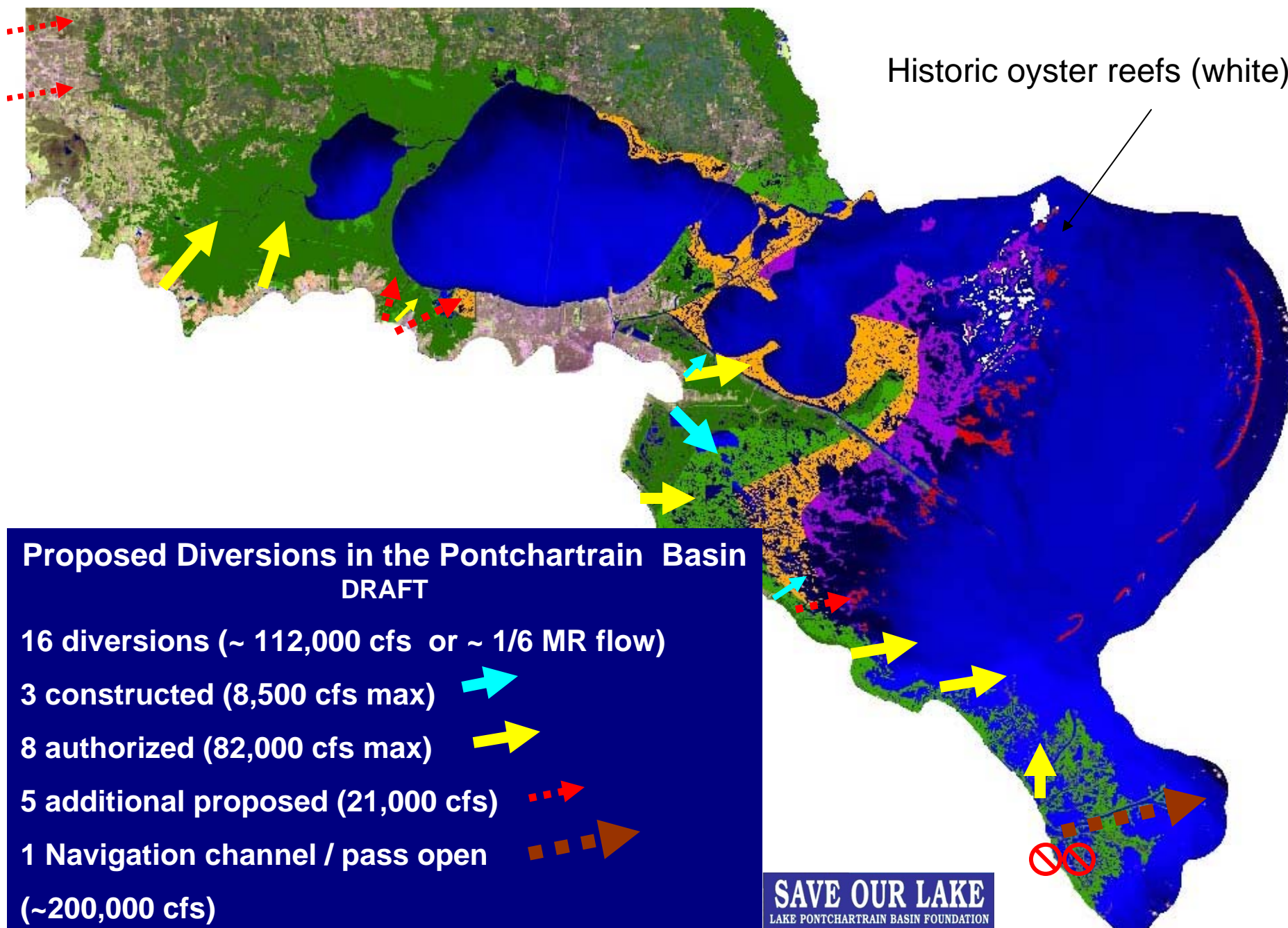
Coastal Project Inventory in the Pontchartrain Basin 2005 to 2007

- 36 (61%) projects are in Comprehensive Habitat Management Plan

- 28 (47%) project within the Ponchartrain Coastal Lines of Defense



Restoration Habitat Goals and Proposed Diversions



Louisiana's Traditional Smart Growth Model

Coastwide Assessment of Multiple Lines of Defense Implementation Assessment

(See documents at SaveOurLake.org)

Louisiana has a traditional model for flood protection which is building elevated home and businesses on ridges. Levees are best designed along ridges to protect the high ground and allow restoration of the natural hydrology (diversion flooding) on the low (wetland) side. Levees which cross the basin hydrology create major obstacles to flood protection and restoration of wetlands.

Funds provided by the McKnight Foundation

SAVE OUR LAKE
LAKE PONTCHARTRAIN BASIN FOUNDATION

