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Weekly Brief

2 May 2006

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Topics

- Hurricane Katrina & Rita
- Corps emergency missions
- Hurricane protection system
- Congressionally authorized levels of hurricane protection
- Hurricane protection system restoration summaries
- New Orleans outfall canals
- Louisiana Coastal Protection and Restoration (LaCPR)
- Additional improvements

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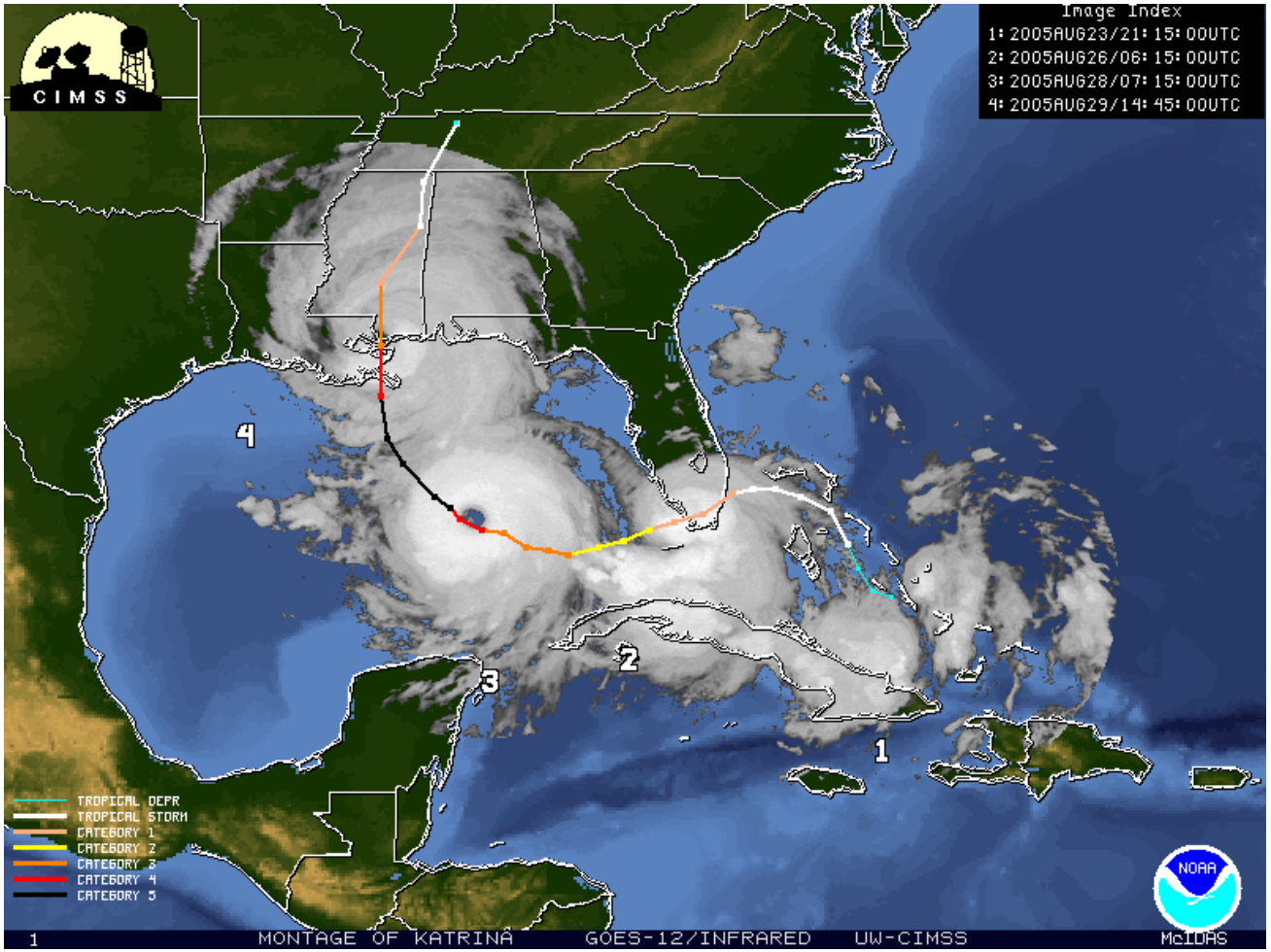
Hurricane Katrina



- *One of America's largest natural disasters*
- Cat 5 strength less than 12 hours before landfall
- *127 MPH wind at Louisiana landfall*
- Maximum surge of 28 to 30 feet along Mississippi coast
- *75 percent of New Orleans flooded*
- More than 1,300 dead

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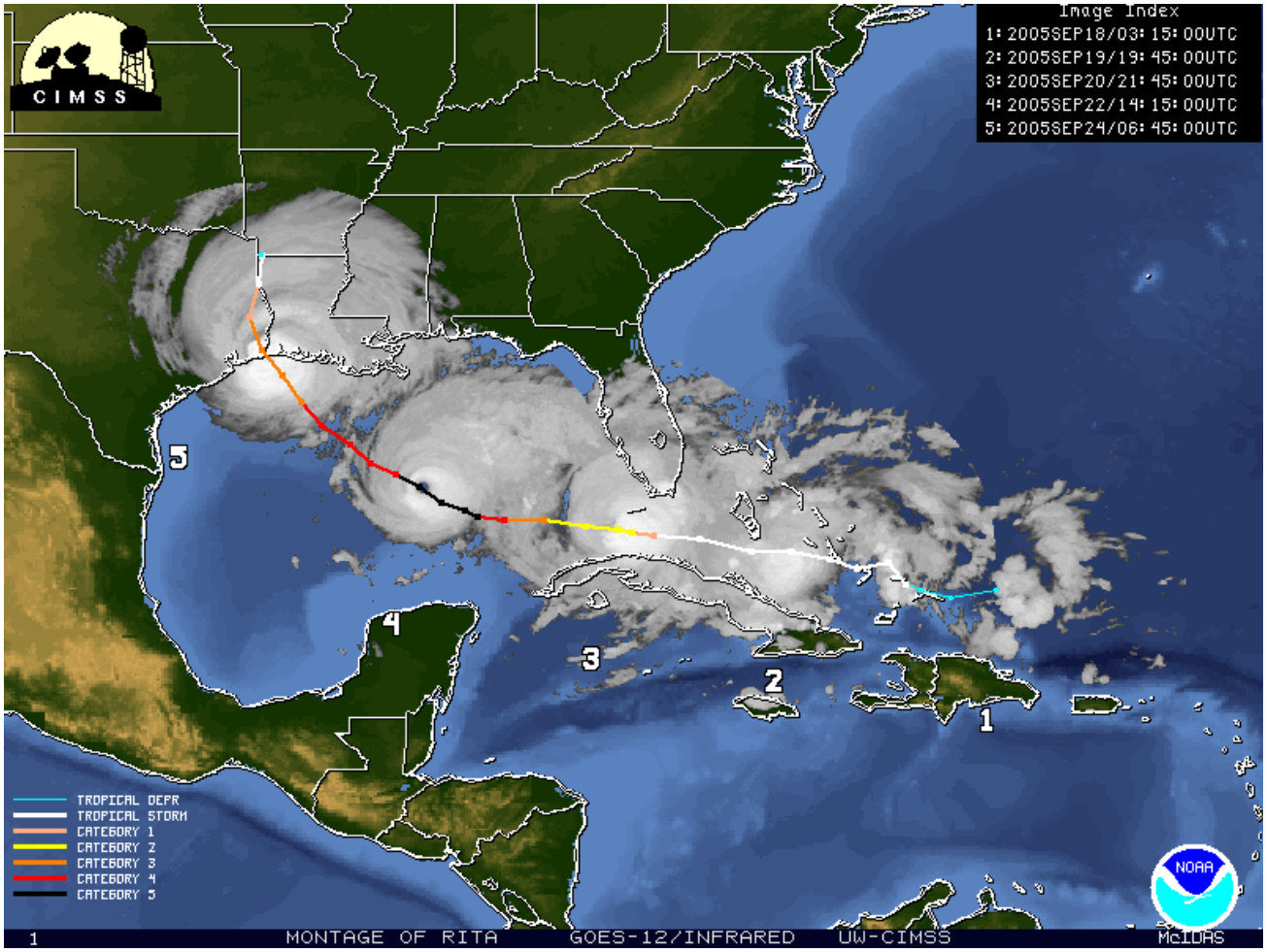
Hurricane Rita



- ***175 MPH max sustained winds in Gulf of Mexico***
- **120 MPH max sustained winds at landfall**
- ***Cat 3 strength at landfall***

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Corps of Engineers Emergency Missions

Task Force Hope Personnel: 2,351 currently assigned

- **Water:** ***Completed***
- **Ice:** ***Completed***
- **Emergency power:** ***299 generators installed***
- **Flood water removal:**
  - ***By pumping***
  - ***Accomplished in 53 days***
  - ***Volume -- more than 732,000 acre-feet (250 billion gallons) removed***
- **Temporary roofing:**
  - ***131,210 structures***
  - ***100% complete***
- **Temporary structures**
  - ***1,036 total required***
  - ***92% complete***
- **Debris removal**
  - ***40.5 million cubic yards removed***
  - ***82% complete***
- **Structural debris removal**
  - ***902,643 cubic yards removed***
  - ***11% complete***

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Louisiana & Mississippi Debris Missions

measured in million cubic yards (mcy	Louisiana (% comp.)	Mississippi (% comp.)
Estimated Total Debris	27.0 (79%)	22.2 (86%)
Estimated Total Structural Debris	7.1 (3%)	0.83 (81%)
Overall Total (million cubic yards)	**34.1 (63%)**	**23.0 (86%)**

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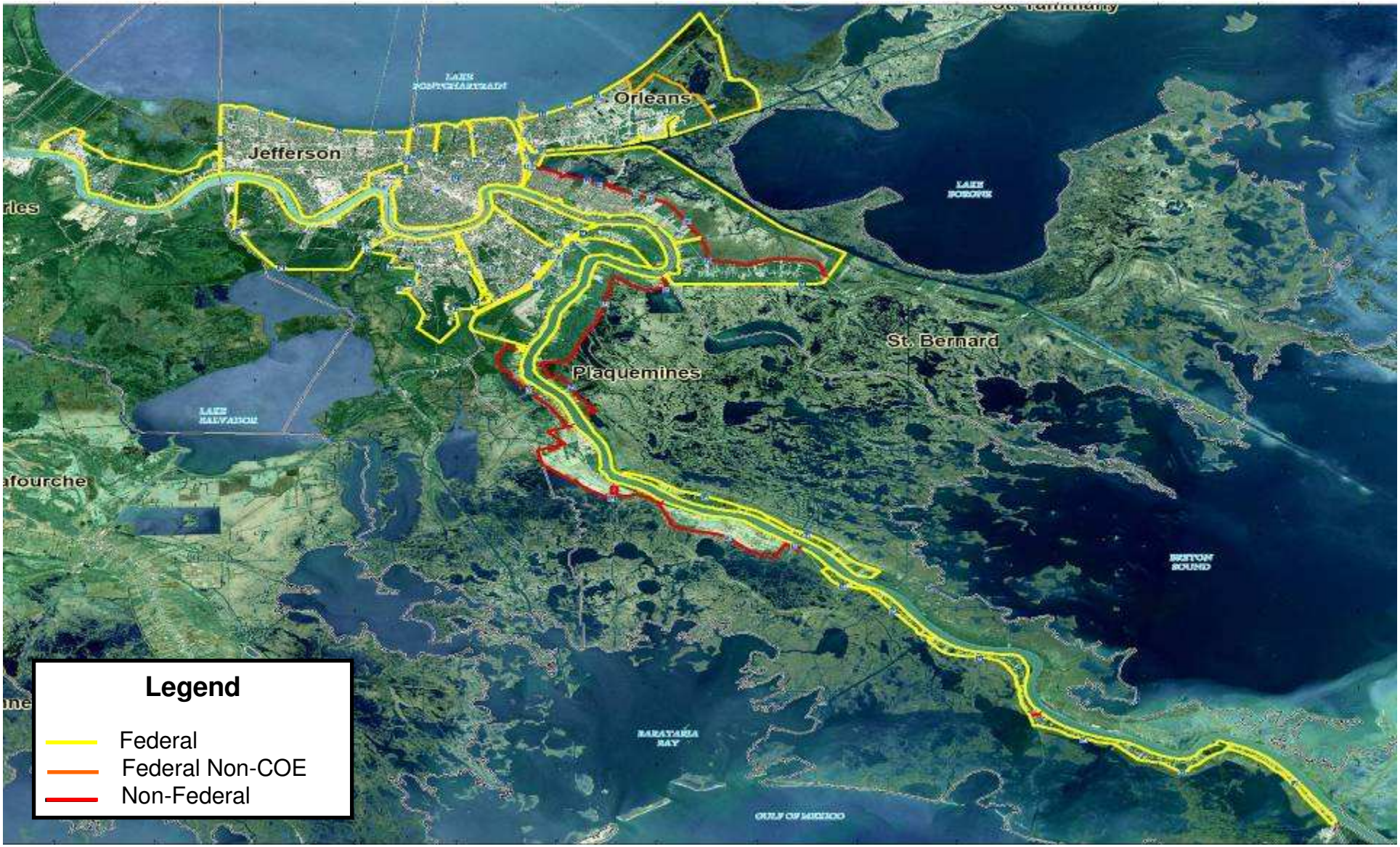
Existing New Orleans Area Hurricane Protection



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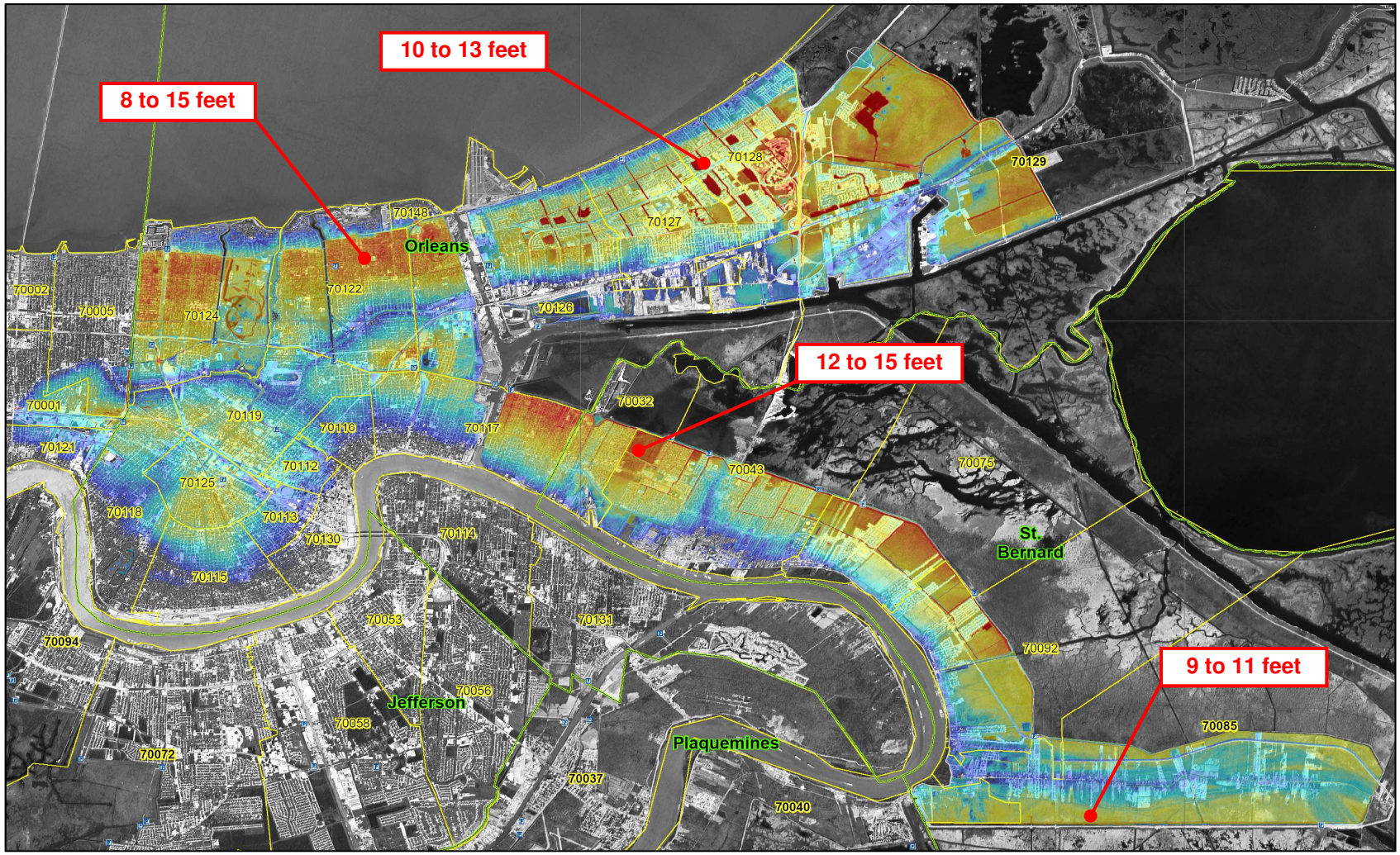
New Orleans
Maximum Flooding Depth



One Team: Relevant, Ready, Responsive, Reliable

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Authorized Protection Levels

Design Hurricanes

Project Location	Date Authorized	Central Pressure Index	Wind		Forward Speed
			Speed	*At Radius of*	
Lake Pontchartrain & Vicinity	October 1965	27.6 inches	100 mph	34.5 miles	5.75 – 12.66 mph
Grand Isle & Vicinity	1965 – 1976	28.15 inches	87 mph	35 miles	13 mph
New Orleans to Venice	October 1962	28.1 inches	90 mph	34.5 miles	11 mph
West Bank & Vicinity	1986	27.4 inches	115 mph	34.5 miles	12.6 mph

Congress currently authorizes protection from flood waters resulting from winds of 90-115 MPH.

Saffir-Simpson Scale (1970)

Scale Number	Winds (mph)
1	74 – 95
2	96 -110
3	111 – 130
4	131 – 155
5	155 +

Katrina at LA Landfall

Category 3
127 mph wind
27.17 inches central pressure
15 mph forward speed
90 miles – extent of hurricane force winds
230 miles – extent of tropical force winds

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Southeast Louisiana Hurricane Protection System

- **Repair:**
  - Return pre-Katrina protection to hurricane-damaged components by 1 June 2006
- **Restore:**
  - Restore undamaged levees/floodwalls to originally authorized heights by 1 Sep 2007
  - Correct Floodwall Deficiencies
- **Complete:**
  - Accelerated completion of unconstructed portions of authorized projects by Sep 2007
- **Improve:**
  - Make improvements to optimize the performance of the existing system
- **Certify:**
  - Raise system to provide 100 year level of protection
- **Evaluate Higher Levels of Protection:**
  - Louisiana Coastal Protection and Restoration Report - preliminary report due June 2006, final December 2007

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Hurricane Protection System Funding Status

Component	Funding (Millions)
FUNDING TO DATE (Through 3rd Emergency Supplemental)	
Repair Existing System and Restore to Design Height	$1,533
Complete Authorized System	
New Orleans to Venice (Hurricane Protection)	$33
West Bank and Vicinity (Hurricane Protection)	$147
Lake Pontchartrain and Vicinity (Hurricane Protection)	$120
Southeast Louisiana (Interior Flood Damage Reduction)	$225
Grand Isle (Hurricane Protection)	$15
Larose to Golden Meadow (Hurricane Protection)	$4
TOTAL FUNDING TO DATE	$2,077
PRESIDENT'S PROPOSAL FOR 4TH SUPPLEMENTAL	
Outfall Canal Closures and Pump Stations	$530
Improvements to IHNC	$350
Selective Armoring of Levees and Floodwalls	$170
Storm Proofing Pump Stations	$250
Incorporate non-Federal Levees in Plaquemines Parish	$60
'Jump Start' Eco-system Restoration	$100
TOTAL 4TH SUPPLEMENTAL	$1,460
TOTAL ANTICIPATED PROGRAM	$3,537

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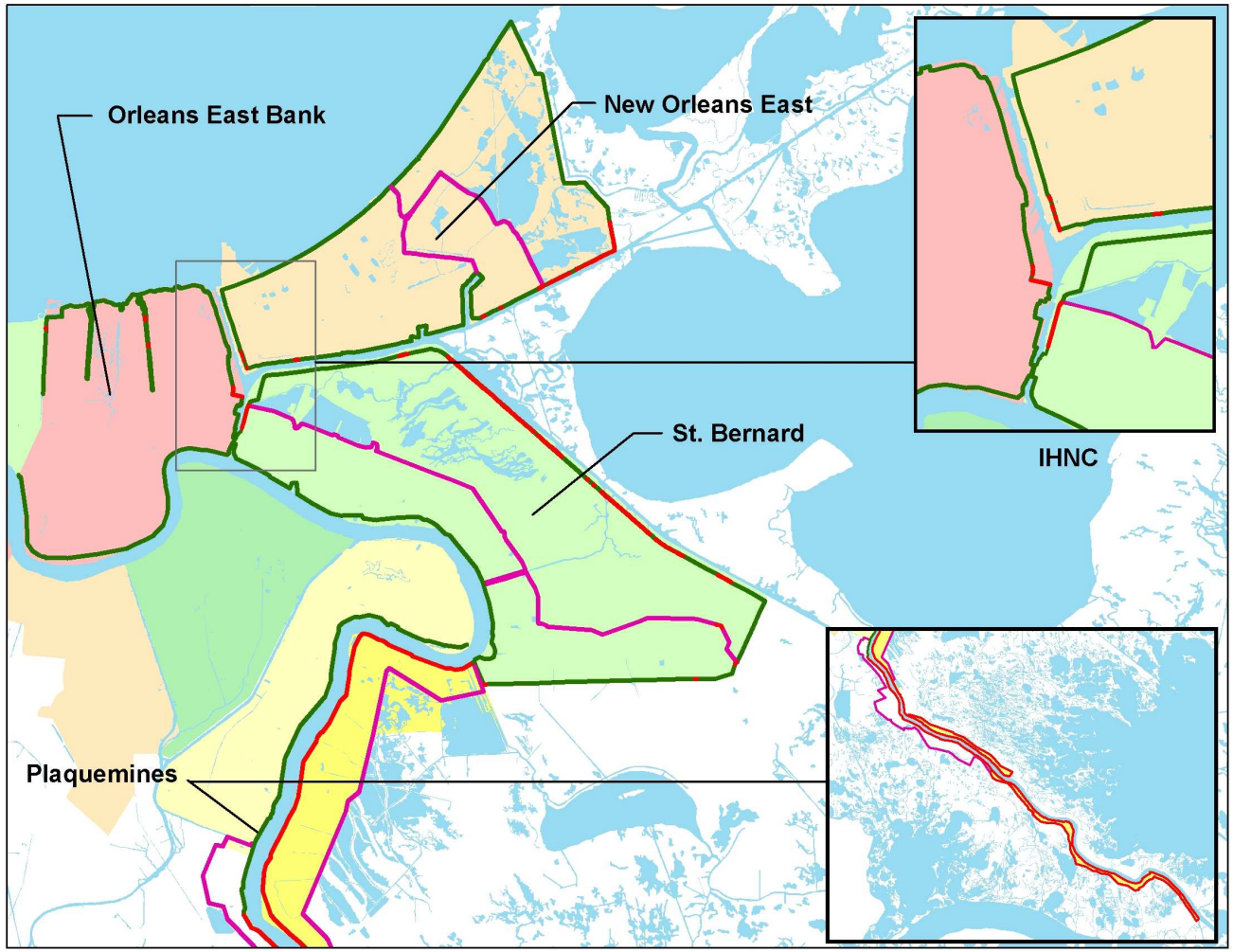
Hurricane Protection System Restoration Program Summary



Hurricane Protection System
- 350 miles
- 71 pump stations

Damage
- 41 miles severe, 128 miles moderate damage
- 34 pump stations were non-operational

Cost
- $ 798 million

Percent of Pre-Katrina Protection Restored

76 % Complete

24 of 59 contracts complete

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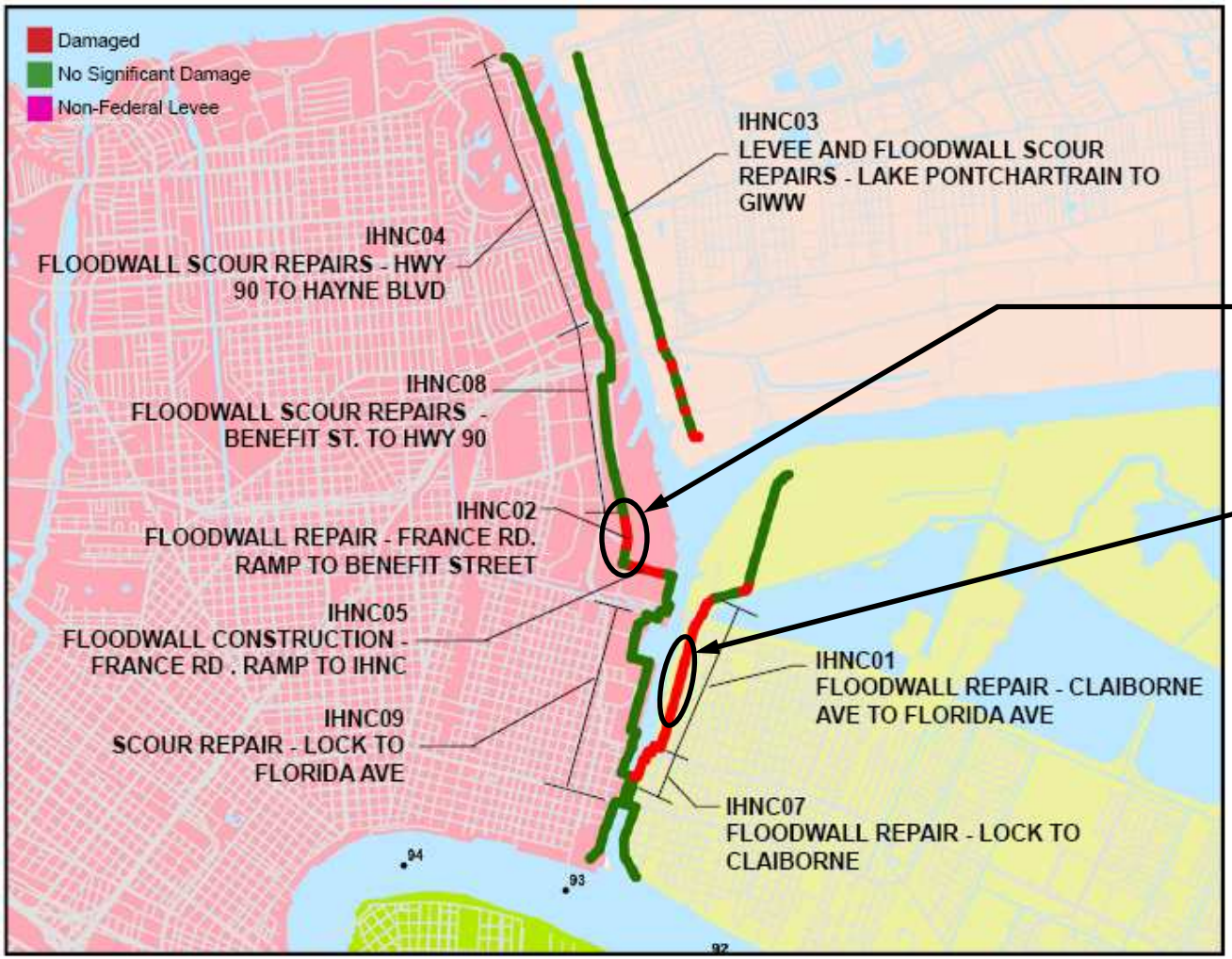
Inner Harbor Navigation Canal



Percent of Pre-Katrina Protection Restored

87 % Complete

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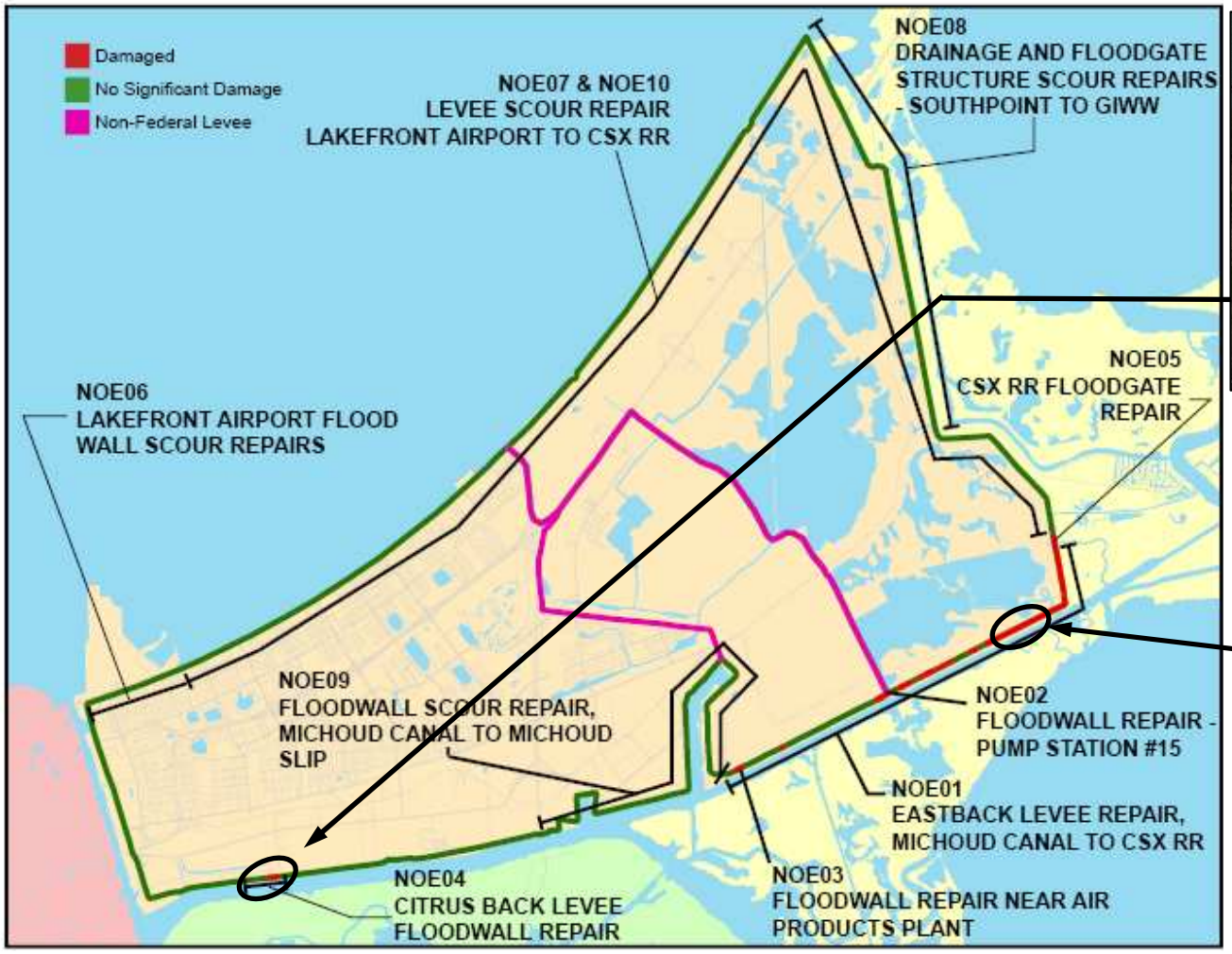
New Orleans East



Percent of Pre-Katrina Protection Restored

74 % Complete

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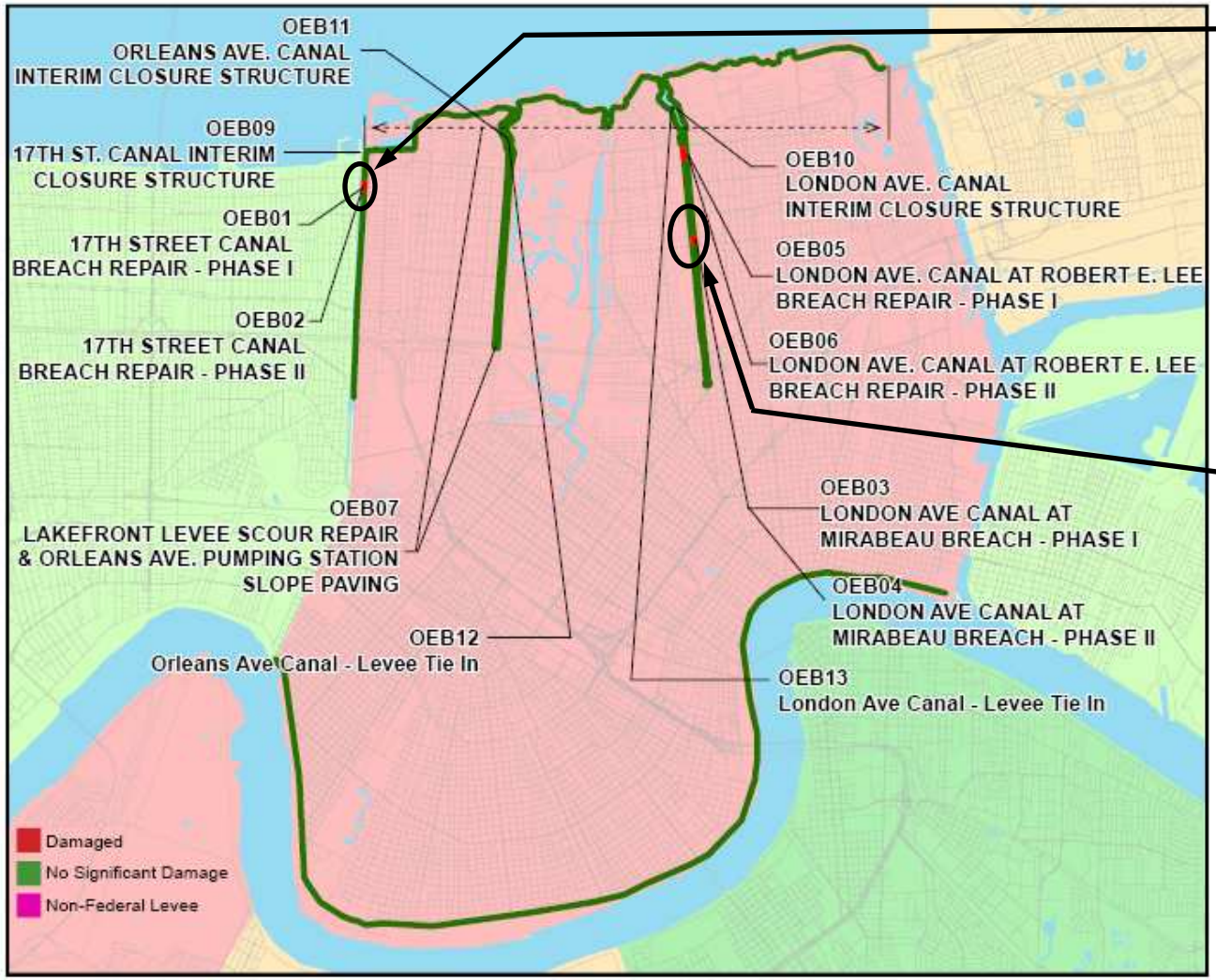
Orleans East Bank



Percent of Pre-Katrina Protection Restored

63 % Complete

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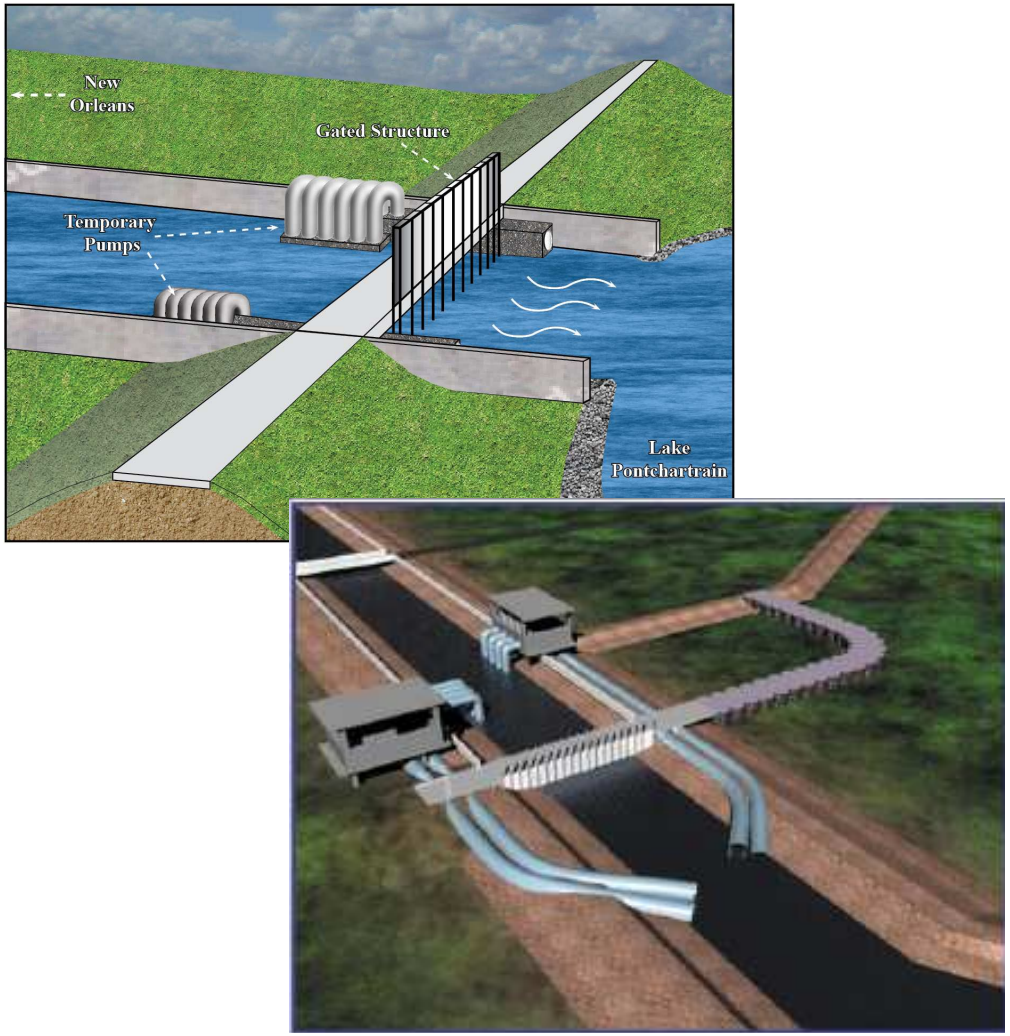
New Orleans Outfall Canal Interim Closure Plan



- Three locations on Lake Pontchartrain
- Provides protection by 1 June 2006
- Provide New Orleans with rainwater drainage
- Prevent storm surge
- Pumps permit drainage while closed

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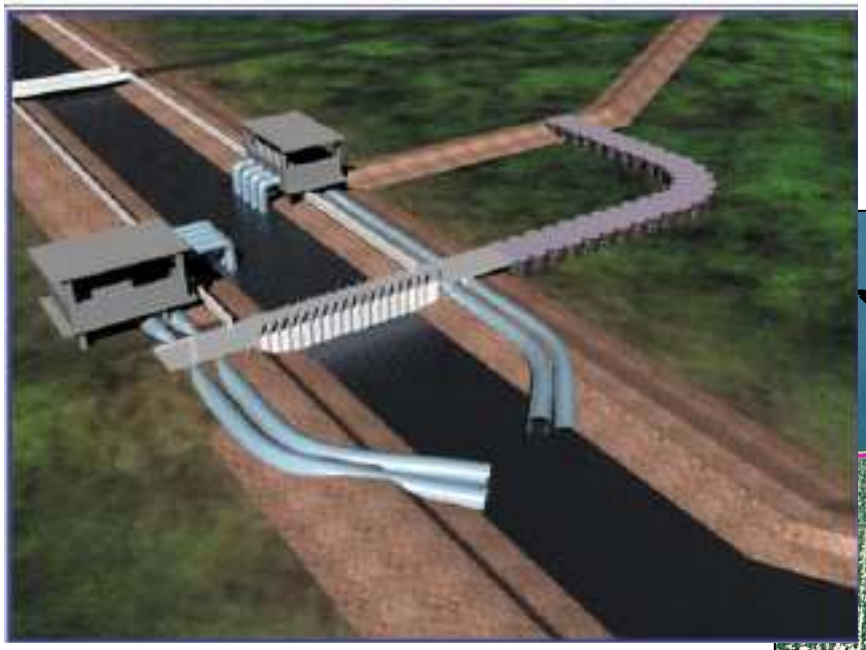
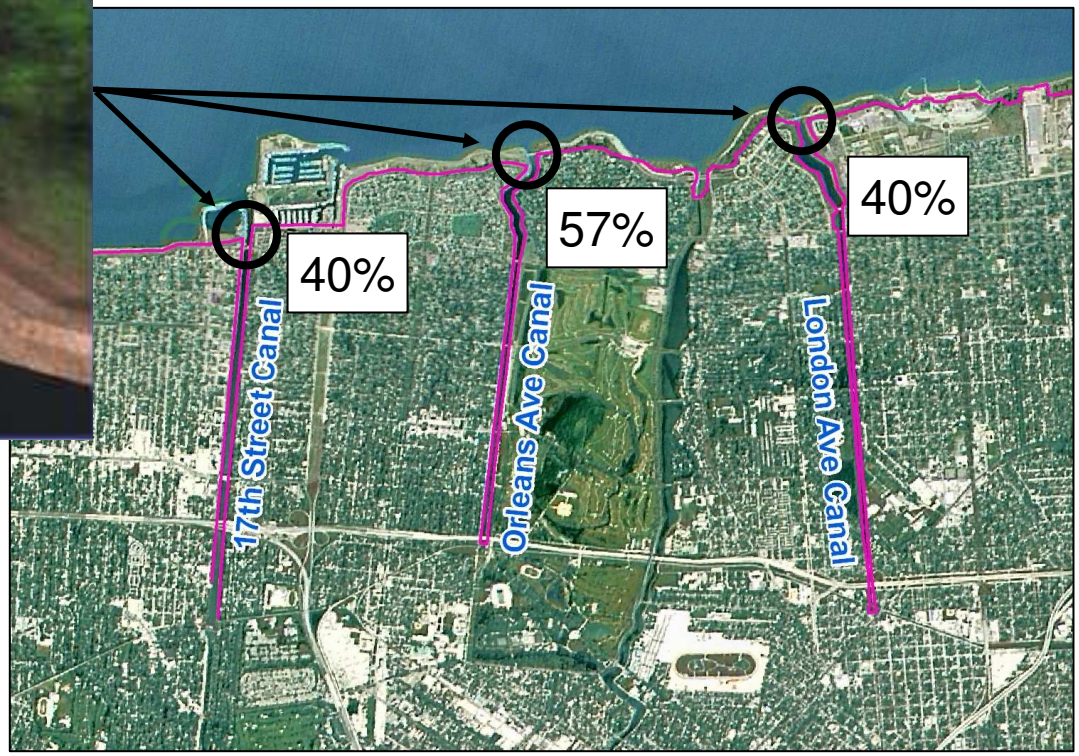
New Orleans Outfall Canal Interim Closure Structure Status

17th St. Canal CS	40% Complete
Orleans Ave. CS	57% Complete
London Ave. Canal CS	40% Complete



Interim Closure Structure



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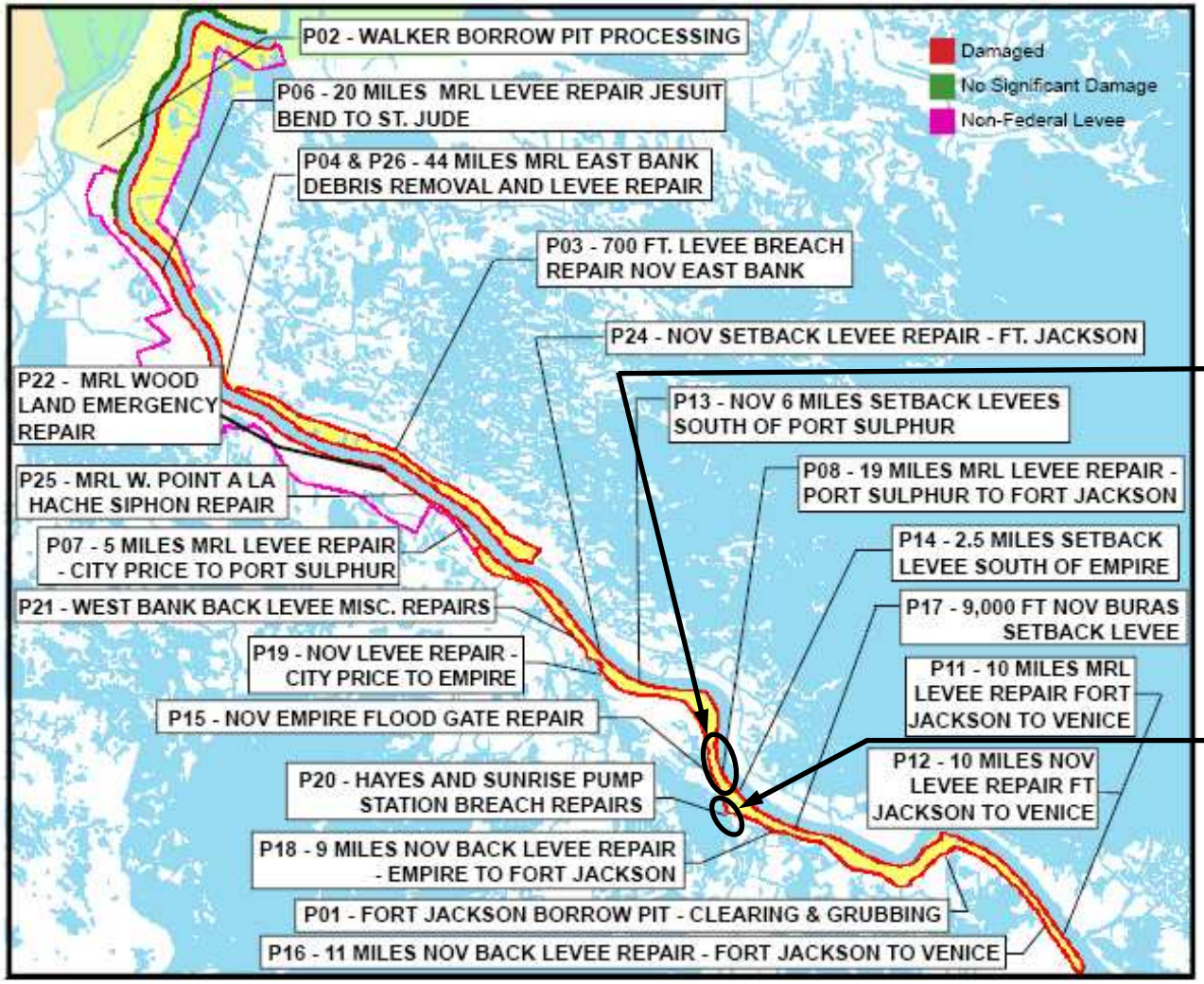
Plaquemines Parish



Percent of Pre-Katrina Protection Restored

86 % Complete

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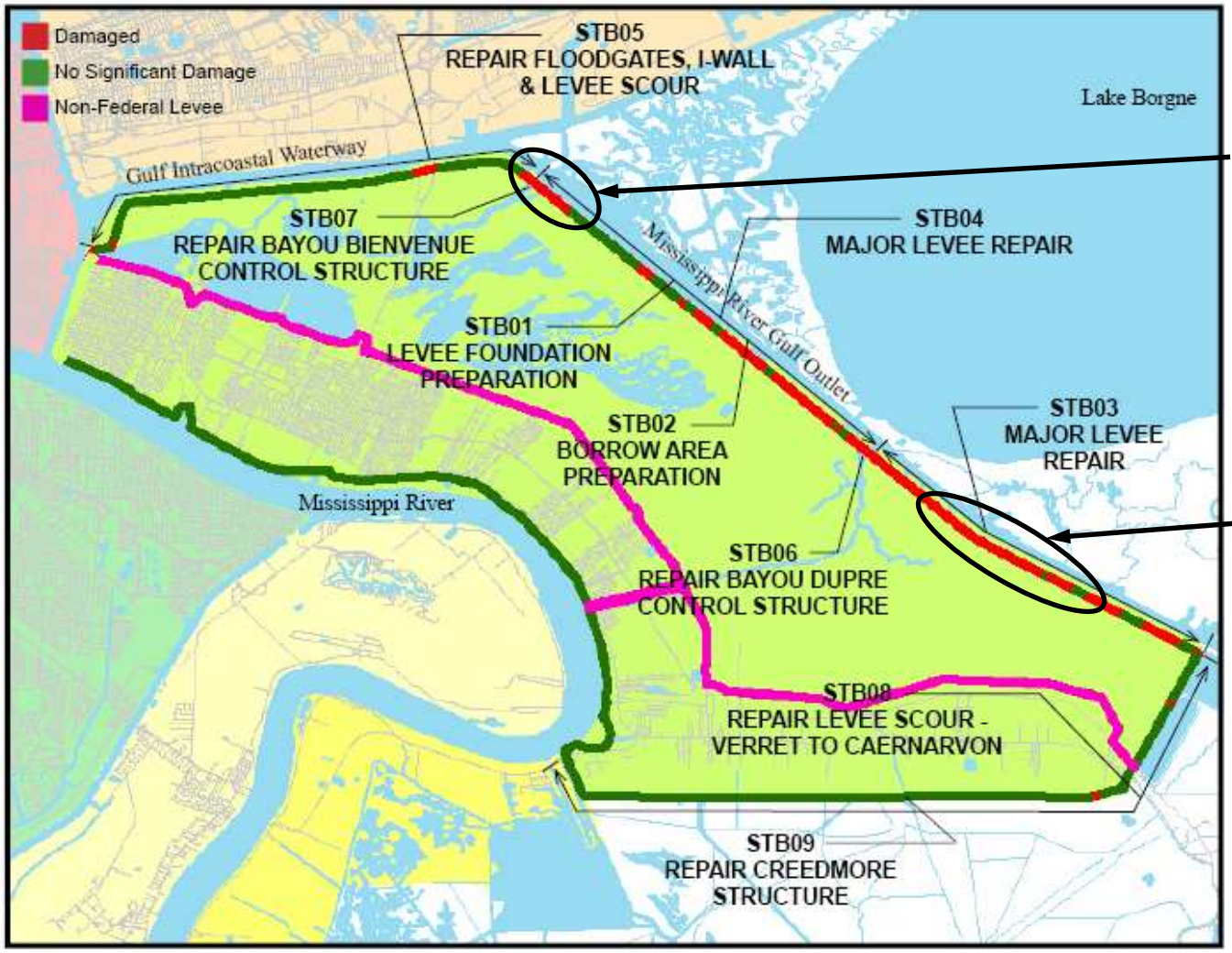
Saint Bernard Parish



Percent of Pre-Katrina Protection Restored

90 % Complete

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Louisiana Coastal Protection and Restoration (LaCPR)

Congress directed analysis and design of:

- Category 5 Hurricane Protection
- Full range of measures for flood control, coastal restoration, and hurricane protection
- Preliminary Report to Congress – June 2006
- Final Technical Report – December 2007
- Submit reports on component areas for authorization as practicable

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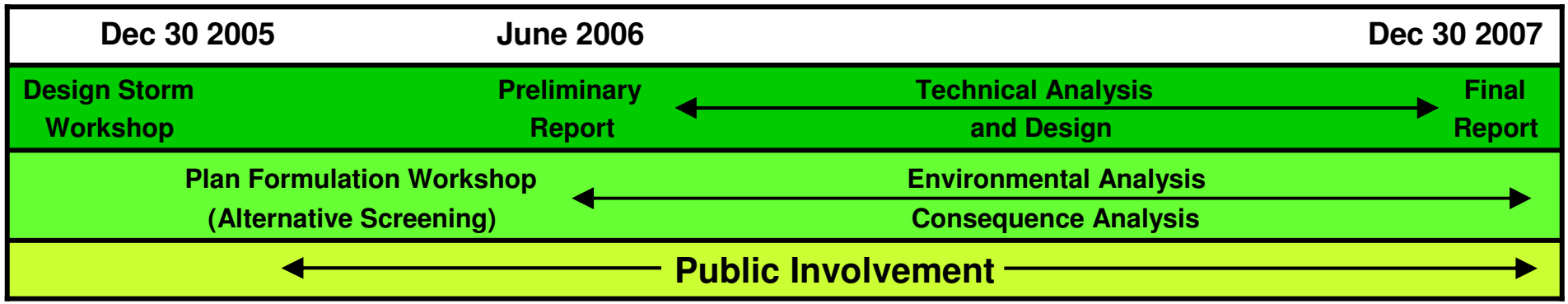
South Louisiana Coastal Protection and Restoration - Status

- Partnership with State Coastal Protection and Restoration Authority
- Working closely with State of Louisiana and Master Plan Development
- Formalizing plan formulation process and alternatives development for presentation in PTR
- Frequent broad based public involvement planned
- Comprehensive hurricane protection and coastal restoration efforts from both short-term and long range perspectives



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Louisiana Coastal Protection and Restoration (LaCPR) - Report

- Study approach requires innovation
- Accelerated schedule
- IPET forms basis for analysis and design
- Expert Team
- Outside and independent review
- Extensive public input

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Southeast Louisiana Hurricane Protection

ADDITIONAL IMPROVEMENTS

The Bush Administration on Feb. 16 asked Congress to support an additional $1.46 billion in new funding for improvements to southeast Louisiana's hurricane protection system. If approved, the proposal would pay for:

• Permanent pumps and closures for New Orleans' three outfall canals.	**$530 million**
• Two navigable closures that would prevent hurricane surge from entering the Industrial Canal area.	**$350 million**
• Storm-proofing existing interior drainage pump stations in Jefferson and Orleans Parishes.	**$250 million**
• Selective armoring for critical portions of the New Orleans levee system.	**$170 million**
• Incorporation of Plaquemines Parish west bank, non-federal levees into the federal levee system.	**$60 million**
• Restoration of critical areas of coastal wetlands and ecosystems needed to improve long-term hurricane and storm protection.	**$100 million**

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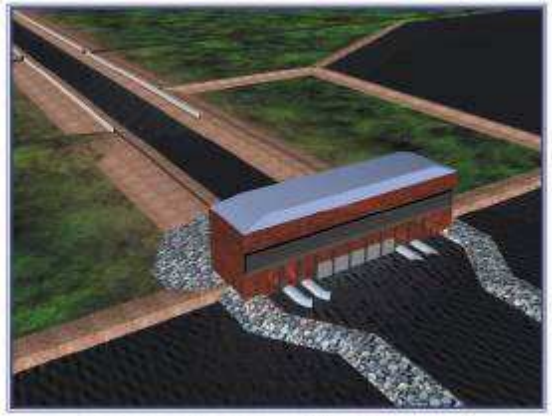
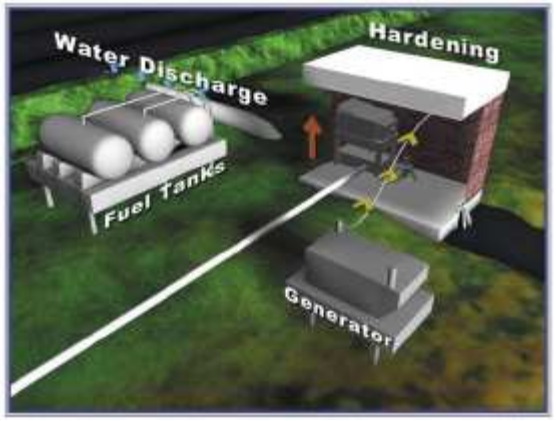
Southeast Louisiana Hurricane Protection

ADDITIONAL IMPROVEMENTS

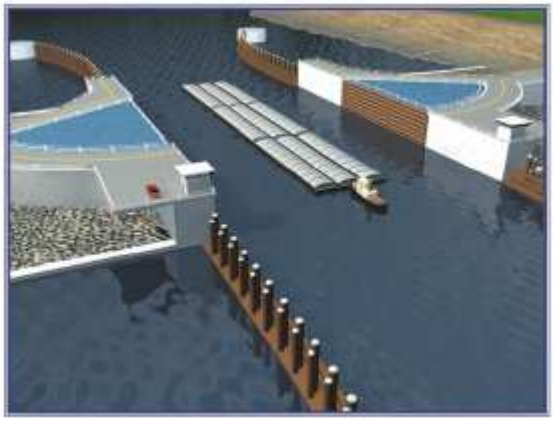


Permanent Pumps & Closures

Selective Armoring



Storm-Proofing Pump Stations



Navigable Closures

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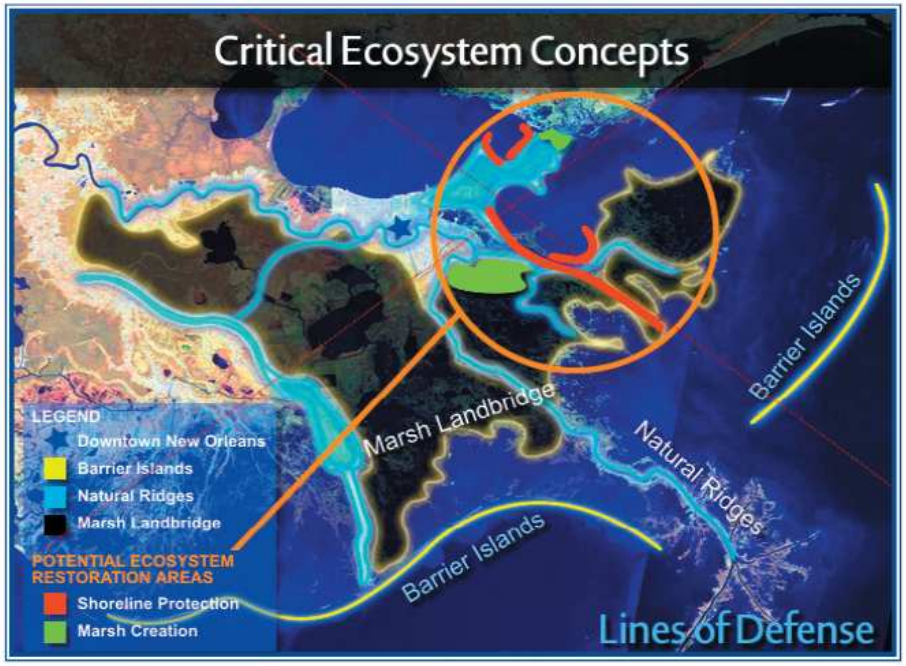
Southeast Louisiana Hurricane Protection

ADDITIONAL IMPROVEMENTS



Wetlands and Ecosystem Restoration

Incorporations of non-federal levees in Plaquemines