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# **Task Force Hope**

## **Weekly Brief**

**9 May 2006**



# Topics

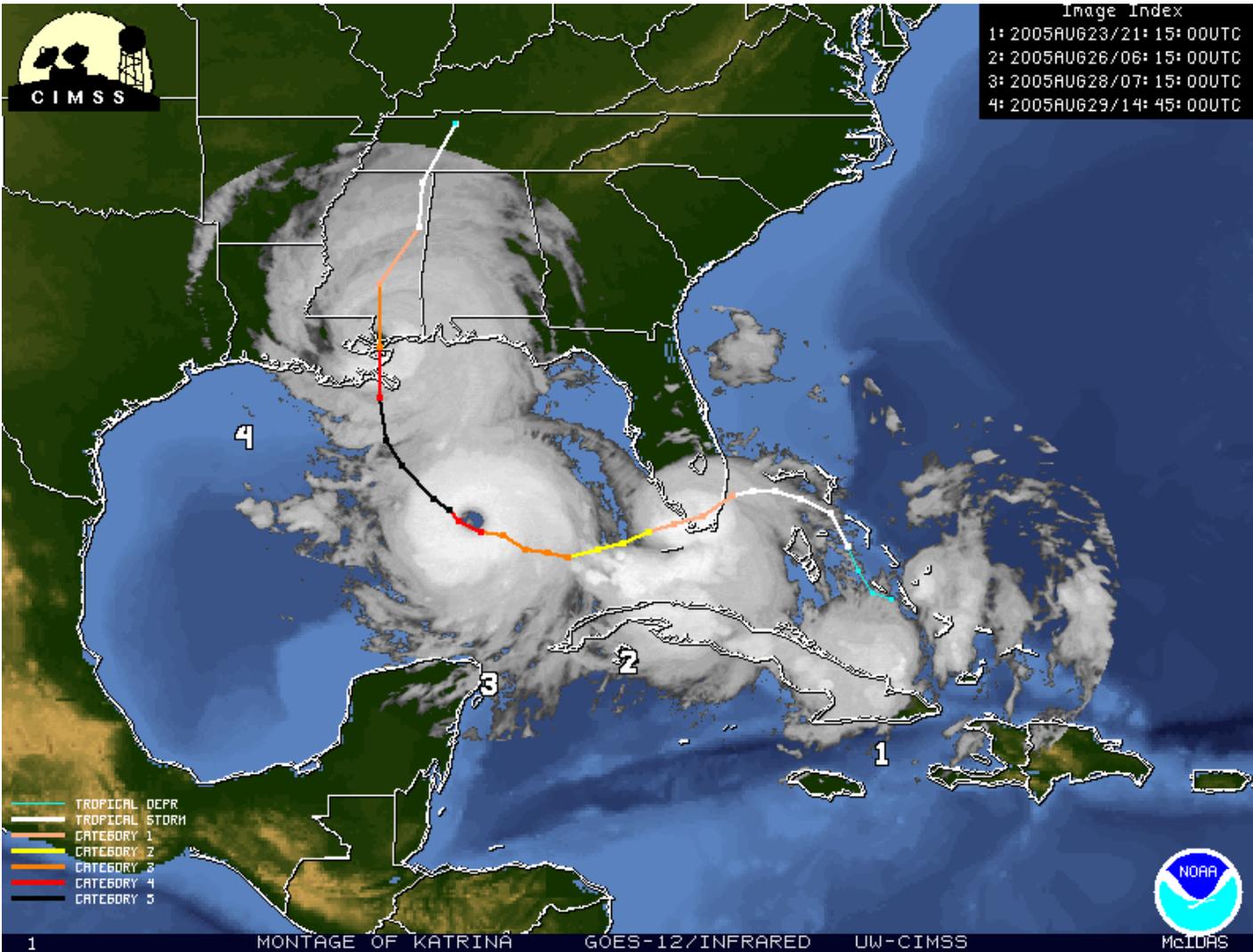


- **Hurricane Katrina & Rita**
- **Corps emergency missions**
- **Hurricane protection system**
- **Congressionally authorized levels of hurricane protection**
- **Hurricane protection system restoration summaries**
- **New Orleans outfall canals**
- **Louisiana Coastal Protection and Restoration (LaCPR)**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



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# Hurricane Katrina

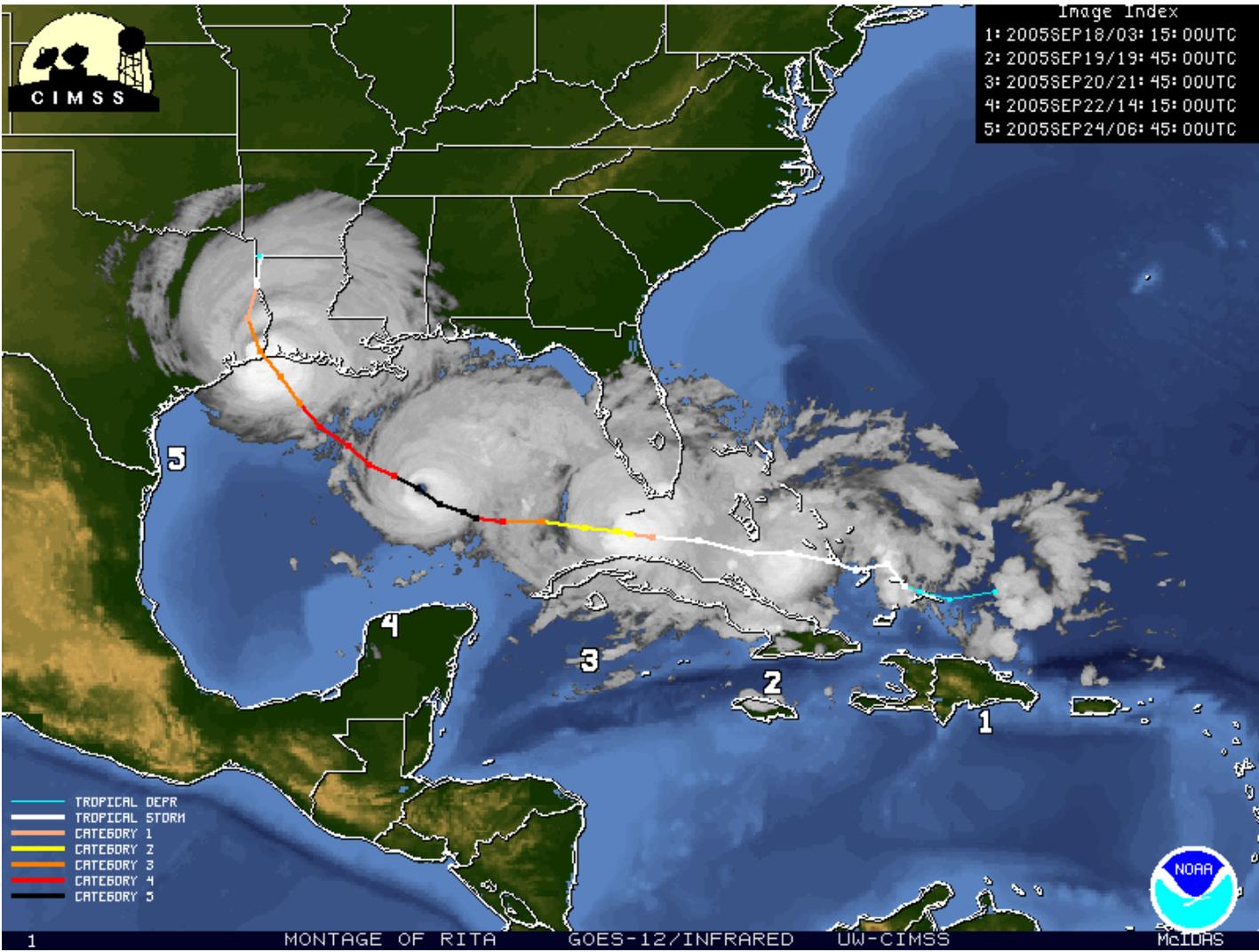


- *One of America's largest natural disasters*
- **Cat 5 strength less than 12 hours before landfall**
- *127 MPH wind at Louisiana landfall*
- **Maximum surge of 28 to 30 feet along Mississippi coast**
- *75 percent of New Orleans flooded*
- **More than 1,300 dead**



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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: 1,895 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**
  - *41 million cubic yards removed*
  - *83% complete*
- **Structural debris removal**
  - *971,342 cubic yards removed*
  - *12% complete*



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# Louisiana & Mississippi Debris Missions



New Orleans

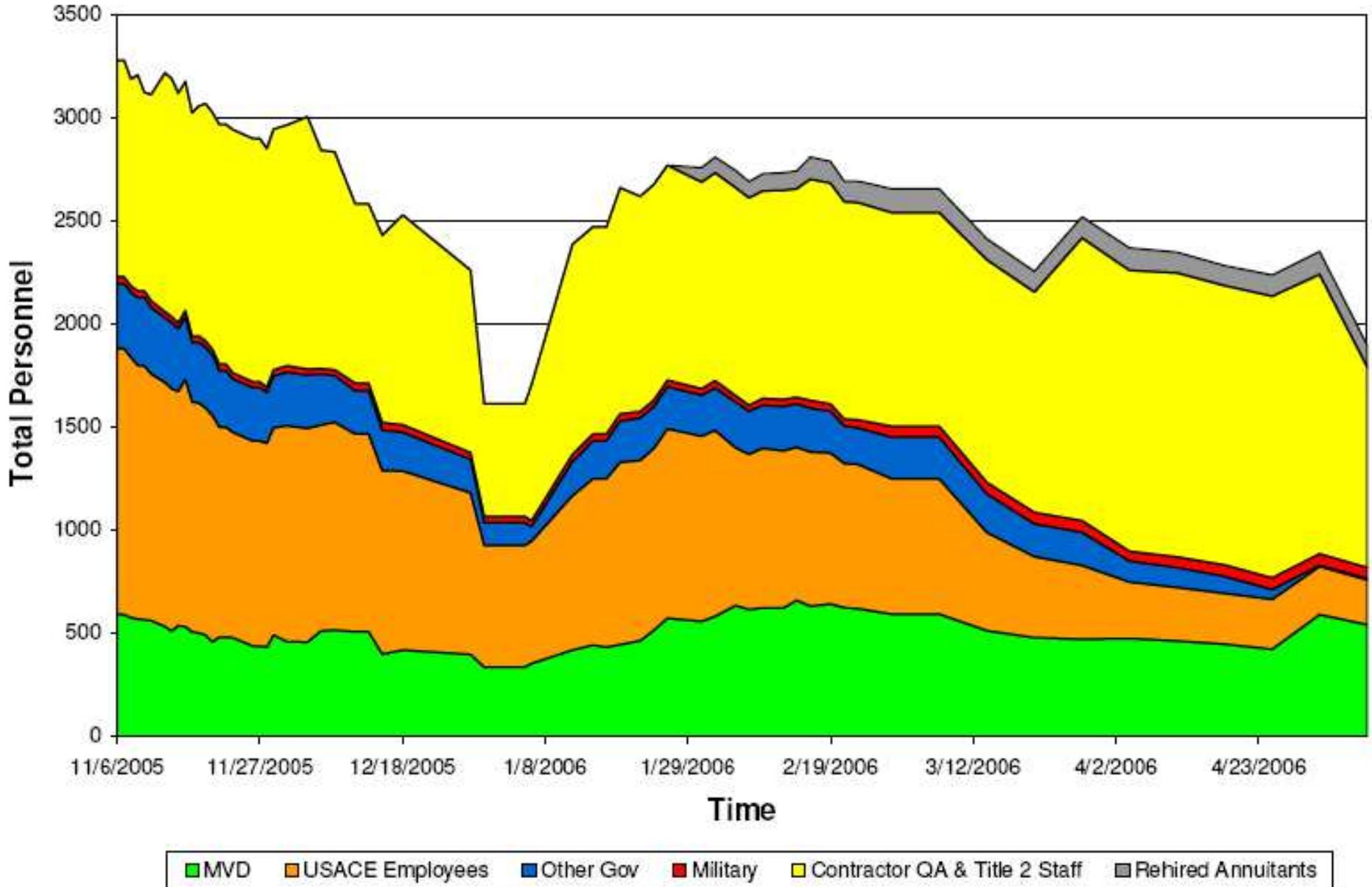


measured in million cubic yards (mcy)	Louisiana (% comp.)	Mississippi (% comp.)
<b>Estimated Total Debris</b>	27.0 (80%)	22.2 (88%)
<b>Estimated Total Structural Debris</b>	7.1 (4%)	0.83 (86%)
<b>Overall Total (million cubic yards)</b>	<b>34.1 (64%)</b>	<b>23.0 (88%)</b>



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# Task Force Hope Personnel

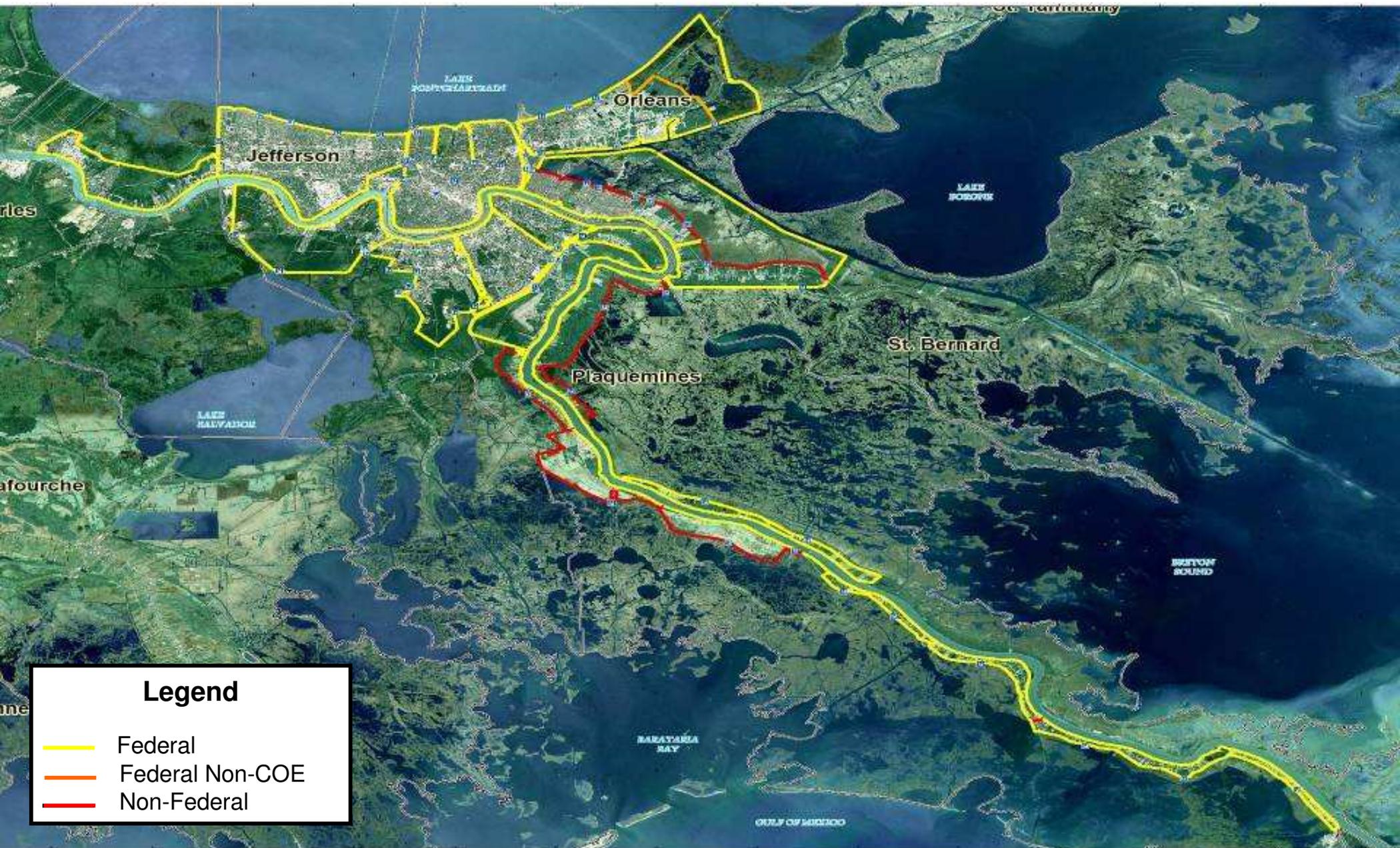


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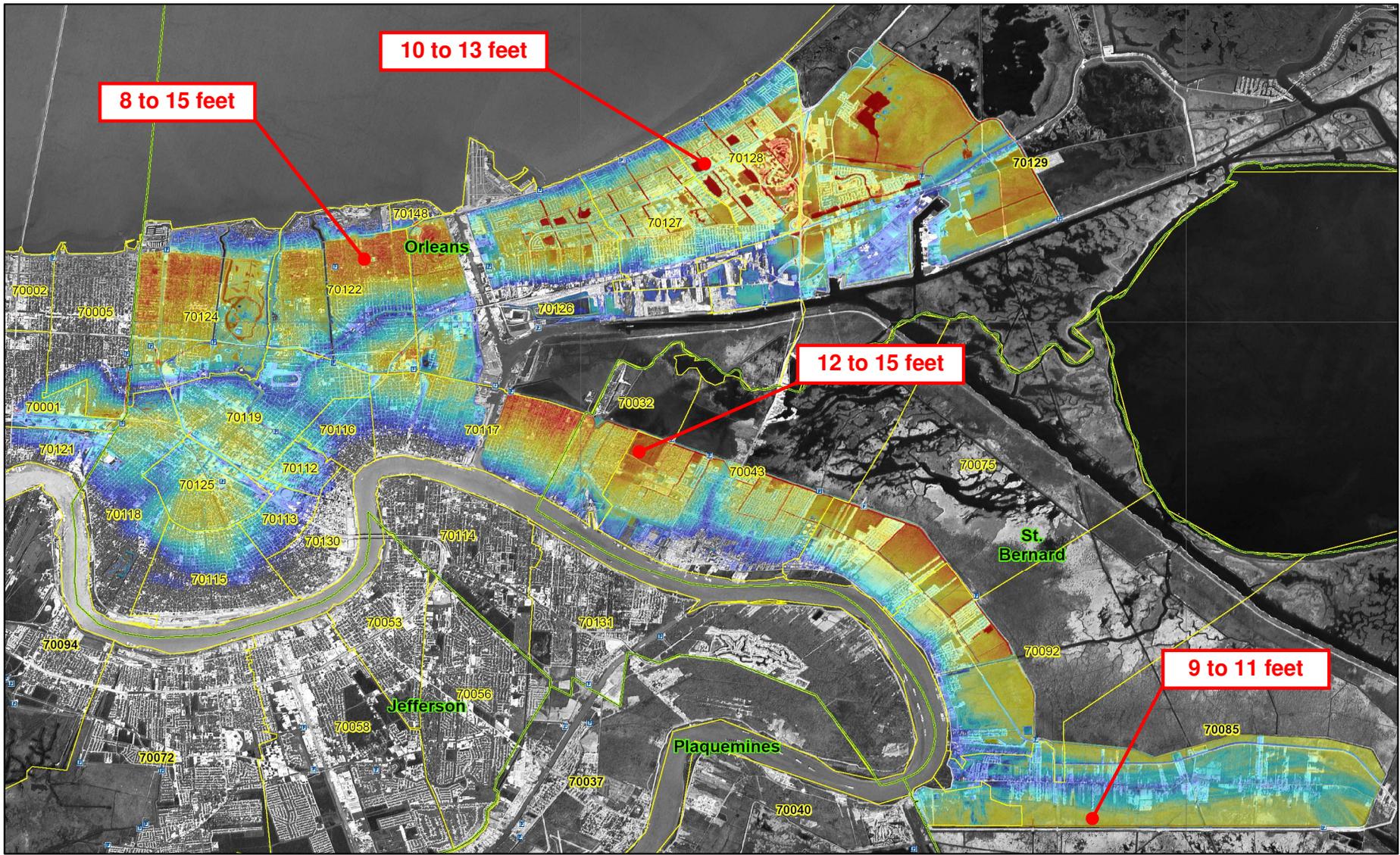
# Existing New Orleans Area Hurricane Protection





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# New Orleans Maximum Flooding Depth



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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)
<b>FUNDING TO DATE (Through 3<sup>rd</sup> Emergency Supplemental)</b>	
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
<b>TOTAL FUNDING TO DATE</b>	<b>\$2,077</b>
<b>PRESIDENT'S PROPOSAL FOR 4<sup>TH</sup> SUPPLEMENTAL</b>	
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
<b>TOTAL 4<sup>TH</sup> SUPPLEMENTAL</b>	<b>\$1,460</b>
<b>TOTAL ANTICIPATED PROGRAM</b>	<b>\$3,537</b>

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# Estimated Cost to Provide Protection to Base Flood Elevation (Billions)



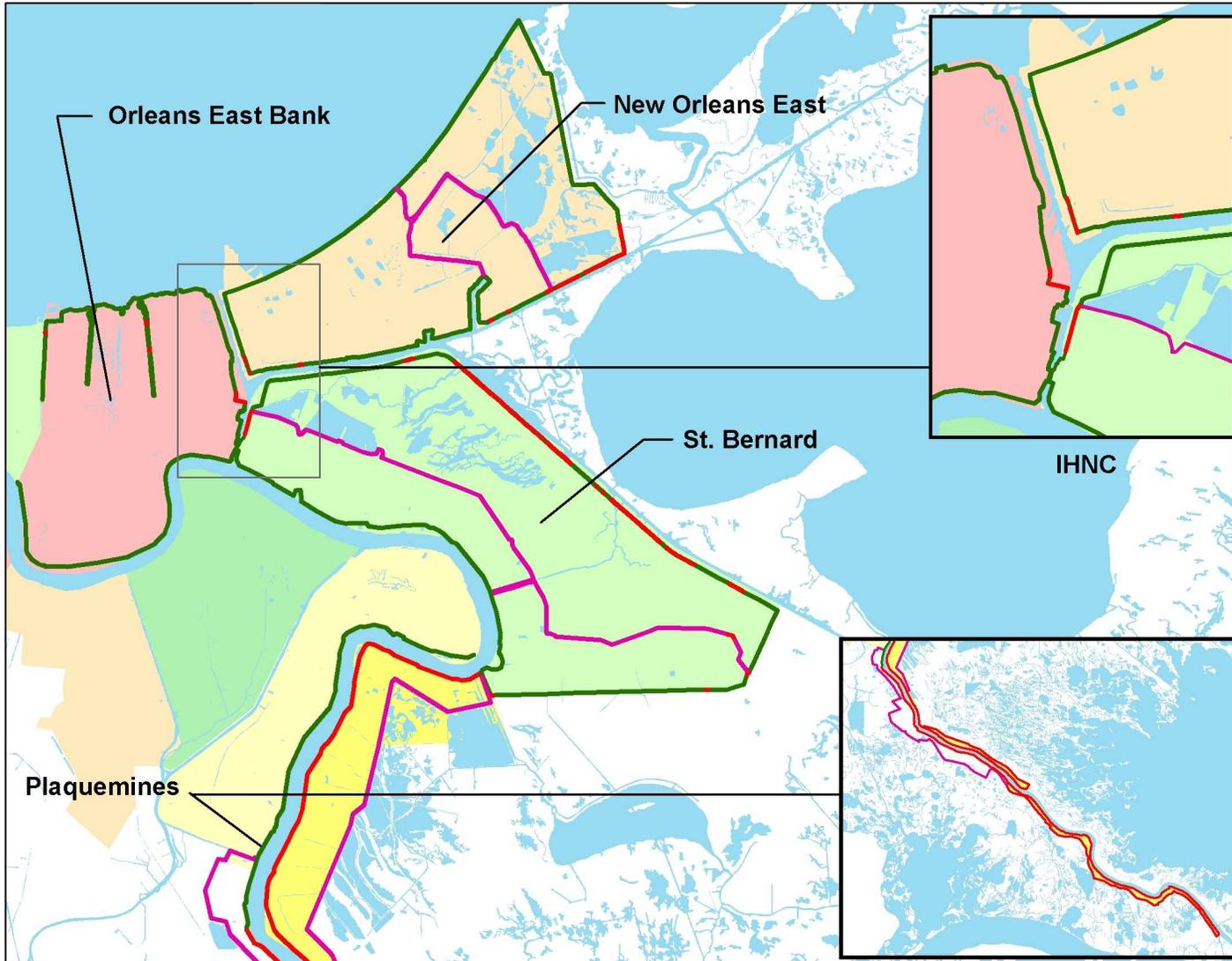
Previously Appropriated Funds	\$2.08	
Pending Supplemental Request	\$1.46	
<b>Total Funds Provided/Requested</b>		<b>\$3.54</b>
<b>Additional Cost for New Orleans Metro Area and Belle Chase</b>		
• Floodwalls	\$1.6*	} <b>\$2.5</b>
• 100-year Protection	\$0.8	
• Non-Federal Levees (West Bank of Plaquemines)	\$0.2	
<b>Additional Costs for Lower Plaquemines Parish</b>		
• T-Walls	\$0.5	} <b>\$1.6</b>
• 100-Year Protection	\$1.1	
<b>Total Additional Costs</b>		<b>\$4.10</b>

\* Assume 36 miles of floodwall replacement per IPET analysis



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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

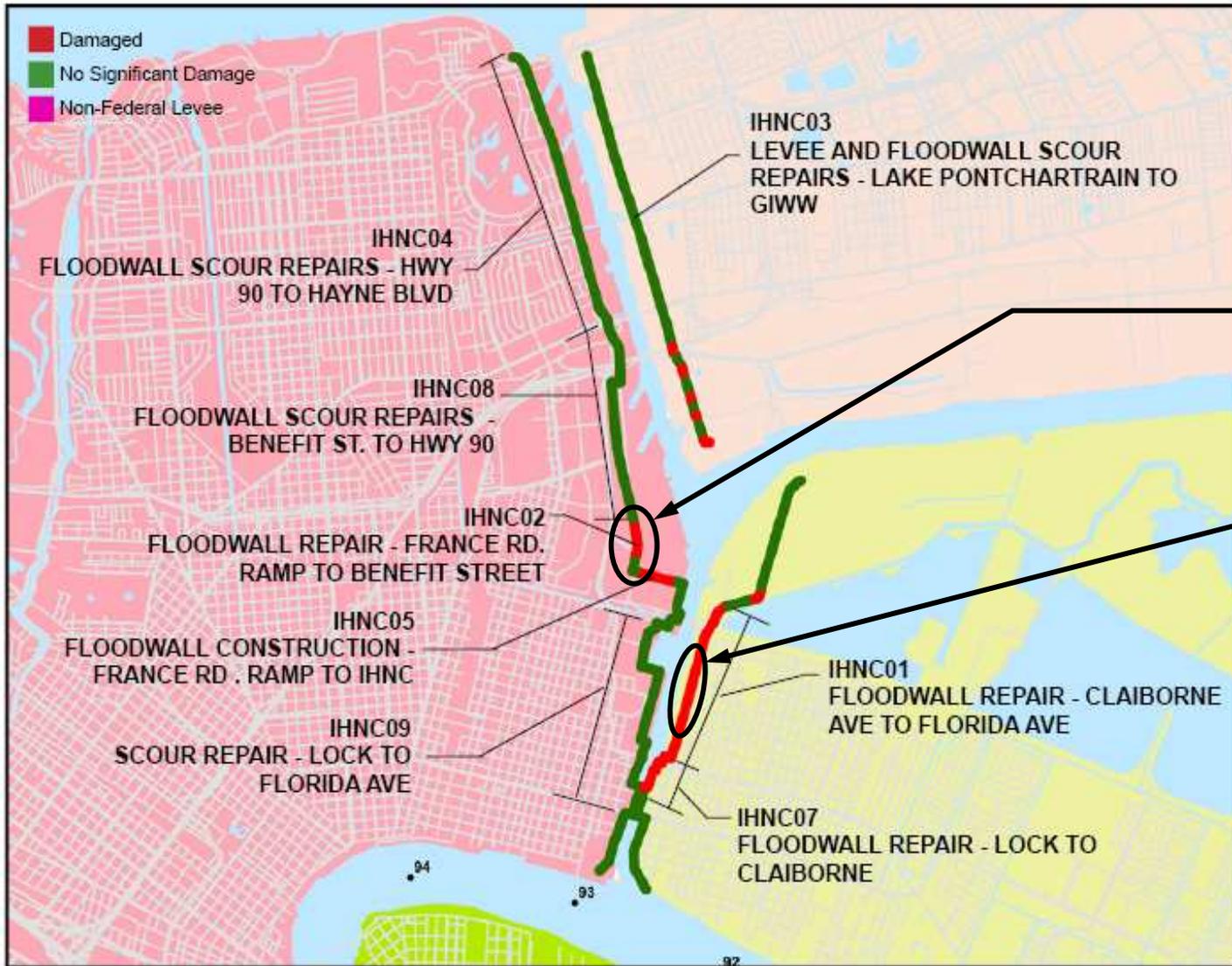
**81 % Complete**

**26 of 59 contracts complete**



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# Inner Harbor Navigation Canal



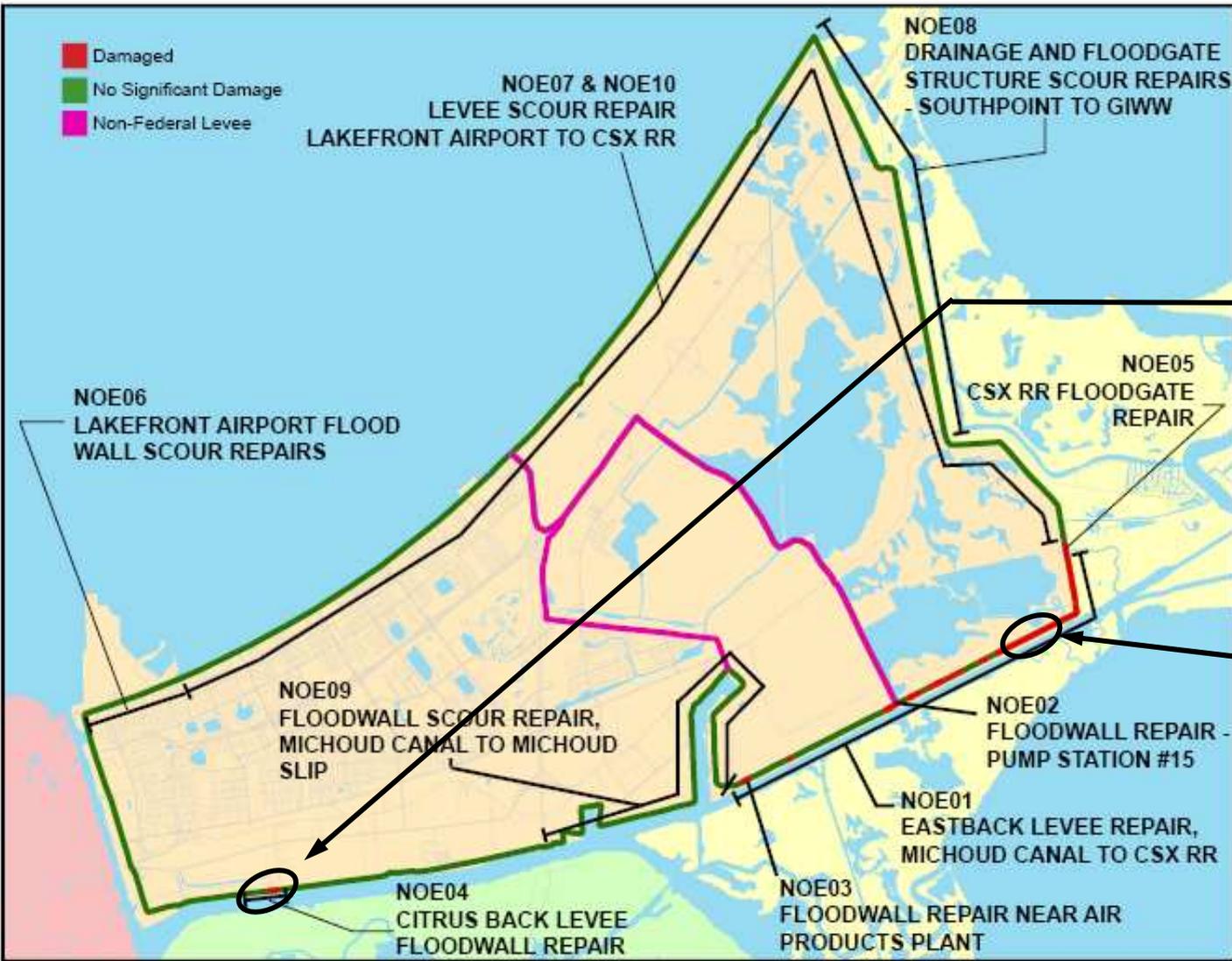
**Percent of Pre-Katrina  
Protection Restored**

**93 % Complete**



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# New Orleans East



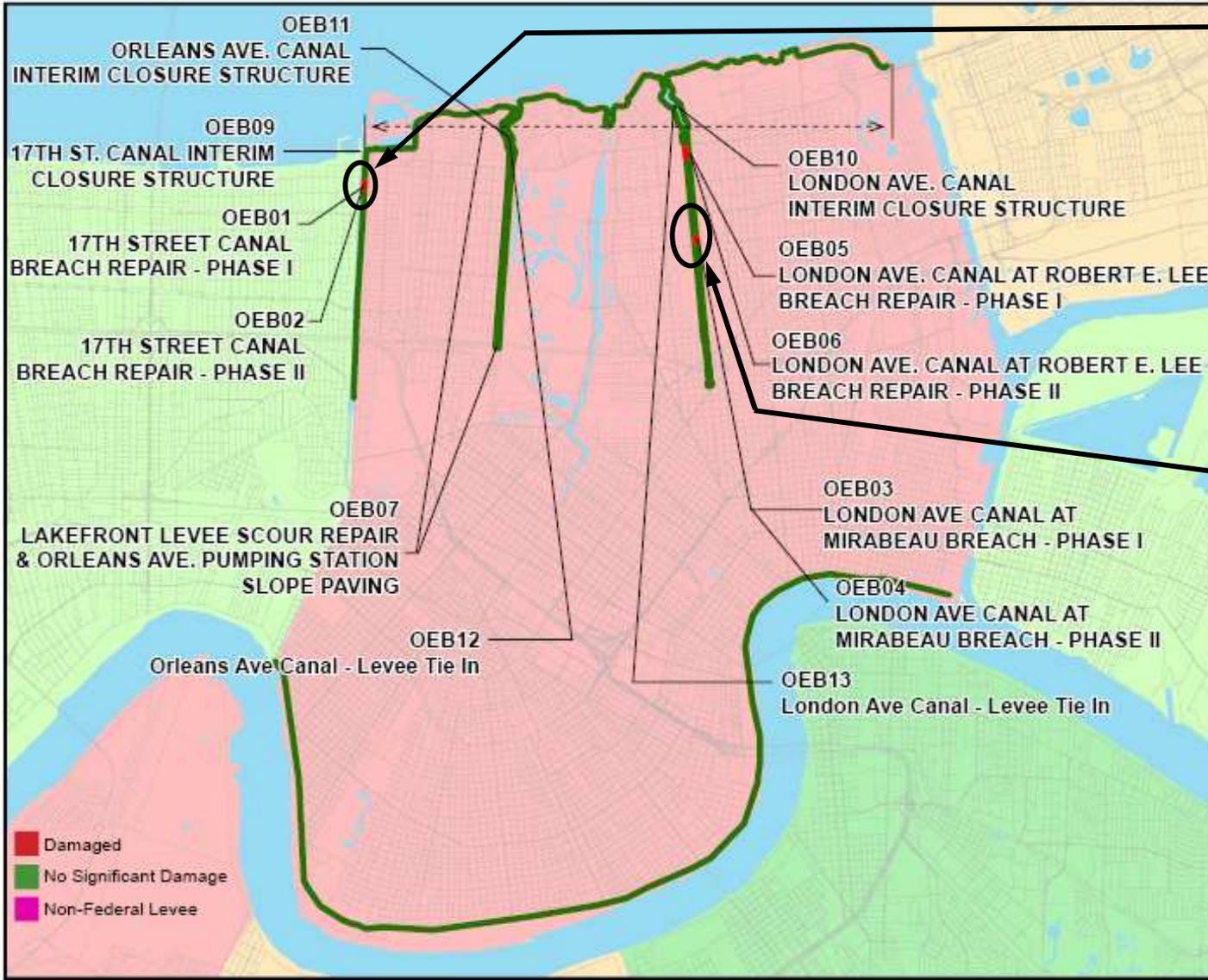
**Percent of Pre-Katrina Protection Restored**  
**93 % Complete**

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# Orleans East Bank

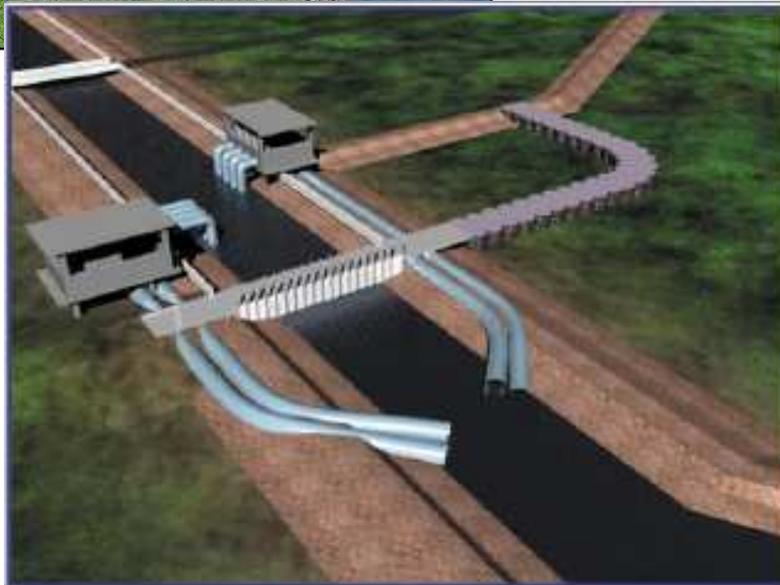
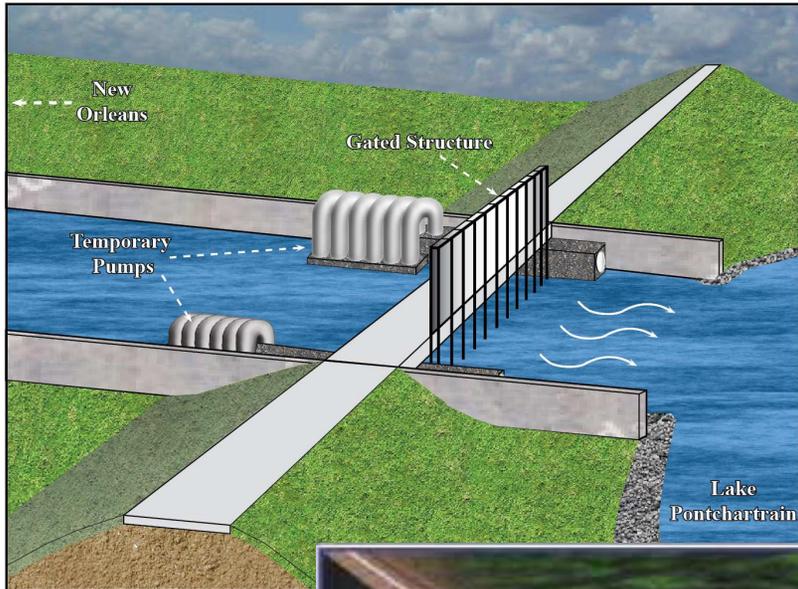


**Percent of Pre-Katrina Protection Restored**  
**64 % Complete**



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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

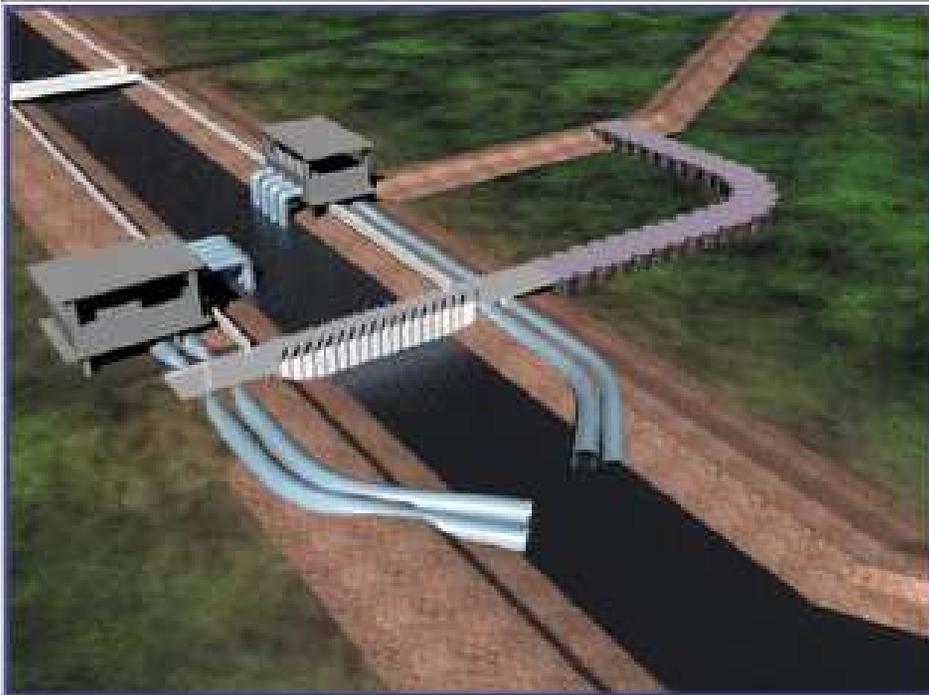


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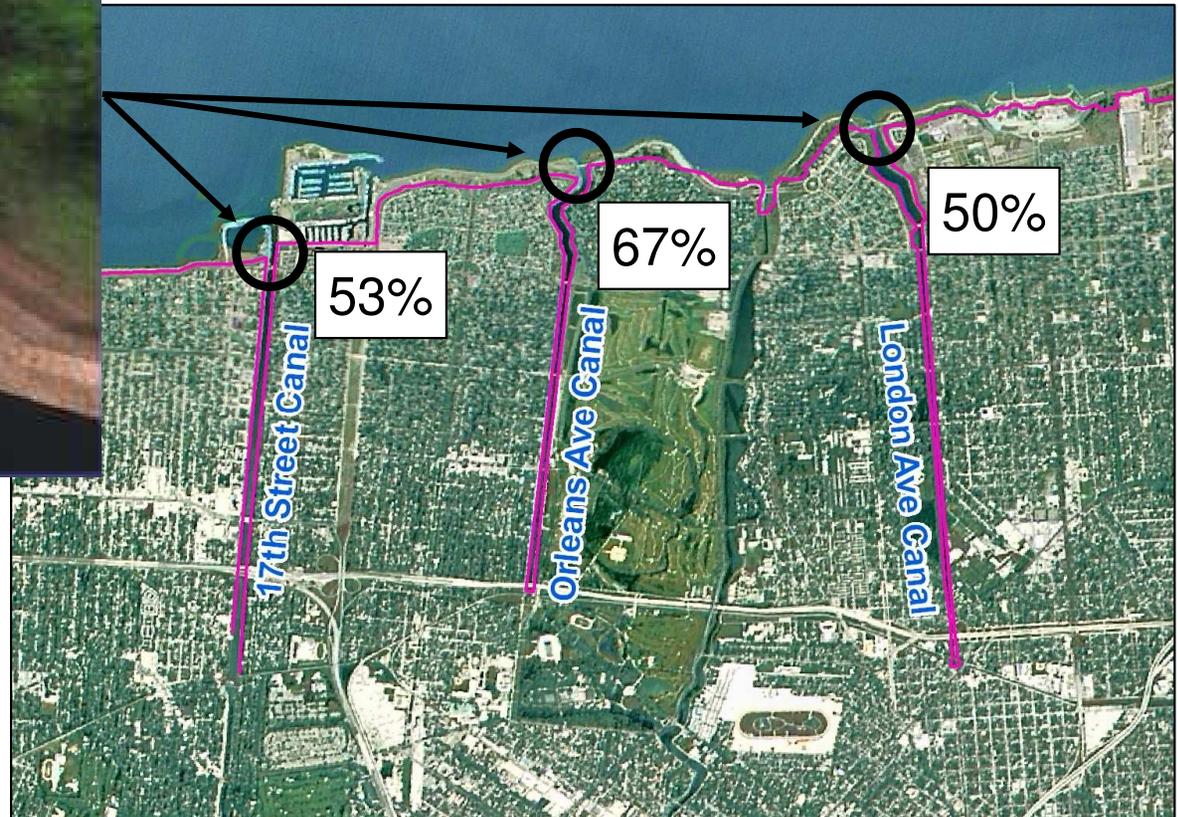


# New Orleans Outfall Canal Interim Closure Structure Status

17 <sup>th</sup> St. Canal CS	53% Complete
Orleans Ave. CS	67% Complete
London Ave. Canal CS	50% Complete



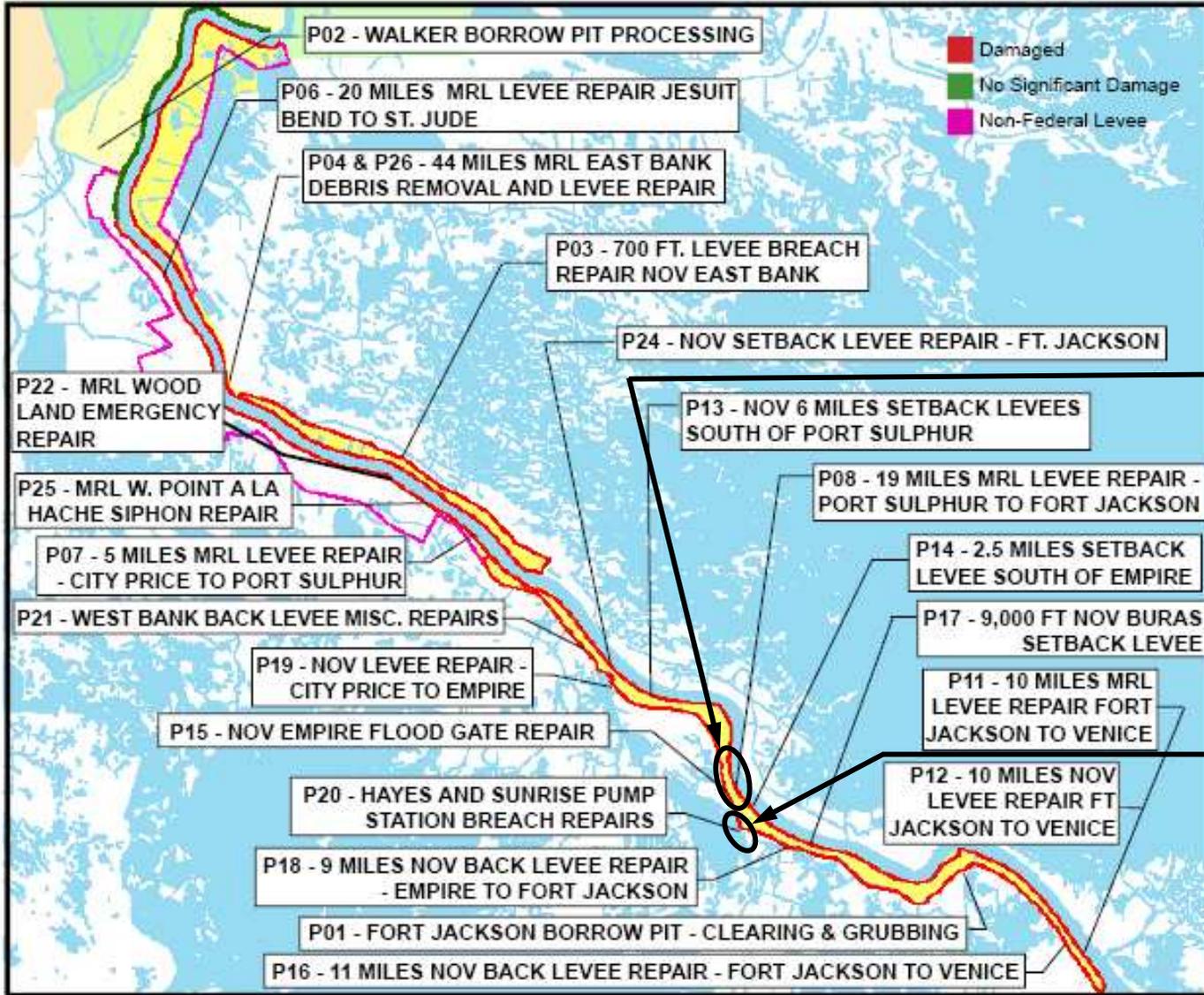
Interim Closure Structure





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# Plaquemines Parish



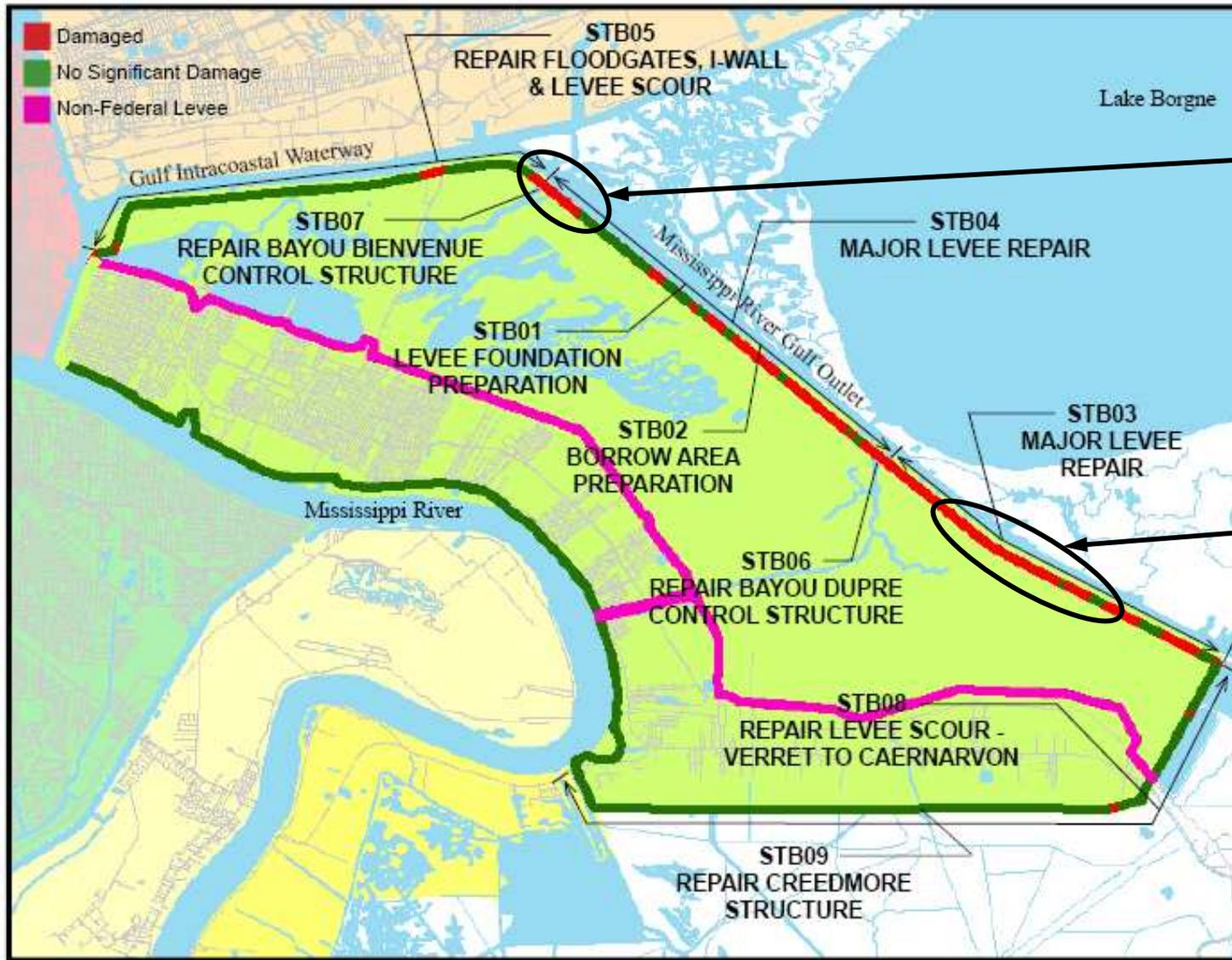
**Percent of Pre-Katrina Protection Restored**

**86 % Complete**



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# Saint Bernard Parish



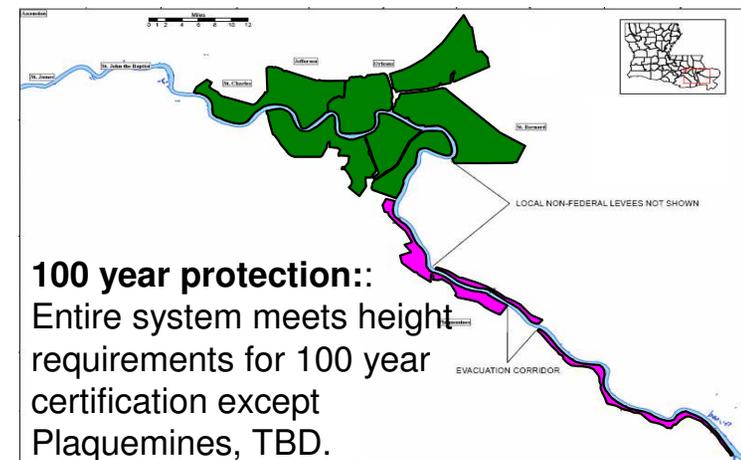
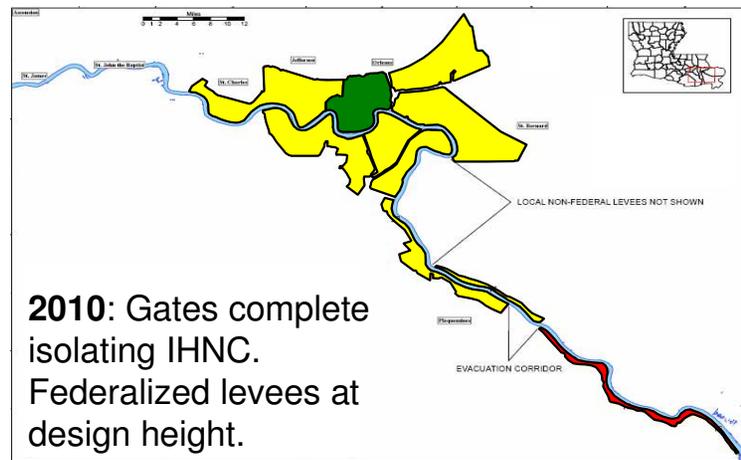
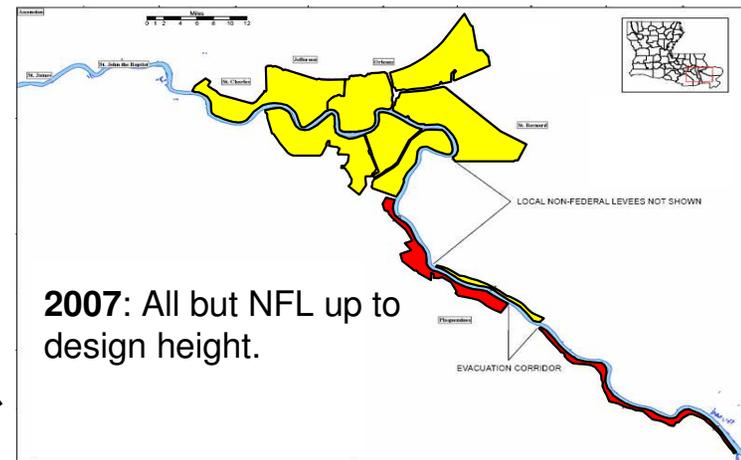
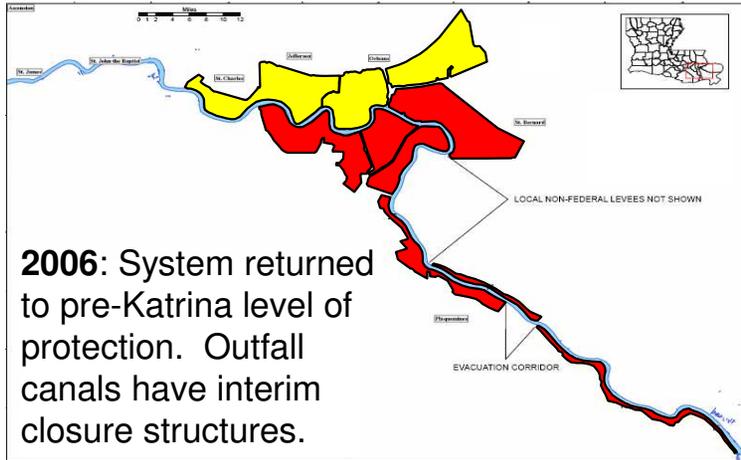
**Percent of Pre-Katrina Protection Restored**  
**93 % Complete**

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# Relative Risk of Flooding 100 Year Storm



### 100 Year Storm:

Based on FEMA still water elevations and wave height of 1/2 still water elevations resulting from the worst case track for each area of a hurricane that statistically has a 1 out of 100 (or one percent) chance of being equaled or exceeded in any given year.

- No Overtopping – rainfall only
- Wave Over wash only – breaches possible
- Surge Overtopping – breaches probable
- Level of Protection to be determined



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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**

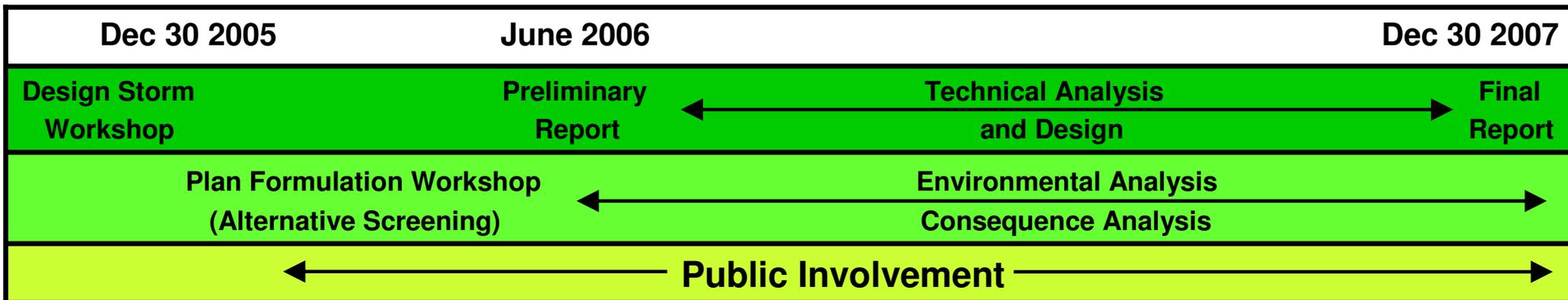


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# Louisiana Coastal Protection and Restoration - Status



- 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



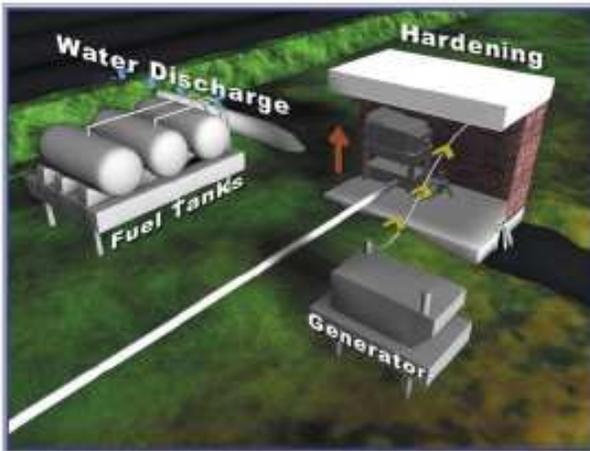
## ADDITIONAL IMPROVEMENTS



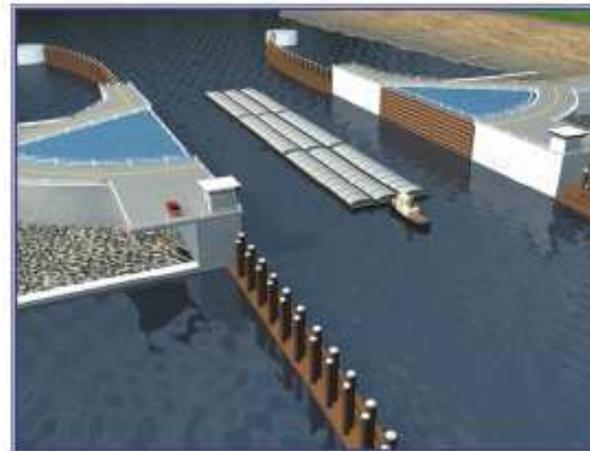
Permanent  
Pumps &  
Closures



Selective  
Armoring



Storm-Proofing  
Pump Stations



Navigable  
Closures

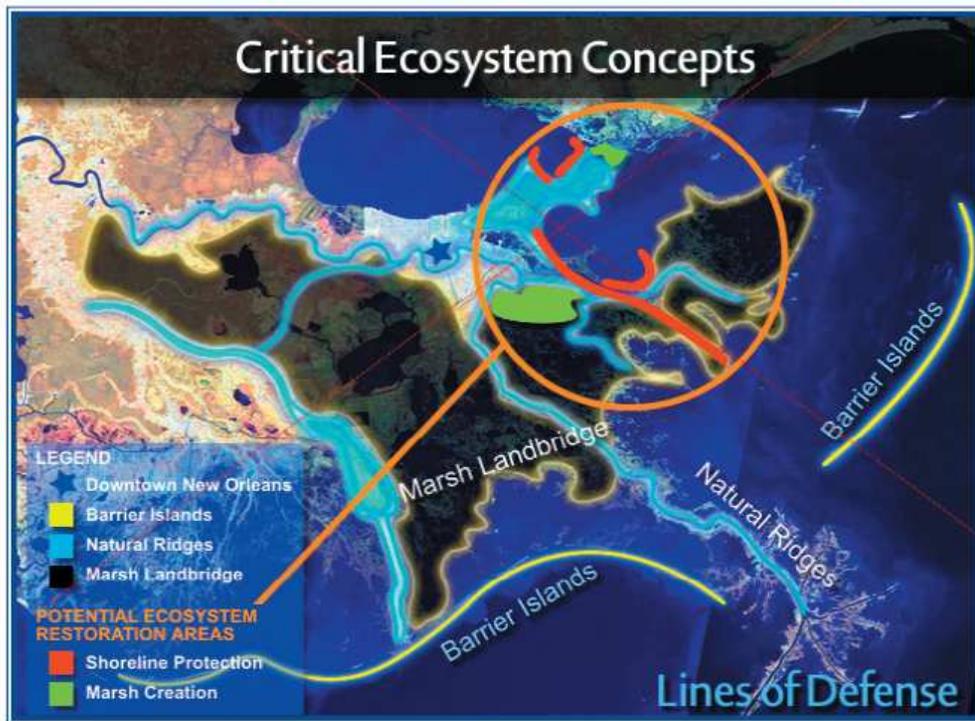


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# Southeast Louisiana Hurricane Protection



## ADDITIONAL IMPROVEMENTS



Wetlands and Ecosystem Restoration



Incorporations of non-federal levees in Plaquemines