



Presented to:

Aquaterra Forum

by

COL Al Lee

Commander, New Orleans District

February 10, 2009



Agenda

- **Organization and Mission**
- **Louisiana's Relevance to our Nation**
- **Land Change for Coastal Louisiana**
- **Topography of New Orleans**
- **Hurricanes Katrina & Rita**
- **Actions For Change**
- **How We Deliver**
- **The Greater New Orleans Hurricane and Storm Damage Risk Reduction System (GNHSDRRS)**
- **Ecosystem & Coastal Restoration**
- **Buying Down Risk**



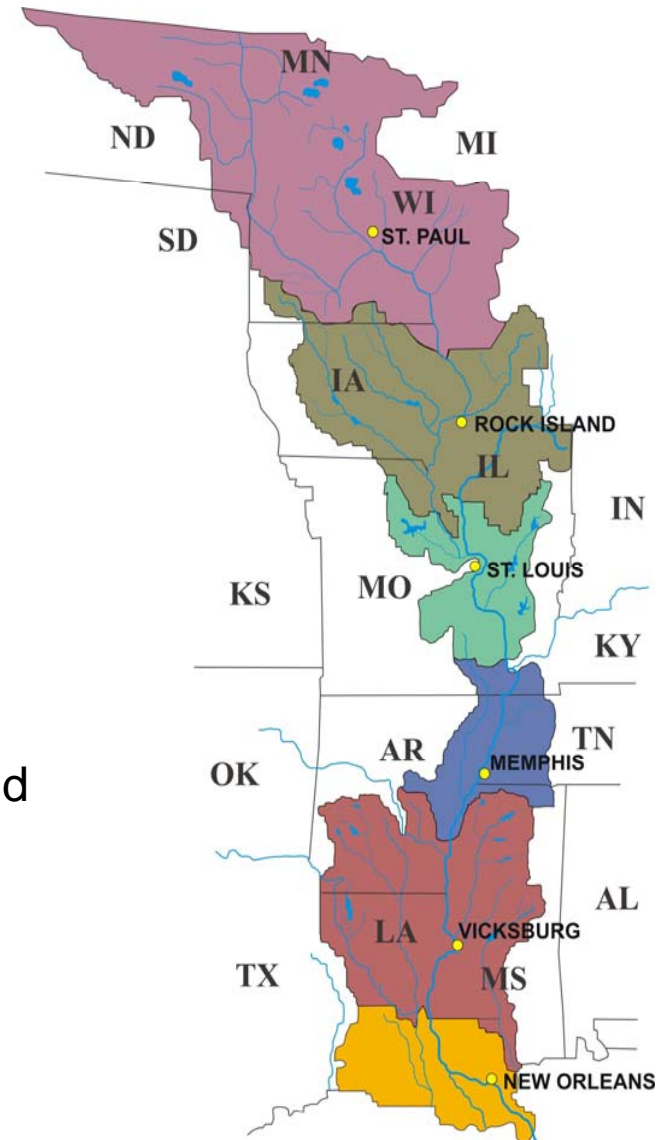
US Army Corps of Engineers





Mississippi Valley Division

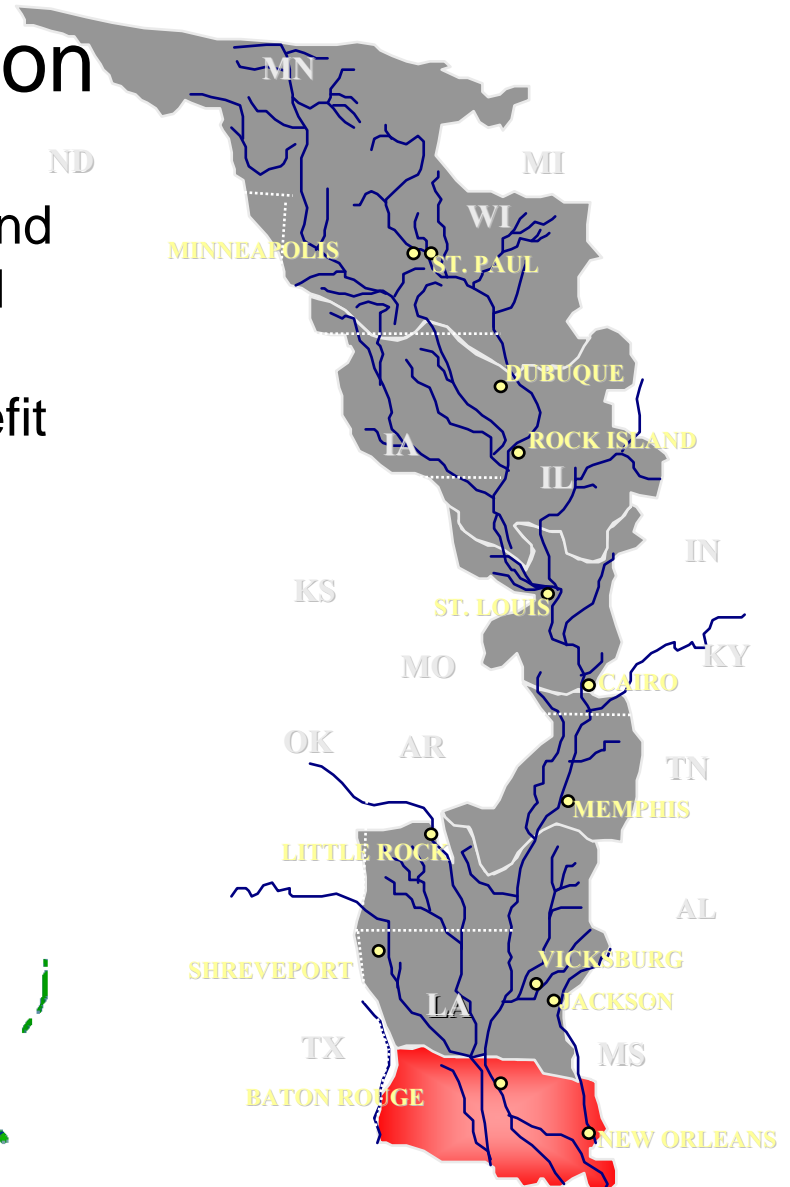
- Six districts
- 5,000 employees
- 370,000 square mile (958,300 km²) boundary, encompassing all or parts of 12 states
- 4,267 miles (6867 km) of commercial waterways
- 36 flood control reservoirs
- 59 locks
- Drainage basin covers 1.25 million square miles and gathers water from 41% of the continental US (31 states & 2 Canadian provinces)





New Orleans District's Mission

Provide comprehensive water resources management to include navigation, flood and hurricane storm damage risk reduction and environmental stewardship for South Louisiana to ensure public safety and benefit the nation. Be prepared to conduct contingency operations and support the national response plan.



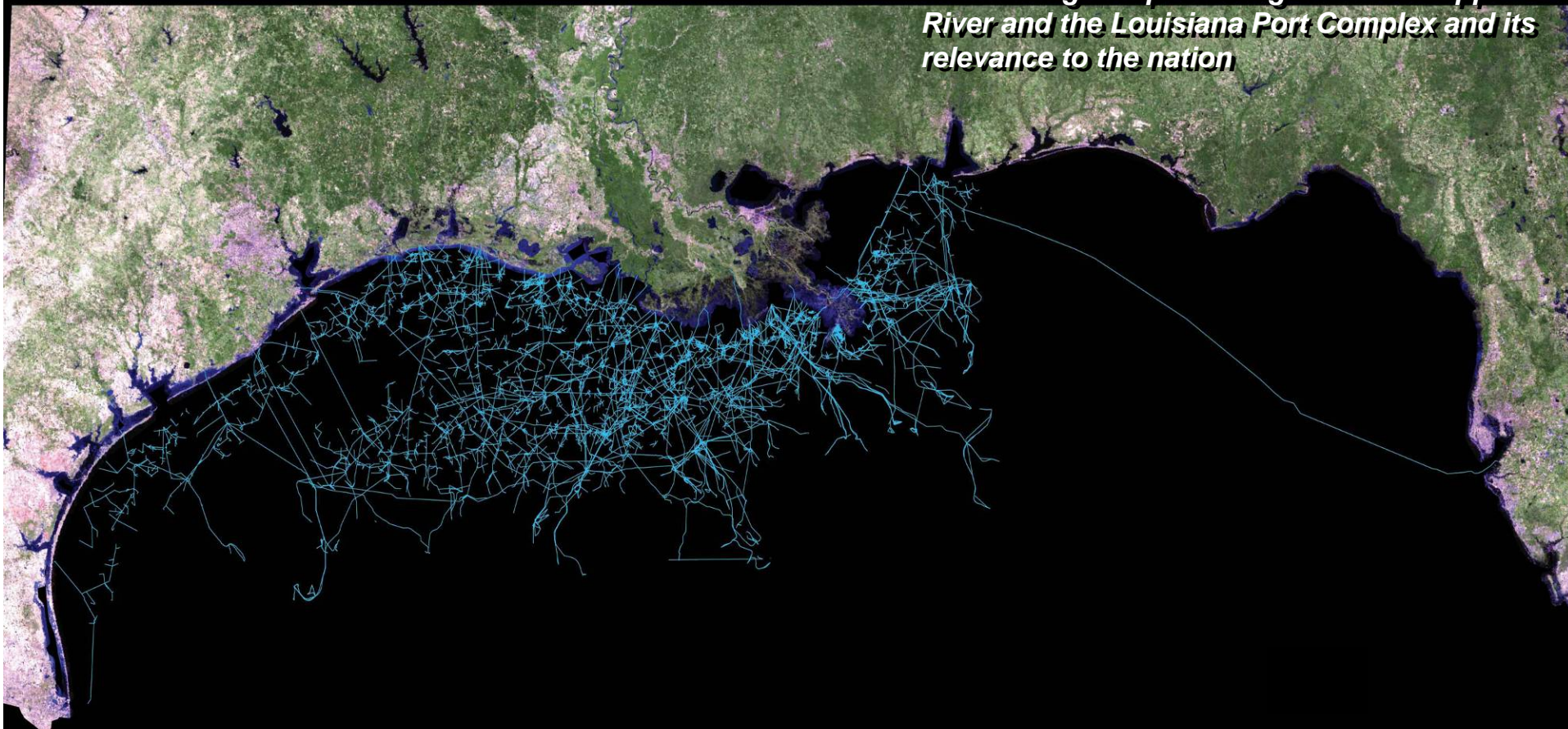


USGS National Wetlands Research Center

THE NATION'S ENERGY COAST

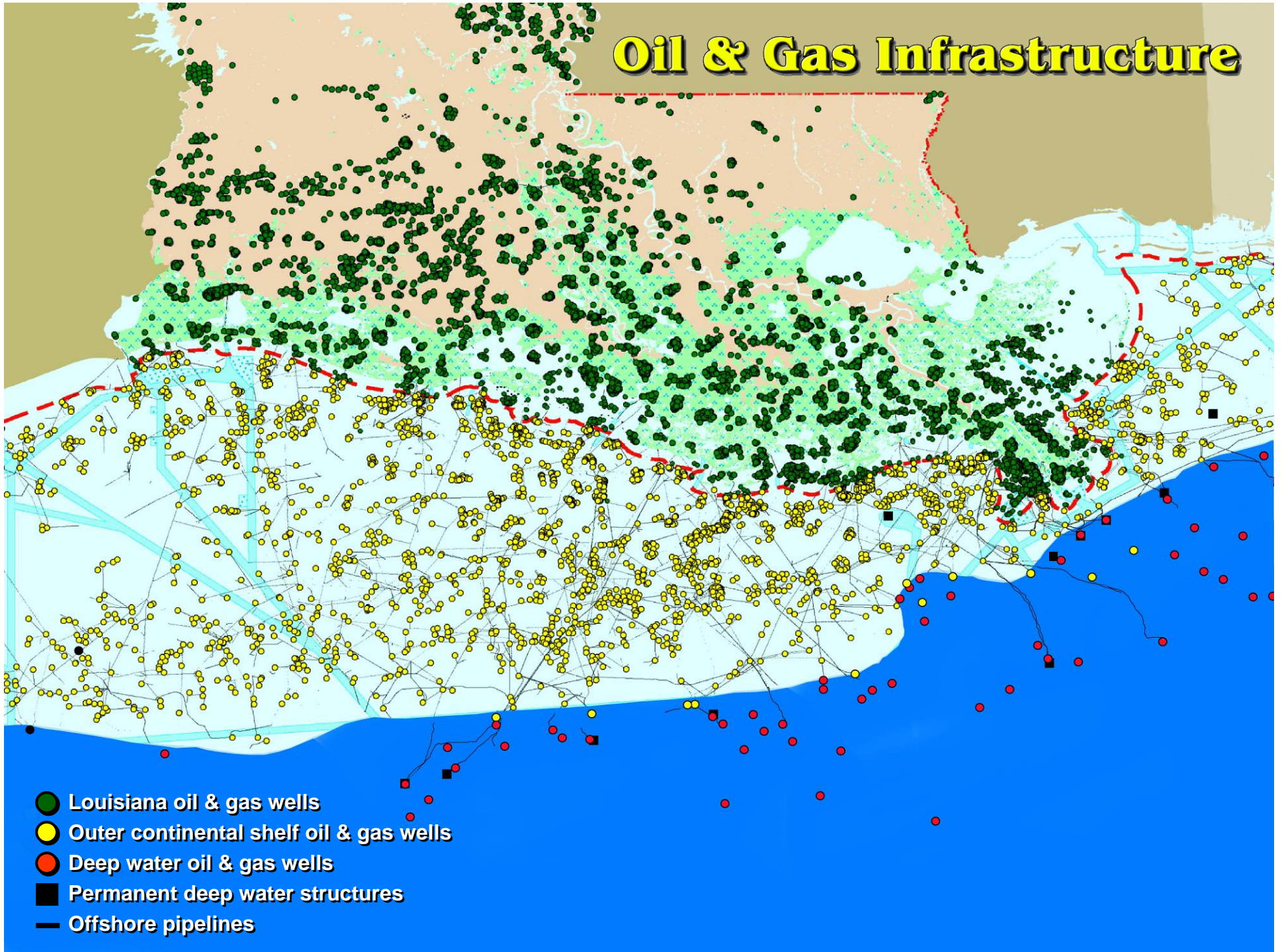
Offshore Oil and Gas Pipelines in the Gulf of Mexico

Maintaining and protecting the Mississippi River and the Louisiana Port Complex and its relevance to the nation



 Pipelines and Flowlines

Oil & Gas Infrastructure



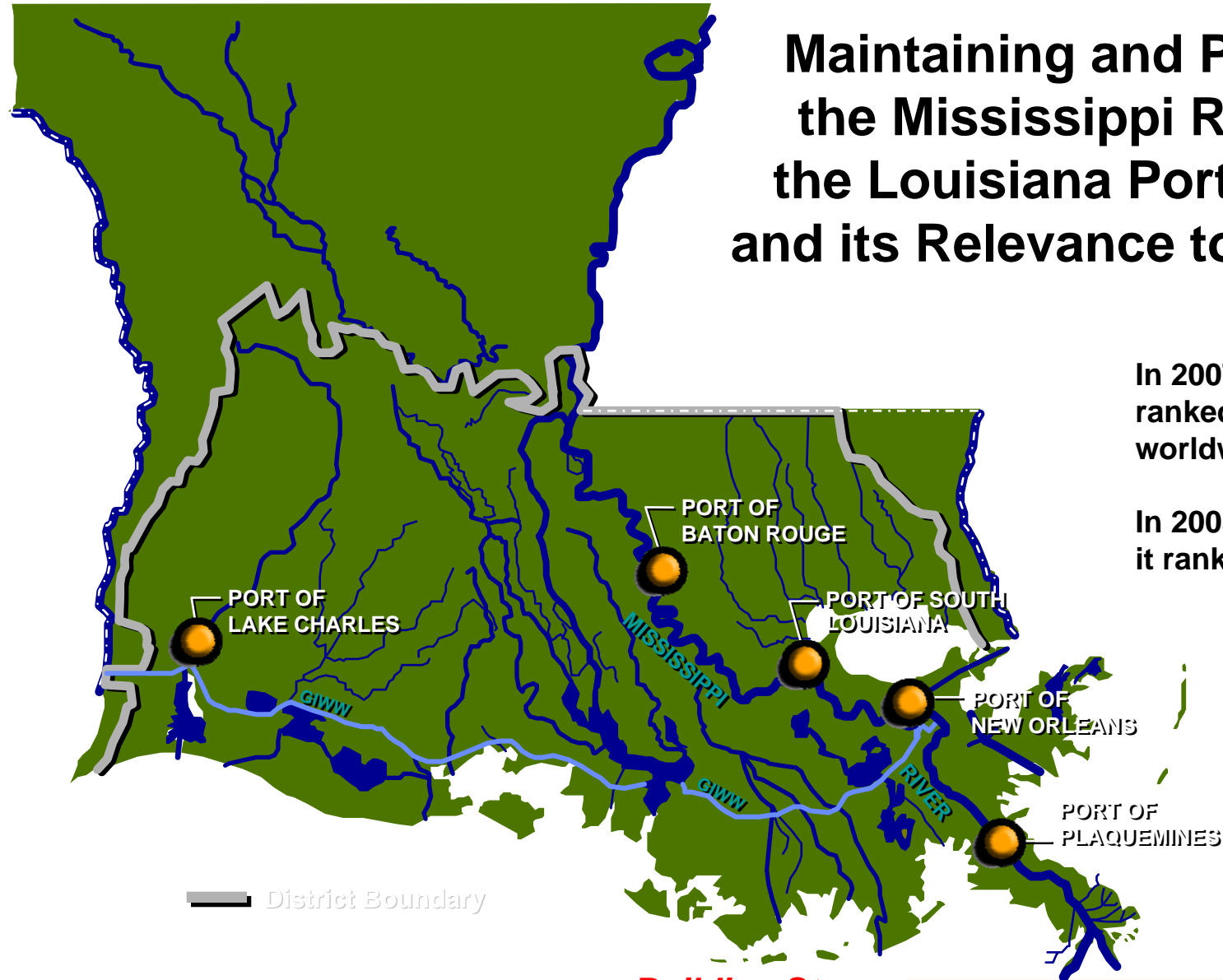
Coastal Louisiana Fisheries Importance to the Nation

- Home to 25% of Continental US commercial fisheries
- Over 1 billion pounds caught annually
- Dockside value \$291 million
- Recreation value \$944 million





Maintaining and Protecting the Mississippi River and the Louisiana Port Complex and its Relevance to the Nation



In 2007, our port complex ranked #4 in total tonnage worldwide

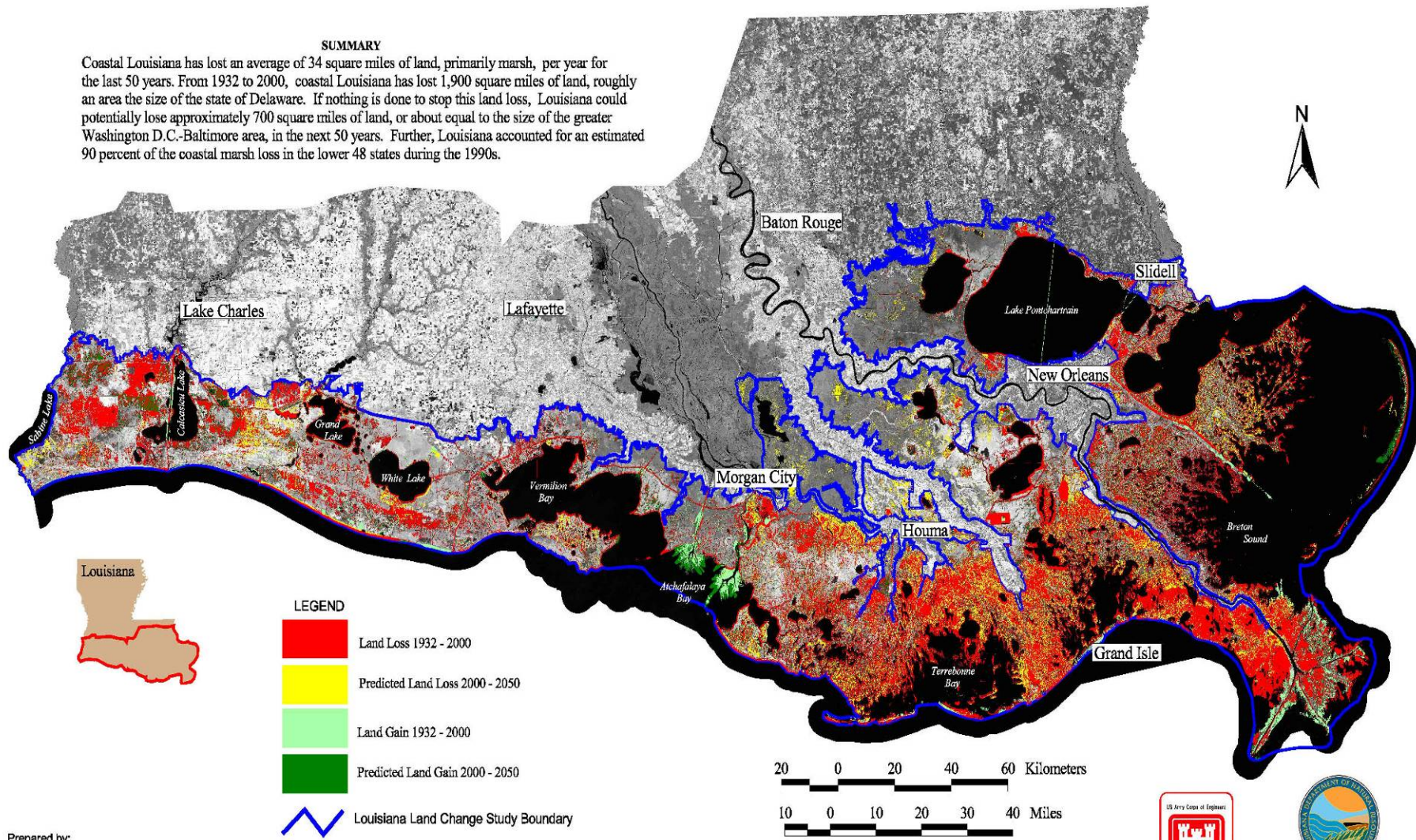
In 2005 before Katrina, it ranked #2 worldwide



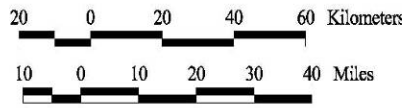
100+ Years of Land Change for Coastal Louisiana

SUMMARY

Coastal Louisiana has lost an average of 34 square miles of land, primarily marsh, per year for the last 50 years. From 1932 to 2000, coastal Louisiana has lost 1,900 square miles of land, roughly an area the size of the state of Delaware. If nothing is done to stop this land loss, Louisiana could potentially lose approximately 700 square miles of land, or about equal to the size of the greater Washington D.C.-Baltimore area, in the next 50 years. Further, Louisiana accounted for an estimated 90 percent of the coastal marsh loss in the lower 48 states during the 1990s.



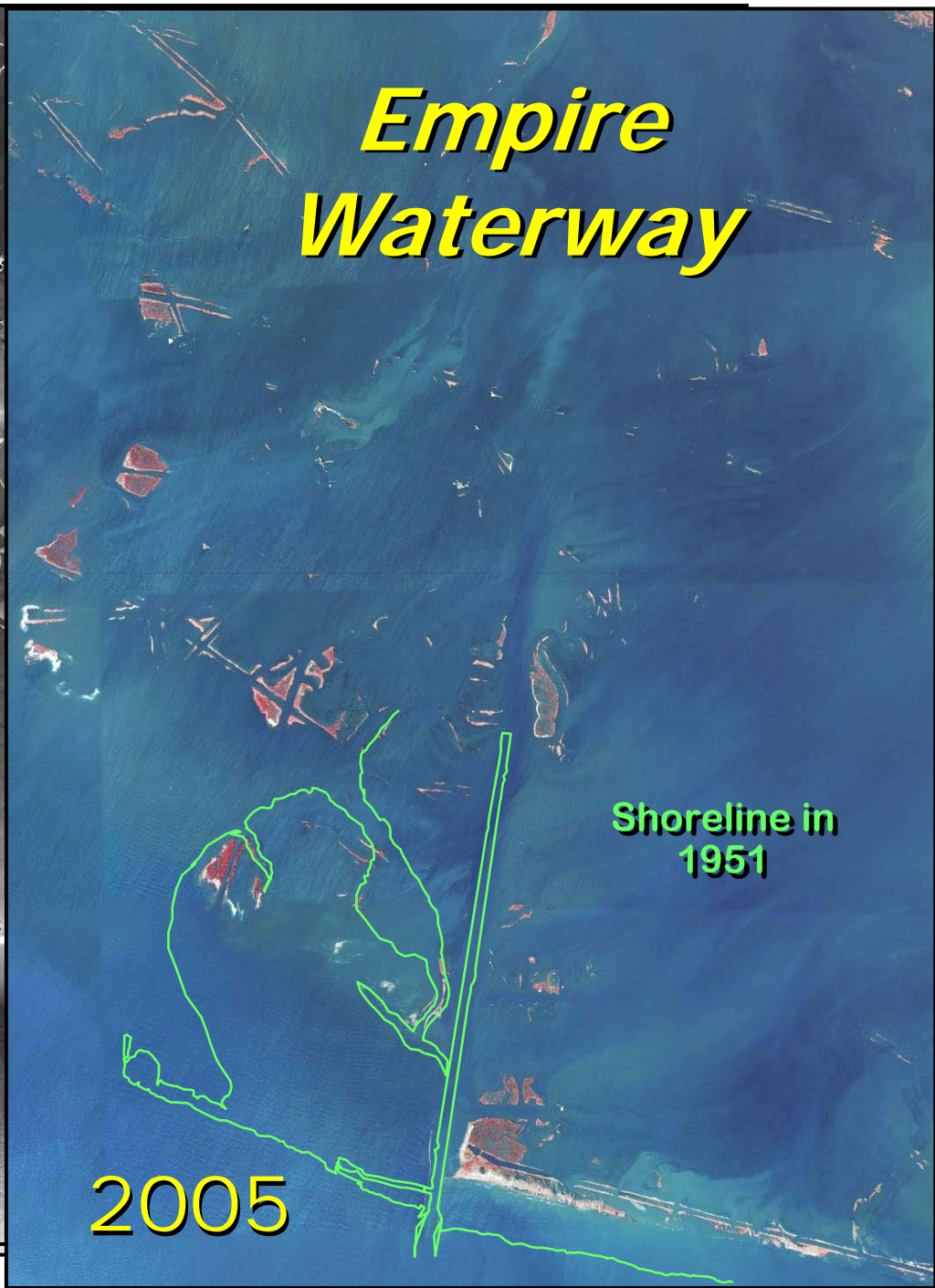
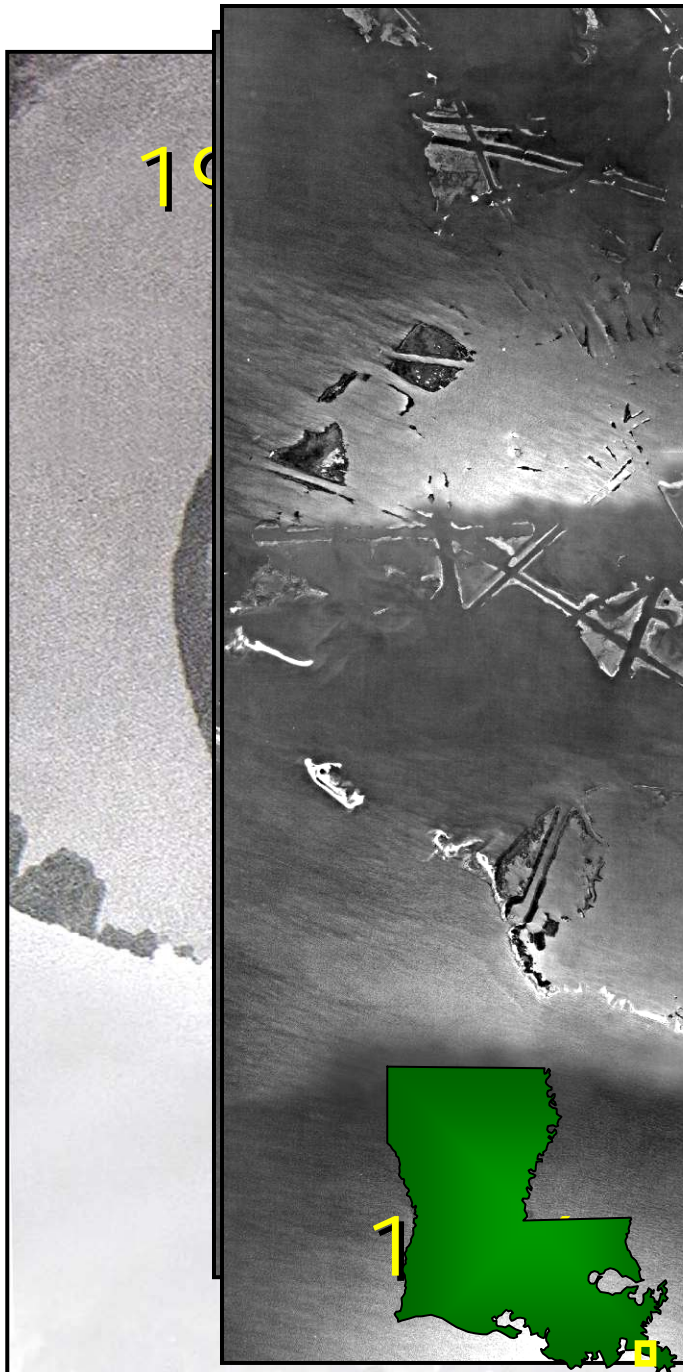
- LEGEND**
- Land Loss 1932 - 2000
 - Predicted Land Loss 2000 - 2050
 - Land Gain 1932 - 2000
 - Predicted Land Gain 2000 - 2050
 - Louisiana Land Change Study Boundary



Prepared by:
U.S. Geological Survey
National Wetlands Research Center
Lafayette, LA

Background is 2000 Thematic Mapper panchromatic band.





L A K E P O N T C H A R T R A I N

STREET DIRECTORY.

TO FIND THE LOCALITY OF ANY STREET

TAKE THE DESIGNATION OPPOSITE THE NAME IN THE TABLE BELOW AND THEY FIND ON THE MAP THE SQUARE OR BLOCK BY THE LETTER OF THE DESIGNATION AND THE NUMBER OF THE STREET.

Table with multiple columns listing street names and their corresponding grid designations for the city of New Orleans.

DIRECTORY

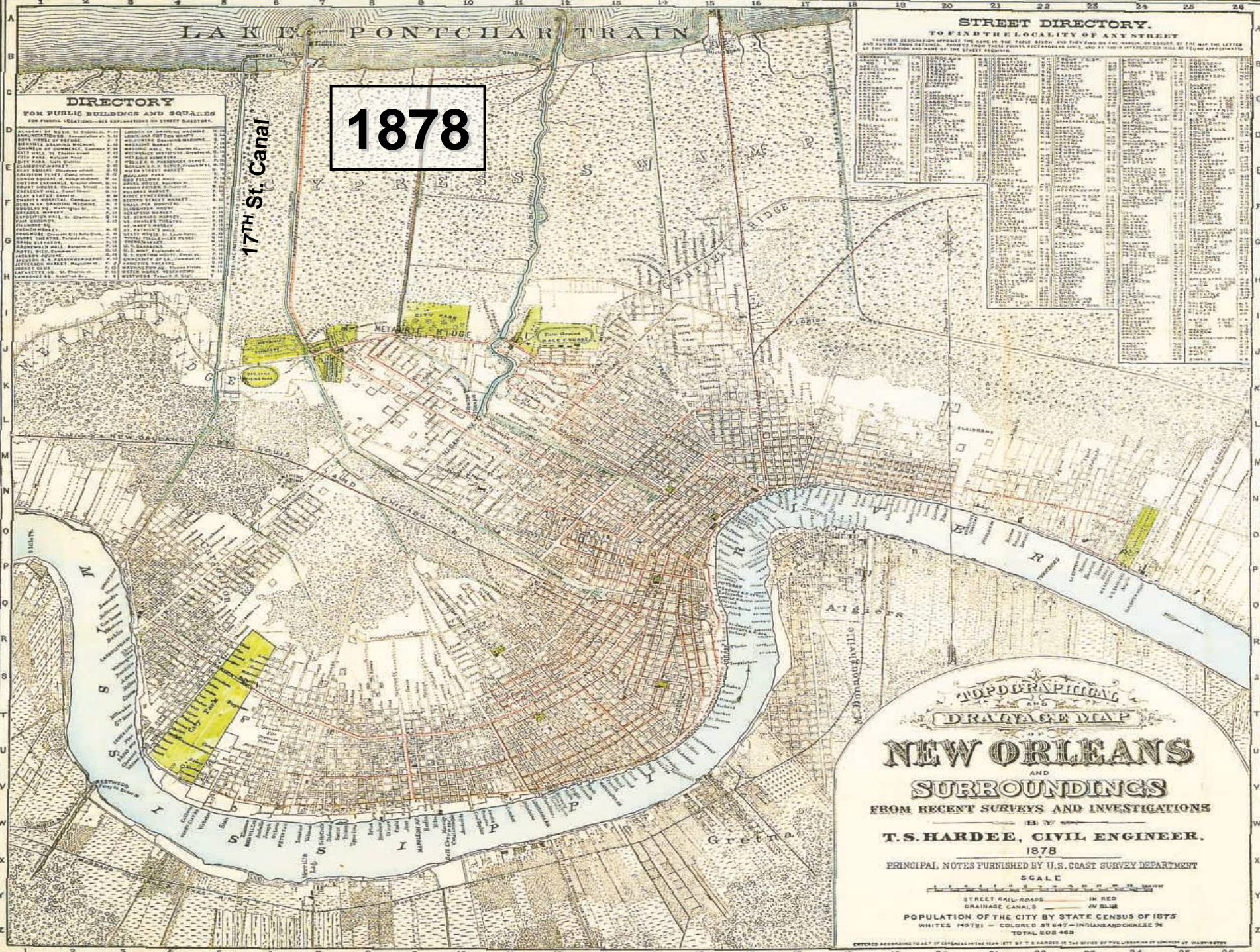
FOR PUBLIC BUILDINGS AND SQUARES

FOR PUBLIC LOCATIONS—SEE EXPLANATIONS ON STREET DIRECTORY.

Table listing various public buildings, squares, and locations with their grid coordinates.

1878

17TH St. Canal



TOPOGRAPHICAL
DRAINAGE MAP
NEW ORLEANS
AND
SURROUNDINGS
FROM RECENT SURVEYS AND INVESTIGATIONS

T. S. HARDEE, CIVIL ENGINEER.
1878

PRINCIPAL NOTES FURNISHED BY U.S. COAST SURVEY DEPARTMENT

SCALE

STREET RAIL-ROADS IN RED
DRAINAGE CANALS IN BLUE

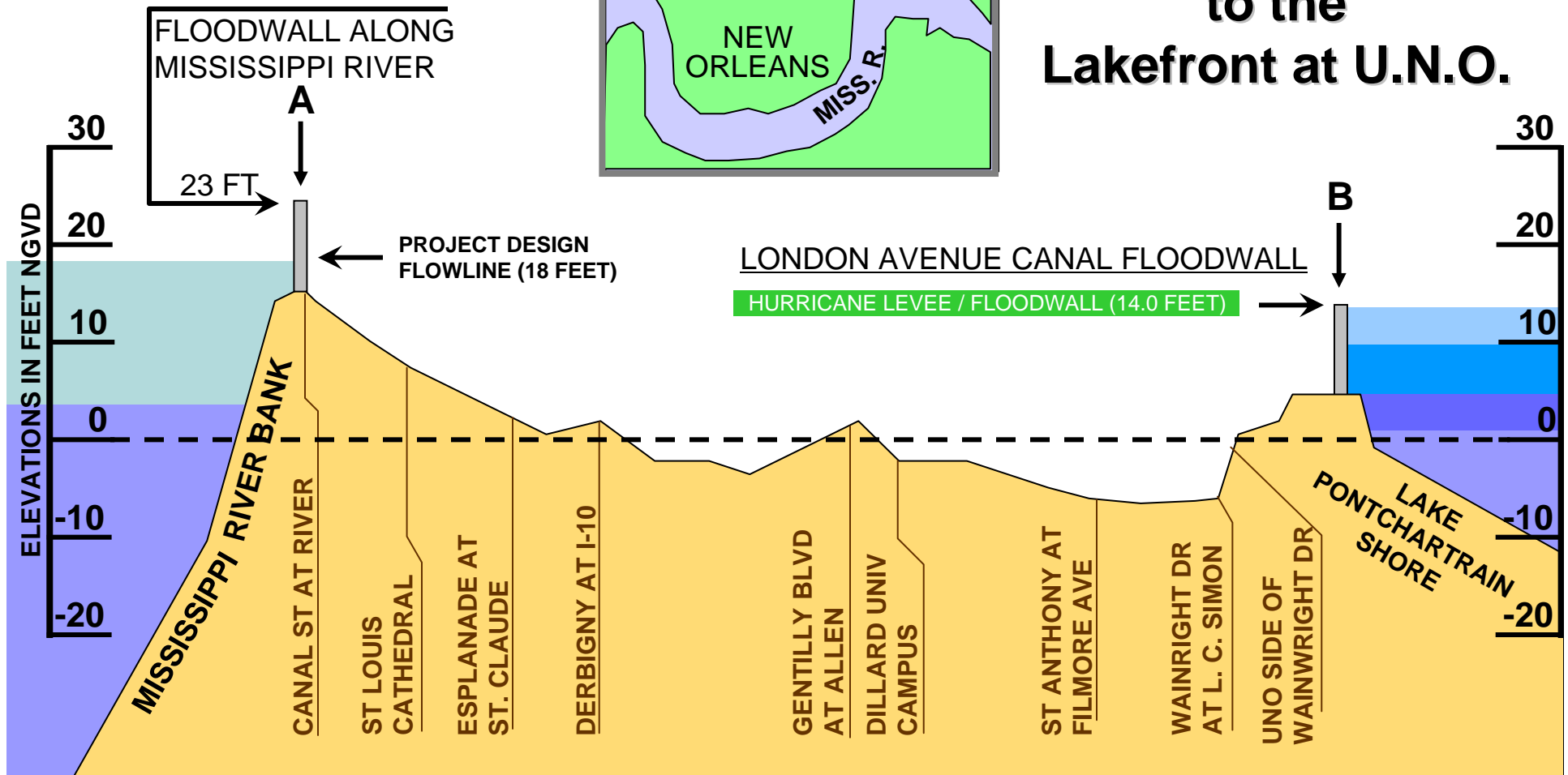
POPULATION OF THE CITY BY STATE CENSUS OF 1875
WHITES 149,721 - COLORED 37,547 - INDIANS AND CHINESE 74
TOTAL 187,342



City of New Orleans Ground Elevations and Topography



From Canal St. at Mississippi River to the Lakefront at U.N.O.

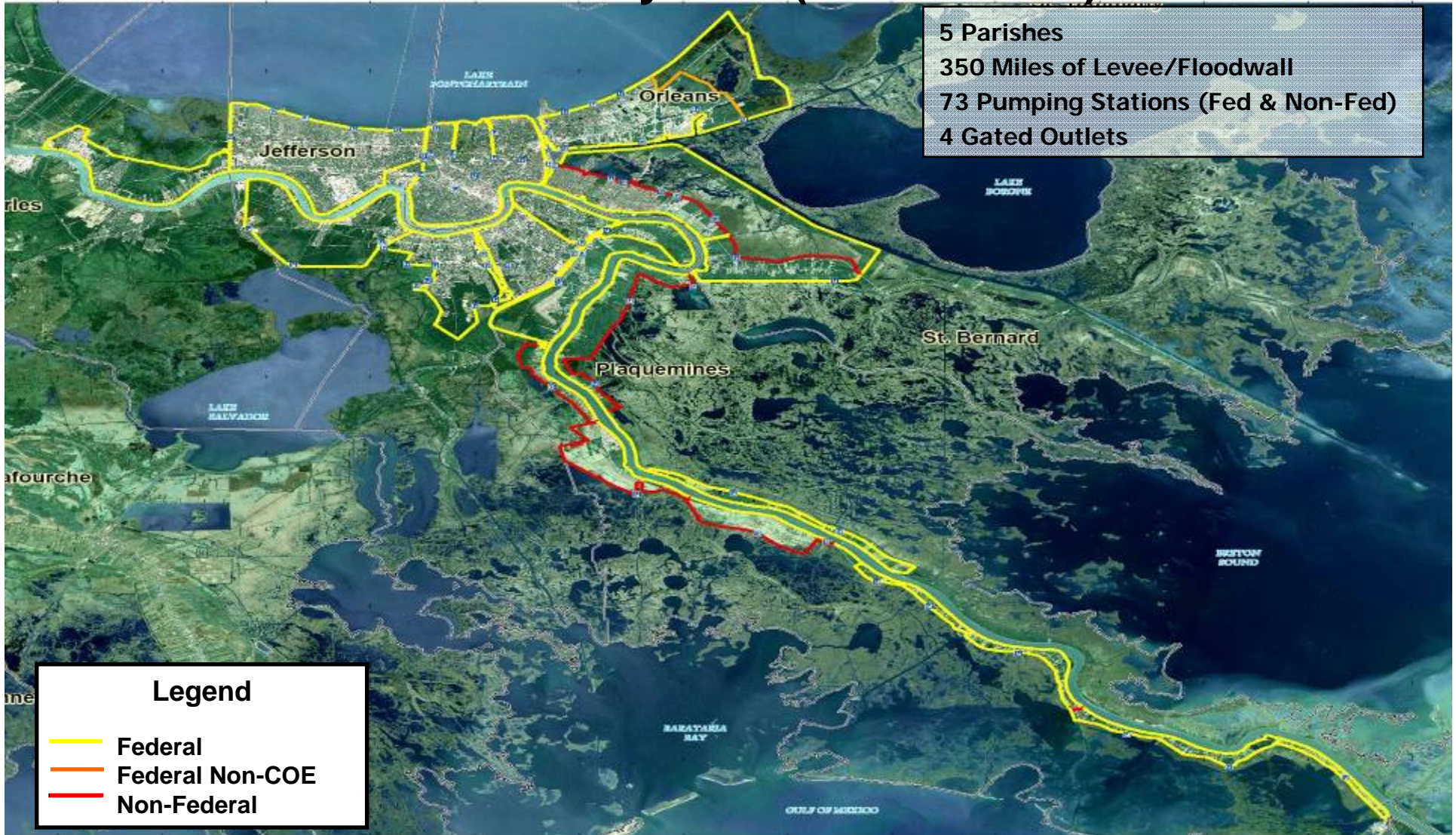




US Army Corps of Engineers



Greater New Orleans Hurricane and Storm Damage Risk Reduction System (GNHSDRRS)





Hurricane Katrina

Aug 29, 2005



- One of America's largest natural disasters
- Cat 5 less than 12 hrs before landfall
- 127 MPH wind at Louisiana landfall
- Maximum surge of 28 to 30 feet (8.5 to 9+ meters) along Mississippi coast

Hurricane Rita

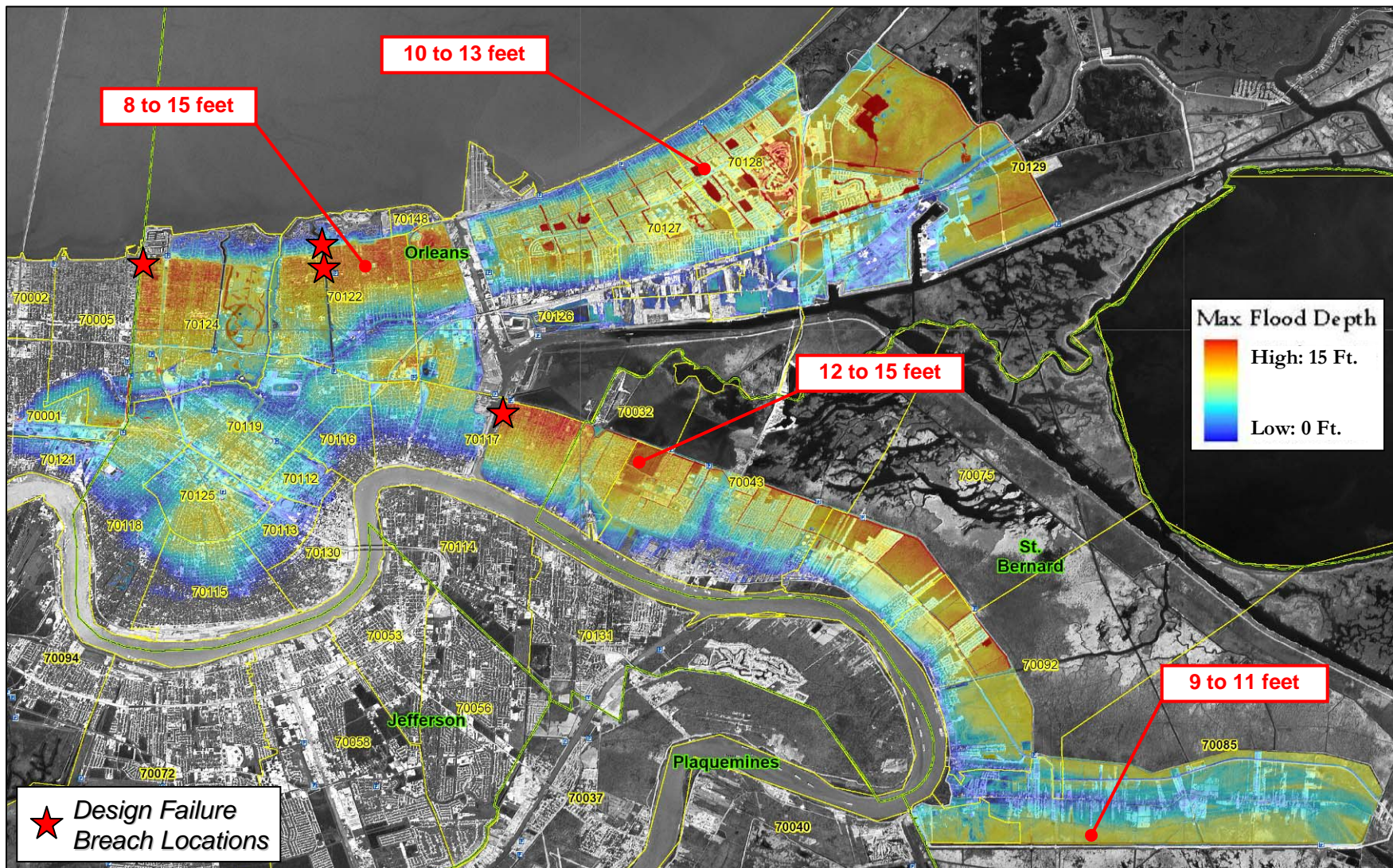
Sep 24, 2005



- Cat 4 less than 12 hrs before landfall
- 175 MPH (281 KM) max sustained winds in Gulf of Mexico
- 120 MPH (193 KM) max sustained winds at landfall
- Cat 3 strength at landfall



New Orleans- Maximum Flooding Depth





“The Corps of Engineers has committed to provide 100-year level of protection by June 2011...or break our backs trying.”

-- Lt. Gen. Robert Van Antwerp, Chief of Engineers

CHIEF’S ACTIONS FOR CHANGE:

- 1. Comprehensive systems approach**
- 2. Risk-informed decision making**
- 3. Communication of risk to the public**
- 4. Professional and technical expertise**

CHIEF’S TENETS:

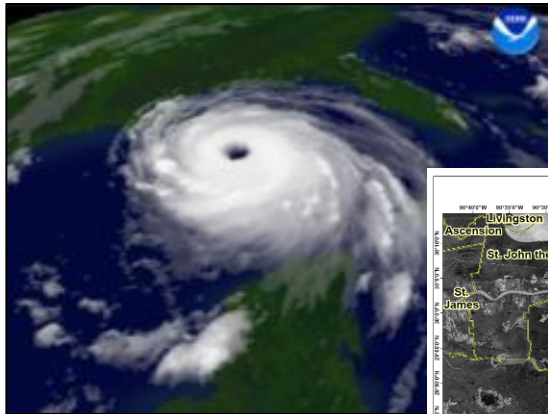
- Communicate transparency**
- Team with industry**
- Maintain mission focus**
 - Steal ideas shamelessly**
 - Share ideas willingly**



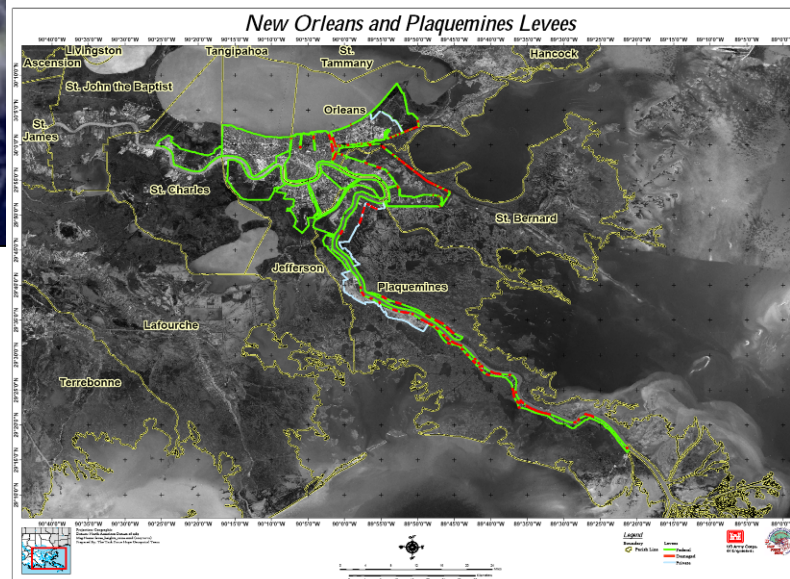


1. IPET – Interagency Performance Evaluation Task Force

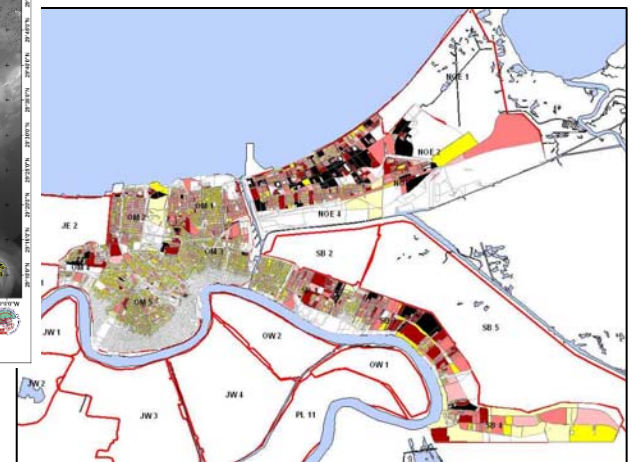
Forensic Analysis and Risk-Based System-Wide Assessment *STORM*



SYSTEM



CONSEQUENCES

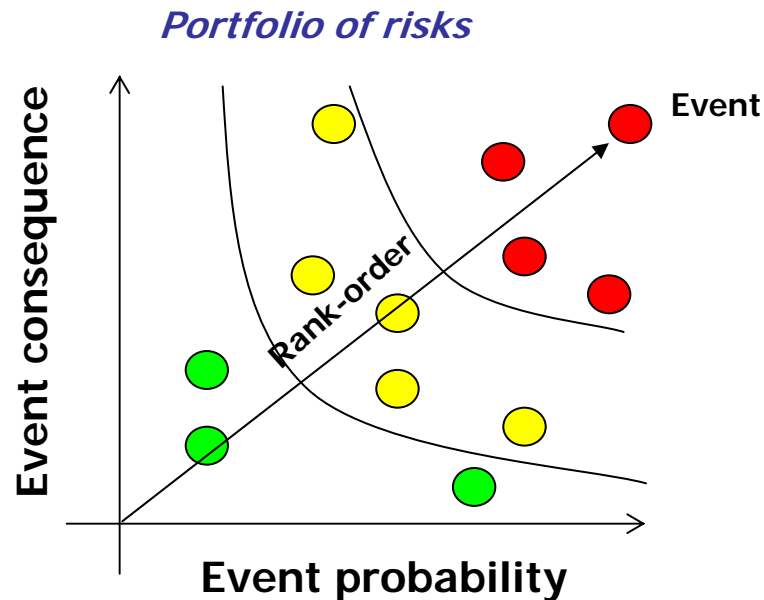


Results are
“in the Ground”



2. Risk Informed Decision Making

Risk = Probability (event) x Consequence (event)



UNITS = Expected Consequences

Fatalities

\$

Acres of Marsh

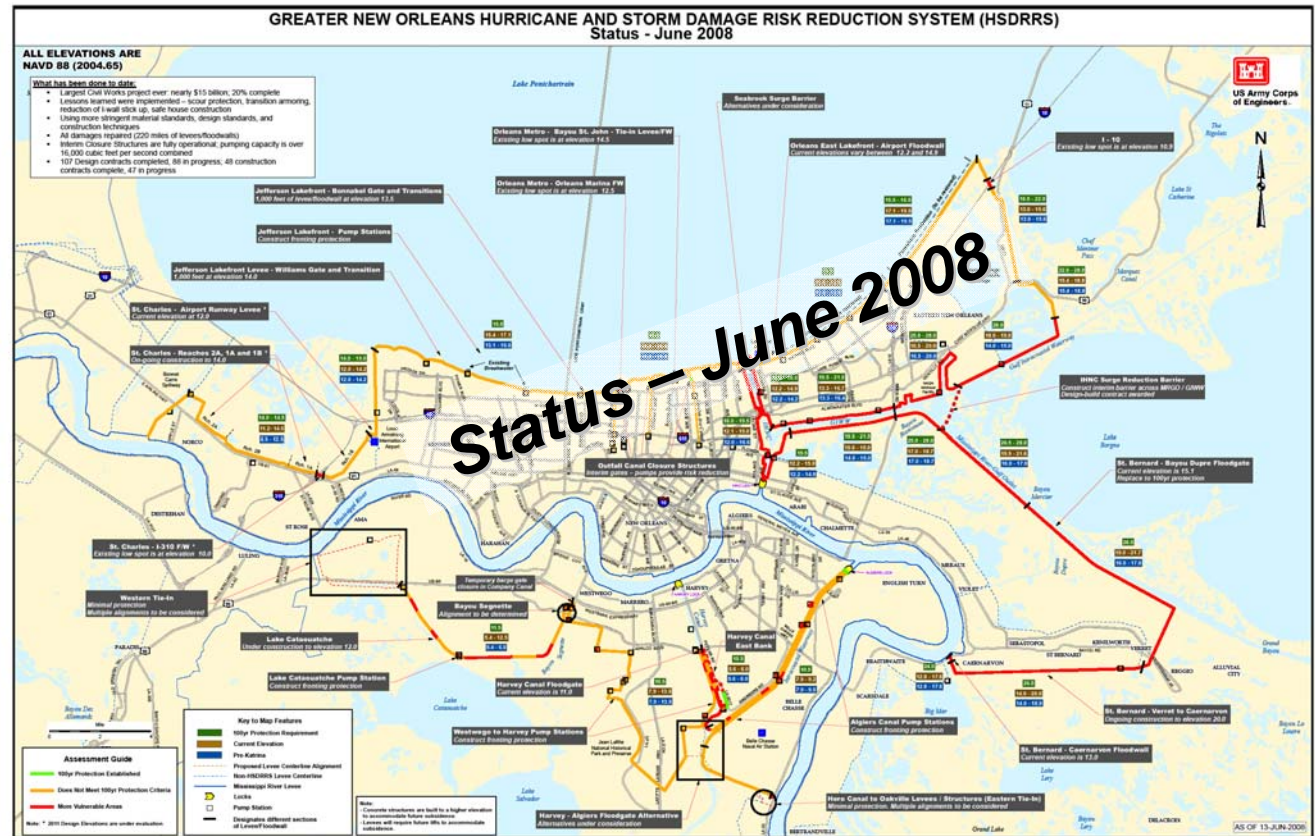
Social Vitality

Policy: Setting standards or boundaries allows incorporating into decisions



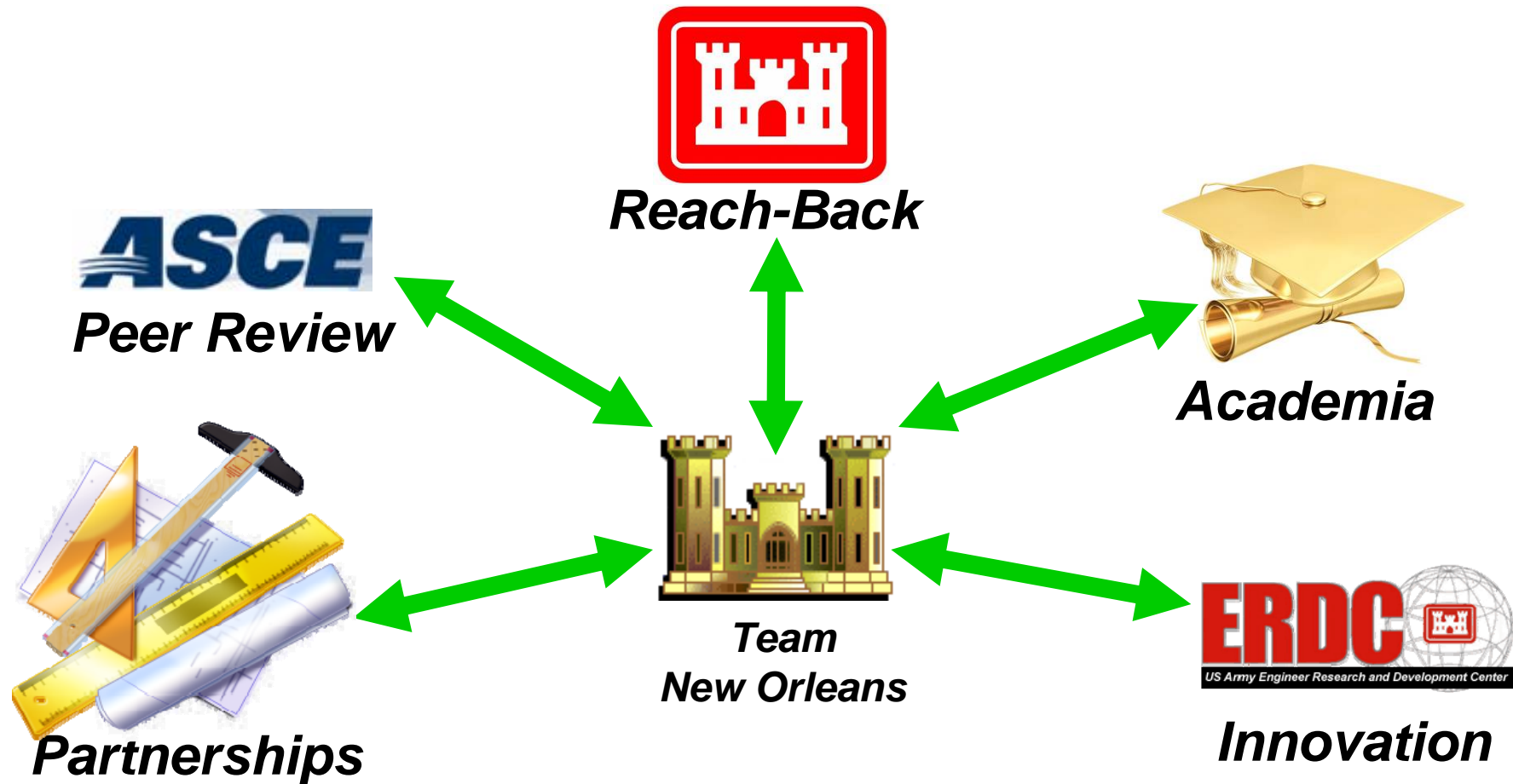
3. Communication of Risk to Public

- Create an accurate and timely representation of the risk faced by the community
- Valuable tool used to Inform the external public and internal audience of current vulnerabilities
- Open and Transparent





4. Professional & Technical Expertise



Programmatic Delivery



Greater New Orleans Hurricane & Storm Damage Risk Reduction System: Our Mission and Commitment

- Repair the damages, making what was there before whole again.
- Strengthen and improve the system and provide 100-year level of protection capable of withstanding the effects of a storm having a 1% chance of occurring each year.
- Current funding level \$14.6 B (fully funded).
- Study and recommend solutions to provide higher levels of protection; restore and protect coastal wetlands (LaCPR).

How We Deliver

**U.S. ARMY
CORPS OF ENGINEERS**



**Mississippi Valley
Division**
BG Michael Walsh



Task Force Hope
Karen Durham-Aguilera (SES)

**St. Paul
District**
COL Jon Christensen

**Rock Island
District**
COL Robert Sinkler

**St. Louis
District**
Col Tom O'Hara

**Vicksburg
District**
COL Michael Wehr

**Memphis
District**
COL Thomas Smith

**New Orleans
District**
COL Al Lee

**Protection
Restoration Office**
Tom Podany

**Hurricane
Protection Office**
COL Mike McCormick



**Air Force Center for
Engineering and
Environment (AFCEE)**

**Engineer Research
and Development
Center (ERDC)**

**Walla Walla District
Cost Center of
Expertise**

**Corps Planning
Centers of
Expertise**

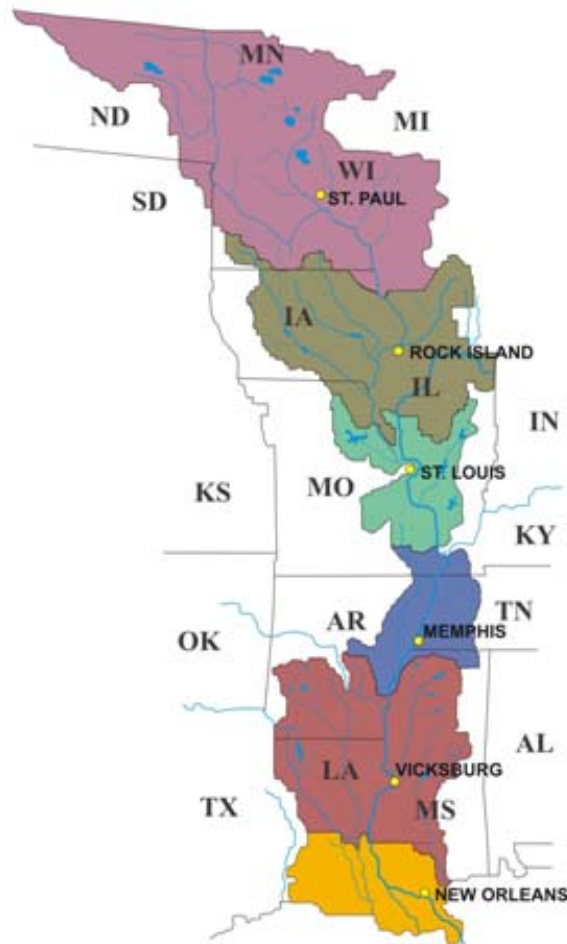
**Omaha District
Rapid Response**

**Philadelphia District
Peer Review Center of
Expertise**

(Examples) USACE Reachback



Operationalized Regional Interdependent Business Model



2011

Regional:

- Culture
- Program Development/Delivery
- Workforce Management
- Acquisition Strategy

Efficiently and Effectively Focus Resources of Entire Region on Project Delivery

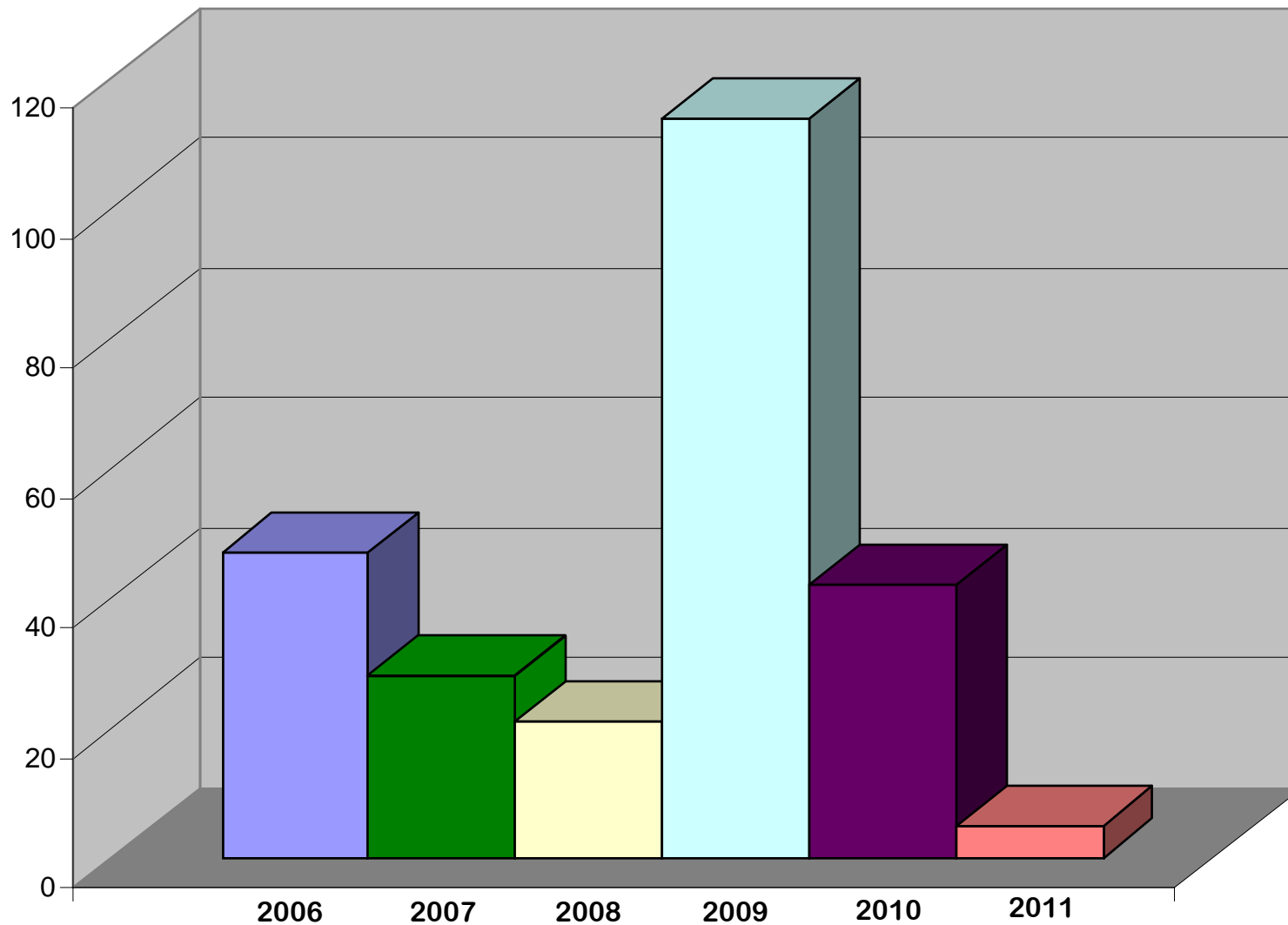
2009

Regional:

- Platform
- Processes
- Rates



Total Number of GNHSDRRS Contracts





Mitigation for GNHSDRRS Projects

\$600 Million – Fully Funded

- Approximately 5,000 Acres
 - Bottomland Hardwood
 - Wetlands





How We Engage the Public

Alternative NEPA arrangement / IER meetings

Team New Orleans Web Site / Nola Environmental

Strategic Communications

Emergency Preparedness Day

Status Maps

Media Roundtables





Risk Communication Means

Local

- Metro New Orleans Area Public Meetings
- City of New Orleans Mayors Meeting
- Local Levee board meetings
- Local media
- HSDRRS Flyover video
- Project specific videos
- And many more.....

State

- TFH Newsletter
- CPRA interface
- LA DNR coordination
- LA DOTD coordination
- Levee Authority Meetings

National

- District News letters
- AP
- CNN
- Time Magazine
- New York Times
- And other means...





New Orleans District

Floodwalls

Building them bigger, stronger, better

The U.S. Army Corps of Engineers is continuing to work expeditiously to complete the Hurricane and Storm Damage Risk Reduction System (HSDRRS) by 2011. To this end, the Corps is using valuable lessons learned to construct more resilient levees and floodwalls.

[See for yourself >>](#)



PUBLIC INFORMATION

6 Hurricane & Flood Risk Reduction
[Learn more about what the Corps is doing to reduce risk here>>](#)

Emergency Information
[Road Closures, Disaster Recovery, Parish Information and More>>](#)

Nola Environmental
Did you miss a meeting? No problem! Find presentations, summaries and [More>>](#)



TOP HEADLINES

[document confirming action on Westwego t Harvey](#)

[Corps releases environmental document fo public review](#)

[Corps to provide update on Westbank risk reduction projects](#)

[Corps Seeks Industry Input on Design and Construction Techniques for Westbank](#)

Scroll: [Faster](#) | [Slower](#) | [Off](#)

[RSS](#) (What is RSS?)

ASK THE CORPS

The Corps wants to hear from you!

Q. *Do you have information on the closing of Industrial Locks on August 1, 2008 for 60 days?*

A. *Yes, for information regarding the August 1st closing of the Inner Harbor Navigation Canal Lock, [please click here.](#)*

Submit questions or comments to askthecorps@usace.army.mil.

FEATURED VIDEOS



West Closure Complex
Learn more about the alternatives under consideration to reduce risk on the Westbank. [Watch >>](#)



Hurricane & Storm Damage Risk Reduction System
From levees to pumping stations, [find out more](#) about system features.



U.S. ARMY

US Army Corps of Engineers



Hurricane and Storm Damage Risk Reduction System

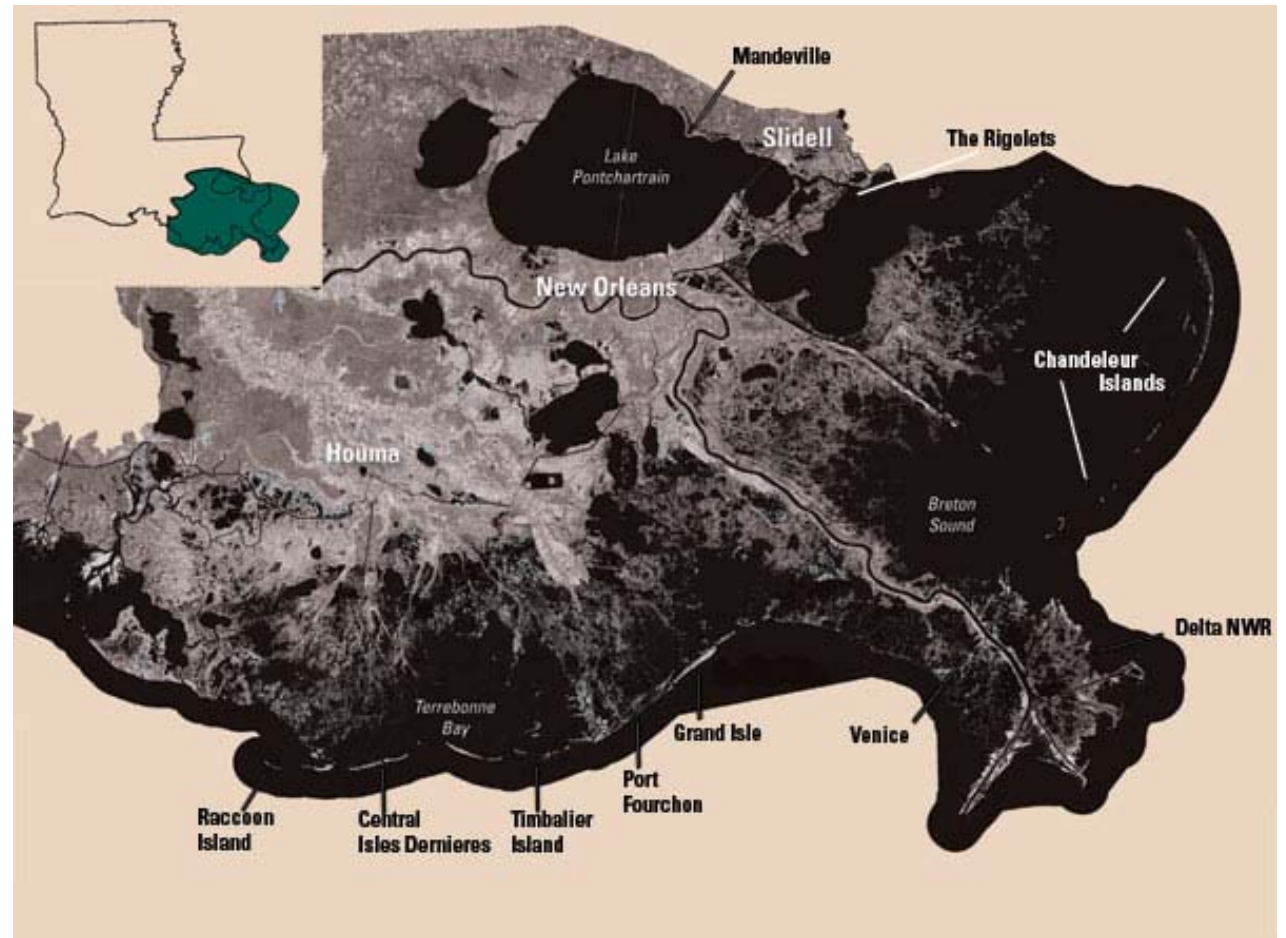
Today and Tomorrow



Existing Coastal Protection and Restoration Authorities

LCA

Coastal Wetland Protection and Restoration Act (CWPRRA)



Louisiana Coastal Area Ecosystem Restoration

Critical restoration features:

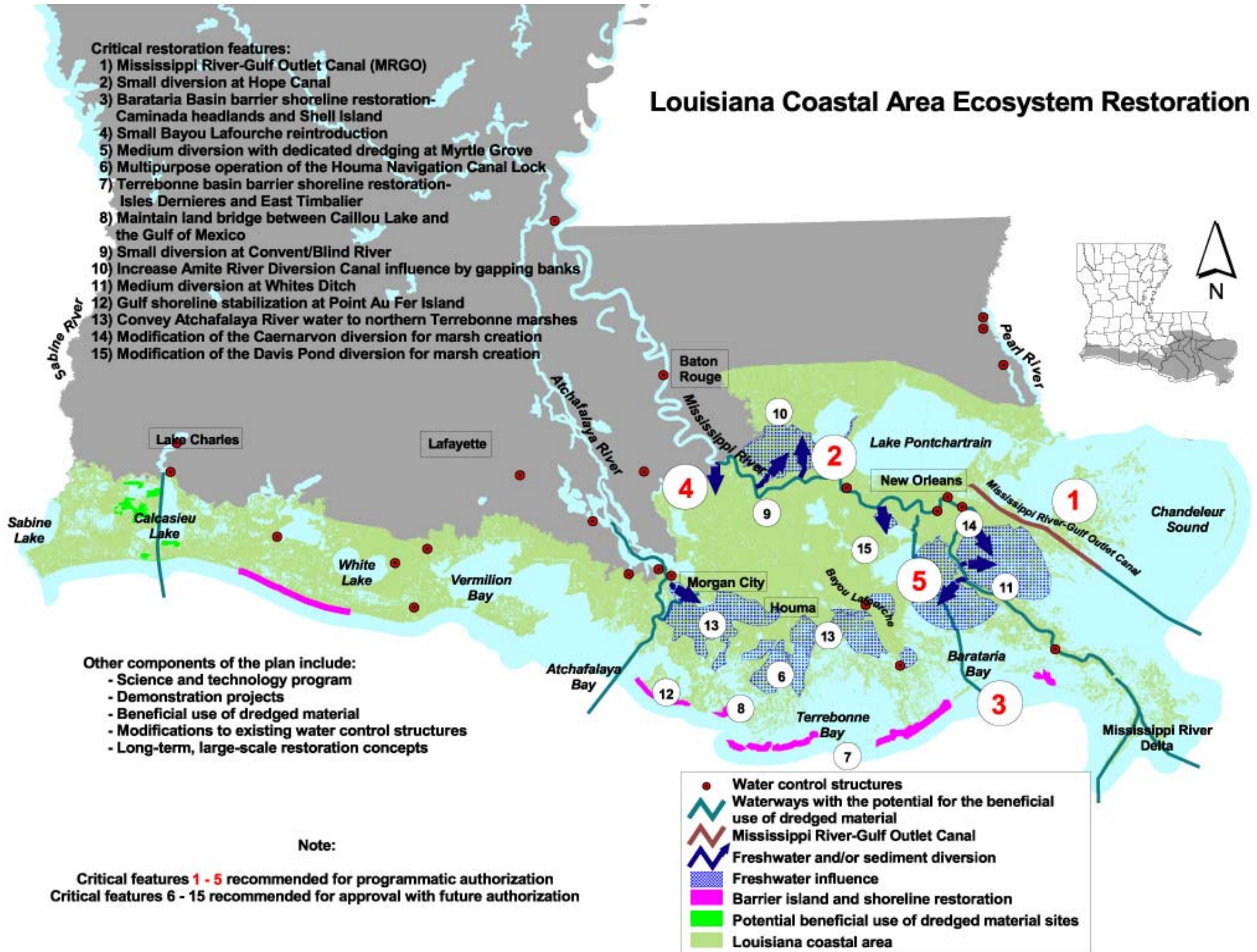
- 1) Mississippi River-Gulf Outlet Canal (MRGO)
- 2) Small diversion at Hope Canal
- 3) Barataria Basin barrier shoreline restoration-Caminada headlands and Shell Island
- 4) Small Bayou Lafourche reintroduction
- 5) Medium diversion with dedicated dredging at Myrtle Grove
- 6) Multipurpose operation of the Houma Navigation Canal Lock
- 7) Terrebonne basin barrier shoreline restoration-Isles Dernieres and East Timbalier
- 8) Maintain land bridge between Caillou Lake and the Gulf of Mexico
- 9) Small diversion at Convent/Blind River
- 10) Increase Amite River Diversion Canal influence by gapping banks
- 11) Medium diversion at Whites Ditch
- 12) Gulf shoreline stabilization at Point Au Fer Island
- 13) Convey Atchafalaya River water to northern Terrebonne marshes
- 14) Modification of the Caernarvon diversion for marsh creation
- 15) Modification of the Davis Pond diversion for marsh creation

Other components of the plan include:

- Science and technology program
- Demonstration projects
- Beneficial use of dredged material
- Modifications to existing water control structures
- Long-term, large-scale restoration concepts

Note:

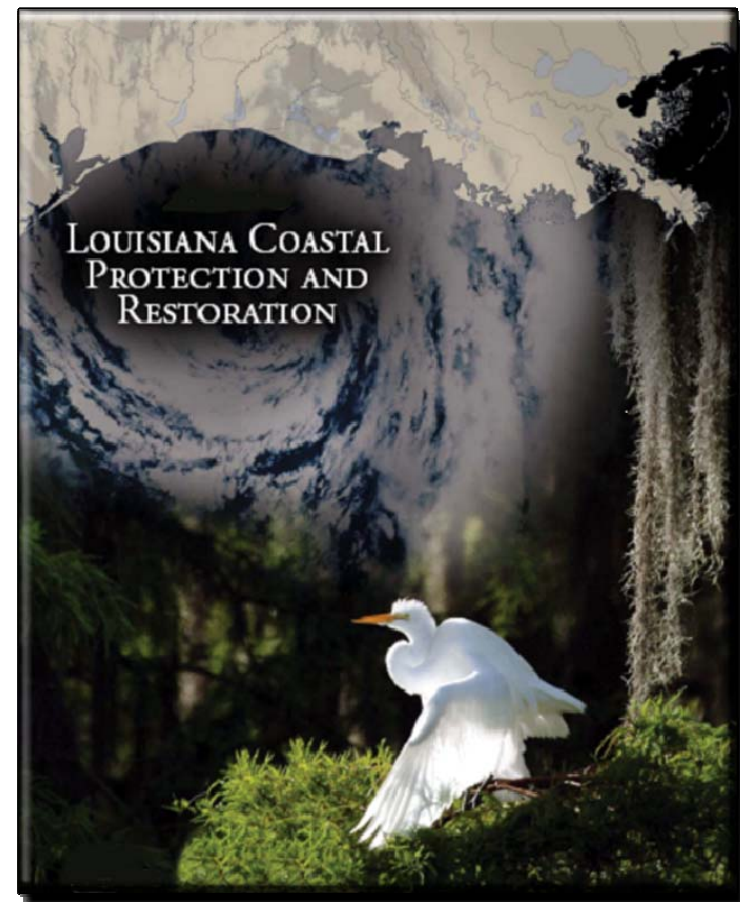
Critical features 1 - 5 recommended for programmatic authorization
 Critical features 6 - 15 recommended for approval with future authorization





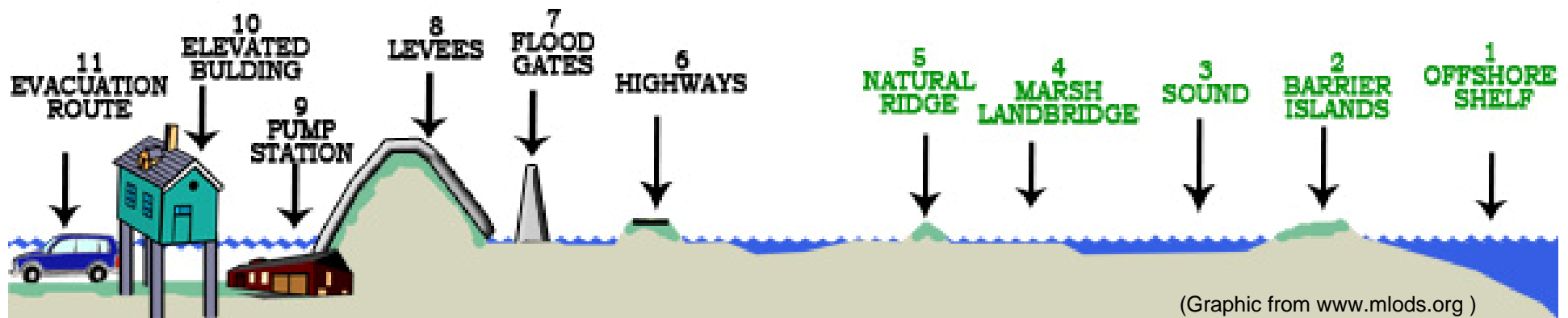
Louisiana Coastal Protection and Restoration (LaCPR) study

- Draft Final technical report submitted in Dec 08.
- ATR and HQ policy review initiated on 22 Dec 08.
- NAS external peer review will begin on 2 March 2009.
- scheduling formal public review





Multiple Lines of Defense



Elements include:

Coastal restoration/protection

Structural measures

Non-structural features



US Army Corps of Engineers



Southwest Coastal Study

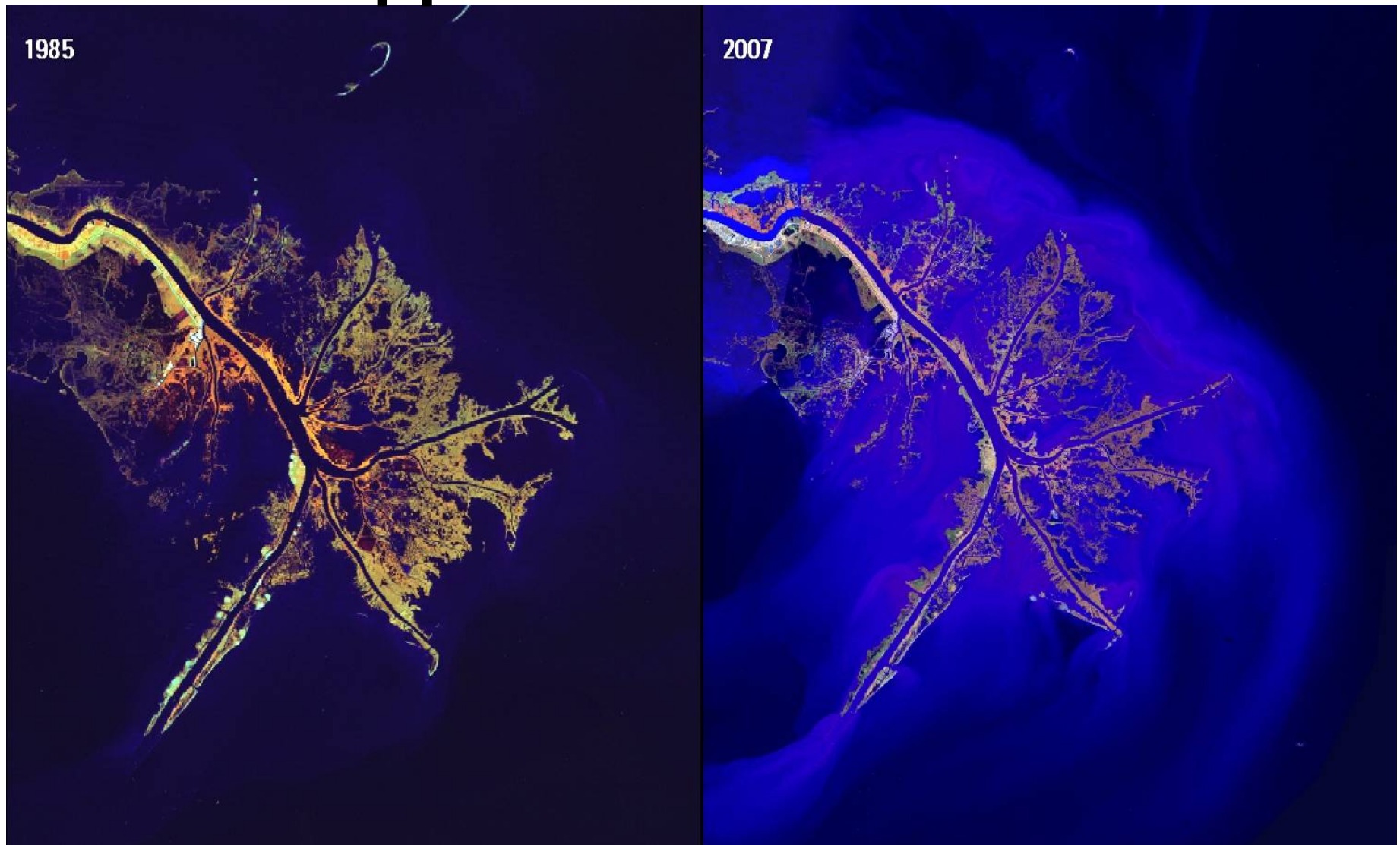




US Army Corps of Engineers

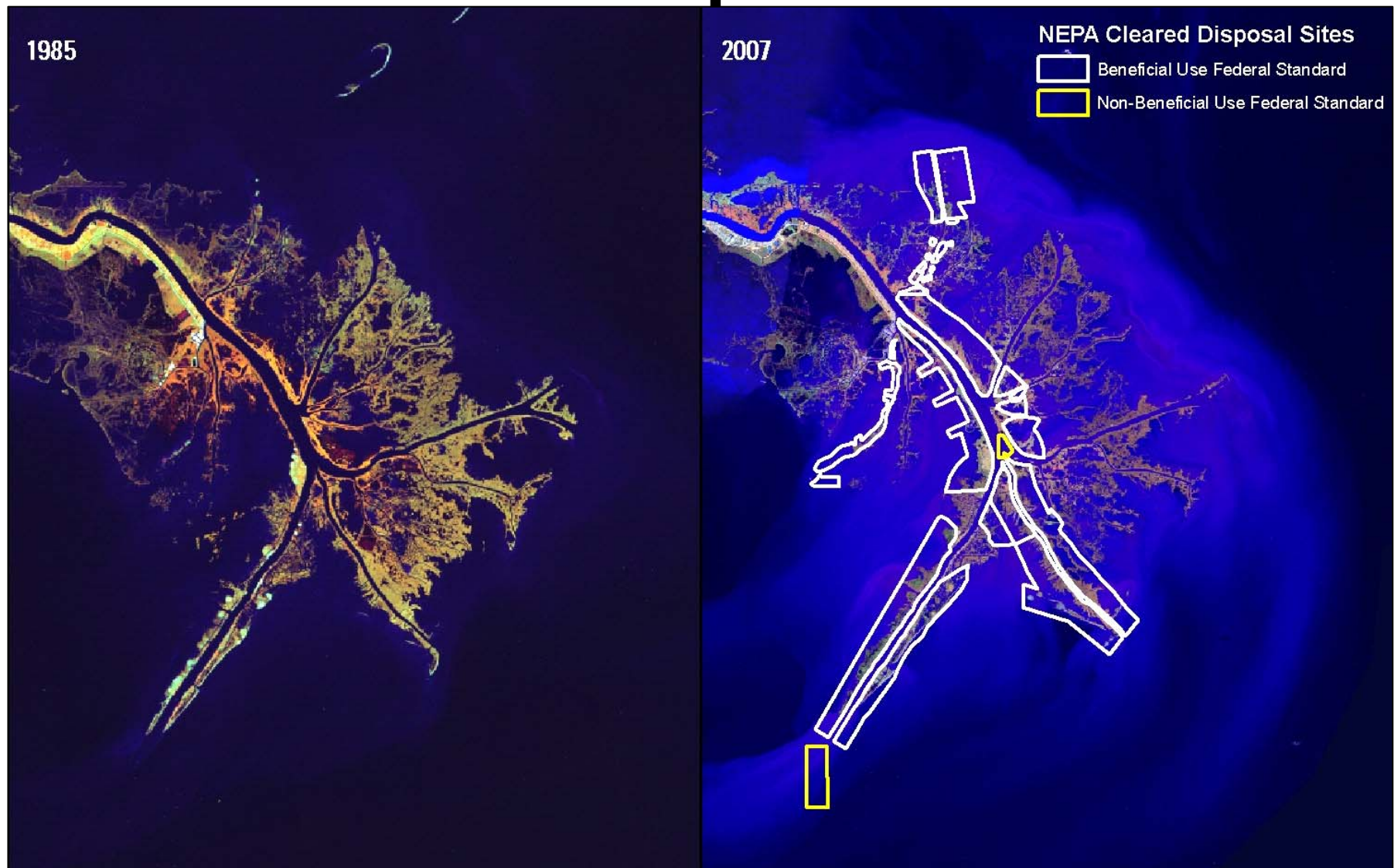


Mississippi River - Southwest Pass





Current Disposal Sites

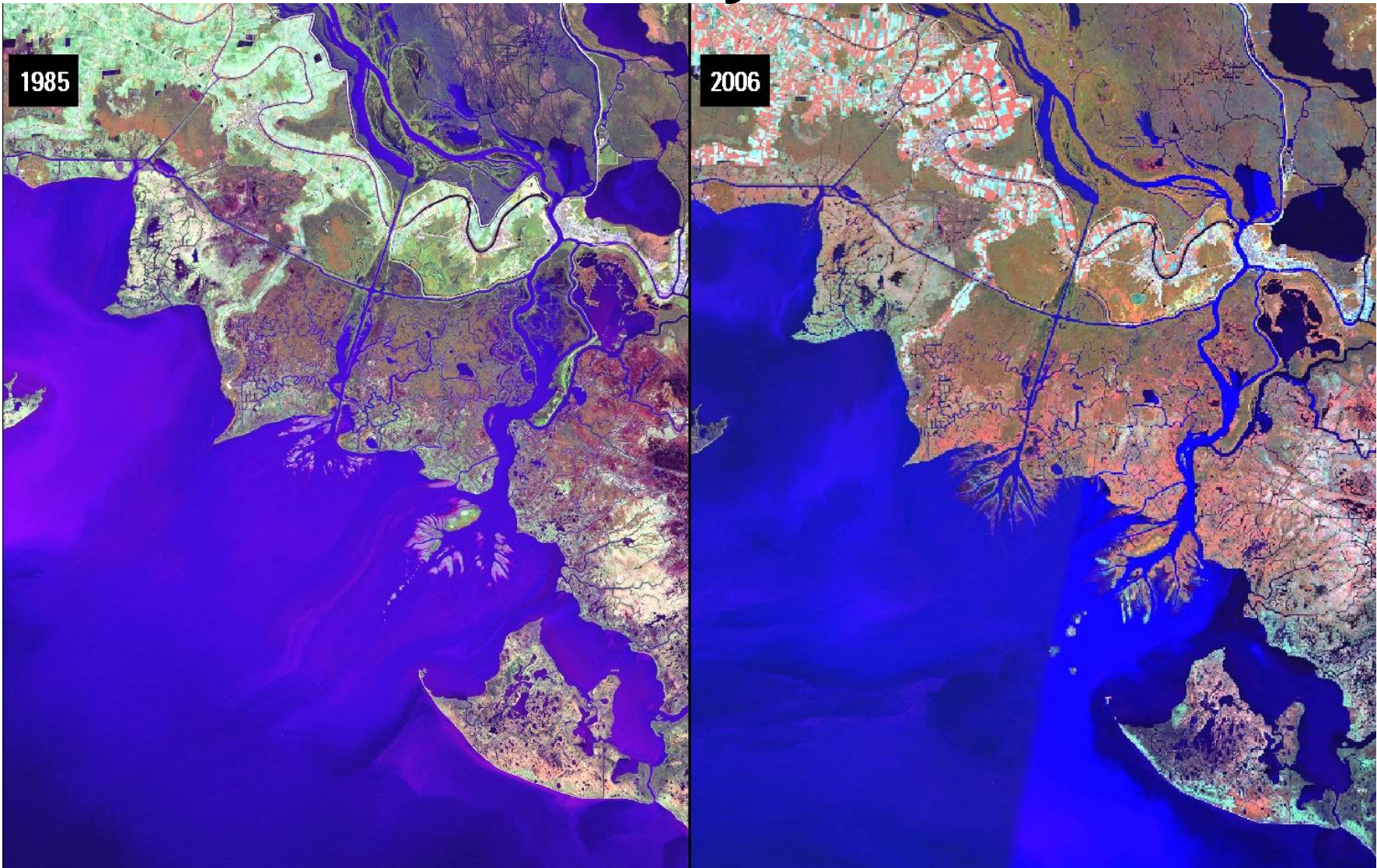




US Army Corps of Engineers



Atchafalaya River





Lower Atchafalaya River - Bay Channel



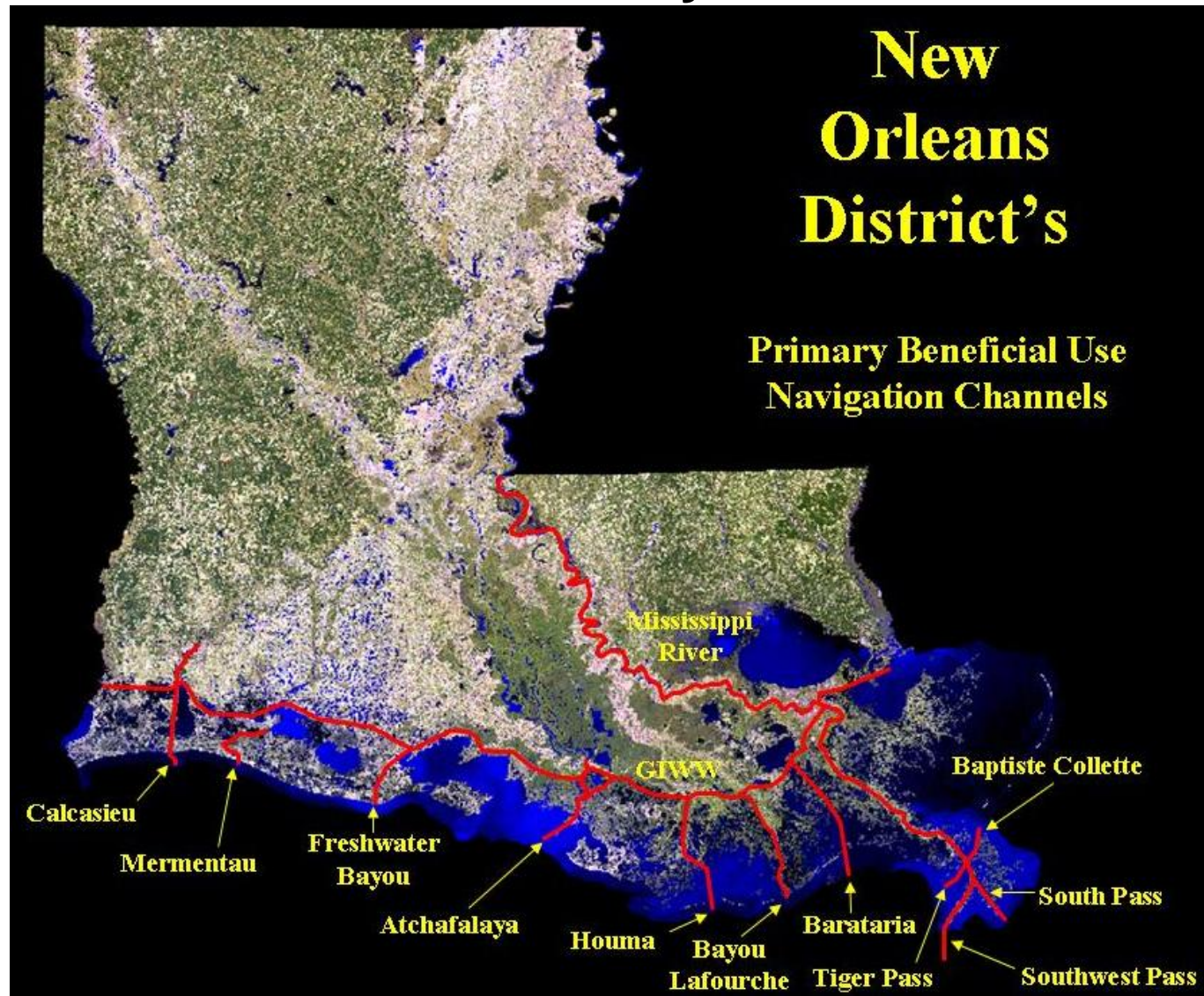


Initiatives to Increase Beneficial Use of Dredged Materials

- **2008 Beneficial Use Summit with LaDNR**
 - Formalized Maintenance Dredging Beneficial Use Working Group (MDBUG) to foster enhanced communication between agencies
 - MDBUG charged with prioritizing beneficial use projects based on NEPA status, oyster lease impacts, dredging schedule
 - 10 beneficial use projects selected and being developed for implementation during FY09/10
- **Beneficial Use of Dredged Material Program (\$100 million/10 year program)**

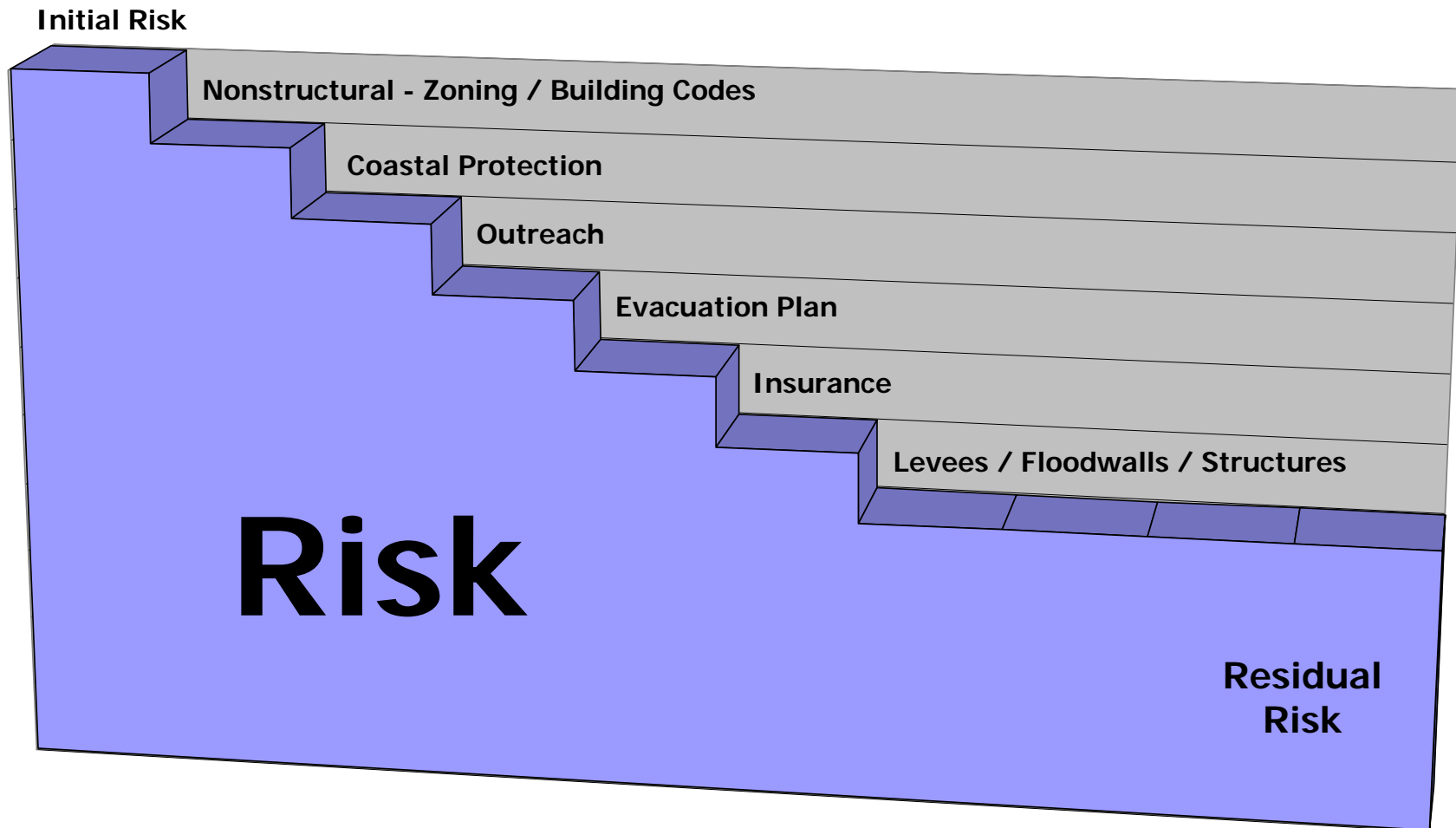


BUDMAT Study Area





Buying Down Risk



The background of the slide is a close-up of the American flag, showing the stars and stripes. In the center-right, there is a faint, golden-colored image of a castle or fortress with two prominent towers, set against a cloudy sky.

Questions?

***COL Al Lee
Commander
New Orleans District
U.S. Army Corps of Engineers***