

Greater New Orleans Hurricane & Storm Damage Risk Reduction System

Lower 9th Ward NENA Meeting

Col. Robert Sinkler, Commander
Hurricane Protection Office

August 14, 2010



US Army Corps of Engineers
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Agenda

- **Overview**
- **Inner Harbor Navigation Canal Video**
- **Lower Ninth Ward Risk Reduction Features**
- **Other East Bank Risk Reduction Features**
- **Construction Gaps and Openings**
- **Q & A**

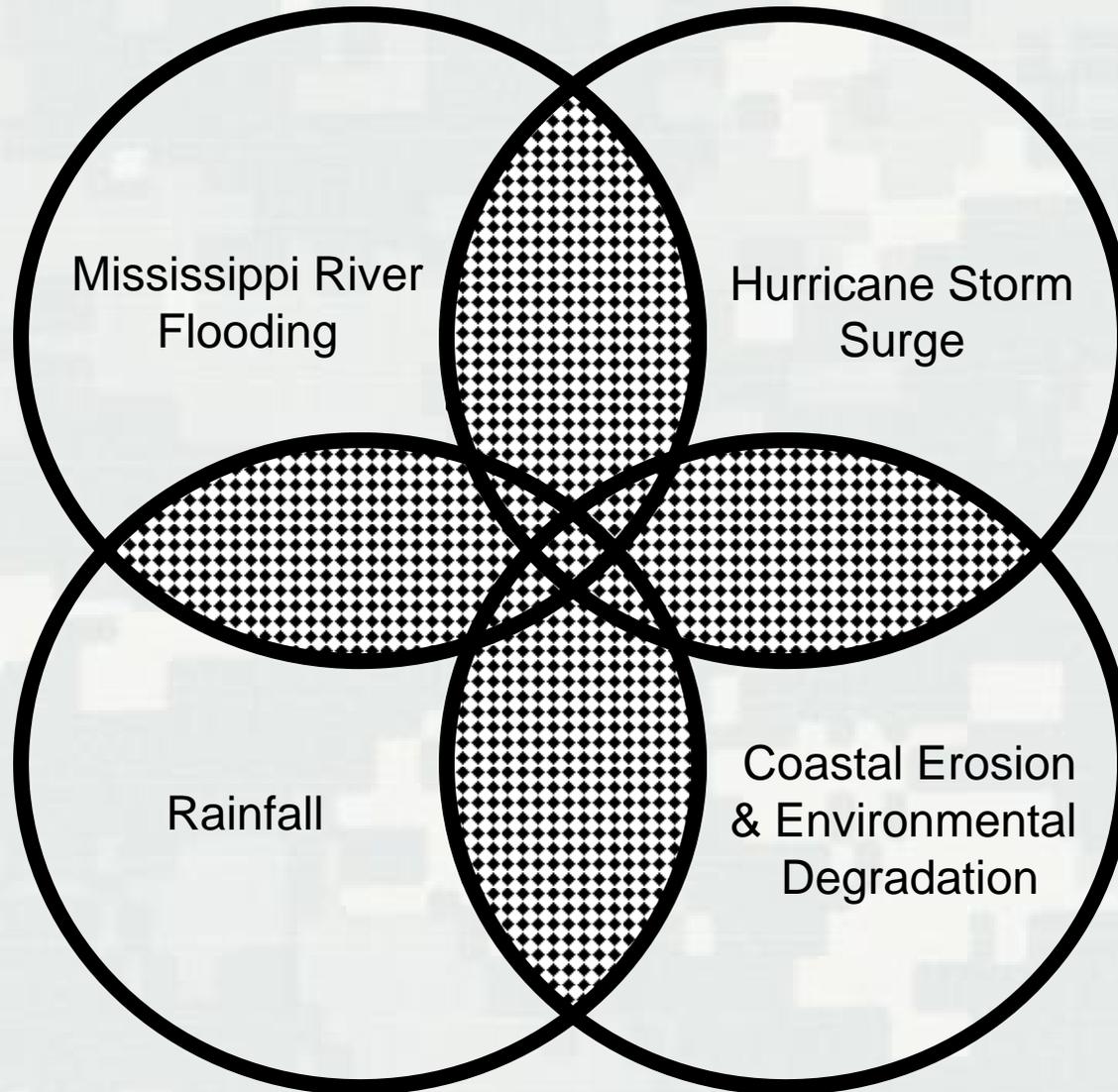


Levee Overtopping during Hurricane Katrina



The Four Major New Orleans Flood Risks

Separate, but overlapping or related interagency systems or programs to address each!

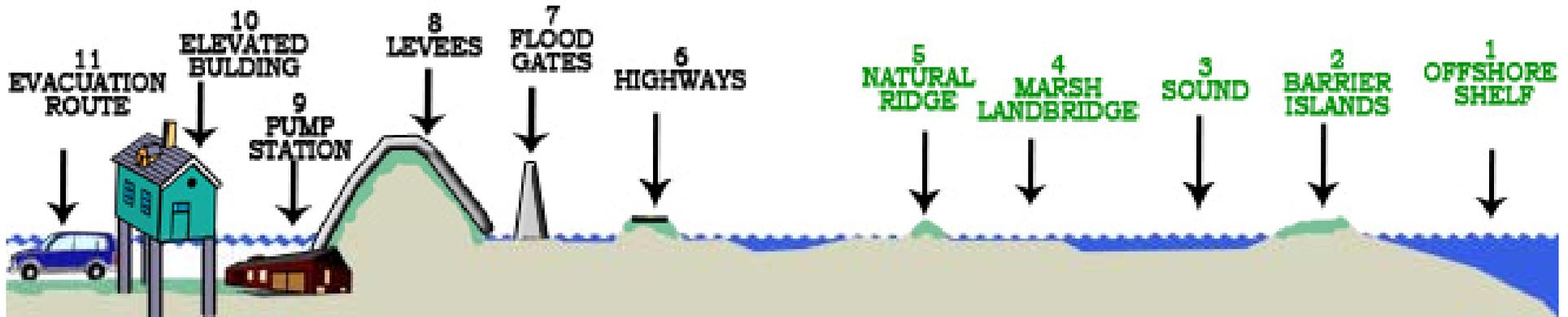


*Working
Draft*



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Multiple Lines of Defense



(Graphic from www.mfods.org)

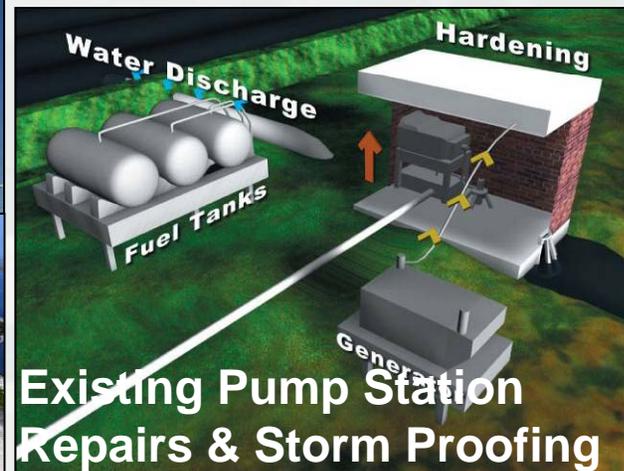
Elements include:

- Coastal restoration/protection
- Structural measures
- Non-structural features



Hurricane Protection Office Mission

Execute the fully authorized / appropriated HSDRRS program / projects in order to provide 100-year level of risk reduction by 2011. Complete Permanent Pumps / Plaquemines Parish / Grand Isle Flood Risk Management projects on a parallel / complementary timeline.



Inner Harbor Navigation Canal (IHNC)

Lake Borgne Surge Barrier



- The IHNC Lake Borgne Surge Barrier project was the first construction contract awarded for the 1 percent storm damage risk reduction system.
- At over \$1 billion, this is the largest civil works Design-Build project in Corps history.
- The IHNC Lake Borgne Surge Barrier contract awarded to Shaw Environmental & Infrastructure, Inc., on April 4, 2008.
- Began driving 1,271 (1.8 miles) 66-inch spun cast piles on May 9, 2009; completed base portion on October 21, 2009.



IHNC Surge Barrier – Barrier Wall



IHNC Surge Barrier – Bayou Bienvenue Cofferdam



IHNC Surge Barrier – Barge Gate Opening



NENA's Visit to the IHNC Surge Barrier January 2010



Inner Harbor Navigation Canal *Lake Pontchartrain (Seabrook) Surge Barrier*



Conceptual



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Seabrook



- Seabrook will consist of one sector gate and two vertical lift gates just south of the Senator Ted Hickey Bridge.
- The construction option was awarded in July 2010.
- A cofferdam will be in place for next year's hurricane season.



IHNC Interior Wall Improvements – Relief Wells



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IHNC Interior Wall Improvements – Sheet Pile Seepage Cutoff



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IHNC Interior Wall Improvements – Deep Soil Mixing



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***The strengthened walls held during Hurricane Gustav in 2008,
and that was before construction began on the Lake Borgne
Surge Barrier and the Seabrook Floodgate Structure!***



Outfall Canal Pumps & Gates

Currently provide temporary 100-year level of risk reduction

17th St. Canal



Orleans Ave. Canal



London Ave. Canal



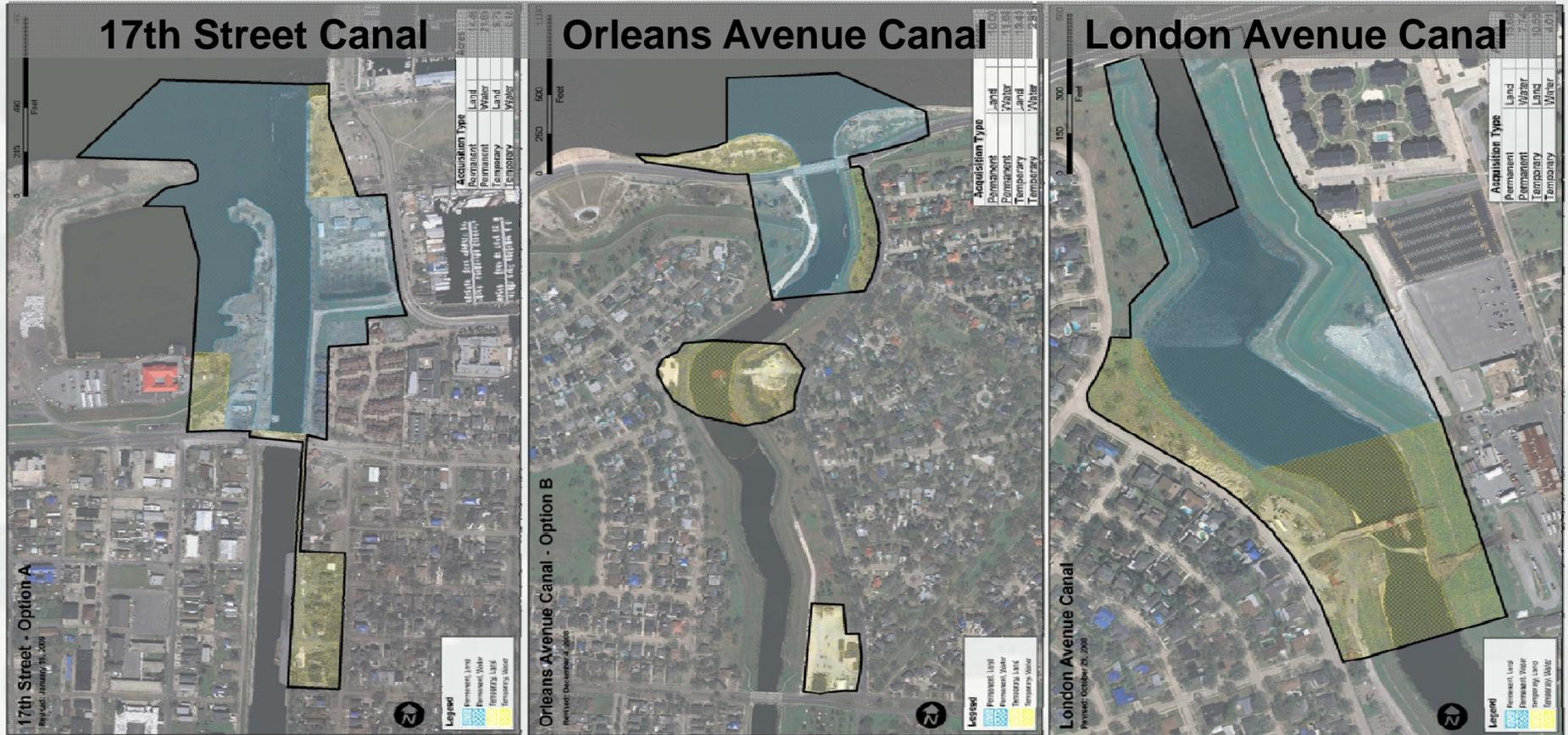
- **Pumping Capacity: 9,200 cfs**
- 18 hydraulic pumps fully installed and tested
- 11 direct drive pumps fully installed and tested
- 14 portable pumps
- Operated during Hurricanes Gustav & Ike

- **Pumping Capacity: 2,200 cfs**
- 10 hydraulic pumps fully installed and tested

- **Pumping Capacity: 5,200 cfs**
- 12 hydraulic pumps fully installed and tested
- 8 direct drive pumps fully installed and tested
- Operated during: Hurricanes Gustav & Ike, Tropical Storm Ida, Rainfall event



Permanent Canal Closures & Pumps



*The proposed site locations shown indicate a **maximum footprint** with the intent to minimize the footprint during construction.*



Orleans Metro Phase II – 5 of 5 contracts awarded

Raise approximately **6 miles** of levees and replace / strengthen **1.5 miles** of existing floodwalls; improve all road crossings / gates from 17th St. Canal to west side of IHNC / modify existing floodgate at Bayou St. John.



Phase 1 Construction - *100% complete*
100-year level of risk reduction - *More than 90% complete*



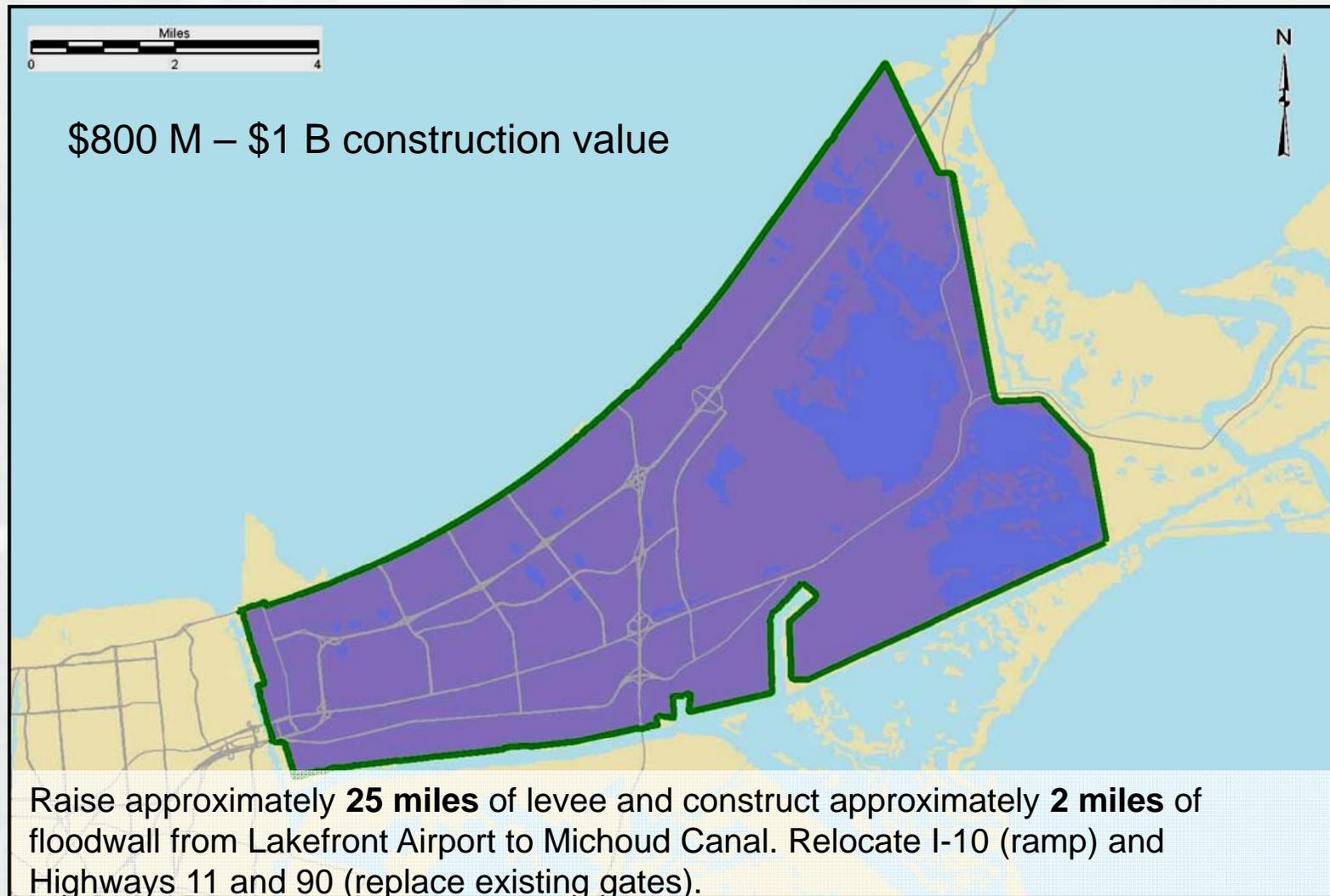
LPV 103.01A - Floodwall Construction



Orleans Metro- Floodwall Construction



New Orleans East – 11 of 11 contracts awarded



New Orleans East – Sand Drainage Blanket



New Orleans East - Deep Soil Mixing



New Orleans East – IHNC North Floodwall Tie-in

New Floodwall

Old Floodwall



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New Orleans East – IHNC North Floodwall Tie-In

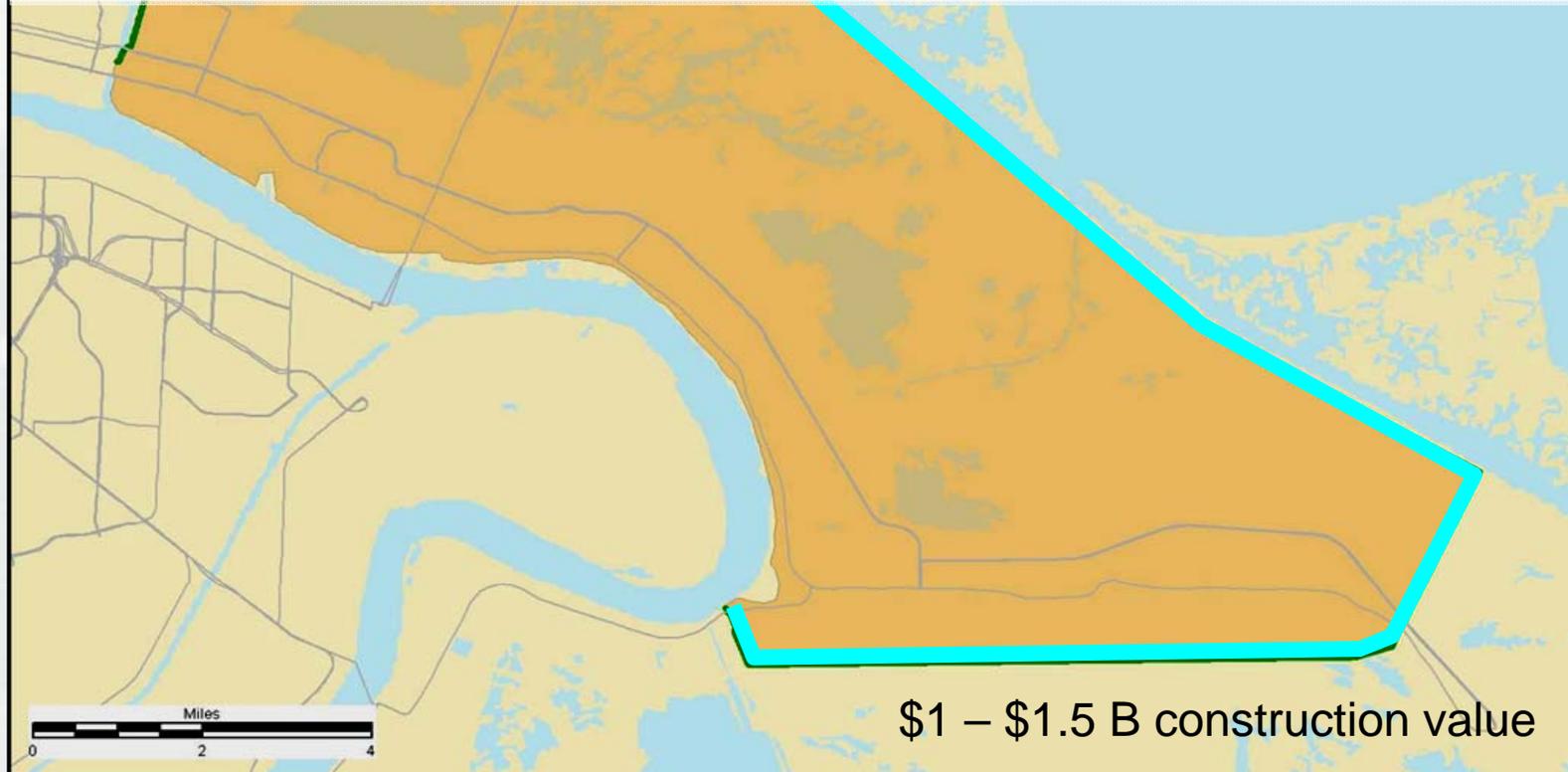


New Orleans East – IHNC North Floodwall Tie-In



St. Bernard Parish – 7 of 7 contracts awarded

Construct approximately **23 miles** of floodwall from Bayou Bienvenue to Caernarvon (raising from 20 to 29 feet and, in some places, to 31.5 feet). Construct new sector gate at Bayou Dupre. Add floodgates across Highway 46 and replace floodgate at Bayou Road. Construct floodwall and sector gate across Caernarvon Canal back to Highway 39. All projects will provide 100-year risk reduction by June 2011.



St. Bernard Parish – Cofferdam for New Sector Gate at Bayou Dupre



St. Bernard Parish – T-wall Construction



St. Bernard Parish - IHNC South Floodwall Tie-in



Pump Station Repairs / Storm Proofing



Motor at Orleans Drive Pump Station

Repair \$102.7 M Program

61 Pump Stations Total
60 Completed, 1 in Construction

Stormproofing \$340 M Program

Program includes work at 49 pump stations in Orleans and Jefferson Parishes. We have completed \$38.8 million of the work to date.



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Construction Gaps



Seabrook Floodgate Complex



Bayou Bienvenue – Vertical Lift Gate

**Under Construction –
Scheduled to be
Functional by the
June 2011
Hurricane Season**

**The IHNC Canal Walls
will be the Primary
Hurricane Storm Surge
Defense in 2010**



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Floodwall Construction Openings – *Closed within 48 hours*

LPV 111 / IHNC Surge Barrier Tie-in



LPV 101 – 17th Street to Topaz Street



Web-based Resources

<http://www.mvn.usace.army.mil/hps>

The screenshot displays the website's navigation menu at the top, including links for ABOUT US, SERVICES, BUSINESS, CAREERS, REFERENCES, PRESS ROOM, CONTACT US, and LINKS. The main header features the US Army Corps of Engineers logo, the text "US Army Corps of Engineers Team New Orleans", and the slogan "BUILDING STRONG". Below the header is a search bar and a breadcrumb trail: "Team New Orleans Home : Risk Reduction : Index".

The central content area is titled "Hurricane & Storm Damage Risk Reduction System (HSDRRS)". It includes a sidebar on the left with a "Risk Reduction Home" menu containing items like "Risk Reduction Plan", "Current Projects", "Corps Needs Levee Clay", "Early Contractor Involvement", "Peer Review Plan", "Contract Information", "Resources", "Videos & Animations", "Hurricane and Emergency", "Frequently Asked Questions", and "How to Contact Us".

The main content area features an "Interactive Project & Contract Location Map" with a "Launch Map" button. A map of the New Orleans area is shown with a pop-up for "SELA NOLA-21 (Project NOLA) - Levee Risk Reduction - Phase 1 - Closure to SR-804" with an estimated award of 3rd Quarter 2009 and a cost of \$10M.

Below the map are three featured sections: "Emergency Info" with a "Be Prepared >>" link, "Task Force Hope Newsletter" for the "Gulf Intracoastal Waterway - West Closure Complex", and "Inner Harbor Navigation Canal" which "Reduces risk to New Orleans East, Metro New Orleans, the 9th Ward & St. Bernard from storm surge." There is also a "Seabrook Floodgate" section with a video alternative.

The bottom of the page is divided into three columns: "TOP HEADLINES" with a link to "Corps releases environmental document on risk reduction for Westwego to Harvey", "QUICK LINKS" with a list of links including "2009 Facts and Figures", "Tree Removal", "Nola Environmental", "Risk Depth Maps", "100 Year Design Map", "Employment With Us", "Contracting - Doing Business With Us", and "N. O. Metro Road Conditions - Cameras"; and "MULTIMEDIA" with the "Inner Harbor Navigation Canal" and "Seabrook Floodgate" sections.

At the very bottom, there is a footer with the text "Last updated 12/02/2009" and a series of links: "DISCLAIMER", "PUBLIC INQUIRIES", "PRIVACY AND SECURITY", "FOIA", "INFORMATION QUALITY ACT", and "ACCESSIBILITY".

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