

Greater New Orleans Hurricane & Storm Damage Risk Reduction System

Pump Stations 11 and 13 and GIWW West Closure Complex Construction Update

Mar. 10, 2010
English Turn Clubhouse



US Army Corps of Engineers
BUILDING STRONG®

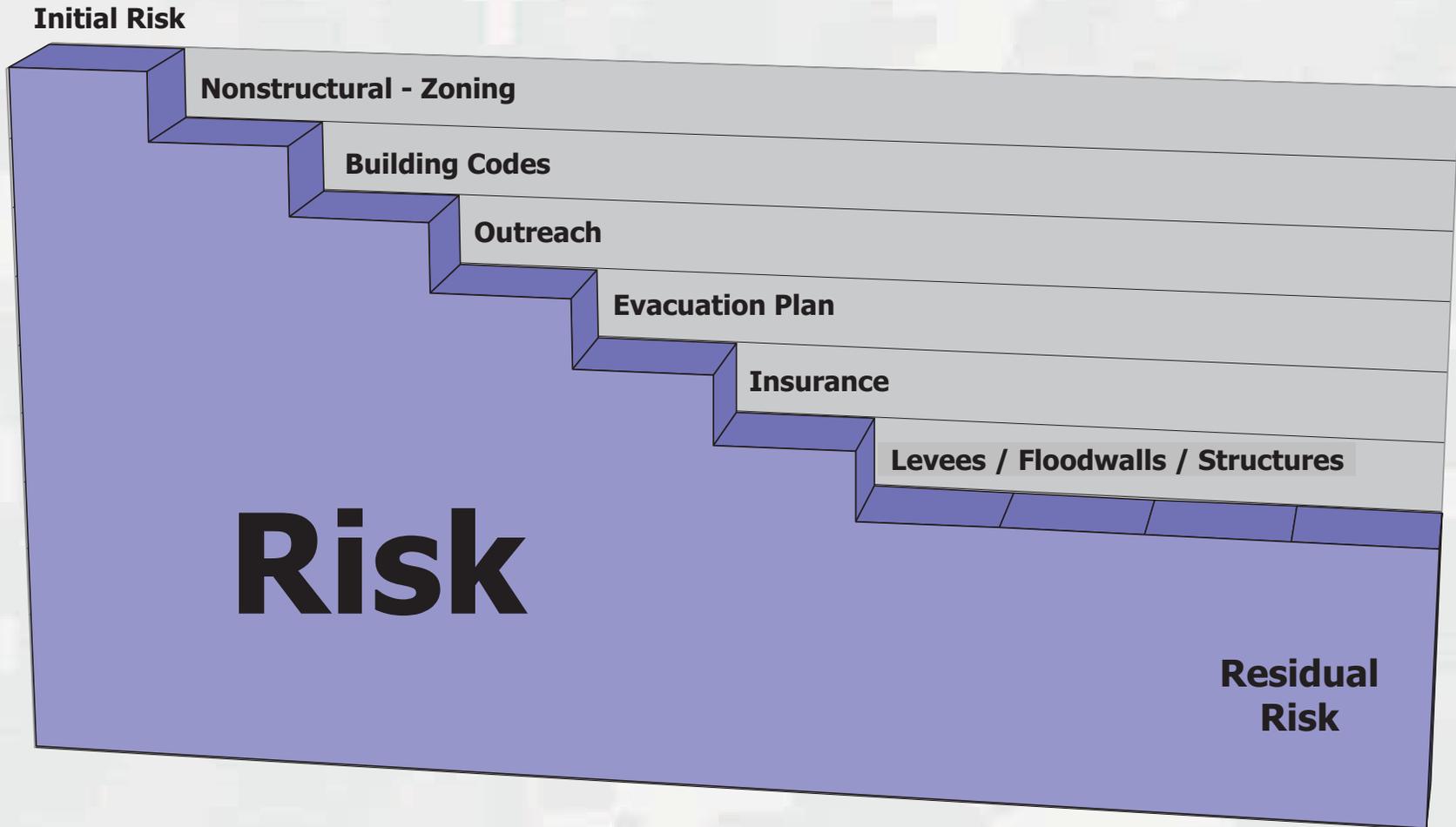


Meeting Purpose

- To discuss status of construction of Sewerage and Water Board Pump Stations 11 and 13 fronting protection
- To update the progress on the GIWW West Closure Complex
- Discussion



Risk – Shared Responsibility

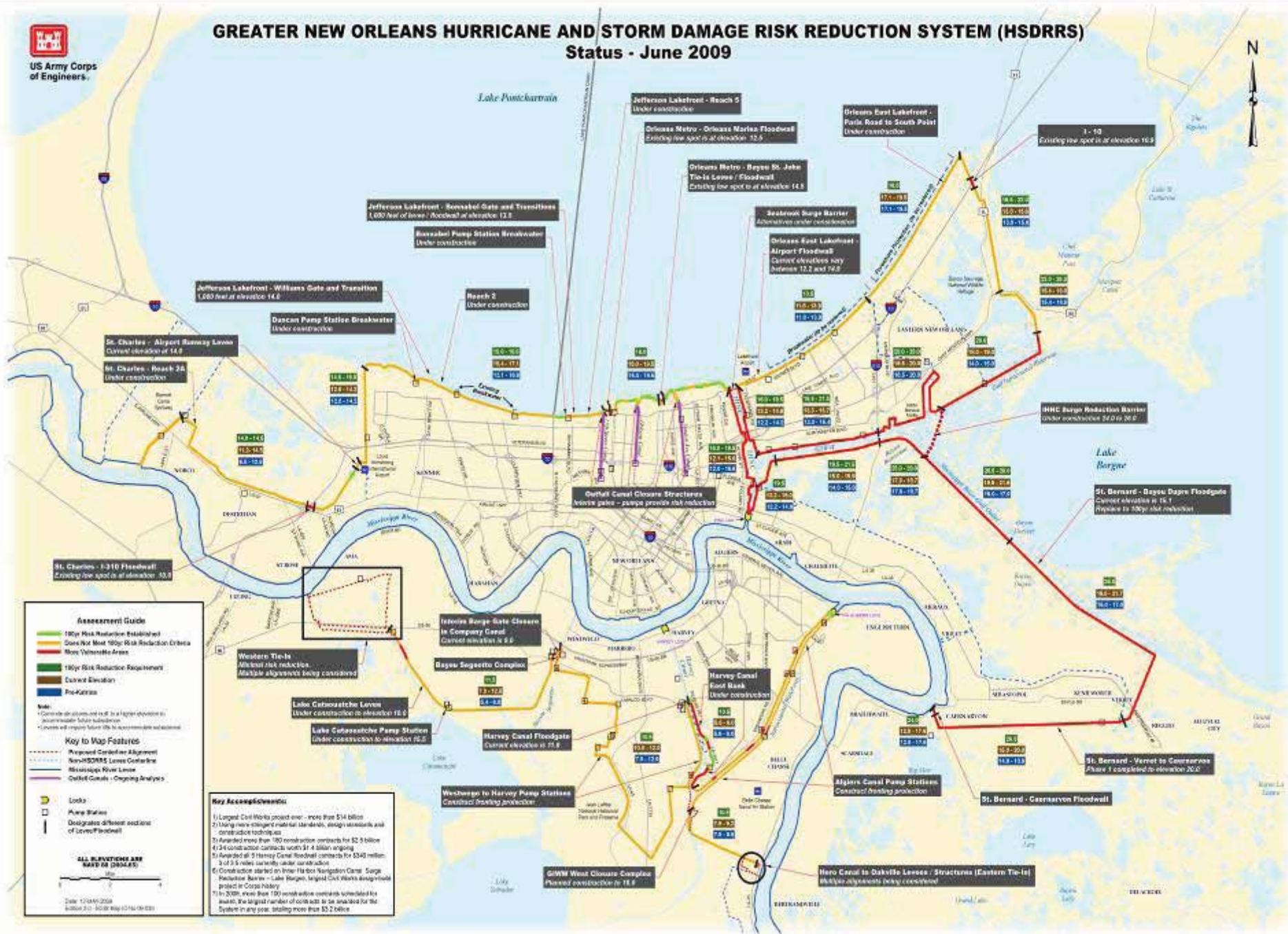


Fronting Protection at Sewerage and Water Board Pump Stations 11 and 13





GREATER NEW ORLEANS HURRICANE AND STORM DAMAGE RISK REDUCTION SYSTEM (HSDRRS) Status - June 2009



Assessment Guide

- 100yr Risk Reduction Established
- Does Not Meet 100yr Risk Reduction Criteria
- More Vulnerable Areas
- 100yr Risk Reduction Requirement
- Current Elevation
- Pre-Katrina

Note:
 1 Current elevations are not in a higher elevation to accommodate future subsidence
 2 Current elevations are not in a higher elevation to accommodate future subsidence

Key to Map Features

- Proposed Centerline Alignment
- Non-HSDRRS Levee Centerline
- Mississippi River Levee
- Outfall Canals - Ongoing Analysis

Icons:
 Locks
 Pump Station
 Designates different section of Levee/Floodwall

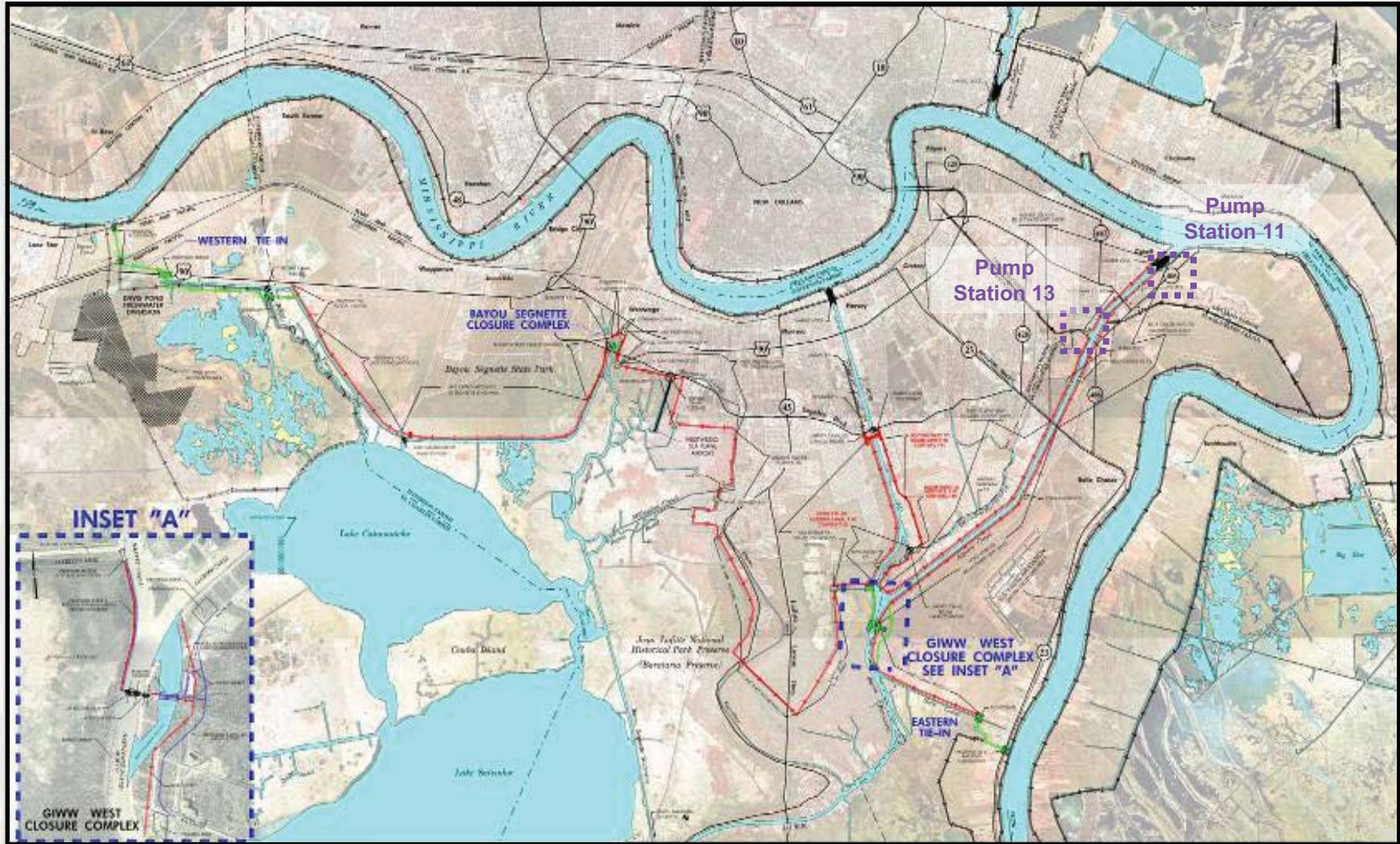
ALL ELEVATIONS ARE BASED ON (DMSAS)

Date: 12/04/2008
 6:00:04 P.M. - 03:00 May 02/04/09 03:03

Key Accomplishments

- 1) Largest Civil Works project ever - more than \$14 billion
- 2) Largest levee program ever for standards, design standards and construction techniques
- 3) Awarded more than 100 construction contracts for \$2.5 billion
- 4) 245 construction contracts worth \$1.4 billion ongoing
- 5) Awarded all 5 Harvey Canal Floodwall contracts for \$243 million
- 6) 3 of 5 miles awarded under construction
- 7) Construction started on Intra-Harbor Navigation Canal - Surge Protection Barrier - Lake Borgne, largest Civil Works design/build project in Corps history
- 8) In 2008, more than 100 construction contracts scheduled for award, the largest number of contracts to be awarded for the System in any year, totaling more than \$5.2 billion

Westbank and Vicinity Risk Reduction

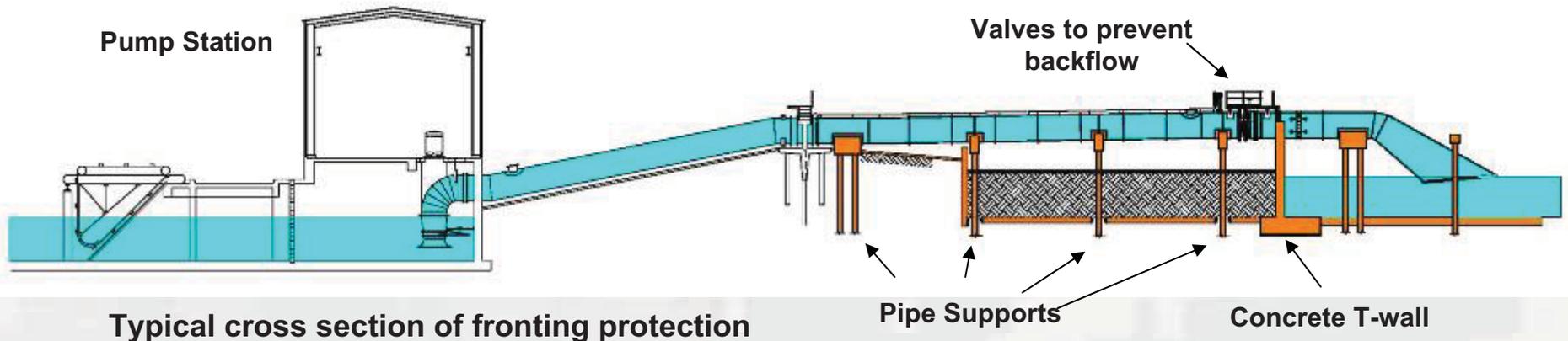


- Current or approved alignments
- Proposed or recommended alignments
- Pump Stations 11 and 13



Purpose of Fronting Protection

- Risk Reduction
 - Construction of a continuous concrete T-wall in front of pump stations
 - Valves or gates to keep water from flowing back through pumps



Sewerage and Water Board Pump Stations 11 and 13 Current Status



- Existing walls do not meet current design criteria
- Existing walls are not continuous across pump stations resulting in gaps in the risk reduction system

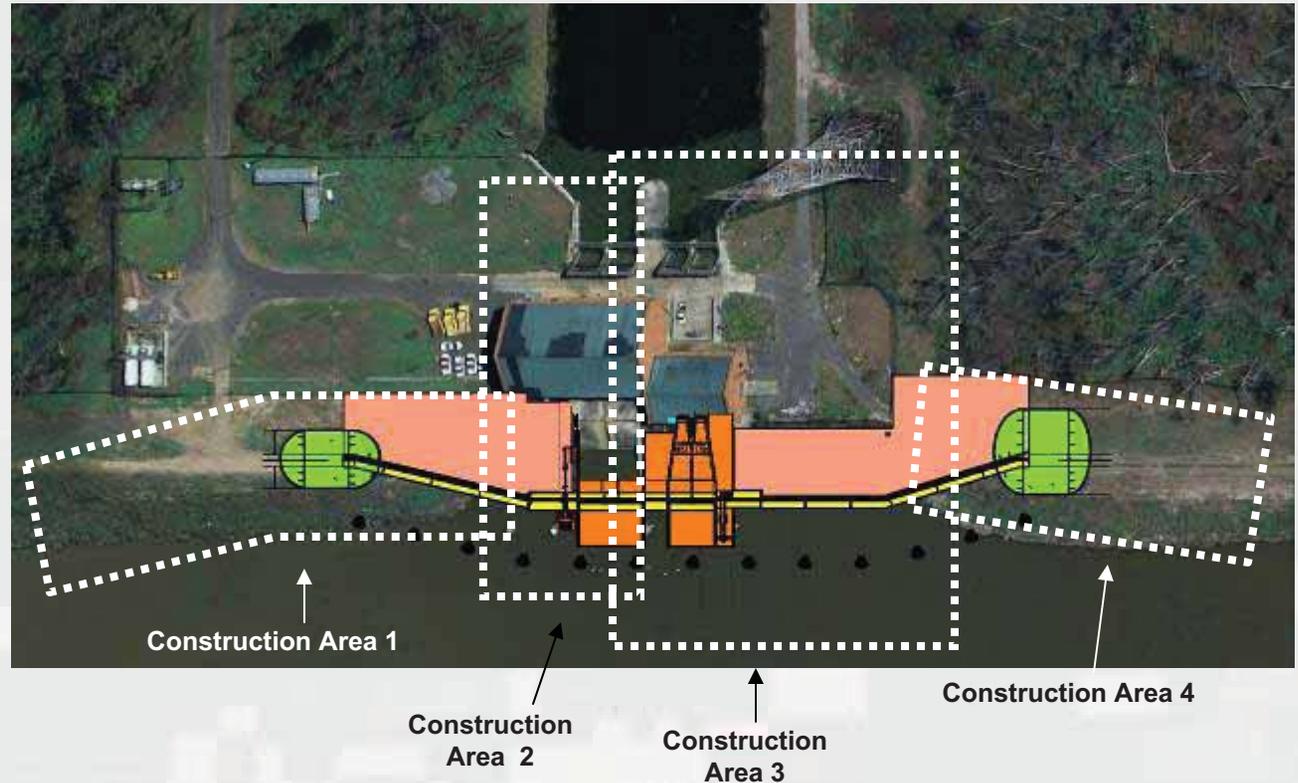


- Water could flow back through the pumps
- Current pump stations may allow water seepage



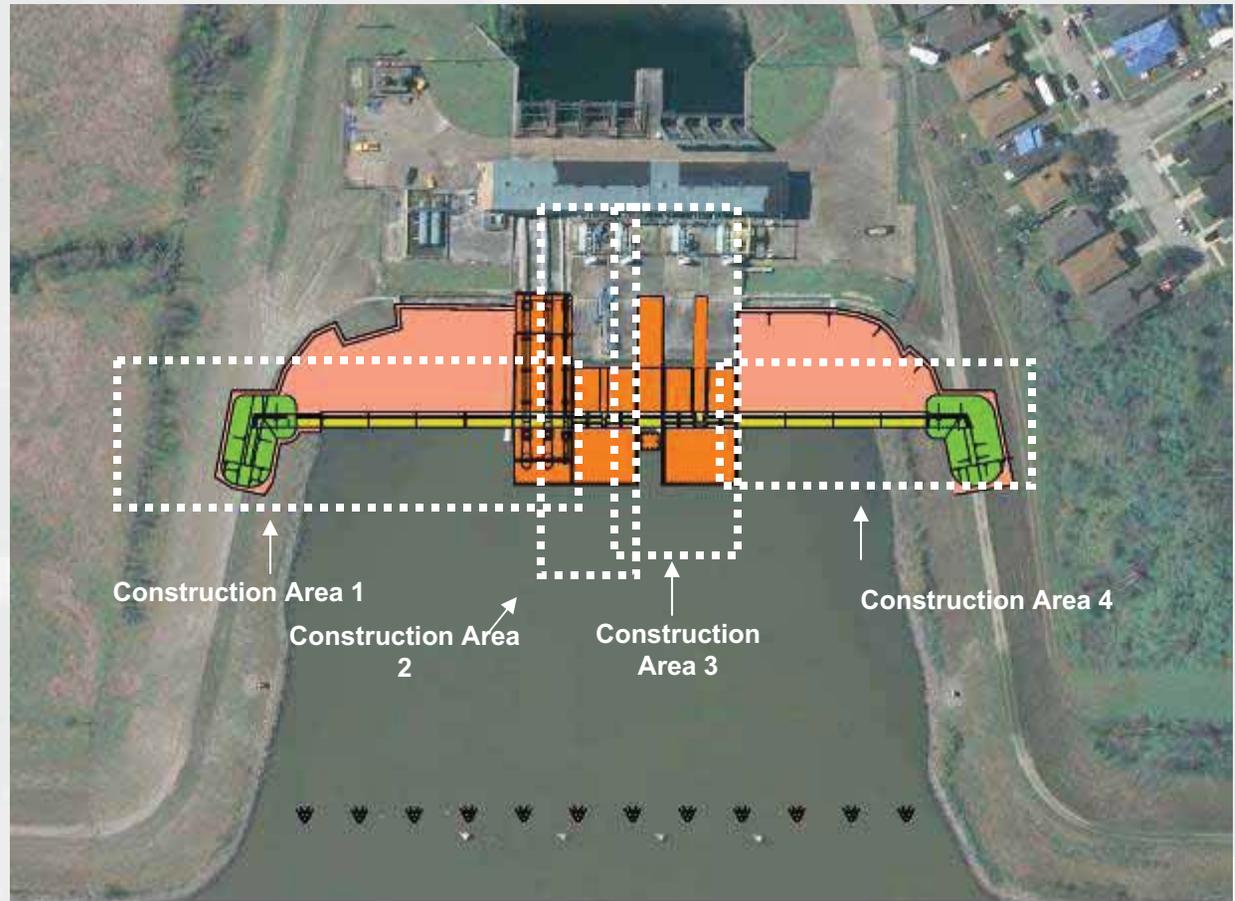
Sewerage and Water Board Pump Station 11

- Currently demolishing and removing discharge slabs and walls
- Will begin excavating earthen material from basins this week
- Pile driving to begin in about a month
- Includes five pumps with a total capacity of 1,670 cubic feet per second
- Phased construction allows for continued operation of pumps



Sewerage and Water Board Pump Station 13

- Currently demolishing and removing discharge slabs and walls
- Additional 15 MPH speed limit signs have been installed
- Includes seven pumps with a total capacity of 4,650 cubic feet per second
- Phased construction allows for continued operation of pumps



Vibration Monitoring

- The Corps is required to conduct vibration monitoring
- Predetermined levels of vibrations are based on industry standards for residential construction
- If vibrations exceed predetermined levels, the contractor is required to alter procedures



Existing Fronting Protection S&WB Pump Station No. 6



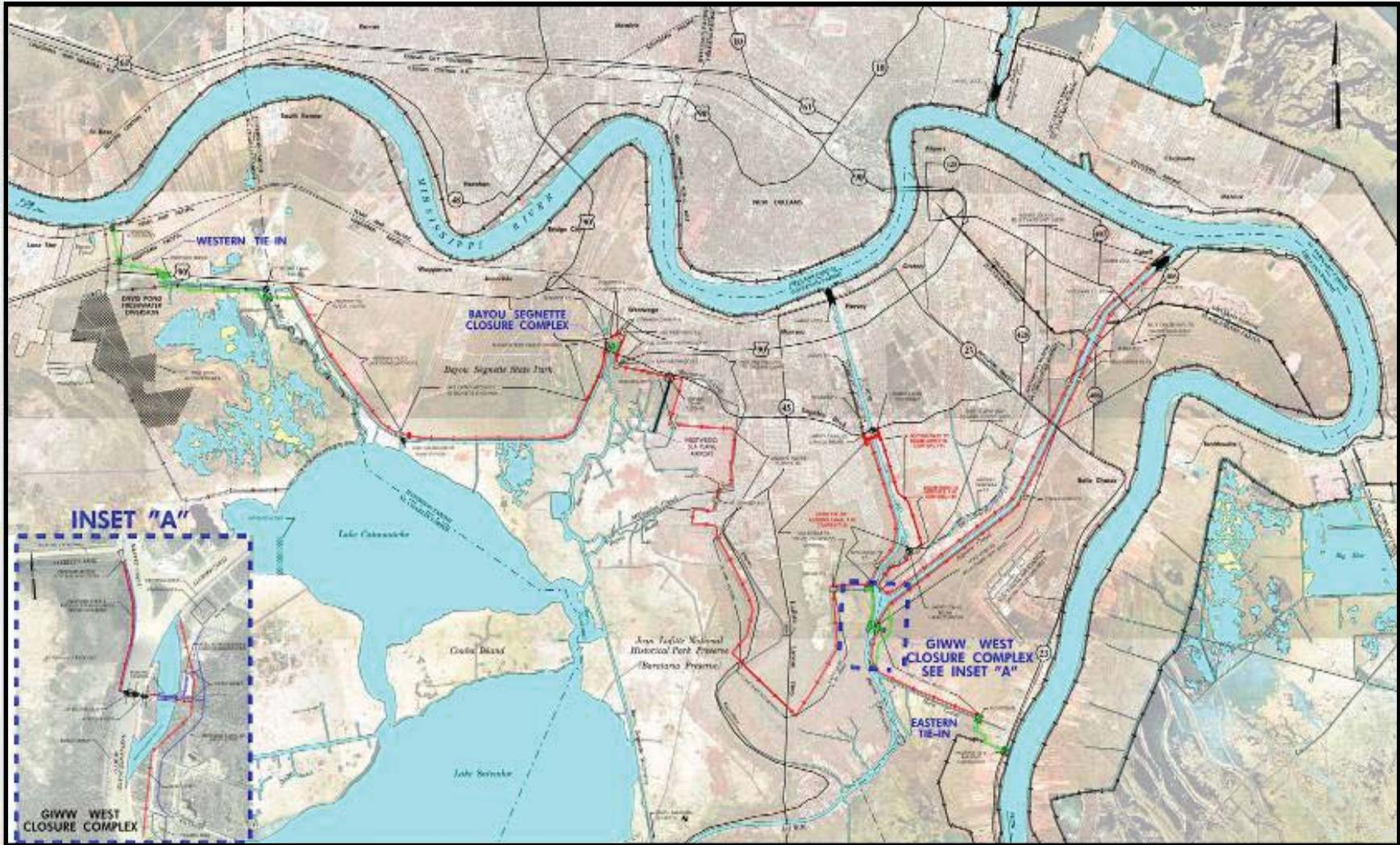
Fronting protection at Pump Station 13 will look similar to fronting protection at Pump Station 6 at the 17th Street Canal in New Orleans.



Construction of the GIWW West Closure Complex

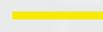
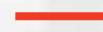


Westbank and Vicinity Risk Reduction



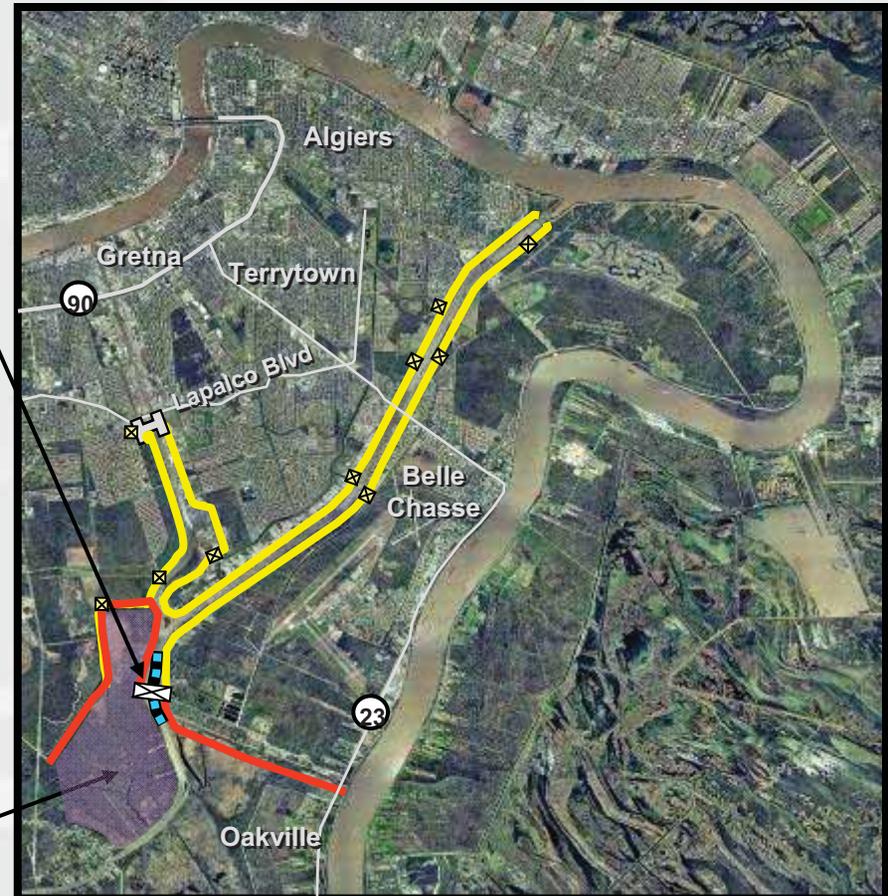
GIWW - West Closure Complex (Overview)

Floodgate and permanent bypass channel in the GIWW below the confluence of the Algiers and Harvey Canals to the 100-yr level of protection

-  Lapalco Floodgate and Cousins PS Discharge Channel Walls at previously authorized level of protection
-  Proposed Floodgate and pump station at 100-yr level of protection
-  GIWW permanent bypass channel
-  Levees and Floodwalls to the previously authorized level of protection or greater
-  Levees and Floodwalls to the 100-yr level of protection
-  Pump Stations



Bayou Aux Carpes 404 (c) site



Early Contractor Involvement Construction Methodology

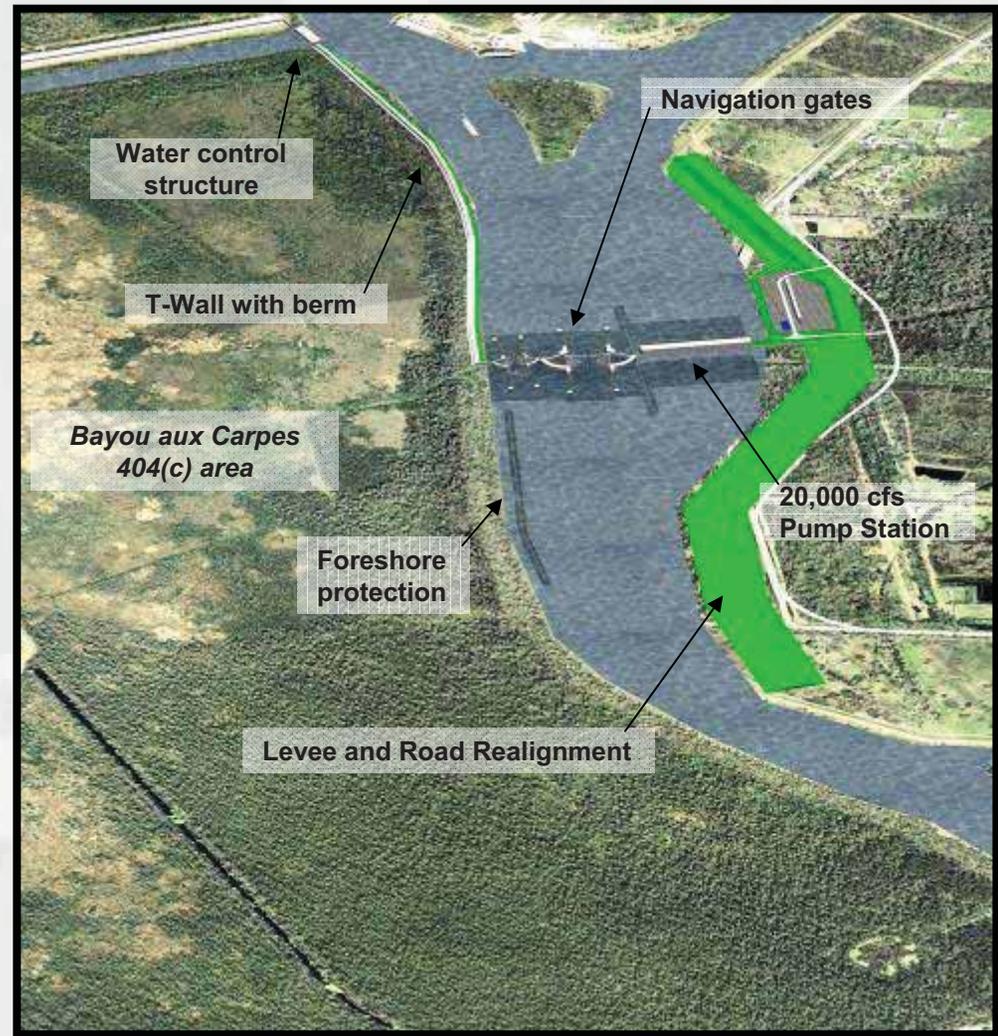
- Allows construction to start before complete design achieved - allows for faster start and completion of project
- Preconstruction Services
- Construction Contract
- Contract price negotiated after start of construction



GIWW - West Closure Complex (original)

Project Features:

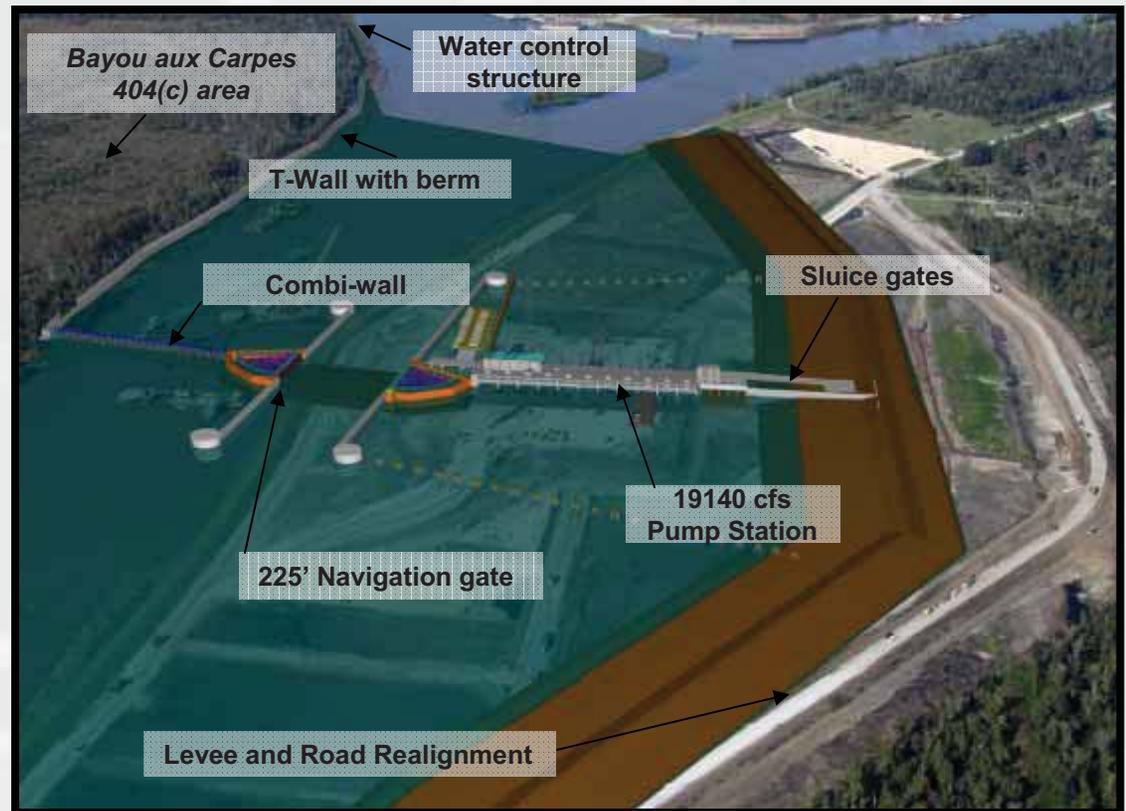
- 20,000 cfs Drainage Pumping Station (13 x 1540 cfs vertical “Flower Pot” pumps)
- 225-foot primary navigation gate
- 75-foot secondary navigation gate
- T-wall along edge of Bayou aux Carpes CWA 404(c) wetlands (4200' X 100' construction corridor)
- Water Control Structure
- Levee and East Bayou Road Realignment
- Environmental Mitigation and Augmentations
- Foreshore Protection
- Algiers Canal dredging



GIWW - West Closure Complex (revised)

Project Features:

- 19,140 cfs Drainage Pumping Station (11 x 1740 cfs vertical “Flower Pot” pumps)
- 225-foot primary navigation gate
- Sluice gates (5 – 16’ x 16’)
- T-wall along edge of Bayou aux Carpes CWA 404(c) wetlands (4200’ X 100’ construction corridor)
- Water Control Structure
- Levee and East Bayou Road Realignment
- Environmental Mitigation and Augmentations
- Foreshore Protection
- Algiers Canal dredging



Comparison of Scope Changes

Earlier Project Features:

- 20,000 cfs Drainage Pumping Station (13 x 1540 cfs vertical “Flower Pot” pumps)
- 225-foot primary navigation gate
- 75-foot secondary navigation gate
- T-wall along edge of Bayou aux Carpes CWA 404(c) wetlands (4200’ X 100’ construction corridor)
- Water Control Structure
- Levee and East Bayou Road Realignment
- Environmental Mitigation and Augmentations
- Foreshore Protection
- Algiers Canal dredging

Current Project Features:

- 19,140 cfs Drainage Pumping Station (11 x 1740 cfs vertical “Flower Pot” pumps)
- 225-foot primary navigation gate
- Sluice gates (5 – 16’ x 16’)
- “Closure-Wall”
- T-wall along edge of Bayou aux Carpes CWA 404(c) wetlands (4200’ X 100’ construction corridor)
- Water Control Structure
- Levee and East Bayou Road Realignment
- Environmental Mitigation and Augmentations
- Foreshore Protection
- Algiers Canal dredging



“Flower Pot” Pump Station

Original Capacity 19,140 cfs

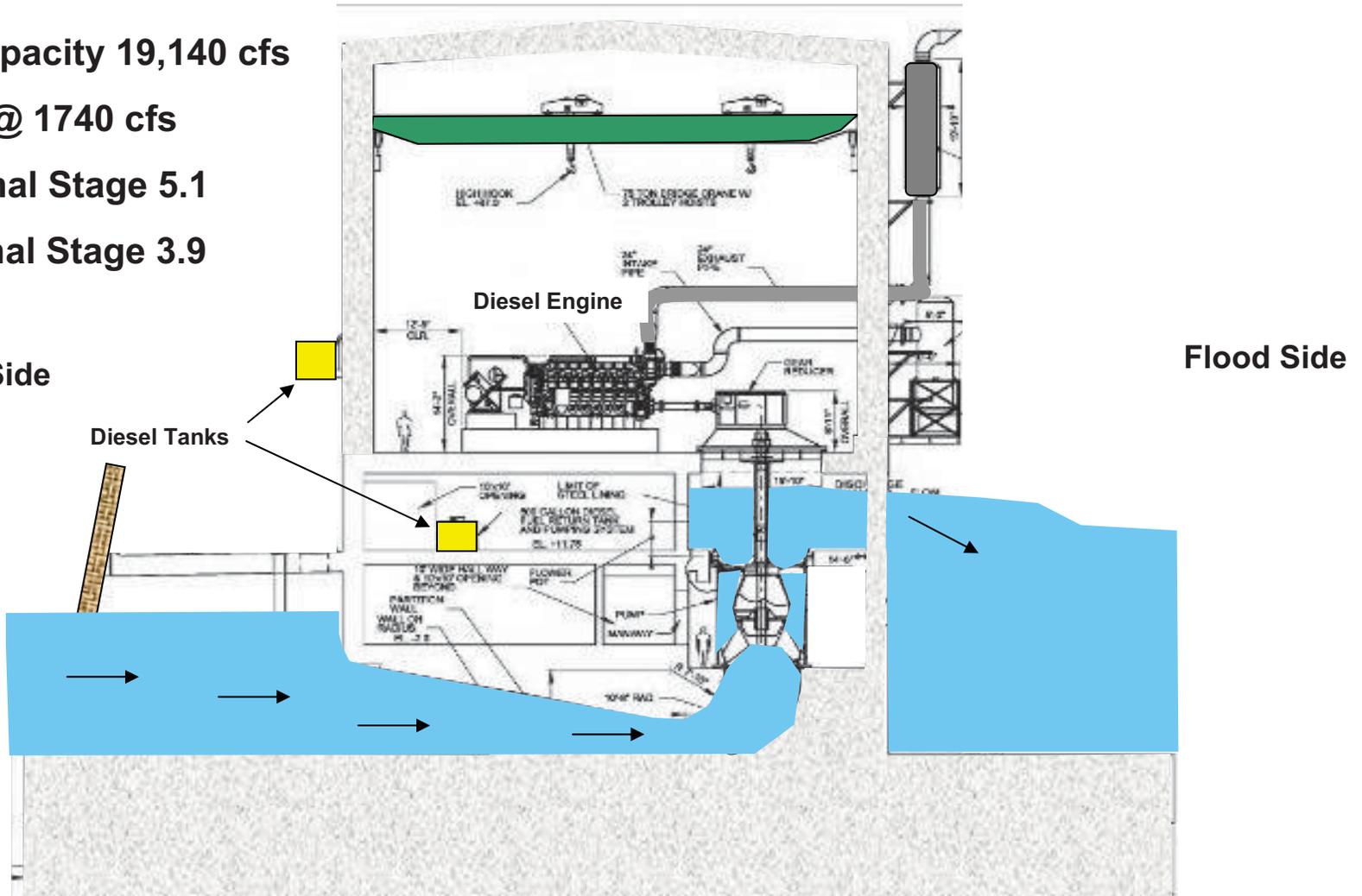
11 Pumps @ 1740 cfs

Algiers Canal Stage 5.1

Harvey Canal Stage 3.9

Protected Side

Diesel Tanks



Cross section through pumping unit

Detention Basin Analysis

10 Local Parish Pump Stations [10% Chance Exceedence Rainfall Actual Peak Discharge output]

- **6 on Algiers Canal**
 - PS#11 = 1,310 cfs
 - PS#13 = 3,704 cfs
 - Belle Chasse #1 = 3,500 cfs
 - Belle Chasse #2 = 999 cfs
 - Whitney-Barataria = 3,750 cfs
 - Planters PS = 2,360 cfs
- **4 on Harvey Canal**
 - Cousins PS = 5,474 cfs
 - Hero PS = 2,377 cfs
 - Estelle PS = 1,140 cfs
 - *Old Estelle PS = 514 cfs
- **Total Flow = 25,128 cfs**

(Note: *Old Estelle flows are being routed out of the system for the design alternative, resulting in a total inflow of **24,614 cfs** to the system.)

Nameplate Capacity = 29,212 cfs



Hydraulic Modeling

- Extensive numerical and physical modeling done at Engineer Research and Development Center
- Modeling of Detention Basin storage and conveyance
- Extensive modeling of individual pumps in conjunction with pump engine and gear manufacturers
- Results show ability to reduce pumping capacity from 20,000 to 19,140 cubic feet per second and maintain canal elevations below original levels



Pump Station and Detention Basin Model Results Summary

90% Assurance Peak Stages for Final Project Conditions
 (10% Chance Exceedence Rainfall Event with Gates Closed and Pumps Operating)
 Design Water Surface Elevation (DWSE) = 5.8 feet NAVD88, 2004.65 Epoch

	Original Model	*Refined Model	Alternative 3	Alternative 4
# of Pumps	13	13	12	11
**Individual Pump Q (cfs)	1,540	1,540	1,740	1,740
**Total Pump Capacity (cfs)	20,020	20,020	20,880	19,140
Algiers Canal Stage***	5.8	5.0	4.9	5.1
Harvey Canal Stage***	3.9	4.0	3.9	3.9
GIWW Canal Stage***	3.6	3.6	3.5	3.7

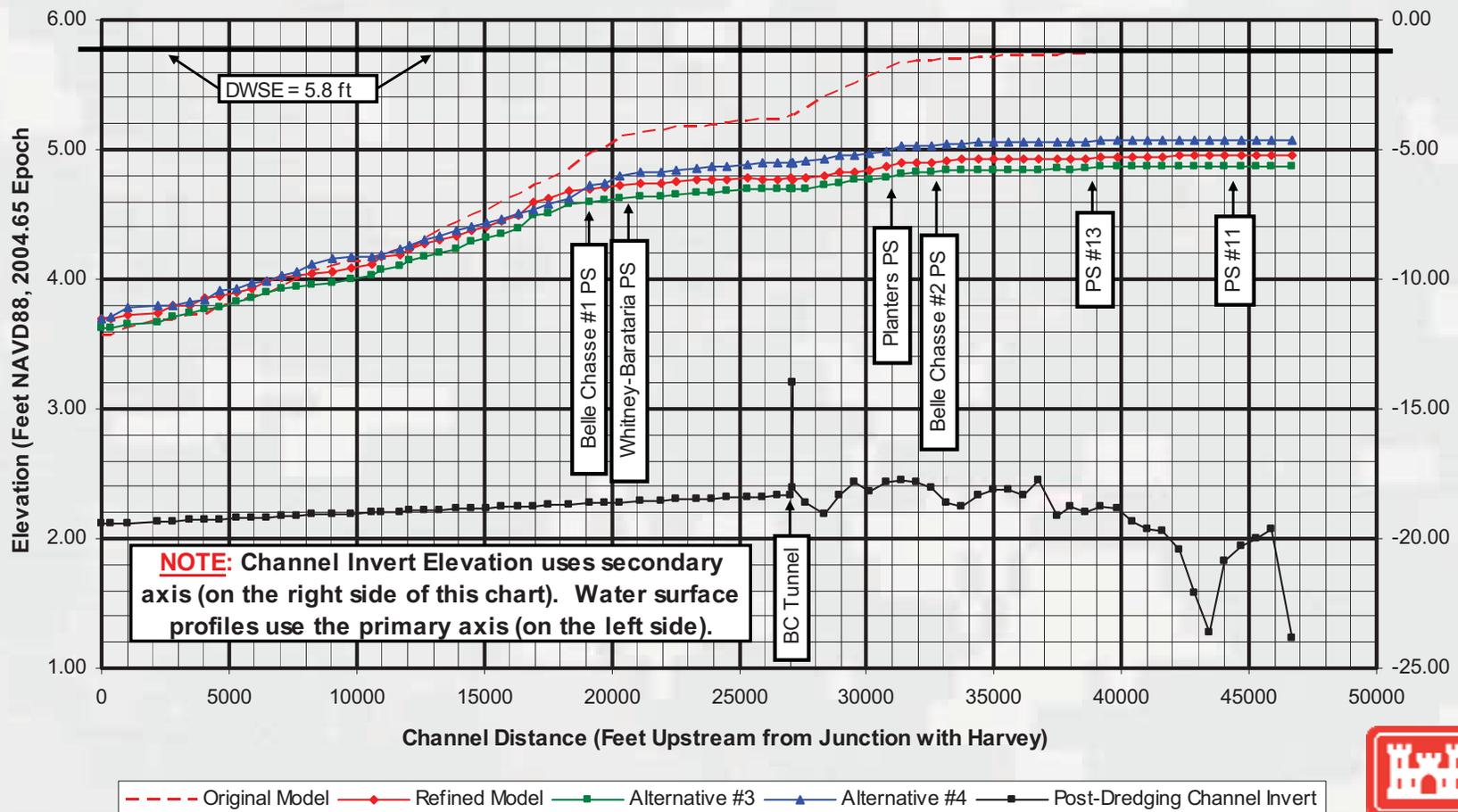
Notes: *Change in results from “Original Model” to “Refined Model” can be attributed to model refinements resulting in a more accurate computation of canal storage
 ** Nameplate capacities are based on an intake elevation of 2.0 feet.
 *** All Stages are reported in the NAVD88 Datum, 2004.65 Epoch

- Assumptions:**
1. PS#13 improvements are included in the analysis.
 2. Dredging on Algiers Canal is included.
 3. Old Estelle Pump Station outflow is routed out of the system, through the 404c area.
 4. Original & Refined Model: Pumps turn on at 2.0, 2.5, and 3.0 ft; turn off at -1.0, -0.5, and 0.0 feet.
 5. Alternatives #3 and #4: Pumps turn on at 2.0, 2.5, and 3.0 feet, turn off at 0.0 feet.



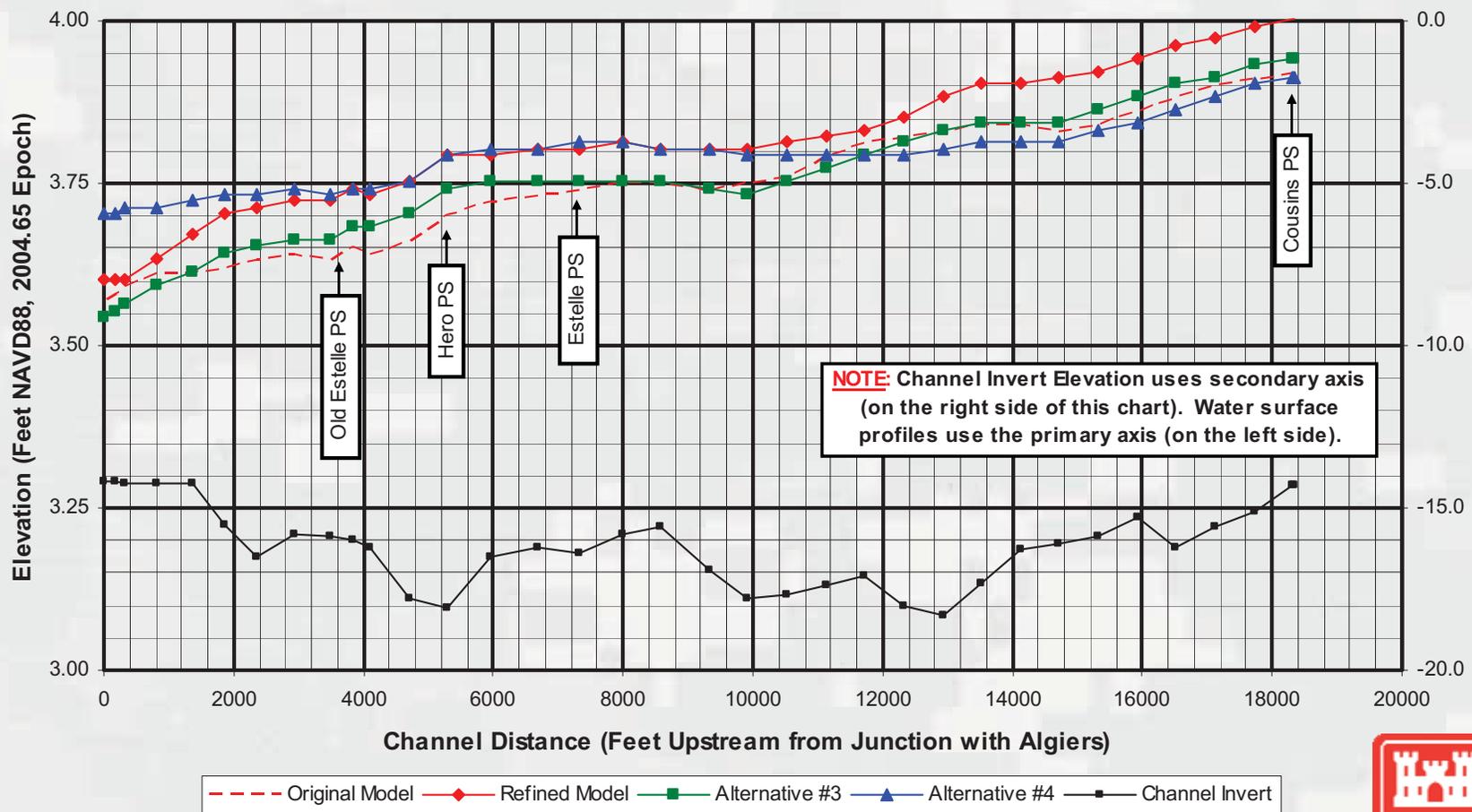
Algiers Canal Water Levels

90% Assurance Peak Water Surface Profile Plots on Algiers Canal
 10% Chance Exceedance Rainfall, Gates Closed, All WCC Pumps Operating



Harvey Canal Water Levels

90% Assurance Peak Water Surface Profile Plots on Harvey Canal
 10% Chance Exceedance Rainfall, Gates Closed, All WCC Pumps Operating



Construction Progress

Jan. 2010



Construction Progress

Feb. 2010



Construction Progress

Jan. 2010



Construction Progress

Feb. 2010



Construction Progress

Jan. 2010

Pump Station Foundation



Construction Progress

Feb. 2010

Pump Station Foundation



Construction Progress

Jan. 2010

225' Navigation Gate Cofferdam



Construction Progress

Feb. 2010

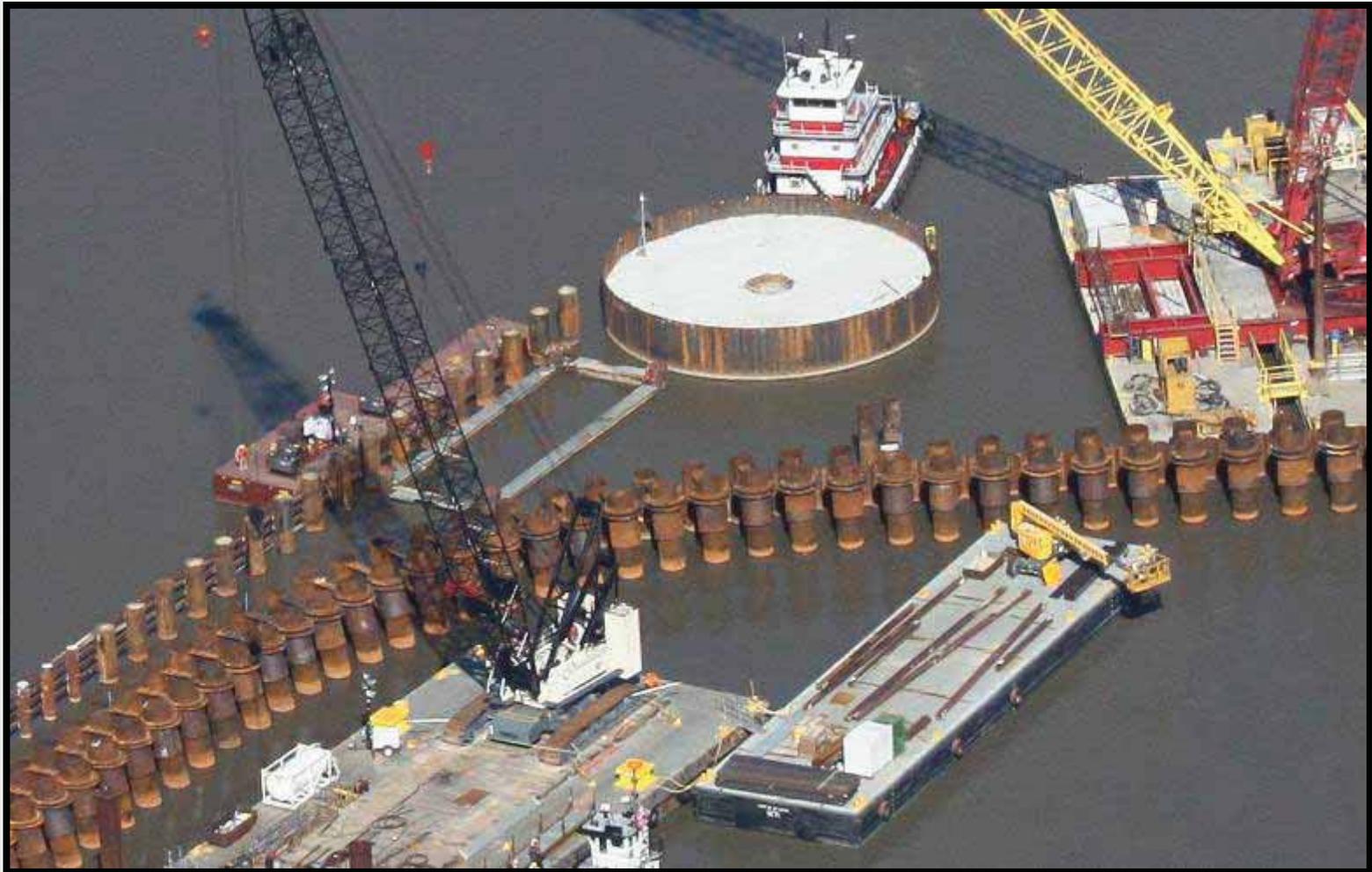
225' Navigation Gate Cofferdam



Construction Progress

Jan. 2010

225' Navigation Gate Cofferdam



Construction Progress

Jan. 2010

Earthen Material Processing



What To Expect During Construction

- **Construction impacts**
 - Elevated noise levels from motors, pumps, generators, pile driving, etc.
 - Increased truck traffic
- **Corps' efforts to minimize impacts**
 - Contractor has ability to both use canal and road access
 - Wet unpaved roads (to minimize dust)



Onsite Inspection

Quality Control/Quality Assurance

- Onsite Corps employee oversight
- Monitors the construction contractor
- Ensures sites are safe and signage is clear
- Confirms traffic control measures are maintained and meet safety standards
- Knowledgeable of site activities



Upcoming Public Meetings

Open House 6 p.m. - Presentation 6:30 p.m.

Wednesday, Mar. 24, 2010

Permanent Canal Closures and Pumps RFP public meeting

Dillard University, Lawless Chapel
2601 Gentilly Blvd,
New Orleans, LA 70122

Tuesday, Mar. 30, 2010

St. Charles eastbank construction and IER 24 meeting
St. Charles of Borromeo Catholic Church
13396 River Rd.
Destrehan, LA 70047

Tuesday, Apr. 20, 2010

MRGO Feasibility Study Overview
Holy Angels Convent
1011 Gallier St.
New Orleans, LA 70117

Thursday, Apr. 29, 2010

LCA Convent/Blind River
St. James Parish Courthouse
5800 LA 44
Convent, LA 70723



Opportunities for Public Input

- Regular public meetings throughout the Hurricane and Storm Damage Risk Reduction System (HSDRRS) Area
- Make sure to sign in tonight to get on our meeting notification mailing list
- Construction Impact Hotline: **1- 877- 427- 0345**
- Comments can be submitted at any time at
www.nolaenvironmental.gov

Questions and comments may be submitted to

Telephone: 504-862-2201

[E-mail: AskTheCorps@usace.army.mil](mailto:AskTheCorps@usace.army.mil)



Resources

www.nolaenvironmental.gov

NOLA Environmental
NEW ORLEANS, LOUISIANA
Environmental Compliance Data Bank
www.nolaenvironmental.gov

PROJECTS | MEETINGS | LIBRARY | DATA VIEWER | GET INVOLVED | RELATED LINKS

Welcome to NOLA Environmental! This site has been set up to share with the public the efforts being made by the U.S. Army Corps of Engineers and other federal and state agencies in south Louisiana regarding the environmental compliance for proposed federal and state Hurricane Risk Reduction Projects. Additional information pertaining to other federal and state agencies' hurricane recovery efforts in southeast Louisiana will also be posted on the site as it becomes available.

The U.S. Army Corps of Engineers, Mississippi Valley Division, New Orleans District implemented Alternative Arrangements on March 13, 2007 under the provisions of the Council on Environmental Quality regulations for implementing the National Environmental Policy Act (40 CFR § 1506.11). Learn more...

FEATURED PROJECT
USACE-MVNY Emergency Alternative Arrangements
Greater New Orleans
Hurricane and Storm Damage
Risk Reduction System Projects

Announcements

- Draft IER 7 Public Comment Period 5/6 - 6/4
- Draft IER 13 Comment Period extended to 5/18
- Draft IER 5 Public Comment Period 5/4 - 6/3
- Draft IER 16 Public Comment Period 5/1 - 5/30
- Draft IER 6 Public Comment Period 4/24 - 5/23
- IER 6 - The Clean Water Act Section 404 Public Notice Comment Period 4/24 - 5/23
- Orleans Parish Pump Station Stormwatering EA #474 Drafts Public Comment Period 4/17 - 5/23
- Jefferson Parish Pump Station Stormwatering EA #475 Drafts Public Comment Period 4/14 - 5/20
- Draft IER 10 Public Comment Period 4/13 - 5/12

Upcoming

- 05/11/2009 - Public Meeting IER 6, 9, 10 and below
- 05/17/2009 - Draft IER 10 Public Comment Period Ends

Newly Available

NEW NOLA Environmental Basic Data Viewer

- News Release 06 May 09 Draft IER 5
- IER 5 - Phase 2 Final Report: Operating Scenario Analysis

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

U.S. Army Corps of Engineers New Orleans District - Microsoft Internet Explorer, provided by USACE, New Orleans District

US Army Corps of Engineers
New Orleans District

Floodwall:
Building more bigger, stronger, better. The U.S. Army Corps of Engineers is continuing to work speedily to complete the Hurricane and Storm Damage Risk Reduction System (HSDRS) by 2012. To this end, the Corps is using valuable resources learned to construct more resilient levees and floodwalls.

PUBLIC INFORMATION

Learn more about what the Corps is doing to reduce risk. [Public Information and More...](#)

Emergency Information
[Food Supplies](#), [Disaster Response](#), [Public Information and More...](#)

NOLA Environmental
Did you miss a meeting? No problem! Find presentations, presentations and more.

TOP HEADLINES

ASK THE CORPS

FEATURED VIDEOS

NEW Draft IER 10 Public Comment Period

NEW News Release 06 May 09 Draft IER 5

NEW IER 5 - Phase 2 Final Report: Operating Scenario Analysis





US Army Corps
of Engineers
New Orleans District

Social Web Networking Communities

and what they mean to you

twitter



is an online messaging and social networking system that allows people to share their daily life experiences minute-by-minute, hour-by-hour, and/or day-by-day via their computer or mobile phone. Team New Orleans is joining in and taking on the opportunity to tweet with the public and offer reports on developments, additions, changes, and upcoming public meetings and events that will affect local communities. Check it out by going to twitter.com/teamneworleans.

Flickr is an online community platform for global photo management and sharing applications via the web. Team New Orleans has become a part of the movement and is using Flickr to visually explain our projects.

Check out our photos at www.flickr.com/photos/37671998@N05.

flickr



Explore...

facebook

is a global social networking Web site that links people from across the world and is currently ranked as the most popular of its kind. Team New Orleans is following in the trend and is using Facebook to update the

public about projects, events, activities and public meetings.

Become friends with Team New Orleans by visiting www.facebook.com, search New Orleans District.



Visit the following links to follow us on Facebook, Twitter and Flickr:

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<http://twitter.com/teamneworleans>

<http://www.flickr.com/photos/37671998@N05>

