

# Greater New Orleans Hurricane & Storm Damage Risk Reduction System

## Individual Environmental Report 12/13 Supplemental & Eastern Tie-In Traffic Impacts

January 12, 2011  
St. Paul's Benevolent  
Association Hall



US Army Corps of Engineers  
**BUILDING STRONG**



# Meeting Purpose

- **Discuss proposed installation of a waterline that would provide the water necessary to operate and maintain the GIWW West Closure Complex in regular and emergency conditions, should they occur.**
- **Discuss traffic impacts construction of the Eastern Tie-In will generate.**

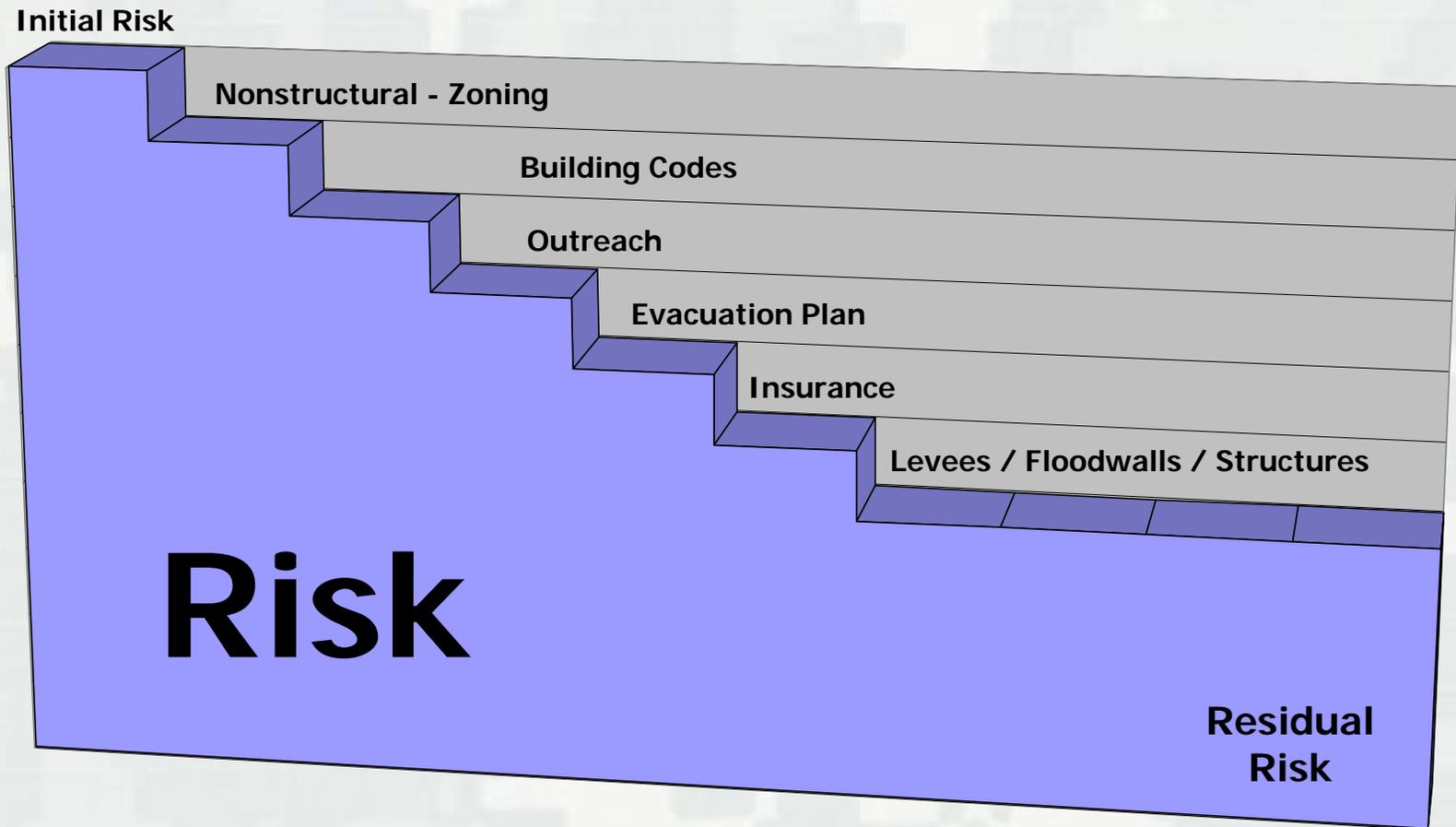


# National Environmental Policy Act: NEPA

- Required of all major federal actions
- Analyze potential impacts to the human and natural environment and investigate reasonable alternatives
- Public involvement is KEY! We want to hear from you.
- Goal: more informed decision making through public involvement
- Analysis documented in Individual Environmental Reports (IER)
- Corps has made alternative arrangements to expedite project timelines



# Risk – Shared Responsibility





US Army Corps of Engineers

# GREATER NEW ORLEANS HURRICANE AND STORM DAMAGE RISK REDUCTION SYSTEM (HSDRRS) Status - June 2010



**Assessment Guide**

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

**Note:**

- \* Concrete structures are built to a higher elevation to accommodate future subsidence.
- \* Levees will require future fills to accommodate subsidence.

**Key to Map Features**

- New Alignments
- Levee Centerline (Non-HSDRRS)
- Mississippi River Levee (Non-HSDRRS)
- Outfall Canals - Ongoing Analysis
- Locks
- Pump Station
- Designates different sections of Levee/Floodwall
- Under Evaluation
- Temporary 100-yr Risk Reduction Established

**ALL ELEVATIONS ARE NAVD 83 (2004.GS)**

Date: 22-JUN-2010  
Edition: 1.0; EGIS Map ID No. 10-052  
Map produced by the U.S. Army Corps of Engineers - New Orleans  
<http://www.nv.usace.army.mil/hrs22pdf/RiskStatusMap.pdf>

**Key Accomplishments:**

- 1) Largest Civil Works project ever - more than \$14 billion
- 2) Using more stringent materials and design standards, and innovative construction techniques
- 3) Awarded more than 260 construction contracts so far for \$6.9 billion
- 4) 100 contracts currently under construction worth more than \$5.7 billion
- 5) Construction started on Gulf Intracoastal Waterway - West Closure Barrier, to include largest drainage pump station in the world
- 6) Construction at half-way mark on Inner Harbor Navigation Canal Surge Barrier at Lake Borgne, largest Civil Works design-build project in Corps history
- 7) When the System is completed, the New Orleans area will have the best perimeter defense in its history

**GIWW West Closure Complex**  
Under Construction to elevation 16.0

*(The 100 year requirement for the Harvey Canal and Intracoastal Waterway areas will be met by construction of the GIWW West Closure Complex.)*

**IHNC Surge Reduction Barrier**  
Under construction to elevation 29.0

*(The 100 year requirement for the GIWW-IHNC area will be met by construction of the Seabrook and IHNC Surge Barriers.)*

**Orleans Metro - Orleans Marina Floodwall**  
Under Construction

**Orleans Metro - Bayou St. John Tie-in Levee / Floodwall**  
Under Construction

**Seabrook Floodgate Complex**  
Under construction to elevation 16.0

*(The 100 year requirement for the GIWW-IHNC area will be met by construction of the Seabrook and IHNC Surge Barriers.)*

**Orleans East Lakefront - Airport Floodwall**  
Under Construction

**Outfall Canal Closure Structures**  
Interim gates - pumps provide risk reduction

**Jefferson Lakefront Pump Stations 1 - 4**  
Fronting Protection Under Construction

**Jefferson Lakefront Levee Reaches 1 - 4**  
Under Construction

**West Return Floodwall**  
Under construction

**St. Charles - Airport Runway Levee**  
Current elevation at 14.0

**St. Charles - Bayou Trepanier Complex**  
Under construction

**Bayou Bienvenue to Bayou Dupree**  
Under Construction

**Bayou Dupre Floodgate**  
Under Construction

**Bayou Dupree to Hwy 46**  
Under Construction

**Verret to Caernarvon**  
Under Construction

**Caernarvon Floodwall**  
Planned Construction to elevation 24.5

**Algiers Canal Pump Stations**  
Fronting Protection Under Construction

**Hero Pump Station**  
Under construction

**Hero Canal to Oakville Levees / Structures (Eastern Tie-in)**  
Under Construction

**Westwego to Harvey Pump Stations**  
Fronting Protection Under Construction

**Westwego to Harvey Levee / Floodwalls**  
Under Construction

**Lake Cataouatche Pump Station**  
Under construction to elevation 15.5

**Lake Cataouatche Levee**  
Under construction to elevation 11.5

**Western Tie-in**  
Minimal risk reduction. Under Construction to elevation 11.5

**Bayou Segnette Complex**  
Under Construction

**Interim Barge Gate Closure in Company Canal**  
Current elevation is 9.0

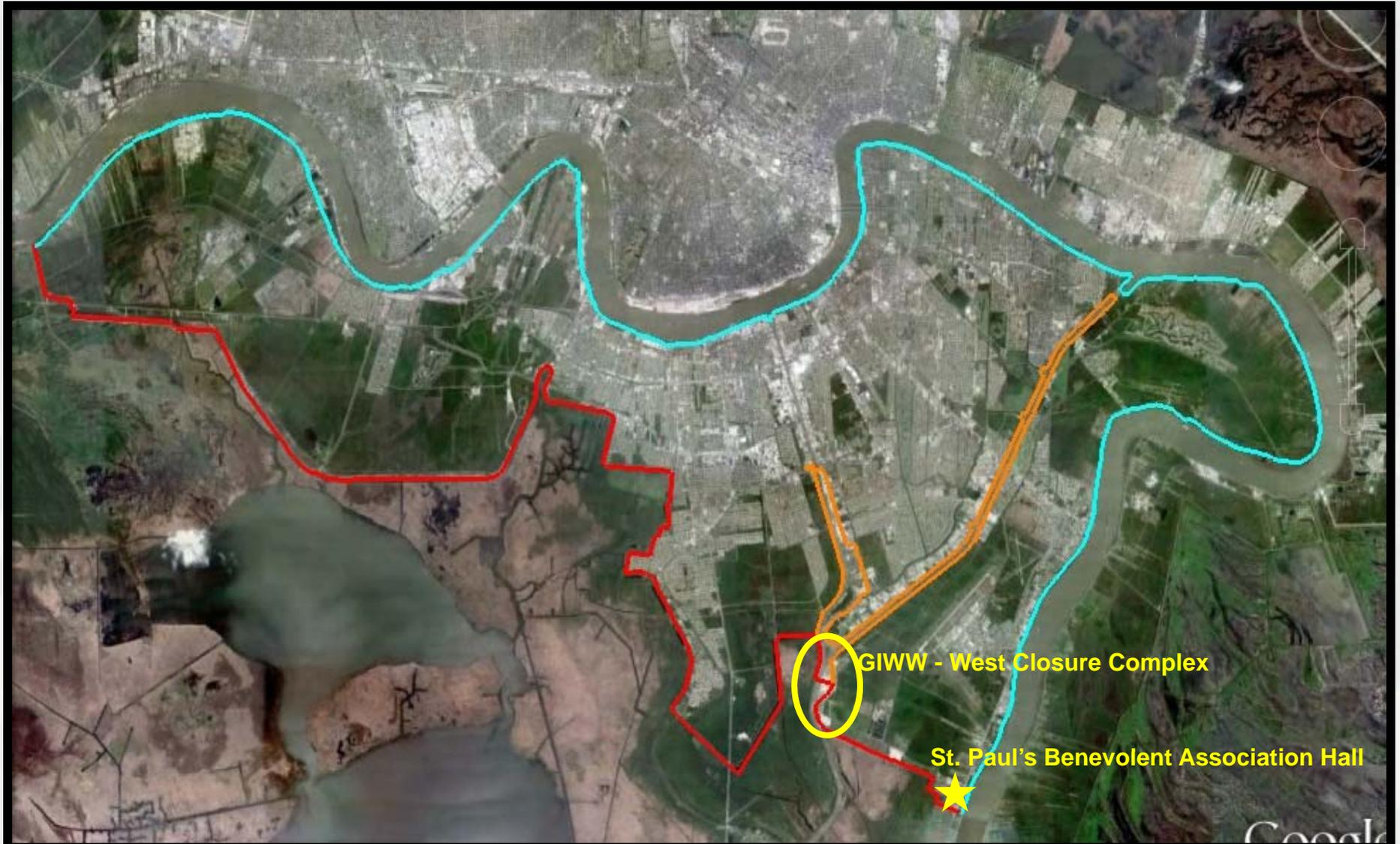
**Harvey Canal Floodgate**  
Current elevation is 11.0

**Hero Canal to Oakville Levees / Structures (Eastern Tie-in)**  
Under Construction

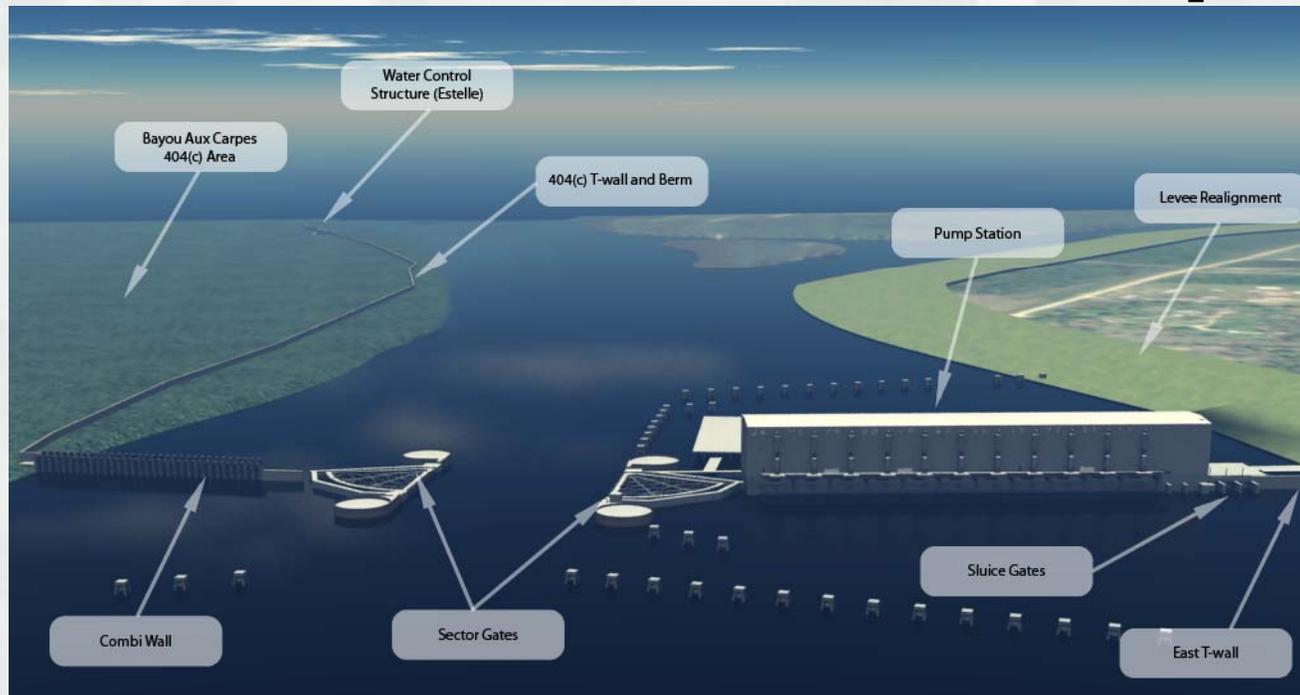
**Hero Canal to Oakville Levees / Structures (Eastern Tie-in)**  
Under Construction

**Hero Canal to Oakville Levees / Structures (Eastern Tie-in)**  
Under Construction

# West Bank Hurricane & Storm Damage Risk Reduction System



# GIWW-West Closure Complex



- 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



# Individual Environmental Report 12/13 Supplemental Proposed Action

- Install a waterline to operate and maintain the GIWW West Closure Complex in regular and emergency conditions, should they occur.
- Install fire hydrants near the complex
- Two construction methods would generate the fewest impacts to nearby residents
- Available for public review through Jan. 20, 2011



The GIWW West Closure Complex is the keystone risk reduction project on the Westbank.



# Individual Environmental Report 12/13 Supplemental Proposed Action

## Section 1

- Bergeron Dr. to Walker Rd
- Staying within Bergeron Dr. right-of-way and drainage easement

## Directional Drill

- Minimizes impacts to Bergeron Dr. residents
  - Single entry and exit points
  - Multiple entry and exit points with trenching

Impacts to bottomland hardwoods would be mitigated



The directional drill construction method generates the fewest impacts to residents along Bergeron Dr.



# Individual Environmental Report 12/13 Supplemental Proposed Action

## Section 2

- Walker Rd. to GIWW West Closure Complex

Construction by trenching within existing right-of-way (Contractor may elect to use directional drill method)

Impacts to bottomland hardwood forest lands would be mitigated



Construction by trenching would begin in March 2011.



# Mitigation

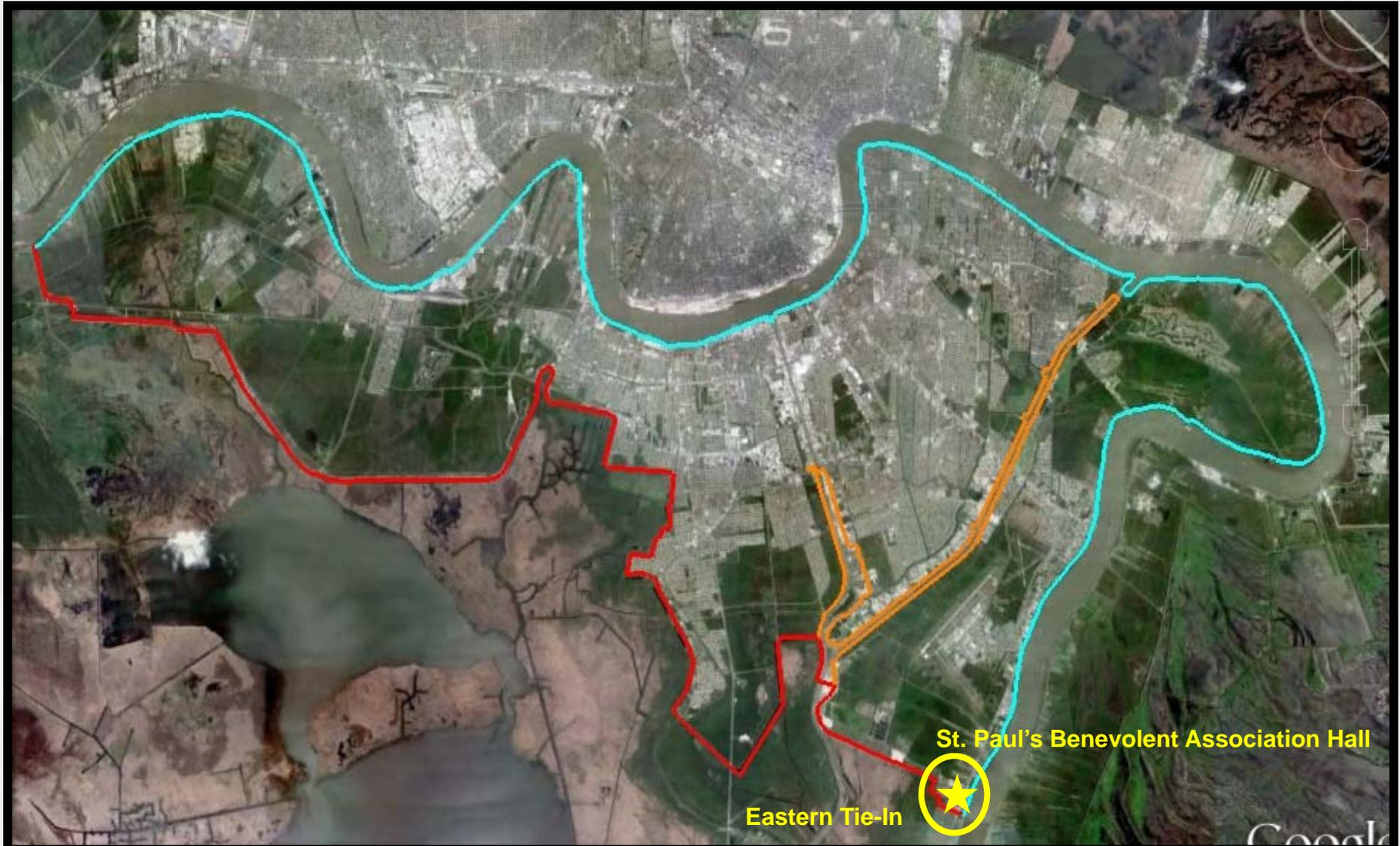


Proposed mitigation projects are currently under development and will be discussed in future environmental documents.

- **The Corps has made efforts to avoid impacts to natural resources**
- **Minimize impacts to the greatest extent possible**
- **Compensate for unavoidable impacts**
- **Mitigation plans will be discussed in environmental documents**
- **Mitigation is funded**

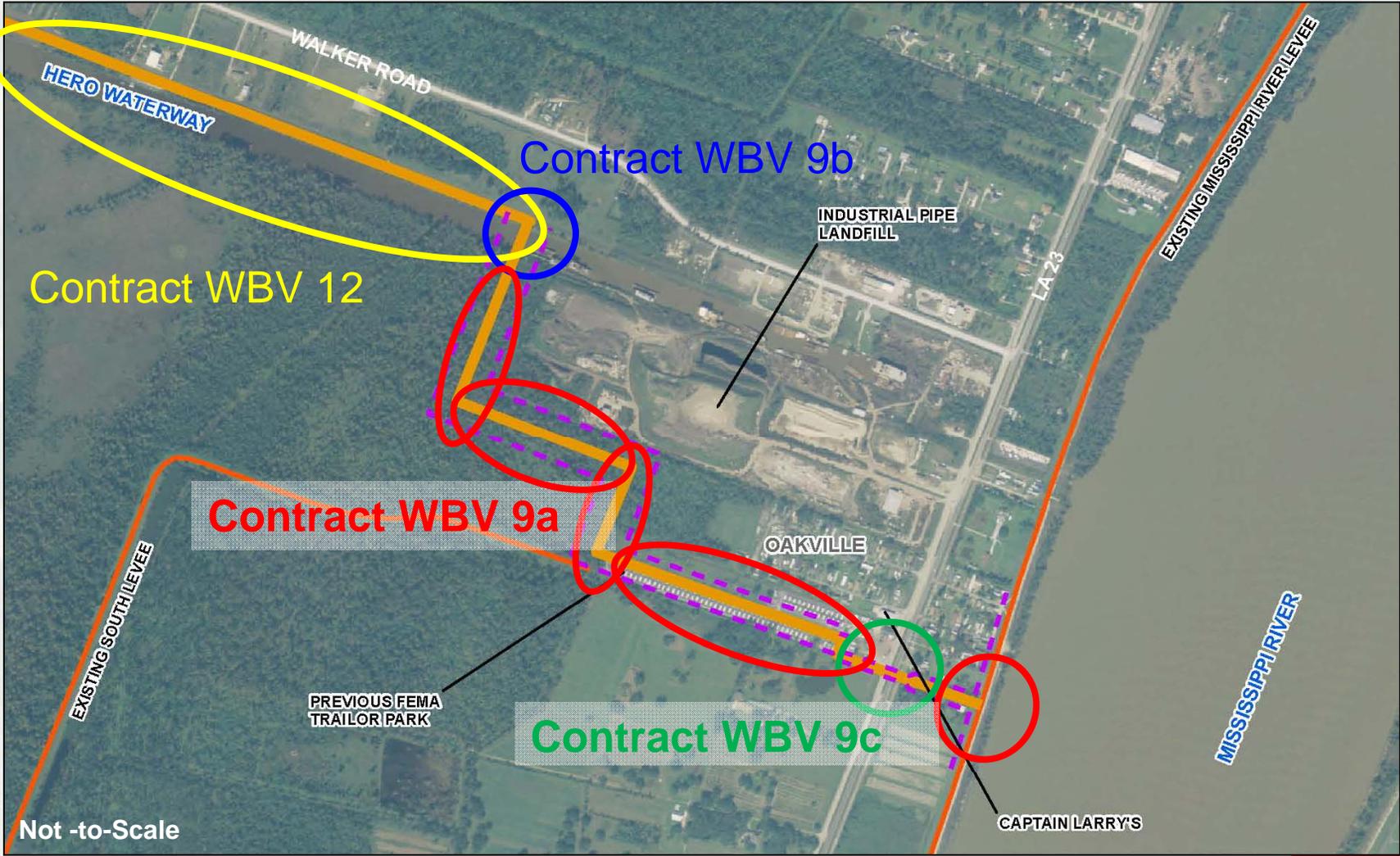


# West Bank Hurricane & Storm Damage Risk Reduction System



# Eastern Tie In

Connects to the Hero Canal Levee and the Mississippi River Levees in Oakville



# Eastern Tie-In

## Contract WBV 9a

### recent/current activities:

- About 27% complete
- Levee in former FEMA trailer park is substantially complete
- Installing a sand base and geotextile to build the levee in the swamp

## Contract WBV 9b

### recent/current activities:

- About 29% complete
- Batter piles to support stoplog structure underway
- Preparing soil for levee tie-in



The stoplog gate at the Hero Canal will look similar to the Industrial Canal stoplog gate when it is completed.



# Eastern Tie-In

**Contract WBV 9c  
recent/current  
activities:**

- About 16% complete
- Driving sheetpile for construction of the T-wall
- Detour to begin in late-January



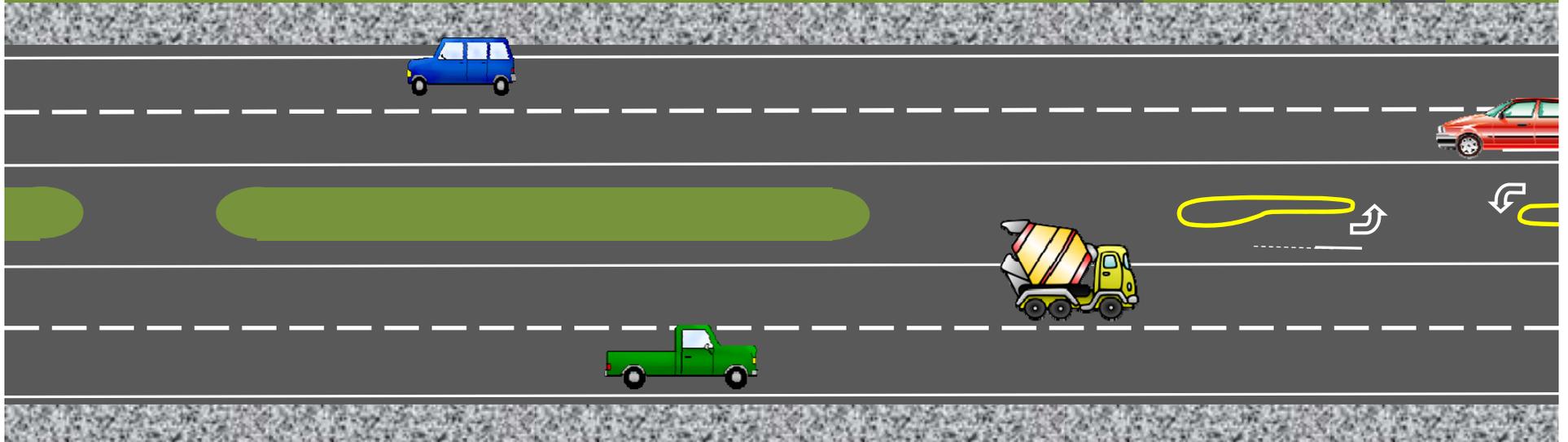
# Current Conditions

Captain  
Larry's  
Seafood

Cemetery Rd.

W. Peters St.

W. Oakville St.



Not to Scale

E. Peters St.

E. Oakville St.

Levee Rd.

# Detour Phase 1

Approx. One Week

Captain  
Larry's  
Seafood

Cemetery Rd.

W. Peters St.

W. Oakville St.



Not to Scale

E. Peters St.

E. Oakville St.

Levee Rd.

# Detour Phase 2

Approx One Week

Captain  
Larry's  
Seafood



W. Peters St.

Cemetery Rd.

W. Oakville St.



Not to Scale

E. Peters St.

Levee Rd.

E. Oakville St.

# Detour Phase 3

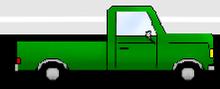
Approx. Four Months

Captain  
Larry's  
Seafood

Cemetery Rd.

W. Peters St.

W. Oakville St.



Work  
Area



E. Peters St.

E. Oakville St.

Levee Rd.



Not to Scale

# Detour Phase 4

Approx. Two Months

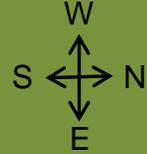
Captain  
Larry's  
Seafood

Work  
Area

Cemetery Rd.

W. Peters St.

W. Oakville St.



E. Peters St.

E. Oakville St.

Levee Rd.

Not to Scale

# Hurricane Season

## West side Detours

Captain  
Larry's  
Seafood

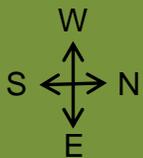
Cemetery Rd.

W. Peters St.

W. Oakville St.



Work  
Area

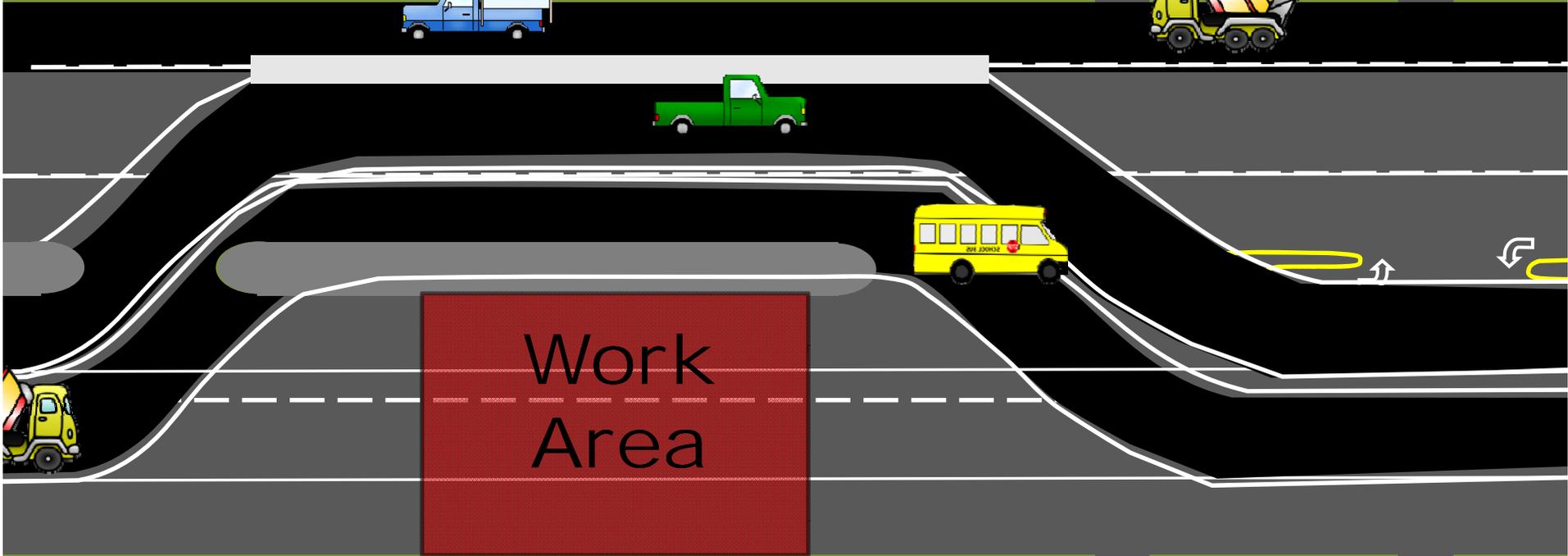


Not to Scale

E. Peters St.

E. Oakville St.

Levee Rd.



# Hurricane Season

## East side Detours

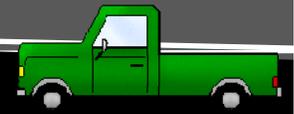
Captain  
Larry's  
Seafood

Work  
Area

Cemetery Rd.

W. Peters St.

W. Oakville St.



Not to Scale

E. Peters St.

E. Oakville St.

Levee Rd.

# Eastern Tie-In Conceptual



**Completed work will include:**

- **Three swing gates at Hwy 23**
- **A concrete T-wall built to elevation 14 ft on the southern edge of Capt. Larry's Seafood Restaurant Parking lot**



# What To Expect During Construction

## Construction impacts

- Elevated noise levels from motors, pumps, generators, pile driving, etc.
- Increased truck traffic
- Travel lanes reduced from two to one-lane in each direction (outside of hurricane season)
- Minor traffic delays
- Lane shifts



Construction of concrete T-walls will require pile driving.



# 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



# Currently Available for Public Review

- IER 12/13 Supplemental
  - Public Review through Jan. 20, 2011
- Comments can be submitted by:
  - Calling 504-862-1544
  - E-mailing [mvnenvironmental@usace.army.mil](mailto:mvnenvironmental@usace.army.mil)
  - Or at any time at [www.nolaenvironmental.gov](http://www.nolaenvironmental.gov)



# Upcoming Public Meetings

## **Thursday, Jan. 20, 2011**

MRGO Ecosystem Restoration public meeting  
CF Rowley Alternative School  
49 Madison Ave.  
Chalmette, LA 70043  
Open House 6:00 p.m.  
Presentation 6:30 p.m.

## **Tuesday, Jan. 25, 2011**

MRGO Ecosystem Restoration public meeting  
Leo Seal Community Center  
529 Highway 90  
Waveland, MS  
Open House 6:00 p.m.  
Presentation 6:30 p.m.

## **Thursday, Feb. 3, 2011**

MRGO Ecosystem Restoration public meeting  
Light City Church  
6117 St. Claude Ave.  
New Orleans, LA 70117  
Open House 6 to 6:30 p.m.  
Presentation 6:30 p.m.

## **Tuesday, Apr. 5, 2011**

Plaquemines Parish Non-Federal Levee and NOV  
Buras Auditorium  
35619 Hwy 11  
Buras, LA 70041  
Open House 6:00 p.m.  
Presentation 6:30 p.m.

## **Wednesday, Apr. 6, 2011**

Plaquemines Parish Non-Federal Levee and NOV  
Belle Chasse Middle School  
13476 Hwy 23  
Belle Chasse, LA 70037  
Open House 6:00 p.m.  
Presentation 6:30 p.m.

## **Thursday, Apr. 7, 2011**

Plaquemines Parish Non-Federal Levee and NOV  
Rev. Percy M. Griffin Community Center  
15535 Hwy 15  
Davant, LA 70046  
Open House 6:00 p.m.  
Presentation 6:30 p.m.



# 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](http://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)





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](https://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](http://www.flickr.com/photos/37671998@N05).

## flickr



## 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](http://www.facebook.com), search New Orleans District.



# Resources

[www.nolaenvironmental.gov](http://www.nolaenvironmental.gov)

**NO LA Environmental**  
NEW ORLEANS, LOUISIANA  
Environmental Compliance Data Bank  
[www.nolaenvironmental.gov](http://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 (48 CFR § 1506.11). Learn more...

**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 Stormproofing EA #474 Drafts Public Comment Period 4/17 - 5/23
- Jefferson Parish Pump Station Stormproofing 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 8, 9, 10 and borrow)
- 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

**FEATURED PROJECT**

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

<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

SEARCH

**Floodwall:**  
Building more bigger, stronger, better. The U.S. Army Corps of Engineers is working to work, and is ready to complete the Hurricane and Storm Damage Risk Reduction System (HSDRRS) by 2014. To help and the Corps is using valuable lessons learned to construct more resilient levees and floodwalls.

**PUBLIC INFORMATION**

**Learn More About the Corps's Plans to Reduce Risk**

**Emergency Information**  
Food Closures, Evacuation Routes, Health Information and More

**Featured Videos**

**Meet Orleans Complex**  
Learn more about the alternatives under consideration to reduce risk on the Western Marshes.

**Hurricane & Storm Damage Risk Reduction System**  
From levees to pumping stations, find out more about system features.

HOME | DISCLAIMER | PUBLIC INQUIRY | EMERGENCY AND SECURITY | FOIA | INFORMATION QUALITY ACT | ACCESSIBILITY



# Ground Rules

- **Speakers will have a maximum of 3-minutes to speak**
- **Speakers may not yield unused portions of their time**
- **A speaker may not comment a second time until all community members have been called on to speak a first time**
- **All comments and/or questions (written or verbal) become part of the administrative record for Individual Environmental Report 12/13 Supplemental**
- **Written comments may be submitted on [www.nolaenvironmental.gov](http://www.nolaenvironmental.gov)**



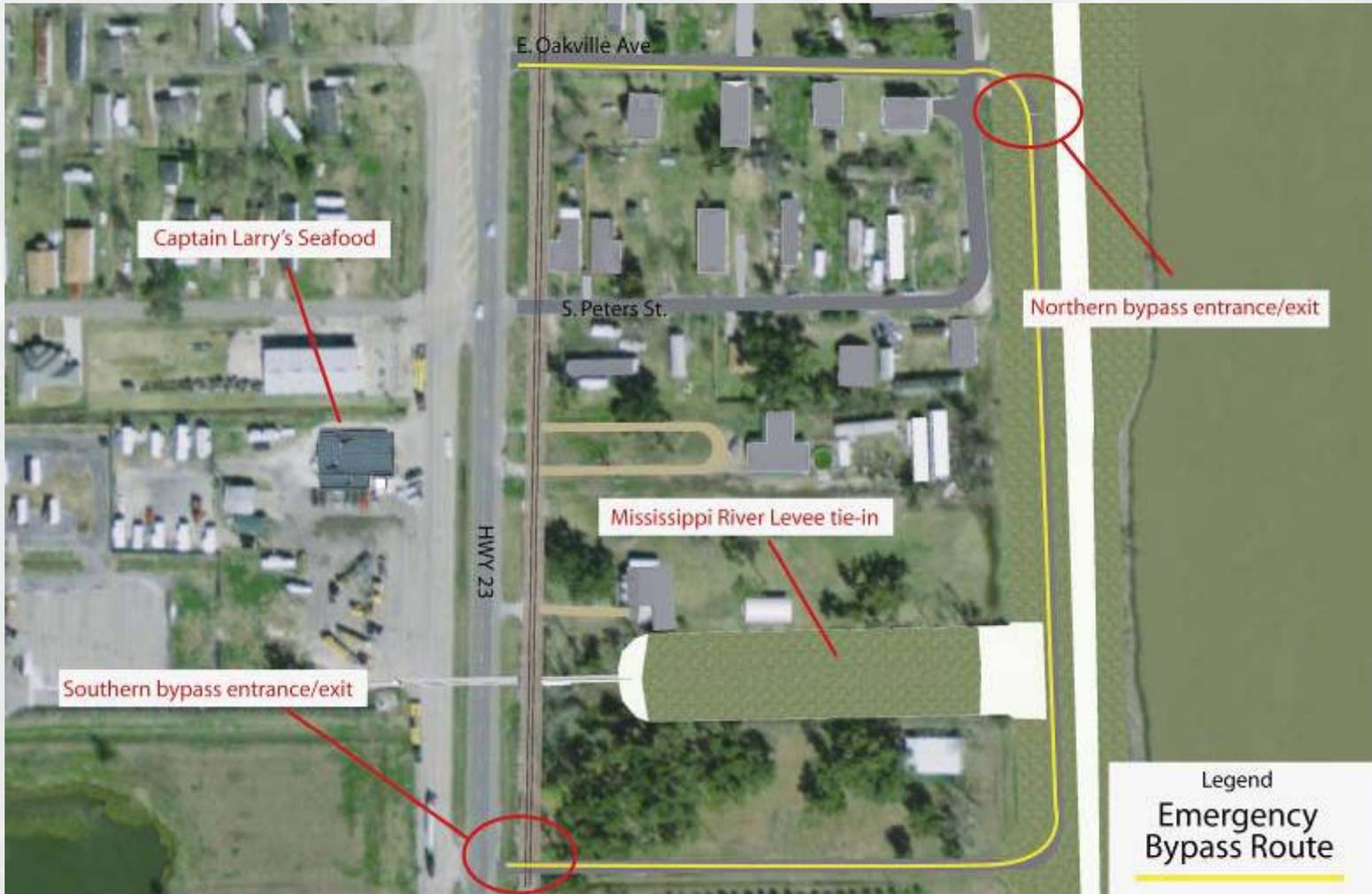
# Discussion



# Additional Slides



# Emergency Bypass



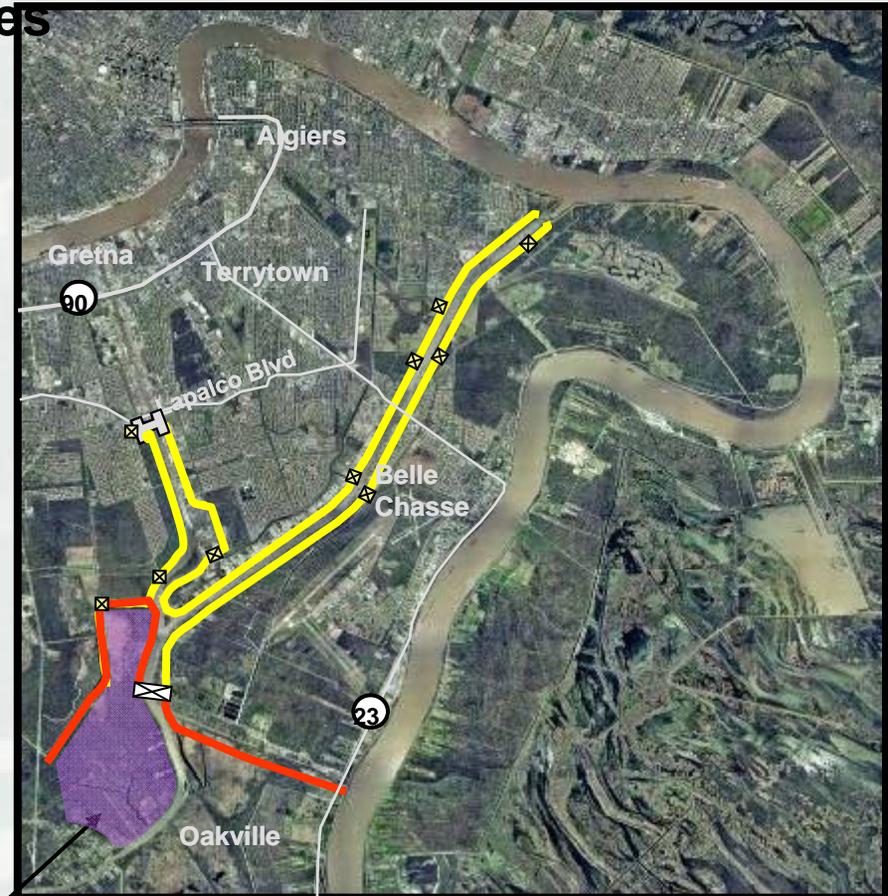
An Emergency Bypass road would be constructed at the project site no matter which option to cross highway 23 is selected.



# GIWW - West Closure Complex

## Key Project Influences / Challenges

- **Storm Water Drainage:** Harvey and Algiers Canals function as the primary drainage conduits for the West Bank. 9 drainage pumping stations discharge into these canals.
- **Navigation:** The Harvey and Algiers Canals are part of the Gulf Intracoastal Waterway. 30 commercial barge tows per day pass the project site.
- **Environmental:** The project interacts with the Bayou Aux Carpes 404 (c) site. A wetland of national significance, only 11 of this type in the nation.
- **Timing:** Achieve risk reduction by June 2011



Bayou Aux Carpes 404 (c) site



Pump Stations



Detention basin



100-yr level of protection



# Construction July 2009



# Construction November 2009



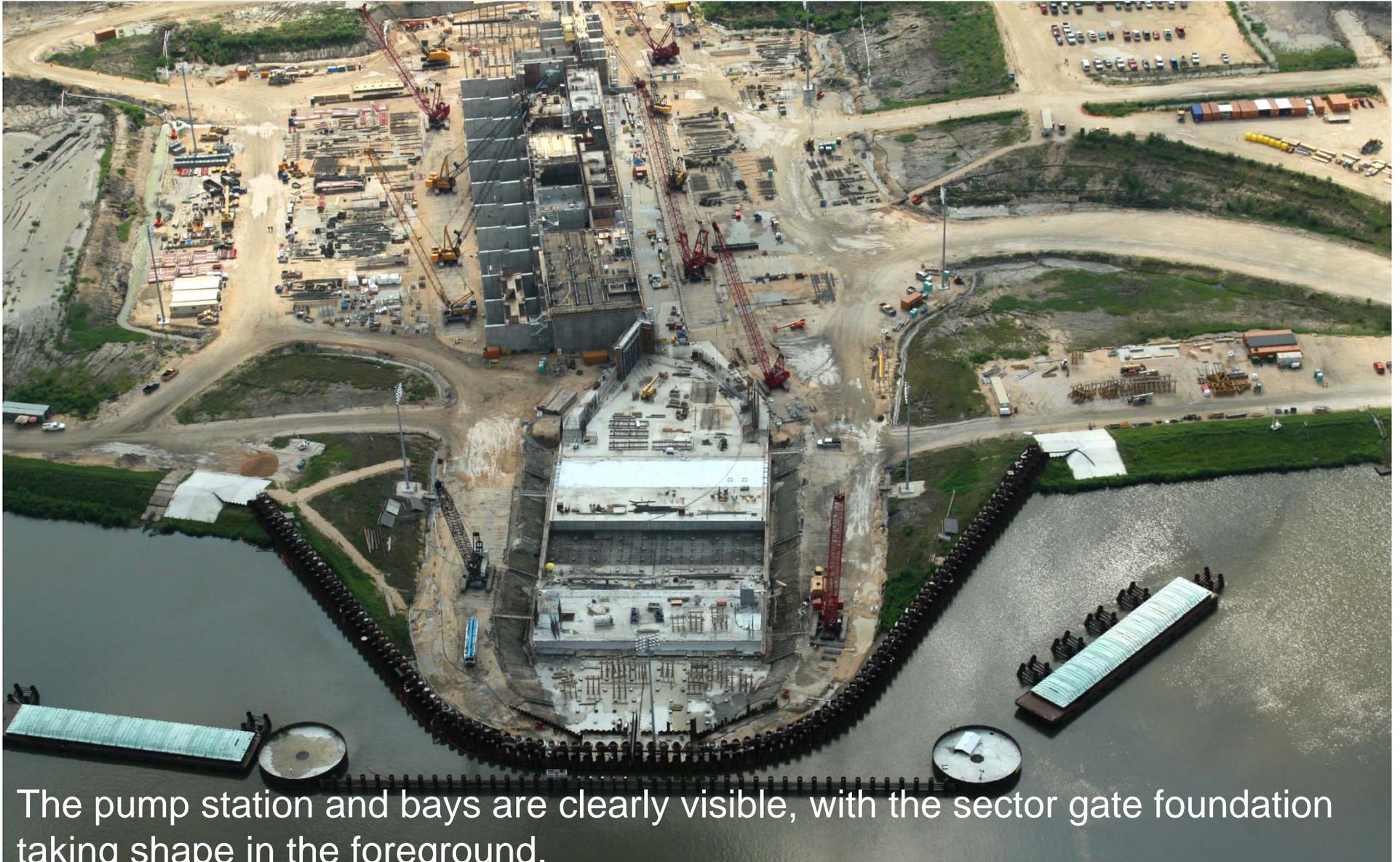
# Construction July 2010



By the summer of 2010, major advances on the construction of all features of the GIWW West Closure Complex were underway.

The onsite concrete batch plant in the foreground produces 350 cubic yards per hour.

# Construction August 2010



The pump station and bays are clearly visible, with the sector gate foundation taking shape in the foreground.

# Pump Installation



- 4 September 2010, 3 of 11 flower pot pumps were installed in the pump station
- Each pump has a capacity of 1,740 cubic feet per second and weighs approximately 70 tons



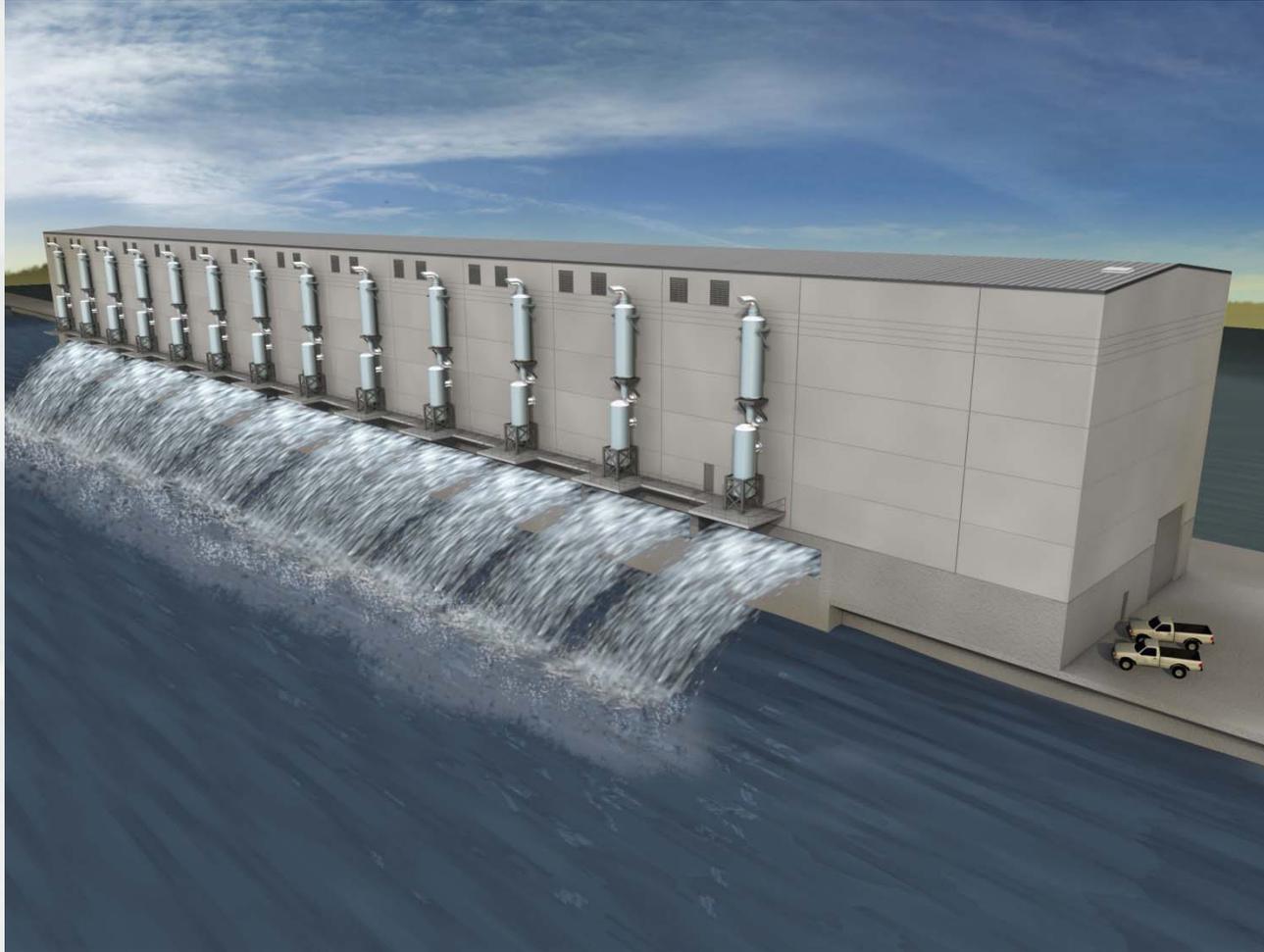
# Pump Installation



- A 600 ton crane lifted each pump individually into place
- Eight pumps will be installed by hurricane season of 2011, and the remaining three will be in place by 2012



# Pump Station



The 19,140 cubic feet per second pump station would evacuate stormwater from the Harvey and Algiers canals during a storm event.



Not-to-scale  
Conceptual

# GIWW - West Closure Complex

## Conceptual



Approx. 1,000 workers work two, 10-hr shifts per day 6 days a week



# GIWW-West Closure Complex by the Numbers

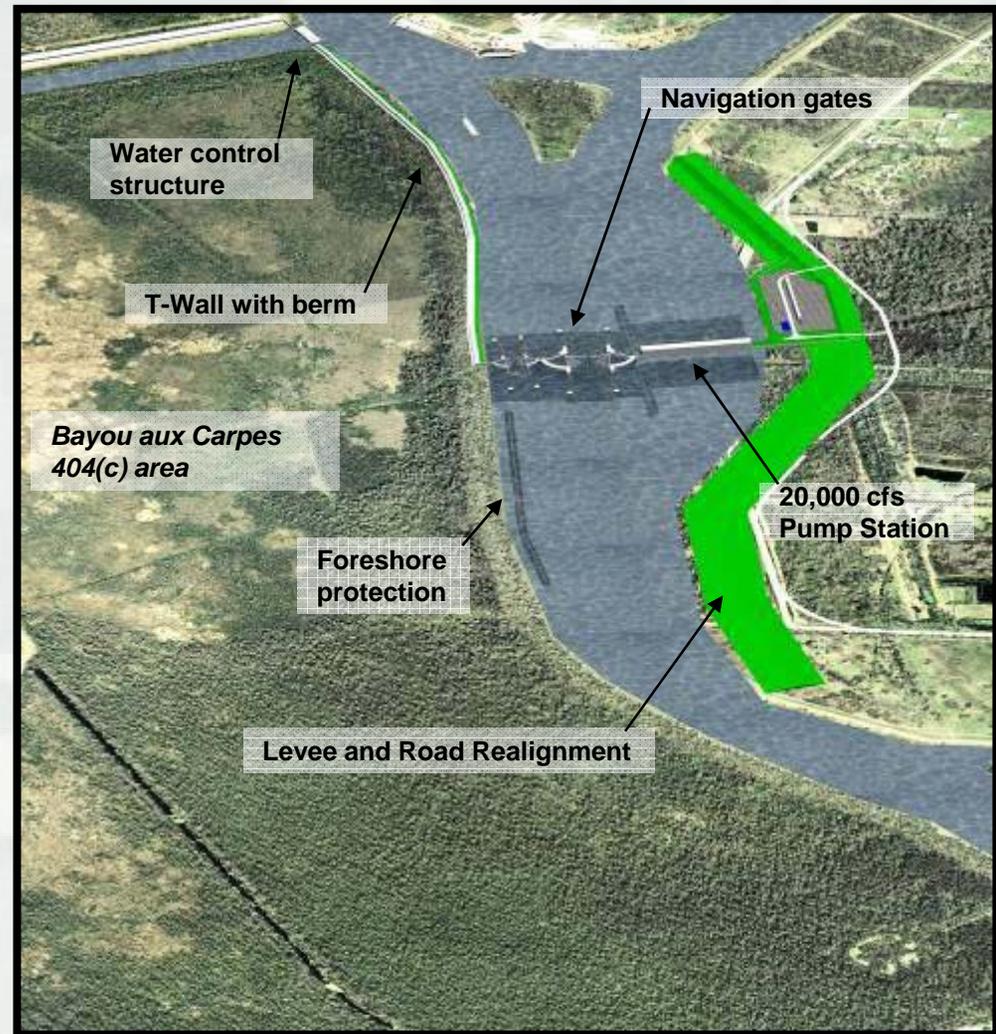
- 2,300,000 cubic yards of on-site excavation/dredging
- 610,000 linear feet of piling
- 140,000 cubic yards of concrete
- 18,028,000 pounds of rebar
- 770,000 cubic yards of levee embankment
- Nearly 3,000,000 man hours



# 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



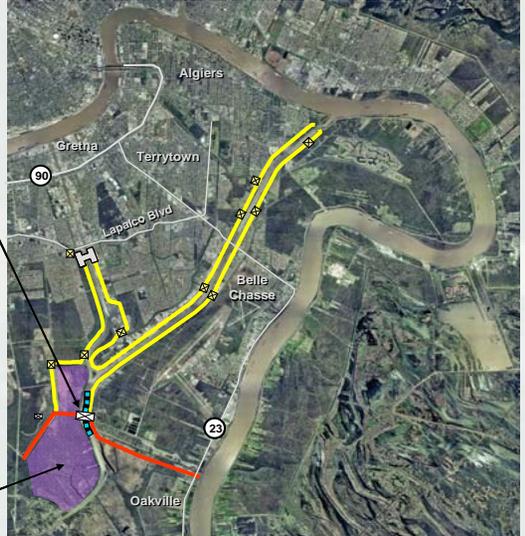
# WCC Alternatives Evaluated

**Alternative 1: Floodgate on GIWW**

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

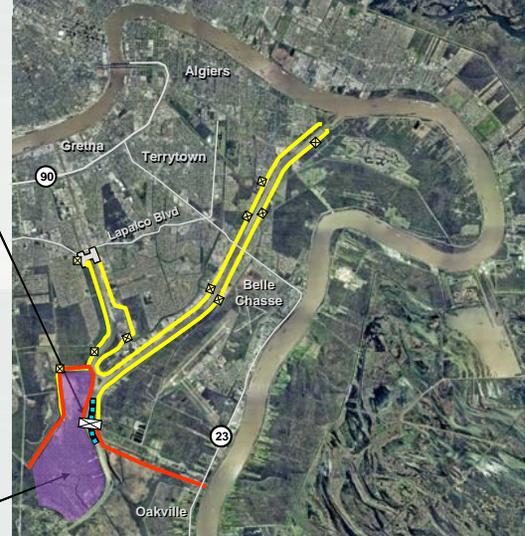


**Alternative 2: Floodgate on GIWW**

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

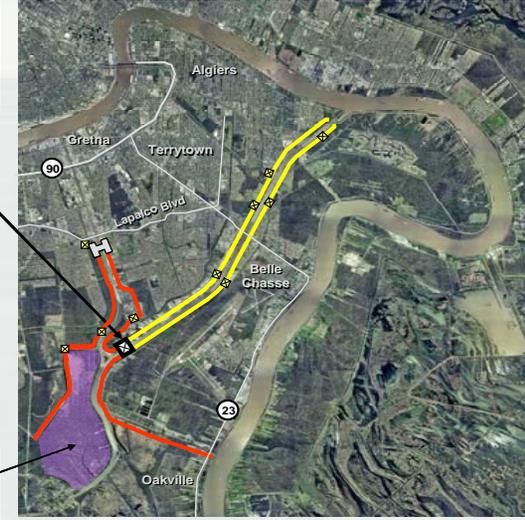


**Alternative 3: Floodgate on Algiers Canal**

Sector floodgate in the Algiers Canal to the 100-yr level of protection

-  Lapalco Floodgate and Cousins PS Discharge Channel Walls (raised to provide 100-yr level of protection)
-  Proposed Floodgate and pump station at 100-yr level of protection
-  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

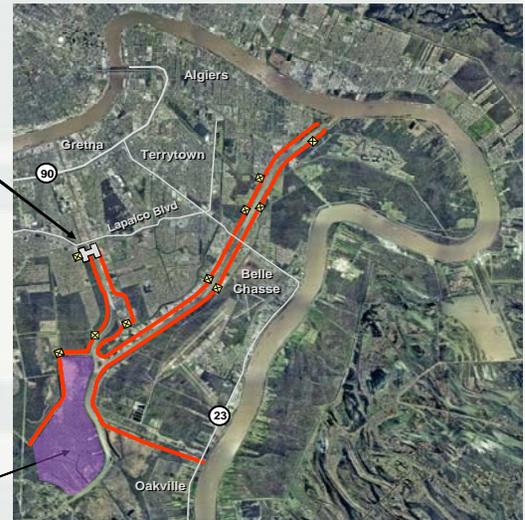


**Alternative 4: Parallel Protection**



-  Lapalco Floodgate and Cousins PS Discharge Channel Walls (raised to provide 100-yr level of protection)
-  Levees and Floodwalls to the 100-yr level of protection
-  Pump Stations

 Bayou Aux Carpes 404 (c) Site



# WCC Stakeholder Engagement and Coordination

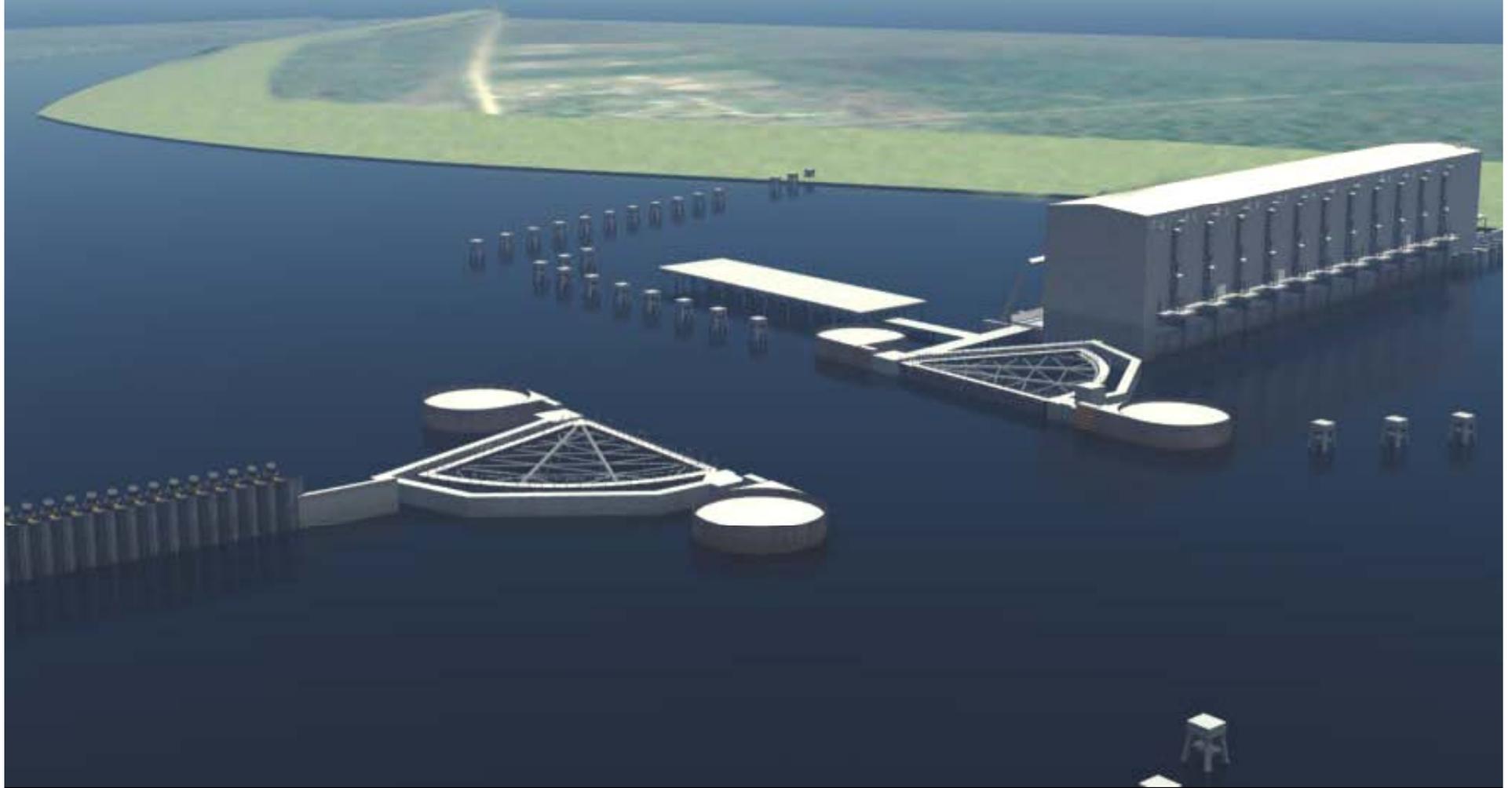
- State and Local Governmental Agencies
  - State of Louisiana
  - SLFPA West
  - Jefferson, Orleans and Plaquemines drainage entities
- Navigation Community
  - Gulf Intracoastal Canal Association (GICA)
  - American Waterways Operators (AWO)
  - Harvey Canal Industrial Association (HCIA)
- Environmental Community
  - Environmental Protection Agency (EPA)
  - Other State and Federal environmental agencies.
  - Non-Governmental environmental groups
- General Public
  - Neighborhood groups
  - Civic associations
  - Church groups





US Army Corps of Engineers  
Team New Orleans  
GIS Development/Production Team

# West Closure Complex

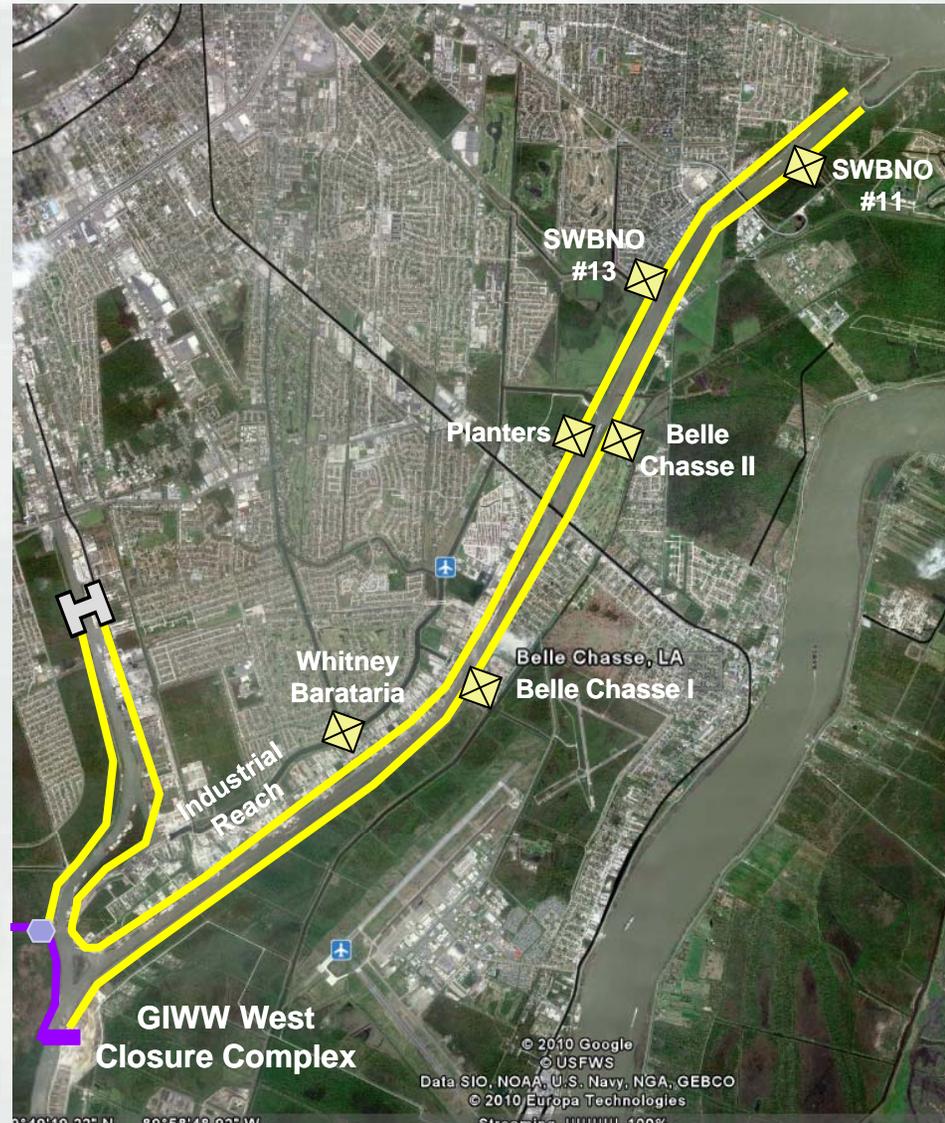


# West Closure Complex



# Algiers Canal

- Connects the Mississippi River to the Gulf Intracoastal Waterway
- 12 miles long
- Stormwater drainage basin for Orleans, Jefferson and Plaquemines parishes
- Will serve as a detention basin when the GIWW-West Closure Complex is complete
- Detention basin elevation is 8.2 ft



# Fronting Protection

- Construction of a continuous concrete T-wall in front of pump stations
- Valves or gates to prevent water from flowing back through pumps
- Provides a continual line of defense against storm surge
- Floodwalls will be built to elevation 9.5 ft, allowing for 1 ft of overbuild

