Greater New Orleans Hurricane & Storm Damage Risk Reduction System

Gulf Intracoastal Waterway West Closure Complex
Project Sponsors

• Federal Sponsor
  • U. S. Army Corps of Engineers – New Orleans District
  • 100% Federally Funded Construction Cost
  • Hired Designers and Contractors

• Non-Federal Sponsor
  • Louisiana Coastal Protection and Restoration Authority
  • Support form the SLFPA-West
  • Responsible for Operation and Maintenance of Completed Project
  • Hired BKI to Provide Technical Oversight During Construction of GIWW West Closure
West Bank & Vicinity Risk Reduction System

- Future 1% WBV Primary Risk Reduction System
- Future Detention Basin (Harvey and Algiers Canal)
- Mississippi River Levees

New Orleans

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 12 of this type in the nation.

- **Timing:** Achieve protection by June 2011
Stakeholder Engagement and Coordination

- State and Local Governmental Agencies
  - State of Louisiana - Coastal Protection and Restoration Authority
  - SLFPA West
  - Jefferson, Orleans and Plaquemines Parish 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
19,140 cfs Drainage Pumping Station
(11 x 1740 cfs vertical “Flower Pot” pumps)

225-foot Navigable Sector Gate

5 Gravity Flow Bays with Sluice Gates (each 16’ x 16’)

4200 ft Concrete T-Wall along edge of Bayou aux Carpes CWA 404(c) wetlands
(4200’ X 100’ construction corridor)

Closure Wall Structure

Levees and East Bayou Road Realignment

Environmental Mitigation and Augmentations

Navigation Protection Dolphins

Provides 100 Year Level of Protection
Levees & Floodwalls to Elev +16.0
Current Status

West Closure Complex is 92% complete

100 Year Level of Flood Protection is in place

Key Factors

• Project was fully funded as part of the $14.6 billion Greater New Orleans Hurricane Storm Damage Risk Reduction System – no recurring annual funding appropriations needed
• Modified NEPA Compliance Process – Individual Environmental Reports (IER)
• Non-typical, effective ECI contracting method utilized
Early Contractor Involvement (ECI) Construction Methodology

• Creates a team consisting of the owner, designer, and contractor at the early stages of the project
• Allows construction to start before complete design achieved - allows for faster start and completion of project
• Preconstruction Services
• Construction Contract
• Final contract price negotiated after start of construction and is currently greater than $1.2 Billion
September 2010 - Pump Installation
September 2010 – 140 Inch Vertical Pump
December 2010 – 5,390 HP Diesel Engine and Right Angle Gear
September 2010 – Formed Suction Intake
September 2010 – Vertical Pump Flower Pot Discharge
January 2011 – 1500 KW Generator Installed
February 2011 – Six 50,000 Gallon Diesel Fuel Storage Tanks
November 2010 – 16’ X 16’ Sluice Gate
Pump Unit Control Panel - Speed Reducer Readings

- **Coolant Flow**
- **Coolant Pressure**
- **Low Speed Drive End Bearing Temperature**
- **Mid Speed Top Bearing Temperature**
- **High Speed Drive End Bearing Temperature**
- **Coolant Inlet Temperature**
- **Coolant Outlet Temperature**
- **Low Speed Non-Drive End Bearing Temperature**
- **Mid Speed Bottom Bearing Temperature**
- **High Speed Non-Drive End Bearing Temperature**

**Date:** 05/21/2011

- **Engine Status-1**
- **Engine Status-2**
- **Engine Status-3**
- **Speed Reducer-1**
- **Speed Reducer-2**
- **Pump Status**
- **Trending**
- **Alarm Summary**
- **PLC Health**

**Message:** SR OIL FLOW LOW ALARM - SWITCH
Operational Criteria

- Normal Operations Require All Gates Open and No Pumps Operating Except for Routine Maintenance

- Close Sector Gates and Sluice Gates When Tropical Storm Conditions Predicted to Reach Elevation +4.0 in GIWW

- Begin Pump Operations to Draw Down Sump to Elevation 0.0 to Maximize Storage Capacity of Detention Basin

- Operations Personnel Remain in Safe House During Storm Conditions

- From Safe House Continue Pump Operations as Needed to Match Flow from Interior Pump Stations

- Begin Opening Sector Gates and Sluice Gates
  - When Surge Threat No Longer Predicts Levels Above El. +4.0
  - When Water Level on Flood Side is Lower Than Water Level on Protected Side
June 2011 – Pump Operational Test
Pump Video
Gulf Intracoastal Waterway
West Closure Complex

Questions?