



11th Annual Tulane Engineers' Forum

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April 15, 2011

The Project

West Bank and Vicinity (WBV)
Hurricane Protection Project

Status of Construction

- 40 Completed Construction Contracts \$671M
- 42 Ongoing Construction Contracts \$2.6B
- 2 Remaining Construction Contracts to be Awarded \$10M

Project Total:
\$3.28B



West Bank and Vicinity

Hurricane and Storm Damage Risk Reduction System





West Closure Complex

Project Features:

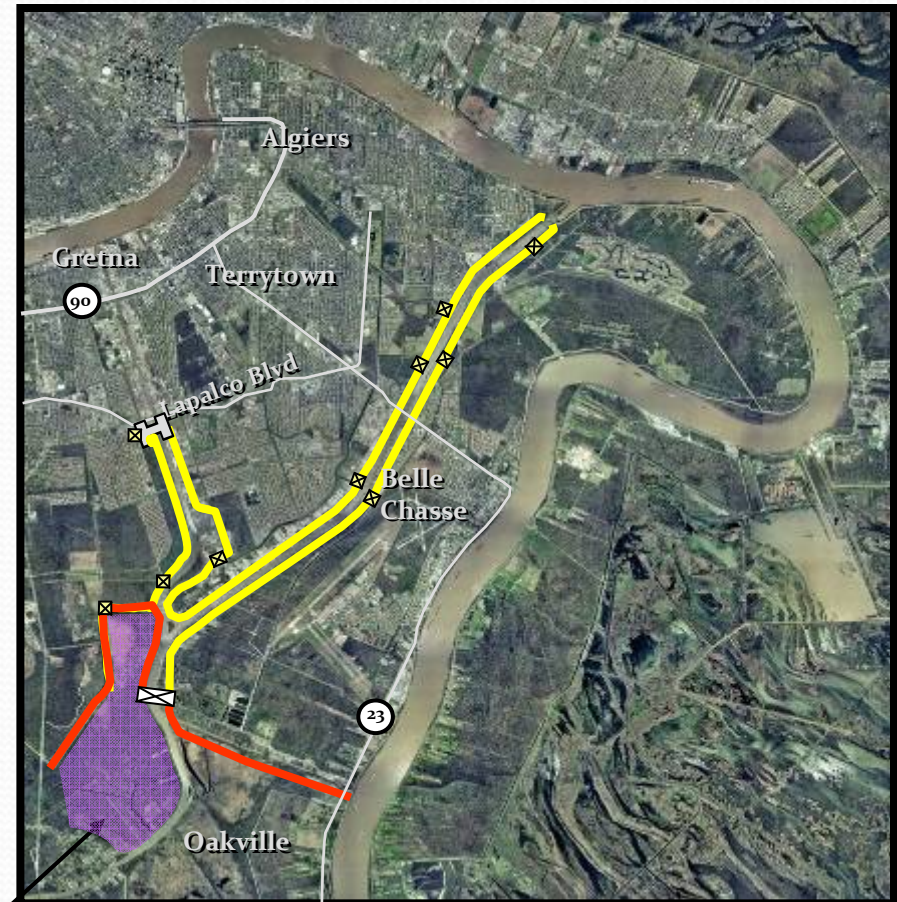
- **19,140 cfs Drainage Pumping Station**
(11 x 1740 cfs vertical “Flower Pot” pumps)
- **225-foot primary navigation gate**
- **Sluice gates (5 – 16’ x 16’)**
- **T-wall along edge of Bayou Aux Carpes CWA 404(c) wetlands**
(4200’ X 100’ construction corridor)
- **Water Control Structure**

Facts:

- **Largest drainage pump station in the world**
- **Largest sector gate in the U.S.**
- **Over 18 million pounds of rebar**
- **Over 3 million man hours and counting**

GIWW - West Closure Complex

- **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 eleven of this type in the nation.
- **Timing:** Had to provide 100-yr level of protection by June 1, 2011.



Bayou Aux Carpes 404 (c) site

- ✕ Pump Stations
- Detention basin
- 100-yr level of protection

July 2009 - Pre-construction



September 2009



January 2010



April 2010



August 2010



December 2010



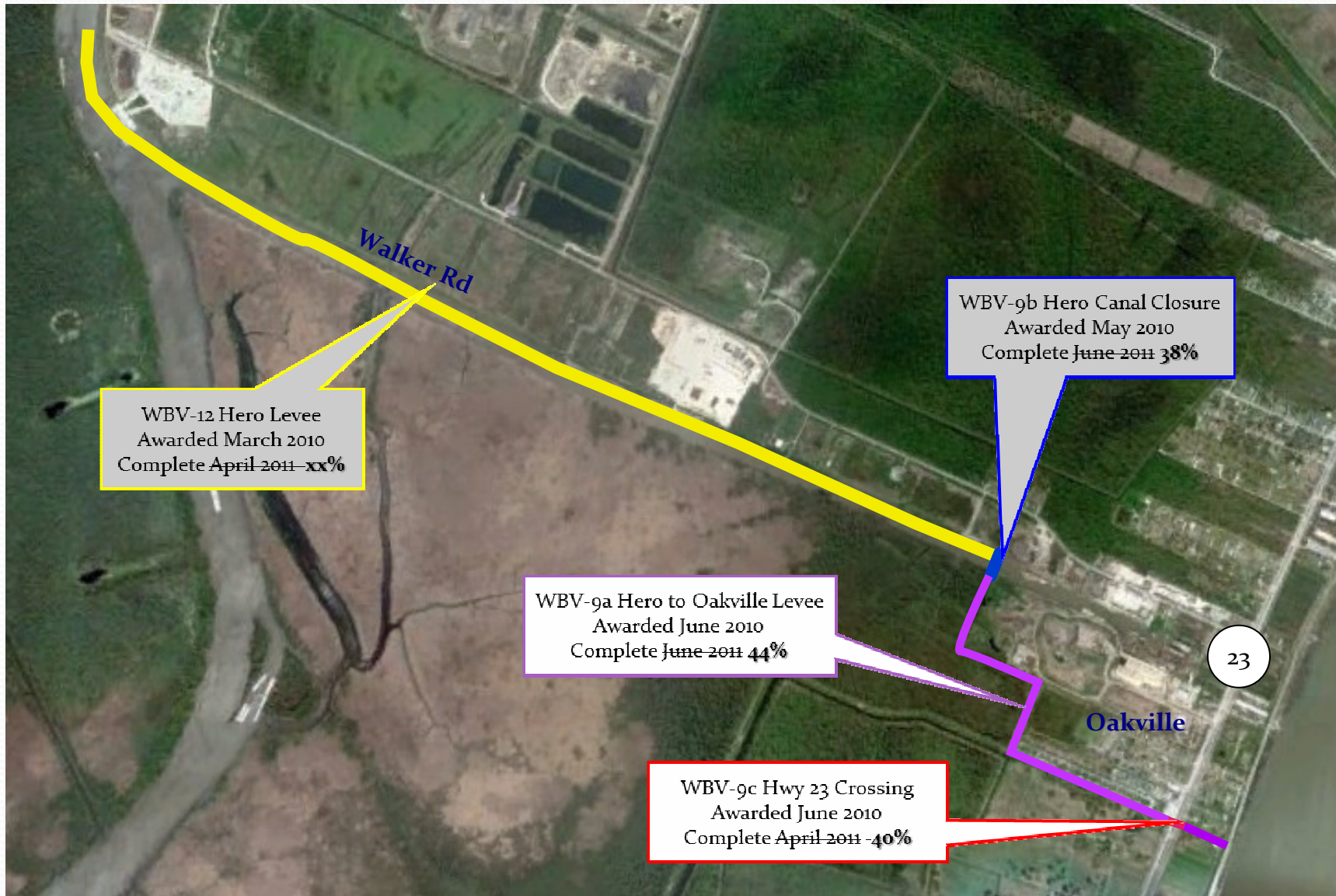
January 2011



April 2011

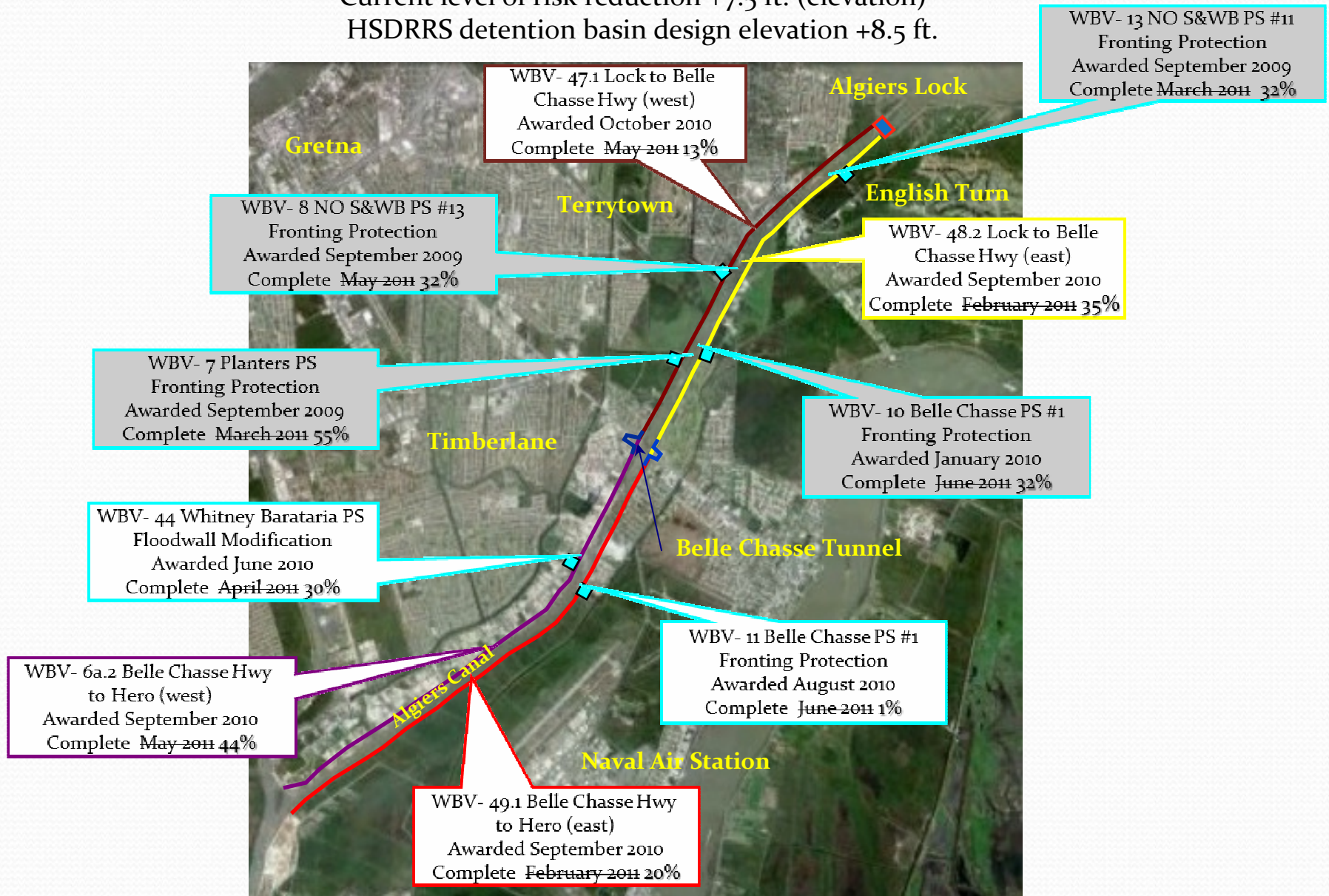


Eastern Tie In



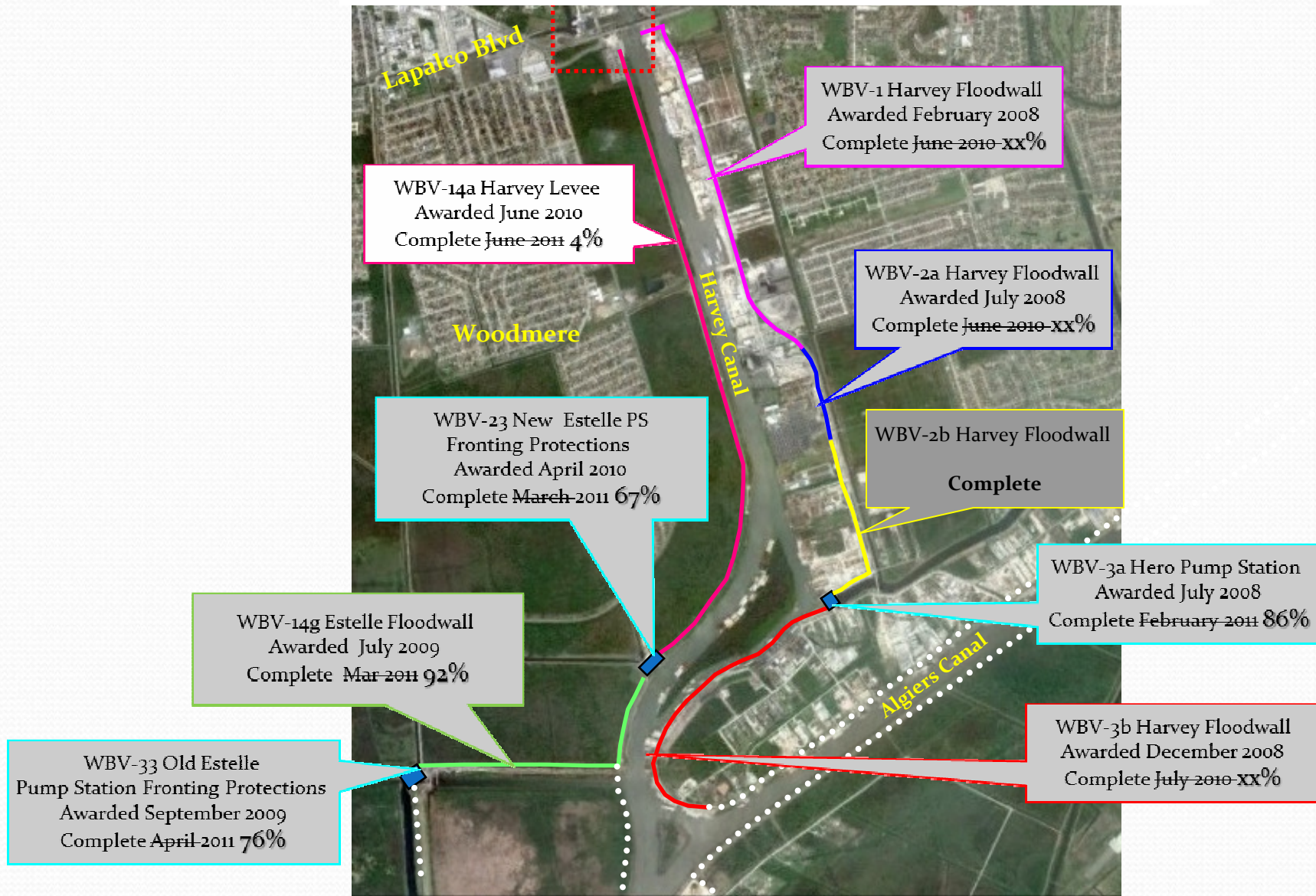
Algiers Canal HSDRRS Detention Basin

Current level of risk reduction +7.5 ft. (elevation) *
HSDRRS detention basin design elevation +8.5 ft.

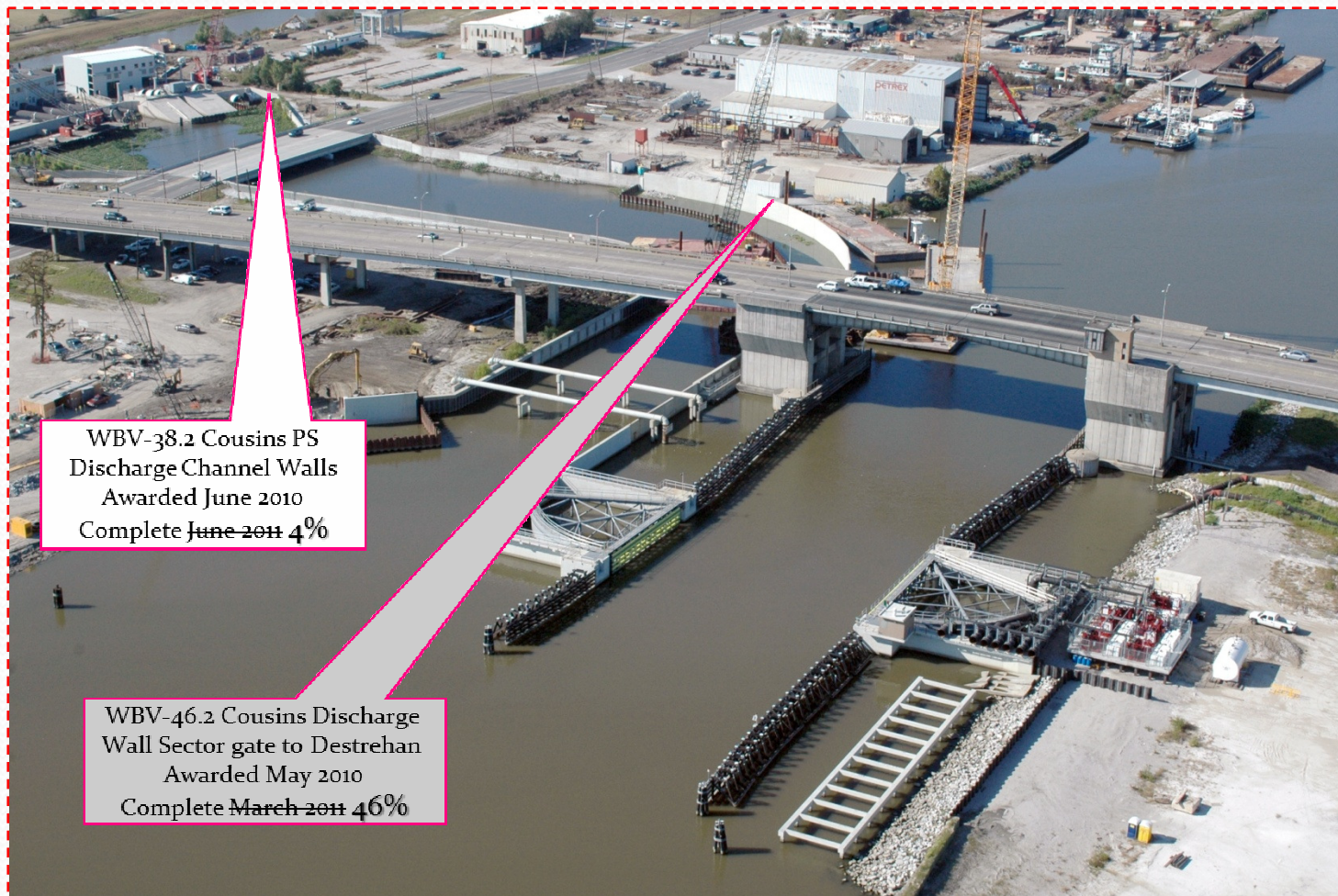


Harvey Canal HSDRRS Detention Basin

Current level of risk reduction +8.0 ft. (elevation)
HSDRRS detention basin design elevation +8.5 ft.



Harvey Canal HSDRRS Detention Basin



WBV-38.2 Cousins PS
Discharge Channel Walls
Awarded June 2010
Complete ~~June 2011~~ 4%

WBV-46.2 Cousins Discharge
Wall Sector gate to Destrehan
Awarded May 2010
Complete ~~March 2011~~ 46%

Harvey Floodgate (USACE)
Cousins Pump Station (Jefferson Parish)

Westwego to Harvey Canal

Current level of risk reduction +9.0 ft. (elevation)

100-yr level of risk reduction design elevation +10.5 ft. (+14.0 ft. 2057)

WBV- 14c.2 New Westwego PS
To Orleans Village Levee
Awarded June 2010
Complete ~~June 2011~~ 58%

WBV- 37 Ames/Mt Kennedy PSs
Fronting Protection
Awarded June 2011
Complete ~~June 2011~~ 24%

WBV- 14b.2 Orleans Village
to Hwy 45 Levee
Awarded September 2009
Complete ~~Mar-Oct 2010~~ 95%

WBV- 14f Hwy 45 Levee
Awarded September 2009
Complete ~~August 2010~~ 99%

WBV- 14d V Line Floodwall
Awarded July 2009
Complete ~~May 2011~~ 97%

WBV-14g.2 Estelle Floodwall
Awarded July 2009
Complete ~~March 2011~~ 92%

WBV- 33 Old Estelle PS
Fronting Protection
Awarded September 2009
Complete ~~April 2011~~ 76%

WBV- 14e.2 V Line Levee
Awarded 26 Mar 2010
Complete ~~Jun 2011~~ 1%

WBV- 14i Hwy 3134 Crossing
Awarded March 2010
Complete ~~June 2011~~ 32%



Bayou Segnette/Company Canal

Current level of risk reduction +9.0 ft (elevation)
100 Yr level of risk reduction design elevation +10.5 ft (+14.0 ft 2057)

- Interim Barge Gate fully Operational
- Current level of risk reduction +9.0 ft (Elevation)
- Barge Gate closes when water south of the gate (floodside) is +2.0 ft and rising
- Interim Gate to be replaced with permanent 56-ft floodgate (sector gate) w/pump station



Lake Cataouatche

Current level of risk reduction +8.5 ft. (elevation)
100-yr level of risk reduction design elevation +11.5 ft. (+15.0 ft. 2057)



WBV- 18.2 Lake Cat PS to Hwy 90
Levee
Awarded August 2009
Complete April 2011 51%

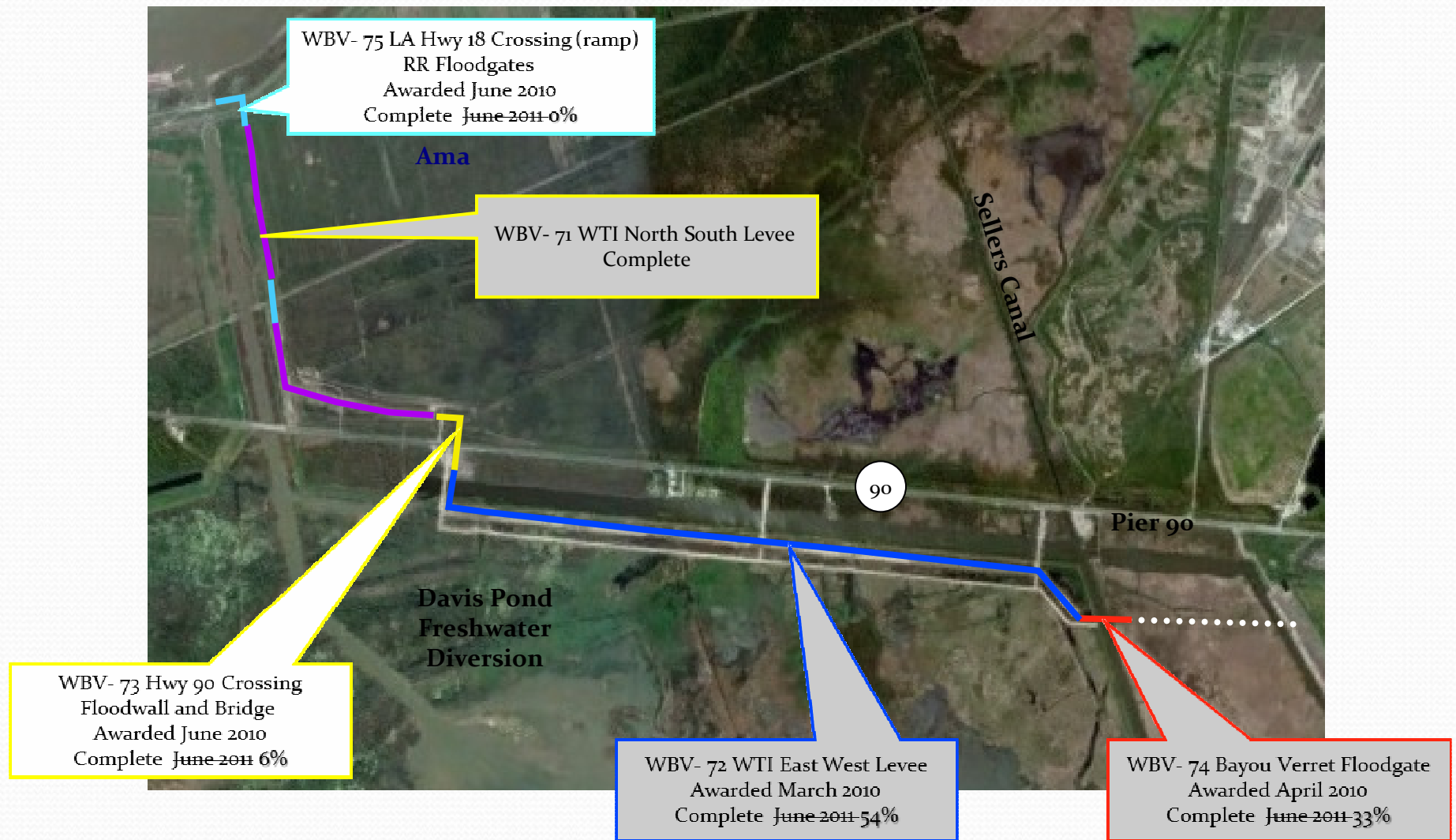
WBV- 15b.2 Lake Cat PS
Fronting Protection
Awarded April 2009
Complete October 2010 83%

WBV- 15a.2 Levee Segnette to
Lake Cat PS
Awarded February 2010
Complete June 2011 46%

WBV- 24 Segnette State Park
Floodwall
Awarded December 2009
Complete June 2011 58%

Western Tie In

100-yr level of risk reduction design elevation +11.5 ft. (+15.0 ft. 2057)



What Is Working?

Project Coordination TEAM

Developed the (PCT) Collaboration Plan

Example: WBV 90 GIWW WCC



(PCT) Collaboration Plan

- Planning and Design
- Real Estate
- Construction
- Site Visit Plan
- Turnover to Non-Federal Sponsors



(PCT) Collaboration Plan

- **Planning and Design**

- ✓ Review Plans and Specifications
- ✓ On site Plan in Hand Review
- ✓ Operability and Maintenance Requirement Review

- **Real Estate**

- ✓ Rights of Way Acquisition
- ✓ Coordination of required permits (LA DOTD, Railroad, etc.)

- **Construction**

- ✓ Pre-Construction Meeting
- ✓ Monthly Progress Meeting
- ✓ Weekly Inspection Report by SLFPA-W
- ✓ Monthly Site Visit by USACE (Project Management, Engineering, and Construction) and Non-Federal Sponsors (SLFPA-W, OCPR, St. Charles and Plaquemines Parish)

(PCT) Collaboration Plan cont'

- **Site Visit Execution Plan**
 - ✓ Project Management
 - ✓ Construction
 - ✓ Engineering
 - ✓ Non-Federal Sponsor
 - ✓ Contractor
 - ✓ QC Representative
- **Turnover to Non-Federal Sponsors (OCPR/SLFPA-W) for O & M**
 - ✓ “Red Zone” Planning
 - ✓ Inspection
 - ✓ Training
 - ✓ O & M Manual
 - ✓ As built drawings

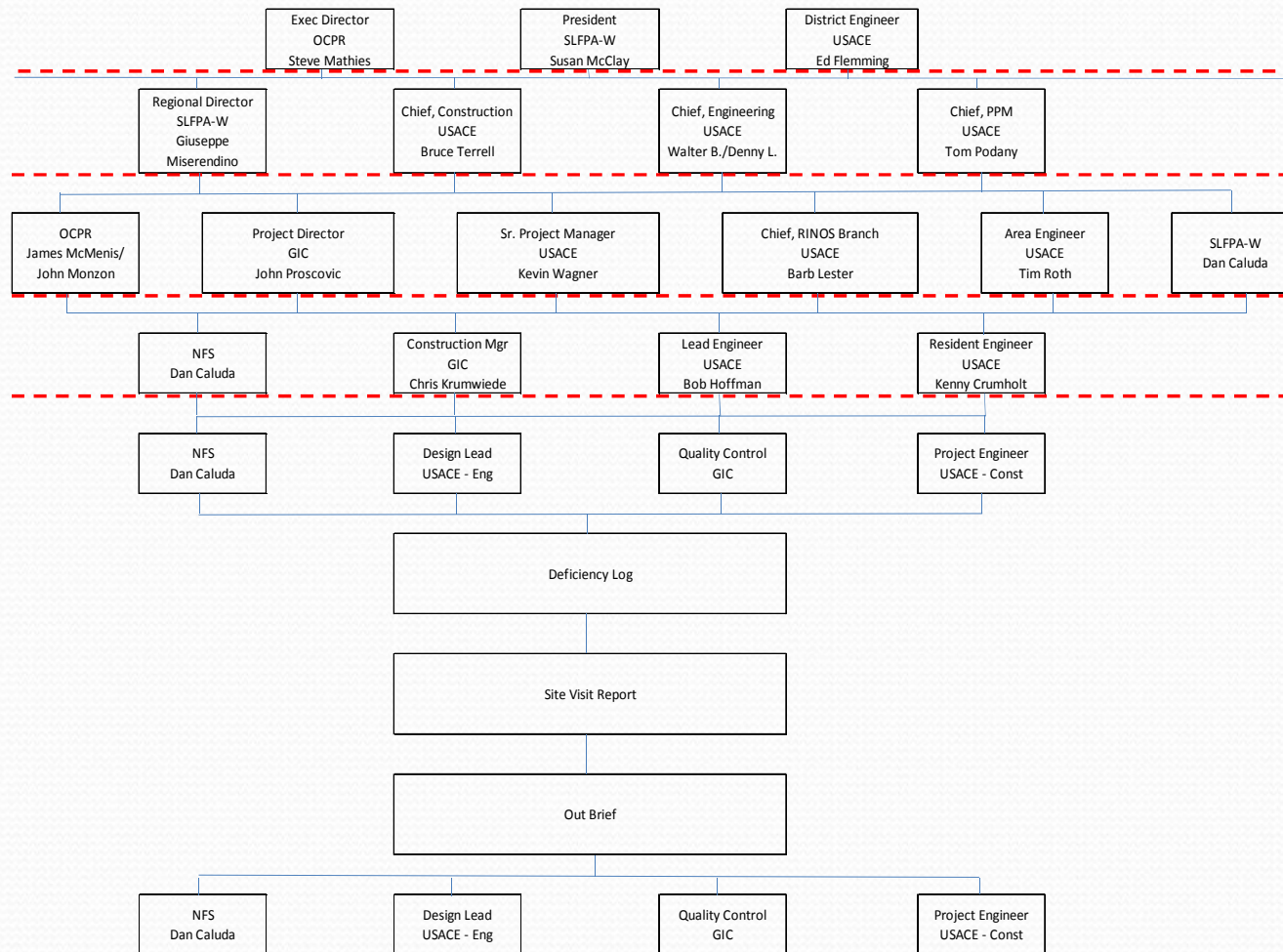


Site Visit Execution Plan

- PURPOSE:

To ensure that all partners in the Project are fully aware of the progress and quality of construction, to promptly resolve design, construction and potential O & M issues.

Open and frequent communications in an environment of mutual trust and earnest teamwork are a **must** to ensure the project is constructed in accordance with the contract requirements and meets the expectations of the customer.



What Is Not Working?

Incomplete execution of PCT Plan
on the majority of other WBV Projects

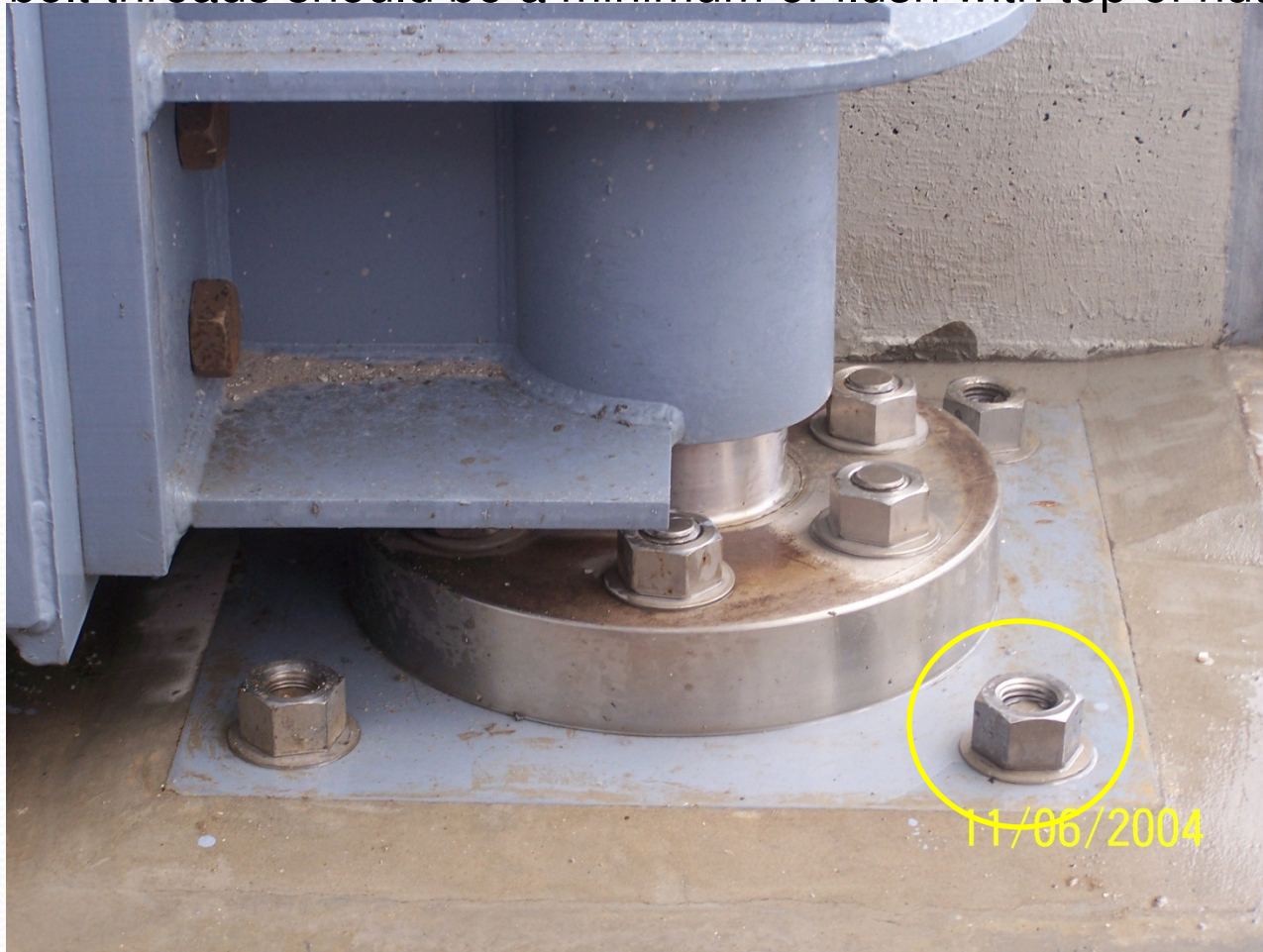
(PCT) Collaboration Plan

- ✓ **Planning and Design**
- ✓ **Real Estate**
- ✓ **Construction**
- ✗ Site Visit Execution Plan**
- ✗ Turnover to Non-Federal Sponsors for O & M**

What is the outcome?

WBV-1 Sector Gate to Boomtown Casino

- Anchor plate bolts at swing gate
- bolt threads should be a minimum of flush with top of nut.



WBV-1 Sector Gate to Boomtown Casino

- Holes in paint surface
- Rusting



WBV-2b Boomtown Casino to Hero PS Floodwalls

Hinge Failure



WBV-14c.2 NEW WESTWEGO P.S. TO ORLEANS VILLAGE – PHASE 2



- Debris in fill being dumped
- Non-performance of specifications

WBV-14c.2 NEW WESTWEGO P.S. TO ORLEANS VILLAGE – PHASE 2

Debris



1/24/2011 2:32:05 PM Lat=N29 53' 35.31" Lon=W090 09' 23.74"



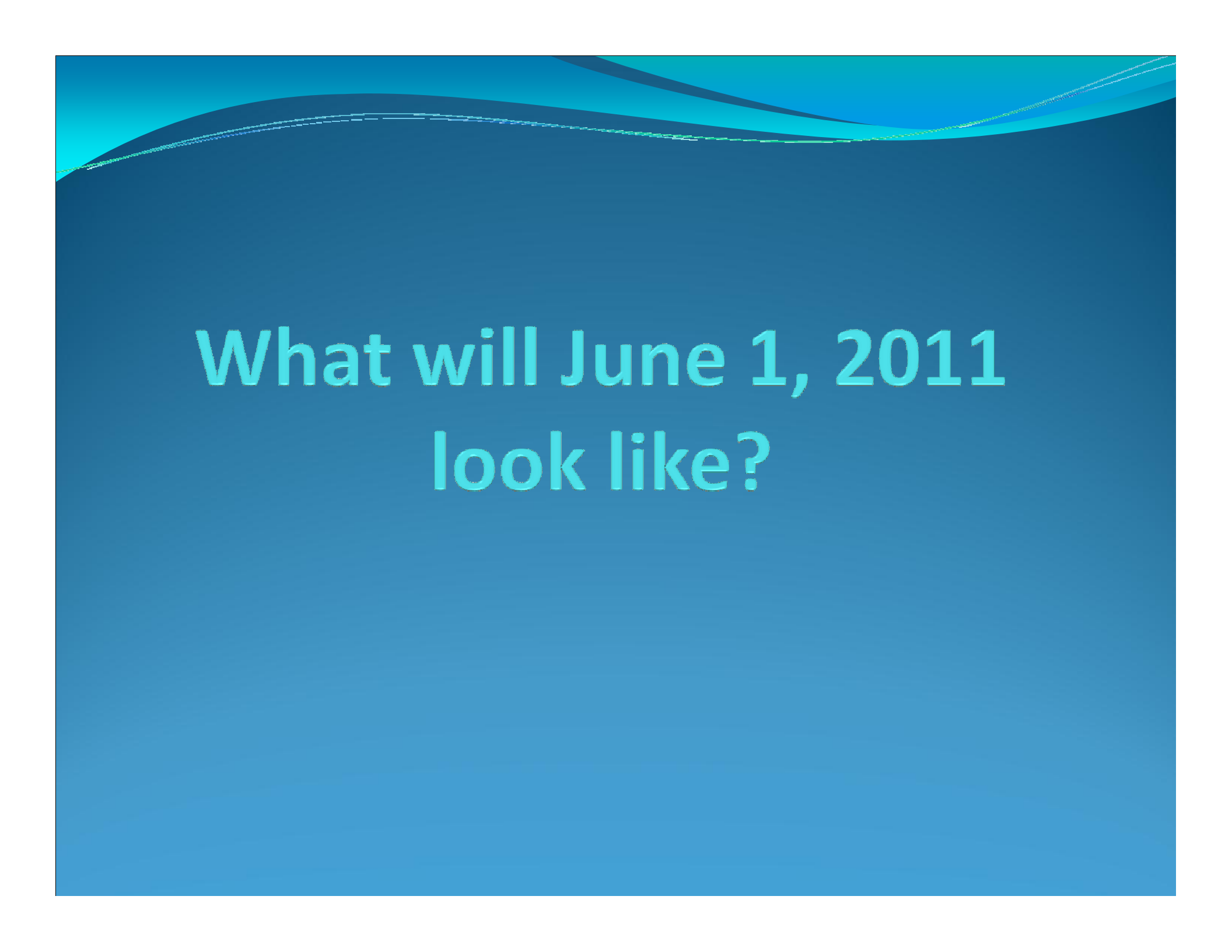
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**What will June 1, 2011
look like?**



Projects we are closely monitoring:

- WBV-72
- WBV-73
- WBV-74
- WBV-75
- WBV-77
- WBV-9a
- WBV-9b
- WBV-9c
- WBV-14c.2
- WBV-MRL 1.1
- WBV-MRL 3.1
- WBV-MRL 4.1
- WBV-MRL 6.1
- WBV-MRL 7.1

WBV-72 Lake Cataouatche Western Tie-In, East-West Levee

Project is 54% complete



The work consists of construction of approximately 14,000 LF of new levees at elevation 13.5, removal of existing levee, permanent bridges, removal of existing temporary bridges and roadways.

WBV-73 Western Tie-In Highway Crossing, St. Charles Parish, LA

Project is 6% complete



Work consists of detour roads; approximately 1,168 LF of concrete T-wall; sheet pile I-wall levee tie-in; drainage box culverts, inlets and piping; pre-stressed concrete girder span bridge; approach slabs; asphalt pavement construction and embank-ment.

WBV-74 Western Tie-In Closure Structure across Bayou Verrett

Project is 33% complete



Work consists of construction of swing-type sector gates, approximately 364 LF of concrete T-wall, earthen levee, sluice gates, Rip-Rap and other work incidental thereto. To date: All H-piles and cut off sheet piles have been driven for sector gate foundation. Contractor currently driving H-piles to set template for south wall of TRS. Contractor currently welding and driving pipe pile for north end work trestle.

WBV-75 Western Tie-In, BNSF Railroad Crossing

Contract not awarded

Work consists of construction of earthen levee, concrete reinforced T-walls and steel swing gate monoliths across the Burlington Northern Santa Fe (BNSF) Railroads.



WBV-77 Western Tie-In, LA Hwy 18 Crossing and UP Railroad Gate

Contract not awarded

Work consists of construction of an earthen ramp, detour roadway, drainage improvements, relocation of 8" waterline, steel swing gate monoliths across the Union Pacific (UPRR), concrete reinforced T-walls.



WBV-9a, Hero to Oakville, Phase II First Lift Levee Enlargement, Plaquemines Parish, LA

Project is 44% complete



Project consists of removing and relocating utilities, the construction of approximately 4,560 LF of levees (3 sections constructed to elevation 14.5 to 15), an emergency access road, a pump station, approximately 307 LF of T-wall (9) monoliths, and tie ins to adjacent projects.

WBV-9b Hero Canal to Oakville Structures, Plaquemines Parish, LA

Project is 38% complete



Work consists of construction of approximately 482 LF of levees (elevation 14.5 to 15); approximately 412 LF of T-Wall (9) monoliths (total with option 1 & 2), a reinforced concrete 56 ft. bulkhead closure gate; pedestal crane and crane platform; pump station; a temporary bypass channel and stone armoring.

WBV-9c Hero Canal to Oakville Hwy 23 Crossing, Plaquemines Parish, LA

Project is 40% complete



Work consists of construction of approximately 510 LF of reinforced concrete T-walls; placing embankment, asphaltic paving, drainage, installation of swing gates, and other incidental work.

WBV-14c.2 - New Westwego Pump Station to Orleans Village

Project is 58% complete



Work consists of construction of approximately 510 LF of reinforced concrete T-walls; placing embankment, asphaltic paving, drainage, installation of swing gates, and other incidental work.



These projects are 0% complete:

- WBV-MRL 1.1 Engineered Alternative Measures, Oak Point to Oakville
- WBV-MRL 3.1 Engineered Alternative Measures, Belle Chasse to Oak Point
- WBV-MRL 4.1 Engineered Alternative Measures, English Turn Bend to Belle Chasse
- WBV-MRL 6.1 Engineered Alternative Measures, Parish Line to English Turn Bend, Plaquemines Parish
- WBV-MRL 7.1 Engineered Alternative Measures, West Crossover Pt. to Parish Line, Orleans Parish,