Greater New Orleans Area Hurricane & Storm Damage Risk Reduction System

East Bank Update to SLFPA-East
St. Bernard and Orleans parishes

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March 17, 2011
1 June 2011 Status (Goal):

• A perimeter system capable of defending against a 100-year storm surge where:
  
  o 100% of the perimeter system will be capable of defending against a 100 year storm surge

**Includes:**

*Engineered Interim Closure Structures*

- Meet 100-yr hydraulic and structural/geotechnical design criteria
- Temporary in nature – to be replaced by permanent features for accreditation
- Example: Cofferdam at Seabrook Surge Barrier
The 1 June 2011 Mission

Lake Pontchartrain & Vicinity
(~ $ 5.3 Bil)

Perimeter Levees & Floodwalls
  E. St. Charles & E. Jefferson (~30 miles)
  Orleans Parish (East & Metro) (~30 miles)
  St. Bernard Parish (~30 miles)

Major Projects
  IHNC Surge Barrier & Seabrook Gate**
  Interim Closure Structures & Perm. Pumps**

Other
  Storm Proofing (incl. West Bank)**
  Existing Pump Station Repair (incl. West Bank)

West Bank & Vicinity
(~ $ 2.3 Bil)

Perimeter Levees & Floodwalls
  W. St. Charles, W. Jefferson & Plaquemines (~30 miles)

Major Project
  West Closure Complex

Mississippi River Levee
  Engineered Adv. Meas. (~15 miles)

Interior Canal Walls (June Commitment)

17th Street Canal*
London Avenue Canal*
Orleans Avenue Canal
IHNC*

Interior Canal Walls
  Harvey Canal**
  Algiers Canal**

* 2005 Design Failure
* *Some substantial work not required for 1 June 2011
SLFPA-E Construction Status
Three Strategic Improvements of the Hurricane and Storm Damage Risk Reduction System (HSDRRS)

1. Block five storm surge avenues from a 100-year storm surge.

2. Raise and strengthen levees and floodwalls to the same design guidelines.

3. Storm proof key pump stations so they can function when there is flooding in the city.
Block The Five Storm Surge Avenues
(From a 100-year storm surge)
Raise and Strengthen Levees / Floodwalls

Higher Floodwalls and Levees

Orleans Metro

New T-wall

St. Bernard Parish

New 32-foot T-wall

Old I-wall

New Orleans East

Old Levee Elevation
Storm Proof Key Pump Stations

- Repair 61 pump stations ($103 Mil)
- Storm proof 49 pump stations ($322 Mil)
- Construct 5 safe houses ($18 Mil)
Never Again from a 100-Year Storm Surge

2005 Maximum Flooding Depth
“Now, even as we continue our recovery efforts, we're also focusing on preparing for future threats so that there is never another disaster like Katrina. **The largest civil works project in American history** is underway to build a fortified levee system. And as I — just as I pledged as a candidate, we're going to finish this system by next year so that this city is protected against a 100-year storm.”

President Barack Obama
Xavier University, New Orleans
August 29, 2010
3 Glass Balls that Cannot Be Dropped

PUBLIC SAFETY DEPENDS ON ALL 3...

QUALITY

SCHEDULE

COST
Scheduled for Completion in May 2011

1. St. Bernard Parish
   - LPV 149 Canearvon Sector Gate (1 May)
   - LPV 148 T-Wall (28 May)
   - LPV 144 Bayou Dupre Sector Gate (9 May)

2. Inner Harbor Navigation Canal
   - Surge Barrier Sector Gate Concrete (12 May)

3. Orleans East
   - LPV 109 CSX Railroad Crossing (30 May)
   - LPV 109 Levee (30 May)
   - LPV 105.01,2 Lakefront Airport Floodwall (29 May)

4. Orleans Metro
   - LPV 104.02a Norfolk Southern Railroad Gate (15 May)
   - LPV 101.02 Lakefront Marina Floodwall (10 May)
Work will Continue Past 1 June 2011

1. To finish non-storm surge related features at the canal and waterway crossings.

2. To further increase safety factors.

3. To overbuild for anticipated future settling, subsidence and sea level rise.

4. To increase resiliency of the system.

5. To further enhance the system’s armoring.

6. To mitigate for environmental damage.

7. To complete some longer-term operations and maintenance features.

8. To replace Interim Closure Structures (ICSs).
HYLA

One Hundred Year Level Attained
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.
Caernarvon Canal Sector Gate and Floodwall

HYLA will be achieved in May.
Floodwall – Verret to Caernarvon

HYLA will be achieved in May.
Highway 46 Floodgate
HYLA will be achieved this month.
Floodwall – Bayou Dupre to Highway 46

*HYLA will be achieved in April.*
Bayou Dupre Sector Gate

HYLA will be achieved in May.
Floodwall – Bayou Bienvenue to Bayou Dupre

*HYLA will be achieved this month.*
Inner Harbor Navigation Canal

~$1.1 B construction value
Barrier Wall and Floodwall Tie-Ins

Barrier wall and south tie-in are complete; north tie-in will be complete in May.
Lake Borgne Surge Barrier Gates

Barge Gate on site; BB Gate will be installed in March; Sector Gate will be installed in May.
Bayou Bienvenue Gate Fabrication
Barge Gate Fabrication
Sector Gate Fabrication
New Orleans East

~$1 B construction value

Raise approximately **25 miles** of levee and construct approximately **2 miles** of floodwall from Lakefront Airport to Michoud Canal. Relocate I-10 (ramp) and Highways 11 and 90 (replace existing gates).
Levee – CSX Railroad to Michoud Canal
HYLA will be achieved in May.
CSX Railroad Crossing
HYLA will be achieved in May.
Levee – Southpoint to CSX Railroad

HYLA will be achieved in May.
Southpoint to CSX Railroad – Interstate 10 Crossing

HYLA will be achieved this month.
Levee - Paris Road to Southpoint, Collins Pipeline Floodwall

HYLA has been achieved.
Hydra will be achieved in April.
Lincoln Beach Floodwall and Gate

HYLA will be achieved in April.
Floodwall – Lakefront Airport
HYLA will be achieved in May.
Orleans Metro

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.

~$1.1 B construction value

Phase 1 Construction - 100% complete
100-year level of risk reduction - More than 90% complete
Four interim closure structures provide interim 100-year-level risk reduction.
Seabrook Floodgate Complex

HYLA will be achieved in May.
Seabrook Floodwalls, Leon C. Simon Drive Boat Launch Gate, UNO Campus Ramp

HYLA will be achieved in May.
Lakefront Roadway Ramps, Floodwalls at Pontchartrain Beach, Levee near Leroy Johnson Drive Ramp

HYLA has been achieved.
Levee – Topaz Street to Orleans Avenue Canal

HYLA has been achieved.
Bayou St. John Floodwalls and Sector Gate, Marconi Floodgate, Orleans Avenue Canal Floodwall Tie-In

HYLA has been achieved.
Floodgates – Lakeshore Drive at Rail Street, Lake Terrace Drive

HYLA will be achieved in April.
Floodwall – 17th Street Canal to Topaz Street

HYLA will be achieved in May.
Greater New Orleans Area Hurricane & Storm Damage Risk Reduction System

East Bank Update to SLFPA-East

LTC. Mark Jernigan,
Deputy Commander MVN District

March 17, 2011
Successes

The following contracts have already achieved HYLA:

- Lakefront Levee Reach 1
- Duncan Breakwater
- Williams Floodgate
- Lakefront Levee Reach 2
- Lakefront Levee Reach 3
- Lakefront Levee Reach 4
- Bonnabel Breakwater
- Bonnabel Floodgate
- Lakefront Levee Reach 5
Lakefront Levee Reach 1

HYLA has been achieved.
Duncan Breakwater
*HYLA has been achieved.*
Williams Floodgate
HYLA has been achieved.
Lakefront Levee Reach 2

HYLA has been achieved.
Lakefront Levee Reach 3

HYLA has been achieved.
Lakefront Levee Reach 4

HYLA has been achieved.
Bonnabel Breakwater
HYLA has been achieved.
Bonnabel Floodgate

HYLA has been achieved.
Lakefront Levee Reach 5
HYLA has been achieved.
Interim Measure Plans

For the 5 contracts completing past 1 Jun 11 we will have Interim Measures in place to ensure we can defend against the 1% storm event.

- West Return Floodwall, Southern Segment
- West Return Floodwall, Northern Segment
- Bridge Abutment and Floodwall Tie-in at Causeway Bridge
- Pump Stations Fronting Protection (Elmwood and Suburban)
West Return Wall (Southern Segment)
LPV-03.2A West Return Floodwall (Southern Segment) - Phase 2

EXISTING T-WALL

PROPOSED EMBANKMENT

PROPOSED T-WALL

PROPOSED EMBANKMENT

700' PROPOSED HESCO BASKETS
West Return Wall (Northern Segment)
LPV-03.2B West Return Floodwall (Northern Segment) - Phase 2
Bridge Abutment and Floodwall Tie-in at Causeway Bridge
LPV-17.2 Bridge abutment and Floodwall Tie-ins at Causeway Bridge
Jefferson Lakefront – Elmwood Pump Station
Jefferson Lakefront – Suburban Pump Station
LPV-09.2 Jefferson Lakefront Pumping Stations (#1-#4) Modifications, Fronting Protection, Positive Cutoff and Floodwall Tie-ins-Phase 2