

# Gulf Coast Community Protection and Recovery District



**HURRICANE TECHNICAL WORKSHOP  
AND  
SYMPOSIUM  
SEPTEMBER 15, 2011**

**SOUTH SHORE HARBOR CONFERENCE CENTER  
LEAGUE CITY, TEXAS**

**Highlights Compiled by Attendee Jack Heintschel,  
Deer Park Community Advisory Council**

# Speakers List (Partial)



- **Dr. Phillip Bedient** – Rice Univ. Professor – Civil and Environmental Engineering
- **Jim Blackburn** – Attorney and Rice Univ. Professor – Sustainable Development and Environmental Law
- **Herman (Bubba) Gesser III** – Architect and Attorney – Chief Council and Projects Director to US Senator Mary Landrieu (D-La)
- **Mark Henry** - Galveston County Judge
- **Dr. William Merrell** – Geo. P Mitchell chair in Marine Sciences at Texas A&M, Galv.
- **Dale Morris** – Senior Economist at the Royal Netherlands Embassy in Washington DC
- **Col. Chris Sallese** – District Engineer and Commanding Officer, US Corp of Engineers, Galveston District
- **Len Waterworth** – President/CEO Dannenbaum Engineering Corp and General Eng. Consultant for Gulf Coast Community Protection and Recovery District (Facilitator)
- **Helen Young** – Deputy Commissioner Texas General Land Office
- As well as a prestigious host of Civil, Hydraulics, Environmental, Port, Marine, Coastal, Flood Management and Ecosystem engineering and legal professionals

# Purpose



Promote grassroots community and business support for action toward construction of storm surge protection for the Texas Gulf Coast  
by

- Review of storm surge risk
- Review of lessons learned in Netherlands and Louisiana
- Review of steps toward construction
- Presentation of three surge protection options
- Review of challenges

# Storm Surge Risk



## People

- ✦ 5.1 m people in six-county area including Brazoria to Jefferson
- ✦ 20% of Texas population resides here
- ✦ 135 lives lost due to IKE. If landfall had been 30 more miles west - thousands may have been killed.

## Economy

- ✦ 30% of nations fuel is refined within this six-county area
- ✦ 80% of nations aviation fuel
- ✦ 500 chemical plants and 2 largest strategic oil reserves
- ✦ 5 of top 16 exporting ports in US located here (Hou.- \$330 m/day GDP)
- ✦ Ike damages approaching \$40 billion

## Environment

- ✦ Galveston Bay second only to Chesapeake Bay in seafood production (Chesapeake Bay is 6 times larger)

# Lessons Learned - Louisiana



## Louisiana

- ✦ Levee system began in 1928 w/ federal funding
- ✦ Levees control Miss. River but Louisiana coastline is receding due to lack of river silt (rate equivalent to one football field/year)
- ✦ Considering use of abandoned pipelines to pump silt as needed
- ✦ MRGO (Miss. River Gulf Outlet) channeled storm surge north, around the meandering Miss. River
- ✦ Some projects stalled or changed in 70's by environmental impact studies (i.e. 14 ft levee changed to 12ft.)
- ✦ Multiple New Orleans Levee system breaches during Katrina
- ✦ “Funding-stream is unreliable”

# Lessons Learned - Netherlands



Netherlands – 60% of population lives below sea level

- ✦ Environmental standards more stringent than US
- ✦ Flood control prompted by 1953 flood, 1800 killed
- ✦ People more willing to act after disaster
- ✦ Flood control system took 44 yrs (1953 - 1997) to complete
- ✦ Has less: rainfall, storms /year, storm surge height and wind
- ✦ “Make room for the water”. Some land is just going to flood
- ✦ No single “best way” to defend against water encroachment. Multiple small projects that must work together
- ✦ Layered defense: Wetlands, levee, structures, evacuation
- ✦ Barriers to Google and/or YouTube – Maeslant, Hartel, Hollandsche Ijssel, Haringvliet Sluices, Eastern Scheldt

# Steps Toward Construction



- 1.) Capture Options
- 2.) Convince stakeholders of ROI for initial funding (Businesses want certainty)
- 3.) Congress alerted
- 4.) Study requires Senate or House resolution/authorization
- 5.) Conduct preliminary “rough and dirty” study to determine to proceed
- 6.) Conduct feasibility study (Technical, Economical, Environmental)
- 7.) Obtain authorization in a WRDA bill (Water Resource Dev. Act)
- 8.) Project must be funded by Congress
- 9.) Project begins

Notes:

- Lots (and lots) of steps between these major ones
- Time to get a Corp. of Eng. project started - 17 to 40 yrs.
- There is currently a backlog of authorized but unfunded projects
- GCCPRD is currently at Step #1

# Three Surge Protection Options



1. Elevate Hwy 146, Galv. To Baytown (Utilize existing Texas City Dikes?) w/ Maeslant-type flood gate at Fred Hartman Bridge
2. Place a Maeslant-type flood gate at Fred Hartman Bridge and elevate Hwy 146 from LaPorte to Baytown only
3. Ike Dike – Levee from Bay City to High Island utilizing existing Galv. Seawall, and natural barriers where possible and building a Maeslant-type flood gate at Bolivar Roads and a segmented gate at San Luis Pass

Note: Our system can be “leaky”. Just need to slow down water flow

# Challenges



- Generation of common “political will” to act
- Initial study funding
- People issues (interveners/activists/special interests)
- Ecological issues (wetlands, general effect on bay system)
- Economic issues (Easy to justify, but who pays for it?)
- Federal and State Construction Funding Hurdles
  - ✦ Must convince nation this is in their interest
  - ✦ Federal climate of budget cutting (Agencies to cut 5%-10 %)
  - ✦ Competing for funds (desalination project for drinking water)
  - ✦ “Bureaucratic Red Tape” simply amazing
  - ✦ Corp. of Engineers facing budget cuts (Primary work is navigation projects critical to ship channel traffic)
  - ✦ GLO offered little hope of funding w/o federal backing

## Closing Symposium Comment



Any option currently on the table will cost less than the damage caused by a single hurricane of Hurricane Ike severity;

Can we afford not to act?