

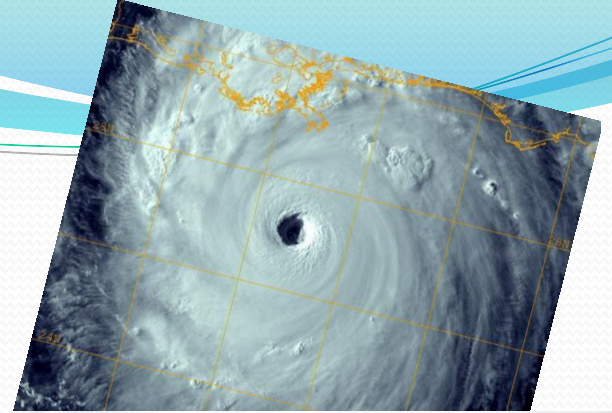
Hurricane Katrina and The New Orleans Environmental Response

Eddie Katz



Hurricane Katrina

- August 29th, 2005
- Costliest Disaster/One of the 5 deadliest Hurricanes in US History. Total Cost: Approx. \$100 Billion in damages
- Over 15 million affected by Katrina whether it was due to the economy, evacuations, gas shortages, or even drinking water.
- 1,836 people died
- Wind Gusts 175 MPH/ 14 inches of rain 24 hours

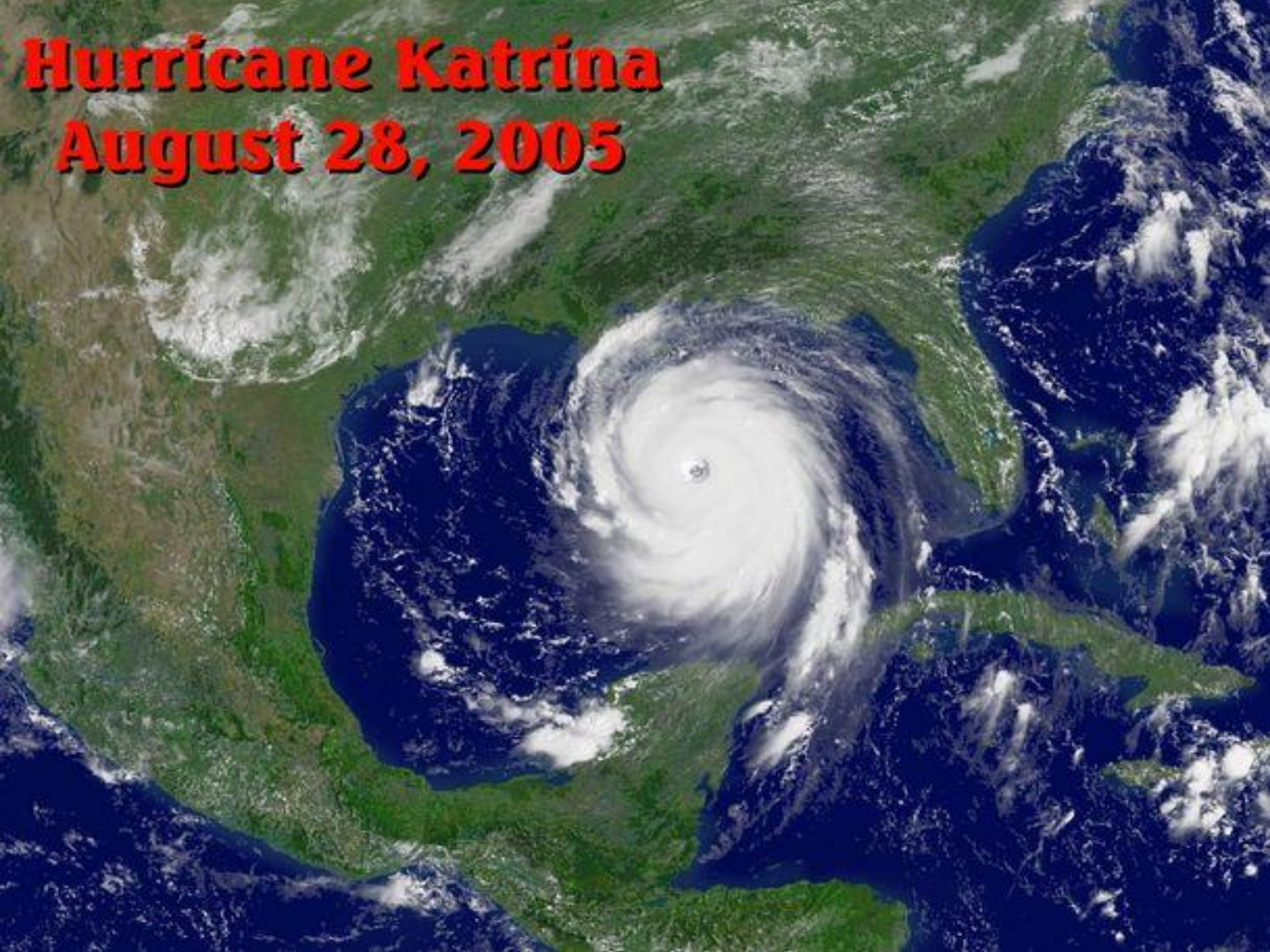


Hurricane History

- New Orleans has always been a target for Storm Surges
- Over 10% of hurricanes that make landfall in American Atlantic Coast between 1851 and 2004 made landfall in Louisiana.
- 18/92 with Saffir Simpson Rating of Cat 3 or above struck stated
- Hurricane of 1947, Hurricane Betsy (1965), Hurricane Camille (1969)
- Hurricane Georges (1998) and Hurricane Ivan (2004) demonstrated the potential dangers in New Orleans Hurricane Response Tactics. Especially the evacuation plans

Hurricane Katrina

August 28, 2005



“We were expecting a hurricane but we got a flood”

- Mayor Mitch Landrieu
- New Orleans’s experiences with hurricanes means the city is prepared to deal with a hurricane
- Levee System
- The Breaking of the Levee/Overload of the Pumping System
- The city would have still undertook a significant amount of damage however the levee flooding is where the majority of damage came from.



BEFORE



AFTER



FEMA

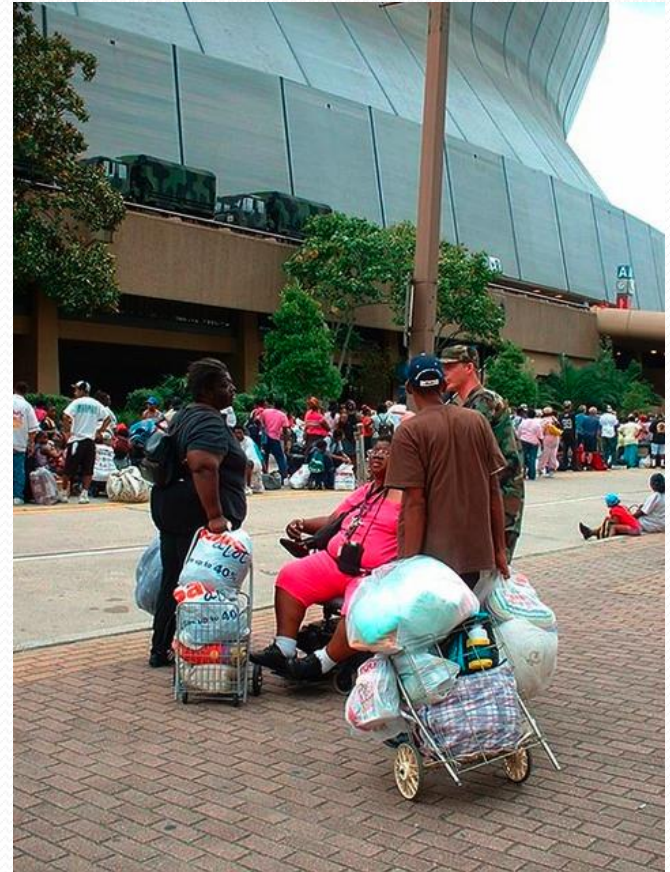
- Federal Emergency Management Agency
- Heavily criticized for their response to the Hurricane
- House of Reps organized the Select Bipartisan Committee to Investigate the Preparation for and Response to Hurricane Katrina:
 - "The Secretary Department of Homeland Security should have designated the Principal Federal Official on Saturday, two days prior to landfall, from the roster of PFOs who had successfully completed the required training, unlike then FEMA Director Michael Brown. Considerable confusion was caused by the Secretary's PFO decisions."
 - "Department of Homeland Security and FEMA lacked adequate trained and experienced staff for the Katrina response."
 - "The readiness of FEMA's national emergency response teams was inadequate and reduced the effectiveness of the federal response."
 - "Long-standing weaknesses and the magnitude of the disaster overwhelmed FEMA's ability to provide emergency shelter and temporary housing."
 - "FEMA logistics and contracting systems did not support a targeted, massive, and sustained provision of commodities."
 - "Before Katrina, FEMA suffered from a lack of sufficiently trained procurement professionals."
- Michael D Brown, then FEMA director, resigned on Sept. 12, 2005 after taking extreme criticism.

New Orleans Evacuation Plan for Katrina

- Headlines/Quotes in Newspapers pre-Katrina
 - “New Orleans City Officials Plan to Use Buses to Evacuate Some Residents; Lacks Capacity for Full Evacuation” July 2005: Times-Picayune
 - “Hurricane Ivan Demonstrates Need to Improve New Orleans Evacuation Plan” September 2004: Washington Post
 - “Ivan was a real wake-up call. We have to take Ivan’s near-miss to get the federal government to fast-track some of these restoration projects,’ says Ivor van Heerden, the deputy director of the LSU Hurricane Center.” Oct. 2004 Philadelphia Inquirer
 - “For example, FEMA writes that “the emergency management community has long feared the occurrence of a catastrophic disaster” that would cause “unprecedented levels of damage, casualties, dislocation, and disruption that would have nationwide consequences and jeopardize national security.” Dept. of Homeland Sec. 2004
- They saw it coming!

Evacuation

- Evacuation statistics are not too bad.
- Better than Hurricane Ivan because of Mandatory Evacuation: About 80% of city evacuated
- 26,000 sheltered in New Orleans Superdome
- Lack of public transportation however kept many of the poor stranded.



Hurricane Gustav's Relevance

- Fall 2008
- Anticipated to be the “storm of the century”
- Mayor Ray Nagin: "This is the real deal, not a test," "For everyone thinking they can ride this storm out, I have news for you: that will be one of the biggest mistakes you can make in your life."
- Contraflow Lane Reversal on all major highways, and 700 buses to help move evacuees.
- 1.9 Million people evacuated South Louisiana
- City much more wary of Hurricanes

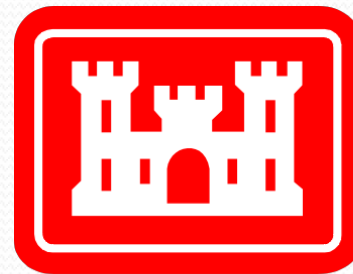
Post-Katrina: What now?

- Rebuilding: Voluntary Programs, Religious Organization Help, Celebrity Coverage
- BUT, how to make sure it won't happen again?



US Army Corp of Engineers

- Given the task of recreating the city's defense against hurricanes
- First task: Get rid of the water: removed 250 gallons of water from the city in 53 days
- Next: Protect the city



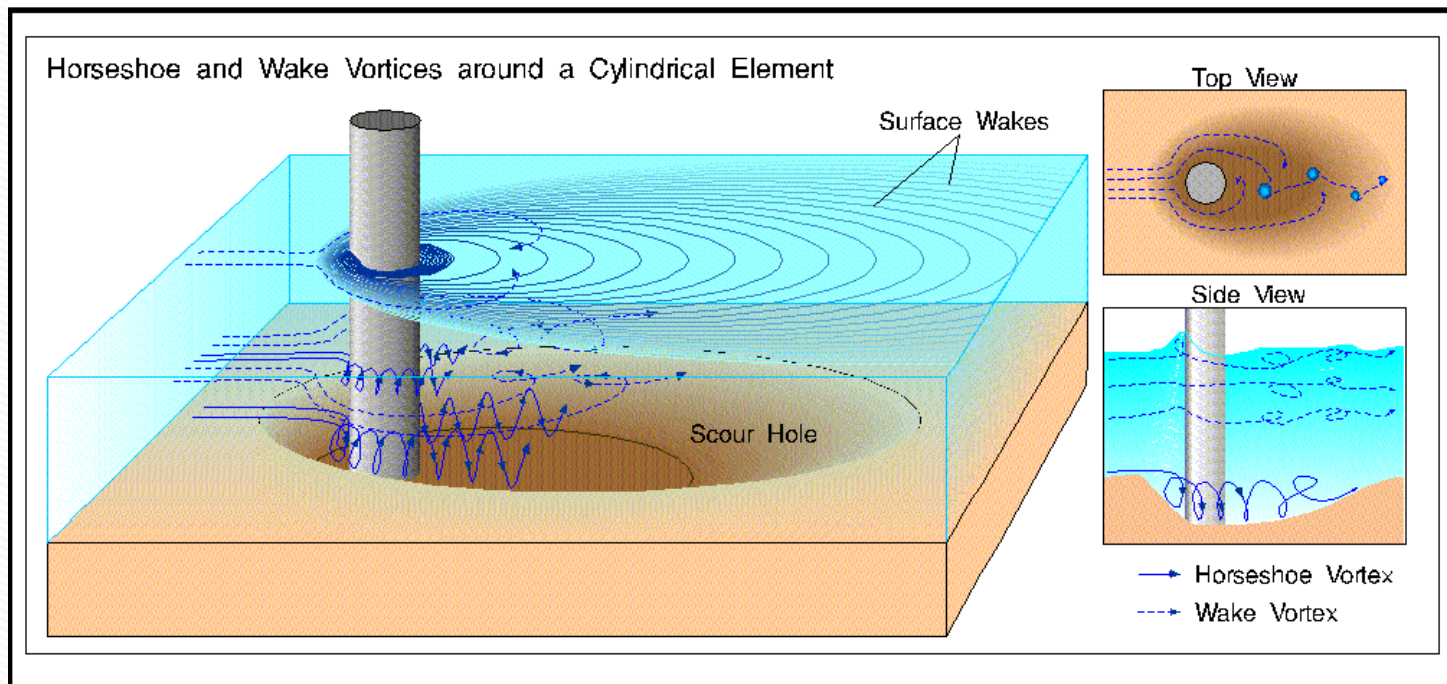
**US Army Corps
of Engineers®**

100-Year Level of Protection Plan

- Protects from storm surge flooding caused by hurricanes with a 1 percent chance of occurring in any year, often referred to as a 100-year storm.
- 4/50 major levee resulted from foundation-induced failures. Remainder: combination of overtopping and scour.
- To address these issues: some levees and floodwalls have been (or are in the process of being) raised and in some areas widened.

100-Year Level of Protection Plan

- How to protect from scour:
 - Extra Grass
 - Large Stones (rip-rap)
 - Turf Reinforced Mats
 - Concrete Slabs



Progress Today

- June 1st 2011 is the projected completion date
- \$10 billion in construction contracts (288) has been obligated (60% to New Orleans Businesses)
- 98% of projects completed as of now
- All surge barriers, interior floodwalls, exterior floodwalls, T-walls and levees will be ready by June 1st.
- 1.8 miles of wall/month is the rate now; expected to increase to 2.

Works Cited

“100-Year Level of Protection.” *US Army Corp of Engineers: Team New Orleans*. US Army , n.d. Web. 13 Nov. 2010. <http://www.mvn.usace.army.mil/hps2/hps_100_year.asp>.

Guarino, Mark. “Would New Orleans levees hold for a second Katrina?” *The Christian Science Monitor*. The First Church of Christ, 29 Aug. 2010. Web. 13 Nov. 2010. <<http://www.csmonitor.com/USA/2010/0829/Would-New-Orleans-levees-hold-for-a-second-Katrina>>.

“Hurricane Katrina: Evacuation.” *History Commons*. Center for Grassroots Oversight , n.d. Web. 12 Nov. 2010. <http://www.historycommons.org/timeline.jsp?timeline=hurricane_katrina_tmln&katrina_emergency_preparedness/response_plans=katrina_evacuationPlanning>.

Kurpis, Brian. “Hurricane Katrina Relief FAQs.” *HurricaneKatrinaRelief.com*. N.p., 2009. Web. 14 Nov. 2010. <<http://www.hurricanekatrinarelieff.com/faqs.html>>.

McCarragher, Barbara. “Hurricanes: History.” *Mission: Project New Orleans*. Massachusetts Institute of Technology, n.d. Web. 13 Nov. 2010. <<http://web.mit.edu/12.000/www/m2010/teams/neworleans1/hurricane%20history.htm>>.

“New Orleans Levee System.” *New Orleans Levees.com*. Official Florida Visitor Guide.com Network & Internet Publishing Group, n.d. Web. 12 Nov. 2010. <<http://www.neworleanslevee.com/>>.

Schleifstein, Mark. “Corps says 100-year level of protection due June 1.” *Times-Picayune* 10 Nov. 2010: n. pag. Web. 12 Nov. 2010. <<http://www.nola.com/news/t-p/capital/index.ssf?/base/news-8/128885220944930.xml&coll=1>>.