# Performance of the New Orleans Flood Control System: Hurricane Katrina



http://www.noaanews.noaa.gov/stories2005/s2506.htm

Presented to the Senate Committee on Homeland Security and Governmental Affairs

November 2, 2005 Washington DC

#### Levee Assessment Team

- ASCE (Geo-Institute & COPRI)
- NSF (UC Berkeley, CA DWR)





Leading experts in geotechnical engineering, hydraulics, and systems

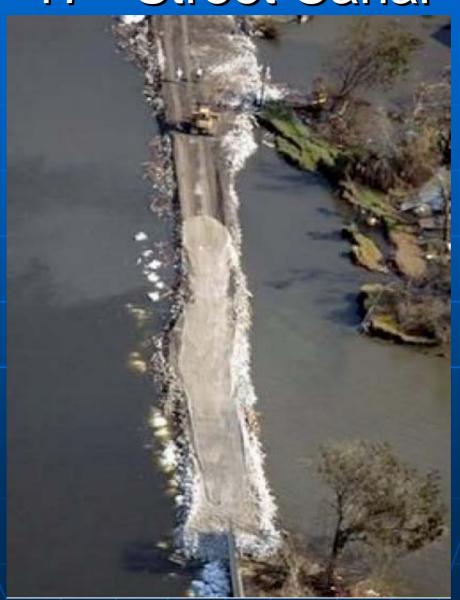




#### 17<sup>th</sup> Street Canal



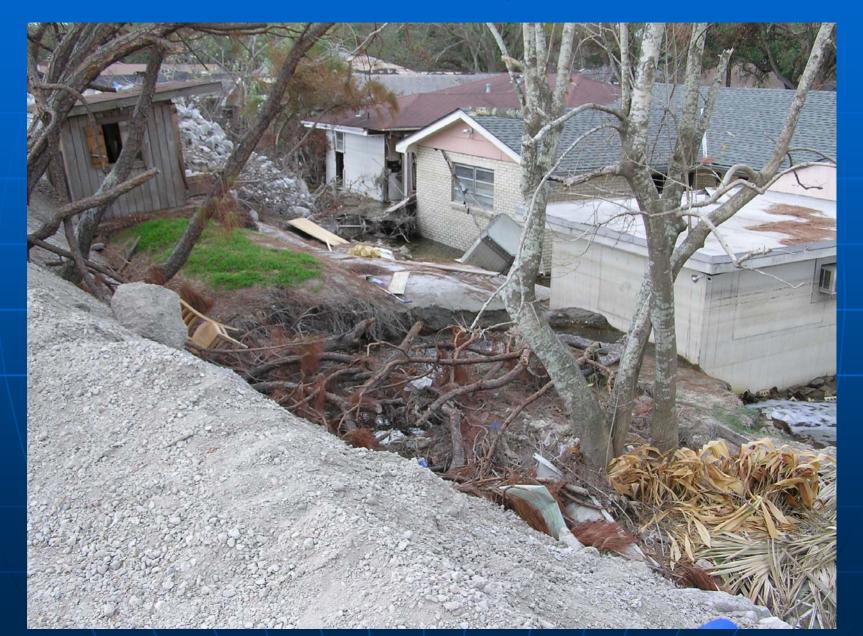
### 17<sup>th</sup> Street Canal



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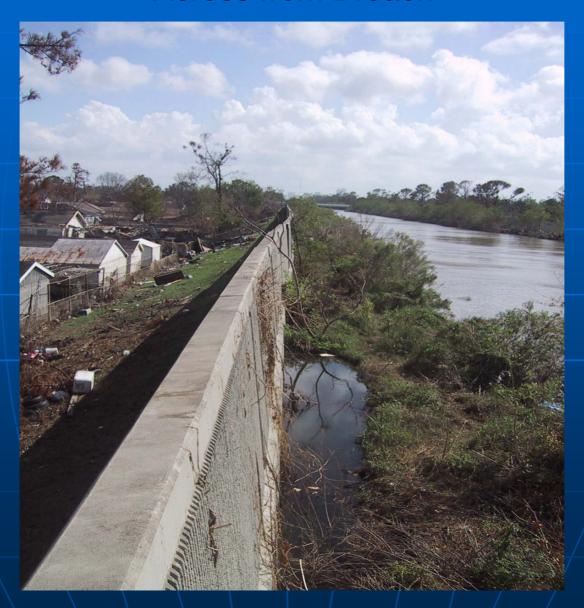
#### London Avenue Canal, North Breach



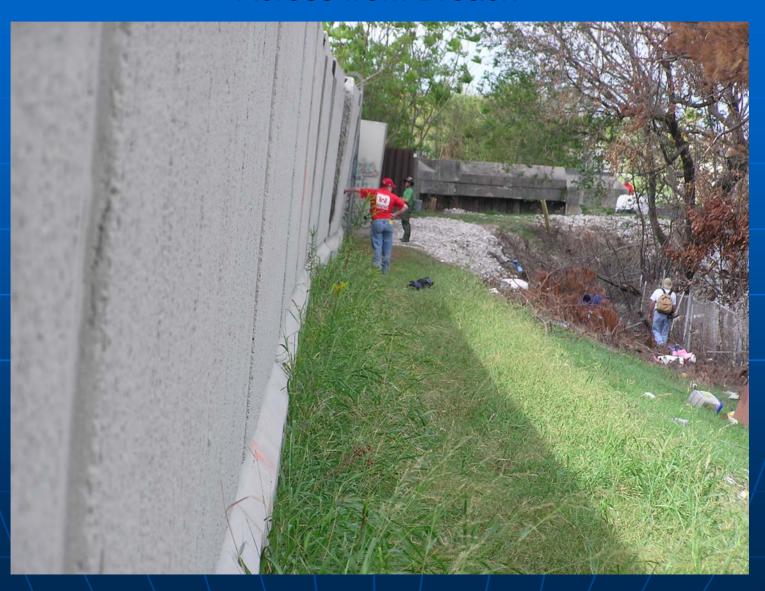
#### London Avenue Canal, North Breach



### London Avenue Canal, North Across from Breach



### London Avenue Canal, North Across from Breach



#### London Avenue Canal, North

**Across from Breach** 



#### London Avenue Canal, North

**Across from Breach** 



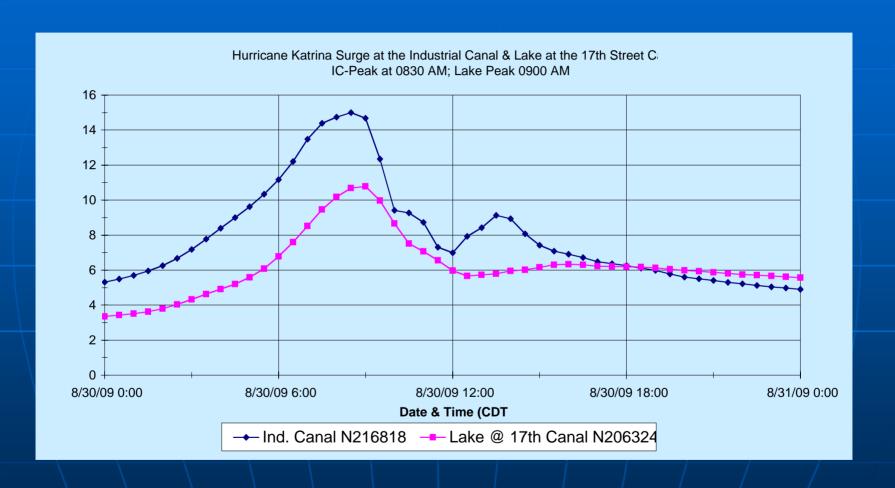
#### London Avenue Canal, South Breach



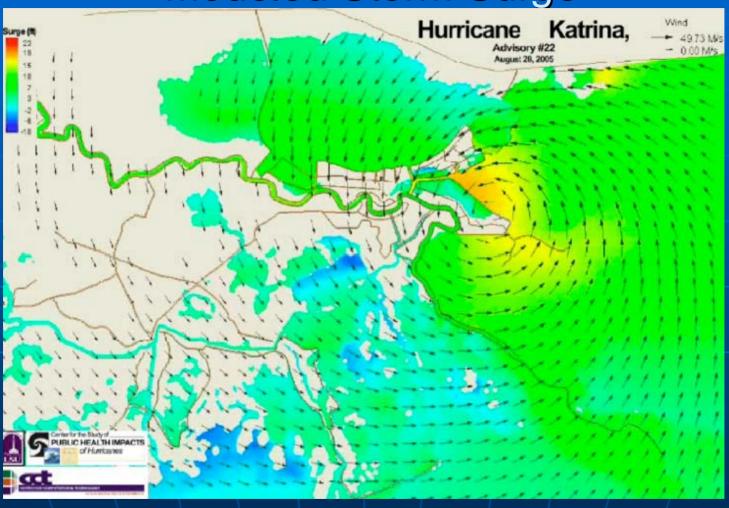
#### London Avenue Canal, South Breach



#### Modelled Storm Surge Heights

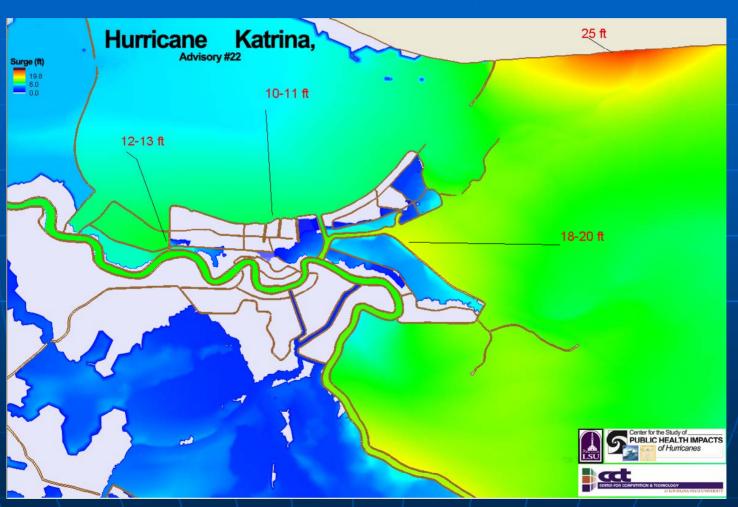


Modeled Storm Surge



Courtesy LSU Hurricane Center

#### Modelled Storm Surge



Courtesy LSU Hurricane Center

Levee Breaches Leves Breaches \* Sumbridged Lake Porachartrain Tellieute ) Desert Pumping Stations Greater Than 20% Capacity 40% to 30% Capacity Lace Than 40% Capacity Under /esessment Estimated Flood Extents 200 Pre-Katrina Wetlands 25 Costor-ber 2006 Jaimoin Pris (949) Maximum CHIA PS(FIS Levee Districts DY Not Dry Can D. Pd Lake Borgne Cast Borth Washingsi River St. States Form: Affirm Teacher
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#### **Embankment Overtopping**



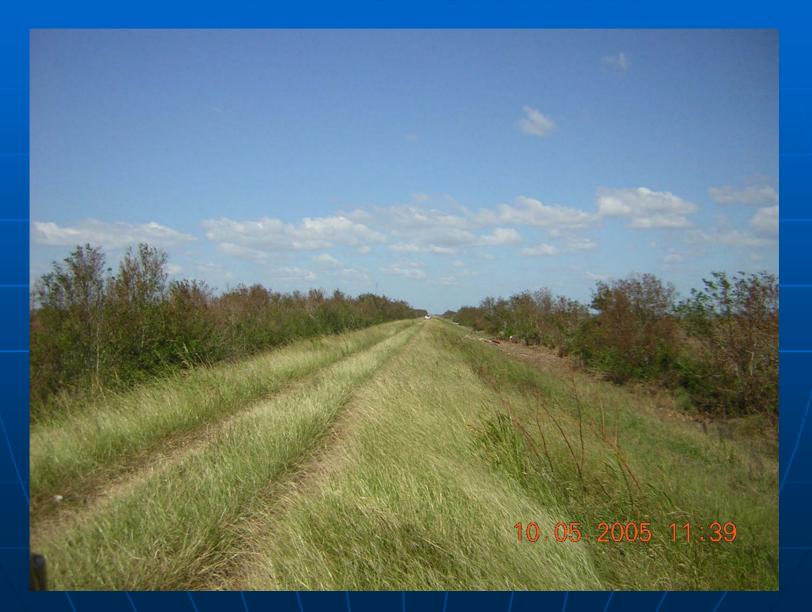
#### Overtopped Embankment (Sand Core)



#### Overtopped Embankment (Sand Core)



#### **Embankment Successes**



### Inner Harbor Navigation Channel (Industrial Canal)



### Inner Harbor Navigation Channel Lower 9th Ward



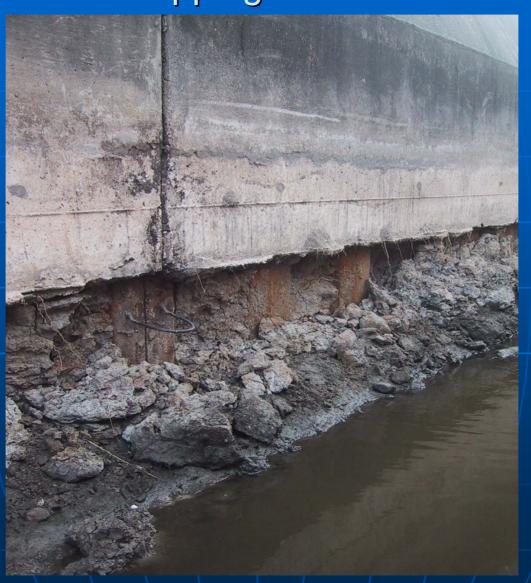
#### Lower 9th Ward



## Inner Harbor Navigation Channel Back Scour at Lower 9th Ward



# MRGO, North Bank (New Orleans East): Overtopping Back Scour



### MRGO, North Bank (New Orleans East): Floodwall Overtopping Failure



#### **Common Transition Problems**



#### Common Transition Failures



#### Common Transition Failures



#### Common Transition Failures



#### **Complex Transitions**

