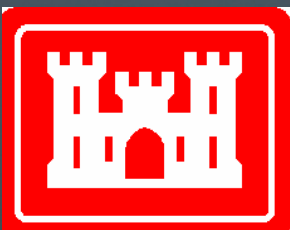


IPET Interior Modeling

Jeff Harris

Steve Fitzgerald

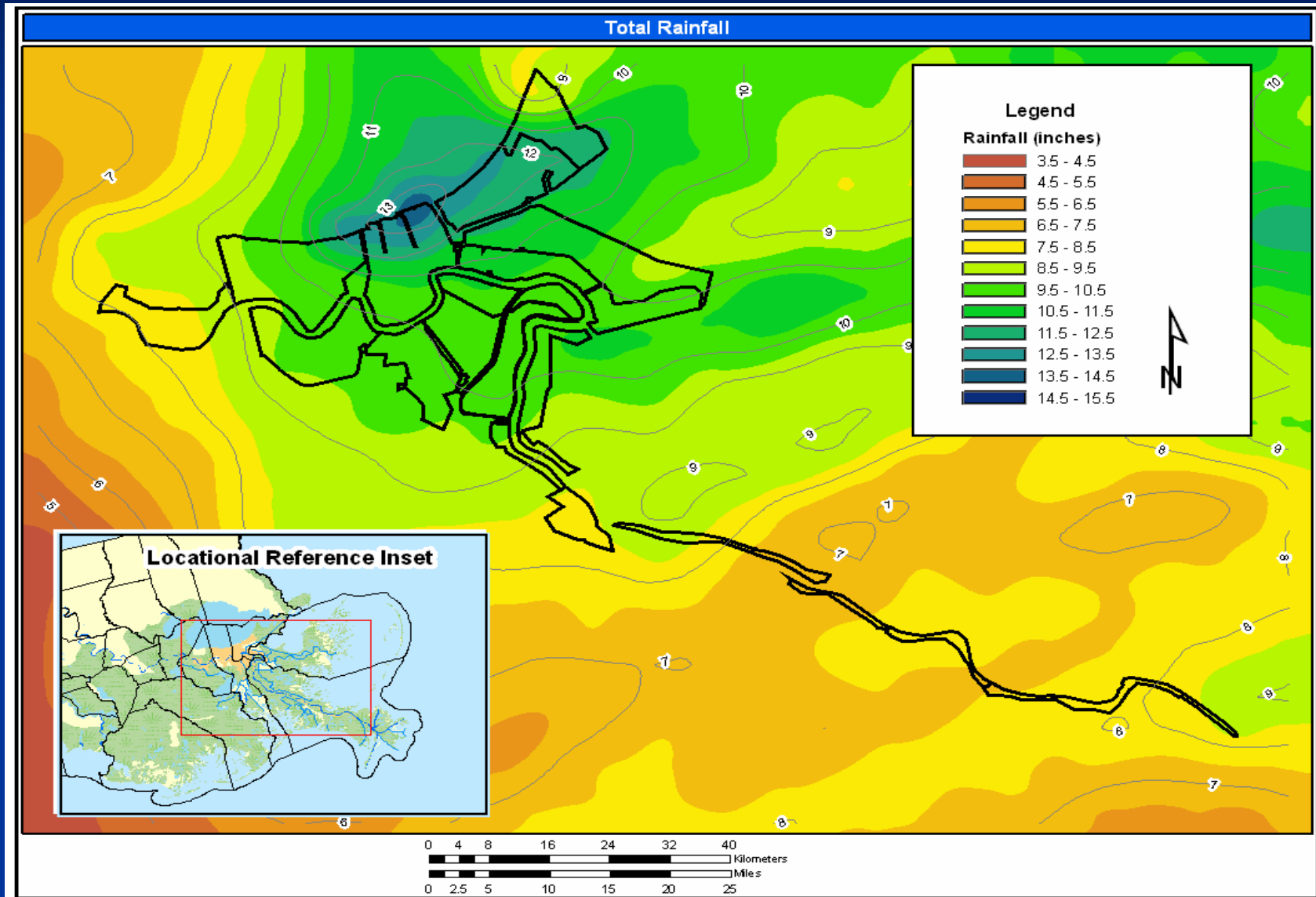


NRC – New Orleans, May 15, 2006

IPET QUESTIONS

- How did the floodwalls, levees, pumping stations, and drainage canals, individually and acting as an integrated system, perform in response to Hurricane Katrina, and why?
- What would the consequences have been if the system would not have suffered catastrophic failure?
 - Following the immediate repairs, what will be the quantifiable risk to New Orleans and vicinity from future hurricanes and tropical storms

Katrina Rainfall



Katrina Precipitation

Storm	Year	Total Storm Rainfall Range (inches)
Hurricane Katrina	2005	8.0 - 14.0
Tropical Storm Isidore	2002	4.5 - 7.5
Hurricane Lili	2002	2.5 - 8.5
Tropical Storm Allison	2001	14.5 - 21.5
Hurricane Danny	1997	1.0 - 9.5
Hurricane Andrew	1992	5.6 - 6.0
Hurricane Betsy	1965	4.0 - 7.0

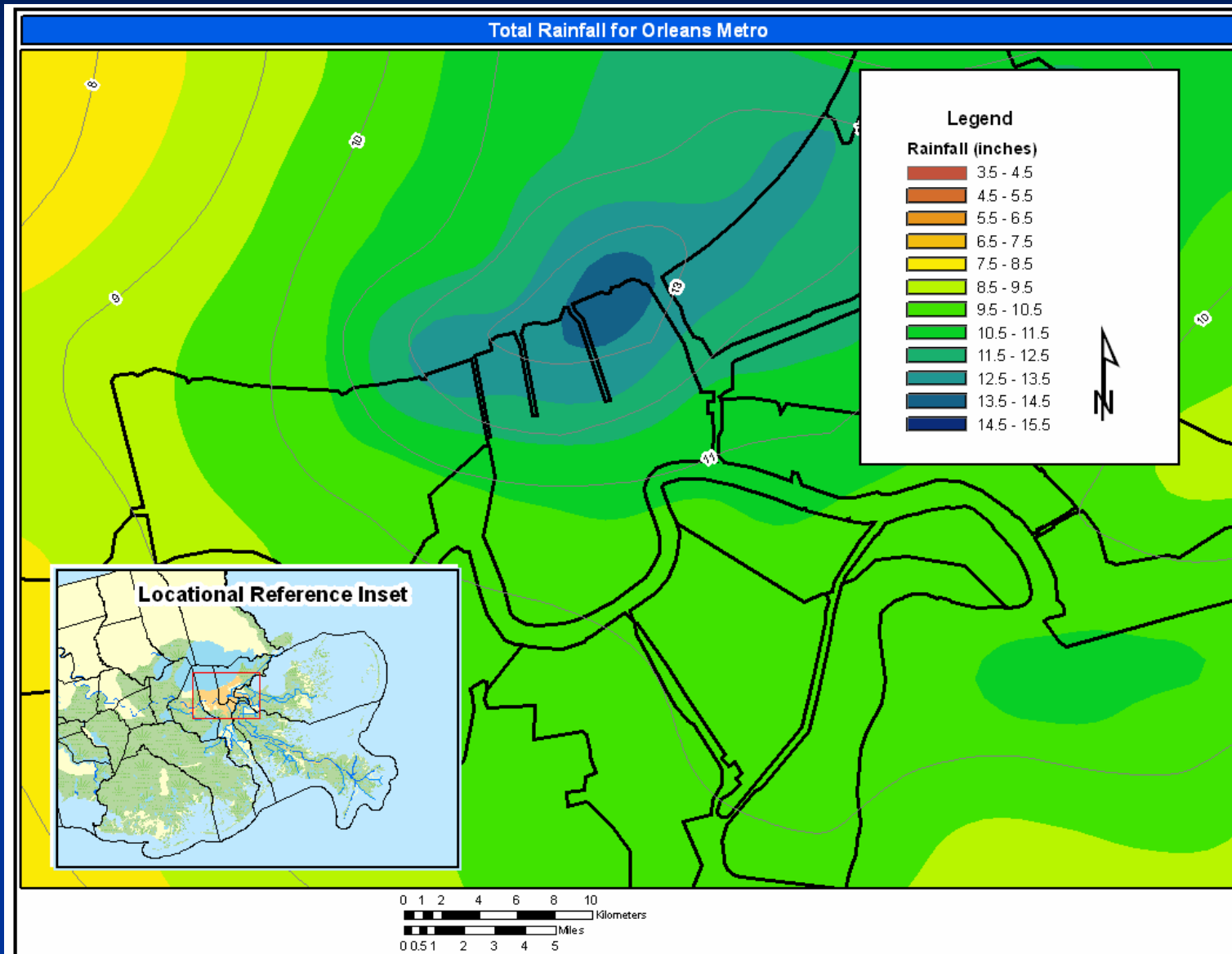
Simulations

- Katrina
- No Breach
 - Locations that breached from causes other than design being exceeded are not breached
 - Pumps
 - Operated as during Katrina

Orleans East Bank

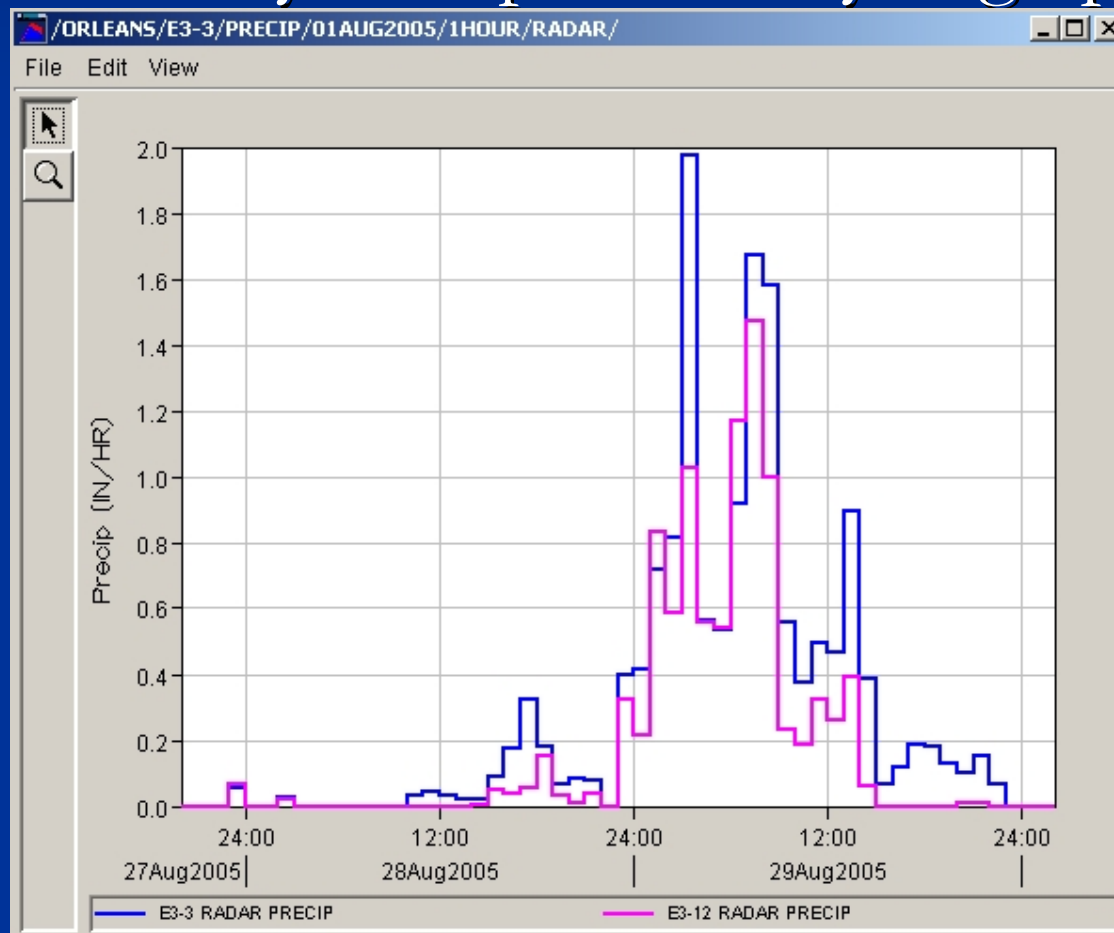
- Flooding Contributors
 - Rainfall
 - Floodwall Overtopping
 - Floodwall Failures
 - Levee Failures

Orleans East Bank Rainfall

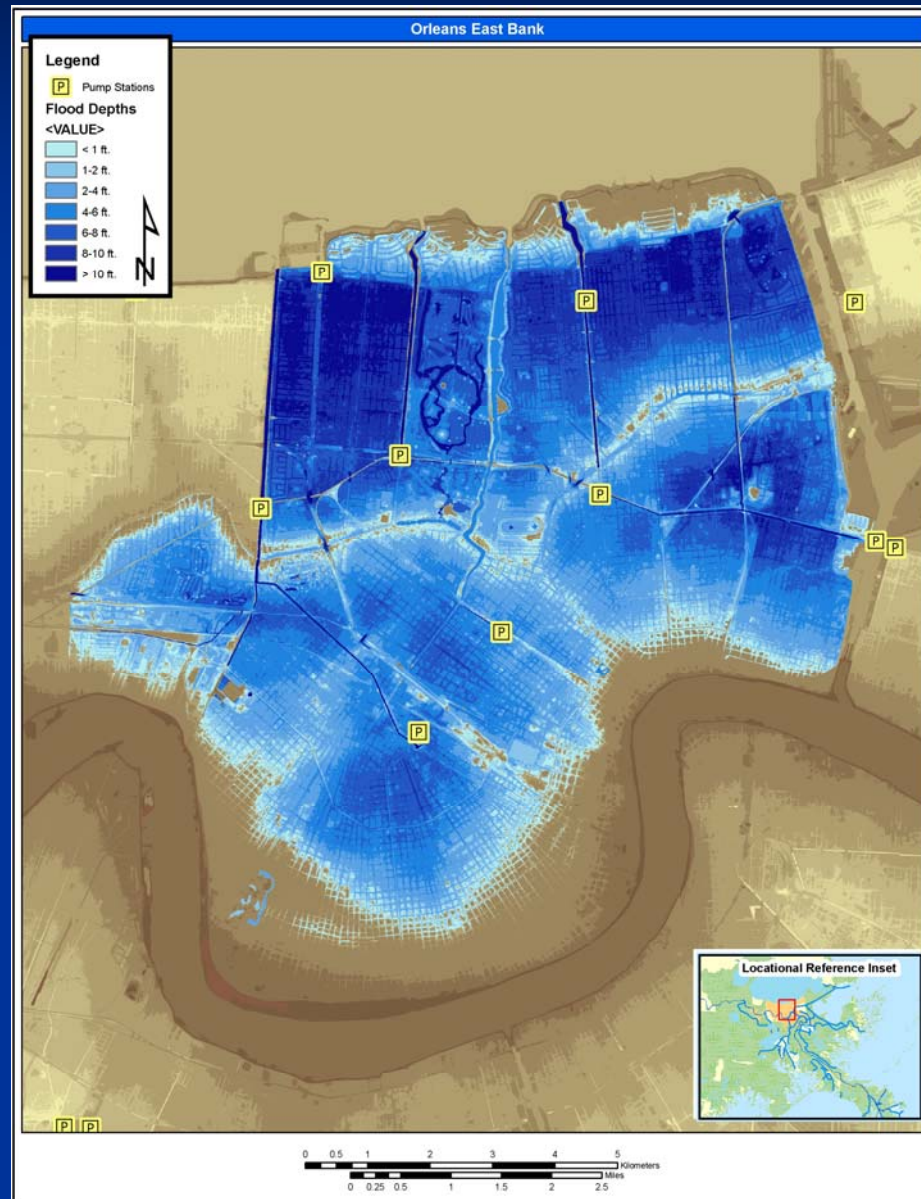


Orleans East Bank

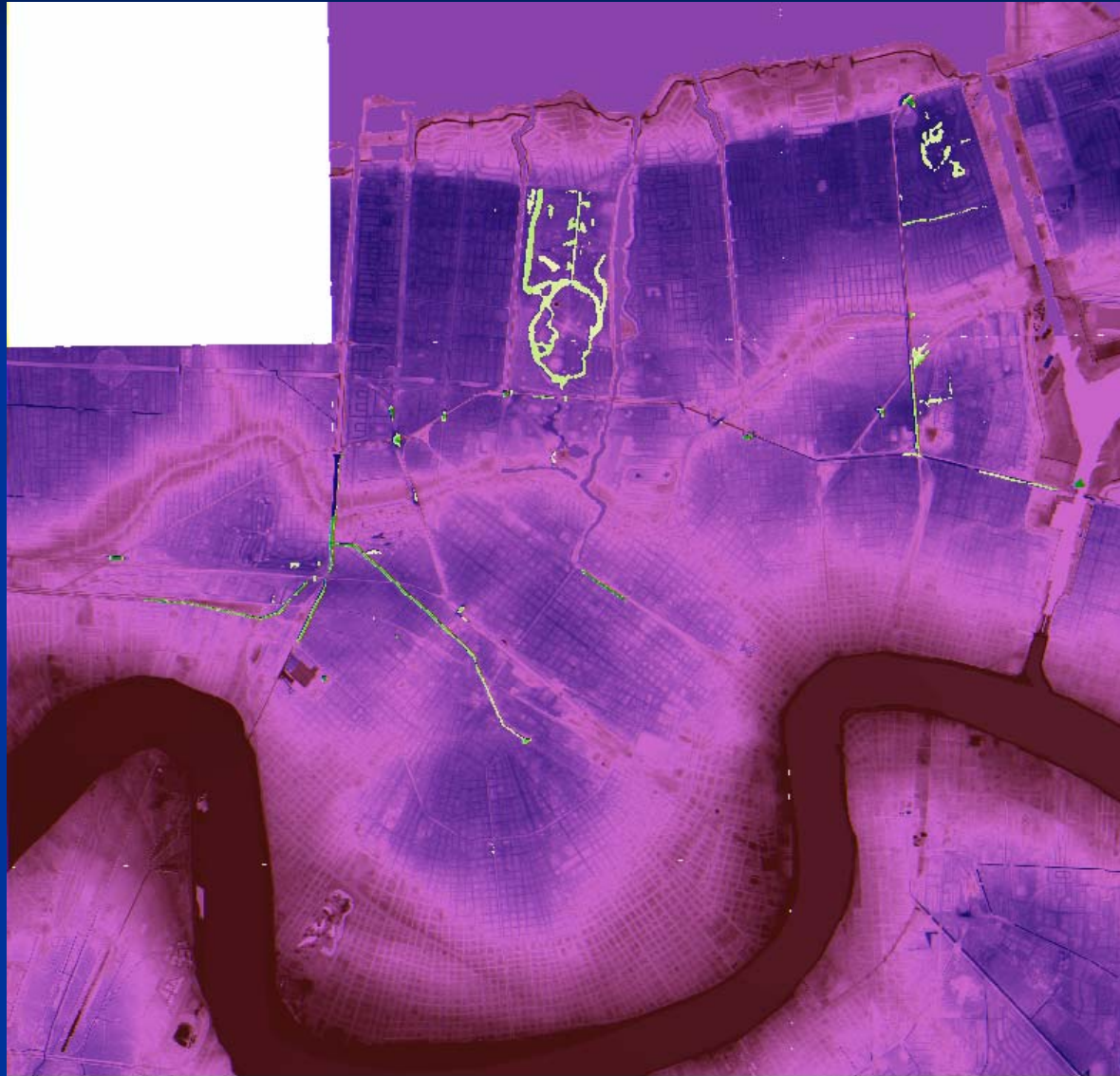
- Sample Hourly Precipitation Hyetographs



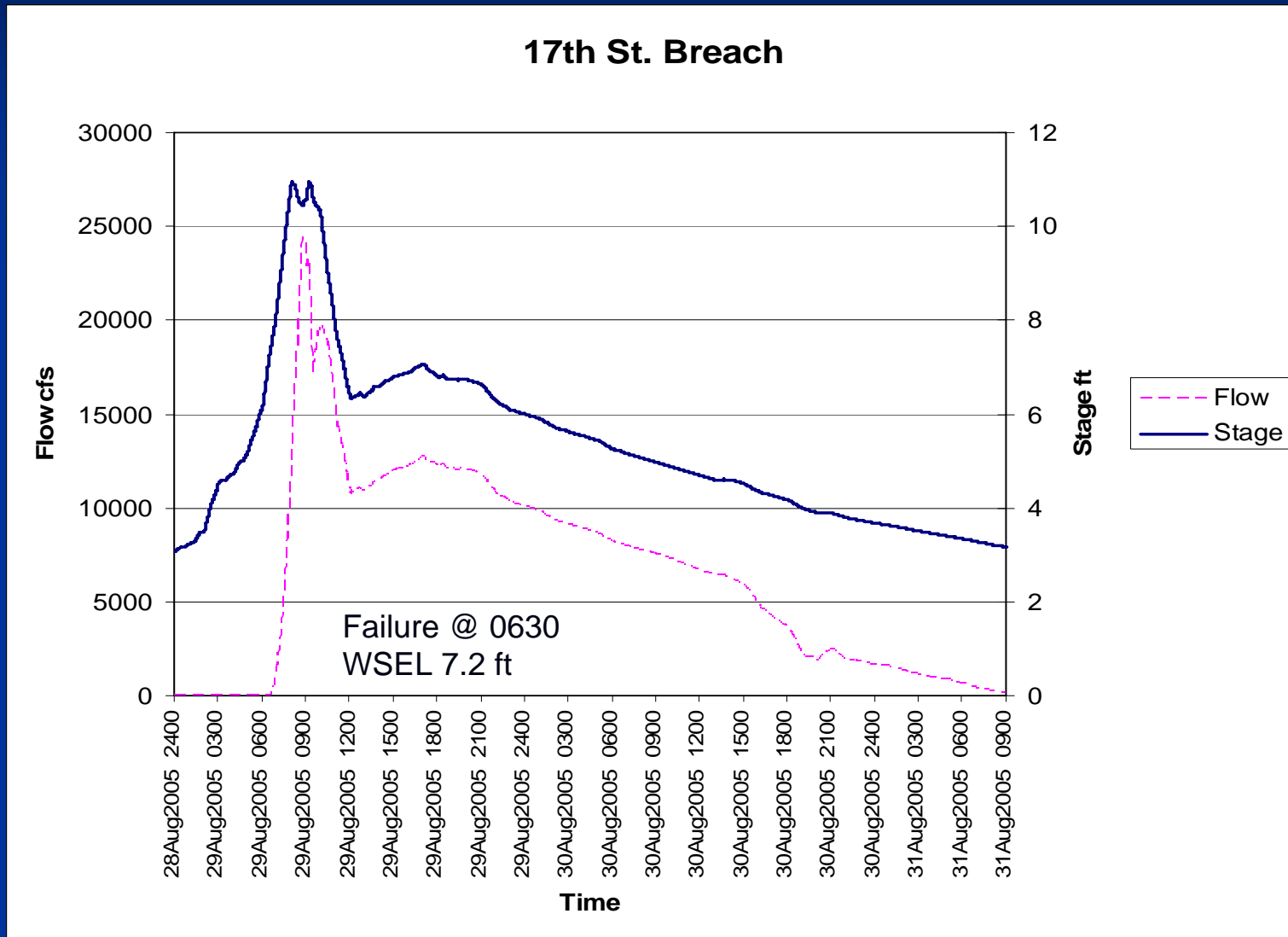
Katrina Simulation Flooding



Katrina Simulation Flooding



17th Street Breach



Volume Comparison

Table 2-9. Calculated Volume of Flow into Orleans East Bank

Location	Inflow with Breaches Acre-Feet	Inflow without Breaches Acre-Feet
Rainfall Runoff	21,900	21,900
17 th Street	30,500	0
London West	14,490	0
London East	15,910	0
IHNC north of I-10	140	140
IHNC I-10 to DPS 19	13,570	5,550
IHNC DPS19 to Lock	7,990	7,990
Total	104,500	35,580