
17th STREET CANAL: Hydraulic Analysis

Overall Purpose

**Provide a Preliminary
Description of Procedures for
Hydraulic Analysis of Canals
in Which Breaches Occurred**

Outline of Presentation (for 17th Street Canal)

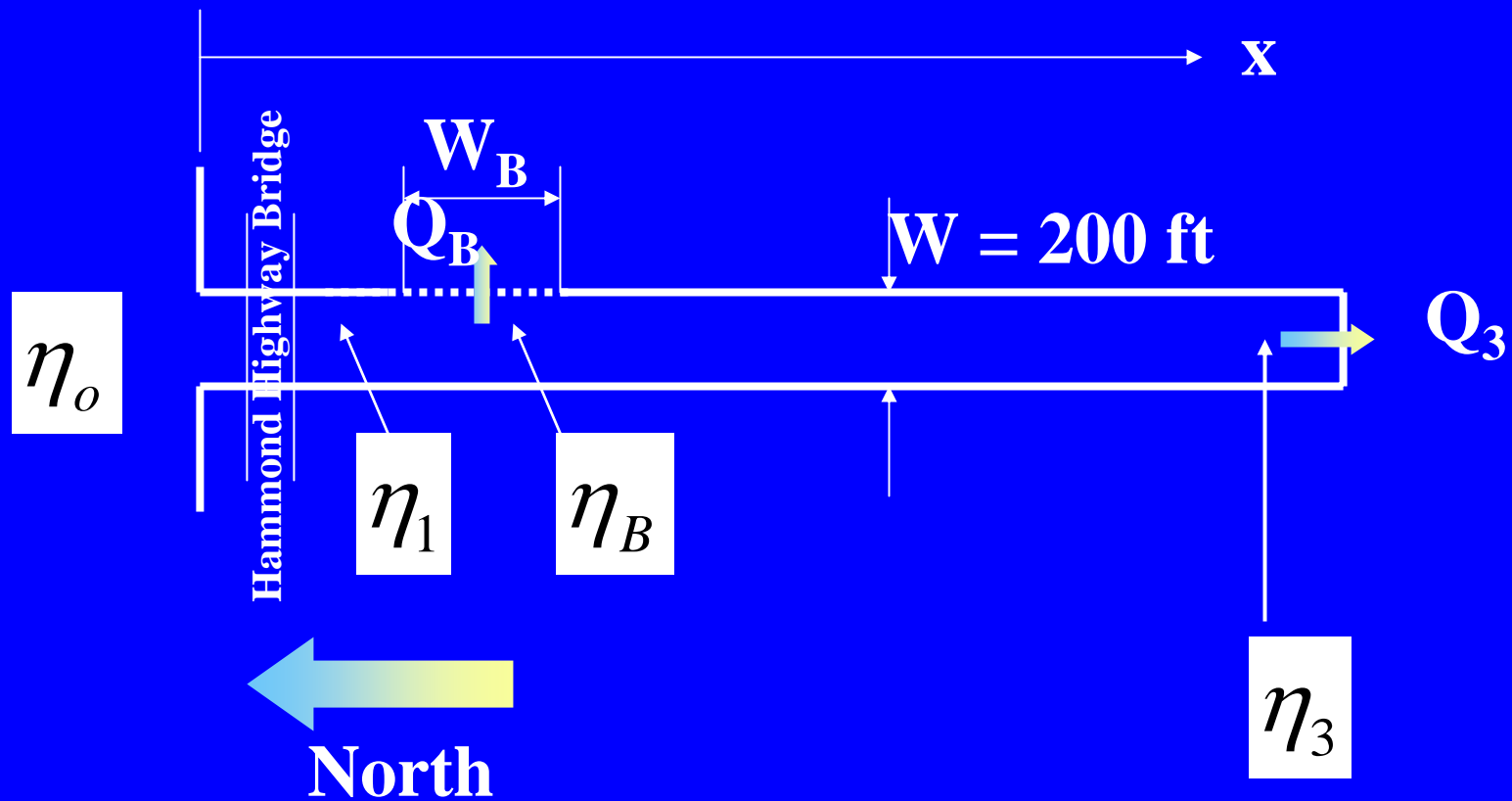
- (1) Describe System**
- (2) Present Available Water Level Data (Lake and Canal South End)**
- (3) Describe Hydraulic Equations Applied**

Outline of Presentation (Cont'd)

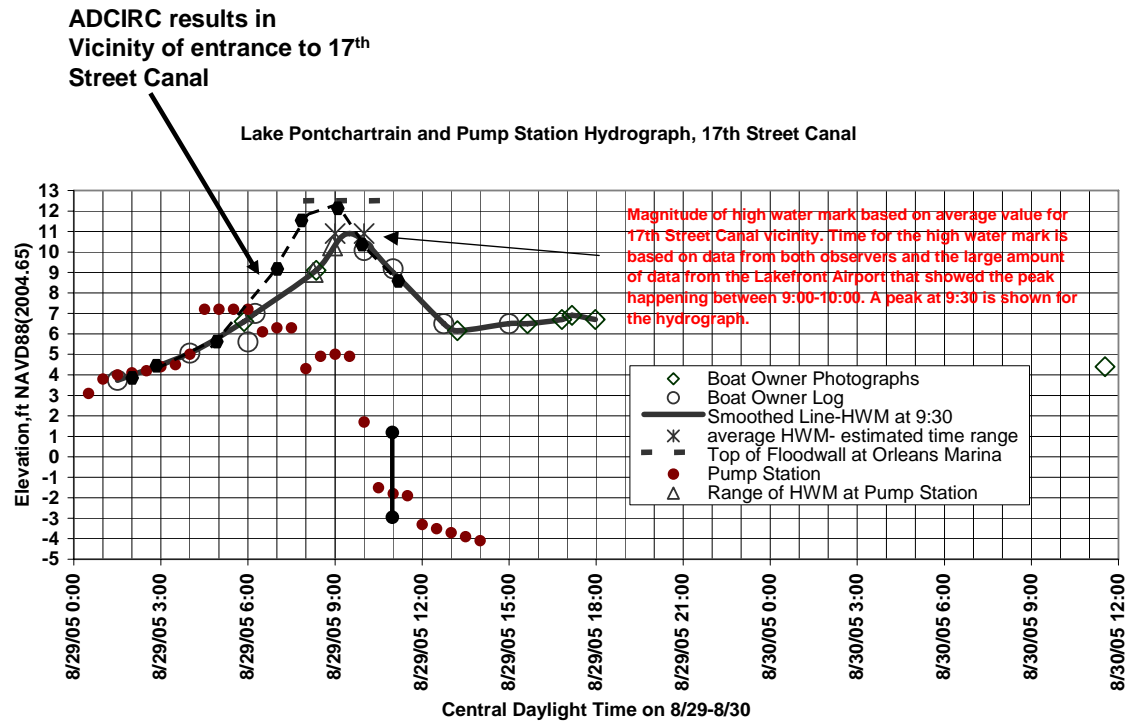
**(4) Present Analysis Results
for 17th Street Canal**


**(5) Describe Preliminary
Protocol for Hydraulic Analysis
of Other Canals**

Definition Sketch of 17th Street Canal

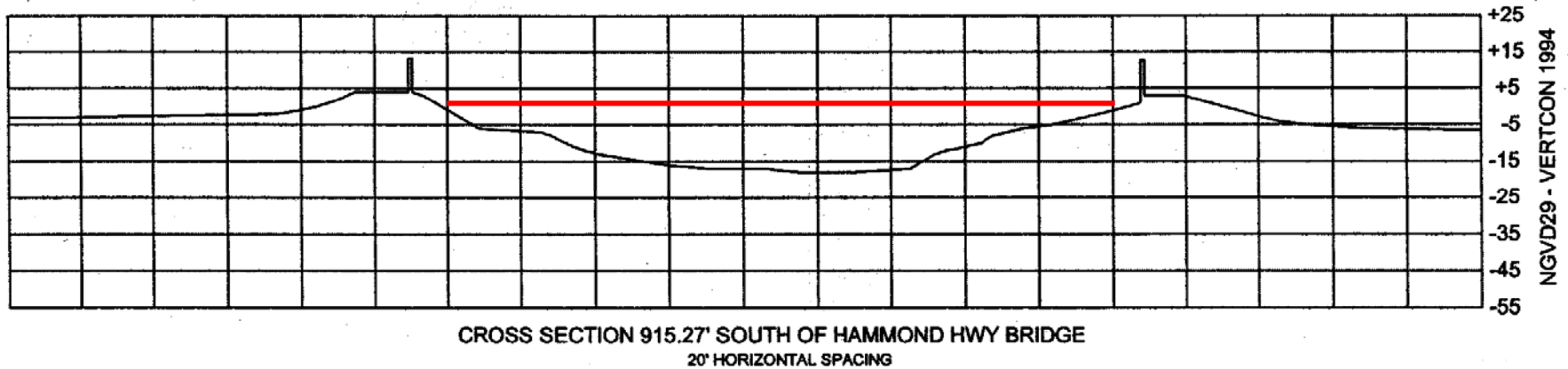


Water Level Time Histories



 Preliminary water level estimated from video frames at shortly after 1100 CDT August 29th

Typical 17th Street Canal Cross-section



Typical Hydraulic Equations Applied

$$\eta_o = \eta_1 + \frac{Q_1^2 (1 + K_{en} + K_B)}{2gW^2 (h + \eta_1)^2}$$

Conditions Considered

(Based in Part on Eye Witness Accounts)

0600 to 0900, August 29, 2006

Breach Width = 200 ft.

**Q_3 (Pump Discharge Into
Canal) = - 5000 cfs**

> 0900, August 29, 2006

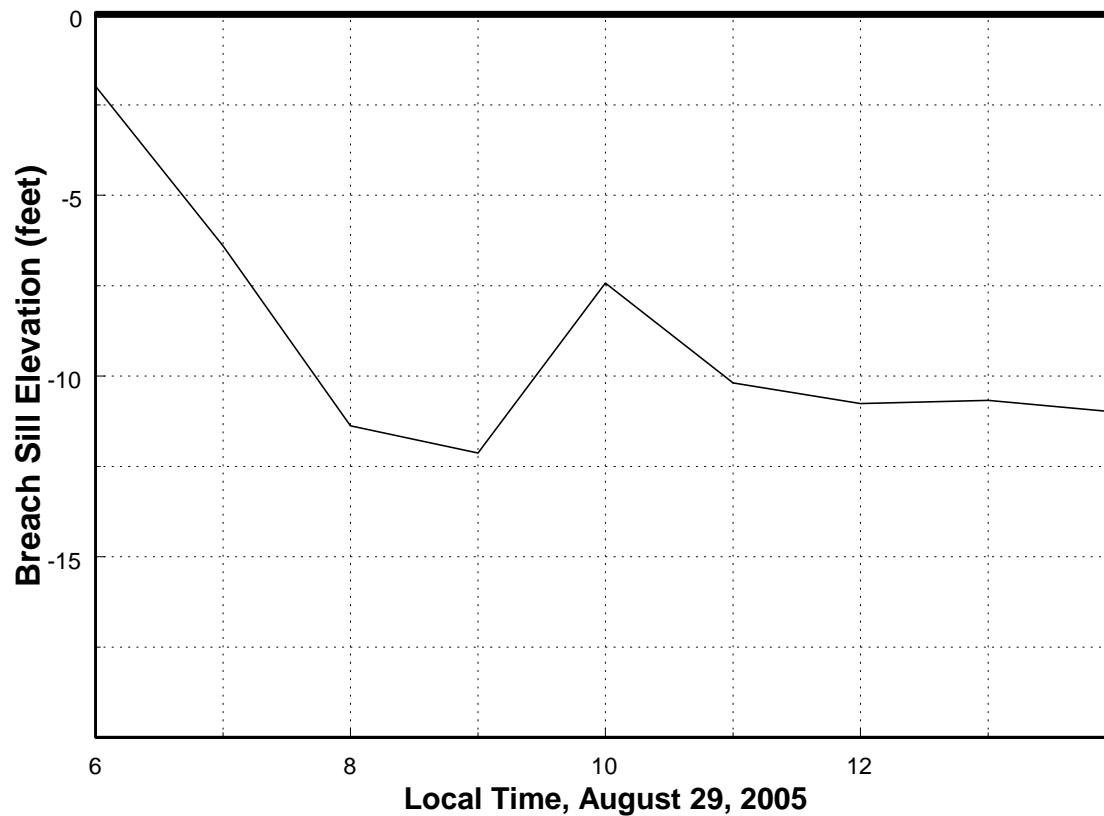
Breach Width = 450 ft.

$Q_3 = 0$ cfs

Breach Discharge Based on Lake and South End Water Levels



Required Sill Elevation for Critical Flow Through Breach

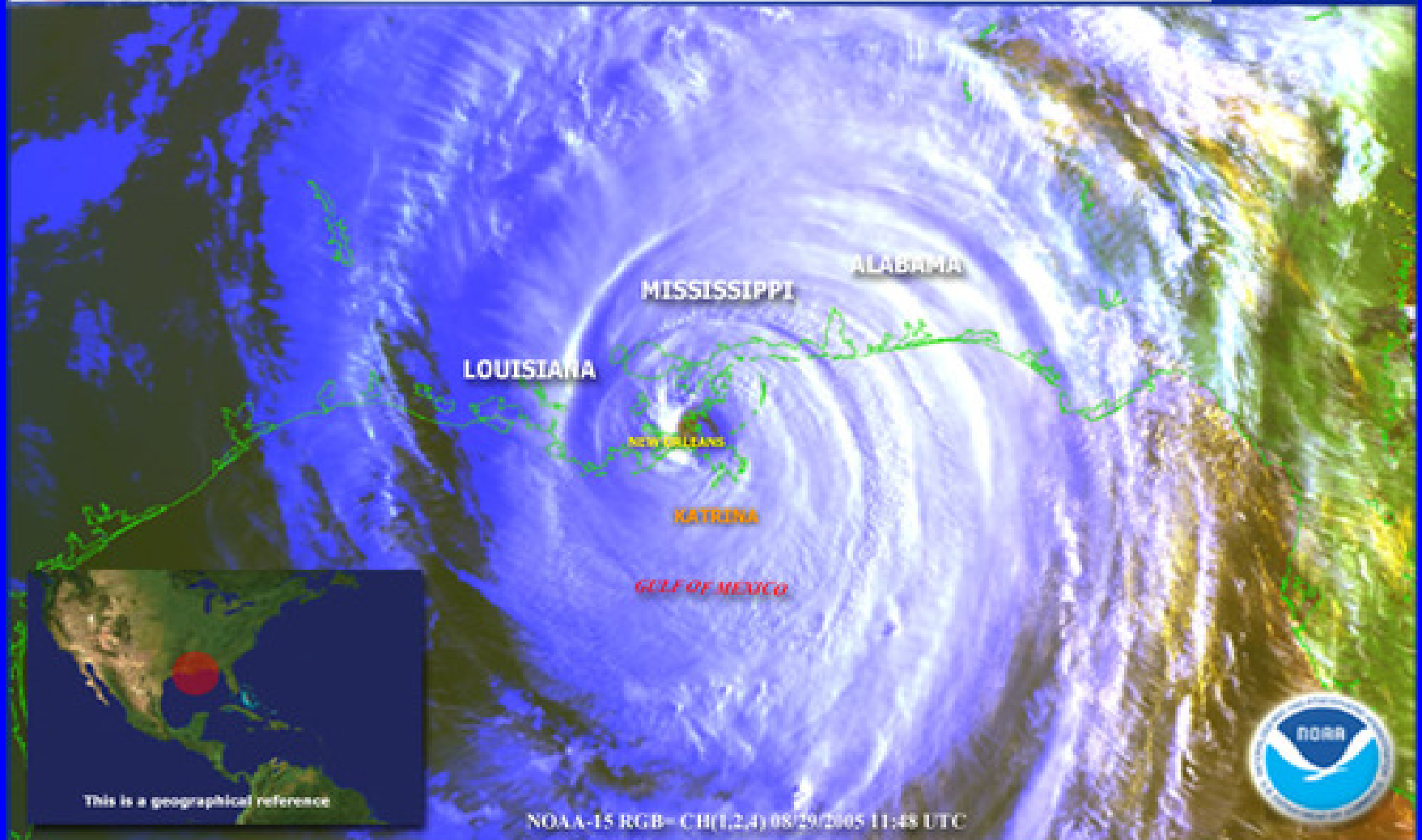


Preliminary Protocol for Hydraulic Analysis of Canals in Which Breaches Occurred

- Conduct hydraulic analysis similar to that described for 17th Street Canal**
- Apply all available information in an attempt to ensure consistency of information**
- From this analysis, develop the best possible time histories of discharges through the breached sections**

Hurricane KATRINA has hit land and is moving north at 15mph. It has max sustained winds of 150mph and gust of 184mph.

Credit: NOAA



This is a geographical reference

NOAA-15 RGB- CH(1,2,4) 08/29/2005 11:48 UTC