New Approach to Hazards

- Adopt systems approach: geophysics:demographics:infrastructure
- **Accept responsibility**
  - humans - not nature - cause disaster losses
- Anticipate ambiguity and change
  - yesterday's mitigation may not reduce future losses
- Reject short-term thinking
  - how will today's mitigation protect future generations
- Account for social forces
  - mitigation must be a shared social value & responsibility
- Redevelop SUSTAINABLY
  - mitigation should strengthen resiliency
Which port will be most vital??
New Orleans
Houston-Galveston
Port Arthur
Mobile

MRGO Short Cut

Levee Breaks: Industrial Canal

Before Hurricane Katrina

After Hurricane Katrina
Install Dutch Style Flood Gates

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The Walls Along New Orleans’s Levees

Concrete floodwalls, installed over the last two decades along canals inside the city, collapsed in several places in the wake of the storm.

**MAKING A LEVEE HIGHER**

To enlarge a levee, engineers added fill or constructed a “T” or inverted “T” floodwall on top. When fill is added, the levee can grow three times in width for its growth in height. This makes floodwalls more common in urban areas like New Orleans, where buildings won’t have to be removed.

**FLOODWALLS IN NEW ORLEANS**

To form an “T” floodwall, sheet pilings, a sort of wall frame, are driven into the perpendicular dirt of the levee. Then reinforcing steel rods are threaded through the pilings. Through the large opening in the center, concrete is placed to incorporate the top of the pilings and form the wall.

**HOW NEW ORLEANS’S LEVEES MAY HAVE FAILED**

Engineers suspect that rising waters reached the top of the floodwalls, creating enough pressure to topple them. Other levee failures may have occurred when flood waters spilled over the top of floodwalls, eroding the soil at their bases.

Above, the reinforcing steel (in the boxes) connects between the sheet pilings and walls in a New Orleans levee.

Below, a diked embankment protects a New Orleans house.

no public space for wider berm in Orleans Parish
Investigators say 17th Street Levee was not overtopped, but "moved about 35 ft laterally." Also was site of construction problems.

In several locations the bases of concrete floodwall sections fractured away from sheetpile tops and reinforcing steel.