

The New Orleans Levee System Failure



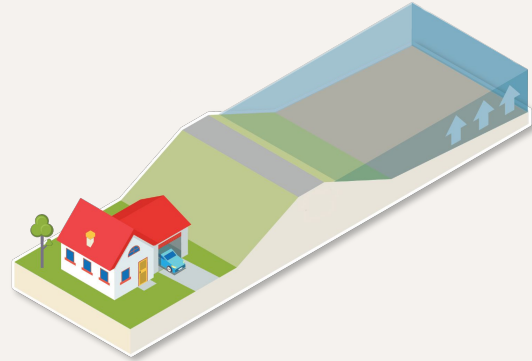
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Period 2-3

8/31/22

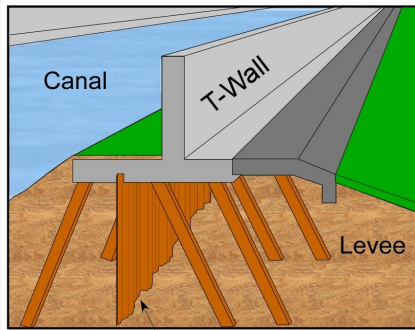
What happened?

- New Orleans, Louisiana flooded as a result of floodwall and levee failures.
- This was caused immediately after Hurricane Katrina (category 5) in 2005
- This submerged 80% of the city
- New Orleans is also under sea level (hard to get water back out after flood)



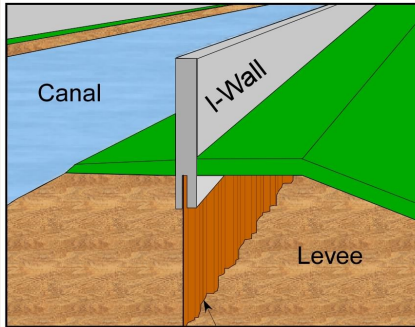
What ethical issue lead to this?

Concrete Foundation



Sheet Piling

Sand Foundation



Sheet Piling

The levees were only designed to withstand a Category 3 hurricane to reduce the cost and save time

- Better protection strategies were blocked by court orders
- Water going over the walls was not considered in the design
- Only some of the walls had concrete foundations, the rest on silt
- Flood walls were built wrong with gaps that made them 25% less useful
- Testing of the wall was flawed and missed multiple issues including the gaps

If these problems were solved, what would have changed?

- If the levees were built on a more solid base, like concrete, instead of sand they might have been able to withstand the hurricane
- If the gaps in the flood walls weren't there the 25% more efficiency would have prevented a lot of the flooding
- 800,000 houses / 160 billion dollars would have been saved



How the system improved



Overall, they learned that the bare minimum is not enough when it comes to preparing for disasters. This lesson resulted in the following changes:

- Improved drain infrastructure
 - Concrete that can drain water
 - More data on weakness
- Increased funding
 - More training for workers
- Improved standards for buildings
 - High wind rated roofing, etc.
 - Incentives to go beyond the minimum

What can we learn from this?



- Bad foundations of infrastructure can make it useless
- A weak link can destroy the whole project
- Budget constraints and bureaucracy lead to a disaster
- Always plan for a higher stress than expected



Thank you

Source Cited

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