

Critical Infrastructure and Dispersed Governance Systems: Reflections After Katrina

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After IPET --- Decision Making Chronology for the Lake Pontchartrain & Vicinity Hurricane Protection Project

- Requested by ASACW and Chief of Engineers (Director of Civil Works)
 - Complement the IPET
- Describe how Corps policies and organization, legislation, and financial and other factors influenced the decisions that led to the protective structures in place when Hurricane Katrina struck.

Broad Overview

Report Content

- Six Chapters
- Five Appendices
- Web site with all source documents used in the report coded and referenced back to the master chronology and/or to the text of the report

[http://www.iwr.usace.army.mil/inside/
products/pub/hpdc/hpdc.cfm](http://www.iwr.usace.army.mil/inside/products/pub/hpdc/hpdc.cfm)

Google: Woolley Shabman IWR

Avoid Presentism

“ Presentism is a mode of historical analysis in which present-day ideas and perspectives are anachronistically introduced into depictions or interpretations of the past.”

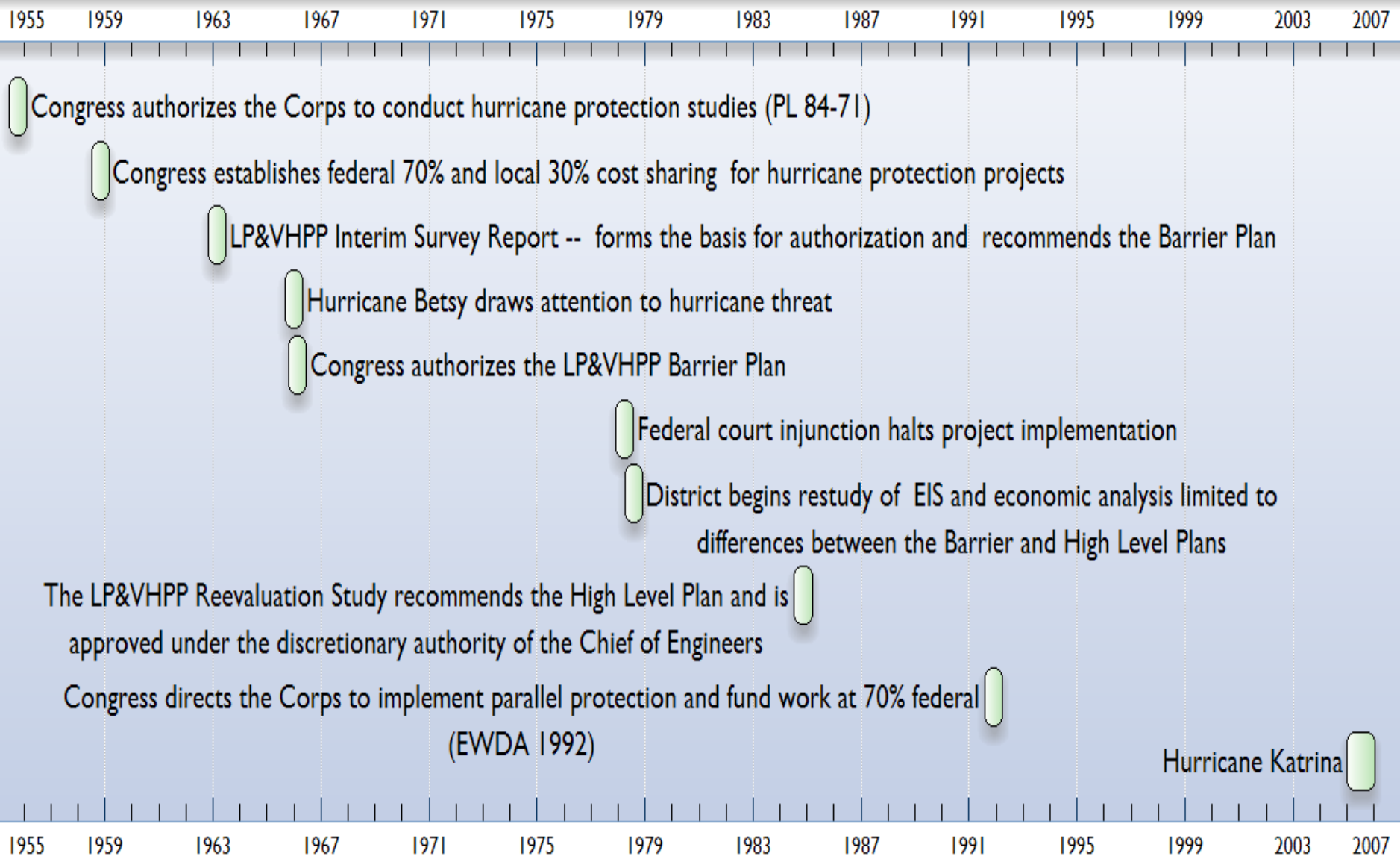
Gordon Wood, *The Purpose of the Past: Reflections on the Uses of History* 2008

Sources

- Agency Reports (Corps, NWS, FWS, etc.)
- Design memoranda
- Legislation
- EM, ER, ETLs
- Budget justification sheets
- Correspondence
- Hearing records
- Levee Board minutes
- Budget data
- Internal memoranda



50 - Year Project Overview



Project Performance Decisions

- Adopted Standard Project Hurricane to define still water design surge heights for protective structures (1956)
- Did not update SPH and still water surge calculations even though hurricane forecasting indicated an increased likelihood of more severe storm events and surges.
- Design elevations of project structures (other than those along the lakefront) were not changed after 1969
- Did not update the relationship between geodetic datum and local mean sea level to ensure that structures were constructed to intended design grades.

Outfall Canal Design Decisions

- Barrier Plan enjoined by federal judge (1977)
- High Level Plan replaces barrier plan is approved under the Chief's discretionary authority (after 8 years- 1985)
- Congress directs parallel protection (1990-92) in lieu of frontage protection along the outfall canals and allocates 70% of cost to federal cost share.
- Division issues Revised Design Guidance for I-Wall sheet pile design significantly reducing cost of parallel protection along outlet canals.



Surge tops the 8-foot high north levee of the MRGO/Intra-Coastal Canal, under the Paris Road Bridge in eastern New Orleans. Photo by Dan McClosky



Failed floodwall and levee at 17th Street Outfall Canal, Lakeview, New Orleans, after Hurricane Katrina. [Photo by Richard Campanella]

Who was Responsible?



“Stop using Katrina short hand – this was a failure of Engineers to protect us and not a natural event.”

“One gentleman made reference to Assistant Secretary of the Army John Paul Woodley, ‘may his soul eternally burn in hell.’ ”

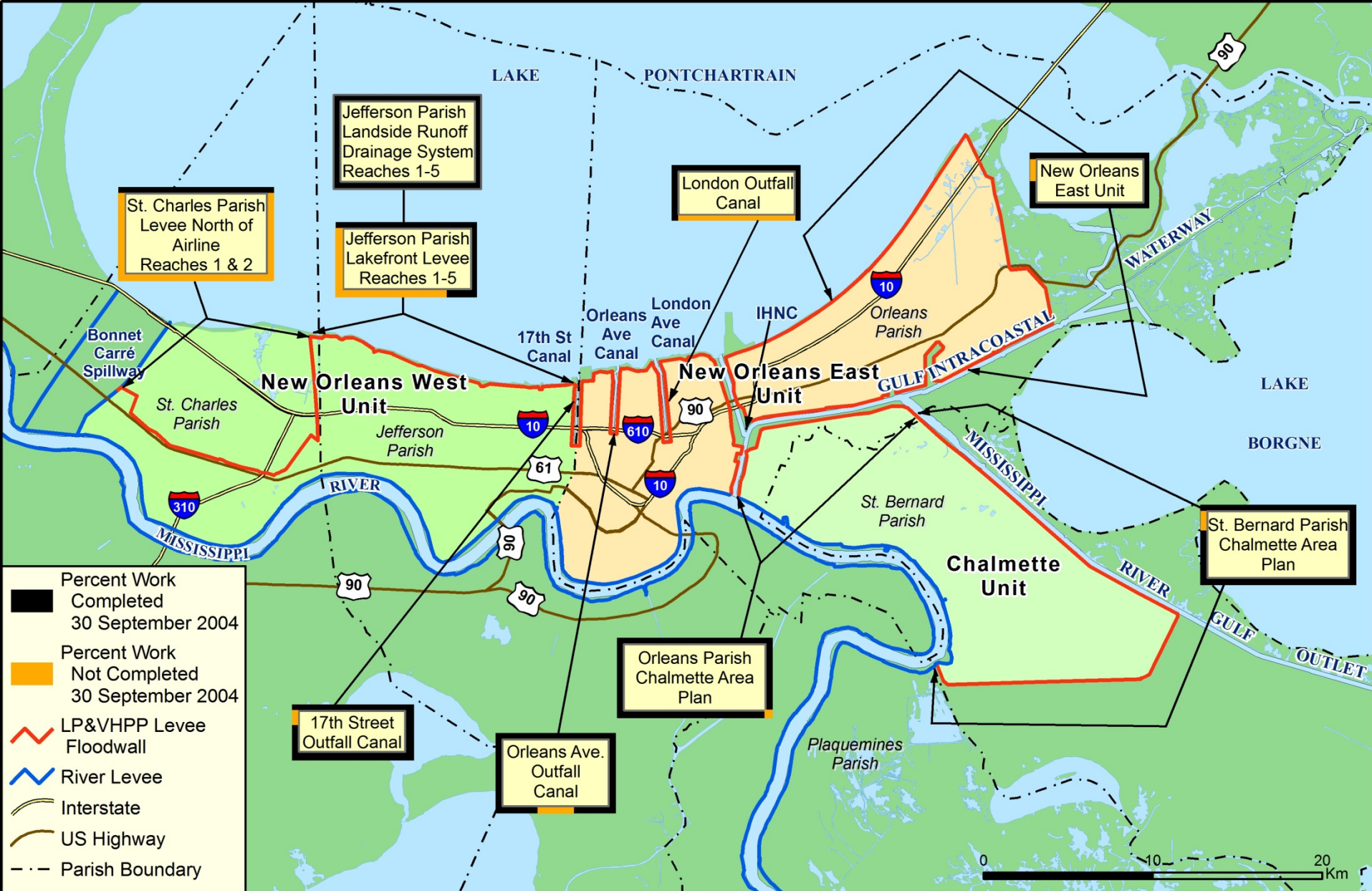
“This whole concept of the Corps beingsome great, slouching beast is ludicrous. Most of the 1,200 people who work in the NOD (were) ... flooded, recovering, frustrated, and eager to feel safe again.”

A Governance System of Interacting Decision Influences

Securing local sponsors, addressing the barrier plan lawsuit, dealing with the problem of the outfall canals, combined to result in a protracted planning and implementation period which led to local sponsors insisting that the authorized project degree of protection be provided throughout the project area before considering changes to project designs in response to new information.

Cost growth (nearly 10 fold) combined with federal and local fiscal budget limitations to

- discourage seeking ever-increasing budget allocations to adapt designs to new information.
- encourage seeking cost saving design modifications that would not compromise design reliability



Where Did Responsibility Lie?

- With planners and design engineers who did not speak up (whistle-blow) when new information was available?
- With scientists who “misread” results from sheet pile tests as they rushed to complete walls under a tight budget constraint and congressional directive?
- With successive administration and Congresses who did not budget for expeditious completion original project design?
- With environmental NGOs who precipitated the shift from barrier to high level plan?
- With local taxpayers / political leaders who wanted to save local funds and rejected frontage plan?

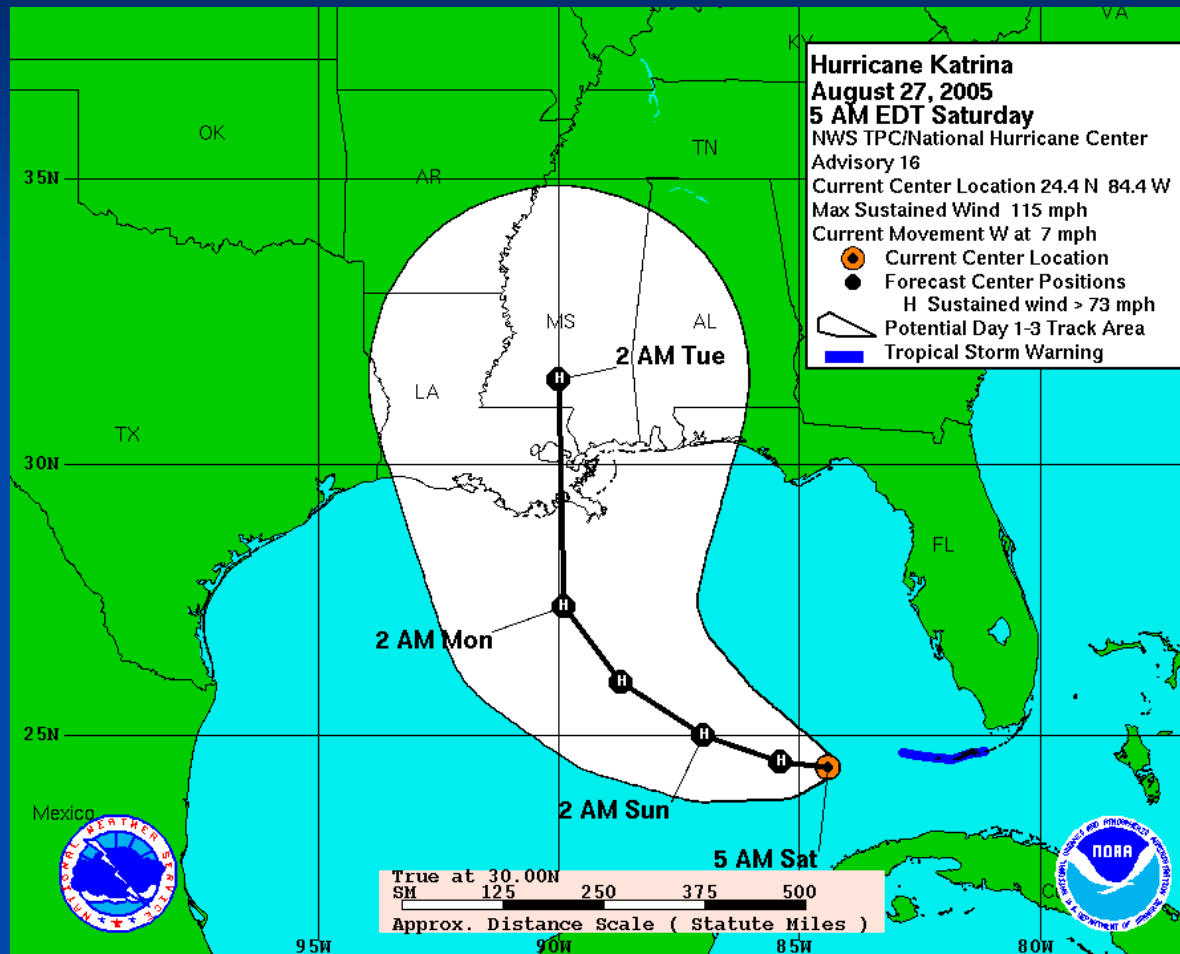
“While the Corps is not responsible for levees we did not build or for lack of funding for recommendations we made that were not funded, we do have accountability for our own design shortcomings and we should have done more to inspect and reassess the condition of the levees and communicate risk to the people of New Orleans.”

General Carl Strock, August 24, 2006 News conference transcripts

Reality

- Governance is always about making unavoidable tradeoffs, whether explicitly or by default.
- There is no “single client” with unlimited resources.
- Governance is dispersed to some degree.
- Change follows failure (Henry Pertroski) failure
 - But change is a response to the specific circumstances of the failure .

Imagine Kartina Landfall to the East



If landfall was to the east ...

- Corps would still call its flood mission “damage reduction” and not “flood risk management” and still would be communicating by talking about levels and degrees of protection.
- Louisiana would be struggling find funds for LPVHPP levee lifts and repairs (turned over project)
- MRGO still open, but being considered for environmental restoration – no money however.
- No changes in soils and related design criteria
 - Morganza to Gulf still a federal project
 - Operational rules for Herbert Hoover dike (central FL) unchanged

If landfall was to the east ...

- No levee safety program with focus on life risk
- A modest and limited to visual inspection for the ICW program.
- No mantra of “shared responsibility”.
- Dutch approach to flood risk management would still be a curiosity in the US.
- NFIP not in debt, and flood insurance reform bills not on Congressional radar.
- Katrina shorthand would not be part of climate debate (Gore vs. Pilkey)
- NSF would not have funded this workshop ☺
- And....

Wisdom after Katrina