Rebuilding in Post-Katrina New Orleans

Image from the National Weather Service

Photo by Steve Moga

Louisiana

Recover
Rebuild
REBIRTH
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Photo by Steve Moga
Path of Hurricane Katrina

Image from National Weather Service
Path of Hurricane Rita

Image from National Weather Service
Toxic gumbo vs. Tidal wave

The entire Gulf was devastated, but there was a different problem in New Orleans. Most of the city was still flooded 2 weeks after storm had passed. It flooded again when Rita hit.
Elevation of the City

Elevation map removed due to copyright restrictions. Source: *Time and Place in New Orleans*, Ray Campanella.

Elevation map reflects flooding, but only tells half the story.

Photo by Steve Moga.
Patterns of Devastation

Newspaper graphic removed due to copyright reasons; map showed floodwater levels and location of levee breaches.

Catastrophic failure of federal infrastructure tells the other half.
Federal infrastructure failed to protect the City

Photographs of flooding removed due to copyright restrictions.
While citizens tried to protect themselves

[Table showing percentages of single-family homes with flood insurance in different cities]

New Orleans homeowners irresponsible about insurance? What about Pensacola and Charleston?

Photograph of evacuation removed due to copyright restrictions.
Is Rebuilding Imperative?

I. The Functional Economic Argument in Favor

II. The Economic Argument Against Rebuilding

III. The Issue of Unequal Risk/Unequal Protection

IV. Infrastructure for All
Tourism and uniquely American traditions

Photos by Steve Moga.
Port of New Orleans - importance to trade

- World’s busiest inland waterway – 6,000 ocean-going vessels per year
- 107,000 jobs, $2 billion in earnings, $13 billion in spending and $231 million in taxes statewide.
- Most inter-modal port in the country - 50 ocean carriers, 16 barge lines, and 75 truck lines serve the Port of New Orleans.
- Leads nation in importing coffee, natural rubber, and steel.
- Over 700,000 passengers leave from Port of New Orleans annually.

Data on port and images to follow from Port of New Orleans website.
FROM NEW ORLEANS, THE WORLD

Figure by MIT OCW.
Port of New Orleans - navigable waterways

Figure by MIT OCW.
Why Rebuild

Three Storms

Obstacles

Real estate

MIT projects

Port of New Orleans – railroad service

Figure by MIT OCW.
Off-shore oil and natural gas

- 18% of domestic oil production done in Louisiana coastal wetlands.
- 24% of U.S. natural gas production originates in or is processed in Louisiana’s coastal wetlands.
- In 1997, oil and gas production was valued at a combined total of $18.6 billion, with federal royalties totaling $2.9 billion.
- Louisiana’s offshore territory produced 89% of the oil and 83% of the natural gas extracted offshore in US through 1996.
- As of December 1998, Louisiana offshore leases totaled 5,363, with more than 27 million acres under lease, 130 active drilling rigs, 4,489 producing oil wells and 3,813 producing gas wells.

Data from Louisiana Coast website
Louisiana gets a raw deal?

DIMINISHING RETURN

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<table>
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<td>12+ miles</td>
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Gulf Coast states get less money as drilling moves farther offshore. The federal government gets all royalties for oil and gas drilling that occurs six miles or more off Louisiana's coast.

Figure by MIT OCW.
Fishing Industry

- Louisiana’s coastal wetlands contribute 28% to the total volume of U.S. fisheries (Louisiana Coast website).
- Profits from industry exceeds $3 Billion per year (Times-Picayune).
- Hurricane Katrina caused an expected $1.1 Billion in lost revenue and damage to industry (Times-Picayune).
- Entire fishing industry in Louisiana threatened by coastal land loss - 25 acres per day. Which also threatens storm protections for region.
Coastal Land Loss – Historical and Projected 1952-2050

Coastal Louisiana has lost an average of 34 square miles of land, primarily marsh, per year for the last 50 years. From 1932 to 2000, coastal Louisiana lost 1,900 square miles of land, roughly an area the size of the state of Delaware. If nothing more is done to stop this land loss, Louisiana could potentially lose approximately 700 additional square miles of land, or an area about equal to the size of the greater Washington D.C.-Baltimore area, in the next 50 years.

For more information about the land loss analysis or to see an animated time series of wetland change, visit www.lacoast.gov/landlss

Obstacles to Recovery

I. Accumulated Inequalities (history)
   * Skill level of the workforce;

II. Structural Fragmentation and Political Division

III. Attitudes and Conflicting Visions of Recovery
Size of Problem

I. 105,000 housing units have major or severe damage (188,000 total).

II. Over 50% of businesses have not reopened. Licenses in surrounding parishes have increased.

III. Over 380,000 people displaced from Orleans parish. At least 225,000 are still gone.

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**PRE-KATRINA**

1. GREATER METRO AREA: 454,000
2. ORLEANS PARISH: 230,000
3. TOTAL: 1,426,000

**POST-KATRINA**

1. GREATER METRO AREA: 1,141,000
2. ORLEANS PARISH: 134,444
3. TOTAL: 1,275,444

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Figure by MIT OCW.

Data from GCR and Associates.
City Infrastructure

I. Human capacity
II. School system
III. Public Housing
IV. Rising violence
V. Lack of services
Skill-level of workforce

I. Median worker reads at 4th grade level

II. Best-educated male workers are often re-entering prisoners

III. Tulane closed only Civil Engineering program in city post-Katrina.

IV. U of New Orleans subsumed only Planning program in city into Humanities Program post-Katrina
Shrunken footprint?

Bring New Orleans Back Commission marked many neighborhoods as “areas for future parkland”. Fear in those neighborhoods that this is a way to take their land.

Image from BNOB Final Report.
Shrunken footprint?

Director of Louisiana Hurricane Center, Ivor van Heerden says shrunken footprint is not needed. Proper investment in levees and coastal wetlands is.

WITHOUT WETLANDS, LEVEES ARE PUMMELED

Large sections of the MR-GO levee that had little or no wetlands separating them from Lake Borgne disintegrated.

Figure by MIT OCW.
Real Estate Challenges

I. Loss of building stock
II. Highly volatile micro-markets
III. Variation in construction costs
IV. Assembly problem
Loss of building stock

Figure by MIT OCW.

Courtesy of Steve Moga. Used with permission.
Variable construction costs

- 105,000 severely damaged housing units (GCR) and over 5,000 flooded business establishments (GCR and US Census Bureau)
- 29,000 building permits issued in Orleans Parish since storm (GCR)
- 887 building permits issued in Orleans Parish in 2004 (US Census Bureau)
- Hardest part of real estate work has been accurately estimating construction costs when industry has work for 10-15 years and trained crews are hard to find.
Assembly problem

I. Rebuilding not an individual decision – viability of a single house determined by viability of all the houses around it.

II. Private Assembly difficult if not impossible.

III. Public Assembly not politically feasible.

IV. Is there a middle way – Paul Stewart’s (MSRED 2006) suggestion of a commitment partnership that is a neighborhood-level mechanism for property swapping and assembly of damaged homes.
How MIT SOAP is helping

I. Direct development – Project Home Again, consulting work
II. Design – MIT @ Nola Studio, LIFT House
III. Economic Development – Classes and Pilot program
IV. Workforce development – Program for City
V. Data/Technology – GCR/MIT partnership
VI. Manufactured Housing – Supporting siting of plant in Parish
VII. Seeding local capacity
Direct Development

Project Home Again funded first house designed and constructed by Tulane Architecture students through Tulane UrbanBuild program.

Photograph of house removed due to copyright restrictions.
Why Rebuild Two Storms

Obstacles

Real Estate

MIT projects

Design for Sacred Heart Church

Images generated by MIT @ NOLA studio led by Professor John Fernandez
Workforce Development

I. Urban Metabolism – CDM, NEI, MIT partnership to look at triple-bottom line workforce strategies.

II. Disparities Study

III. Linking to Labor Union Projects

IV. Small business development and corridor revitalization

V. Job ladders in recycling, coastal restoration, and high-performance building technologies
Seeding local capacity

- Unitarian Universalist Service Committee Work building organizing capacity.
- 4 Public Service Center Fellowships (with Real Gains matching funds) working at 2 local community development corporations.
- Proposed Real Gains fellows program to place early mid-career community and real estate development professionals (5+ years experience) in the Gulf with community-based groups.
Graphic is cut in the middle because it is too long, see Metairie Ridge (b) in both images.

Figure by MIT OCW.