



# Managing Catastrophe: Katrina One Year Later

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International Disaster Reduction Conference  
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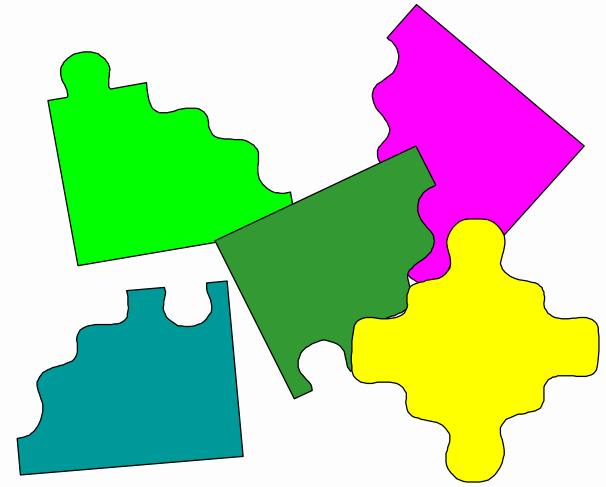
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# Defining “Disaster Recovery”

- n Recovery is the return to normalcy, post-disaster
- n But even a simple definition raises critical questions:
  - What was “normal” before the disaster?
  - Is restoring or replacing what existed before the disaster really wise?
  - When has the process been completed?
  - How can betterment be achieved within this context?

# About Disaster Recovery Management ...

- n** Local governments have primary responsibility for:
  - assessing the post-disaster situation
  - simultaneously recognizing community goals, utilize resources, and seize opportunities
  - managing response and recovery resources
- n** “Windows of opportunity” to reduce risk and achieve community betterment open and close throughout the recovery
- n** Economics and community pressures to rebuild erode the opportunities



# Key Factors Influencing Recovery Outcomes

## n Physical:

- Spatial extent and concentration of loss
- Complex ownership patterns

## n Financial:

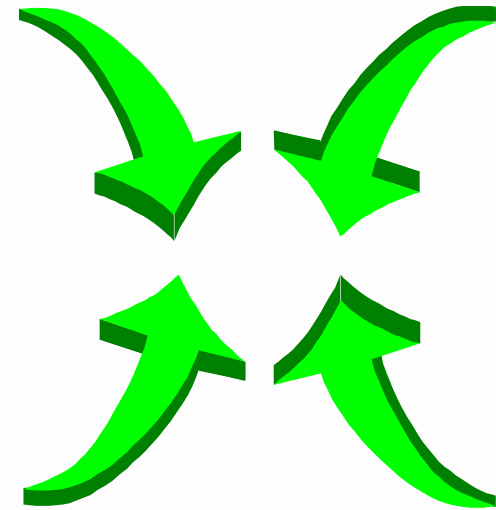
- Nature of, availability, speed and flexibility of financing
- Pre-disaster economics (trends accelerated)

## n Institutional:

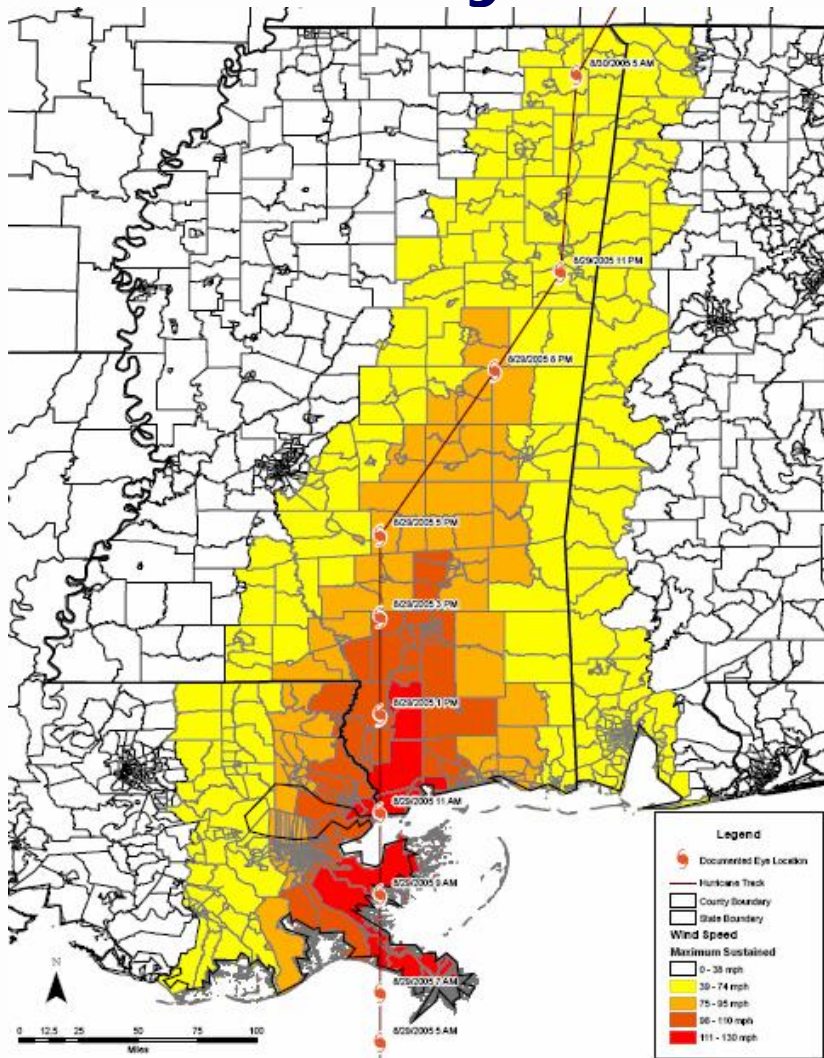
- Local governance structure and decision-making capability
- Pre-disaster politics and post-disaster elections
- Pre- and post-disaster plans, and strong regulatory framework

## n Social:

- Citizen participation
- Media's coverage influences politics/priorities



# Physical Influences – Vast Area Affected by Hurricane-force Winds

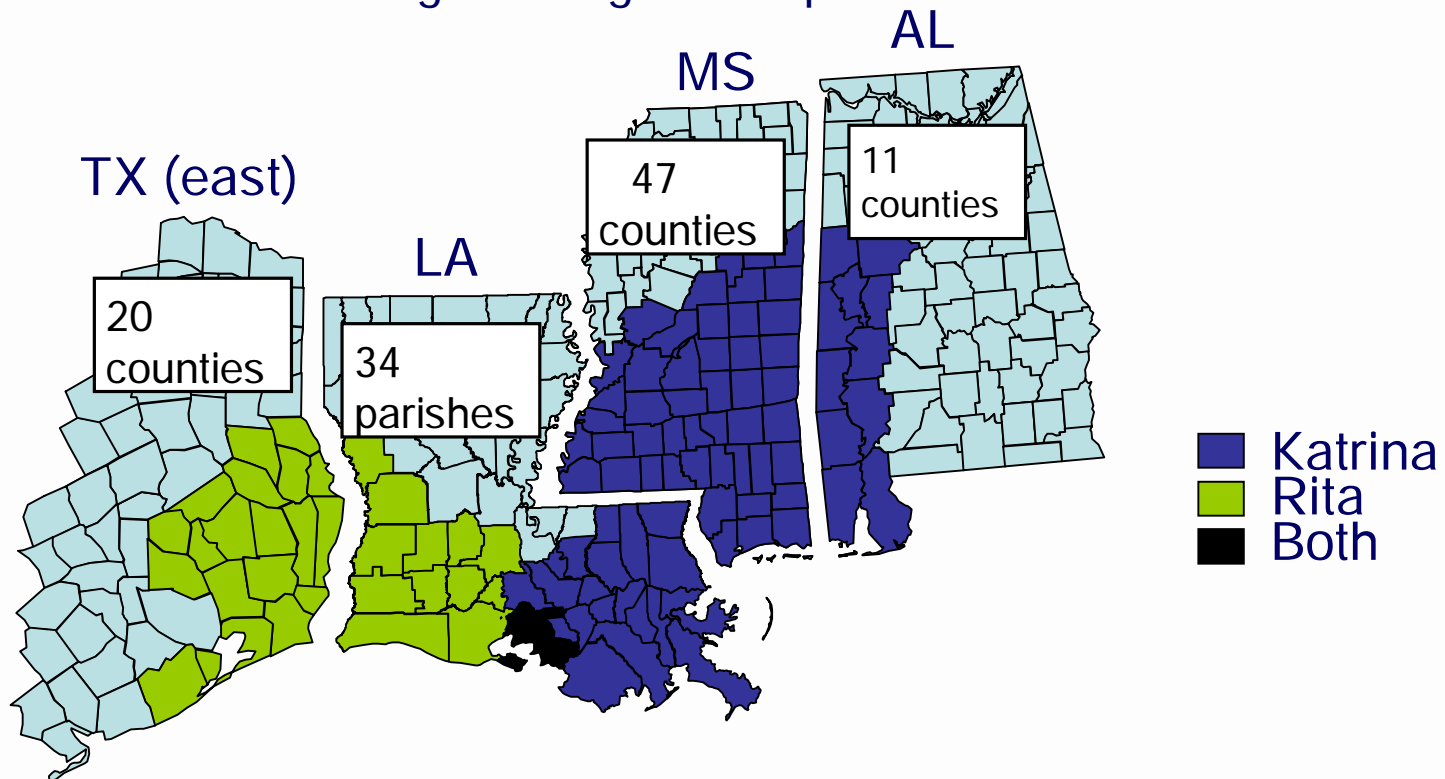


(Source: ASCE, 2005)

# 5-state Federal Disaster Declaration for 2005 Storms (Dennis, Katrina, Rita, Wilma)

FEMA significantly affected parishes/counties\*

(Parishes/counties receiving all categories of public and individual assistance)

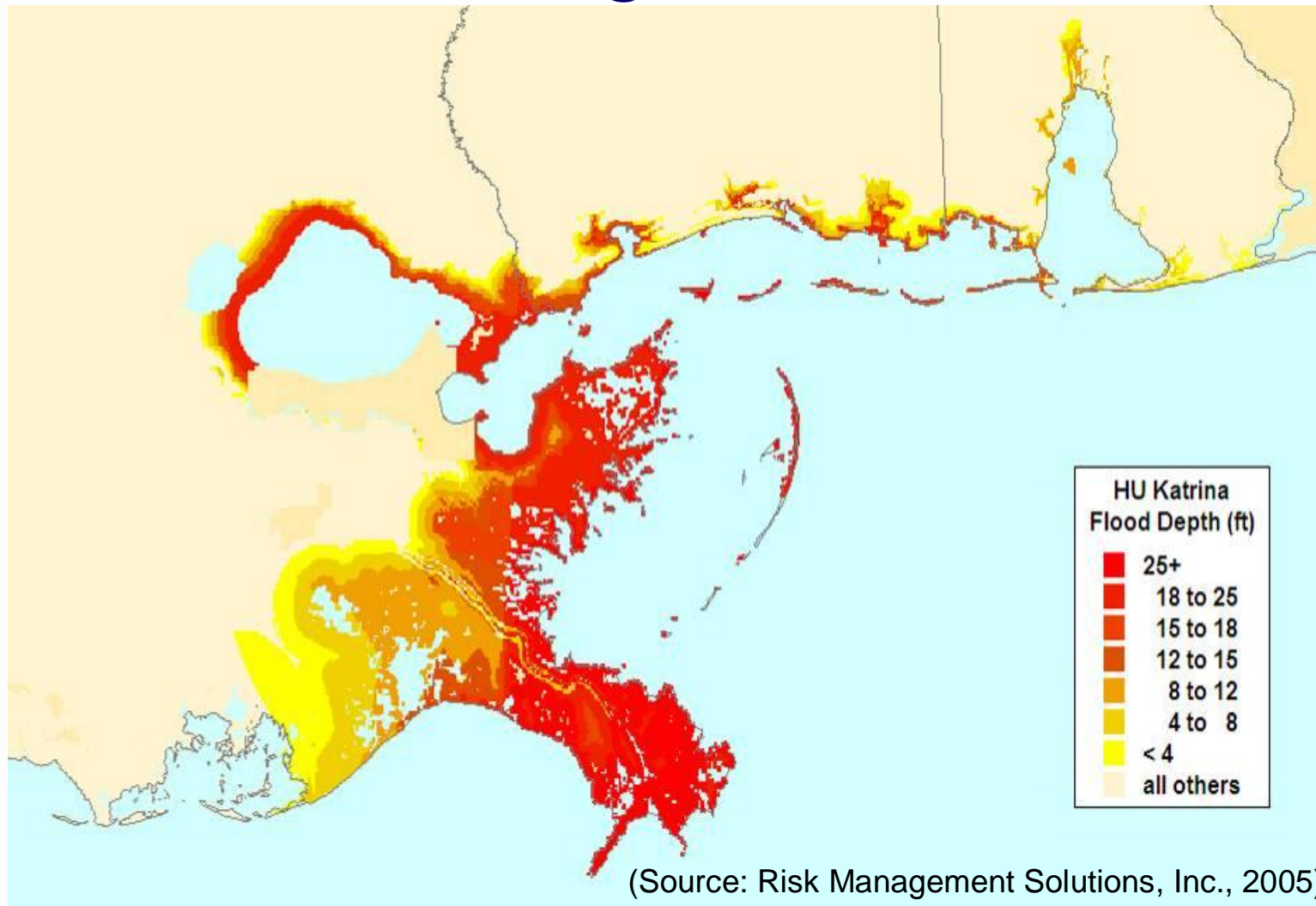


\* FEMA disaster designations don't distinguish between parishes with severe (Orleans) & limited damage (East Baton Rouge) (Source: LRA, 2005; FEMA, 2000 Census)

# Multiple Federal Intervention Points

- n Two FEMA regions and 2 FEMA/State Joint Disaster Field Offices (Baton Rouge, LA and Jackson, MS)
- n Two Corps of Engineers Districts
- n Additional agency field offices (HUD, SBA, EPA)
- n Designated Gulf Coast federal recovery office, Chairman Powell, November 2005
- n FEMA Gulf Coast Recovery Coordinator office established in New Orleans, Spring 2006

# Physical Influence – Extensive and Concentrated Surge Loss



(Source: Risk Management Solutions, Inc., 2005)

# Surge Destruction Reveals Risk Management Shortfalls

- n** Lack of building codes:
  - Mississippi and Louisiana did not mandate building codes prior to Katrina
  - Mississippi adopted code in 5 coastal counties; elective code state-wide
  - Louisiana adopted state-wide code
- n** Destruction of protective wetlands:
  - River levees cut off coastal sedimentation;
  - Since 1980, Louisiana lost land mass equal to state of Rhode Island; Katrina and Rita loss of 225 square miles
  - New Orleans effectively 'seaside' but earthen levees are more typical of riverine protection

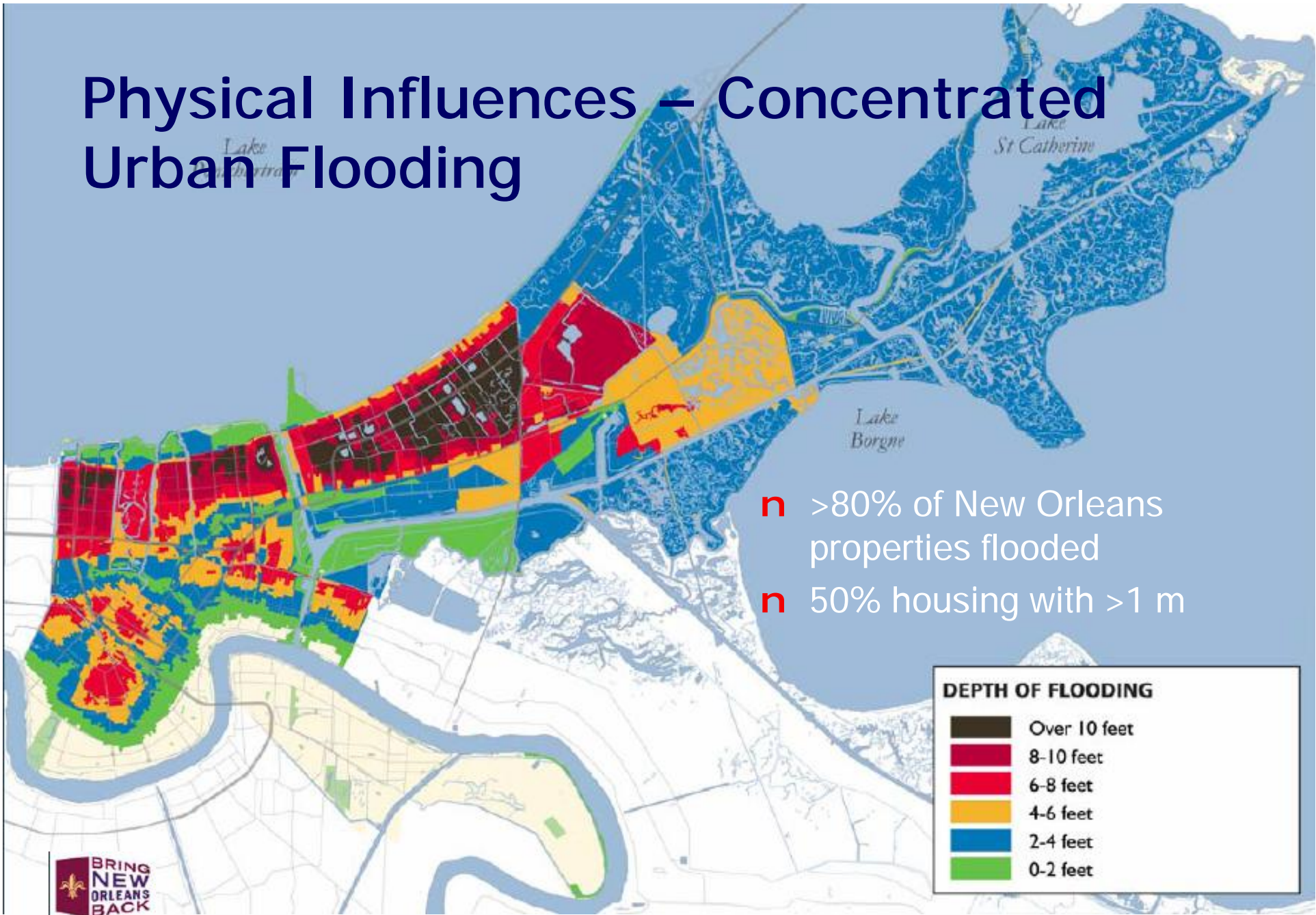




(Source: MSNBC, 2005)

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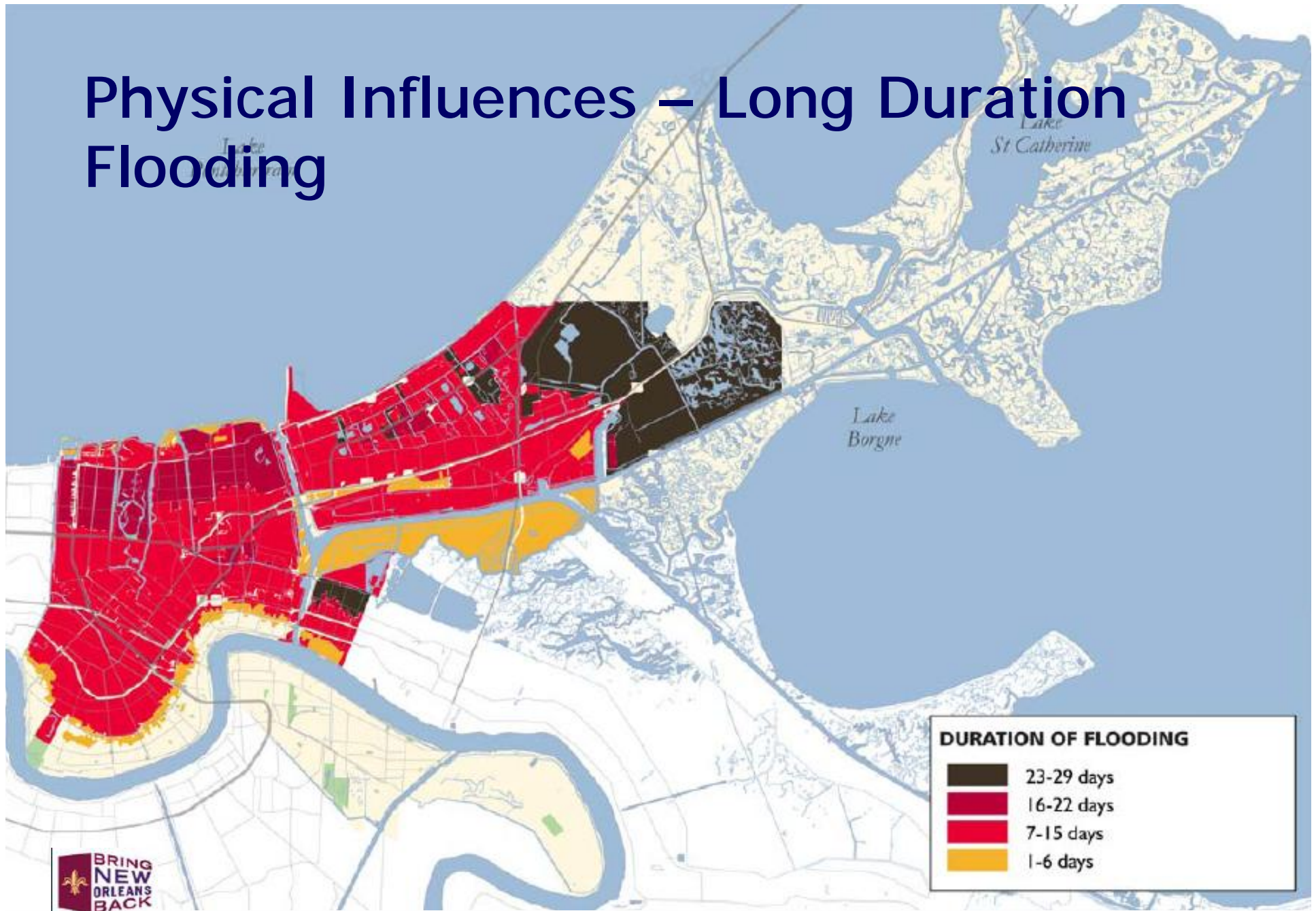
# Physical Influences – Concentrated Urban Flooding



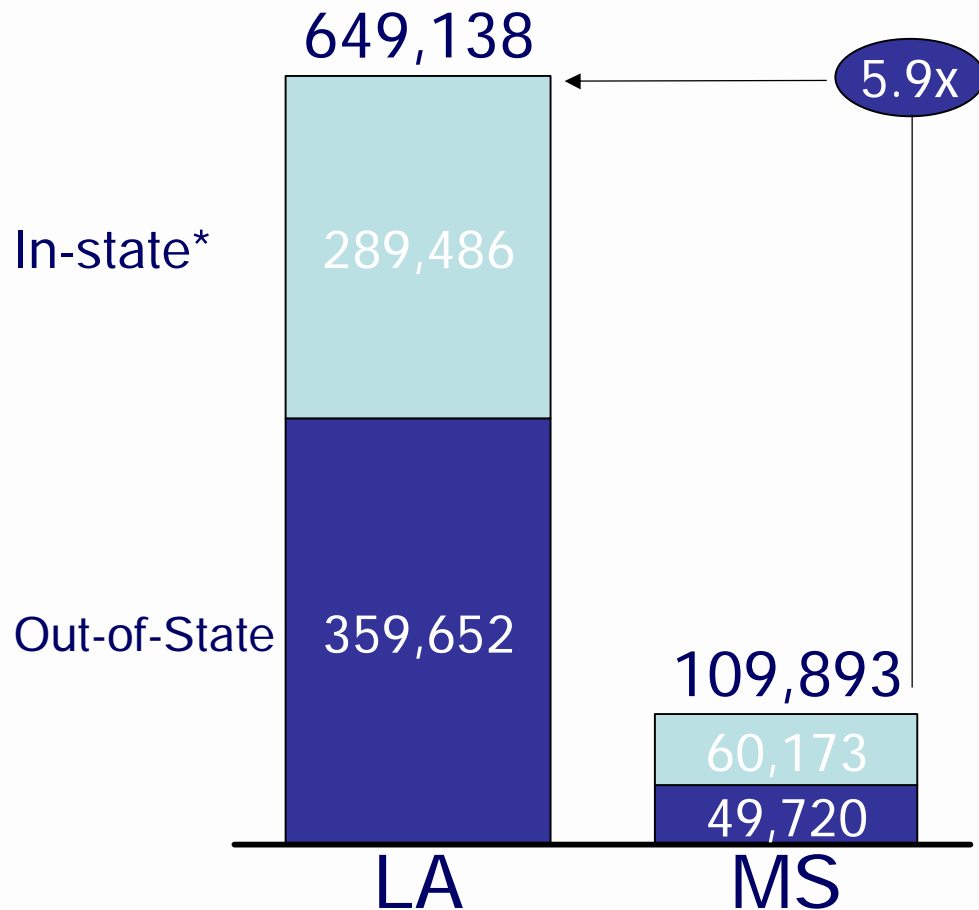
- n >80% of New Orleans properties flooded
- n 50% housing with >1 m



# Physical Influences – Long Duration Flooding



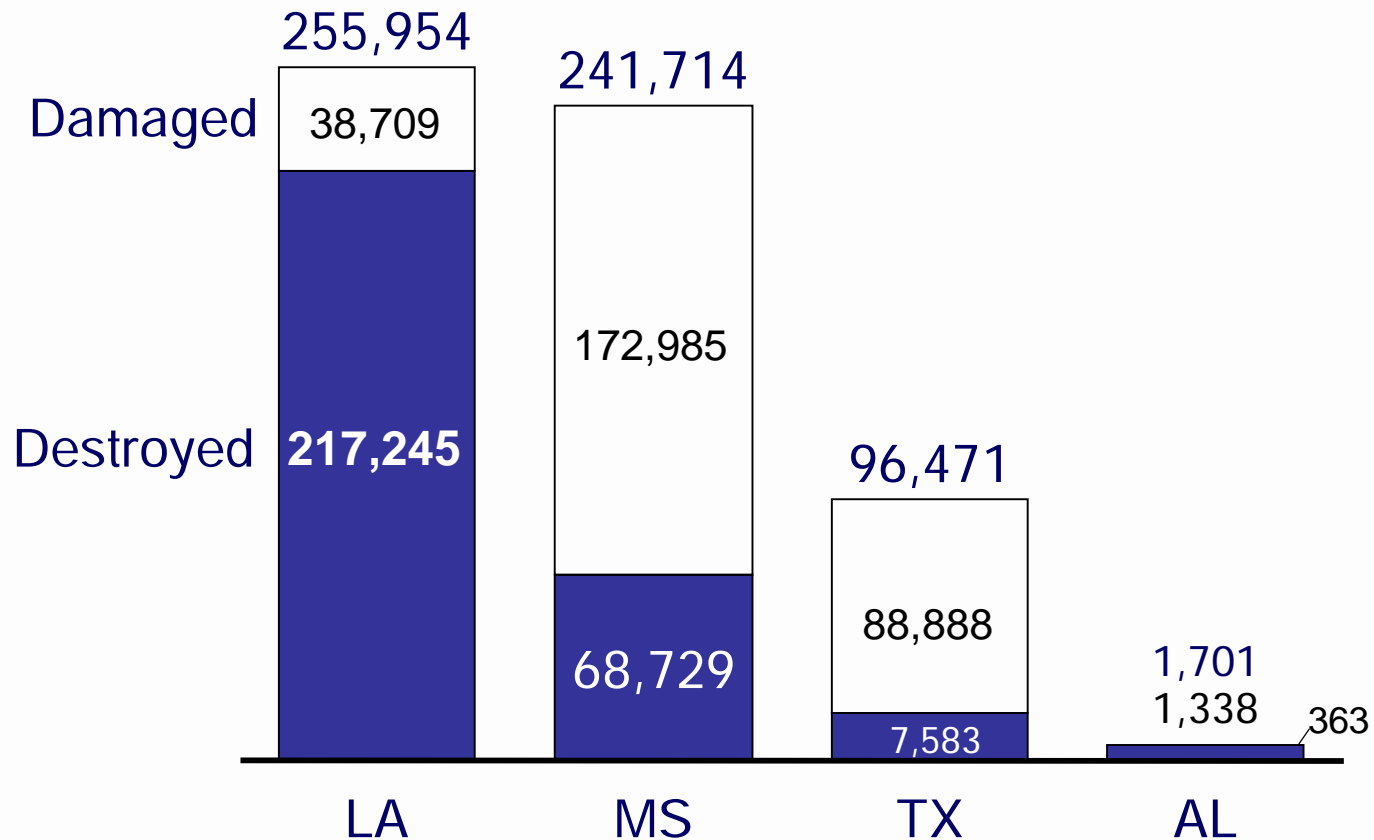
# Displaced Population (Had Not Returned by December 2005)



- n** Those who had returned:
- 410,000 Louisiana residents
  - 390,000 Mississippi residents

\* In-state displaced measured as FEMA applicants who have not returned to their pre-Katrina address; (Source LRA, 2005; FEMA; Louisiana Housing Task Force)

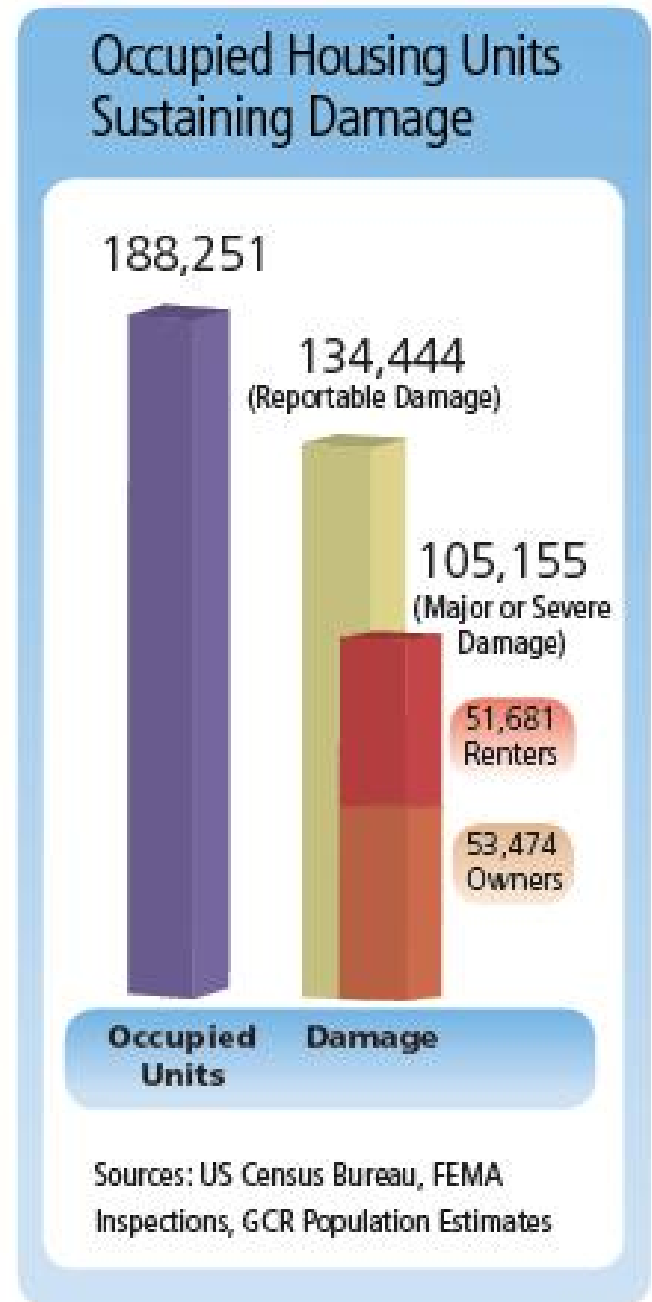
# Housing Units Destroyed and Damaged by Katrina and Rita



(Source: LRA, 2005; Katrina numbers from American Red Cross (as of 9/15/05); Rita numbers based upon FEMA inspections (Louisiana) and Texas Department of Public Safety)

# Physical Influences – Complexity of Ownership

- n Entire city below sea level and risk management depends upon levee protection
- n High (nearly 50%) proportion of damaged rental units, including 1,000 public housing unit, who need rights in recovery planning
- n Lack of rebuilding policy leaves decisions to individuals, mortgage lenders and insurers, and could result in patchwork redevelopment pattern and stretch city services





# Flood Protection Repairs and Upgrades Scheduled through 2010

- n Summer 2006 Progress:
  - Spent \$357 mn to repair damage caused in 2005 (Cat 2 protection)
    - Install surge gates at the mouth of the canals
  - Congress demands NOLA protection from "100-yr hurricane"
  - Louisiana challenged feds to provide greater portion of oil/gas tax revenue to fund wetland restoration of \$14 bn
- n Long-term plan:
  - Majority of \$5.7 bn federal allocation for additional levee, floodwall, drainage and pumping upgrades (Cat 3 levels)
  - Present plan to Congress for "100-yr hurricane" by Dec 2007
  - Undertake both long-term flood protection upgrades and major wetland restoration



# Financial Influences - U.S. Catastrophe Recovery and Rebuilding Resources

## n Federal ( -> Individuals )

- FEMA Individual and Household Assistance
- National Flood Insurance Program
- Small Business Administration loans

## n Federal ( -> State -> Local )

- FEMA Public Assistance
  - (facility and infrastructure repairs and technical assistance)
- FEMA Hazard Mitigation Grants
- H.U.D. Community Development Block Grants
  - (housing, small businesses, and economic development and planning)
- U.S. Dept of Transportation
  - (road repairs and reconstruction)
- U.S. Army Corps of Engineers
  - (flood protection)
- Economic Development Administration
  - (Public Works Act, small businesses and industries, economic planning)

# Financial Influences - U.S. Catastrophe Recovery and Rebuilding Resources

- n** State Programs and Projects
  - Street and highway budgets and public transportation funds
  - Housing and economic development programs
  - Park projects and cultural programs
  - Historic preservation (Main street funds from federal)
- n** Local Programs and Projects
  - Capital improvements programs
  - Redevelopment districts / tax-increment financing
  - Assessment districts
  - Fee-based cost-recovery
  - Bonds
- n** Non-Profits - Grants and other forms of assistance
- n** Corporations - Grants and other forms of assistance
- n** Individuals
  - Private insurance
  - Land value and home equity
  - Saving

# Financial Influences – Massive Rebuilding Costs in Excess of \$200 Bn

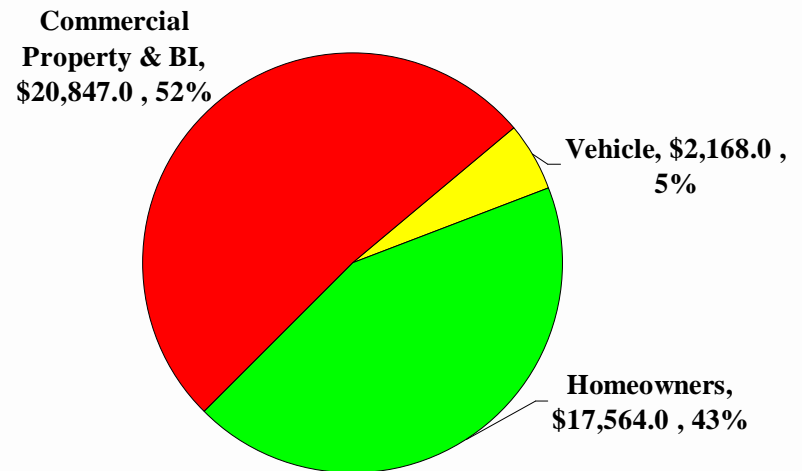
- n >\$110 bn in federal assistance approved, much with 10% state match required, and another \$8 bn in tax relief
- n >\$77 bn of federal assistance already spent or allocated to states
  - \$20.9 bn paid on 241,905 NFIP claims
  - \$16.7 bn in U.S. HUD Community Development Block Grants (CDBG) to help rebuild damaged housing and other infrastructure
  - \$10.4 bn in disaster loans approved by U.S. Small Business Administration (SBA) to homeowners, renters and businesses
  - \$5.6 bn paid by FEMA Public Assistance to repair and replace damaged public infrastructure (i.e. local roads and bridges, schools, water systems, public buildings, and public utilities), and to fund emergency protective measures and debris removal
  - \$6.0 bn paid for FEMA Individuals/Households Assistance Program
  - \$2 bn spent to repair and rebuild highways and bridges (U.S. DOT)

(Sources: FEMA, August 18, 2006; Insurance Information Institute; Property Claims Service, June 8, 2006; NFIP, July 26, 2006)

# Financial Influences – Insurance Paid

## \$57 bn for 2005 hurricanes

- n Over 3.3 million claims
- n Louisiana - 62% of insurance losses paid and 56% of claims files
- n \$40.6 bn for Katrina (excludes offshore and marine losses)
  - Larger, insured commercial properties (structure, contents and business interruption) \$20.8 bn
    - Middle market (chains)
    - Large commercial and industrial
    - Offshore and onshore energy\*
    - Private utilities
    - Insured public facilities
      - » City, county and state buildings
      - » Universities, schools and hospitals
      - » Public utilities (usually structures)
  - Insured residential\* (structure, contents and ALE) \$17.6 bn
    - Standard homeowners policies
  - Insured automobiles \$2.2 bn



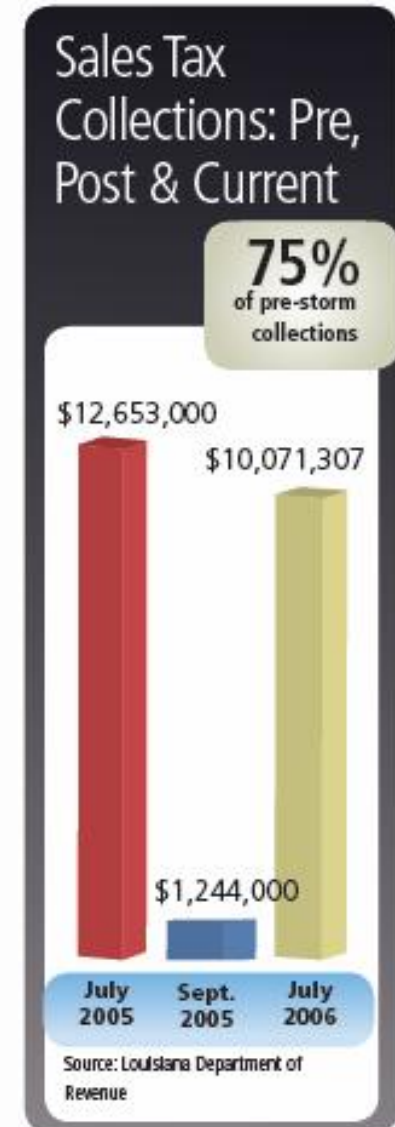
\*Excludes National Flood Insurance Program and \$2 to 3 billion in offshore energy losses. (Source: III, July 2006; Property Claims Service, June 8, 2006)

# Financial Issues – Local Government Recovery Burden (“The Gaps”)

- n** Response and recovery management costs
  - Evacuation and sheltering
  - Civil protection
  - Debris removal and flood contamination clean-up
- n** Major infrastructure and community services restoration and reconstruction
  - Levees
  - Utilities (water, sewer, electricity, cable, telephone, etc.)
  - Transportation (major roads and bridges, city streets, sidewalks and lights, public transit)
  - Schools, hospitals, and other community facilities
  - Government buildings and facilities
- n** Housing
  - Temporary housing
  - Public housing repair and reconstruction
  - Owner and renter gaps, not covered by insurance or federal/state programs
- n** Businesses and industries
  - Small business and industry gaps, not covered by insurance or federal/state programs
  - Key local economic development needs
- n** Historical and cultural resources
- n** Environmental resource protection and wetland restoration
- n** Permit processing and recovery-related staffing
- n** Cost of deductibles, under-insurance

# Financial Issues –Local Governments Starved for Money

- n Local government revenue sales tax revenue streams stop immediately; property tax values also lower
- n New Orleans had massive layoff in Sept 2005
  - Planning Dept reduced from 24 to 8
- n FEMA approved \$975 million in Community Disaster Loans for LA and MS municipalities to help maintain essential services such as law enforcement, schools and fire services
  - \$715 million directly to Louisiana communities
    - \$120 million loan to New Orleans
- n Mississippi Legislature approved grants of up to \$3 million for affected cities (Aug 2006)



# Financial Issues - Residential Recovery Gaps

- n Low and moderate housing
  - Apartment owners and tenants
  - 1,000 public housing units
- n Flooded but uninsured properties that were believed to be protected by levee system



# Louisiana and Mississippi Homeowners' Assistance Grants

**n** Both states will use nearly all CDBG funds to fund housing reconstruction:

- Both provide up to \$150K or insured value (whichever is lesser), less any FEMA or insurance proceeds.
- SBA loans must be paid back first
- Louisiana allocated \$7.5 bn to its "Road Home" program

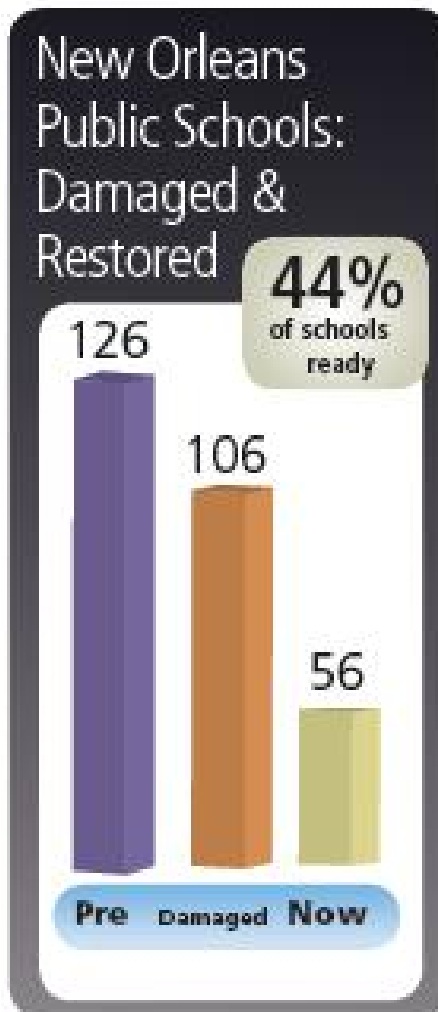


# Financial Issues – Commercial and Industrial Recovery Gaps

- n SBA loans and commercial insurance - >\$40 bn
- n Gulf Opportunity Zones provide special tax incentives for entrepreneurs and small-business investments
- n In NOLA, specific gaps and future economic development targets still to be defined:
  - Local small businesses forced to reopen, while national chains wait
  - 1/3 restaurants reopened
  - 2/3 hotel beds available; >60% occupancy
  - Conventions - >70% in 2007
  - Employment at 70% pre-Katrina level



# Financial Influences – Pre-existing Economics & Community Service Gaps

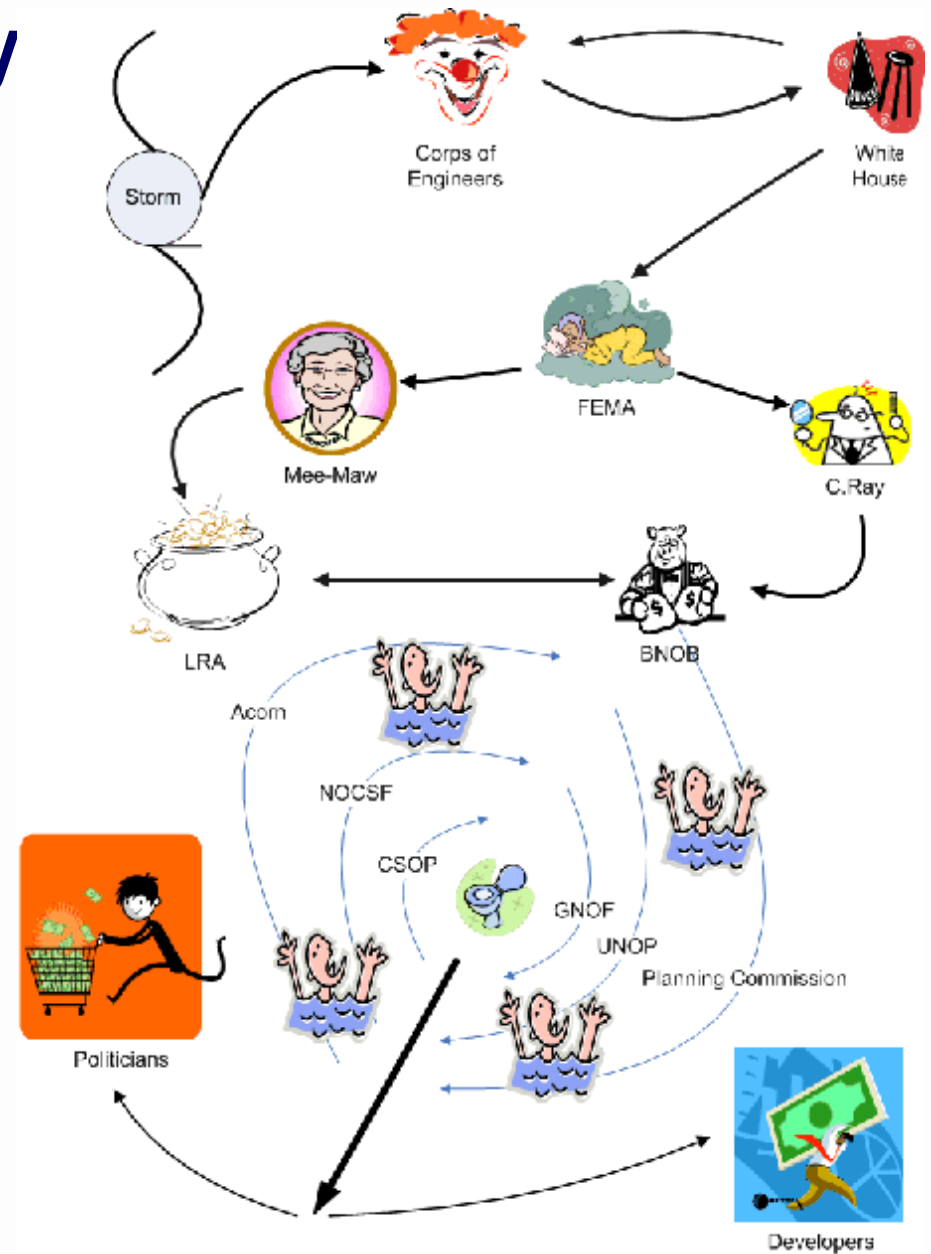


- n Region faced declining economy, infrastructure and population even before Katrina (New Orleans down from 660K in '80s)
- n Major industries now rebounding: oil and gas, ports, gambling, tourism, education
- n NOLA Schools: State took over public schools - 44% ready, many now charter schools; only 25K of 66K students expected in fall 2006; University enrollment at 75% pre-Katrina levels
- n NOLA Health care: Only 4 of 12 hospitals reopened; only 30% of health care providers back
- n NOLA Civil Services: Courts operational;  $\frac{3}{4}$  police force is back

# Institutional Influences – Local Governance & Decisionmaking Capability

- n Both Louisiana and Mississippi formed state recovery authorities that are leading recovery policymaking, governance and planning
- n In New Orleans, Mayor and City Council have initiated multiple planning efforts and still manage to avoid major rebuilding questions
- n Citizen-led initiatives are filling the leadership gap, and managed to get state legislation on:
  - Consolidation of Louisiana levee boards
  - Designation of only 1 Orleans parish tax assessor

# “Louisiana Recovery Governance Explained”



(Source: <https://toulousestreet.wordpress.com/2006/07/25/the-recovery-process-explained>)

# Institutional Influences – Pre-disaster Politics and Post-disaster Elections

- n Differences between MS and LA state response and federal support blamed on party politics
- n New Orleans similarly singled itself out from other LA cities, especially Baton Rouge
- n New Orleans divisive mayor-council and race politics exacerbated
  - Policymaking halted by Spring 2006 elections
  - Both Mayor and City Council acted unilaterally on recovery planning decisions
  - Both Mayor and City Council diminished role of City Planning Commission

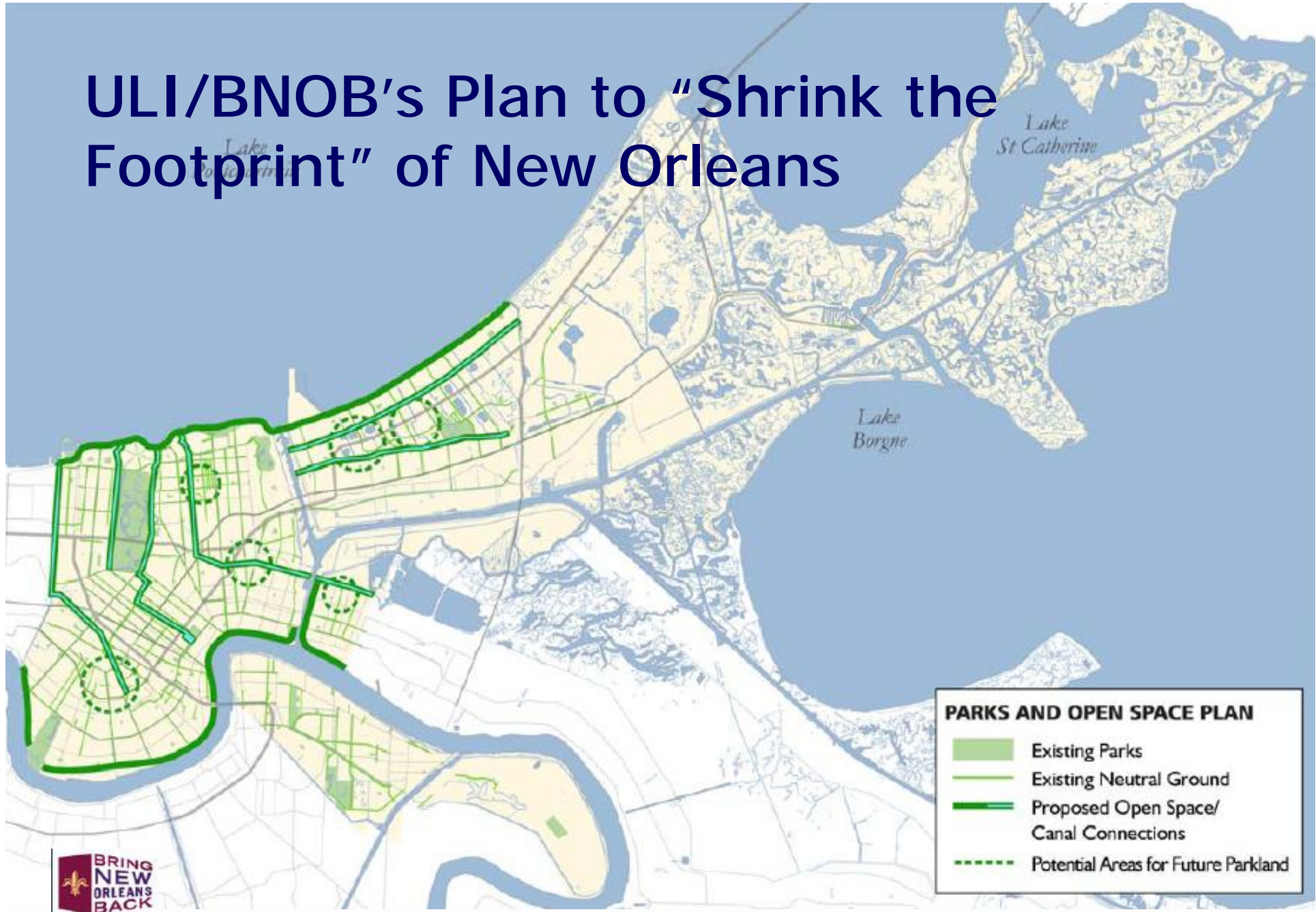
# Institutional Influences – Pre- & Post-disaster Plans, Regulatory Framework

- n FEMA has had major role in post-disaster planning
  - Enforcing Disaster Mitigation Act of 2000 compliance to have states and every county/parish adopt hazard mitigation plans
  - Also supported recovery project planning through Emergency Support Function (ESF) #14 - Long-term Recovery Planning
- n Both LA and MS lacked state-mandated planning and building codes and regulatory framework necessary to support rebuilding
- n Mississippi Governor's Commission adopted 'New Urbanism' philosophy for rebuilding
  - 'Smart code' and pattern books for rebuilding
  - 11 municipal plans
- n Louisiana Recovery Authority adopted FEMA ESF-14 parish plan process, and also leading South Louisiana Plan

# New Orleans Pre- & Post-disaster Plans, Regulatory Framework

- n Mayor's Bring New Orleans Back Commission formed in September 2005 and led 3 failed planning initiatives:
  - Urban Land Institute (ULI) recommended that rebuilding start in city's more flood-resistant core and spread out only as city regained the population density and economic vitality (Dec 2005)
  - Land-use panel called for building moratorium while series of meetings assessed residents intent to rebuild severely flooded neighborhoods (Jan 2006)
  - Authorization given to planners to develop 13 district plans (FEMA refused to fund) (Spring 2006)
- n FEMA advisory flood elevation guidelines did not bar development in any city district, and left intact the elevations set in 1984 contingent upon Corps' flood protection plan (April 2006)
- n City Council used pre-Katrina CDBG to fund planning in 49 most flooded neighborhoods, but not linked to BNOB or other city-wide plan (Spring 2006)
- n Unified New Orleans Plan launched with private foundation funding, and City Council, City Planning Commission and Mayor's 'signed' agreement and appointed participants in project oversight (July 2006)
  - 1 city-wide plan linked with 13 district plans, and all previous planning efforts
  - Large-scale outreach and communications plan
  - Draft Plan submitted to City Planning Commission and City Council (Dec 2006)

# ULI/BNOB's Plan to "Shrink the Footprint" of New Orleans

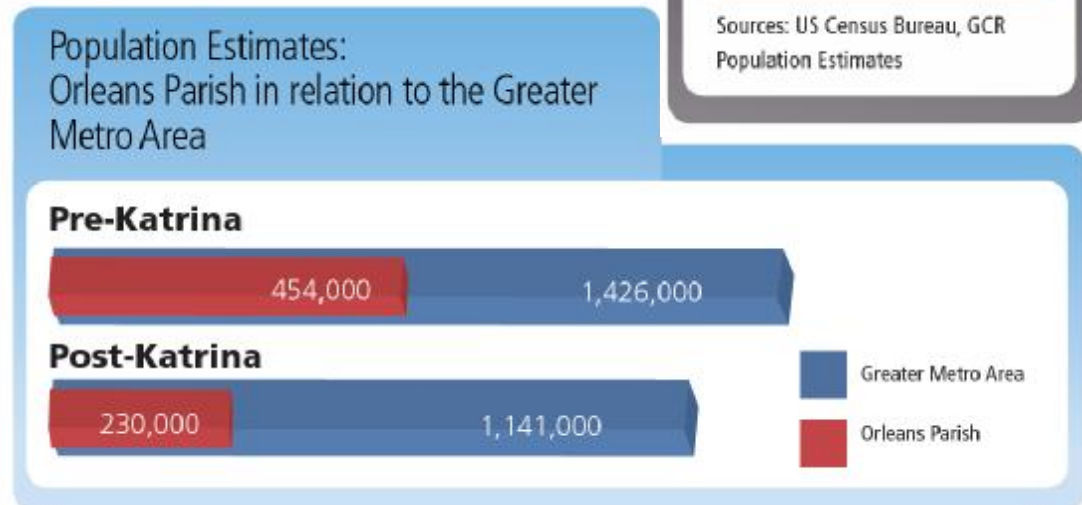
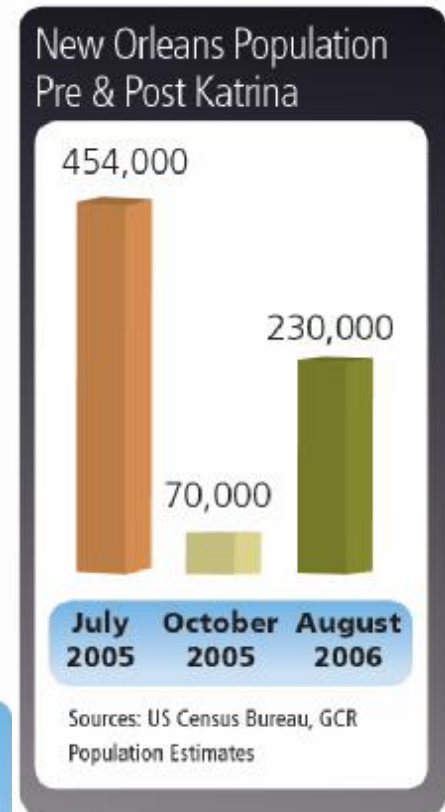


# ULI/BNOB's Plan to "Shrink the Footprint" of New Orleans

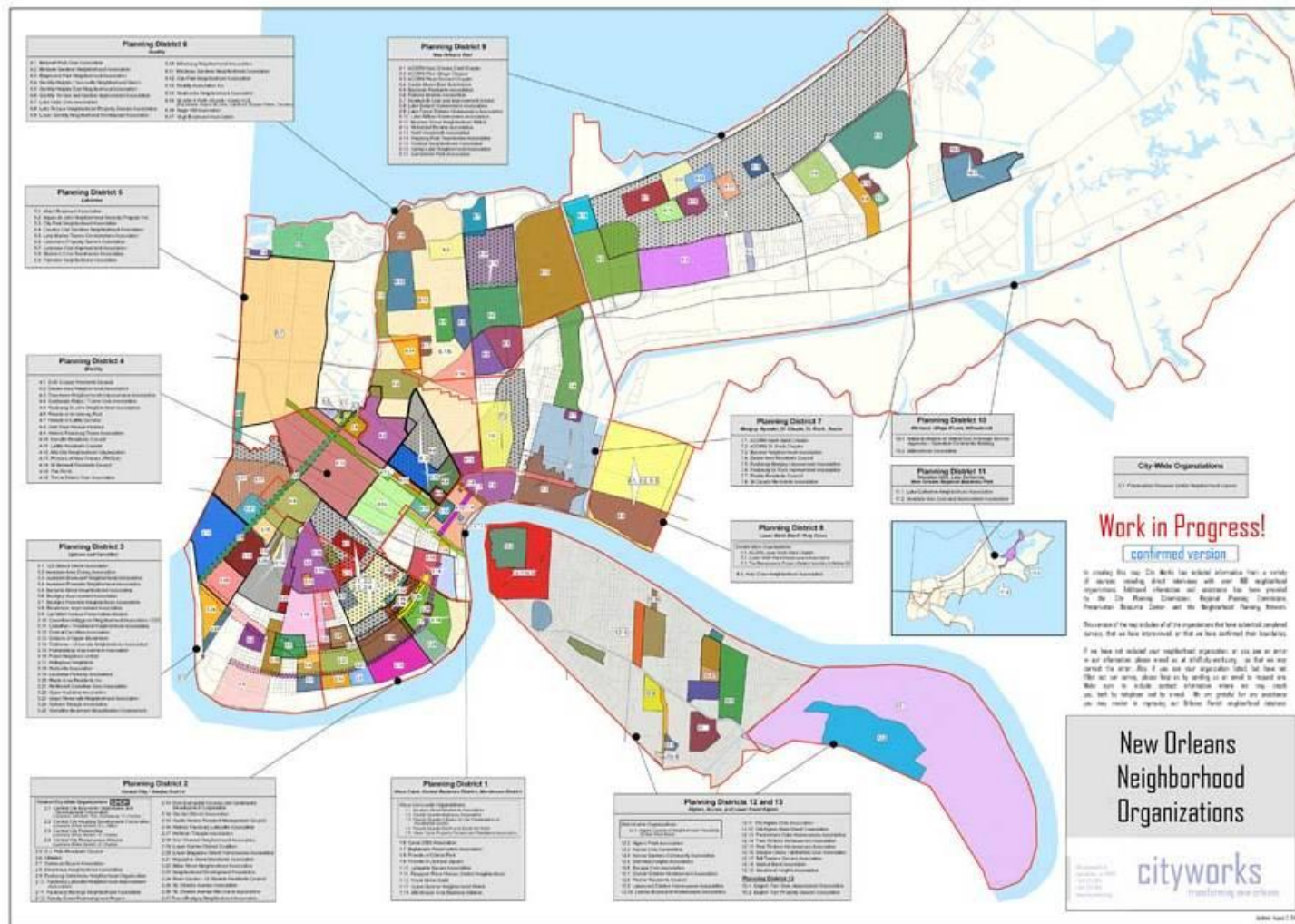


# Social Influences – Citizen Participation in Planning

- n Mississippi has had much more success with citizen participation in post-disaster planning
- n LA, and especially New Orleans, citizen involvement has been limited by lack of planning traditions and neighborhood organizations
- n The diaspora is an added and unique problem
  - 80% of metropolitan area's and 50% of New Orleans' population returned
  - Slightly lower Black population returned (down from 68% to 58%)



# Social Influences – New Orleans Neighborhood Activism Evolving



# Social Influences – Media, Blogs, and Politicians

- n Pre-Katrina survey found that 90% of NOLA residents got their local news from cable TV. Less than 40% used the web.
- n Award-winning national and local coverage has kept disaster-dialogue going:
- n Several local blogs keep 'watch' on recovery
- n Politicians continue controversial communications and divisive positioning



The screenshot shows a Mozilla Firefox browser window displaying a special edition page from NOLA.com. The page title is "SPECIAL EDITIONS with The Times-Picayune" and the main heading is "RUIN & RECOVERY". The page features a large photograph of a city at night, identified as Kobe, Japan, with a caption: "Photo by Ted Jackson. More than one-fifth of Kobe's 1.5 million population was left homeless after the Hanshin-Awaji Earthquake." Below this, there are three main sections:

- Almost went under** (December 19, 2005):
  - Galveston: Maintaining the legacy**
    - Lessons Learned
    - Graphic:** Hurricane's destruction
    - Graphic:** Galveston vs. Houston
    - Photos:** Accelerating the course
- A sister city flourishes** (December 14, 2005):
  - Charleston: Keeping its charm**
    - Historic city prospers after Hugo
    - Lessons Learned
    - Photos:** Accelerating the course

On the right side of the page, there is a list of other disaster stories:

- Galveston, TX** - Galveston almost went under in the hurricane of 1900, but city leaders saved it, and a new economy reshaped it.
- Charleston, SC** - Historic Charleston survived Hurricane Hugo and rebuilt, keeping its charm
- Grand Forks, ND** - Lessons learned after devastating floods in 1997
- Homestead, FL** - Hurricane Andrew nearly wiped Homestead off the map. But after early stumbles, and a lot of help from private enterprise, the town is stronger than ever
- Kobe, Japan** - In seconds, buildings collapsed, bridges toppled and thousands died when an earthquake hit Kobe, Japan, 10 years ago. Despair was rampant. But with dogged determination, the city rebuilt, repopulated and rebounded
- The Dutch** - After a North Sea flood killed nearly 2,000 people in the Netherlands in 1953, building a state-of-the-art flood defense became a national priority

The browser's address bar shows the URL: <http://www.nola.com/speced/ruinandrecovery/>

# August 29 –One-year Anniversary Day of Remembrance



(Source: [www.nola.com](http://www.nola.com))

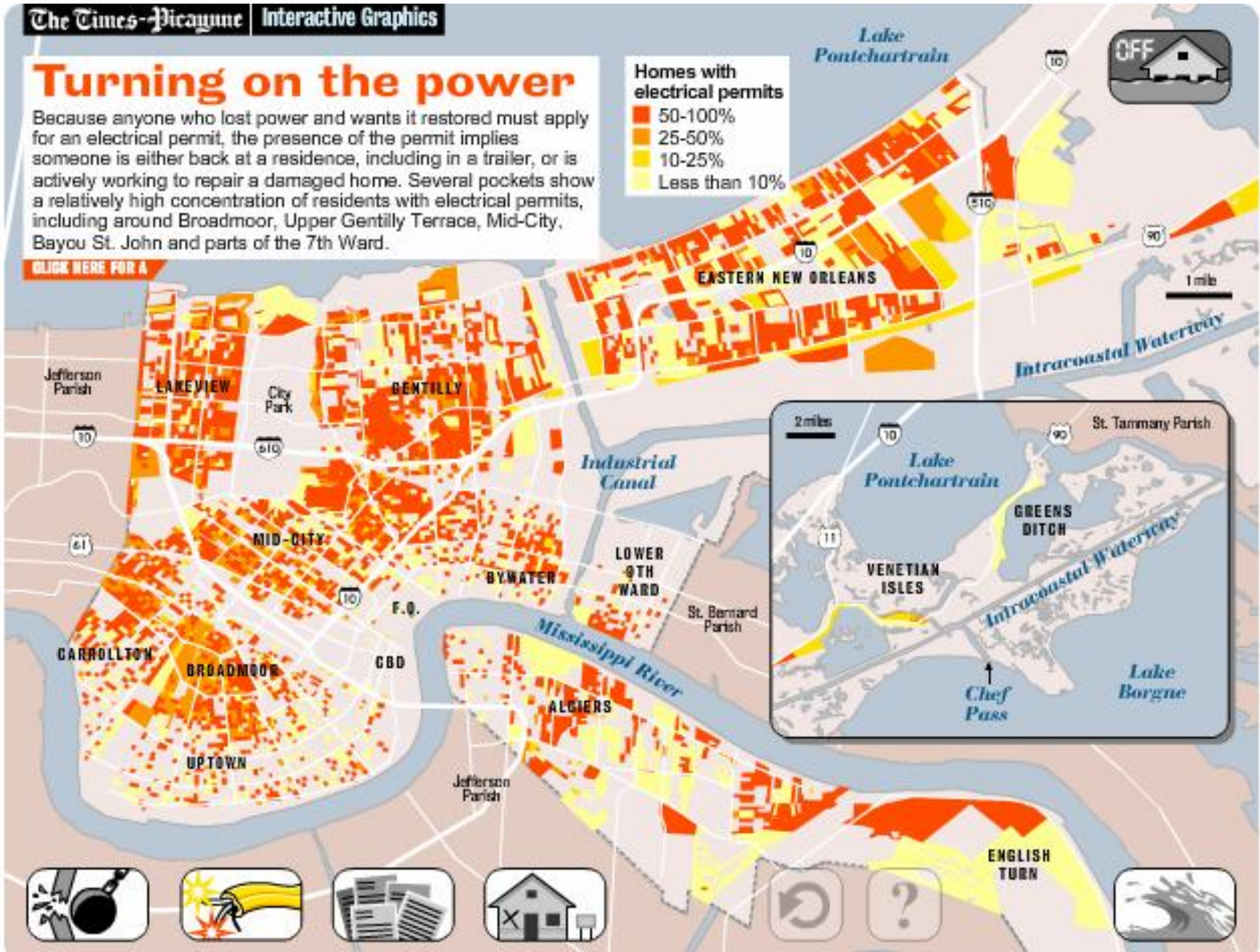
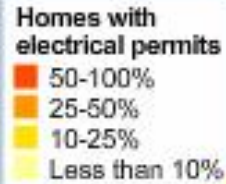
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**LAURIE A. JOHNSON, AICP**

# Turning on the power

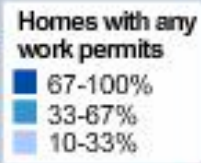
Because anyone who lost power and wants it restored must apply for an electrical permit, the presence of the permit implies someone is either back at a residence, including in a trailer, or is actively working to repair a damaged home. Several pockets show a relatively high concentration of residents with electrical permits, including around Broadmoor, Upper Gentilly Terrace, Mid-City, Bayou St. John and parts of the 7th Ward.

[CLICK HERE FOR A](#)

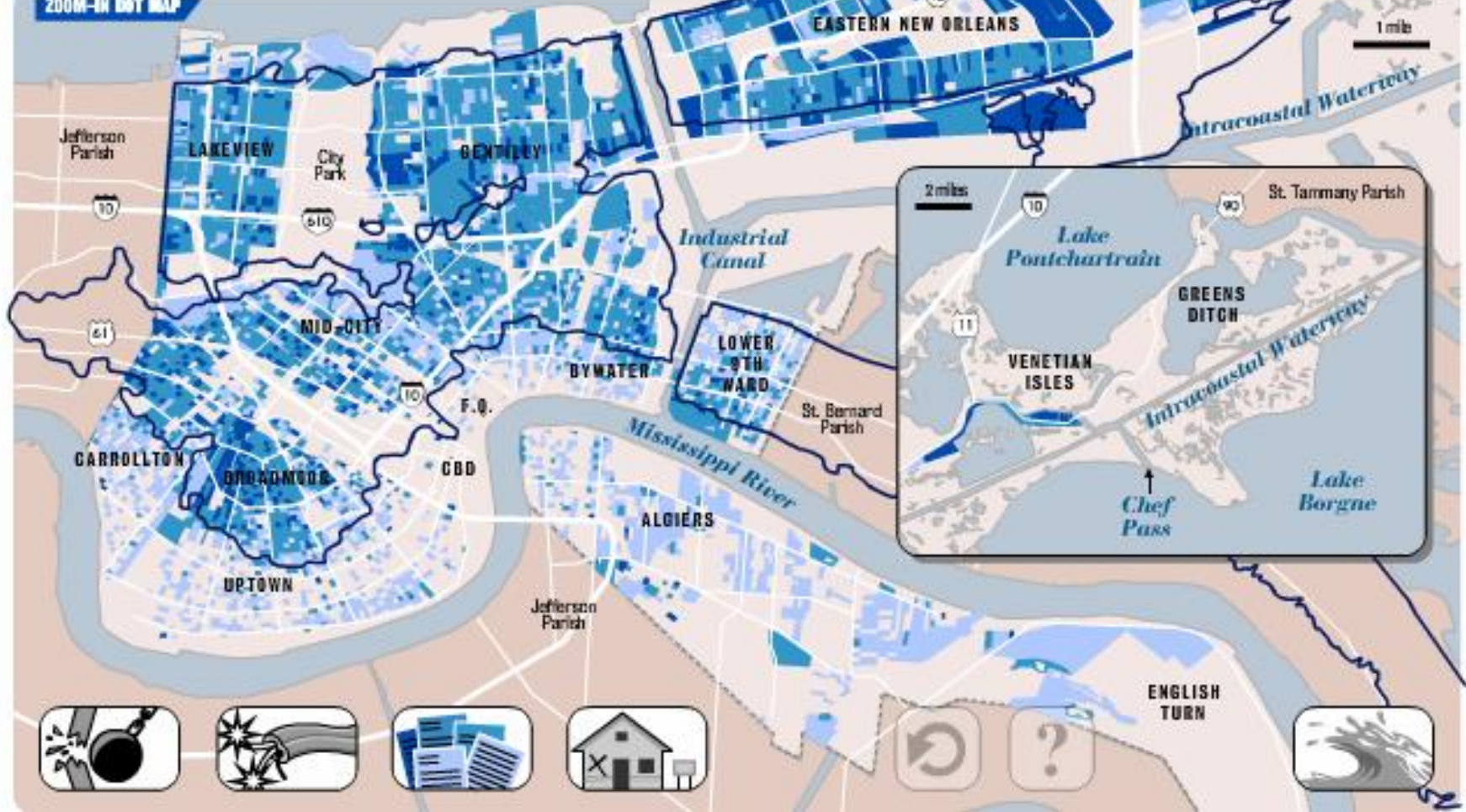


# Permission to work

Throughout parts of the city affected by flooding, at least one-third of residents have applied for some sort of permit to ensure that work can get under way on their property. The presence of a permit does not necessarily mean work is under way but generally indicates that an owner is at least taking an interest in the property. In this look at where permits are, the darker the shading, the greater the concentration of residents who have received at least one residential work permit.



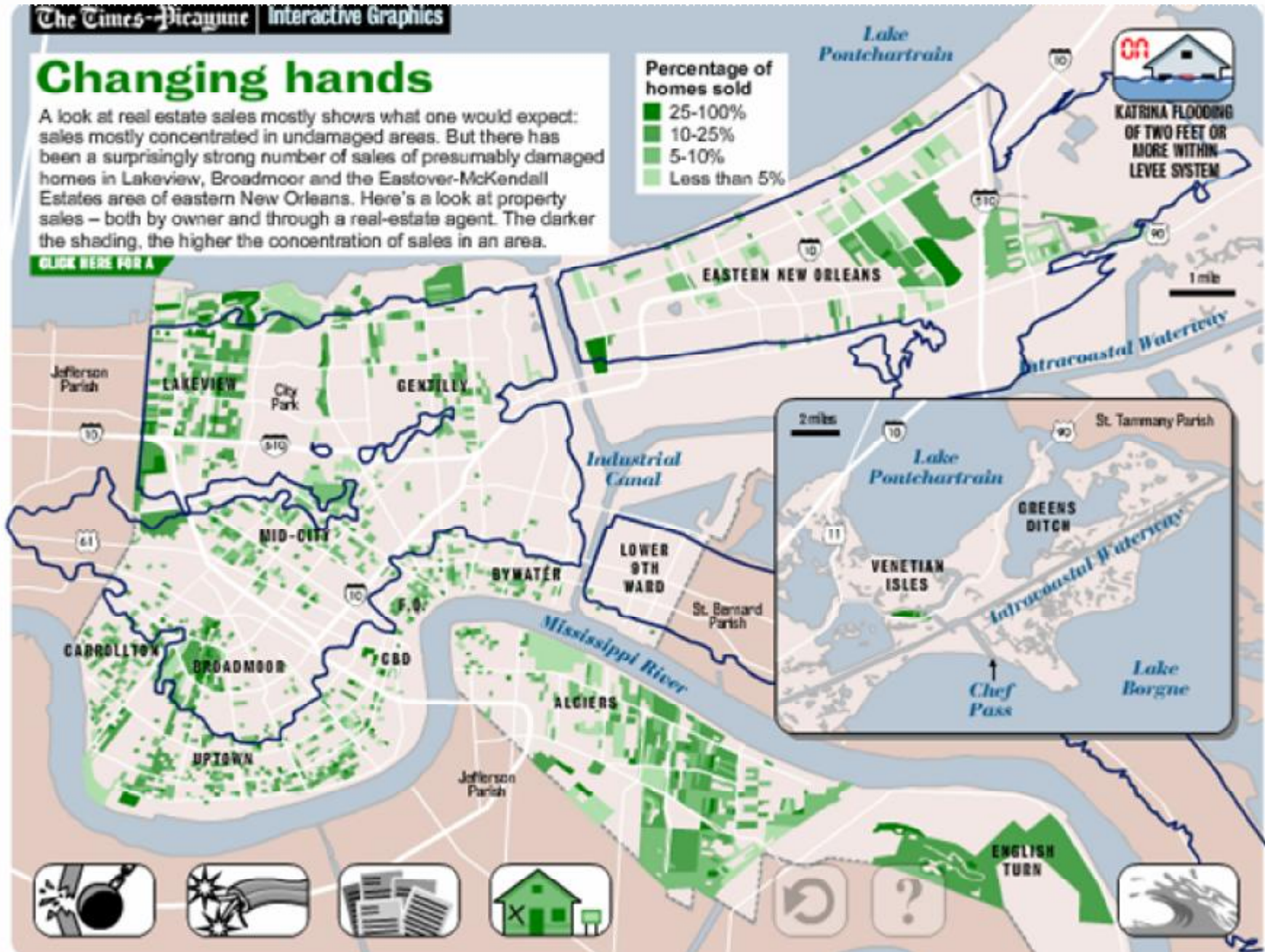
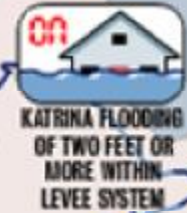
ZOOM-IN DOT MAP



# Changing hands

A look at real estate sales mostly shows what one would expect: sales mostly concentrated in undamaged areas. But there has been a surprisingly strong number of sales of presumably damaged homes in Lakeview, Broadmoor and the Eastover-McKendall Estates area of eastern New Orleans. Here's a look at property sales – both by owner and through a real-estate agent. The darker the shading, the higher the concentration of sales in an area.

[CLICK HERE FOR A](#)

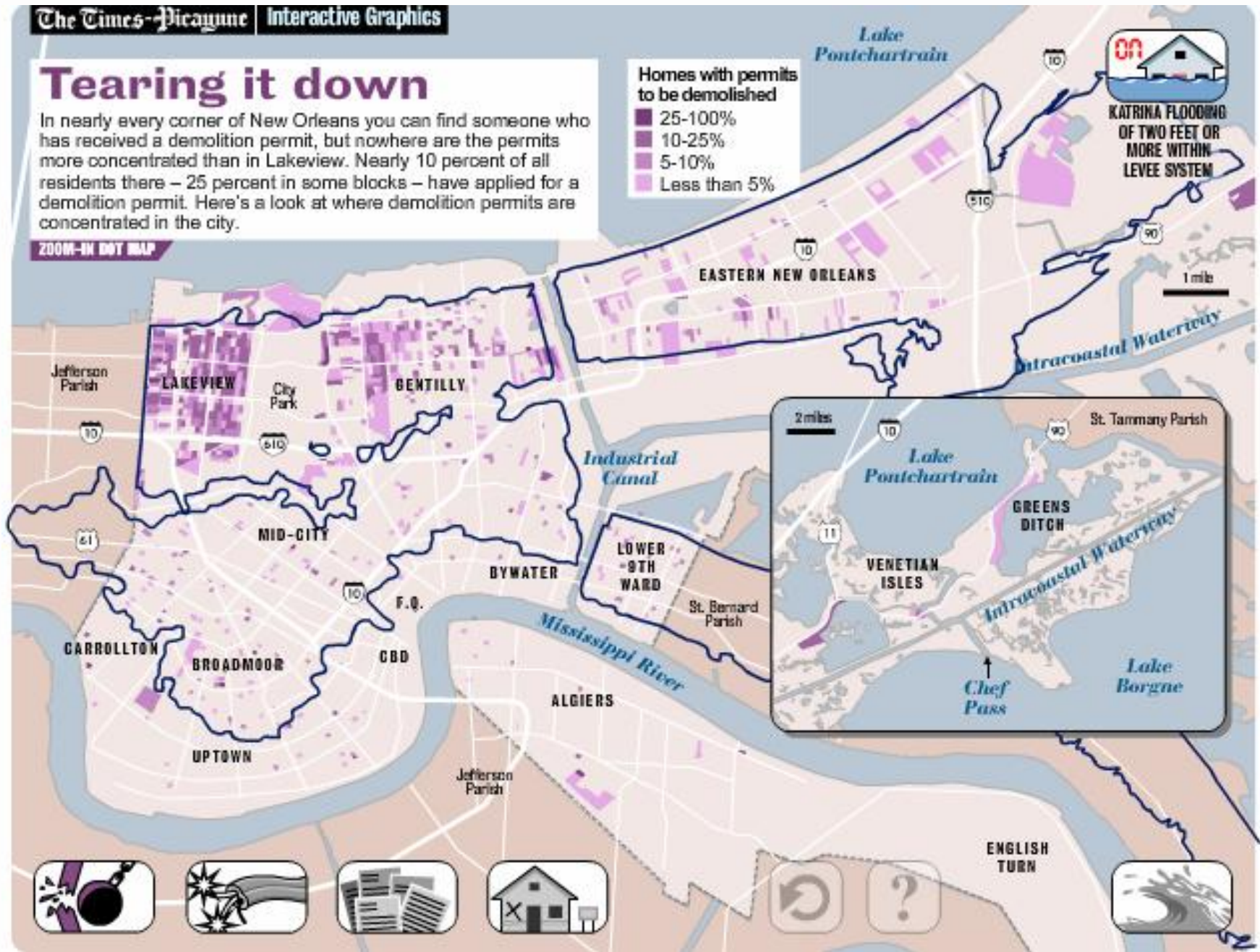


# Tearing it down

In nearly every corner of New Orleans you can find someone who has received a demolition permit, but nowhere are the permits more concentrated than in Lakeview. Nearly 10 percent of all residents there – 25 percent in some blocks – have applied for a demolition permit. Here's a look at where demolition permits are concentrated in the city.

ZOOM-IN DOT MAP

- Homes with permits to be demolished
- 25-100%
  - 10-25%
  - 5-10%
  - Less than 5%



# New Orleans – Cross-Cutting Issues Affecting Long-term Recovery

## n Money:

- Funds for household rebuilding now in place
- Community infrastructure and service restoration hampered by lay-offs, labor shortage, and slow reimbursement process
- Infrastructure and service overhaul necessary to support recovery, community betterment, and long-term sustainability

## n People:

- Only half the population has returned
- Lack of interim housing solutions inhibits private market forces
- Start of the 2<sup>nd</sup> school year term will provide important long-term indicator

## n Politics and Plans:

- Political will lacking to adopt realistic rebuilding strategy
- Risk management and mitigation are not a real part of recovery planning dialogue
- Full flood protection will take years and requires wetland restoration

# How Does Katrina's Recovery Compare with Other Catastrophes?

- n Heavy reliance on state and federal levels of government to lead, manage and finance recovery. Federal resources have been slow to come and state's are critical conduits for funds, planning, and information dissemination.
- n Still lack 'big picture', holistic management of private and public resources for recovery:
  - Macro-strategies continue to prioritize infrastructure rehabilitation and individual stabilization, followed by more 'reactive' responses to housing and economic recovery needs.
  - Flexibility in long-term public financing is critical.
  - Lack programs to help small businesses and those with fewer resources.

# How Does Katrina's Recovery Compare with Other Catastrophes?

- n Macroeconomic indicators of recovery, do not represent the individual and neighborhood-level recovery conditions
  - Most other large disasters are also filled with despair during the first years
- n New Orleans' recovery will leave neighborhood and planning legacies
  - Physical, political, and economic legacies are still unclear

# Following Katrina's Recovery

## **n** Mississippi:

- [www.mississippirenewal.com](http://www.mississippirenewal.com)

## **n** Louisiana:

- [www.louisianarecoveryauthority.org](http://www.louisianarecoveryauthority.org)
- [www.louisianaspeaks.org](http://www.louisianaspeaks.org)

## **n** New Orleans:

- [www.nola.com](http://www.nola.com)  
([www.nola.com/katrina/graphics/flashflood.swf](http://www.nola.com/katrina/graphics/flashflood.swf))
- [www.unifiedneworleansplan.org](http://www.unifiedneworleansplan.org)
- [www.thinknola.com](http://www.thinknola.com)

**Thank You!**