Rebuilding after Hurricane Katrina: Neighborhood Planning with a GIS Template

URPL 969
Applied GIS Workshop: Rethinking New Orleans After Hurricane Katrina
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Local Context

As of January 2006 only 181,400 of the City’s roughly 485,000 residents had returned

Rebuilding is stalled due to:
– lack of unified planning efforts
– nation-wide diaspora of displaced residents
– local politics (primary and runoff elections)
– limited resources

Concerns identified by New Orleans Residents

• Lack of adequate and affordable housing

• Lack of jobs

• Damaged or reduced infrastructure for utilities & essential services including telecommunications, gas, water, sewer

• Delays in publication of flood maps which provided guidelines for rebuilding

Source: Gentilly Woods and Ponchartrain Park Visioning Session Document from March, 2006
Process

1. Define the Question
   - What do displaced New Orleans residents want to know before returning to the city?
   - What information does the neighborhood need to conduct long-range planning?

2. Choose a Neighborhood: Pontilly (Pontchartrain Park and Gentilly Woods)

3. Refine and Bundle Data to Answer Questions

4. Create Useful Maps and Status Reports

5. Identify Data Gaps

6. Research Exceptional Web Mapping Examples
What do displaced New Orleans residents want to know before returning to the city?

Six Categories of Status Information Sought

1. Hazards
2. Community Resources
3. Public Services
4. Utilities
5. Public Safety
6. Transportation
HAZARDS

FEMA Flood Zone Maps

Flood Zone A7 Below Base Flood Elevation & Required to Carry Flood Insurance under the NFIP.

Flood Zone B Above Base Flood Elevation & NOT Required to Carry Flood Insurance

Source: FEMA, 2006
### Extent of Housing Damage

#### Housing Unit Damage Estimates as of February 12, 2006

**Gentilly Planning District Total Housing Damage**

<table>
<thead>
<tr>
<th>Insurance Status</th>
<th>Owner-Occupied Housing Units</th>
<th>Rent-Occupied Housing Units</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Hazard &amp; Flood</td>
<td>Hazard Only</td>
</tr>
<tr>
<td><strong>Homes with flood damage</strong></td>
<td><strong>Homes in FEMA 100 yr. fl plain</strong></td>
<td></td>
</tr>
<tr>
<td>Minor Damage</td>
<td>75</td>
<td>17</td>
</tr>
<tr>
<td>Major Damage</td>
<td>470</td>
<td>81</td>
</tr>
<tr>
<td>Severe/Destroyed</td>
<td>5,465</td>
<td>1,013</td>
</tr>
<tr>
<td><strong>Subtotal</strong></td>
<td>6,040</td>
<td>1,111</td>
</tr>
<tr>
<td><strong>Homes outside 100 yr. fl plain</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Minor Damage</td>
<td>24</td>
<td>73</td>
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<tr>
<td>Major Damage</td>
<td>132</td>
<td>152</td>
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<tr>
<td>Severe/Destroyed</td>
<td>584</td>
<td>541</td>
</tr>
<tr>
<td><strong>Subtotal</strong></td>
<td>740</td>
<td>766</td>
</tr>
<tr>
<td><strong>Homes with no flood damage</strong></td>
<td><strong>(generally wind damage)</strong></td>
<td></td>
</tr>
<tr>
<td>Minor Damage</td>
<td>108</td>
<td>39</td>
</tr>
<tr>
<td>Major Damage</td>
<td>18</td>
<td>9</td>
</tr>
<tr>
<td>Severe/Destroyed</td>
<td>1</td>
<td>-</td>
</tr>
<tr>
<td><strong>Subtotal</strong></td>
<td>127</td>
<td>48</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>6,877</strong></td>
<td><strong>1,925</strong></td>
</tr>
</tbody>
</table>

**Census 2000:**
- Owner: 4,849
- Rent: 8,992

**Percent:**
- Owner: 82%
- Rent: 78%

**SBA Median Verified Loss:**
- Major: $102,591 (N=319)
- Severe: $122,291 (N=3,193)

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**Debris:** 7.8 M cubic yards collected to date

Source: www.cityofno.com, 2006
The two schools within the Pontilly boundary are not open.

The two closest are both elementary schools:

- Franklin &
- Capdau.

Source: LSU GIS store and school district websites, 2006
St. Gabriel the Archangel is the only church open in either Ponchartrain Park or Gentilly Woods.
Data compiled from listing of businesses confirmed open by the City of New Orleans as of January 2006

Legend

- Distribution Center
- Pontilly Boundary
- Open Businesses - 1/2 mile

Source: LSU GIS store and www.cityofno.com, 2006

no scale
Mail Service

• Varies greatly among the various zip codes

• Some residents are receiving regular service, while others need to pick-up their mail at various distribution locations throughout the city.

• The United States Postal Service website, www.usps.com, regularly posts service updates with detailed information for each affected zip code.

• Information can also obtained at (800) 275-8777.
Voter Information

• **Louisiana Voter Poll Locator** provided by LA Secretary of State, Elections Division

• Interactive Web Mapping is easy to use to locate individual polling locations but does not facilitate area-wide mapping to see patterns in poll locations.

Utilities Update: Zip Code 70126

- **Sewer:** Sewer system is inoperative
- **Water:** Potable
- **Electricity:** Power available to 95% of customers
- **Gas:** Service available to 98% of customers

Source: Situation Report for New Orleans, April 24, 2006
Hospitals, Clinics, Red Cross

- Closest Hospital (24 hours) – USS Comfort
- Closest Clinic – Covenant House

Legend:

- Clinic
- Hospital
- Red Cross Distribution Center
- Fire Stations
- Police Station
- Pantilly Boundary

Source: LSU GIS store and www.cityofno.com, 2006
ROADWAYS

- Roads Inspected 90%
- Signals Operational 0%
- Temporary Stop Signs 100%

Source: Situation Report for New Orleans, April 24, 2006

TRANSIT

- Vital to Rebuilding
- Regional Transit Authority (RTA) providing limited service free of charge
- FEMA contract expires June 30, 2006
- RTA website is fully operational with data, maps and special event alerts
- Neighborhood organization and planning necessary to retain service

Source: www.cityofno.com, April 2006
What information does the neighborhood need to conduct long-range planning?

• **Useful Categories of Data**
  – Hazard Data
  – Community Resources
  – Public Services
  – Utilities
  – Public Safety
  – Transportation
  – Natural Resources
  – Political Boundaries
  – Demographics (Census)
  – Parcel Data
  – Land Use and Zoning
  – Housing
Data Gaps

• Availability Issues
  – General lack of data
  – Data exists but is not publicly available
    • Because of privacy
    • Because data is secured (e.g. LSU GIS Store)

• Consistency Issues
  – A variety of formats and sources
    • GIS-compatible data
    • PDF maps
    • Text or other format

• Accessibility Issues
  – Expensive software is needed to utilize data
  – Steep learning curve
  – Time and labor intensive
What Could Be

- Identifying Web Mapping applications
- Specific functions for New Orleans neighborhoods
  - Property ownership
  - Businesses by type
  - Crime data
  - Government services
What Could Be

• Greater New Orleans Community Data Center
  – www.gnocdc.org

• Two examples of Web-Mapping sites with applicability for New Orleans neighborhoods:
  – Baltimore County, MD’s MyNeighborhood site
  – Philadelphia’s Neighborhood Information System

Since 2001, this website has been the most widely used source for informat surrounding parishes. Post-Katrina, we’ve been working hard to round up re organizations now need to make.

Post-Katrina Population & Housing Estimates

**Louisiana parishes population estimates Updated!**
LA Dept of Health and Hospitals Bureau of Primary Care and Rural Health
(Oct 2005 - Mar 2006)
Monthly population estimates for all parishes in Louisiana.
- [Methodology](#) - PDF - 0.1 MB
- [Post-Disaster Population Estimates Data](#) - Excel spreadsheet - 1.4 MB
- [Map](#) of percent change Jul 05- Mar 06 - Word document - 0.4 MB

**New Orleans population estimates**
City of New Orleans, Emergency Operations Center (Jan 2006)
Estimates of overnight and daytime populations in residential structures in Orleans Parish by planning district. Overnight estimates for age groups, ge employment and health indicators.
- [Rapid Population Estimate Survey Report](#) - PDF - 0.6 MB
What Could Be

Baltimore County, MD: MyNeighborhood

- Facilities information
- Available at a variety of scales

Source: www.co.ba.md.us/Agencies/myneighborhood/
Philadelphia Neighborhood Information System

What Could Be

Crime Base

Source: http://cml.upenn.edu/nis/
Recommendations

• Immediate and effective dissemination of pertinent information

• Increased access to data in consistent, dynamic formats

• Development of intuitive web-mapping software to provide increased transparency, access, and availability of data
Conclusion

• Set out to answer 2 questions:
  • What do displaced New Orleans residents want to know before returning to the city?
  • What information does the neighborhood need to conduct long-range planning?
• Chose to focus on Pontilly Neighborhood
• Refined and bundled data
• Created useful maps and status reports
• Identified data gaps
• Identified suggestions for long-range planning