Rebuilding after Hurricane Katrina: Neighborhood Planning with a GIS Template

Prepared For:
Urban and Regional Planning 969
Applied GIS Workshop: Rethinking New Orleans After Hurricane Katrina
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Spring 2006

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May 3, 2006
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INTRODUCTION

The landfall of Hurricane Katrina on August 29, 2005, had devastating impacts on the City of New Orleans. Winds of more than 140 miles per hour and storm surges of up to 32 feet caused extensive flooding in coastal areas, including many neighborhoods within the City of New Orleans. Despite mandatory evacuations, nearly 150,000 City residents, many poor and disabled, were unable to evacuate before the storm. The Louisiana Geographic Information Council estimates that the storm displaced over 288,700 people and impacted 71,000 businesses totaling an estimated $22 billion dollars in damages (LAGIC, 2005). This damage was the combined result of multiple factors including on-going depletion of wetland buffers, failed levee and pumping infrastructure, lack of adequate emergency planning and preparation, and failed communication and emergency response systems.

Since the storm New Orleans residents, business owners, and local officials have struggled with the essential questions of where and how to begin rebuilding the city. The lack of unified planning, the nation-wide diaspora of residents displaced by the storm, local politics (awaiting the results of the upcoming 2006 mayoral race) and limited resources have stalled rebuilding efforts and left New Orleans residents, now living across the country, to weigh the costs and benefits of returning. According to the “Bring New Orleans Back Commission”, as of January 2006 only 181,400 of the City’s roughly 485,000 residents (US Census, 2000) had returned. Residents potentially interested in returning to the City and local officials involved in rebuilding efforts highlight several key areas of concern:

- **Lack of adequate and affordable housing:** According to January 30 Action Plan for New Orleans prepared by the Bring New Orleans Back Commission, “housing is now the biggest constraint to people moving back. People who have jobs have trouble finding places to live. Employers with openings have trouble finding employees with a place to live close enough to permit them to accept the job” (City of New Orleans, 2005);

- **Lack of Jobs:** Only 2000 of the 22,000 businesses in New Orleans had re-opened as of April 2006. Of those that have reopened, most are food establishments or large companies able to absorb the additional cost of rebuilding and operating in a city that is “functioning but disabled” (Rivlin, 2006). Displaced residents have limited access to information about the presence of employers.
➢ **Damaged or reduced infrastructure for utilities & essential services including telecommunications, gas, water, and sewer:** Some areas of the City remain without critical infrastructure such as water and sewer service. According to the City’s Situation Report, which is regularly posted on the City website, many zip codes across the City have “inoperative sewer systems.” Obviously, the absence of these critical services is a major barrier to the rebuilding process.

➢ **Delays in publication of flood maps which provide guidelines for rebuilding:** Guidelines were finally released on April 12, 2006.

This intent of this paper is to document our project process and results. The report identifies the project opportunities, explains our process, provides a model analysis of the Pontilly neighborhood, discusses an analysis of long-range planning, identifies data gaps and other constraints, and discusses successful examples of how web-based GIS templates might be used to facilitate neighborhood planning.

**OPPORTUNITIES**

The graduate seminar that spawned this project, an applied GIS workshop entitled “Rethinking New Orleans After Katrina”, afforded the project team with many opportunities. The course was offered as part of the Urban and Regional Planning Department of the University of Wisconsin-Madison in the Spring Semester 2006. The urban planning background of the project team members and our instructor, David Hart, presents us with an excellent framework with which to tackle this project. In order to augment our backgrounds and understanding of the magnitude of the crisis in New Orleans, our instructor familiarized us with additional information concerning New Orleans, neighborhood planning, and the various technologies at our disposal. The specific opportunities deemed most useful in executing this project are listed below.

Online conferences, meetings, and lectures with staff and local officials from the City of New Orleans informed the development of our analysis. These included presentations and discussions with: James Schwab, AICP of the American Planning Association who provided background regarding the planning process currently underway in New Orleans; Michael Barndt of the Nonprofit Center of Milwaukee, Inc., a leading authority on public participation GIS
(PPGIS), who described PPGIS principals and how PPGIS may be used to help democratize data in New Orleans; Joy Bonaguro, Greater New Orleans Community Data Center, (a PPGIS initiative aimed at democratizing data an facilitating neighborhood planning in New Orleans); Patrick Haughey and Isabelle Maret of the University of New Orleans, College of Urban and Public Affairs (currently working with neighborhood residents in the City); and Dubravka Gilic, New Orleans City Planning Commission. These discussions guided us to address the most salient and pressing needs in the City and provided us with access to relevant data sources, including the LSU GIS store, a Louisiana State University source for spatial analysis of New Orleans after Hurricane Katrina. Linda and Bert Stitt of Stitt Facilitations presented additional information about the state of the Pontilly neighborhood. Stitt Facilitations led a neighborhood planning charrette in the Pontilly neighborhood (Gentilly Woods and Ponchartrain Park) in New Orleans on March 18, 2006. A report based on this process was particularly informative with regard to the immediate needs and requirements of the Pontilly community.

PROCESS

Through this course at the University of Wisconsin-Madison, our class had a unique opportunity to try to provide planning and GIS assistance to the greater New Orleans community. Our group undertook the following process steps to complete our project.

1. Defined the question. In this step, we zeroed in on our problem statement and formulated two main questions:
   a. What do displaced New Orleans residents want to know before returning to the city?
   b. What information does the neighborhood need to conduct long-range planning?

2. Selected a neighborhood. Because of our contacts with Bert and Linda Stitt, we chose to focus our efforts on the Pontilly Neighborhood (Ponchartrain Park and Gentilly Woods). We had a visioning document from Stitt Facilitations that allowed us to understand this neighborhood’s residents’ concerns. We also hope that the Stitts’ connections to this neighborhood will create an avenue for residents to receive this document.
3. **Refined and bundled data to answer questions.** In this step, we researched data sources and formats that would help us answer our two main questions.

4. **Created useful maps and status reports.** We compiled our data into a series of maps and reports focusing on the Pontilly Neighborhood.

5. **Identified data gaps.** We assessed the data we were able to locate and highlighted large gaps in information that is crucial to addressing our two main questions.

6. **Researched Exceptional Webmapping Examples.** In this step, we envisioned “What could be?” in that we learned about other examples where GIS and other types of data are bundled and made easily accessible to the public via a webmapping website.

The next section describes our Pontilly Neighborhood analysis.

**NEIGHBORHOOD ANALYSIS**

We have learned throughout this course that neighborhood planning efforts are hindered by the fact that many residents have not yet returned to New Orleans. Because of the importance of this issue, we chose to assess and compile information that most residents would want to know before they return to New Orleans. In order to produce some usable analyses, we chose to focus on the Pontilly neighborhood. As mentioned earlier, Stitt Facilitations began a visioning process with this neighborhood and provided us with a transcript of their conference. This provided clear indicators of the type of information people were looking for. Specifically, residents had questions pertaining to FEMA and flood elevations, security, levees, transportation, public services and utilities, schools, insurance, information and communication, city planning, and health. Based on these questions and concerns voiced by Pontilly residents, we focused our analysis efforts on attempting to create a number of maps and status reports that would help to address these questions. The following list identifies information we either gathered or created. Where possible, we attempted to find available data that we could use in a GIS format. When we could not find this data, we searched for other graphical or text-based sources of information. This data is summarized in matrix format in Appendix A.
1. Hazard Maps
   a. Extent of Damage
   b. Updated FEMA Flood Zone Maps
   c. Rebuilding Requirements
   d. Current Rebuilding Efforts
   e. Levee Reconstruction
   f. Subsidence Predictions

2. Community Resources Status Maps
   a. Schools, Hospitals, Churches
   b. Grocery Stores and Other Businesses

3. Public Services Status Report
   a. Mail Service
   b. Garbage Pick-Up
   c. Voter Information

4. Utilities Status Report
   a. Water and Sewer
   b. Power and Telephone

5. Public Safety Status Report
   a. Crime Rates
   b. Police Stations
   c. Environmental Pollution

6. Transportation Status Maps
   a. Transit Routes

Some of this data, we were able to find; however, there was a significant amount of data we were not able to locate. When we did find data, it was in a variety of formats that were often incompatible with each other. We were able to locate several useful GIS-based data files from the Louisiana State University (LSU) “GIS Store.” The LSU GIS store is a 20 terabyte information clearinghouse established at the Louisiana State University in Baton Rouge “to facilitate the collection, dissemination, and archiving of data related to Hurricanes Katrina and Rita” (LSU GIS store website). While this resource has amazing potential and countless applications, there are some potential drawbacks for neighborhood planning activities. First and foremost, access to the information is “currently restricted to LSU researchers, FEMA officials, and a few other state agencies that are involved in various hurricane related efforts” (LSU GIS store website). We were fortunate in that our instructor, David Hart, had a previous professional relationship with some LSU researchers, others may not be as fortunate. Another weakness of the LSU GIS store is that in the haste to gather and catalogue the data, little attention was paid to metadata in many cases. All in all, the strengths of the LSU GIS store outweigh the weaknesses, but it is important to note that those weaknesses exist before proceeding. The following sections describe the data we were able gather and are organized according to categories listed above.
Hazards

As noted earlier, we define hazards to focus on the damage due to Hurricanes Katrina and Rita. This information ranges risk factors like subsidence, levee strength and new FEMA flood zone maps to rebuilding requirements and the extent of damage.

Extent of Housing Damage
The extent of housing damage is a critical piece of information not only for citywide rebuilding, but also for short-term and long-range neighborhood planning efforts. This information will inevitably guide priorities within a neighborhood plan, and the Pontilly Neighborhood is such an example. In one of their initial visioning meetings for rebuilding, many Pontilly residents wanted to know the extent of housing damage.

The source of this data is a report released on February 12, 2006 by the Department of Homeland Security issuing current housing unit damages from Hurricanes Katrina, Wilma, and Rita. The data were compiled and analyzed by the Department of Homeland Security, Federal Emergency Management Agency (FEMA), Department of Housing and Urban Development (HUD), and the Small Business Association (SBA). The data was collected from FEMA Individual Assistance Registrants and from SBA Disaster Loan Applications. This report is publicly available to anyone with Internet access on the Greater New Orleans Community Data Center (www.gnadc.org) and is available in a PDF text format. In the report, the data is broken down by state, and then by parish for Louisiana. Within Orleans Parish, it is also broken down by planning district. While this information is extremely helpful, we were not able to find it as a shape file and could not incorporate it into our GIS analysis.

As shown in the Map of New Orleans’ planning districts (Figure 1.1), the Pontilly neighborhood is a subset of the Gentilly District. Therefore, the table listing the Gentilly District damages (Figure 1.2) incorporates damages from several other neighborhoods. Given that neighborhoods are all doing individual planning, it would be helpful to have the data broken down to a more localized scale. In addition, being able to delineate damages from the three hurricanes would also be helpful.

Residents of the Pontilly Neighborhood also expressed interest in knowing the extent of other damage to other buildings, such as commercial and industrial facilities. Unfortunately, we were not able to find this data either in a text, pdf, or GIS-compatible format.
Figure 1.1: Pontilly Neighborhood as Part of Larger Gentilly Planning District
Figure 1.2: Housing Unit Damage Estimates as of February 12, 2006 for Gentilly Planning District

<table>
<thead>
<tr>
<th>Insurance Status</th>
<th>Owner-Occupied Housing Units</th>
<th>Renter-Occupied Housing Units</th>
<th>Type of Structure Unit Located</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Hazard &amp; Flood</td>
<td>Hazard Only</td>
<td>No Insurance</td>
</tr>
<tr>
<td>Minor Damage</td>
<td>75</td>
<td>17</td>
<td>8</td>
</tr>
<tr>
<td>Major Damage</td>
<td>470</td>
<td>81</td>
<td>43</td>
</tr>
<tr>
<td>Severe/Destroyed</td>
<td>5,465</td>
<td>1,013</td>
<td>722</td>
</tr>
<tr>
<td><strong>Subtotal</strong></td>
<td><strong>6,040</strong></td>
<td><strong>1,111</strong></td>
<td><strong>773</strong></td>
</tr>
<tr>
<td>Minor Damage</td>
<td>24</td>
<td>73</td>
<td>15</td>
</tr>
<tr>
<td>Major Damage</td>
<td>132</td>
<td>152</td>
<td>53</td>
</tr>
<tr>
<td>Severe/Destroyed</td>
<td>584</td>
<td>541</td>
<td>285</td>
</tr>
<tr>
<td><strong>Subtotal</strong></td>
<td><strong>740</strong></td>
<td><strong>766</strong></td>
<td><strong>333</strong></td>
</tr>
<tr>
<td>Homes with no flood damage (generally wind damage)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Minor Damage</td>
<td>108</td>
<td>39</td>
<td>9</td>
</tr>
<tr>
<td>Major Damage</td>
<td>18</td>
<td>9</td>
<td>4</td>
</tr>
<tr>
<td>Severe/Destroyed</td>
<td>1</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td><strong>Subtotal</strong></td>
<td><strong>127</strong></td>
<td><strong>48</strong></td>
<td><strong>13</strong></td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>6,877</strong></td>
<td><strong>1,925</strong></td>
<td><strong>1,119</strong></td>
</tr>
<tr>
<td>Census 2000:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Percent</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**SBA Median Verified Loss:**

<table>
<thead>
<tr>
<th>FEMA Damage Level</th>
<th>N</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Major</td>
<td>319</td>
<td>$102,591</td>
</tr>
<tr>
<td>Severe</td>
<td>3,193</td>
<td>$122,281</td>
</tr>
</tbody>
</table>

* See Methodology for explanation of how these damage estimates were calculated
** See Methodology for explanation of what SBA Median Verified Loss refers to

Source: Office of the Federal Coordinator for Gulf Coast Rebuilding at the Department of Homeland Security
**Updated FEMA Flood Zone Maps**

Many residents have been waiting for updated flood zone maps and related insurance information in order to determine if they were able to rebuild in New Orleans. Updated maps were released on April 12, 2006 and are available on the City of New Orleans website via a link to updated FEMA flood zone mapping: [http://www.cityofno.com/](http://www.cityofno.com/)

As shown in the attached map (Figure 1.3), the unit of division used is zip codes. Pontilly neighborhood is a small part of zip code 70126. Within this neighborhood, residents are required to carry flood insurance under the National Flood Insurance Program (NFIP) because they are in an “A Zone.” Specifically, the Pontilly neighborhood is categorized as Zone A6 or A7, where the higher the number, the more likely the area is to flood (and the range is A0 to A30). These zones represent areas with a 1% annual chance of flooding and a 26% chance of flooding over the life of a 30-year mortgage. While this information is very useful, it is difficult to use for planning purposes since it is in a simple PDF format and not able to be used in other mapping applications such as ESRI ArcMap.
Figure 1.3: FEMA Flood Zones, focusing on Pontilly Neighborhood

**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
Current Rebuilding Requirements
Advisory Base Flood Elevation information is available in the form of a pdf link from the city of New Orleans website as well as from the FEMA website. This publication designates a three-foot elevation above the “highest adjacent existing ground elevation” for properties within levee-protected areas (FEMA).

Levee Reconstruction
Newspaper reports have provided some details about the status of levee rebuilding, in that the Army Corps of Engineers is working to rebuild the levees to pre-hurricane Katrina level by the beginning of hurricane season in June 2006. Additionally, information on rebuilding efforts appears often in the form of news reports rather than comprehensive information that can be mapped to provide residents a sense of where rebuilding efforts are located.

Subsidence Predictions
Some initial exploration of subsidence predictions has been made available due to the work of Professor Dave Hart and the University of Wisconsin-Madison graduate course on GIS post-Katrina, the course in which the authors of this report are also involved. Future data from FEMA in the form of shape files is pending, and will include surge inundation limits, surge elevation contours and advisory base flood elevations by parish (http://www.fema.gov/hazard/flood/-recoverydata/katrina/katrina_la_gis.shtm).
Schools and Churches
Returning residents need to know if they bring children back to New Orleans, whether they will be able to continue their education during rebuilding efforts. Churches provide key centers for community, social and emergency services and emotional and spiritual support. These community resources will be central to the rebuilding of neighborhoods and communities.

The City of New Orleans website maintains a link to a word document listing schools that are opening as part of their daily situation report. The school district website ([http://www.nops.k12.la.us/](http://www.nops.k12.la.us/)) also maintains a pdf file listing schools open as well as descriptions of the schools, if enrollment is open or the school is hiring and relevant contact information. The City of New Orleans’ website does not list information about open churches. The visioning document for Pontilly provided information that St. Gabriel the Archangel is the only area church currently open. Base maps including the orthophoto and church locations were obtained through the LSU GIS Store. Various websites include lengthy lists of churches in the New Orleans area, but much of this information was posted prior to Hurricane Katrina.

The above-mentioned lists provided addresses for open schools. This data was geocoded using ArcGIS software. Figure 1.4 shows St. Gabriel the Archangel in relation to other neighborhood churches. Figure 1.5 shows the closest schools to Pontilly. The two schools in the neighborhood are not yet open. The closest open schools are two elementary schools, Franklin Elementary and Capdau Charter.
Open Businesses

Essential for gauging the quality of life, availability of jobs and neighborhood vitality, businesses are a key ingredient in the community fabric. The City of New Orleans provides local businesses the ability to use the city’s website to register the business as open. City officials are then dispatched to confirm that the business is open. A listing of open businesses is available on the website, but was last updated as of Jan. 2006.

Using the list of businesses confirmed open by city staff, we were able to geocode the addresses on a GIS map also using additional data from the Louisiana Spatial Reference Center as a base layer. In addition, the daily situation reports available on the city’s website noted a Red Cross Distribution Center within the Pontilly neighborhood boundary. This is also depicted on the map. Figure 1.6 presents all businesses confirmed open by the City of New Orleans within the Pontilly neighborhood, and within ½ mile of its boundary.
Figure 1.6: Open Businesses in Pontilly and within ½ Mile of the Boundary
Mail Service
Mail delivery in the City of New Orleans varies greatly among the various zip codes that cover the city. 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. Residents with access to a telephone can also obtain information by calling (800) 275-8777. The following service update was posted on April 26, 2006.

Garbage Pickup
According to the City of New Orleans’ web site, household garbage is being collected once each week. The Garbage Collection Route Map shown in Figure 1.6 shows when garbage will be collected in each part of the city. The city’s daily Situation Report gives instructions on preparing non-household debris for collection. This information is accessible in pdf format at www.cityofno.com. Residents with telephone service can obtain similar information by contacting the Department of Sanitation at (504) 658-3800. The city’s web site does not clearly show if household recycling service has resumed.

Voter Information
Concern has been raised because the majority of New Orleans polling locations have been changed and residents may have trouble determining where they are to go to cast their ballot for the upcoming Mayoral election. The State of Louisiana Elections Division has set up a website that should help avoid the confusion for those who have Internet access. In just a few clicks, voters can search for their polling location according to either their name or address. This information is helpful, but is not easy to display on a map.
Figure 1.6: Garbage Pick-up for the City of New Orleans, Noting Pontilly

GARBAGE COLLECTION DAYS BY AREA IN ORLEANS PARISH

- **MONDAY**: The West Bank of Orleans Parish including Algiers.
- **TUESDAY**: The area bounded by South Claiborne Ave-10 on the north, the Mississippi River on the north, Louisiana Ave on the west, and the Industrial Canal on the east.
- **WEDNESDAY**: The area bounded by the Orleans-Jefferson parish line on the north, the Mississippi River on the south and west, and Pelican St, Washington Ave, and Louisiana Ave on the east.
- **THURSDAY**: The area bounded by I-10 on the north, the Orleans-Jefferson parish line on the west, South Claiborne-10 on the east and Poydras St/Washington Ave on the south.
- **FRIDAY**: The area bounded by Lake Pontchartrain on the north, I-10 on the south, the Industrial Canal on the east and the Orleans-Jefferson parish line on the west.
- **SATURDAY**: The area in New Orleans East bounded by Hayne Blvd, on the north, Chef Mentzou Hwy, on the south, Paris Rd on the east and Willowbrook Drive on the west.
Utilities Status Report

In the Pontilly Neighborhood visioning meeting, some of the overwhelming questions to government officials focused on utilities. Residents wanted to know why they were being charged for utilities when the services were not functioning. They also wanted to know when the services would be up and running. Next to housing and flooding concerns, utilities are key services that may either motivate or deter people from returning to their neighborhood. Therefore, we chose to collect data on the status of utilities and included the following in this dataset: water, sewer, gas, electric, and telephone service.

As of April 26, 2006, the status of utilities for the Gentilly Woods and Ponchartrain Park neighborhoods are as follows:

- Sewer: sewer system is inoperative;
- Water: water is potable;
- Electric: power is available to 95% of customers;
- Gas: service is available to 98% of customers.
- Unfortunately, we were not able to find the status of telephone service for the neighborhood.

This information is located on the City of New Orleans website (www.cityofno.com) and is available to anyone with Internet access. The information is consistently updated in the City’s daily situation report and is listed by city zip code.

While the city’s situation reports are updated daily on the city website, current reports must be compared to previous ones to note any changes in information. Additionally, the information is a text document, which provided information only by zip code, rather than on a neighborhood or individual parcel scale. Due to time constraints, we were not able to convert the information into a shapefile and use it in our GIS analysis.
Crime Rates
While some newspaper reports, including a March 30th story in the New York Times by Adam Nossiter, note a more recent increase in crime in the city, we have been unable to find and specific data on the number of crimes or locations, thereof. Recent crime is not near that of Pre-Katrina levels (Nossiter), but remains a concern for current and returning residents of New Orleans. The New Orleans Police Department’s website is void of any information about crime statistics. More specific and detailed data is of great need for current and future neighborhood planning needs.

Police, Fire, Hospitals and Clinics
The City of New Orleans website provides some basic information in the form of daily situation reports. No specific police stations are designated as open, and while four fire stations are open and serving the residents of New Orleans, the particular four are not denoted. It is understandable that closed police stations would not be displayed publicly, so as not to jeopardize public safety. However, open hospitals and clinics are listed. The addresses were geocoded on a base map made available by Louisiana Spatial Reference Center.

The map in figure 1.7 shows that the closest hospital and clinic are both downtown. The USS is open 24 hours a day while the Covenant Clinic is open from 9 a.m. to 4 p.m. The data for fire and police stations is from the LSU GIS Store and represents pre-Katrina levels of staffing.

Figure 1.7: Public Health and Safety – Closest Hospital and Clinic to Pontilly
**Environmental Pollution**

The U.S. EPA website contains a wealth of localized information on the location of hazardous materials. The site includes information on facilities licensed to store hazardous materials along with a history of each facility. The EPA’s “Enviromapper” is a webmapping function that allows users to search their neighborhood for hazardous materials and known polluted sites. The Louisiana Department of Environmental Quality also has a GIS mapping feature.

**Transportation Status Maps**

**Roadways**

The April 26, 2006 Situation Report from the City of New Orleans Website listed the following conditions for the zip code, 70126:

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

**Transit**

Adequate public transportation is crucial to the livability of all large cities, especially in New Orleans, where it is estimated that over 27% of residents in Orleans Parish do not have access to a personal vehicle (U.S. Census Bureau, compiled by the Greater New Orleans Community Data Center) and more than 12% of residents ride the bus to work (U.S. Census Bureau). As residents return to New Orleans and the city rebuilds, adequate public transportation is vital to the rebuilding of the city’s neighborhoods and regional economy. Thankfully, many bus and streetcar routes operated by the New Orleans Regional Transit Authority (RTA) are operating at greatly reduced fares and some are free of charge. FEMA has agreed to cover these costs until June 30, 2006, at which time the RTA will return to regular funding sources. Because RTA relies on sales taxes and passenger fares for a large portion of its revenue, the financial viability of RTA service is in serious jeopardy.

**Transit and Neighborhood Planning**

A necessary and emotional part of the neighborhood planning process in the city will undoubtedly be efforts to retain public transportation service. After June 30\textsuperscript{th}, it is very likely that RTA will need to reduce and/or eliminate service to parts of the city. Unfortunately, it may be necessary for residents and neighborhood associations to demonstrate why this essential service should not be eliminated in their neighborhood. Neighborhood leaders will need to implement various planning activities to “make the case” for their neighborhoods. Surveys, testimonials and other evidence will be crucial if neighborhoods hope to influence RTA officials.

**Current Transit Data**

Accurate, up-to-date information about current service is readily available on the RTA’s website, [www.norta.com](http://www.norta.com). Routes, service hours, and special event alerts (e.g. Jazzfest) are all readily available in pdf format. Figure 1.8 presents a transit map as of April 2, 2006. Presumably, the RTA is updating and distributing similar information in hard copy on all operating buses and streetcars. This data is very accessible to anyone with Internet access, and for riders with access to a telephone, the RTA’s Rideline is operational (504-248-3900) during regular business hours.
Current service maps are also available in pdf format on the RTA website. Because this map is in pdf format, it has not been incorporated into our Pontilly map. However, there is transit service in the neighborhood as of April 2006.

Figure 1.8: City of New Orleans Transit Map: effective April 2, 2006
LONG-RANGE PLANNING ANALYSIS

Our second major question is: “What information does the neighborhood need to conduct long-range planning?” For this analysis, we expanded our existing list of data to create a new list of data that we thought would be pertinent to supporting long-range neighborhood planning post-Katrina. Then, using the internet as well as personal contacts we had made during the first half of the semester, we searched for this additional needed data. The results of our research have been compiled into a matrix included in Appendix B. The matrix describes whether we were able to locate the data, and if so, includes information on data format, accessibility and any other comments or suggestions as to how the data might be acquired by other interested persons. We bundled this data into the following categories:

- Hazard data
- Community resources
- Public services
- Utilities
- Public safety
- Transportation
- Natural resources
- Political boundaries
- Demographics (census)
- Parcel data
- Land use and zoning
- Housing

With about four solid weeks of research and seven team members, we were able to track down quite a bit of data, but again, the formats were inconsistent and we are still sorely lacking in some categories of data. The following section describes more about the data gaps we identified.

DATA GAPS

As part of our project, we identified two types of data gaps: 1) overarching constraints to rebuilding efforts in New Orleans, and 2) more specific constraints to neighborhood planning using a GIS template.

Overarching Constraints

The necessity for a neighborhood planning GIS template in New Orleans cannot be overstated. The City of New Orleans, through the Bring New Orleans Back Commission, has handed over a majority of the planning responsibilities to individual neighborhoods that will be working separately. The commission also has set an extremely brief timeline for the
neighborhood recovery plans to be completed. To make matters worse, the unprecedented diaspora of the city’s population makes it very difficult for many neighborhoods to engage in any meaningful public participation in their neighborhood planning process. The combination of the decentralized responsibility, short timeline, and potential dearth of public participation comprise a set of overarching constraints to any contemporary neighborhood planning effort in the New Orleans metropolitan region.

Due to the diminished resources of local planning departments and neighborhood groups, very little of this information is currently available either to displaced residents or to remaining residents in New Orleans neighborhoods. Residents have suggested that this may place some neighborhoods (particularly those already lacking community organization, social or economic resources) at a disadvantage in competition for federal rebuilding funds.

**Specific Constraints**

Our project was aimed at providing GIS assistance to the neighborhood planning bodies in New Orleans. The nature of data and our role as students in developing this process presented the following more specific constraints:

- **DATA AVAILABILITY**: The apparent lack of digital spatial data from New Orleans that is available to the public is an obstacle. In some cases, the data exists but is not publicly available. Oftentimes this is due to privacy issues or because data is highly guarded (e.g., LSU GIS Store).

- **CONSISTENCY ISSUES**: The data that we were able to find was in a variety of formats and sources, such as GIS-compatible data, PDF maps, and text formats. This can make compilation of data challenging.

- **ACCESSIBILITY ISSUES**: Expensive software like ArcGIS is needed to utilize some of the data and make it more powerful. If ArcGIS is available, there is a steep learning curve with the software, and it is time and labor intensive to maintain data.

- **LOCATION**: Project participants were in Madison, WI: 1062 miles north from New Orleans. Distance prevented us from easily accessing local data, making relevant City connections, and confirming accuracy of data.
LIMITED TIMEFRAME: Since this project was part of a graduate seminar at the University of Wisconsin-Madison (UW-Madison), we had only four weeks to complete the analysis (March - April, 2006).

LACK OF EXPERTISE: With the exception of our instructor, none of the project team members claim to be an expert in GIS or computer programming.

WHAT COULD BE

Web mapping technology has the potential to provide neighborhoods with important information about the spatial characteristics of their neighborhood. More and more cities are now including neighborhood web mapping technology into their community information and outreach strategies. To look at how this initial analysis could be expanded into the future, we chose to research well-designed web mapping sites from around the country that support neighborhood planning. The following section describes the web mapping sites that we found most useful and includes a description of how they could be used for long-range neighborhood planning in New Orleans.

Philadelphia Neighborhood Information System:  http://cml.upenn.edu/nis/

This is a very comprehensive resource for residents, nonprofits, community groups and others in Philadelphia. It walks users through the scientific process (e.g., formulate hypothesis) and then provides extensive data to use when researching neighborhood issues. There are four main applications: Neighborhood base, Parcel base, Crime base, and Mural base. The Neighborhood and Crime bases have the most potential applicability for New Orleans neighborhoods.

Neighborhood Base:

This application utilizes extensive data that is publicly available. The primary sources are the 2000 Census, and the City’s records on property ownership, property sales, utility information, and violations. The underlying theme to the neighborhood base mapping system appears to be the identification of why certain neighborhoods are struggling or why quality of life is declining. Users can easily assemble maps, charts, and other tools to identify neighborhood trends. The website has an ‘additional resources’ tab that assists users in
compiling the information they have gathered in order to apply for grants, or to use it for presentations.

Crime Base:

The Crime base is also an excellent template for New Orleans at the city-wide level. It allows users to map a wide variety of crime data provided by the Philadelphia Police Department. This is also an excellent example of a city agency putting data in the hands of citizens who can learn from the data and help the agency better implement its mission.

As far as organizing data, the Philadelphia Neighborhood Information System uses eight categories of data: land use, property ownership, housing characteristics, vacancy/abandonment indicators, real estate sales, property tax & revenue, utility info and U.S. Census data.

The application also includes a button that users can click to create a pdf of the map they have made. This is an excellent feature that can be very useful for neighborhood planning processes.


The Greensboro Spatial Viewer was developed by the City’s GIS Division. In addition to having a standard, city-wide viewer, the website also has a ‘Loose Leaf Pickup Viewer’ and a viewer that allows the user to access selected elements of the Comprehensive Plan.

The ‘Loose Leaf Pickup Viewer’ allows the user to find out the availability for loose leaf pick-up in their neighborhood. This type of application could be useful for New Orleans neighborhoods, which are still concerned with picking up and dropping off garbage, brush, and housing materials.

The Greensboro Spatial Viewer also includes a web mapping engine that plots information contained in the Comprehensive Plan. This allows users to map information such as landmark and national registry properties, proposed park sites, potential school sites, and recommendations for future land use. This could be used as a template for New Orleans neighborhoods to map the recommendations that come out of their neighborhood plan. This could be an important way for people to learn about the neighborhood plan recommendations, and could lead to higher chances of implementation.
**Baltimore County Maryland’s MyNeighborhood:**  [http://www.co.ba.md.us/Agencies/myneighborhood](http://www.co.ba.md.us/Agencies/myneighborhood)

My Neighborhood provides access to Baltimore County's GIS databases. My Neighborhood is based on key themes. The themes include:

- Commercial Revitalization,
- Eastern County Bicycle Plan,
- Enterprise Zones,
- Neighborhood Facilities,
- Historic Features,
- Zoning.

The Neighborhood Facilities section maps facilities, and allows users to access particular facility information, including facility name, address, contact information and links to a specific Web site. For example, My Neighborhood: Facilities shows the location of fire stations, police stations, schools, libraries, and senior centers.

**Fairfax County, Virginia's MyNeighborhood:**

The general information view offers residents a variety of basic information about any location. In the General Information report users can find the following information about an address or parcel:

- County, state, and federal district and representative information,
- Voting precinct,
- Polling location,
- Zip code,
- School district information,
- Closest hospital,
- Closest library,
- Closest post office,
- Closest government center
- Closest police station
RECOMMENDATIONS

Our team has identified three levels of recommendations that could significantly assist in post-Katrina recovery efforts:

1. Immediate and effective dissemination of pertinent information
2. Increased access to data in consistent, dynamic formats
3. Development of intuitive web-mapping software to provide increased transparency, access and availability of data.

1. Immediate and effective dissemination of pertinent information

Invaluable in our analysis were the daily situation reports on the city of New Orleans website. While this data is updated daily, there is not way to quickly know what is new, nor any ability to view the area or changes to a specific area. We recommend the following modest changes:

- Use of color-coding for information that is new within a given week. This dated information could be marked red or blue and easily updated without having to make substantial changes to the website.
- Provide a few maps in a pdf format of neighborhood, zip code and other district boundaries mentioned in the situation report.
- Create a blog with the situation report categories for residents to provide more information on the ground in regard to debris, utility services, crime, etc. While this blog would need to be facilitated, it could become a key resource for up-to-date data for current and returning residents. Such a blog could potentially be connected with similar efforts including topic based forums on www.nola.com.

2. Increased access to data in consistent, dynamic formats

Working to maintain and deciminate data in similar formats will be difficult, but currently the best resource for GIS files and other datasets is the LSU GIS Store. We recommend the following additions to their policy:

- Allow for more general access to data files.
- Work to improve meta-data on current files.
- Allow for users to upload GIS shapefiles and pertinent data to help contribute to the store.

3. Long-range web-mapping application
A long-range effort would be to develop a web-mapping application on the City of New Orleans website. This effort would need to include the following:

- More access to city documents, including assessor data, crime data, neighborhood rebuilding efforts, current demographic information, insurance information, etc.
- Commitment to transparency and to maintaining a current and relevant site.
- A comprehensive website with active and current links to permitting, police, fire, school, public health and all other sections of government.

Overall, these recommendations point to the need for increased availability, access and transparency in regard to data from both before Hurricane Katrina and after. Public involvement and more equitable and democratic decision-making rely heavily on current, accurate and complete information. We hope that the city, parish, state and federal organizations, as well as universities and non-profits can work together to fill this essential need.

CONCLUSION

It is our sincere hope that these maps and reports and the accompanying commentary will not only be of use to the Pontilly Neighborhood but that, additionally, they can serve as examples or templates for other New Orleans neighborhood planning processes. We also hope that the project calls attention to the considerable barriers we encountered in obtaining data. As we illustrated in the maps and analysis, the lack of data and disconnected data sources significantly limits the ability to provide pertinent information to residents looking to return home. It is absolutely crucial that existing data is made available to the public. Additionally, the data should be provided in a range of formats so that neighborhoods or individuals are able to use the data in simple map format (i.e. a PDF document) or as part of an integrated mapping system such as ArcGIS.
REFERENCES CITED


