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Spring January 5, 2012

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The city of New Orleans blight fight: using GIS technology to integrate local knowledge

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Planners have a unique ability to consume information and address both policy and practical issues on a variety of scales – from neighborhood to regional to international. The use of information technology, specifically geographic information systems, continues to expand the planners' toolkit. Applying these tools requires planners to go beyond synchronous inductive and deductive reasoning and move towards 'integrated thinking'. Spatial literacy allows citizen planners to question and advocate for public policies based upon community data that has not been readily available to decision makers in municipal government. This report identifies examples of how a public participation geographic information system (PPGIS) increases engagement of stakeholders through increased access to and integration of municipal data. Post Hurricane Katrina, the *Beacon of Hope – University of New Orleans Community Recovery Project (BUCRP)* led to a shift in citizen participation by a community-led PPGIS. The *BUCRP* follows standards and replicable training methods to improve accuracy and reliability of crowd sourcing data. The development of tools and traditions where community data complements municipal resources can be used in weak market cities and those urban areas devastated as a result of natural or man-made disasters.

Keywords: urban planning; housing; economic development; data; public participation; geographic information systems; volunteered geographic information; crowd sourcing

Introduction/background

Technology is to data as data is to power. The ways in which individuals can identify, create, evaluate, and advance uses of community data appears to be endless. This, in part, is due to increased access to and integration of community and municipal data using public participation geographic information systems (PPGIS). One of the most important assets that government creates, protects, and maintains is data. In recent years, rules governing the distribution of data are managed through public information requests. Limited access to municipal data was based upon the notion that the public may misuse the information to adversely impact citizens and/or be used to identify weaknesses in city administration and/or public policies. In an effort to provide equal access to data, data have not been made available, are restricted, or are provided in a format that limits utility.

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Within the last 15 years, a movement to find an equitable solution to increasing access to public data, standardize methods from ‘bottom up’ (Talen 2000) data collection has helped the ‘public participation GIS’ (PPGIS) movement evolve. The underlying motivation for a PPGIS is to partner community, municipal, and university resources in order to improve information that can be used in an integrated manner. For the paper, Public Participation GIS¹ focuses on the ability to identify information that is citizen-derived though parcel level data collection with the aid of universities and/or community advocates, into a spatial environment.

‘Public Participation GIS is defined by Dr. René Sieber as the use of geographic information systems to broaden public involvement in policymaking as well as to the value of GIS to promote the goals of nongovernmental organizations, grassroots groups and community based organizations’ (Sieber 2006).

The new age planner must learn to balance using technology as a way to gather information instead of driving the decision-making. The issues of ‘time, access, and technology’ have not changed in the last ten years of using GIS (Thompson 2000). Jack Dangermond, president of the Environmental Systems Research Institute (ESRI)² suggests that planners must use integrated thinking that use

geographic information system (GIS) technology as a framework for understanding our world and applying geographic knowledge to solve problems and guide human behavior (2007).

In order to promote integrated thinking, the PPGIS partners must have a similar understanding of the use, development, and influence that geospatial data have as a decision-making tool. In general, open access map resources have increased spatial literacy. ‘Mashups’, *Google Earth*, *Google Streetview*, and other internet-based maps have increased visibility of community data using bounded datasets. Increased access to socio-demographic data from the US Census and market segmentation data, such as *Prizm* from Claritas³ or *Community Tapestry* from ESRI,⁴ increases public access to spatial data that can be used to identify trends and, in stable markets, predict future actions, and/or estimate purchases. In weak markets or cities that have experienced rapid decline, market indicators are no longer valid. For cities that have experienced catastrophic events, such as New Orleans, demographic and economic data do not reflect current or predicted real estate purchase behaviors, for example.

Since August 2005, the most relevant market data have come from the neighborhood surveys collected by residents, volunteers, and academic institutions (some of which are non-NOLA based). While the City of New Orleans has the means to identify and monitor problem properties, due to the volume it does not have current or accurate information on conditions of vacant, abandoned, or blighted properties. According to the Director of Blight Policy and Neighborhood Revitalization, Jeff Hebert (2010a) “the issues of blight go back to the 1960s and after (white) flight . . . and were increased significantly after Hurricane Katrina.” City departments must manage this daunting task with limited resources to accurately identify and evaluate the problem in order to distribute this information

¹PPGIS: http://en.wikipedia.org/wiki/Public_Participation_GIS

²Environmental Systems Research Institute: www.esri.com

³Claritas Prizm Market Segmentation: <http://www.claritas.com/MyBestSegments/Default.jsp>

⁴ESRI Community Tapestry: http://www.esri.com/data/esri_data/tapestry.html

to other City departments. Unfortunately, the City of New Orleans GIS. This was, in part, due to lack of data standards, centralization, secure data repository, managerial oversight, interdepartmental cooperation, and the means to equitably distribute a current, accurate, and reliable parcel layer file. Prior to Hurricanes Katrina and Rita and within five years after, the inability to have a functioning municipal GIS has crippled the city and its ability to adequately develop a comprehensive strategy to fight blight.

For those involved in moving from recovery to (economic) reinvestment, there remains a void of practical ways to collect current and reliable data so that local housing and commercial investment can be made. The related issues of identifying the socio-demographic characteristics are important in order to justify the distribution of public services (e.g. fire stations), public accommodation (e.g. accessible sidewalks), or demand-driven assets such as housing and food. The ability for the city to identify its own properties became apparent when a local activist, Karen Gadbois, was able to demonstrate that the wrong houses on the city's blight demolition lists were being torn down (Winkler-Schmit 2010).

There are multiple sources of abandoned or blighted properties in the City of New Orleans. For the purposes of this research, the potential impact of a state-wide program to manage abandoned properties in city neighborhoods is evaluated. The Louisiana Recovery Authority (as of summer 2010 the LRA is now the Office of Community Development – Disaster Recovery Unit⁵) *Road Home* program is a creative short-term planning solution to address a housing crisis that will have unknown consequences for years to come. The *Road Home* program provided affected citizens with options for reclaiming/repairing (Option 1) or selling their homes (Option 2 or 3) to the Louisiana Land Trust.

The merits of this program are still being debated, with public outcry that the funding for repairs or purchase was unevenly distributed due to racial bias. "HUD has the duty, authority, and ability to make sure Louisiana distributes funds for the Road Home program fairly," said Shanna L. Smith, president and CEO of the National Fair Housing Alliance. "Instead, HUD allowed a formula that is biased and threatens to undermine the recovery efforts of African-American homeowners. As such, it failed to take into account the legacy of racial discrimination in the housing market, which has resulted in systematically lower values for homes in communities of color."⁶ Reliable assessing or appraisal data were limited pre-Katrina but was completely unusable after, since housing values completely changed after the storm. The lack of usable data affects the ability for homeowners to make rational decisions in, and after, a major crisis. Citizen involvement is curtailed when data that would aid in their decision are overtly (and sometimes considered covertly) denied.

In an effort to aid the City Code Enforcement with identifying problem and/or hazardous properties that may not yet have been deemed 'blight' or were included in any of the government-sponsored programs (including elevation grants), community surveys have been collected but in a more systematic and proactive manner since Hurricane Katrina. The lack of valid, accurate, or reliable data sets can have unintended effects in emerging markets and create future unpredicted crisis points.

⁵State of Louisiana Office of Community Development – Disaster Recovery Unit: <http://doa.louisiana.gov/cdbg/DRHousing.htm>

⁶Katrina: An Unnatural Disaster: <http://www.soros.org/resources/multimedia/katrina/blog/?p=115>

NOLA Community-based organizations such as Beacon of Hope Resource Center, Neighborhood Housing Services of New Orleans, Jericho Road Housing, Squandered Heritage, Broadmoor Neighborhood Project in association with Harvard University,⁷ Gentilly Civic Association, Lakeview Civic Association, Make It Right Foundation, 9th Ward Neighborhood Empowerment Network Association, ACORN-NOLA and many others not identified, developed a wide variety of data collection methods, tools, and analyses for the purposes of evaluating the return rates, and in some cases, demographic and economic profiles of returning residents.

The *Road Home* program, which intended to ‘bring back’ residents and aid in neighborhood stabilization, cannot yet be adequately measured. There are over 40,000 properties in New Orleans whose owners received up to \$150,000 to rehabilitate their primary resident within three years in the Option One Program. The ability of the Office of Community Development – Disaster Recovery Unit (OCD-DRU/LRA) to have ongoing monitoring was not part of the program planning but now is being conducted through a ‘case management’ system. This report will evaluate a sample set of the first 2,308 properties whose covenant expired on April 30, 2010. A PPGIS study with the Beacon of Hope Resource Center and the University of New Orleans – Department of Planning & Urban Studies conducted in spring 2010 identified some of the issues related to data management, property condition and potential policy implications for remedial action for home owners who may not have been in compliance.

For the City of New Orleans who, at current estimates have “approximately 43,755 blight properties” (Hebert 2010b), a fraction of the approximately 40,000 Option One properties could “potentially” add to either the abandoned or blight inventory. Based upon the BUCRP study “the data also suggests the state could have given as much as \$500 million in federal rebuilding grants to New Orleanians who may never rebuild” (Hammer 2010). The map summarizes the results of this study are provided in Figure 1 below.

This report will provide results from a sample of Option One data collected from May to August 2010. This may not be generalizable to the universe of Option One properties but can address the argument by OCD-DRU/LRA that electrical data or postal delivery information are reasonable proxies for resident repopulation. By conducting a parcel level condition survey of 1,800 properties and integrating this with municipal data can serve both public and private interests and add to local and regional information on neighborhood indicators from which short- and long-term reinvestment policies are based”.

Using GIS as a “middle ware”⁸ solution for planning is a reality given the ability for technology to be the driving force to support and encourage “top down” and “bottom up” social equity through the middle. A recent attempt to test this *middle through* solution is the ‘WhoData.org’ internet mapping service that provides an online environment where community property condition data, city parcel information, and state Option One data cohabitates on a website that allows the public to see the present conditions while evaluating potential areas of concern or investment.

⁷Broadmoor Neighborhood Project: http://belfercenter.ksg.harvard.edu/project/54/broadmoor_project.html

⁸Ferreira, Joseph, ‘Smart middleware for understanding neighborhood markets’, <http://uis.mit.edu/>

PPGIS post-Katrina and public participation in weak market cities

The ability for state-run programs to evaluate program effectiveness at the neighborhood level remains a difficult, cumbersome, and very costly process. Many communities have found that creating collaborative partnerships between community-based and government organizations have proven an effective way to improve program evaluation, data compatibility, and exchange. Since Hurricanes Katrina and Rita, the City of New Orleans was met with unprecedented challenges in gathering neighborhood data that are consistent, timely, and accurate. By using standardized methodology and geographic information systems (GIS), universities have been able to assist community-based organizations with integrating neighborhood survey data with municipal data in a way that previously was not available through the City of New Orleans such as the New Orleans Redevelopment Authority, City of New Orleans (CNO) Planning, CNO, GIS, and/or State of Louisiana Recovery Offices.

Since 2005, resident-led organizations galvanized minimal resources to document the storm impact and resurgence of many neighborhoods. Neighborhoods such as the Lower 9th Ward continue to be in the national spotlight and have been used as a 'poster child' for the lack of equitable reinvestment. The lack of adequate study of lost resources, resident reinvestment and required city services has neither predicted nor adequately documented with current and community-level data.

Planners face the issue of providing equitable service to the community and are often in a difficult position since political issues and bureaucratic guidelines have rules that must be followed.

The '*Bring Back New Orleans Commission*' incorporated a community planning process within the *Unified New Orleans Plan*⁹ community roundtables post-Katrina. Many citizens grew weary and the media began to suggest that 'Katrina Fatigue' was stifling the process. However, residents began to question why community participation was required when the meetings were seen as a means unto themselves. These experiences increased distrust of planners and the so-called community planning process. It became clear that the theoretical application of Arnstein's "ladder of community participation" (Arnstein 1969) was outmoded and impractical for the issues that faced New Orleans. The goal for planners is to maintain objectivity and promote equity. While these may not always be achieved, the public would increase their trust in the process if all aspects of the decision-making process are communicated and are transparent. The PPGIS must consider post-event or emerging community conditions and reflect how roles and data-access changes the balance of power and effectiveness of a community-led process. The *Thompson Technology Tree* (Table 1) reflects an evolved community participation ladder model infused with both community-led information and technology.

In this scenario, there are many 'branches' in the development of technology-based citizen planning and the process is not linear. Identifying how and when citizens can support the management of their public resources is not solely at the discretion of the municipality. As summarized in the *Thompson Technology Tree* and outlined below, the understanding of roles and interpreting these has changed over time:

- 'partnership' – the concept of what a partner is and what contributions are made changes over time; there are times when the initial stages of a technology

⁹Unified New Orleans Plan: <http://www.unifiedneworleansplan.com/home3/>

Table 1. Thompson technology tree (2010).

<i>Thompson Technology Tree</i>	Citizen	Municipality or University
Technology-based Decision Support	^	>
IMS Monitoring and Data Maintenance	^	>
Program Implementation	+	+
Evaluation/Reporting	+	+
Data Collection	>	^
Training/Education	>	^
Phased Project Plans	>	^
Partnership	+	+
Values/Goals Definition	+	+
Communication	+	+
Identification	>	^

Legend: > = reliance; ^ = primary driver/coordinator; + = equal participation

Source: M. Thompson, 2011.

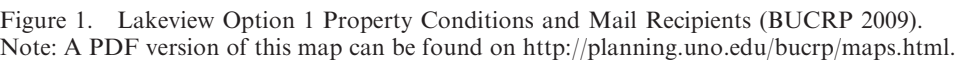
project must be ‘driven’ by the university or municipal partner but in constant consultation with the CBO; there is significant amount of time that must be taken to educate the CBO on the benefits or risks of a particular GIS strategy so that informed decisions can be made by all.

- ‘data’ – the power that data have in the ability for the partners to participate is more important than ever; access to data is becoming less onerous due to the public ‘right to know’ and multiple formats that are compatible with GIS; the issue of who owns the data, how the data can be used, distributed and maintained will be a negotiated issue throughout the project process.
- ‘independence/reliance’ – it should be the goal for the citizen planner, and its related organization, to become independent from the university-municipal partners in order to manage their own GIS; By having specific and measurable goals, the CBO will be able to track progress and determine where in the process of full implementation their customized GIS remains.
- ‘training/education’ – in order for PPGIS to expand beyond a concept and towards a ‘science’ there must be a way to document the knowledge transfer and brand the policies, practice and methods into measureable, quantifiable and verifiable terms. The partner knowledge, that includes tangible and intangible concepts, can be shared in future partnerships or can be demonstrated through best practices by CBO sister agencies.

In New Orleans, many variations of the PPGIS model allowed citizens to see the necessity in creating databases and maps that reflect neighborhood conditions. An understanding of how technology can inform and limit the disconnection between neighborhood and public data led to an even greater desire to create a shared environment for crowd-sourced data. Crowd-sourcing data collection is a super-powerful way of collecting a massive amount of data.¹⁰

Blended PPGIS models, such as the Broadmoor Neighborhood Association (BNA) and Harvard University project, allowed citizens to identify assets and create a body of local knowledge that did not exist pre-Katrina. However, BNA is

¹⁰GeoSpatial Solutions Weekly ‘*Crowdsources GIS Data*’. Accessed 30 July 2011. <http://www.gpsworld.com/gis/gss-weekly/news/crowdsourced-gis-data-9850>



One of the most prolific and well-respected data sources is the Greater New Orleans Community Data Center. As a warehouse of data and, recently with the

assistance of the Brookings Institute, provider of secondary market reports on housing reinvestments and socio-demographic trends, the community is closer to being able to see change but still cannot fully participate in the knowledge-based data sharing.

New Orleans, more than ever, is an environment that requires creative and new ways of thinking through complex planning issues. For example, Chapter 15 in the City Master Plan, a community participation program has the force of law and requires citizens to engage in neighborhood planning in ways never before provided in the city charter. Data sharing and technology are significant components of this plan as described below:

Use multiple forms of notification to communicate between the CPC and citizens. Other forms of communication should be employed, including on-site notification, electronic notification (including the ability to easily receive comments or feedback) with interested stakeholders and organizations, along with mailed notification. The notification policy should ensure that a broad cross-section of the community receives information.¹¹

However, the inability for the city departments to seamlessly share data interdepartmentally will continue to thwart practical implementation of the Citizen Participation Program. The lack of an integrated and smart intergovernmental data management system plagues many cities throughout the United States. In the following, there is a discussion of how a successful PPGIS in New Orleans emerged from creative data sharing collaborations that benefit public, private and municipal interests.

The state: Option One

The Louisiana Recovery Authority¹² was created after Hurricanes Katrina and Rita to manage the affected State of Louisiana properties. The *Louisiana Land Trust* (LLT) was a non-profit organization formed to manage the properties that have been purchased by the State of Louisiana under the *Road Home* Program. There were several different options for the disposition of the LLT properties, including Options One, Two, and Three. The maintenance and disposition of LLT-purchased Options Two and Three were immediately focused on since they had the most direct impact on the former residents and neighborhood recovery. However, the potential for additional abandoned or blighted properties that could result from the lack of reinvestment of Option 1 homeowners became a local concern.

The State of Louisiana/Louisiana Recovery Authority¹³ Option One properties allowed for homeowners to obtain a grant of up to \$150,000 to renovate their property. This grant was based upon the pre-storm value of the property and not the damage assessment. Homeowners were required to begin construction on their dwellings within three years of receipt of the funds or were required to return the funds to the LRA. This covenant exposed approximately 30,000 properties in New Orleans to this deed restriction.

¹¹City of New Orleans, *City Master Plan and Comprehensive Zoning Ordinance, Volume 2, Community Participation Program*: https://www.communicationsmgr.com/projects/1371/docs/Vol2_Ch15_Community_Participation_Program.pdf

¹²Louisiana Land Trust: <http://www.lalandtrust.org/>. In Summer 2010, this became the Office of Community Development, Disaster Recovery Unit (OCD-DRU).

¹³Louisiana Recovery Authority: <http://lra.louisiana.gov/splash/>

In the fall of 2009, a study conducted by the Beacon of Hope Resource Center, and supported by the University of New Orleans Department of Planning and Urban Studies, was able to identify problems with the customer service ‘snail mail’ outreach (versus non-parcel level evaluation) of the LRA Option One properties in the Lakeview neighborhood. Based upon this study, some of the dwellings identified as occupied were not, since the LRA used alternative means for establishing occupancy.¹⁴ The Beacon of Hope was able to identify why the properties were not rehabilitated (bad contractors) and mismatched information on occupancy (lights on but nobody home).

The data provided by Entergy (electric company) and enhanced by GCR, Inc. (private data management company) are used to identify occupancy but this does not provide any information on condition or whether a resident dwells in the house. Another data set that has been used as a proxy for occupancy has been US Postal Service information. Again, this is problematic since mail can be delivered to an unoccupied dwelling.

While the Beacon Option One study was inconclusive, this was another call to action for residents to find ways to have direct access to city and state data that were necessary to inform immediate and future investment decisions. The Beacon Study raised policy questions that have not yet been sufficiently answered since the LRA organization. In the Spring of 2011, the LRA provided Beacon with a one year grant to monitor and case manage 250 non-compliant Option one properties to learn more of the causes and recommend remedial actions. To date, there currently has not been any change to the policy to have non-compliant residents return funding, nor is there any current information on the repopulation or rehabilitation of properties under the authority of the State Office of Community Development, Disaster Recovery Unit.

The *Beacon of Hope – University of New Orleans Community Recovery Project (BUCRP)* used neighborhood knowledge and an experienced University management team understands the issues related to data collection, management and mapping that was, or is, driven by residents. The BUCRP provided public testimony on these findings to the LRA in order to require property-specific reporting given the impact that this information can have on residents immediately and far into the future. The availability of state-of-the-art GIS technology aided project efficiency, accuracy, and dynamic map property evaluations that will be used to aid in case management and inform both public and municipal administrators. In this way, the LRA, the Community Partners and residents will be able to effectively manage potential opportunities that will influence the neighborhood stability, economic reinvestment, and hope for the renewal of New Orleans. This form of *Volunteered Geographic Information (VGI)* is a new phenomenon in New Orleans since the non-profit sector did not contribute in a significant way pre-Katrina (Haklay et al. 2010).

Community–university response: BUCRP

The Beacon of Hope Resource Center (BOH) has received both local and national recognition for the community based operation that has made a significant difference

¹⁴Road Home Program: http://www.nola.com/hurricane/index.ssf/2010/04/road_home_rebuilding_covenants.html

in the recovery of New Orleans. The BOH was created in 2005 by Denise Thornton¹⁵ who vowed that after being in the Superdome post Hurricane Katrina that she would provide a way for other neighbors to find their way home. Denise and Doug Thornton opened their home as the first “Beacon” in Lakeview and started out as a respite for weary souls who had limited resources but a will to reclaim their storm-ravaged city. With a clipboard and paper, Denise began to document the condition of her neighborhood in an attempt to document where her neighbors were but also to identify areas of concern that could be addressed by public safety and code enforcement.

The BOH relies on community reinvestment through social capital since the resident-driven community surveys are done through a ‘block captain’ that supervises neighborhood volunteers. There is a commitment to ensure that surveys are completed in a consistent and timely manner. Many of the surveys are completed within three–six months and covers multiple neighborhoods and hundreds of land in the Gentilly and Lakeview neighborhoods.¹⁶

The University of New Orleans – Department of Planning and Urban Studies (UNO-PLUS) is an urban university that recognizes the need to provide direct service to residents and support municipal organizations in this urban environment. UNO-PLUS “. . . has been an important regional institution helping to train leaders in urban issues for over 40 years.”¹⁷ The Regional Planning Commission¹⁸ (RPC) was created to service local and regional planning organizations. The RPC, specifically Lynn Dupont (Principal Planner and GIS Manager), was integral in providing emergency GIS services post-Katrina and continues to aid municipal offices and community organizations in recovery analysis. The RPC primarily services Jefferson, Orleans, Plaquemines, St. Bernard, and St. Tammany parishes.

This community-university-municipal team created an experienced, reliable team that created a model PPGS that both city managers and national parties have identified as a successful model. The BOH M.O.D.E.L.¹⁹ has a focus that is broader than the community survey component. However, the community organizing, visioning, and activism that BOH provides is guided by the knowledge obtained with what is needed to grow and sustain the community beyond re-population.

The Beacon of Hope Resource Center and the University of New Orleans Department of Planning and Urban Studies started a pilot project PPGIS in 2008, including creation of the Beacon Community Data Information System. Over the next 2 years, the *Beacon of Hope – University of New Orleans Community Recovery Project* (BUCRP)²⁰ collaboration resulted in an ongoing Beacon of Hope GIS Program. The BUCRP PPGIS documented neighborhood change with a primary focus on mapping blighted properties. The BUCRP assisted the other 12 Beacon Centers in the neighborhoods of Lakeview and Gentilly with mapping services and survey training.

¹⁵Beacon of Hope Resource Center: <http://www.lakewoodbeacon.org/>

¹⁶Beacon Neighborhood Service Areas: <http://www.lakewoodbeacon.org/pages/locations.html>

¹⁷Department of Planning & Urban Studies, University of New Orleans: <http://planning.uno.edu/>

¹⁸Regional Planning Commission: <http://www.norpc.org/>

¹⁹Beacon M.O.D.E.L.: <http://www.lakewoodbeacon.org/pages/MODEL.html>

²⁰*Beacon of Hope – University of New Orleans Community Recovery Project P*: <http://planning.uno.edu/BUCRP/>

Of most importance was the ability to standardize the process of data collection, input, and maintenance with a goal of minimizing error, increasing accuracy, and streamlining the data collection process. The University of New Orleans, Department of Planning and Urban Studies followed data standards that met the Federal Geographic Data Committee (especially for metadata, data dictionary, and creation of a Beacon GIS Manual). According to Linus' Law, "... the more people involved and watching over a project, the more likely errors can be spotted and fixed quickly."²¹ In this case, the BUCRP increased the ability to increase the level of accuracy and consistency through data standardization and training protocols. It remains equally important to identify key state data standards that are found in Louisiana Public Records Act LA. R. S. Title 44 which states, in part, "No person shall be denied the right to ... examine public documents, except in cases established by law."²²

While much of the focus has been on looking at the response after Hurricane Katrina, the BOH is now anticipating issues on what may further inhibit the renewal of New Orleans neighborhoods. There are over 40,000 Option One properties that have not yet been fully evaluated for program compliance. Initial mapping results have provided information on the location but not the details related to condition, development plans or owner status.

Based upon the BOH study, several issues emerged that suggested that the existing policy (Spring 2010) of evaluating a sample of the LRA properties may not be sufficient to adequately understand property conditions nor find solutions for mitigating circumstances if owners were not able to rebuild. The goal of the BOH was to raise the question about how residents, who might be victims of contractor fraud, financial hardships, or lacked adequate insurance to rebuild and raise their dwellings, should be addressed instead of the potential adverse impact of being sued or having an attachment on their deed for non-repayment of grant funds.

After UNO-PLUS provided pro-bono training, project development, and assisted with the implementation of a fully-functioning GIS at BOH, the project ended in May 2010. BOH has continued to provide condition surveys through the "survey captain" model and has expanded its support of neighborhoods under the "Beacon" umbrella. The effectiveness of survey training and document standardization has allowed this neighborhood organization to increase the visibility of the area, directly affected re-investment by providing area market data to encourage commercial reinvestment, and has played a major role in identifying future areas of potential blight, the LRA Option One properties.

The ability to respond to neighborhood change through bottom-up surveys that are timely, consistent, and accurate has been the cornerstone of the BOH community model and is standard protocol for public participation GIS. Information technology supports the community process by allowing those directly involved in reinvestment, namely municipal managers, and commercial businessmen to make better business decisions when there is limited reliable data in an environment.

The opportunity to identify existing and future redevelopment opportunities has been a difficult process for municipal departments during a period of restructuring where resources are limited. With input from stakeholders, community partnerships,

²¹ESRI ArcWatch, March 2011: <http://www.esri.com/news/arcwatch/0311/power-of-vgi.html>

²²Office of the Attorney General – Louisiana. <http://ag.state.la.us/Article.aspx?articleID=20&catID=10&printer=1> accessed 2 August 2011

and a vision for the rebuilding of New Orleans, local and state government has been able to create mutually beneficial partnerships. While the issue of how to move Road Home and other blight properties is a major concern, as mentioned, the Beacon of Hope identified potentially a new stream of blight, the LRA Option One properties. The program and its impact on the ability to revitalize New Orleans must be considered given the variety of properties that could impact the housing market now and in the immediate future. The Beacon Option One Study was limited in scope and physical neighborhood area. In the Spring of 2010, UNO-PLUS expanded the research and study area to evaluate the potential impact of non-compliant Option properties city-wide. The methodology for conducting the study and results follow.

Option One study methods, mapping and results

Further study of properties outside of the micro-evaluation of Option One properties in the neighborhood of Lakeview by the Beacon of Hope was required. The limitations on property identification continued because the City of New Orleans parcel layer remained out of date and not readily accessible to the public. The lack of spatially integrated data that identifies the 30,000 Option One properties through the standard geocoding (address matching) process was problematic and not reconciled after a few months of trying a variety of geocoding services. Therefore, it was determined that a city-wide sub-sample of the Option One properties would be conducted. The dataset was based upon the first 2,308 properties whose covenant expired on April 30, 2010. From May through August of 2010, a total of 1,803 properties received a condition assessment, images were collected, and these results were mapped in a geographic information system database.

Based upon the routing of the Network Analyst, properties were grouped in approximately 30 parcels that were in close proximity. The property survey form was based upon the 'standard community survey form' that was developed by the Neighborhood Housing Services of New Orleans.

The results of the study (see Table 2) suggest that of the 1,803 properties that were evaluated throughout the City of New Orleans, 1,409 or 78 percent were rehabilitated and are in good condition.

This information is displayed on the following comprehensive map (Figure 2). To date, a geographically-referenced map of Option One properties from the OCD (formerly LRA), in a sample or the whole dataset, has not been made available to the public.

If this information were made directly available to NORA, other city departments and the public, this would be an additional means to understand re-occupancy, property condition and current condition trends. While spreadsheets and

Table 2. UNO-PLUS Option 1 Study.

Condition	Number of properties
Good	1409
Fair	277
Poor	67

The research was conducted by Dr Michelle Thompson and Husni Qurt, in UNO-PLUS in summer 2010.

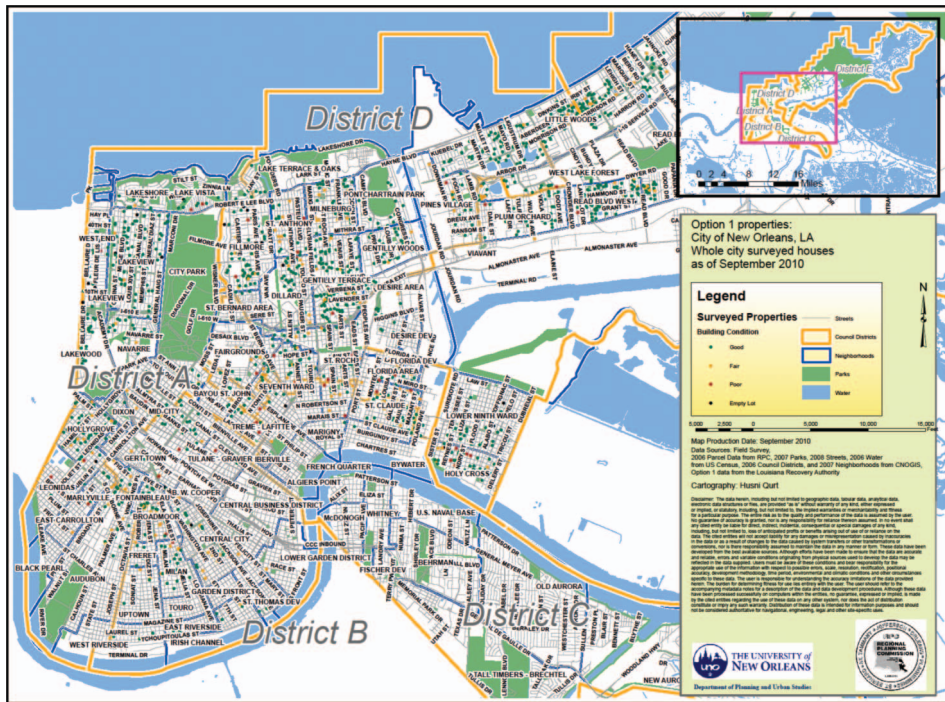


Figure 2. UNO-PLUS Option 1 Study - 2308 (2010).

static maps have been provided to select community partners or be shown in public meetings, holistic planning cannot be achieved without the ability to assemble data at varying levels of government and spatial geographies on demand.

Future research and opportunities: info-tech planning

The future of community asset management and PPGIS will depend on the response to how data are developed, managed, integrated and evaluated within a publicly accessible IMS. State and Federal data maintenance standards such as those provided by the Federal Geographic Data Committee²³ should guide the development of data but are not always at the forefront when developing new data streams. Both BUCRP and *WhoData.org* have provided ways that New Orleans Community Data has begun to advance crowd-sourcing.

Ensuring that these standards reflect guidelines developed by public managers will increase the ability for community planners to effectively support and participate in adopting new program policies (such as the 'Fight the Blight' strategy) at the neighborhood level.

Citizen mappers and community advocates continue to influence public policy. In New Orleans, stakeholders have been able to help define new markets, document neighborhood conditions, and directly contribute to the discussion of proactive planning through the use of PPGIS.

²³Federal Geographic Data Committee: <http://www.fgdc.gov/>

High-end software, such as ArcGIS,²⁴ cannot be used by most community-based organizations so they are reliant on limited or no community mapping systems. Most Universities can support community-based organizations and citizen planners through advocacy and serving as a government liaison. As part of the mission of the UNO-PLUS, former theories in communities planning have been advanced by the infusion of technology in the 'ladder of public participation' in a practical way. As an urban university, UNO-PLUS has been charged with preparing a new generation of planning students who must rethink the model of community and/or advocacy planning in the face of chaos and uncertainty.

While GIS is still considered a tool, it serves as a medium that can improve access and increase social equity whether through advocacy or by mandate. A fundamental theme when evaluating how PPGIS can evolve and reflect the local market circumstances depends upon how effective communication is when deploying a community-wide GIS. The ability to share information from the ground-up and from the top-down can be achieved when standards of data collection are based upon a heuristic of unbiased and replicable methods. The goal of data-sharing begins with a shared vision, to aid in the transformation of a city living with despair to one focused on a future of hope.

The City of New Orleans has begun a new year where the administration holds a more open view of how the community is the city and vice versa. Added to this are the silent partners – universities, volunteers, and many local and national stakeholders who, with their combined resources are working with the city to reach seemingly unattainable goals. Planning practitioners are finding new ways to manage formerly disparate data sources within a GIS that can inform, support, and encourage data sharing in meaningful ways. One of these ways is the newly created (as of 1 February 2011) *WhoData.org*.²⁵

Public policy cannot rely on theories of planning nor does empirical data, especially sampled, begin to provide the true picture of community redevelopment. It is by combining local knowledge with integrated data in context that future info-technology planners, and their municipal partners, will be able to create an ideal community that will allow the *new* New Orleans to thrive and grow.

Acknowledgements

The author's gratitude extends to Husni Qurt, PhD Student from UNO, Brian Baldwin from 3Mangos, the Data DIVAs (Data Integration & Visualization with Attitude): Lynn Dupont and Clare Brown from the Regional Planning Commission, Katherine Cargo – New Orleans 911, Dr Allison Plyer from the Greater New Orleans Community Data Center, Denise Ross with the City of New Orleans Department of Geographic Information Systems, Tina Marquardt and Denise Thornton from the Beacon of Hope Resource Center, Karen Gadbois and Susan Lewis of Squandered Heritage.

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²⁴Environmental Systems Research Institute, ArcGIS. www.esri.com

²⁵Thompson, Michelle. *WhoData.org*. <http://planning.uno.edu/whodata/index.html> accessed 2 August 2011

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