Rebuilding after Hurricane Katrina: The Big Easy, and the Long Road Home

Jennifer S. Boucher

Bemidji State University

Political Science Senior Thesis

Bemidji State University

Dr. Patrick Donnay, Advisor

April 2011

Table of Contents

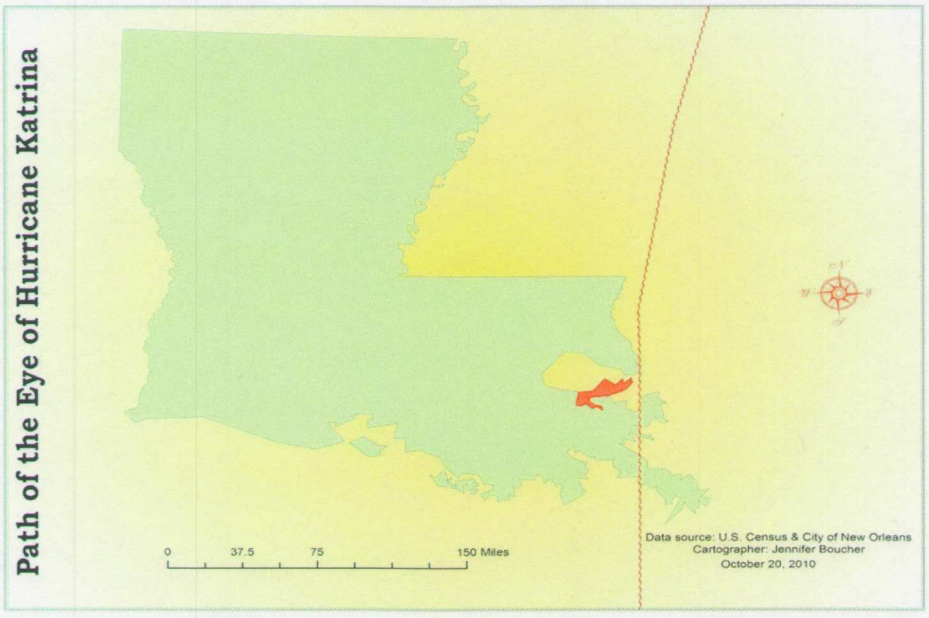
Abstract

The objective of this study is to analyze the influences of demographic patterns, planning politics and funding disbursement processes in rebuilding New Orleans, after Hurricane Katrina's storm surge engulfed several neighborhoods of Orleans Parish Louisiana, on August 29th 2005. Immediately following the storm surge, national opinion makers began debating the possibility of shrinking the footprint of New Orleans, as part of the rebuilding process. Although recovery efforts were begun almost immediately, at the five year anniversary of the cataclysmic natural disaster more than a hundred thousand of New Orleanians are still displaced. Utilizing regression analysis as a quantitative measure and qualitative analysis of policies changes, the anticipated results will demonstrate that race is less significant, contrary to what some would expect. It is anticipated that dimensions of participatory politics and environmental planning are significant factors behind the planning process rather than demographic variable which are shaping the rebuilding of New Orleans.

Introduction

Hurricane season 2005 was a season of firsts, first season with twenty-eight named storms, the first season to have fifteen hurricanes, first with four of the fifteen hurricanes being category 5, and finally the first season with four major hurricanes hitting the United States. Hurricane Katrina was the fifth hurricane of the 2005 season, but the first of two to hit New Orleans. Figure 1 shows the eye of Hurricane Katrina passed just off the eastern tip of Orleans Parish.

Figure1; Eye of Hurricane Katrina



Katrina would forever change New Orleans, bringing to light claims of neighborhood blight and racial polarization in the Lower Ninth Ward. As media crews covered the catastrophic effects of Hurricane Katrina, they reported stories of neighborhood destruction. Hundreds of thousands of homes being completely destroyed or under

water, cars turned upside down, thousands left homeless while others lost their lives. Shortly soon after the stories included those of inadequate maintenance of the levees by the Army Corp of Engineers, the lack of government funding to levee projects, and a general lack of preparedness for natural disasters splashed across the headlines of newspapers and nightly news broadcasts.

Many national pundits and opinion leaders wrote or spoke out about New Orleans in the wake of Hurricane Katrina. Many of these individuals were suggesting that New Orleans shrink its physical size, something that no large city had apparently done after a disaster in modern-era history, at least in dramatic fashion (Vale and Campanella, 2005). Despite this intimidating historical hurdle and the fact that most residents of the 'Big Easy' flooded areas were still displaced, debates raged among the city's politicians over whether to "shrink the physical footprint," as the idea to shrink the city's physical size came to be public. The issue made their way to the top of local policy agenda's, when architects, developers and academics, mostly from other cities, came to town to advise a mayoral advisory panel, the Bring New Orleans Back Commission (BNOB), about recovery efforts. Yet just two years later, pre-storm circumstances prevailed in New Orleans. In fact the *Corporate Crime Reporter 2007* put Louisiana as the most corrupt state in the nation, that the economy is driven by politics and political connections among the elite making the decisions.

It did, however, lead to renewed civic engagement in heavily flooded areas, such as the Lower Ninth Ward, and those with more middle class populations. Existing neighborhood organizations increased their membership numbers, and new umbrella organizations were formed. An example of such a group is the Neighborhood

Partnership Network (NPN), a nonprofit organization aimed at neighborhood collaboration, increase access to government information while strengthening the voices of individuals and communities across New Orleans. This increase in community collaboration was seen locally and nationally as a focus of hope for New Orleans and its pending recovery.

While New Orleans may not be as racially heterogeneous as other large cities in the United States, it has certainly had its share of bad publicity on its racial and socioeconomic divisions. For instance the city of New Orleans population is composed of 28% Anglo-Americans, 67% African Americans, and 5% classed as others, while New York City in comparison has 45% Anglo-American, 25% African Americans, and 30% other (Census Bureau, 2000). Unfortunately, these divisions appeared to contribute to the lack of intra-city, cooperative relationships among the citizens of New Orleans, and community based groups, government leaders and institutions and other private organizations. Whatever the case was, this study has found that racial and socioeconomic divisions were not significant factors in the rate of rebuilding, when comparing them to the actual devastation of damage caused to individual neighborhoods. For Hurricane Katrina did not care what race you were, or the color of your skin, or the amount of money you made.

Literature Review

Many researchers have examined an assortment of topics relating to Hurricane Katrina and the catastrophic devastation it brought to New Orleans. Katrina would forever change New Orleans, bringing to light claims of a non-regime, despair and racial polarization. Although recovery efforts were begun almost immediately, at the five year anniversary of the cataclysmic natural disaster more than a hundred thousand New Orleanians are still displaced. It brings to question if participatory politics is related to the neighborhood recovery, or if it's the actual level of devastation caused in each neighborhood, and whether or not race actually plays a role in the recovery process.

Historical Context

Distinctive Louisiana social characteristics reflect approaches used to manage hazards and disasters. Louisiana has historically been a poor state in economic terms, but rich in culture and biodiversity. The unevenness of wealth in this state makes it a unique problem when deciding where to rebuild. There has been a huge public protest of those not being able to rebuild back in the devastated areas that are prone to repetitive flooding. The bottom line is that leaders are not financing risky development, so the people (especially the poor) are not placed in harm's way if another significant natural disaster were to occur. To get a better understanding of what has hindered the rebuilding process of New Orleans, which seems to be on a very slow track to rebuild, a look at how it came to be New Orleans is needed. In *The Lost Year* (2006) Dan Baum describes that the French settled on the high ground of the Mississippi

River oxbow, which later would become the heart of New Orleans. It was the freed African Americans and the early European immigrants too poor to afford to live in the already established crowded city, who settled in the marginal land. It was the European immigrants who first erected "shotgun style" houses on the marshy cypress lands of the modern day Ninth Ward. They built the houses up off the ground and elongated them for easy ventilation in the hot humid summers of Louisiana. With the lack of educational institutions, hospitals or transportation, the community of immigrants soon developed a strong bond between families setting up their own means to educate children and take care of the elderly or the ill. At the turn of the 20th century, New Orleans leaders began planning for the new industrial canal which connects Lake Pontchartrain with the Mississippi River. They would run it down the middle of the 9th ward, completely cutting off what we today call the Lower Ninth Ward. Eventually three bridges would connect the Lower Ninth Ward, or the "dark skinned" area as it was referred to by locals of the upriver communities of whites or "light skinned" people.

So what is it that gives the people of New Orleans a sense of place? Morgan, Morgan, and Barrett (2006) wrote in the aftermath of Hurricane Katrina of the inequalities that seemed to be historically embedded in our national system of heritage preservation. They also described the multicultural community of the Lower Ninth Ward, with significant bonds and strong individual identities and heritages shared among community members. Landphair (2008) in particular writes, "how the area grew, flourished, and suffered, amid municipal neglect and increasing impoverishment, Lower Ninth Ward residents developed cross-generational neighborhood bonds that encouraged activist pursuit of better public services and nourished cultural traditions singular to New Orleans"(Landphair, 2008). Although the Lower

Ninth Ward was home to roughly fourteen thousand people prior to Hurricane Katrina, which was equivalent to about three percent of the population, its story of devastation is known around the world. Unexpectedly, the Lower Ninth Ward historically characterized as neglected and on the outer boundaries of New Orleans power structure, is now a household name across the nation, representing the storm's human disaster.

Demographic Issues

Fussell (2007) writes of the vast multiracial culture of New Orleans and the history it brings to the state, but on the other hand he notes the rumors that have arisen about the rebuilding of New Orleans with a whiter, wealthier look to it. Government funding may be slow played as a deterrent to keep the lower income blacks from returning back to the neighborhoods. This statement is one that seems to be repeated in many articles on the rebuilding of New Orleans. Burns and Thomas (2006) point out that under Louisiana's Road Home (LRH) program the property owners are allowed up to $150,000 in federal aid, minus their insurance payments for damages caused. However it all sounds good, but the insurance companies estimating damages well below what it will cost to repair or rebuild, so even with the LRH money residents are falling well short of the money needed to rebuild.

Fussell, Sastry, and VanLandingham (2009) wrote *Race, socioeconomic status, and return migration to New Orleans after Hurricane Katrina,* compare rates of return migration to New Orleans, by using American Community Survey (ACS) 2005 and the Displaced New Orleans Residents Pilot Survey (DNORPS) 2006. The study shows that, the whites did return back to New Orleans faster than the blacks, however it also showed that if whites hadn't moved back

by the ninth month following the disaster they probably weren't going to come back. Whereas blacks didn't really start to migrate back until the sixth month, and continue to move back in small groups even today. By using multivariate logistic regression analysis they were able to show the importance of variables, like race and education. In conclusion their analysis showed that race is not a significant factor in return migration, but rather the significant factor was the level of housing damage.

Legal and Bureaucratic Challenges

As difficult as the immediate emergency response proved to be, challenges associated with recovery proved even more complex. Breunlin (2006) wrote of local, state and federal governments not opening public housing and not efficiently providing basic health care and public education needs to the displaced community members. Advocates of the displaced community members believe that human rights are being infringed upon. Breunlin identifies the differences of governmental views over property and ownership. He notes the connection that community members felt or still feel toward the Lower Ninth Ward, even if it was public housing or low income homes, government officials don't see the generational connection to the property. Decisions about these and other aspects of recovery are affected by laws and regulations on the part of all three levels of government. One example of this bureaucratic red tape is under the federal Robert T. Stafford Act, public assistance projects required a 10 percent cost share from local governments upfront before the remaining 90 percent in federal grant money can be used. Many of the estimated 23,000 disaster recovery projects in Louisiana had been put on hold because local governments did not have the resources to provide the match

funding. The local match requirement has been waived 32 times since 1985 when per capita rebuilding costs have been deemed excessive, but had not yet been waived for Katrina and Rita (FEMA, 2007).

As early as 200, FEMA begins to turn more focus towards hazard mitigation, the Robert T. Stafford Disaster Relief and Emergency Assistance Act (Disaster Mitigation Act of 2000) was amended to foster united mitigation planning, coordination, and implementation between states, tribes, and jurisdictions. The Disaster Mitigation Act of 2000 requires counties/parishes/tribes, and/or jurisdictions to develop hazard mitigation plans in order to receive federal disaster mitigation dollars for building safer communities. The Robert T. Stafford Disaster Relief and Emergency Assistance Act encourages "the development of comprehensive disaster preparedness and assistance plans, programs, capabilities, and organizations by the States and by local governments." It also achieves "greater coordination and responsiveness of disaster preparedness and relief programs" States that meet the enhanced planning criteria get increases of 15% to 20% of the Hazard Mitigation Grant Program funds ((HMGP) (FEMA State and Local Mitigation Planning how-to guide, 2002)).

The question of whether it is feasible or justifiable to change the look of New Orleans physical footprint, and move people from areas which they once called home, is one of many divisive issues generated by the rebuilding process in Orleans Parish. Burns and Thomas (2006) write of "the absence of a clear line of authority creates significant ambiguity about how the city will rebuild", in their paper *Power, Politics, and the New Orleans Non-Regime.* They discuss how federal, state and local funding is not reaching the people in the communities, and how

organizations such as Bring New Orleans Back Commission (BNOBC) and Louisiana Recovery Authority (LRA) are stacked with attorneys, gas and oil executives, presidents of companies, chief executive officers and many members coming from other states, most of which have strong ties to the National Republican Party.

LRA was created by the Governor of Louisiana by executive order in October 2005. The purpose of the LRA was to be the state's voice to the federal government, by means of providing documentation for funding needs, and demonstrating transparency and accountability in funding decisions (Olshansky, 2007). In the end the LRA was the one who provided policy decisions for the use of the $10.6 billion in Community Development Block Grant funds(CDBG) provided by the Federal government in December 2005 and June 2006. As well as the estimated $1.15 billion in hazard mitigation grant that FEMA was authorizing (Olshansky, 2007).

The BNOBC was created by Mayor Ray Nagin consisting of a seventeen member board of community leaders that would oversee the development and rebuilding of New Orleans (Olshansky, 2007). BNOBC was divided up into seven subcommittees which included: urban planning, education, cultural, infrastructure, government effectiveness, health and social services, and economic development. The subcommittee of urban planning was chaired by developer Joe Canizaro. At Canizaro's request the Urban Land Institute (ULI) sent a team to New Orleans for a week with the task of developing a set of recommendations for the rebuilding of New Orleans. The ULI released their final report November of 2005. The ULI report made the politically poisonous suggestion of shrinking New Orleans footprint. The

recommendations made by the ULI were that the lowest lying neighborhoods not be rebuilt, but rather be made into green space areas (Horne and Nee, 2006). But in an election year, Mayor Nagin publicly denounced the plans, an openly stated he planned to rebuild all of New Orleans including the most devastated areas like the Lower Ninth ward.

In conclusion, all the researchers show Orleans Parish was hit hard by Hurricane Katrina, and that low lying areas like the Lower Ninth Ward was the most devastated. Previous studies on Hurricane Katrina seem to have a few main theories behind the slow recovery process in New Orleans. The non-regime or lack of a clear governmental authority in the rebuilding process, the race factor of white versus black, the actual level of housing damage caused and finally " is it feasible to rebuild in repetitive flood areas". While these are all very important questions, this study will examine them all to determine which, is the most significant factor hindering the rebuilding of New Orleans.

Methods and Analysis

A data base was compiled by getting demographic data on the neighborhood characteristics for neighborhoods within Orleans Parish from the Greater New Orleans Community Data Center website, along with the use of the U.S. Census Bureau website. ArcGIS 10 was used to overlay the Census tracts over the neighborhood blocks, so that census tract data could be further broken down by neighborhoods. Figure 2 shows Orleans Parish neighborhoods highlighted in pink with the census tracks outlines in black. Upper left hand corner inset map of Louisiana with Orleans Parish highlighted in red.

Figure 2; Orleans Parish with inset map of Louisiana

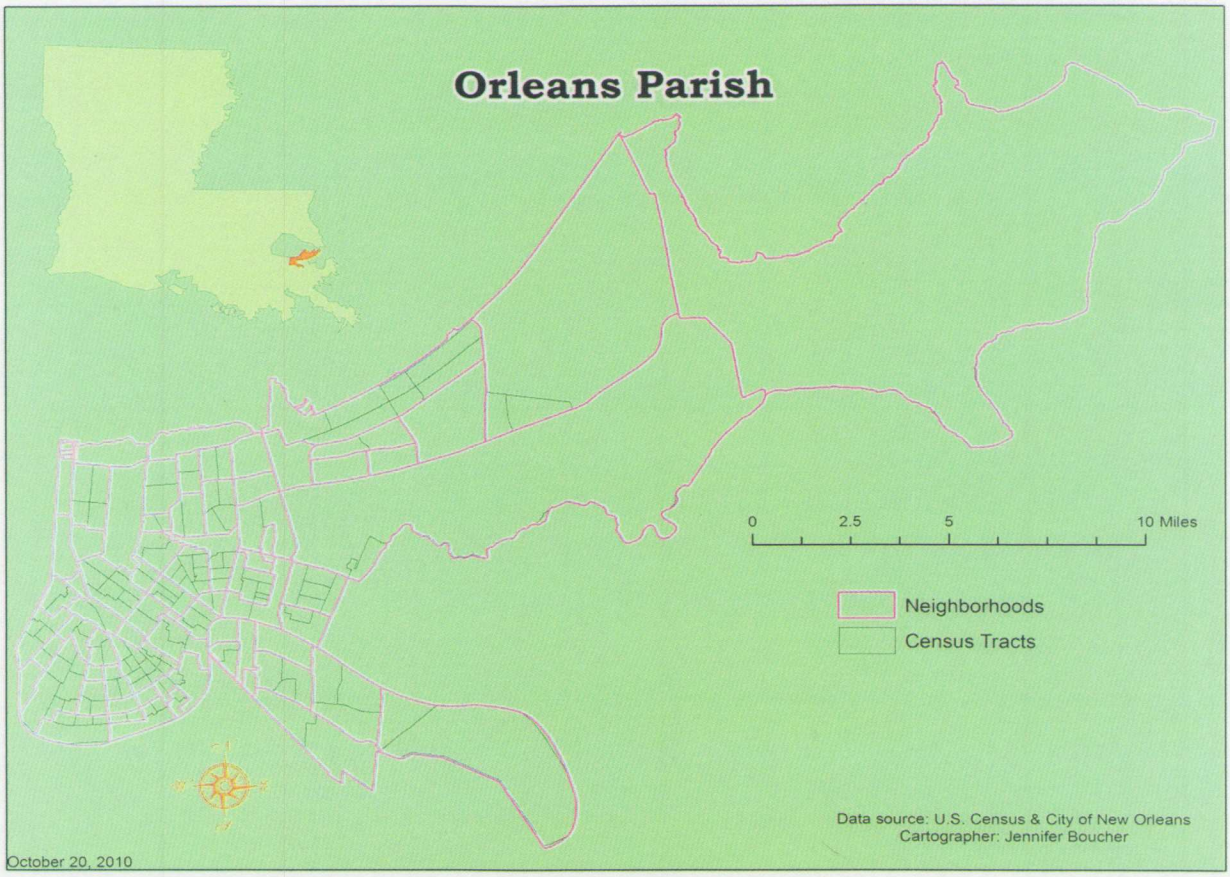
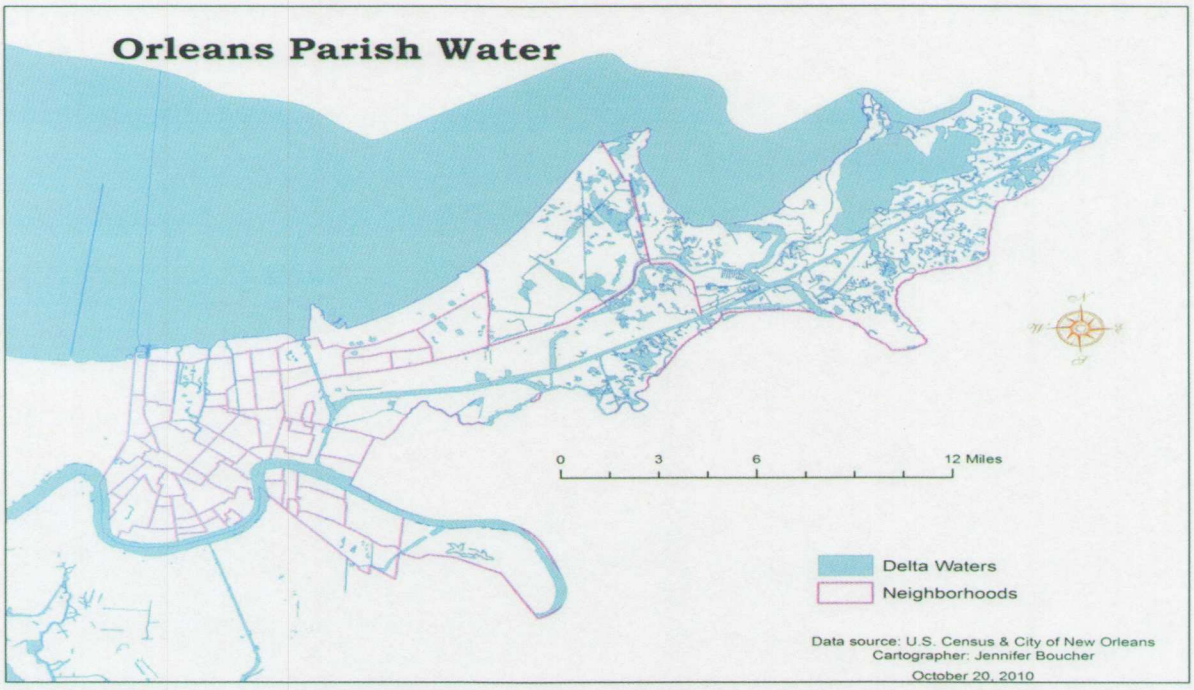


Figure 3 was created to give a visualization of all the water in and around Orleans Parish, to help provide a better understanding of what the residents of Orleans Parish had to deal with.

Figure 3; Map of water in and around Orleans Parish



Unit of analysis in the study is the seventy-three neighborhoods of Orleans Parish, with the dependent variable being the households actively receiving mail. The data range covered 2005 pre-Katrina, along with post-Katrina years of 2008, 2009, and 2010. The data from 2010 for each neighborhood was then divided by the pre-Katrina 2005 mail recipients in each neighborhood to give the individual neighborhood recovery percentage as of June 2010. Table 1 shows the number of households actively receiving mail in each neighborhood within Orleans Parish.

Table1; Households actively receiving mail by neighborhood in Orleans Parish

Neighborhood	June 2005	June 2008	June 2009	June 2010	% Recovery June 2010
Algiers Point	1,322	1,351	1,417	1,429	108%
Audubon	7,576	7,344	7,292	7,319	97%
B.W. Cooper	1,269	357	345	379	30%
Bayou St. John	2,292	1,921	1,976	2,027	88%
Behrman	3,878	3,697	3,832	3,670	95%
Black Pearl	1,115	1,107	1,082	1,082	97%
Broadmoor	3,139	2,551	2,324	2,378	76%
By water Neighborhood	2,570	2,091	2,165	2,181	85%
Central Business District	1,316	1,585	1,939	2,060	157%
Central City Neighborhood	8,175	6,405	6,233	6,417	78%
City Park	1,670	1,534	1,585	1,600	96%
Desire Area	1,419	456	532	582	41%
Desire Development	136	109	128	230	169%
Dillard	2,608	1,728	1,767	2,040	78%
Dixon	631	453	529	565	90%
East Carrollton	2,286	2,275	2,276	2,244	98%
East Riverside	1,539	1,601	1,472	1,474	96%
Fairgrounds	3,091	2,843	2,919	3,000	97%
Filmore	2,831	1,345	1,480	1,686	60%
Fischer Project	300	294	291	292	97%
Florida Area	1,351	457	523	614	45%
Florida Development	460	1	2	2	0%
French Quarter	4,106	3,917	3,936	3,888	95%
Freret	1,014	671	789	839	83%
Garden District	1,216	1,192	1,192	1,179	97%
Gentilly Terrace	4,417	3,380	3,589	3,745	85%
Gentilly Woods	1,512	764	906	979	65%
Gert Town	1,513	1,411	1,547	1,545	102%
Hollygrove	2,751	1,772	1,889	1,995	73%
Holy Cross	2,240	774	1,061	1,226	55%
Iberville Development	830	815	801	646	78%
Irish Channel	1,973	2,002	1,913	1,907	97%
Lake Catherine	733	420	420	439	60%
Lake Terrace & Oaks	688	653	657	675	98%
Lakeshore/Lake Vista	1,608	1,424	1,482	1,495	93%
Lakeview Neighborhood	4,711	1,912	2,358	2,774	59%
Lakewood	786	590	593	624	79%
Leonidas	3,726	3,521	3,485	3,288	88%
Little Woods	16,504	8,907	11,385	12,751	77%
Lower Garden District	4,406	4,073	4,295	4,542	103%
Lower Ninth Ward Neighborhood	5,363	601	1,017	1,271	24%
Marigny	2,133	2,079	2,119	2,128	100%
Marlyville/Fountainebleau	3,010	2,706	2,752	2,792	93%
McDonogh	1,270	1,323	1,281	1,279	101%
Mid-City Neighborhood	6,634	4,652	4,998	6,217	94%
Milan	3,452	2,720	2,718	2,835	82%
Milneburg	2,273	1,008	1,342	1,450	64%
Navarre	1,528	972	1,153	1,210	79%
New Aurora/English Turn	2,127	2,198	2,123	2,096	99%
Old Aurora	6,241	6,215	6,187	6,131	98%
Pines Village	1,864	862	1,161	1,189	64%
Plum Orchard	2,488	1,210	1,407	1,517	61%
Pontchartrain Park	1,024	389	507	566	55%
Read Blvd East	3,099	2,162	2,307	2,493	80%
Read Blvd West	2,107	1,104	1,275	1,430	68%
Seventh Ward	6,470	4,665	4,939	5,116	79%
St. Anthony	2,450	1,088	1,395	1,510	62%
St. Bernard Area	1,936	446	420	467	24%
St. Claude	4,490	2,957	3,276	3,454	77%
St. Roch	4,735	2,804	3,105	3,255	69%
St. Thomas Development	386	627	862	1,091	283%
Tall Timbers/Bechtel	5,504	4,679	4,710	4,811	87%
Touro	1,829	1,803	1,752	1,761	96%
Treme'/Lafitte	3,556	2,520	2,291	2,247	63%
Tulane/Gravier	1,830	1,215	1,237	1,684	92%
U.S. Naval Support Area	1,404	1,106	1,041	1,016	72%
Uptown Neighborhood	3,329	3,274	3,202	3,201	96%
Viavant/Venetian Isles	616	383	328	380	62%
Village de l'est	3,948	2,322	2,642	2,701	68%
West End	2,711	1,218	1,511	1,702	63%
West Lake Forest	3,822	1,276	1,399	1,570	41%
West Riverside	2,838	2,864	2,720	2,706	95%
Whitney	1,006	1,007	995	1,009	100%

Flood damage to each neighborhood was then estimated by first collecting data on total number of structures within each zip code, then the total number of structures actually affected by the floods, and further broken down by the percentage of damage, as seen in table 2 below.

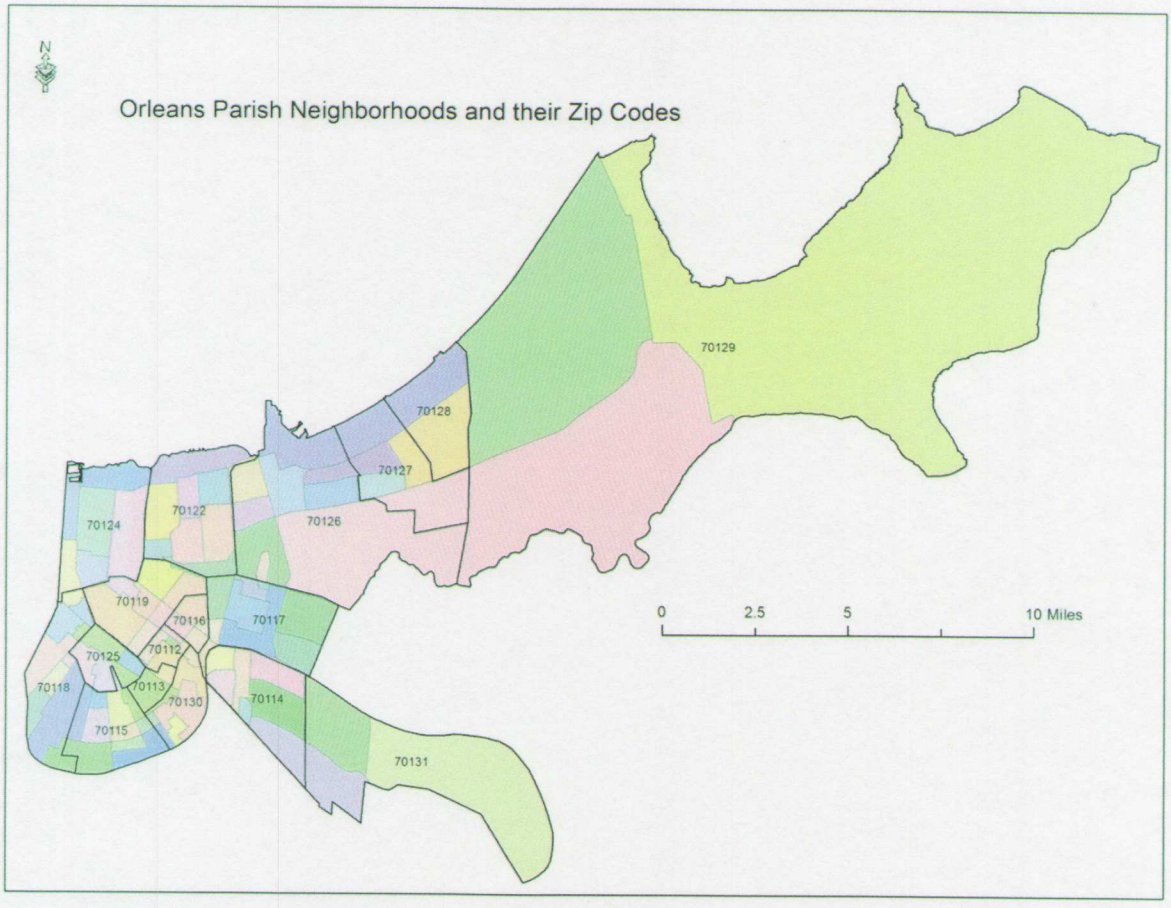
Table 2; Summary of flood damage by zip code

Zip Code	Total Structures	Total with Damage	Damaged 0%-5%	Damaged 5%-25%	Damaged 25%-50%	Damaged 50%-75%	Damaged 75% and Up
70112	999	189	10	48	108	17	6
70113	2,671	1,561	658	145	194	548	16
70115	11,313	4,498	1,588	561	1,529	788	32
70116	4,696	1,944	363	233	637	703	8
70117	17,486	15,503	1,447	370	3,296	8,786	1,604
70118	10,950	5,398	451	538	1,695	2,693	21
70119	12,029	9,327	591	757	3,684	4,111	184
70122	14,799	14,705	504	410	4,038	9,719	34
70124	9,599	9,818	158	530	3,818	5,236	76
70125	5,340	4,580	100	417	2,318	1,721	24
70126	12,207	11,200	146	108	2,603	8,268	75
70127	7,725	6,725	148	63	1,975	4,531	8
70128	6,583	6,006	169	172	2,218	3,444	3
70129	3,611	2,743	7	443	1,482	797	14
70130	2,925	175	87	39	43	3	3
Total	122,933	94,372	6,427	4,834	29,638	51,365	2,108

Note: Zip code 70124 appears to have more damaged structures than total structures. This is a result of the way unidentified structures were allocated between single-family residential and commercial/multifamily. While the allocation formula worked at a citywide level, it does not necessarily hold true for each and every individual zip code.

Then Geographical Information System (GIS) was used to create a map overlaying the zip code blocks onto the neighborhood blocks, as seen in figure 4.

Figure 4; Orleans Parish neighborhoods and zip codes



From there each neighborhood was given their zip code number, and the amount of damage for that zip code followed. In the cases where more than one zip code fell into a neighborhood, the data was added together and then averaged. Too get an estimated amount of damage that each neighborhood sustained a couple of simple math equations were used. First the mail received in 2005 was divided by the mail received in 2008 and then subtracted from one. Then that number was multiplied by the percentage of damage per zip code, giving an estimation of damage caused to each neighborhood. Different levels of damage percentages were achieved by adding up

different levels of damage, and dividing them by the total number of structures damaged. By changing out the percentage of damage into the equation allowed for speculation of which neighborhoods were 50% more or less damaged by Hurricane Katrina. Table 3 shows the neighborhoods and the zip code or codes that applied to each one.

Table 3; Neighborhood zip codes

Central Business District	70112/70130	Iberville Development	70112	Dillard	70122
		Tulane/Gravier	70112/70119	Ficher Project	70122
Central City Neighborhood	70113	French Quarter	70112/70116/70130	Gentilly Terrace	70122
East Riverside	70115	Algiers Point	70114	Lake Terrace & Oaks	70122
Freret	70115	Behrman	70114	Milneburg	70122
Garden District	70115	Filmore	70114	St. Anthony	70122
Irish Channel	70115	McDonogh	70114	St. Bernard Area	70122
Milan	70115	Tall Timbers/Brechtel	70114/70131	City Park	70124
Touro	70115	U.S. Naval Support Area	70114	Lakeshore & Lake Vista	70124
Uptown Neighborhood	70115	Whitney	70114	Lakeview Neighborhood	70124
West Riverside	70115	Bywater Neighborhood	70117	Lakewood	70124
Seventh Ward	70116/70119	Florida Area	70117	Navarre	70124
Treme'/Lafitte	70116/70119	Florida Development	70117	West End	70124
Marigny	70116/70117	Holy Cross	70117	B.W. Cooper	70125
Audubon	70118	Lower Ninth Ward	70117	Broadmoor	70125
Black Pearl	70118	St. Roch	70117/70122	Gert Town	70125
Dixon	70118	St. Claude	70117	Marlyville/Fountainebleau	70125
East Carrollton	70118	Bayou St. John	70119	Desire Area	70126
Hollygrove	70118	Fairgrounds	70119	Desire Development	70126
Leonidas	70118	Mid-City Neighborhood	70119	Gentilly Woods	70126
Read Blvd West	70127	Lower Garden District	70130	Pines Village	70126
Little Woods	70128	St. Thomas Development	70130	Plum Orchard	70126
Read Blvd East	70128	New Aurora/English Turn	70131	Pontchartain Park	70126
Lake Catherine	70129	Old Aurura	70131	West Lake Forest	70126/70127
Viavant/Venetian Isles	70129				
Village de l'est	70129				

Correlations were run between the dependent variable percentage mail recoveries between several other independent variables: total numbers of organizations (these are the organizations that have an active website up and running), African American, Anglo-American, average household incomes, 50% or more damage, and 50% or less damage. I used Pearson's correlation to investigate relationships between the variables. Damaged 50% or more correlates with percentage mail recovered with a Pearson's correlation of -0.366 representing a moderate but negative relationship. So as damage goes up mail delivery would go down. Neither Anglo-American nor African American race variable proved to be significant. Rather it was the 50% or more damage variable that proved to be the significant factor as shown in Table 4.

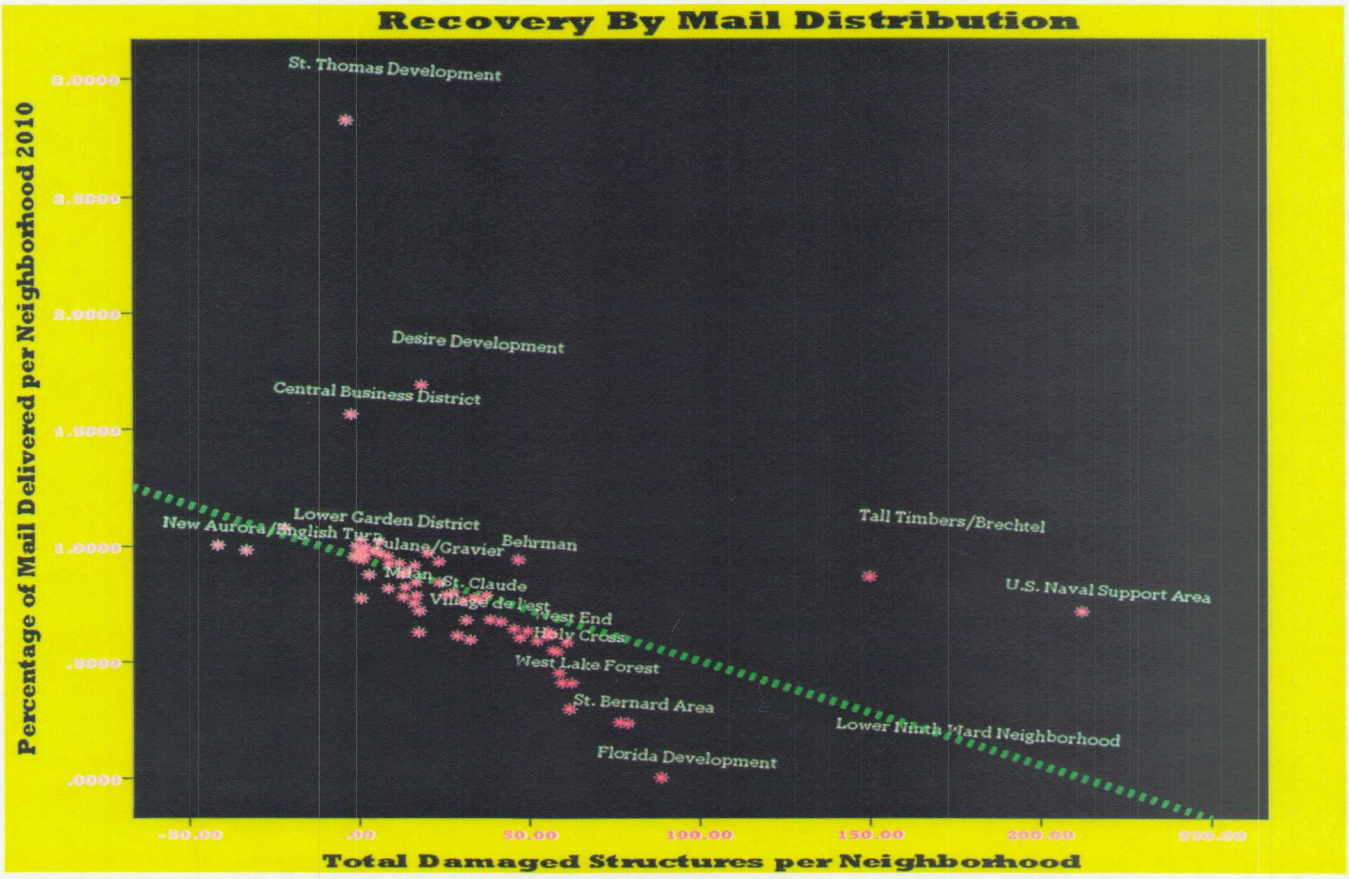
Table 4; Correlations

50% or more damage	Pearson Correlation	**-0.366****
	Sig. (2-tailed)	**0.001**
Average household income	Pearson Correlation	**.087**
	Sig. (2-tailed)	**.466**
Anglo-American	Pearson Correlation	**1.085**
	Sig. (2-tailed)	**.473**
African American	Pearson Correlation	**-.147**
	Sig. (2-tailed)	**.213**
Total number of organizations	Pearson Correlation	**-.015**
	Sig. (2-tailed)	**.9**

** Correlation is significant at the 0.01 level (2-tailed)

Figure 5 a scatterplot was done illustrating the percentage of recovery by mail distribution and the total number of damaged structures in each neighborhood. Each pink star represents a neighborhood within Orleans Parish; the green dotted line is the regression line summarizing the relationship between the two variables. As shown there is a weak negative correlation between the two. This is also reinforced with the R^2= 0.225, as the range is from 0 to 1, 1 being a perfect fit. One may wonder about St. Thomas Development as an outlier, but it can be explained in that in 2001 of its 1,429 residential units, 1,393 were demolished and residents were moved into the Lower Garden District, leaving only 36 historical residents in the neighborhood. This came into play when Hurricane Katrina struck as it gave FEMA a place to set up temporary housing trailers, which in return made St. Thomas recovery by mail distribution sky rocket, when in fact it is just temporary housing receiving mail. But all in all it shows the greater the damage the slower recovery, is which confirms what Fussell, Sastry, and VanLandingham (2009) wrote in *Race, socioeconomic status, and return migration to New Orleans after Hurricane Katrina.*

Figure 5; Recovery by mail distribution



Conclusion

In researching the rebuilding of New Orleans in the aftermath of Hurricane Katrina an array of publications were analyzed. In conclusion, all the researchers showed Orleans Parish was hit hard by Hurricane Katrina, and that low lying areas like the Lower Ninth Ward was the most devastated. Previous studies done on Hurricane Katrina seem to have a few main theories behind the slow recovery process in New Orleans. In no particular order they are the non-regime or lack of a clear governmental authority chain of command in the rebuilding process, the race factor of white versus black, the actual level of housing damage caused and finally is it feasible to rebuild in repetitive flood areas.

In all the research and data compiled for this study there seems to be only one main factor hindering the recovery process, and it has nothing to do with the color of one's skin. The level of damage seemed to clearly standout as the most significant factor as why still today five years following the catastrophic devastation Hurricane Katrina placed on Orleans Parish, that there are still residents displaced. More specialized data for the neighborhoods is needed to get a more precise level of significance, versus the estimating that was done within this study. Other areas or variables that probably need a better look at and should be considered are insurance coverage, housing values pre and post, and an evaluation of personal finance recovery of a forced migration.

References

Baum, D. (2006). The lost year. *New Yorker, 82 (25)*, 44-59.

Breunlin, R. R. (2006). Putting the ninth ward on the map: race, place, and transformation in desire, New Orleans. *American Anthropologist , 108 (4),* 744-764.

Bullard, R.D. (2008). Differential vulnerabilities: environmental and economic inequality and government to unnatural disasters. *Social Research,* 75, (3), 753-784

Burns, P., Thomas, M.O., 2006-08-31 "Power, Politics, and the New Orleans Non-Regime" Paper presented at the annual meeting of the American Political Science Association, Marriott, Loews Philadelpha, and Pennsylvania Convention Center, Philadelphia, PA online<PDF>. 2009-05-24 Retrieved from http://www.allacademic.com/meta/p150465_index.html

Cole, C., Corbett, R., & McCullough, K. (2005). 2004 Hurricane Losses: Testing the Lessons Learned from Hurricane Andrew. *CPCU eJournal*, 58 (3) 1-9.

FEMA. (2005a) Approved Multi-Hazard Mitigation Plans. August 2005. Retrieved from: http://www.fema.gov/fima/approved_plans_reg6.shtm#la.

FEMA. (2007b) Robert T. Stafford Disaster Relief and Emergency Assistance Act (Public Law 93-288) as amended. Retrieved from: http://www.fema.gov/about/stafact.shtm.

Federal Emergency Management Agency. The Disaster process and disaster aide programs. Retrieved from http://www.fema.gov/hazard/dproc.shtm

Fussell, E. (2007). Constructing New Orleans, constructing race: a population history of New Orleans. *The Journal of American History , 94, (3),* 846-855.

Fussell, E., Sastry, N., & VanLandingham, M. (2010). Race, socioeconomic status, and return migration to New Orleans after Hurricane Katrina. *Population Environment*, 31, 20-42.

Horne, J., & Nee, B. (2006, October 18). An Overview of Post-Katrina in New Orleans. New Orleans, Louisiana, United States: nolaplans.com/research.

Landphair, J. (2008). "The forgotten people of New Orleans": community, vulnerability, and the lower ninth ward. *The Journal of American History, 94 (3),* 837-845.

Olshansky, R. B. (2007). Planning for the Rebuilding of New Orleans: Defying the odds. *2nd International Conference on Urban Disaster Reduction*, (pp. 1-15).