Abstract
Hurricane Katrina struck the city of New Orleans on August 29, 2005 flooding 80% of the city. The Lower Ninth Ward neighborhood was devastated as flood waters poured through a levee breach pushing homes off their foundations and altering the geographic landscape dramatically. Recovery and rebuilding has been slow. The neighborhood went from a population of 9,501 (2000 census) to 128 (2010 census). As of 2016 the population is still extremely low and much of the neighborhood remains empty.

Aerial photography and satellite imagery is used to analyze the effects of Hurricane Katrina on the housing in the Lower Ninth Ward. Satellite imagery from 2003 (pre-Katrina) is compared to Post-Katrina imagery from 2005, 2007, and 2014. Aerial photographic flights conducted by the author along with Wendy Lascell dated 2006 and 2015 are also used in the analysis. Rebuilding and recovery has been slow.

Two non-profits have been responsible for the bulk of the rebuilding. Common Ground Relief is a grassroots non-profit formed immediately after the flood event. Make It Right is a national non-profit led by Brad Pitt. This analysis examines the rebuilding efforts of both non-profits in the Lower Ninth Ward using Remote Sensing techniques.

Pre-Katrina Conditions
-This area was very densely populated. 8,501 people in 2000
-Leading to a population density of about 5,346 people per sq mile
-The housing lots were not too much larger then the houses themselves
-The lots were generally situated in a long rectangular shape causing the houses to be in most cases only a few feet apart
-The houses were generally one story “shotgun” style housing
-Which follows the same long narrow footprint of the lots.
-In being such a densely populated urban setting this area really had no green space other than the small yards and the schools yard.

Post-Katrina Rebuilding
-The Lower Ninth saw only about 37% of its residents return
-Rebuilding has been a very slow process and is still going on today
-Make It Right is another non-profit organization led by Brad Pitt to help in the rebuilding
-Make It Right brought in engineers from all round the world to help create new “green” housing options
-However Make It Right and the local population butt heads on things such as the style of housing and ownership rights of the land and house.
-With all the help Make It Right has provided the organization has left the locals with a negative perception because of the lack of community outreach

Impact of Katrina on the Lower Ninth Ward
-Hurricane Katrina caused widespread damage all throughout the Gulf Coast
-In focusing on the Lower Ninth Ward, this damage was magnified with the breach of the Industrial Canal levee
-The floodwater was up to 12 feet deep and took 43 days to pump out
-This caused houses to be knocked off their foundations, cars overturned, and the spread of toxic waters
-Common Ground Relief, a grassroots organization was then founded in order to help rebuild
-Common Ground Relief is a volunteer organization that began rectifying the saturation though demolition and rebuilding of houses
-Common Ground Relief has been a pivotal force in the recovery effort and welcomed by the community

Analysis of Imagery
-The main point that comes across with analyzing these images is that rebuilding has been a very slow process at best
-The green box in both images represents where “Make it Right” concentrated most of its efforts
-97 of the original 186 houses have been rebuilt (52%)
-Of those 65 of them have included solar panels
-This leaves 89 vacant lots
-These lots were cleared and left for vegetation to take over

The yellow box in both images represents the rest of the Lower Ninth that received essentially no help in rebuilding
-Only 27 of the original 197 houses were rebuilt (15%)
-None of these houses have solar panels
-This leaves 152 vacant lots
-Many of the vacant lots still have either the foundation or just the stoops left and have become sites of illegal dumping
-The distinction between these 2 areas is because one can get the wrong idea if only the green box is considered
-The vast majority of the Lower Ninth has been abandoned with no plan to rebuild

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