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Analyzing the Rate of Reconstruction and the Socioeconomic/ Cultural Regions in Post-Katrina New Orleans

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Analyzing the Relationship Between Reconstruction and the Socio-Economic Regions in Post-Katrina New Orleans

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Analysis

Vulnerability
The social vulnerabilities of the socioeconomic regions did experience a change in vulnerability levels, but there is a higher change in vulnerabilities among the higher income regions. These areas show trends of becoming more vulnerable following in 2016 than in 2000.

Recovery
From 2000 – 2010, there is not a clear trend in the physical recovery of each neighborhood according to its socioeconomic regions. However, a trend can be seen in the total recovery from 2000 – 2016. Though none of the neighborhoods fully recovered to their previous state, the areas that are considered “Partially Recovered” or “Majority Recovered” represent areas where the income is over $60K. However, this does not apply to all high income neighborhoods which shows that there is a positive correlation between recovery and income, but other factors also affect the rate at which recovery occurs. These regions that have recovered do correspond with regions considered to have a low, or low-to-medium vulnerability. According to the social and economic recovery of each neighborhood, the areas that did were considered “Not Recovered” do correspond with areas that are considered to have a medium or high vulnerability score. There is also a shift in the recoveries from 2010 – 2016. The neighborhoods that achieved full recovery maintain this status from 2010 – 2016. Though it can be seen that the lower income areas seem to be worsening. These areas are characterized by incomes between $20K and $40K, and these areas correspond with areas with a large minority population.

Findings and Conclusion
These maps were created by selecting regions that showed all characteristics of not being recovered physically, socially, and economically. Each of these neighborhoods experienced decrease in population, housing units, occupied housing units, and mean incomes while also experiencing an increase in unemployment rates, poverty rates, and rate of population 25 and older without a high school diploma. These areas were determined to have experienced the least amount of recovery between the years of 2000, 2010, and 2016.

Background
Following the 2005 environmental disaster event of Hurricane Katrina, New Orleans and the surrounding cities of the Gulf Coast were forced to implement plans of recovery and reconstruction within their communities. This research intends to show the relationship between cultural, economic and ethnic groups and the rate at which communities rebuild following a natural disaster. New Orleans provides a community with pre-existing racial tensions and ethnic groups that exhibit a deep contrast in cultural communities and regions. Prior research conducted by Christina Finch and Susan Cutter has concluded that the rate of reconstruction is dependent on the “social vulnerability” of an area which is the “resilience of communities when confronted by external stresses on human health, stresses such as natural or human-caused disasters, or disease outbreaks.” (https://svi.cdc.gov/). This research will expand on this theory by also analyzing the ethnic and cultural characteristics of a region to the rebuilding of New Orleans. By using census and neighborhood data acquired from the Data Center Research Organization of New Orleans, the data will be cross-analyzed to find areas that have recovered which is defined based on its returned population, vacancy rates, and economic stability. This research expects to demonstrate through data analytics that there are slower patterns of recovery in historically ethnic locations.

Research Questions
• How does social vulnerability change following a natural disaster event?
• How did redevelopment in socially vulnerable areas compare to areas of low vulnerability?
• How do the rates of reconstruction differ between low-income communities and high-income communities?

Methodology
• Clip vulnerability index to census tracts
• Obtain demographic, social, physical, and economic data from the Census Bureau
• Join data in ArcMap by using attribute and spatial joins
• Calculate differences in fields by using the Field Calculator function in ArcMap

• Calculate the difference in the percentages and amounts of housing units, population, and occupied housing units for the years: 2000, 2010, and 2016
• Perform a “Select by attributes”
• Not Recovered: negative difference in housing units, population, and occupied units
• Partially Recovered: Select all that satisfy two of the “Not Recovered” requirements
• Majority Recovered: Select all that satisfy one of the “Not Recovered” requirements

• Calculate the difference in the percentages and amounts of education attainment (population 25 and older without a high school diploma), unemployment rates, poverty rates, and mean income
• Perform a “Select by attributes”
• Not Recovered: positive difference in educational attainment, unemployment rates, and poverty rates, and a negative difference in mean income
• Majority Not Recovered: Select all that satisfy three of the “Not Recovered” requirements
• Medium Recovery: Select all that satisfy two of the “Not Recovered” Requirements
• Majority Recovery: Select all that satisfy one of the “Not Recovered” requirements
• Recovered: Select all that do not meet any of the “Not Recovered” requirements

Data acquired from ESRI ArcGIS Online service, the United States Census Bureau, and the City of New Orleans GIS Data Portal

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