Vulnerable Areas In Alachua County

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Main Goal

Using previous data and GIS analyzes software we were to find specific areas in Alachua County that could be defined as vulnerable neighborhoods. These areas will then be easily assessable for future problem solving needs. So the main goal is to define certain areas, which meet predetermined coefficients that define them as vulnerable.

Background

According to the 2010 census Alachua county is home to about 247,000 citizens, making it one of Florida's most populated counties. The county has a large amount of variance when focused on race, social standing, and economic standpoint. Due to this discrepancy vulnerable areas within this county are thus created. According to Mechanic and Tanner, vulnerability for a certain area is resulted from "an interaction between the resources available to individuals and communities and the life challenges they face."
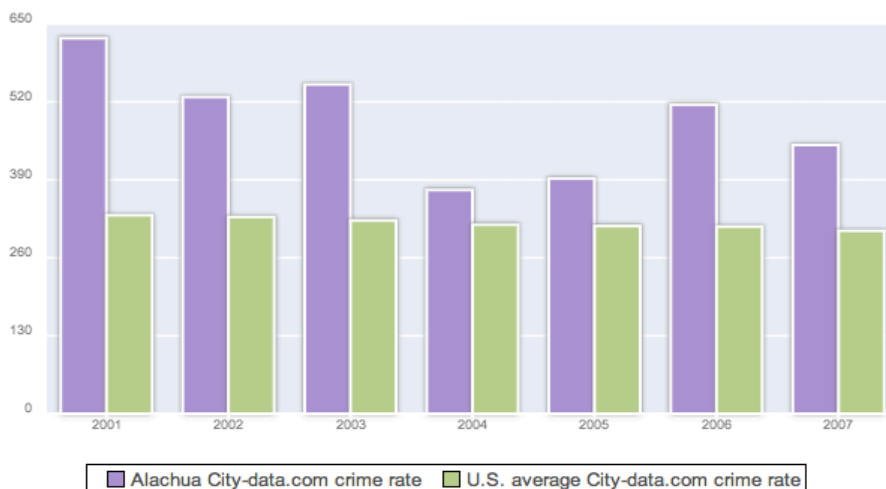
This definition relates in accordance to children who live in these vulnerable areas. These children are affected by the outcomes of their neighborhood, whether it be personally, socially, or economically. According to Jason McLennan, we keep building cities in thought of the automobile and then the adults, and by doing so we keep leaving children out the equation. Children should define the main aspect of vulnerability because if the area in which the child grows in retracts progress, then the child will as well reject progression

Scope

Alachua County spans an area of 875 sq. miles, within this area there are nine municipalities, which are: Micanopy, Hawthorne, Archer, Gainesville, Waldo, La Crosse, Alachua, Newberry, and High Springs. These are the statistics for the county:

2010-2012 Data	Alachua	Florida
Population	247000	18,800,000
Citizens Under 18 (Percent)	18%	21%
Children Under Poverty Line (Percent)	26.3%	23.6%
Average Household Size	2.4	2.64
Median Household Income	$43,000	$47,000

The crime rate statistics in Alachua County are higher than that of the national average:
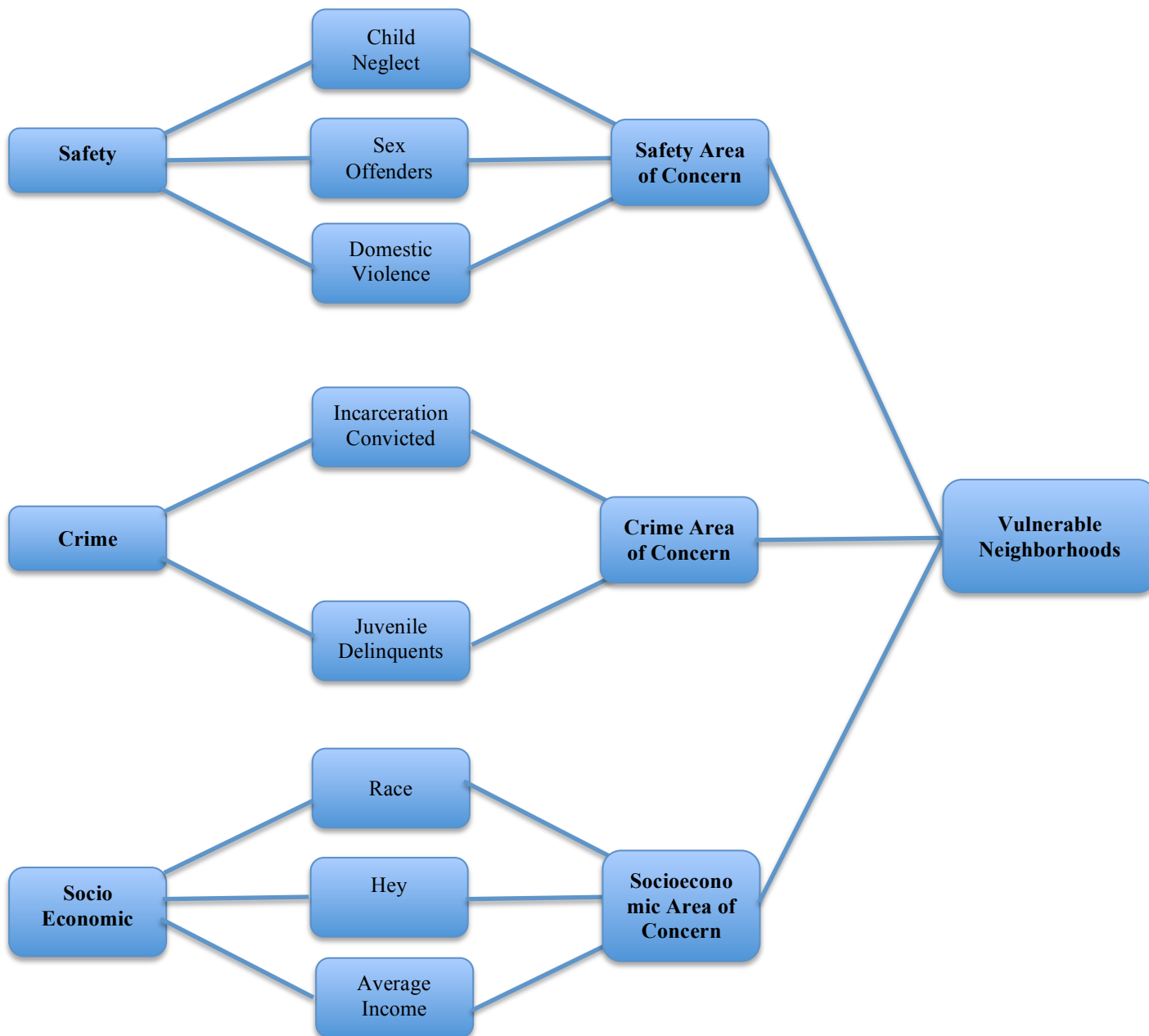

Objective

In order to define the vulnerable neighborhoods we focused on data that would affect citizens under 18 years of age. Through looking at the data it was decided that the three main areas of focus for a vulnerable neighborhood would be:

- Safety- Areas that would be unsafe for a child to live in due to its high risk factors.
- Socioeconomic- Areas that lack economic prosperity.
- Crime- Areas that have a large crime rate: adults and minors

Methodology

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Safety ── Child Neglect ────┐
      ── Sex Offenders ──── Safety Area of Concern ──┐
      ── Domestic Violence ┘                         │
                                                      │
Crime ── Incarceration Convicted ──┐                 ├── Vulnerable Neighborhoods
      ── Juvenile Delinquents ──── Crime Area of Concern ──┤
                                                      │
Socio Economic ── Race ──┐                           │
              ── Hey ──── Socioeconomic Area of Concern ──┘
              ── Average Income ┘
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For each of the topics we chose subtopics that would best depict the vulnerability aspect of each section. The sub topics (shown in the flow chart) would define the areas that ran the highest risk of child safety, crime, and socioeconomic decay. Through that process we would be able to define vulnerable areas for each topic, which would lead us to the most vulnerable areas once the topics were combined.
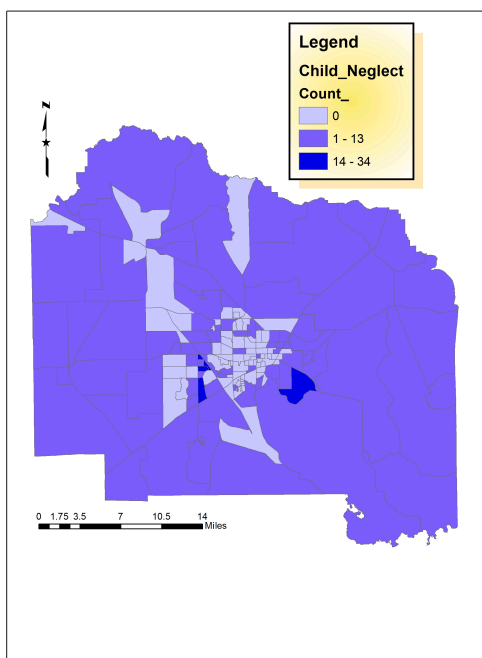
Topic 1- Safety

An unsafe neighborhood will be a factor in developing children with issues. These children will tend to disregard common behavior, and derive that the behavioral disorders that they saw while aging are, the norm. Statistics have proven that neglected and abused children will more than likely become unsuccessful adults. A child that does not receive respect while growing up or witnesses abuse from either parent tends to lead a lower level lifestyle once aged. (Michigan News)

In addition, children who are brought up in unsafe areas are inclined to follow in the footsteps of those around them and will thus become criminals as well. It is in a way a paradox, an unsafe neighborhood for children will continue being unsafe because those children will not strive to change the neighborhood.

With the constant expansion of new communities and industries every year one key factor is always overlooked; are we making communities safe for children and their families to reside in? (Jason McLennon) In the county of Alachua there are many neighborhoods with different demographics, yet the same issues keep occurring in the same neighborhoods. These demographics relate to child neglect, domestic violence, and sex offenders.

A child cannot grow up in a healthy environment if they are constantly witnessing others being mistreated or worse, raped. The kids that are growing up in these neighborhoods will learn from their environment and become underachieving adults. They will act and breath based on what they saw while growing up, either it being violence, neglect, or fear.
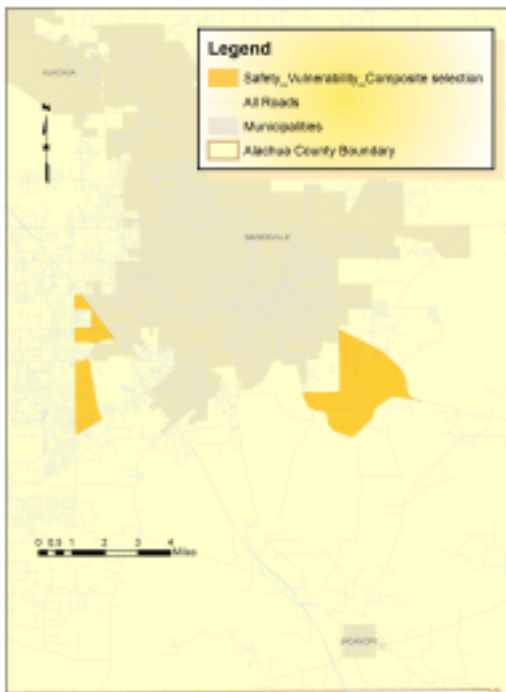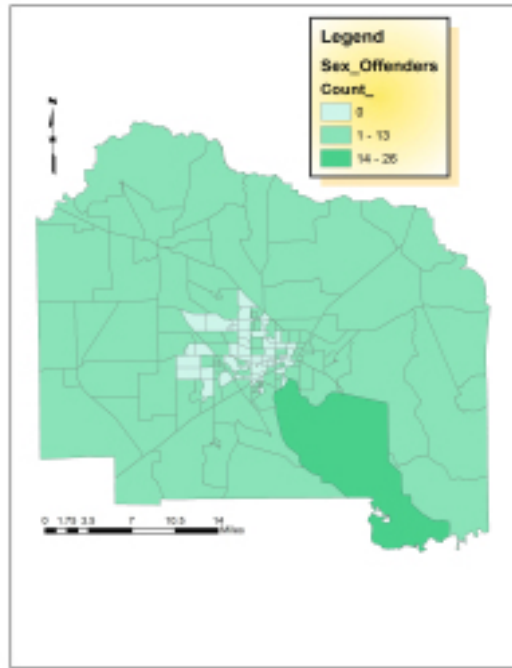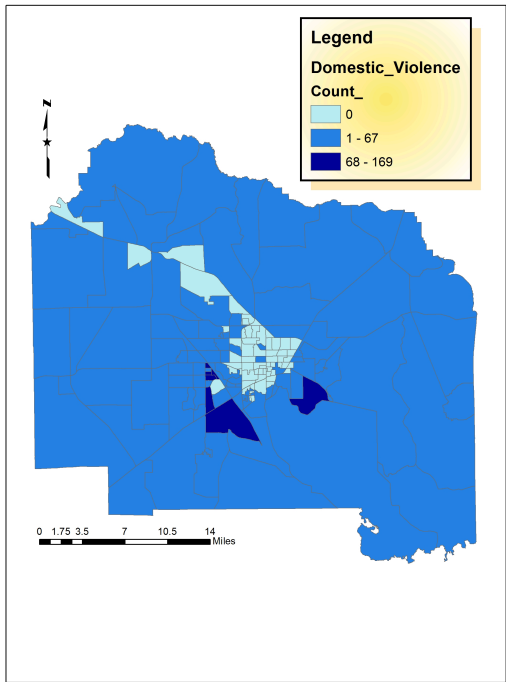

With this knowledge in mind, safety should always be a main concern when considering if an area is vulnerable for families. If the child does not feel safe at home or in his environment then they will exhibit attributes that will later affect the neighborhood negatively.

For safety it was decided to focus on three aspects that highly affected children: Neglect, Domestic Violence, and Sex Offenders. These aspects will result in not only affecting a child's growth but also making the neighborhood an unpleasant place to live.

Three maps were created to depict the neighborhoods in Alachua County that had the highest amount of safety issues, under the three aforementioned conditions. The data was originally in points for each of the three topics chosen under safety concerns. The data was then joined with the census block group layer to provide the proper amount of cases per area. This provided us with block group data to compare.

For child neglect, it was decided that high cases caused an area to be more vulnerable. While all child neglect cases are important, the higher case numbers, between 14-34 were worth considering.
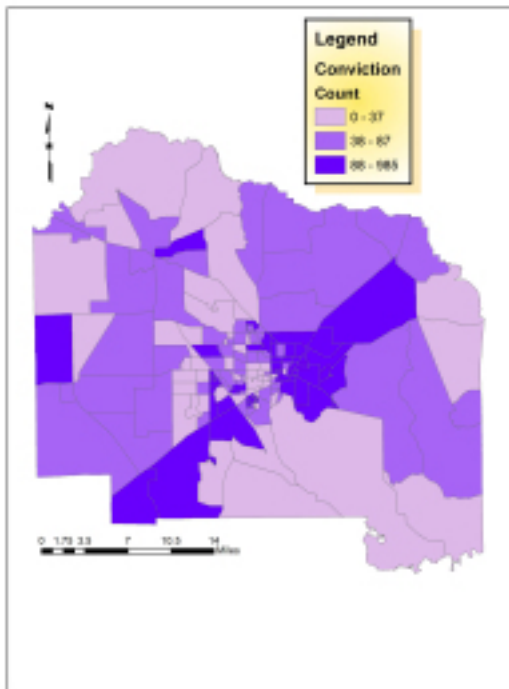
As with child neglect, high cases of domestic violence were used as the most vulnerable. After turning the point data into block groups, cases with 68 to 169 instances of domestic violence were considered the most vulnerable. For sex offenders, the counts of 14-26 in one block group were used to demonstrate the most vulnerable boroughs.

Once those three maps were created a final map composite was made to show which areas in Alachua County are considered the unsafe places to live. Adding a field to each of the three single maps did this. The field classified each area from 1-3, where 3 represented areas that were very assessable to being vulnerable.
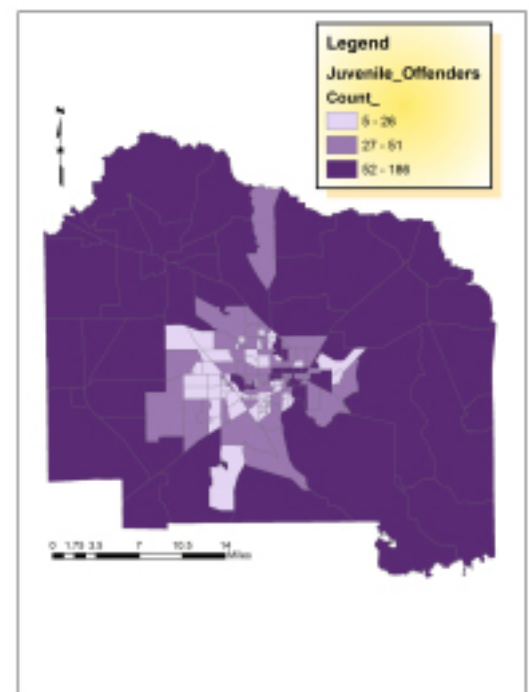
Topic 2- Crime

It is well known that crime-ridden regions are less safe. There are unmistakable cues that indicate an area associated with criminal activity, even at times when no criminals are present and no crimes are taking place. (LaGrange, Ferraro, and Supancic) If you notice litter, graffiti, empty storefronts, and un-kept lots somewhere, you can make a pretty good guess that the area has a lot of crime. The crime that takes place in these areas leaves them vulnerable to other undesirable elements that detract from quality of life. The presence of these peripheral effects makes citizens feel more vulnerable to violent crime because their environment displays that the area is not able to resist criminal influence. (Brunton-Smith, Jackson, Sutherland)
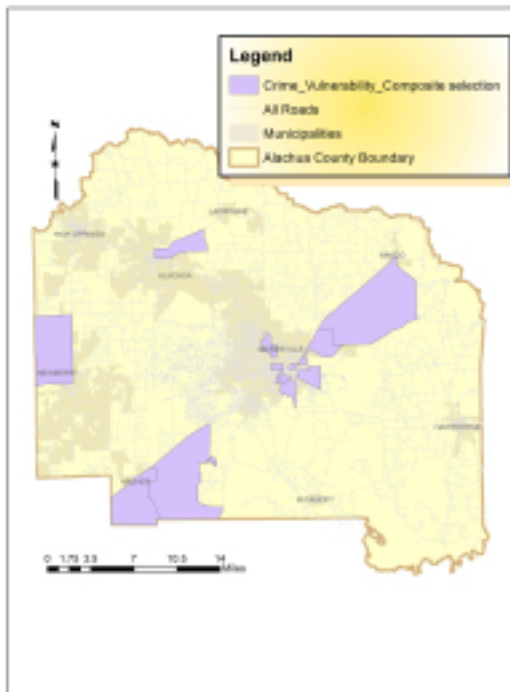

It was important for us to include the element of criminal activity in our model, because criminality directly puts individuals at risk. The first step to analyzing patterns of crime was to examine a point set of arrests resulting in convictions through out the county. This showed us that there were plenty of arrests in all parts of the county. In order to make the data more legible, we used a join to associate each arrest to the block group it took place in. This allowed us to total up the number of arrests in each block group. We classified these into three quantiles in order to present three levels of vulnerability.

In addition to arrest and conviction data, we wanted to take a closer look at juvenile crime. Adolescents who break the law are especially at risk because a tarnished record can make it difficult for a young person to transition into the working world and adult life. Again, we symbolized this at the level of block groups, and used quantiles to stratify them into 3 levels.

The composite crime vulnerability map includes block groups that came up with the highest level of vulnerability in both arrests resulting in conviction and in juvenile offenders.
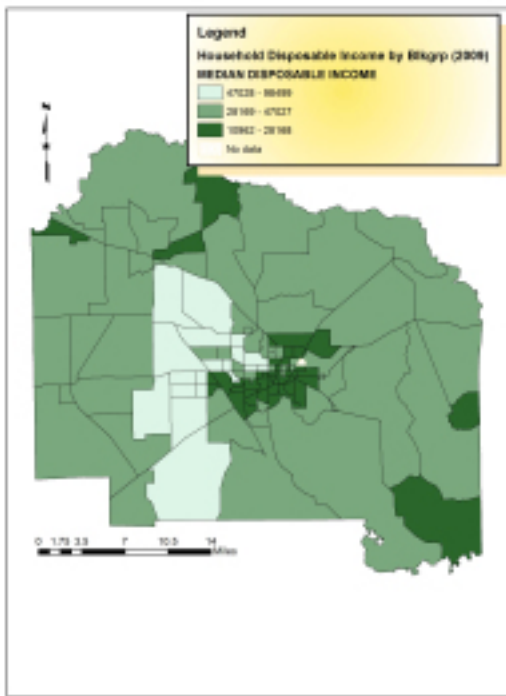

Topic 3- Socioeconomic

The socioeconomic factor is a view into what neighborhoods should be considered vulnerable. In our realm of socioeconomic concerns, Race and Ethnicity, Disposable Income, and High School Graduation Rates are all considered.

In Alachua County, among other places, there is a divide between wealth and success for each race group. This is evident in not only healthcare, but also day-to-day wealth. The Urban Institute points out that the biggest disparage between more diverse populations and predominately white areas is health care coverage. Thus, with less health care coverage and a mentality towards healthcare, this draws a divide between whites and minorities. Keeping in mind that the data stems from 2009, we cannot account for the Affordable Health Care Act's effect in the current society. In terms of wealth, in 2011 a widening gap between whites and minorities was noted (CNN). Seeing as wealth stems from history, more so the when and how of gaining citizenship and rights, there stands the reasoning as to why race and ethnicity is a factor. With big Civil Rights movements happening around 50 years ago, it would be unwise to not consider Race and Ethnicity a factor in vulnerability.

Money drives the world. It's simple really; families with more money are going to be more stable than families without. Looking at disposable income is important in addressing what households will be vulnerable. According to 2010 census data, the average household size in Alachua County is 2.32 persons. According to poverty guidelines that mean that the average home should bring it more than 14-18k for a neighborhood to not be considered vulnerable. Because we are unable to use the data from every house, we are only able to determine approximate guidelines.

As more people head off to college causing bachelor degree inflation, the same is happening at the high school level. Many jobs ask if you've completed high school during the application process. Jobs that don't often ask, will not provide you with a career path, to live comfortably and be prepared for a rainy day. Dropouts are also
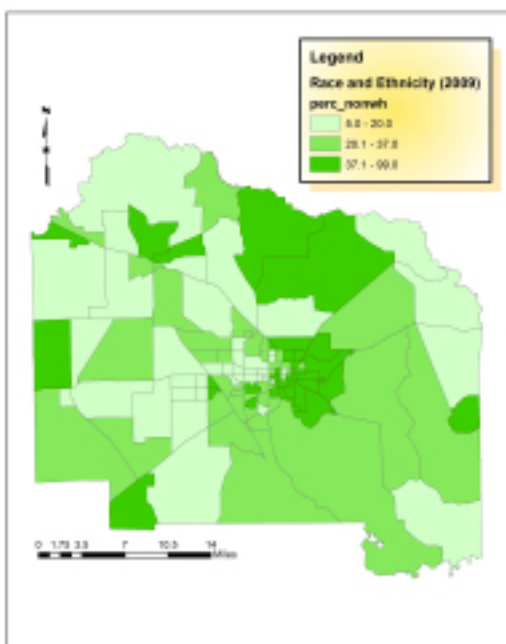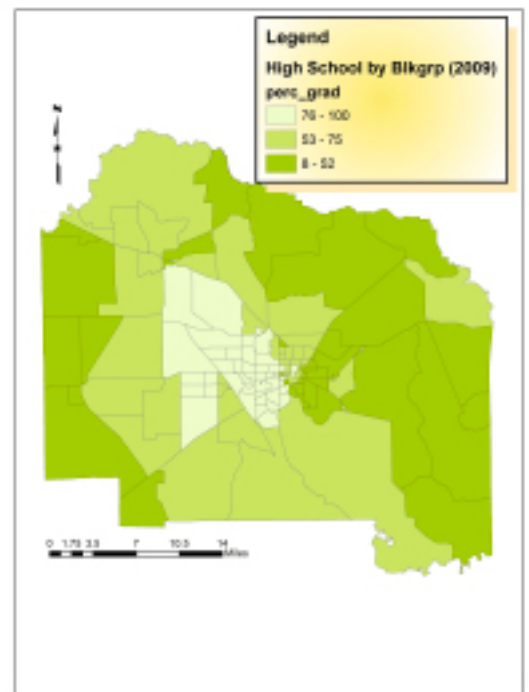
less likely to find a job and will more likely fall into poverty (American Physical Association). Generally areas with higher graduation rates are more secure, so areas with large dropout numbers are important in looking at vulnerability.

Our three main focuses for socioeconomic factors were disposable income, high school graduation rates, and race and ethnicity.

In order to look at disposable income, it was deemed that the median disposable income would be the best factor as it neglects the outliers that exist. As with medians, half of the households in the area have an income lower. Because of this, incomes around ten thousand to 28 thousand were considered vulnerable.
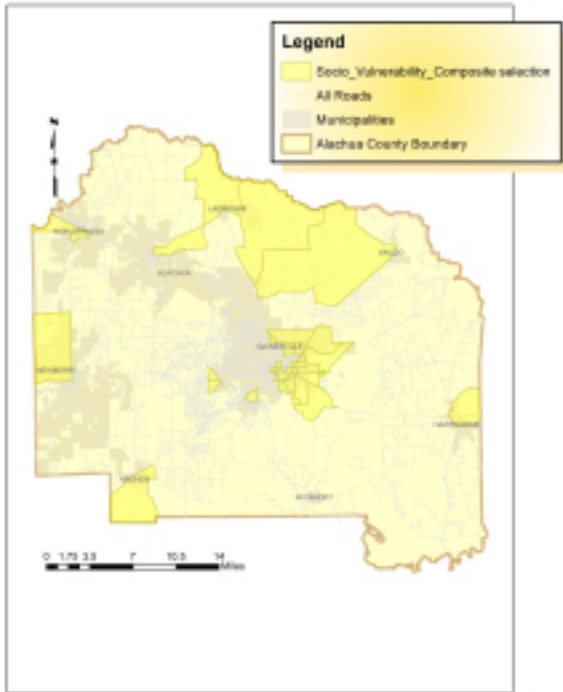

For high school graduation rates, data existed on the number of students that had enrolled in the school and the number that had graduated. By creating a data field of graduates/enrolled x 100, we were able to view graduation rates. Graduation rates from 8 to 52 percent were considered most vulnerable to us.

In order to find diverse neighborhoods, the counts of the white population, black population, Asian, and Pacific Islander population were all compared. By dividing all but whites over total population, we were able to determine the percent of non-white population. Neighborhoods with more of a minority presence, roughly 37 to 99 percent were considered vulnerable.
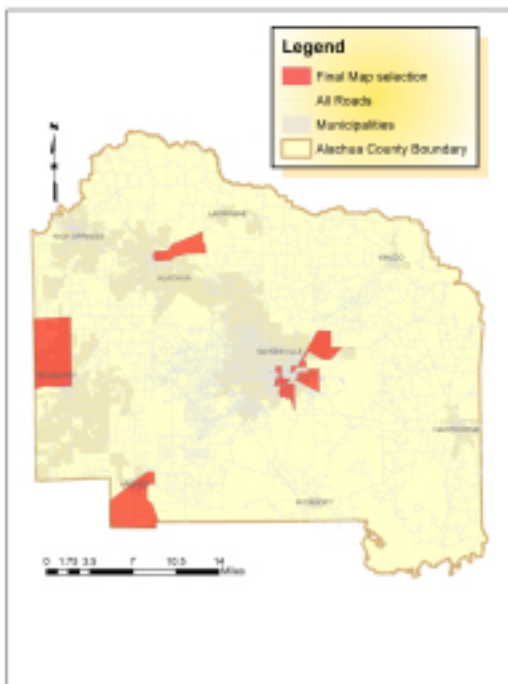
After analyzing the data, putting more weight on the disposable income, the neighborhoods that are the most vulnerable socioeconomically are shown in the following map.
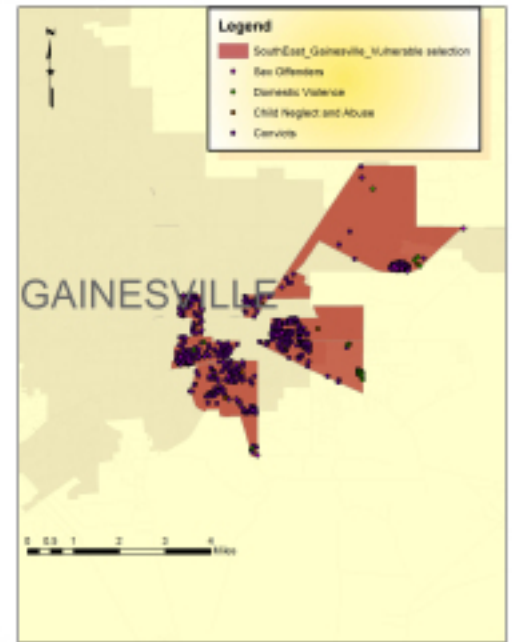

Results

After analyzing our composites for vulnerability in terms of socioeconomic, safety and crime, it was determined that socioeconomic factors were the biggest leads into vulnerability. Aspects like money, race, and high school graduation all set up whether or not child neglect, domestic violence and general crime are going to exist. Due to this, when creating the final composite, Socioeconomic factors were weighted at 70%, and crime and safety 15% each.

Looking at the final map, the most vulnerable areas appear in South, East, and Southeast Gainesville as well as outlying areas of Alachua, Archer, and Newberry. While the areas outside of Gainesville met our criteria for vulnerability, more vulnerable boroughs appear in southeastern Gainesville.

Focusing in on southeast Gainesville, it is clear to see why this area is vulnerable. With a strong citizen base to support bus ridership, little commercial investment, unlike the Butler Plaza area on the other side of town, and amenities like a rehabilitation center located in this area, we can see why this area can be seen as vulnerable.

Conclusion

With the criteria of disposable income, high school graduation rates, and race and ethnicity, it is easy to accept these terms. As the data doesn't account for breaks in social patterns, it is hard to account for strays from societal expectations. Looking at the areas like Newberry, Alachua, and Archer, each block group, which represents a neighborhood, is relatively larger than most of the smaller neighborhoods in Gainesville, which causes data like location of child neglect, crime, and domestic violence to potentially be skewed.

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