

**Research Report on:**  
**The Influence of Demographics on Disaster Risk and Resources in New Hanover County:**  
**A Community-Based Research Study on Hurricane Florence**  
**By Michele Burns**  
**SOC/CRM 496 Public Sociology & Criminology Practicum**

## **Introduction**

After Hurricane Florence made landfall on the coast of North Carolina on September 14, 2018, many New Hanover County residents were left with limited or no access to basic, necessary resources. Our research team set out to determine which areas of New Hanover County suffered the most damage, where the resource centers were in proximity to those areas, and if there were pre-existing disparities that may have played a role in resident's increased vulnerability to disaster. By researching these three areas and cross-referencing our findings, we aim to ascertain whether the risk for damage, displacement and lack of resources was a result of the disaster, or if pre-existing social forces such as social vulnerability and inequality could have played an additional role prior to the event. We hypothesize that social inequalities such as socioeconomic status and race are major predecessors as to the risk for vulnerability of a population during a disaster.

## **Methods**

For this study, our purpose was to try to answer the following questions with research: Which areas of New Hanover County suffered the most damage from Hurricane Florence? Where were Resource Centers located, and what was their proximity to damage? Did poverty play a role in either damage or access to resources, or both? Did pre-existing inequalities, such as race or socioeconomic status, play a role in creating an increased risk of disaster vulnerability?

To answer these questions, we reached out to county officials, disaster relief organizations, and other non-profit, relief organizations who provide services for New Hanover County residents. Initially, we set out to determine which areas of New Hanover suffered the most damage. Using a Damage Assessment mapping report provided by The Red Cross (2018), we were able to identify the areas where most of the damage occurred. We then compared this data to poverty levels by zip code from the American Community Survey (2017). Then, we utilized information provided by Steven Still, New Hanover County Emergency Management and 911 Operations Director, to identify the locations of both viable and failed resources (Burns and Yanicak, Interview of Steven Still, 2019).

Once all the data was collected and compiled, we utilized a map of New Hanover County onto which we uploaded the data in layers. Layer 1, identified by colored boundaries, shows the poverty levels within each zip code as follows: Red: > 70% poverty; Yellow: 31% - 69% poverty; Green: < 30% poverty. Layer 2, identified with red dots, shows all reported damage. Layer 3, identified with green flags to indicate the location of Points of Distribution (POD's); Layer 4, identified with green crosses, are medical resources; Layer 5, identified by green or red houses, indicate shelter locations. The green houses represent viable shelters, and the red houses represent the shelters that failed and therefore could not provide any resources. Layer 6, identified with a green circle with utensils, were food and water resources.

## Results

Based on our findings, the largest clusters of damage were located within New Hanover County zip codes 28403, 28409, 28412 and 28429 ("Story Map Series, 2018). We then compared this data to ACS Housing and Demographic Estimates provided by the United States Census Bureau for 2017 via the American Community Survey ([www.factfinder.census.gov](http://www.factfinder.census.gov), 2019). Based on combined research data, the table below (Table 1) will show populations of the affected areas, their median age, percentages of white and black races within the zip code boundaries, and their poverty levels.

Table 1.

Zip Code	Population within Zip Code	Median Age	Race	Poverty Level
28403	40,404	28	81.4% white 14.2% black	> 70% <b>Red Zone</b>
28409	33,631	43	93.3% white 2.7% black	< 30% <b>Green Zone</b>
28412	37,788	40	81.3% white 11.2% black	31% - 69% <b>Yellow Zone</b>
28429	7,799	41	73.2% white 23.3% black	31% - 69% <b>Yellow Zone</b>

In reviewing our overlaid map of New Hanover County (Image 1 below), it appears that there were multiple resource locations within all New Hanover County zip code regions except 28429. This region had one POD within its boundaries, and its two closest shelters were the two that were forced to close. The only other resource in close proximity to 28429 was a medical only resource. It is also important to note that this was a Yellow poverty zone, indicating that 31% - 69% of its residents were impoverished. Adversely, our map also shows that the areas of New Hanover County that suffer the highest percentages of poverty, zip codes 28401 and 28403, did have multiple resource locations. Further, based on census data (2017), most of the population within these regions are white (excluding zip code region 28401, as it was not part of our damage assessment.)

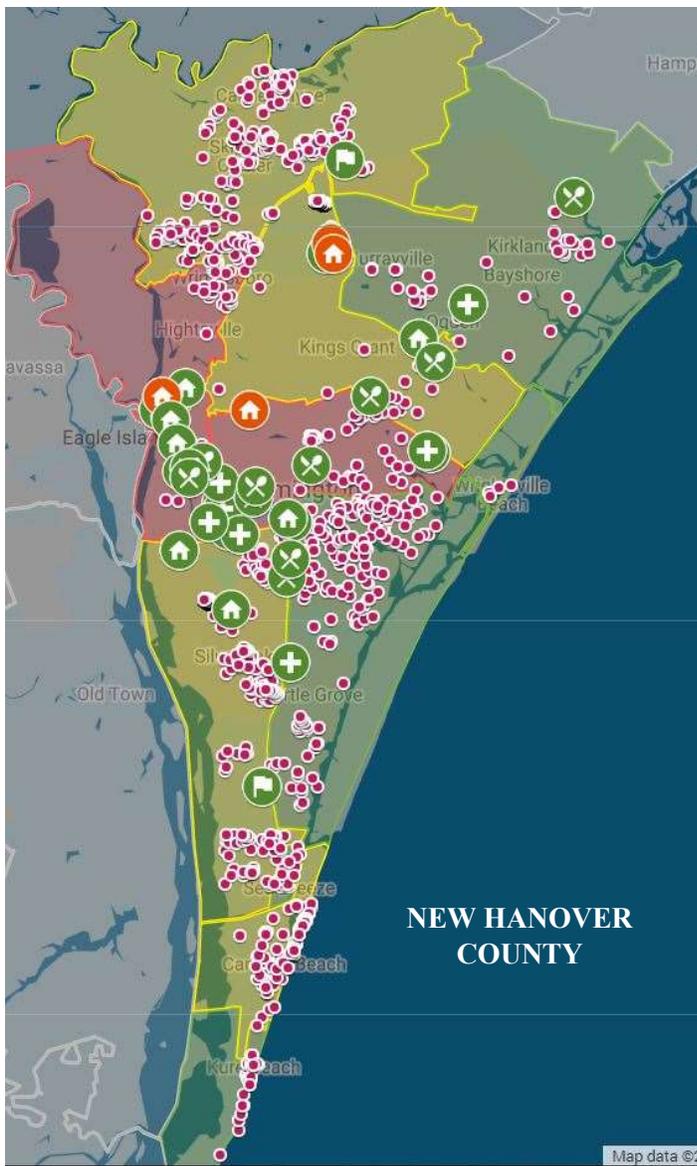


Image 1.  
New Hanover County  
Poverty/Damage/Resource Overlay Map

	Food Resource
	Medical Resource
	Shelter (Viable)
	Shelter (Non-Viable)
	Point of Distribution
	Damage
	Poverty > 70%
	Poverty 31% - 69%
	Poverty < 30%

## **Discussion/Implications**

Based on the collected data and the map overlay process, we found evidence to suggest that socioeconomic status and race did not play a role in disaster vulnerability in New Hanover County during Hurricane Florence. We were able to also show that the areas with the highest levels of poverty received the least damage but did have many resource centers within their zip code regions. However, because we could only research the data at the zip code level, we feel strongly that future research should perhaps be done to identify barriers to resources at the neighborhood level, and if those barriers differ across neighborhoods.

## References

Interview of Steven Still, New Hanover County Emergency Management & 911 Operations Director

[Personal interview]. (2019, February 13).

List of available medical resources in the community. (2018). Retrieved from

<https://www.wwaytv3.com/2018/09/19/list-of-available-medical-resources-in-the-community/>

(n.d.). Retrieved April 01, 2019, from

<https://factfinder.census.gov/faces/nav/jsf/pages/index.xhtml>

New Hanover County. (2018). Retrieved from <https://emergency.nhcgov.com/>

Story Map Series. (n.d.). Retrieved March 20, 2019, from

<https://maps.rcview.redcross.org/portal/apps/MapSeries/index.html?appid=29f526e075d547b283f>

1d892bf943c66