

Under Water in More Ways Than One: Assessing the Impact of Historic Flooding and Foreclosures on Atlanta’s Vulnerable Communities

COMMUNITIES ACROSS THE NATION HAVE BEEN STRUGGLING WITH BOTH NATURAL AND MANMADE DISASTERS, AS THE FORECLOSURE CRISIS AND RECESSION WORE ON THROUGH HURRICANE AND FLOODING SEASONS.

In September 2009, a series of slow-moving storms produced unprecedented flooding in metropolitan Atlanta, forcing the evacuation of hundreds of households and causing extensive property damage to thousands of other homes. Rainfall during Atlanta’s September 2009 flooding exceeded 12 inches in an 11-day period in many areas (see figure 1). The Atlanta Journal-Constitution reported road closures and other major events due to flooding—such as drowning and significant property damage—in 10 counties. U.S. Geological Survey rain gauges recorded floods up to 1.6 times the maximum flood level, with a volume and velocity so great that many of these gauges malfunctioned.

According to Brian McCallum, assistant director of the U.S. Geological Survey Georgia Water Science Center in Atlanta, “If a 500-year flood was a cup of coffee, this one brewed a full pot.... This flood was off the charts.”¹ Existing flood maps did not help predict flooding patterns because they did not reflect such changes as increases in impervious surfaces (sidewalks and parking lots), aging storm water infrastructure, and parched soils, which caused rainwater to collect rather than drain away. The magnitude of rainfall had not been experienced in the state’s recorded history, which meant that many of the affected neighborhoods were caught unprepared.

In total, the flood was responsible for 10 deaths and approximately \$500 million in property damage.² Significantly, this severe flooding had an impact on neighborhoods in Atlanta that were already struggling

with foreclosure. These communities, now literally as well as figuratively under water, tended to be the most socially vulnerable: low-income and minority, with low home-ownership rates and with few resources to recover from either a natural or financial disaster. According to Patrik Jonsson of the Christian Science Monitor, “Some of those affected took a double-dunk: their mortgages are already under water, which means they won’t have any equity to borrow against to rebuild.”³ Adding to the challenge, many affected Atlanta residents lacked flood insurance, which is required only for residents living within the 100-year flood plain boundaries. The September 2009 flooding was measured as a once-in-500-years event.

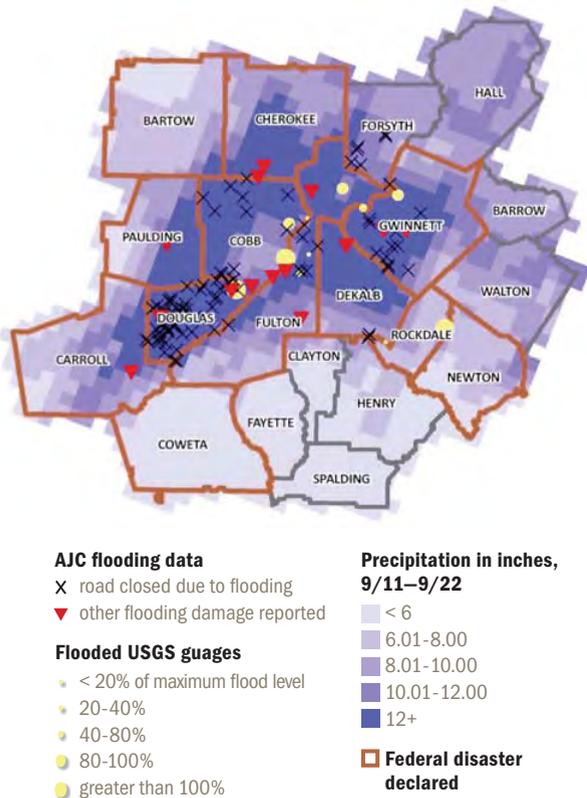
Despite the historic magnitude of both the floods and the foreclosure crisis, experts have done little research into the compounding impact of these disasters on already vulnerable communities. To begin to understand their combined effects, we have to examine flooding and foreclosure data for the 20 counties in metropolitan Atlanta to see what correlations, if any, appear. Could policy and resource directions help these communities build greater resilience in the face of inevitable future shocks?

A Look at the Data:

Where Do Foreclosures and Flooding Converge?

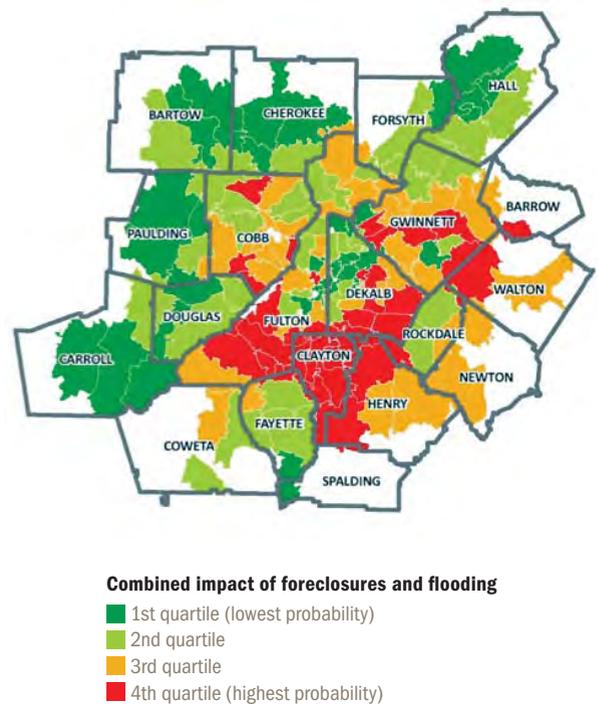
A merging of September 2009 foreclosure data from Lender Processing Services Inc. Analytic Services (LPS) with current Federal Emergency Management Agency

FIGURE 1: FLOODING AND RAINFALL DATA, SEPTEMBER 2009



Sources: National Oceanic and Atmospheric Administration, U.S. Geological Survey, Atlanta Journal-Constitution and Lender Processing Services Inc. Analytic Services

FIGURE 2: COMBINED IMPACT OF FORECLOSURES AND FLOODING



Sources: National Oceanic and Atmospheric Administration, U.S. Geological Survey, Atlanta Journal-Constitution and Lender Processing Services Inc. Analytic Services

(FEMA) 500-year floodplain maps produced a combined index of the probability that households were at risk of flooding and foreclosure. These two data sets were also indexed geographically with residential land cover data (information obtained from aerial maps showing housing unit density) to further highlight affected owner-occupied, single-family residential areas.⁴

The largest concentrations of severely affected neighborhoods were in South Fulton and Clayton counties and parts of Cobb and Gwinnett counties, areas that are typical older, inner-ring suburbs (see figure 2). The analysis actually underestimates the severity of flooding. The 500-year floodplains were often breached during the 2009 flood, but the data still provide a reasonable measure of the risk of extreme flooding in Atlanta's neighborhoods.

FIGURE 3: AVERAGE VARIABLES BY QUARTILE OF COMBINED FLOODING AND FORECLOSURE PROBABILITY

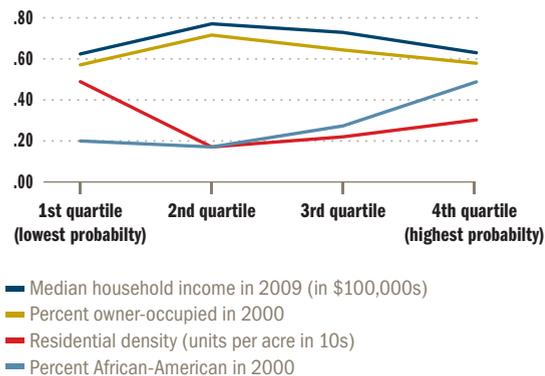


Figure 3 shows, at the regional level, neighborhoods in quartiles according to the combined probability of foreclosure and flooding. The lowest quartile (1st quartile) represents the 36 neighborhoods with the lowest probabilities of foreclosures and flooding in residential areas. The areas hardest hit by flooding and foreclosures (4th quartile) exhibit common characteristics of vulnerable populations: lower incomes, a higher percentage of minority residents, and lower home ownership rates.

While the data analysis is preliminary, it does show a correlation between the risks of flooding and foreclosure and the percentage of African-American households present in a neighborhood. Moreover, the data show that as

neighborhood income declines, the risks of flooding and foreclosure increase.

For many of the most affected ZIP codes, foreclosures continued to have an impact on neighborhood stability six months after the flooding occurred. The ZIP code 30106 includes Austell, a heavily flooded community in Cobb County along Sweetwater Creek, a tributary of the Chattahoochee River. Like the communities in the highest-risk quartile (see figure 2), Austell has a relatively high percentage of African-American residents and witnessed a 40 percent increase in foreclosures and a 95 percent increase in real estate owned properties in the 10 months following the storms. Out of the nearly 150 ZIP codes in the study area, only two (in the downtowns of Decatur and Atlanta) experienced increases in foreclosure rates greater than Austell from September 2009 to June 2010.

Eliminating the blight of vacant flood-damaged or foreclosed homes while stabilizing the property values of the remaining residents is the daunting challenge now confronting Austell's homeowners and local government. While it is difficult to interpret from these data exactly how the combination of flooding and foreclosure came together in Austell, it does pose the question, "How might this community have been better prepared to absorb these natural and financial shocks?"

The Role of Resilience and Possible Policy Directions

Resilience is a community's ability to "absorb disturbance and still retain its basic function and structure."⁵ The strength of social capital, the vitality of the economy, and the health of the environment are all important factors in assessing the general resilience of a place and its specific ability to recover and rebuild after a disaster. The concept of community resilience and the policies and practices that foster it have been garnering increasing attention as cities and counties seek sustainability during challenging economic times.

Following the September 2009 flood, Austell homeowners were faced with two equally urgent options: call the loan servicer first, to deal with a delinquent mortgage, or the insurance adjuster, to let the company know the house was destroyed or damaged. In an area where flooding of this magnitude is truly unusual, homeowners and service providers alike struggled to find what

resources were available and how best to weave them together into an effective action plan.

One tactic that the community pursued was to host a workshop to educate homeowners about available assistance. In all, 14 local, state, and federal agencies and nonprofits offered one-on-one assistance to homeowners about products such as U.S. Department of Housing and Urban Development (HUD) 203(k) and 203(h) loans and FEMA and U.S. Small Business Assistance housing assistance programs. However, lenders and housing counselors were generally unfamiliar with the 203(h) disaster assistance loans (only three such loans were originated as a result of the flooding), which made it difficult for them to advise homeowners beyond referring them to other agencies at the workshop. Only a small percentage of flooded properties qualified for FEMA assistance, buyouts, or other assistance. Because most of the homes in Austell were not located in the 100-year floodplain, they were ineligible for buyout by FEMA'S Disaster Relief Fund.

Conclusion

To ensure the sustainability and resilience of a region and its municipalities, planners and policymakers must understand the risks to vulnerable populations and neighborhoods, communicate those risks, and engage affected populations in efforts to mitigate future damage. Planning and policy efforts should include risk assessments and expanded insurance and disaster recovery programs. These efforts must also include engineering and growth management strategies that minimize the exposure to hazards experienced by the most vulnerable populations. Additionally, the capacity of local nonprofits must be shored up with robust information-sharing mechanisms to ensure their understanding of disaster loan products and how to use them. Nonprofits must also have the financial resources and access to provide the targeted and intensive case management that can truly assist flooding and foreclosure victims in their recoveries. ■

This article was written Ann Carpenter, visiting researcher at the Atlanta Fed.

Endnotes

- ¹ U.S. Geological Survey, *Atlanta Floods Extremely Rare*, 2009, <http://ga.water.usgs.gov/news/e-news/>.
- ² Mark Davis, "Flood anniversary: Water recedes quicker than fears," *The Atlanta Journal-Constitution*, September 19, 2010, www.ajc.com/news/flood-anniversary-water-recedes-616866.html.
- ³ Patrik Jonsson, "Atlanta flood: After drought, residents caught by surprise,"

The Christian Science Monitor, September 24, 2009, www.csmonitor.com/USA/2009/0924/p02s02-usgn.html.

⁴ Although the flood severely damaged a number of multi-family, renter occupied-dwellings (including at least 55 properties in the city of Atlanta),

the LPS did not include these properties in their foreclosure data set. I therefore excluded them from the analysis.

⁵ Brian Walker and David Salt, *Resilience Thinking: Sustaining Ecosystems and People in a Changing World* (Washington: Island Press, 2006).

Nashville: Flooding and Foreclosure

In May 2010, Nashville, Tenn., witnessed flooding at an even greater scale than Atlanta's September 2009 flood. Property damage extended to commercial and civic districts downtown. Damage to private property was estimated at \$1.56 billion.¹

The data analysis used in the Atlanta case study was replicated for Nashville using identical data sources and methodology to compare the impacts of the disaster on communities in the two metropolitan areas and to begin to identify the most vulnerable areas in the Nashville area. FEMA floodplain data were available for only four counties (Davidson, Williamson, Sumner, and Rutherford), an area that includes the city of Nashville (which spans nearly the entire area of Davidson County) and multiple suburban enclaves. Because of the limitation of available data, the analysis was limited to these four counties, although dozens of counties were declared federal disasters. As with the Atlanta region, Nashville suburbs most at risk of foreclosures and flooding (4th quartile; see figure 1) tend to be lower income with a larger minority population and a lower homeownership rate than the least at-risk ZIP codes (1st quartile; see figure 2). Nashville, like Atlanta, is likely to experience increased

complications in recovery from the flooding and foreclosures because of the high degree of social vulnerability in affected neighborhoods.

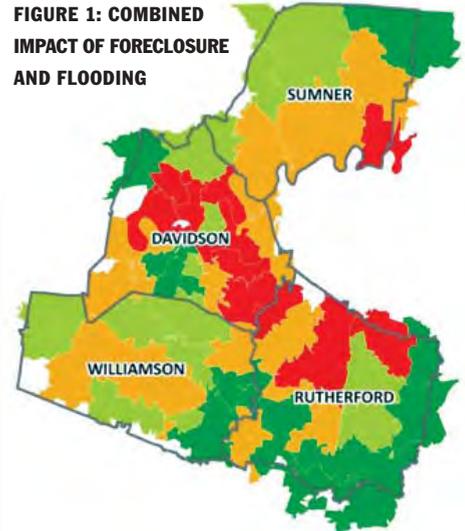
In the three months following the flooding, approximately 300 homes were purchased as part of a buyback program intended to relocate households to prevent repeat flooding. The vacant properties will be left undeveloped, as green space or parks.² Although these 300 homes are only a small percentage of the approximately 11,000 properties damaged, this sort of innovative approach is noteworthy. Still, as in Atlanta, the current financial climate constricts the availability of financial support for impacted households, which presents acute problems for the most vulnerable communities.

Endnotes

¹ Valerie Bauerlein and Kelly Nolan, "After flood, Nashville faces the music," *Wall Street Journal*, May 10, 2010, online.wsj.com/article_email/B10001424052748704247904575240622761973564-1MyQjAxMTAwMDEwMzExNDMyWj.html.

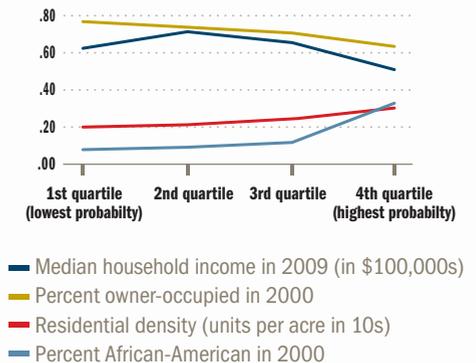
² Michael Cass, and Natalia Mielczarek, "Nashville government sends 305 flood buyout letters," *Nashville Tennessean*, June 23, 2010, www.tennessean.com/article/20100623/NEWS0202/6230358/-1/NEWS0101/Nashville+government+sends+305+flood+buyout+letters.

FIGURE 1: COMBINED IMPACT OF FORECLOSURE AND FLOODING



■ 1st quartile (lowest probability)
 ■ 2nd quartile
 ■ 3rd quartile
 ■ 4th quartile (highest probability)

FIGURE 2: AVERAGE VARIABLES BY QUARTILE OF COMBINED FLOODING AND FORECLOSURE PROBABILITY



Tennessee floods significantly damaged or destroyed homes and businesses in May 2010. David Fine/FEMA

