

# Rocky Mount, North Carolina



## Background

Rocky Mount (pop. 60,000) is located in Eastern North Carolina within Nash and Edgecombe Counties (see Figure 1). Tobacco and cotton, once mainstays of Rocky Mount's economic development, are now being replaced by new industries like diesel engine manufacturing and pharmaceuticals. In addition, the the Golden Leaf Foundation, a nonprofit organization charged with distributing money from settlements the state has made with major tobacco companies, is headquartered in Rocky Mount.

The population of Rocky Mount has historically been majority African American. Despite the presence of some blue-collar and white-collar jobs in the region, there has not been sufficient economic opportunity in recent decades to keep young adults in the community. The city's median age is slightly higher than the state average (see Table 1). Median household income in Rocky Mount is nearly identical to that in North Carolina as a whole: \$36,582 vs \$46,693, respectively.

**Figure 1: Location Map**



## History of Flooding and Mitigation

Eastern North Carolina has a long history of destructive hurricanes, including Hurricane Hazel in 1954, Bertha (1996), Fran (1996), Bonnie (1998) Dennis (1999), Floyd (1999), Isabel 2003 and Irene 2011 (North Carolina State Climate Office:

<http://climate.ncsu.edu/climate/hurricanes/statistics.php>). Along the coast, storm surge and high winds can cause extensive damage. Inland, heavy rains can cause severe flooding along rivers and streams. And strong winds can damage homes and knock down power lines, leaving people without power for weeks.

**Table 1: Rocky Mount Demographic Info**

	<b>Rocky Mount</b>	<b>North Carolina</b>
Population (2010)	57,477	9,535,483
Median age	38.7	37.4
Housing units	26,953	4,327,528
Owner occupied (%)	55.0	65.8
Black (%)	61.3	21.5
White (%)	33.5	68.5
Hispanic or Latino (%)	3.7	8.4
High school degree (%)	82.6	85.4
Bachelor's degree (%)	18.9	27.8
Median household Income	\$36,582	\$46,693
Poverty rate	25.5	17.2

Source: US Census, 2010 and American Community Survey 2014

Table 1 compares the demographics of Rocky Mount to the state of North Carolina. Rocky Mount has a significantly lower percentage of White residents (33.5% vs. 68.5%) as well as Hispanic or Latinos (3.7% vs. 8.4%). In terms of education, while percentage of residents with high school degrees is similar to the state, a considerably lower percentage of Rocky Mount residents have Bachelor's degrees (18.9% vs. 27.8%). In addition, the poverty rate in the city is higher than the state (25.5% vs. 17.2%) and household income is about \$10,000 less than the state median.

The 1999 hurricane season was an active time for the Atlantic basin. The National Hurricane Center ranks it as the 8<sup>th</sup> most active season since 1950. In September 1999, Hurricane Dennis struck NC, although by the time it made landfall it had weakened to a tropical storm. Still, the storm brought heavy rains across eastern North Carolina, including as much as 15 inches of rain in some areas.

Twelve days later, Hurricane Floyd arrived on September 16. At its strongest, Floyd's 155 mph winds classified it as Category 4. Like Dennis, Floyd weakened before striking the North Carolina coast, but it brought heavy rains once again, drenching parts of Eastern NC with as much as 17 inches of rain in little more than a day. When Hurricane Floyd hit, the ground was already saturated with water and rivers were already full. Thus, there was little natural capacity to absorb the extra rainfall from Floyd. This exacerbated flooding in Eastern NC, including Rocky Mount.

Economic losses to the region from the flooding were estimated at over \$6 billion. Thirty-five people lost their lives, mainly from being trapped in their homes as flood waters rose around them. Roughly twenty-five percent of Rocky Mount was under water at the height of the flood; some 4,000 housing units were destroyed.

In addition to the property losses to homeowners and businesses, Hurricane Floyd caused immense revenue losses for farms in the region. The flood drowned or displaced millions of livestock, especially hogs. Flooding at agricultural facilities became a source of environmental degradation as well. Eastern North Carolina is home to thousands of industrial scale hog farms. Flooding caused many hog waste lagoons to overflow, contaminating local waterways. The environmental cost of this influx of bacteria and nutrient-laden waste was significant.

## The Buyout

The buyout in Rocky Mount was among the largest in the state: 446 homes were purchased. Technical expertise and intergovernmental experience primed the city for action when Hurricane Floyd struck. The city was already developing GIS capacity prior to the flooding, and this allowed personnel to plan the recovery effort more effectively.

State of North Carolina funding streams added flexibility and capability to the negotiation process for property acquisition. In addition to funds from FEMA, such as Hazard Mitigation Grant Funds, supplemental programs from the state boosted the purchase price for homes and encouraged more homeowners to participate in the buyout.

One obstacle the city faced was insufficient housing stock to enable speedy, permanent relocation of flood victims. This is not an uncommon problem with buyouts, as flooding destroys much of the housing stock, creating a shortage at a time when replacement housing is needed most. While FEMA provided temporary housing, many residents could not abide the poor living conditions presented by “FEMA trailers”. Despite efforts by the state to fund infrastructure improvements and spur new development, some residents who relocated outside of the area chose not to come back.

Still, the single most important aspect of the flood was the extent of the destruction. Multiple public officials we interviewed reported that the flood of 1999 decimated certain areas to such a degree that rehabilitating them was unfeasible. Former Fire Chief Keith Harris described it this way: “The HMGP is supposed to be a mitigation program, but in Rocky Mount, it was a recovery program.” Another important factor was the one-two punch of Hurricanes Dennis and Floyd. Residents had barely begun cleaning up after Dennis when Floyd hit. This helped convince many homeowners to participate in the buyout.

Following a federal disaster declaration, the state of North Carolina began allocating funds swiftly. FEMA provided initial emergency relief to affected residents of Rocky Mount and

opened the application window for grants through the Hazard Mitigation Grant Program (HMGP). State funding took the form of the Crisis Housing Assistance Fund (CHAF) and the State Acquisition and Relocation Fund (SARF). Rocky Mount, Nash County, and Edgecombe County each began their own efforts to designate personnel and gather the resources needed to complete the FEMA/HMGP grant process. There was some cooperation among the three municipalities, but each submitted its application individually.

Once the most urgent threats to human life were addressed in Rocky Mount, Assistant Fire Chief Keith Harris was assigned by Mayor Charles Penny to be the director of the flood recovery effort. Mr. Harris was joined by former Nash County planner Bob Bridwell and members of the city's planning department, including Nancy Nixon, in an ad hoc recovery administration. To fill out the technical expertise of the team, Mr. Harris selected a small number of firefighters that were familiar with GIS mapping and building inspections.

The planning staff of the city were acquainted with the process of applying for federal funding because the city had previously been the recipient of Community Development Block Grants (CDBG's). However, the city decided to supplement the experience and personnel capacity of the planners by hiring consulting firm that had a strong working knowledge of federal relocation standards under the Uniform Relocation Act due to the firm's prior work on relocating households located near airports.

The city staff visited other cities in Eastern NC that had applied for FEMA funds after Hurricane Fran in 1996, including Greenville and Goldsboro. Meeting with these other local officials gave the Rocky Mount insights on how to manage a buyout process. One piece of advice remembered by the Assistant Fire Chief was to maintain oversight and participation by the city during the buyout rather than relying solely on private consultants. According to the experienced officials, local residents would need representatives of the city to be responsive and act as advocates in interactions with consultants.

In the early days of preparing the FEMA application, the recovery team produced a wall-sized map of the area that they would use to visualize the acquisitions. Colored push pins were placed on parcels to be acquired, with each color representing a different level of prioritization. Homes targeted for acquisition were prioritized in the following order:

- Located in the floodway
- Repetitive loss properties
- Located in the 100 year floodplain

Much of Rocky Mount's residential developments are suburban in nature. Despite the low density of the residential areas, the flat topography allowed flood waters to reach a large number of homes. The historic flooding left few lowland areas safe from inundation.

As there were numerous damaged structures in the 100 year floodplain, these were further prioritized according to FEMA standards regarding the height the flood water reached within the home and the number of days the home was inundated.

The FEMA application process was greatly benefited by the proficiency of the firefighters who had been assigned to the recovery effort. According to Mr. Harris, the fire department had been working on a GIS mapping system to assist with 911 emergency response and for risk assessment and early warning systems. The fire department’s building inspection capacity was an important factor as well. With these mapping and inspection tools in place, the recovery team was able to mobilize quickly and gather information about damaged homes that would be included in the FEMA application. The inspections were quickly streamlined to limit the number of visits to each home. By collecting all relevant data in one trip to a property, the application process took less time than it would have otherwise.

Nearly 100% of residents who were offered money accepted the buyout and left their homes. However, FEMA funds were not enough to motivate all of these households. The flooding that took place in Rocky Mount was distributed across a diverse population in terms of race and income class.

Damaged homes ranged in value from under \$100,000 to over \$700,000. The range of home values affected by the flood created issues for the acquisition of damaged homes. FEMA sets a maximum dollar amount for offers on flooded homes. For residents whose homes were appraised at values beyond this price, the buyout offers were untenable. The State of North Carolina introduced two programs to supplement the federal offers and improve the likelihood of acquisition. These funds were named the State Acquisition and Relocation Fund and the Crisis Housing Assistance Fund. SARF and CHAF enabled Rocky Mount to make satisfactory offers to homeowners whose property values exceeded the maximum allowed under FEMA guidelines.

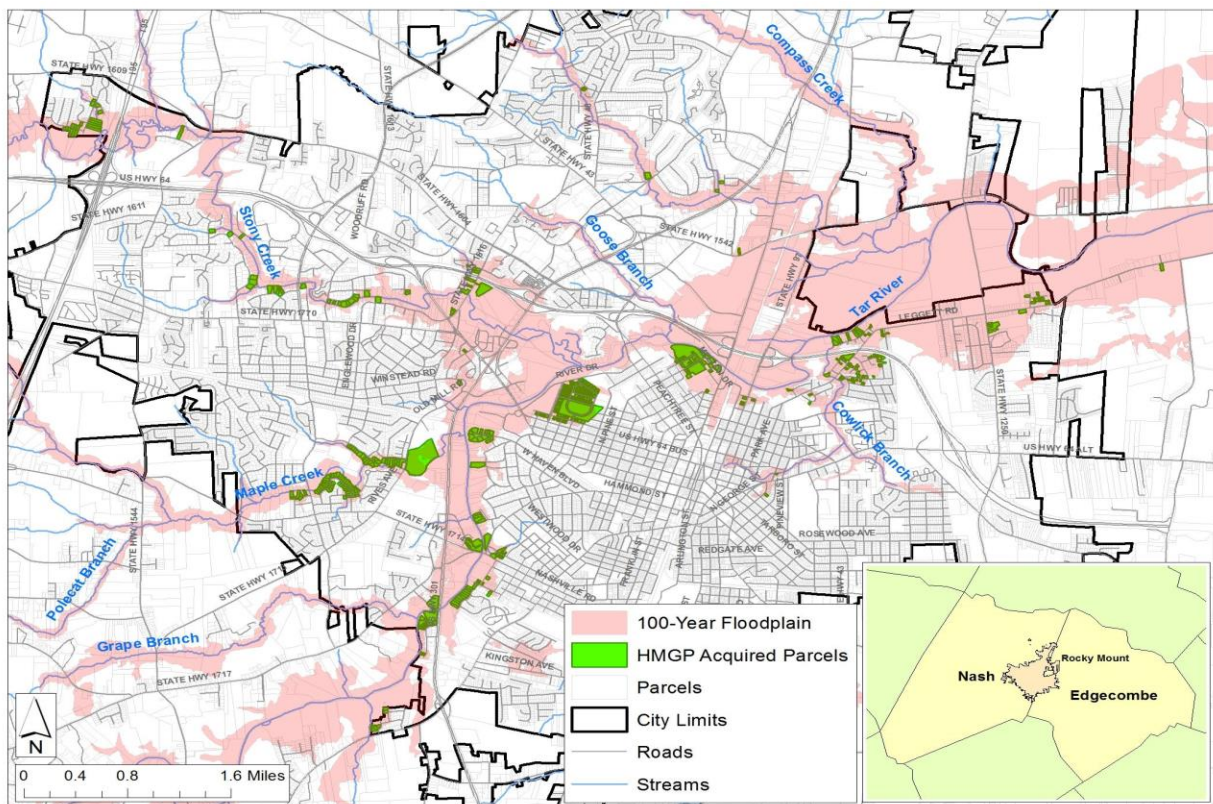
Table 2: Damages and Acquired Homes

Homes damaged or destroyed	~4000
Homes acquired in buyout	446
Homes remaining in flood hazard area	84

Homeowner response to flooding varied by level of income. Lower-income homeowners relied heavily on the temporary housing, known as “RV’s or “trailers”, provided by FEMA. Wealthier residents typically rented homes or apartments or simply moved away. The exodus of affluent residents was exacerbated by the preexisting deficit of housing stock in Rocky Mount. This deficiency was only worsened by the flood’s removal of 4,000 dwelling units from the market.

Following the flood, Rocky Mount was successful in obtaining state funding to lay new water and sewer infrastructure to facilitate the development of new housing that would replace the lost housing stock. However, houses cannot be built overnight so the new housing did little to keep flood victims in the city. The creation of new subdivisions would not have been truly effective anyway, claims Mr. Harris, because affected residents were so diverse. Appropriate replacement housing could not have been provided for this range of income levels by one or two new subdivisions.

**Figure 2: Map of Buyout Areas**



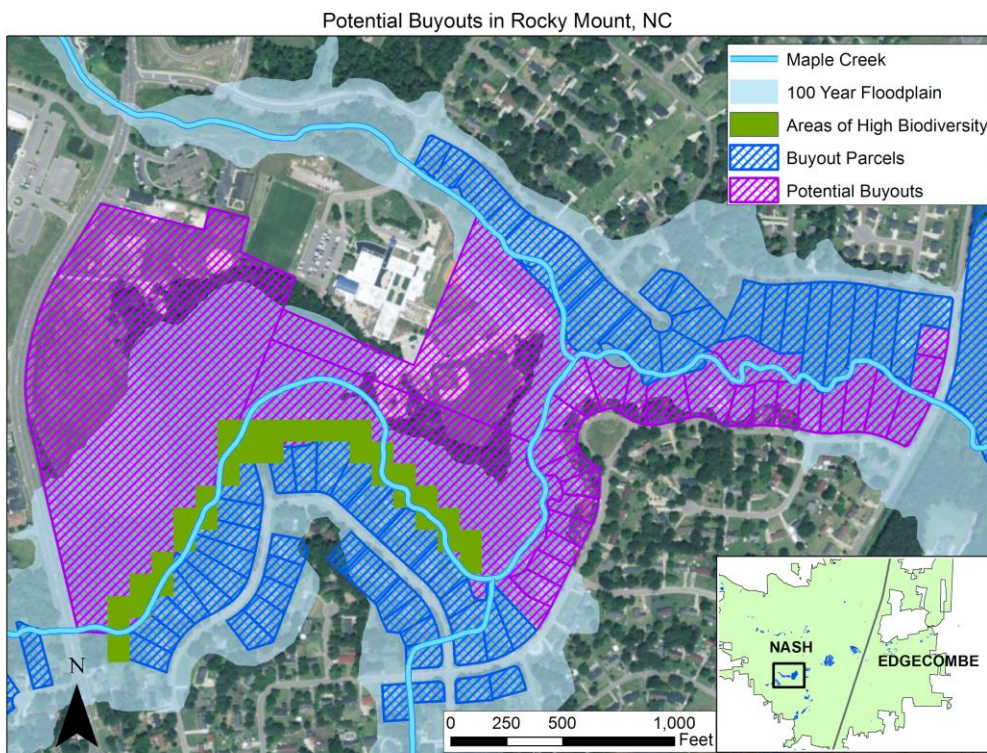
Development in the floodway is generally prohibited by the floodplain ordinances of the City of Rocky Mount and Nash County. Special exceptions can be granted if structures are certified to cause “no net rise” in the base flood elevation. The certification process is expensive, and few projects justify this additional cost. Construction in the 100 year floodplain is allowed. However, the elevation of the first floor of the structure must be 2 feet above the base flood elevation in Rocky Mount and at or above base flood elevation in Nash County.

In the years after Hurricane Floyd, there has been some development in the 100 year floodplain in the city limits of Rocky Mount: eighty four homes were built in the floodplains of Rocky Mount since the buyout occurred. Figure 3 shows homes built in the floodplain since 2000. While visual inspection suggests that most of the structures in the floodplain are elevated to the appropriate level, one area is questionable. A small subdivision of duplexes on Rosedale Avenue was built after the flood. All of these homes have their first floors at ground level whereas NC DFIRM maps show that much of this neighborhood is in the 100 year floodplain.

Despite Rocky Mount's removal of 446 structures in the floodplain as part of the buyout, the construction of 84 new structures since the buyout occurred increases the risk to homeowners who live in the floodplain.

Figure 3 shows the areas where buyout parcels coincide with areas with high value habitat. There is one contiguous area, shown in green in the left side of the image below, but overall, there is little high value habitat within the city.

**Figure 3: Buyout Parcels and Habitat Value**



Rocky Mount has received a lot of attention for the way it has utilized HMGP-acquired property. FEMA policy prohibits the placement of structures or impervious surfaces on property

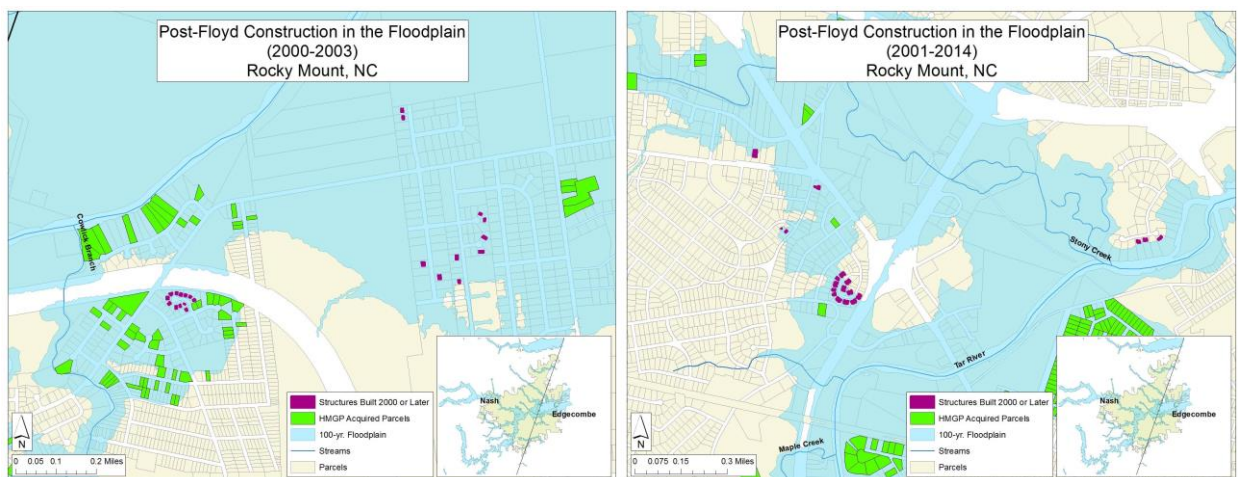


bought with HMGP funds. While some variances can be granted for structures incumbent to recreational facilities, the land must remain “open space” in perpetuity.

These proscriptions have been greeted as an opportunity by the City of Rocky Mount. Parcels acquired through the buyout were turned over to the Parks and Recreation Department. Within three years the city had created its first facility based on acquired parcels. The Tar River Trail, a bicycle and pedestrian greenway, opened for use in 2003. By the next year, the Farmington Disc Golf Course was completed, and it was followed by another disc golf course at Sunset Park in 2007.

In the last two years, a dog park, a barbecue park, and a community garden have been placed in the land purchased by the city. The city also manages two large areas of contiguous parcels as “Community Forests”. These two sites remain unused for active recreation because they are in neighborhoods that are well-served by existing parks.

**Figure 4: Recent Floodplain Development Since Buyout**



Rocky Mount funds all of these projects with assistance from federal grants, state grants, private donations, volunteer labor, and in-kind donations from citizens and businesses. The city’s more recent projects have relied more heavily on private contributions and local dollars and less on state and federal grants. One recent example of this trend is the Barbecue Park on the Tar River, which was made possible in part by three Boy Scouts who raised a total of \$7,500 and coordinated volunteers as part of their Eagle Projects.

These amenities are located in a part of Rocky Mount that has a relatively high density of white residents compared to the city as a whole, but they are centrally located and close to the city’s downtown. In order to ensure access to these amenities, the Parks and Recreation Department has developed bicycle and pedestrian plans as part of its 2015 Master Plan. Each of these two

plans includes multiple trails constructed on or through land purchased with state and federal funding after Hurricane Floyd.

The Master Plan Steering Committee evaluated the park system of Rocky Mount and determined that its City Trail System there was good or excellent in all five measured categories and one of the strongest elements of the system. In addition, this assessment rated the performance of parks as being at or above the city average for two of the three wards with the highest proportions of African American residents. One of these three wards, Ward 3, received the lowest score of any ward. Ward 3 is located on the other side of a railroad junction and across the urban core from most of the land vacated by the FEMA buyouts.

Greenway trails were found to be one of the areas of highest need when the Parks and Recreation Department performed a needs assessment. This assessment included community participation methods like meetings and surveys as well as more technical methods done internally. Of the twenty park system elements assessed, the greenway trails system was one of three that was designated “Highest Need” for both facilities and access levels of service.

### Current Use

Rocky Mount continues to work through its Parks and Recreation Department to fully utilize the parcels it gained through the buyout following the flood of 1999. The current Parks and Recreation Master Plan lays out extensive plans for a greenway and walking trail system. Much of the buyout land that forms large, nonlinear spaces has been converted to parks. Trails lend themselves to the arrangement of the remaining parcels along the river channel. The city’s community forestry program will provide scenic, natural areas for adjacent communities.

In addition to the individual elements listed above, the Parks and Recreation Department has outlined a plan for a mixed-use district tracking the river along the northern edge of downtown Rocky Mount. This area, dubbed River Falls Park, would link several parks and public facilities with the Historic Mill District and wildlife conservation areas using a network of greenways and pedestrian trails. The Master Plan states that, “there is little to no land acquisition required by the city to realize this concept” (118). Nevertheless, the document’s implementation plan calls for \$100,000 to acquire 5 parcels to enable the River Falls Park.

Rocky Mount officials gave no indication of any desire to target particular properties for future acquisition. The Parks and Recreation Master Plan quotes local stakeholders who find the amount of vacant property in some areas to be a liability. An online opinion poll conducted for the Master Plan revealed that land acquisition was the lowest priority for area residents among the choices offered. This evidence suggests that the residents of Rocky Mount are not interested in acquiring more land.

**Figure 5: Current Uses of the Buyout Lands**



Based on the details of the proposed River Falls Park district, the Parks and Recreation Department is considering some parcels for acquisition. Any land purchases related to the project would be prioritized based on their relation to other city-owned parcels and relevance to the development.

Rocky Mount has put forth a vision for a series of greenways linking natural and cultural amenities. The plans outlined by the city emphasize access to wildlife habitat, historic districts, and recreation facilities. Furthermore, the 2004 Rocky Mount Hazard Mitigation Plan contains policy statements encouraging the city to reduce flood risk through property acquisition. The Parks and Recreation Master Plan and the 2004 Hazard Mitigation Plan provide a clear picture of the potential motivations that would influence the purchase of property by the city.

### Integration with Hazard Mitigation Plan

Nash County, Edgecombe County, and Wilson County are drafting a regional hazard mitigation plan, but it has not been released at the time of writing this document. Rocky Mount has a hazard mitigation plan dating from 2004. The plan has a full accounting of the damages caused by Hurricane Floyd and the number of properties that remain at risk of flooding. It also provides a count of repetitive loss properties and how many of these were slated for acquisition through the buyout.

The 2004 Hazard Mitigation Plan cites the city's Land Development Code and power to regulate land use as major sources of potential mitigation against future risk. Other referenced mitigation measures include the Rocky Mount Floodplain Protection Zoning Overlay and the ability to purchase land at risk of flooding.

Although these regulatory measures are explicitly aimed at qualifying the city for the National Flood Insurance Program (NFIP), the plan recognizes the flooding of 1999 as a compounding factor driving these efforts. The plan complements general policy frameworks with a specific goal to develop an open space plan for floodplain acquisition and recreational opportunities. It refers the specifics of the goal to the City Manager's Office, the Planning Department, and the Parks and Recreation Department.

### Integration with Land Use Plan

As mentioned in the previous section, the City of Rocky Mount has adopted a floodplain ordinance. The ordinance prohibits development of the floodway and requires development in the floodplain to have first floor elevation at least two feet above base flood elevation. While there has been little development in the floodplain in the years since 1999, the city allows construction that is consistent with the floodplain ordinance.

Rocky Mount's Comprehensive Plan includes a goal for the creation of a system of open space to be designed by the Parks and Recreation Department. The Comprehensive Plan calls for a network of pedestrian and bicycle facilities to promote connectivity among residential areas and between residential areas and open spaces. In terms of the city's priorities for development, all areas targeted for future growth in the future land use plan lie outside of the 100 year floodplain. These areas are labelled "Smart Growth" areas.

## Conclusion

Rocky Mount was devastated by the flooding from Hurricane Floyd, but the city responded with a buyout that not only reduced future flood risks and moved people out of harm's way, but turned the acquired lands into assets for the entire community: building parks and recreational facilities such as walking trails, disc golf, and a dog park using federal, state and local funding.

Federal rules for acquiring flood damaged properties are cumbersome and the process is slow-moving, but Rocky Mount expedited or facilitated the buyout process by learning from officials in other communities that had implemented a buyout, inspecting and assessing damaged homes and using GIS to track home acquisitions.

The officials leading the recovery effort learned from their visits to other municipalities that private consultants can be useful to the process, but citizens need steadfast local representation too. Local planners spent countless hours responding to the questions and concerns of flood victims, and they reported that this communication made the buyout less contentious and more collaborative.

Federal grants led to the removal of homes from the floodplain and the subsequent reduction of risk to life and property. Representatives from the federal government will verify the development restrictions on buyout land from time to time, but Rocky Mount remains vigilant. The city's development services database has an automatic message that appears when personnel search HMGP acquired parcels. The message warns the user not to issue a building permit. This digital gatekeeper is one of several layers of protective programs, policies, and incentives the city uses to ensure the safety of residents in the future.