UNDERSTANDING FLOOD RISK REDUCTION
Introduction

Public safety is our top priority at Charlotte Mecklenburg Storm Water Services. To prevent tragedies caused by flooding, we partner with the Federal Emergency Management Agency (FEMA) to assess and map flood risks in response to any changes in land development, changes in rainfall statistics and improvements in topographic data.
Charlotte and Mecklenburg County landowners are interconnected through the streams that weave properties and owners together.

- Mecklenburg County has approximately 3000 miles of streams all of which originate within the county, except for the Catawba River.
- In heavy rain events, creeks overflow and store excess water in the floodplain.
- Floodplains are meant to flood. Floodplain regulations effectively promote public health, safety, and general welfare and minimize losses to life and property due to flood conditions.
Floodplain Mapping

Floodplains are the areas along streams or rivers that are likely to experience repeated flooding. Over thousands of years, nature shaped the floodplain to hold excess water that spills over the banks. Simply put, floodplains are meant to flood.

Flood risks change over time. Floodplain maps must be updated regularly to accurately show flooding risk. Our Floodplain Mapping Program updates local floodplain maps. Risk mapping technology has improved, allowing our staff to more accurately predict where floodwater is likely to flow. The new maps also calculate how deep floodwater is likely to get and show how frequently a section of land is expected to flood.
3D Floodzone maps: Typical flood zone maps depict the floodplain areas in only two dimensions: length and width, showing how far floodwater will spread across the ground. Storm Water Services floodplain maps add information on flood height and show how deep and even how fast the floodwater will get. Adding the third dimension (height) is why the new maps are referred to as “3-D”. You can locate your property on our 3D Floodzone Map at StormWater.CharMeck.org.

FEMA 100 Year Floodplain: The 100-year floodplain is the area adjacent to a creek or water body where there is a 1% chance it will flood each year. In Mecklenburg County, 7.3” of rain would have to fall in a 24-hour period to achieve this level.
What is the purpose of floodplain maps?

Floodplain maps are used to:

• guide new construction and remodeling
• determine when flood insurance is required
• set the cost of flood insurance premiums
Can I build or renovate in the floodplain?

Whether you can build or renovate in the floodplain depends on:

1) Where the property is in the floodplain
2) If the building's floor is above the required elevation
3) The cost of renovation compared to the value of the existing structure

Keep in mind: Building codes are different in the floodplain than outside of the floodplain. A special permit is required before any floodplain construction takes place to make sure it complies with the additional regulations. Floodplain development restrictions apply to grading, new construction and some renovations on floodplain property.

To get approval to renovate or repair a structure in the floodplain, you need to ask:

1) What is the required elevation for a building in that part of the flood zone?
2) Is the floor of my building below this required elevation?

Buildings below the required elevation are at a higher risk of flood damage. For that reason, there are restrictions on renovations.
Flooding can happen anywhere.

Each year 25% of flood insurance claims are from outside high-risk areas (regulated, mapped floodplains). Standard homeowners’ insurance or business insurance does not cover flood damage.
The National Flood Insurance Program was developed in 1968 with the purpose of reducing the impact of flooding on private and public structures. It does so by providing affordable insurance to property owners, renters and businesses.

- Everyone is eligible to buy flood insurance
- Homeowner’s mortgage lender may require the purchase of flood insurance
- Renters should buy flood insurance to protect their personal property
- There’s a 30-day waiting period before the policy takes effect

National Flood Insurance Program 1-888-379-9531

Go to floodsmart.gov for more information
Buying and removing buildings in the floodplain is one of the most cost-effective ways to reduce long-term flood damage and create many other community benefits.
Since 1999, the Storm Water Services Buyout Program has purchased over 450 flood-prone homes, apartment buildings and businesses that were in floodplains throughout Charlotte-Mecklenburg. This program has achieved numerous results

• Over 700 families have been moved to a less vulnerable location
• 185 acres of public space has been left undeveloped to allow the floodplain to function during heavy rain
• Storm Water Services estimates the buyouts have avoided more that $27 million in losses
• Will ultimately avoid $300 million in future losses

Floodplain buyouts have all been voluntary. Owners are not forced to sell. Historically, about 85% of owners who go through the appraisal/offer process, participate in the Buyout Program.
Each of the 5,000 individual properties in Charlotte-Mecklenburg’s regulated floodplain have been analyzed using Storm Water Services’ Risk Analyze Risk Reduction Tool (RARRT).

The “flood risk” of an individual property includes two main factors 1) the likelihood of various floods occurring on that property and 2) the damage (and financial impacts) that will occur. There are nearly a dozen different components to analyzing a property’s likelihood of flood and financial impact.
After a destructive flood, the Mecklenburg Board of County Commissioners can allocate rainy day funds to establish a Quick Buy program to purchase qualifying buildings with significant flood damage.

Some of the overall benefits of the Buyout Program include:

- Less tax money spent on emergency rescues
- Less tax money spent on disaster relief
- Less money spent to replenish the National Flood Insurance Program
- Enhanced water quality and ecosystem by restoring the natural floodplain
- More opportunities for recreation, such as creek-side greenways
Floodproofing • Improvements • Together
Financial grants are available to reimburse 75-95% of eligible expenses for qualified floodproofing projects.

Mecklenburg County’s retroFIT Program offers financial and technical assistance to owners that undertake flood damage reduction measures for existing buildings in the regulated floodplain.

Property owners in the FEMA floodplain whose dwelling can be modified to reduce or prevent future flood damages may be eligible. Qualified property owners receive technical assistance throughout the grant application process.

Floodproofing is making modifications to a house/building that will reduce flood damage. Floodproofing projects can reduce post-flood expenses, speed up recovery, and potentially reduce flood insurance rates. However, they do NOT prevent flooding nor eliminate flood damage.
Structure Elevation
physically raising the lowest finished floor of an existing structure to an elevation above the Flood Protection Elevation.

Structure Relocation
involves moving a structure to a location outside the floodplain. The property remains in private ownership.

Wet Floodproofing
involves modifying of a structure to allow exposure to flood water without the structure experiencing significant damage.
Dry Floodproofing involves making an area watertight to prevent floodwater from entering the structure.

Equipment Elevation is intended to protect service equipment involves elevating, relocating, or protecting in place.

Abandon Basement converts a finished living space in a walkout basement and filling involves raising the lowest finished floor of an existing structure by converting the finished basement to crawlspace.

Demolition involves demolition by razing a flood-prone structure.