



MINUTES

January 22, 2025

SECOND MONTHLY MEETING OF THE CITY COUNCIL

CITY HALL - 2ND FLOOR MEETING ROOM | 160 6TH AVENUE E. | 4:00 p.m.

Present: Mayor Pro Tem Dr. Jennifer Hensley and Council Members Lyndsey Simpson, Melinda Lowrance and Gina Baxter

Absent: Mayor Barbara G. Volk

Staff Present: City Manager John Connet, City Clerk Jill Murray, City Attorney Angela Beeker, Communications Manager Allison Justus, Budget & Evaluation Director Adam Murr, and others.

1. CALL TO ORDER

Mayor Pro Tem Jennifer Hensley called the meeting to order at 4:02 p.m. and welcomed those in attendance. A quorum was established with all members in attendance.

2. CONSIDERATION OF AGENDA

Council Member Melinda Lowrance moved that City Council approve the agenda as presented. A unanimous vote of the Council followed. Motion carried.

3. PRESENTATIONS

A. Floodplain Workshop – *Mike Huffman, Stormwater Director*

City Manager John Connet said we have folks from the State here and our team has put together a presentation for you. We've laid out an agenda where we spend 15 minutes or so talking about Floodplain 101, then we'll spend about 30 minutes talking about floodplain mapping and we'll have 15 minutes or so to talk and answer questions. We're going to keep it to two hours and we are not taking questions from the audience but of course council can ask questions.

Mike Huffman introduced the two guests. Mr. Terry Fox, CFM, NFIP Planner, NC Western Branch and Steve Garrett, CFM, State NFIP Coordinator.

Mike gave the following PowerPoint presentation.

Floodplain Development Workshop

January 22, 2025 City Council Meeting

City of Hendersonville, NC

Purpose and Overview

- + Explore floodplain regulations, mapping, and reasonable development considerations.
- + Equip City Council with tools to guide future floodplain management.

Agenda Overview:

1. Local Floodplain Regulations
2. Overview of Floodplain Mapping
3. Discussion
4. Additional Information - Time permitting

Understanding Floodplain Regulations

The NFIP	Local Floodplain Management Ordinance	Development vs. redevelopment.	Special Flood Hazard Areas
Base Flood Elevation (BFE) and Freeboard requirements.	'No Rise' Requirement and floodplain filling.	Substantial Damage and Improvement	Balancing development with flood risk mitigation.

National Flood Insurance Program

- + Provide affordable flood insurance to property owners, reducing the socio-economic impact of floods by mitigating flood risks
- + Enables property owners in participating communities to purchase insurance against flood losses
- + To qualify for the NFIP, **a community must adopt and enforces a floodplain management ordinance to regulate development in flood hazard areas.**



Local Floodplain Management Ordinance

First adopted on January 7th, 1982.

Amended in 2023 - 160d revisions

Based on state model ordinance

Outlines how the city will regulate development in flood hazard areas

It is the responsibility of the local community to adopt and ENFORCE floodplain development regulations.

Objectives

Protect human life, safety, and health;

Minimize expenditure of public money for costly flood control projects;

Minimize the need for rescue and relief efforts associated with flooding

Minimize prolonged business losses and interruptions;

Minimize damage to public facilities and utilities

Help maintain a stable tax base

Ensure that potential buyers are aware that property is in a special flood hazard area;

Minimize damage to private and public property

Make flood insurance available to the community

Maintain the natural and beneficial functions of floodplains.

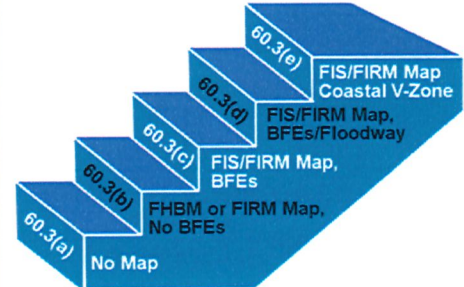


Floodplain Development – Flood Ord.

+ **Development:** any manmade change to improved or unimproved real estate, including, but not limited to, buildings or other structures, mining, dredging, filling, grading, paving, excavation or drilling operations, or storage of equipment or materials.

+ **General Standards (Sec. 24-91):** Apply in all special flood hazard areas

+ **Specific Standards (Sec. 24-92):** all Special flood hazard areas **where base flood elevation (BFE) data have been provided**



The Regulation Staircase



General Standards (Sec. 24-91):

- + All new construction and substantial improvements shall:
 - + adequately anchored to prevent flotation, collapse, and lateral movement of the structure
 - + constructed with materials and utility equipment resistant to flood damage
 - + constructed by methods and practices that minimize flood damages
- + Electrical, heating, ventilation, plumbing, air conditioning equipment, and other service facilities shall be designed and/or located to prevent water from entering or accumulating within the components during conditions of flooding to the regulatory flood protection elevation
- + 13 more provisions:
 - + Water/Sewer/ On-site Wastewater systems
 - + Subdivision requirements
 - + Structures in multiple flood zones
 - + Repairs/Alterations



Specific Standards (Sec. 24-92):

- + All general standards also apply
- + Residential Construction: shall have the reference level, including basement, elevated no lower than the regulatory flood protection elevation
- + Non-Residential Construction: the reference level, including basement, elevated no lower than the regulatory flood protection elevation may be floodproofed to the regulatory flood protection elevation in lieu of elevation.

Specific Standards (Sec. 24-92):

- + Manufactured Homes:
 - + shall be elevated so that the reference level of the manufactured home is no lower than the regulatory flood protection elevation
 - + securely anchored to an adequately anchored foundation to resist flotation, collapse, and lateral movement
 - + An evacuation plan must be developed for evacuation of all residents of all new, substantially improved or substantially damaged manufactured home parks or subdivisions located within flood-prone areas

Floodplain Development -Zoning

Sec. 17-2. - Floodplain protection standards

- Primary objective of floodplain protection standards is to preserve and maintain the natural floodplain in an undisturbed vegetated state to maintain flood storage capacity, control stormwater, improve water quality and conserve plant and wildlife habitat.

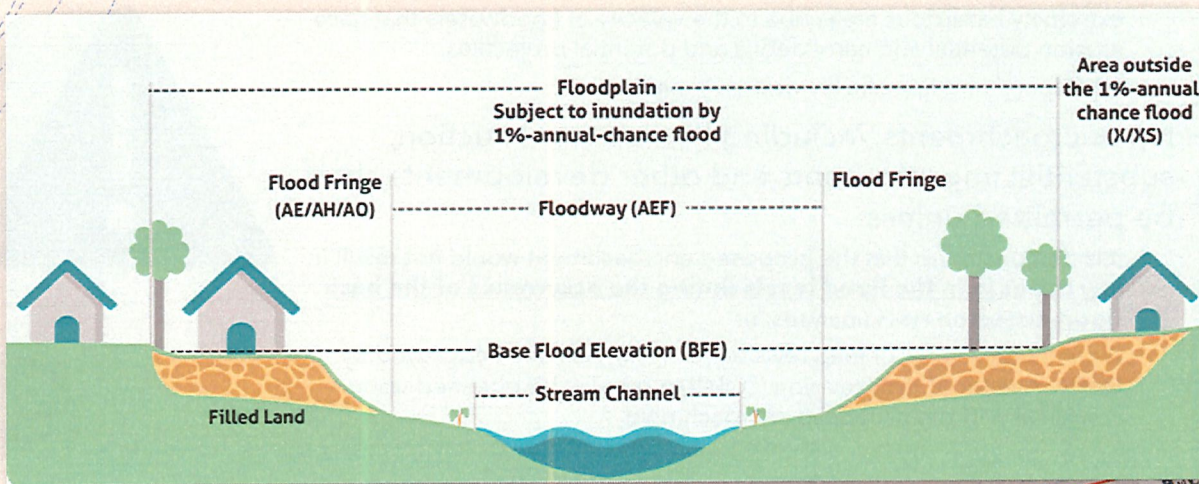
17-2-2 - Development allowed in the floodway and special flood hazard area

- Land in the special flood hazard area may be used for **up to 25 percent** of the parking required for the development on the tract
- Developer may fill and/or use for development up to **ten percent** of the special flood hazard area contained within the boundaries of any development site

17-2-4 - Redevelopment in the floodway and special flood hazard area

- Allows redevelopment to occur on existing developed sites which no longer function as natural flood plain and when **such redevelopment will not result in any further loss of flood-plain functionality.**

Special Flood Hazard Areas

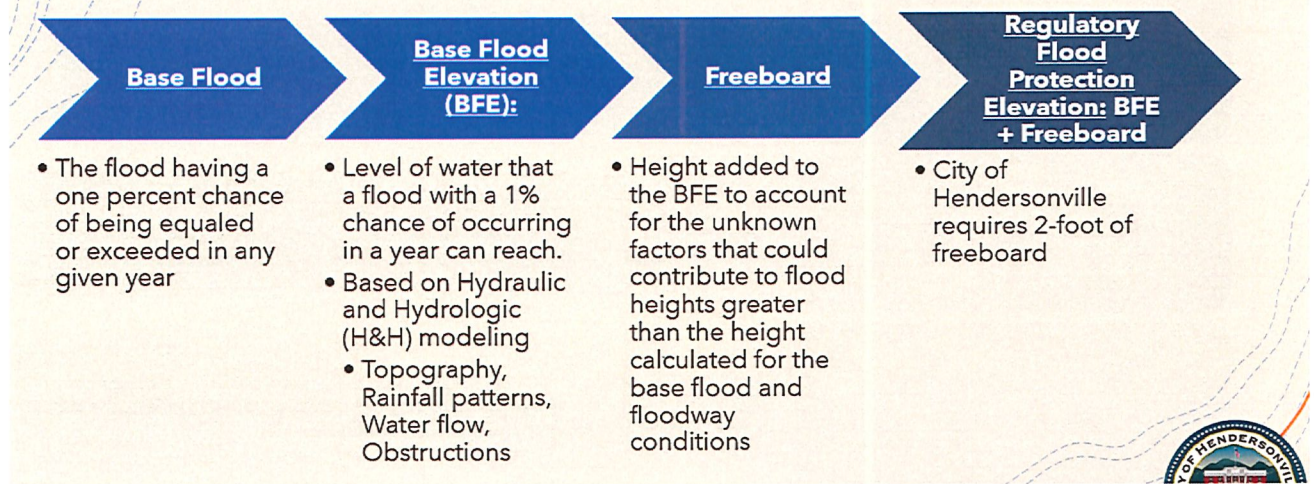


Special Flood Hazard Areas (SFHA)



- + The land in the **floodplain** subject to a **one percent or greater chance** of being flooded in any given year
- + **Floodplain**
 - + any land area susceptible to being inundated by water from **any source.**
- + **Base Flood:** 1%-Annual-chance flood
- + **Floodways and Non-Encroachment Areas**
 - + the channel of a river or other watercourse and the adjacent land areas that must be reserved to discharge the base flood





Base Flood Elevation (BFE) & Freeboard



No-Rise Requirements

- + Applicable in Floodways and Non-Encroachment Areas (NEA)
 - + extremely hazardous areas due to the velocity of floodwaters that have erosion potential and carry debris and potential projectiles.
 - + All General and Specific Provisions Apply
 - + No encroachments, including fill, new construction, substantial improvements and other developments shall be permitted unless:
 - + It is demonstrated that the proposed encroachment would not result in **any increase in the flood levels during the occurrence of the base flood**, based on H&H analyses; or
 - + A conditional letter of map revision (CLOMR) has been approved by FEMA. A letter of map revision (LOMR) must also be obtained upon completion of the proposed encroachment
- 
- 

Substantial Damage/Improvement '50% Rule'

- + Applies to all structures located in the SFHA
 - + **Substantial Damage:** damage of any origin sustained by a structure during any one-year period whereby the cost of restoring the structure to its before damaged condition would equal or exceed 50% of the market value of the structure **before** the damage occurred
 - + **Substantial Improvement:** any combination of repairs, reconstruction, rehabilitation, addition, or other improvement of a structure, taking place during any one-year period for which the cost equals or exceeds 50% of the market value of the structure **before the "start of construction"** of the improvement
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Overview of Floodplain Mapping

What do floodplain maps show (and not show)?

Updating maps: Process, timing, and triggers.

Alternative mapping resources.

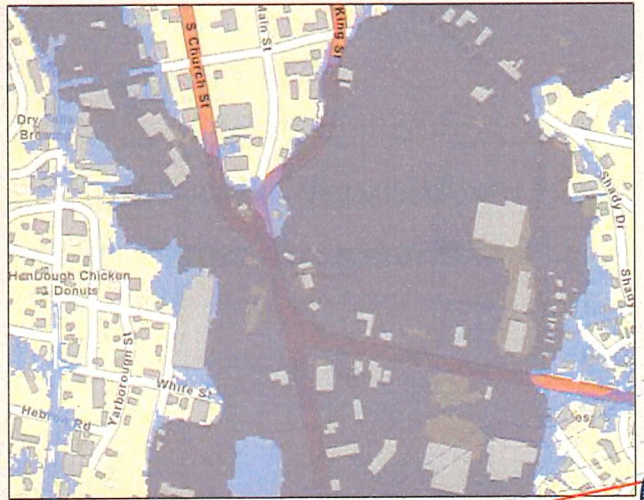
FEMA Flood Maps

- + FIS - Flood Insurance Study
 - + Report prepared by the FEMA that summarizes an analysis of the flood hazards in a community
- + FIRM - Flood Insurance Rate Map
 - + Basis for floodplain management, mitigation, and insurance activities in NFIP
 - + **Adopted October 2, 2008**
 - + Used by lenders/insurance agencies to determine flood risk
 - + Helps communities understand flood risk and make informed decisions
 - + Created through partnerships between local, state, and federal agencies.



FEMA Flood Maps Limitations

- + FIRMs and FIS reports are often dated
- + FIRMs and FIS reports are based on models
- + FIRMs and FIS reports do not show worst-case scenarios



UPDATING MAPS:

Process

FEMA
Initiated

Community
Initiated

Community
Initiated
(CTP)

Letter of Map Change
(LOMC)

LOMA

LOMR-F

Alternative mapping resources.



What is Reasonable Development?

+ Considerations:

+ Percentage of developable property in the city and ETJ.

+ Public Safety

+ Affordable housing.

+ Private property rights.

<https://experience.arcgis.com/experience/bb310e69d23a4655999f8b73d6e016d5/>
Ctrl+Click to follow link

Direction for Staff

Closing and Questions

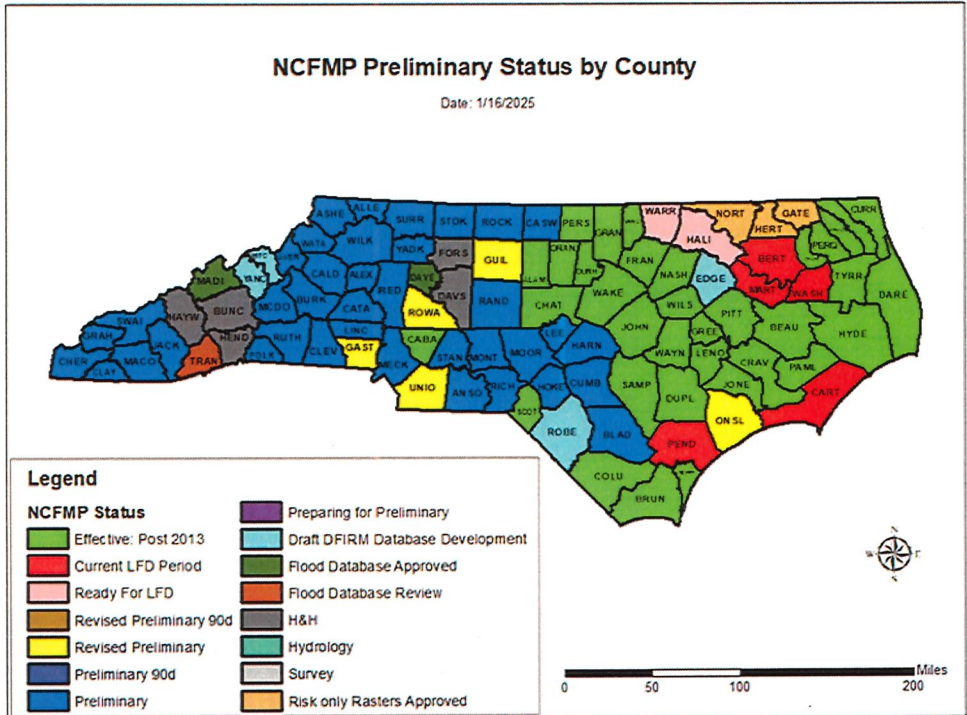
- +Acknowledgments
- +Input from state technical experts.
- +Engagement with community stakeholders.
- +Open Floor: Questions, comments, and feedback from City Council.
- +Thank You

Steve Garrett gave the following PowerPoint presentation.

NC Floodplain Mapping Update

January 22, 2025

NCFPM/FEMA Map Maintenance



Flood Map Status: Preliminary Issuance

- Issued
 - October 28, 2022: Caswell, Guilford, Rockingham, Stokes
 - March 31, 2023: Anson, Montgomery, Randolph, Richmond, Rowan, Stanly, Surry, Union, Wilkes, Yadkin
 - September 29, 2023: Alexander, Avery, Burke, Caldwell, Catawba, Gaston, Iredell, Lincoln, McDowell, Mecklenburg
 - March 28, 2024: Bladen, Cumberland, Harnett, Hoke, Lee, Moore; appeal resolutions for Jacksonville and Morehead City
 - October 31, 2024: Alleghany, Ashe, Cherokee, Clay, Cleveland, Eastern Band of Cherokee Indians, Graham, Jackson, Macon, Polk, Rutherford, Swain, Watauga

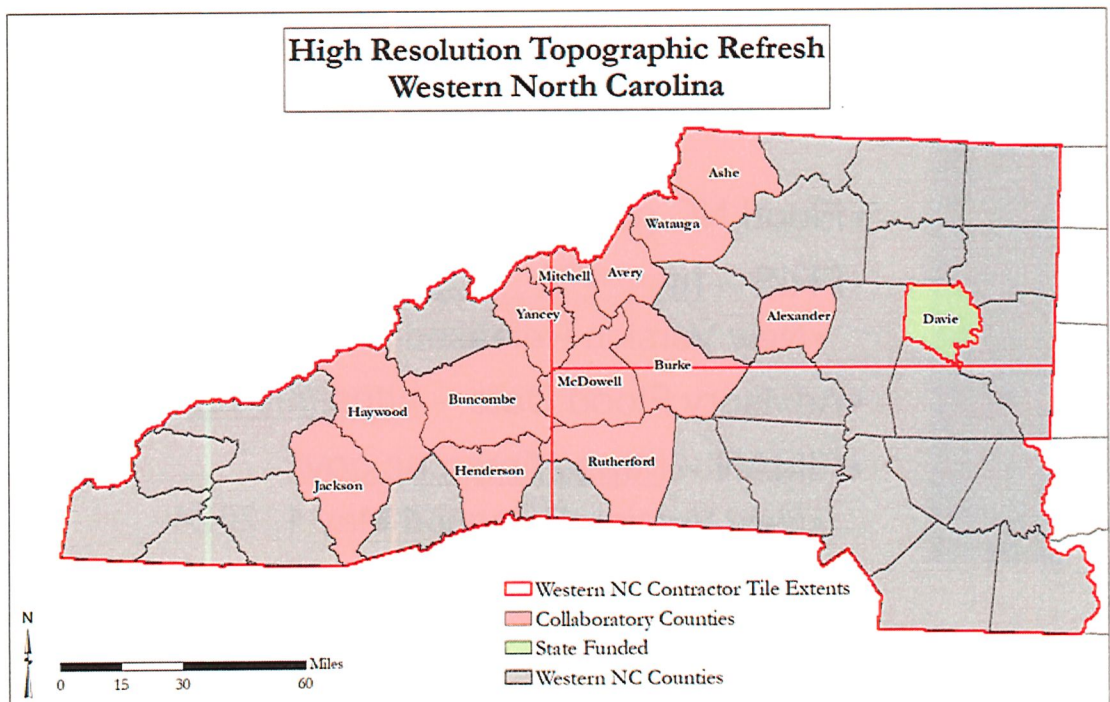
Flood Map Status: Preliminary Issuance

- Upcoming
 - Spring 2025: Edgecombe, Mitchell, Robeson, Yancey
 - **Fall 2025**: Buncombe, Davidson, Davie, Forsyth, Haywood, **Henderson**, Madison, Transylvania

Flood Map Status: Flood Studies Underway

- Active
 - French Broad Basin
 - Survey, Rainfall-Runoff Modeling, and Rain-on-Grid 2D Modeling Complete
 - Buncombe: Hydraulics Complete; DFIRM Database Underway
 - Madison: Hydraulics and DFIRM Database Complete
 - Haywood, **Henderson**, and Transylvania: Hydraulics and DFIRM Database
- QA/QC Review
 - New Riverine H&H and Mapping
 - Mitchell and Yancey – Approved; Preparing draft DFIRM database
 - Davidson – MOA/LOMR incorporation in progress
 - Forsyth – LOMR incorporation approved

Helene Updates





Post-Helene Updates

- State of North Carolina in collecting post-Helene Lidar data for 41 Counties this year.
 - Deliverables should be available by the end of the calendar year.
- NCFMP is currently reviewing post-Helene aerial imagery to identify areas where the river/stream channel has been shifted outside the mapped Special Flood Hazard Area boundaries.
- NCFMP will conduct a similar review of post-Helene Lidar data to identify areas where the terrain has been modified by the event.
- NCFMP will update 2-D BLE models and mapping using the updated Lidar data and discuss future FIRM updates with communities.



4



Available Flood Hazard Data



NC Web Applications

- Flood.NC.gov – <https://flood.nc.gov/ncflood/>
- FRIS – <https://fris.nc.gov/>
Ctrl+Click to follow link
 - New Version Released November 22, 2024
- Advisory Flood Data – <https://flood.nc.gov/advisoryflood/>
- FIMAN – <https://fiman.nc.gov/>
 - New Version Released May 1, 2024

flood.NC.gov

Go to FRIS site Go to FMAN site Go to Flood Advisory site Go to NC CNMS site

Home Property Risk Mapping Program Find a Document Events Floodplain Management LOMC Mitigation Flood Warning Justices

Do You Know Your Flood Risk?

Search an address

Use my current location

Property Risk

Learn about flood risk at a specific address, to include flood hazard, structural and content impacts, potential insurance rates, mitigation opportunities and the location of flood warning sites near you.

Learn More

Web applications



Real Estate Agent



Insurance Agent



Professional Engineer/Surveyor



Community Official

New FRIS site - <https://fris.nc.gov/>

FRIS Flood Risk Information System

Welcome to the North Carolina Flood Risk Information System (FRIS)

Am I at Risk of Flooding?

Our Flood Risk Information System (FRIS) can tell you!

Enter your address or county below, select a county on the map, or click "Go to my location" to get started.

Smart Search: GO

GO TO MY LOCATION



County Selection: Hover over a county

About FRIS

The State of North Carolina provides this website as a public service to the citizens of North Carolina. The Flood Risk Information System (FRIS) contains digitally accessible flood hazard data, models, maps, risk assessments, and reports that are database driven. This site also provides geospatial data, along with hydraulic and hydrologic models that are available for download and use. The North Carolina Floodplain Mapping Program has made every effort to ensure accuracy of this information. Contact information for the North

New FRIS site - <https://fris.nc.gov/>

FRIS Flood Risk Information System

Home Map Download Help

Tools Map View: Effective Preliminary 200 Park Offices Drive, Durham, NC, 27703 Create Map Draw & Export

TOOLS

Overview Layers

Map Selection

Flood Information

Building Selection

200 Park Offices Drive, #100, Durham, North Carolina, 27703

This panel's status is Effective

A portion of this building intersects the special flood hazard area.

Flood Zone: A1

Map marker is inside of the special flood hazard area.

Flood Source: Burdons Creek

Base Flood Elevation: 276.6 ft

Show Annual Events

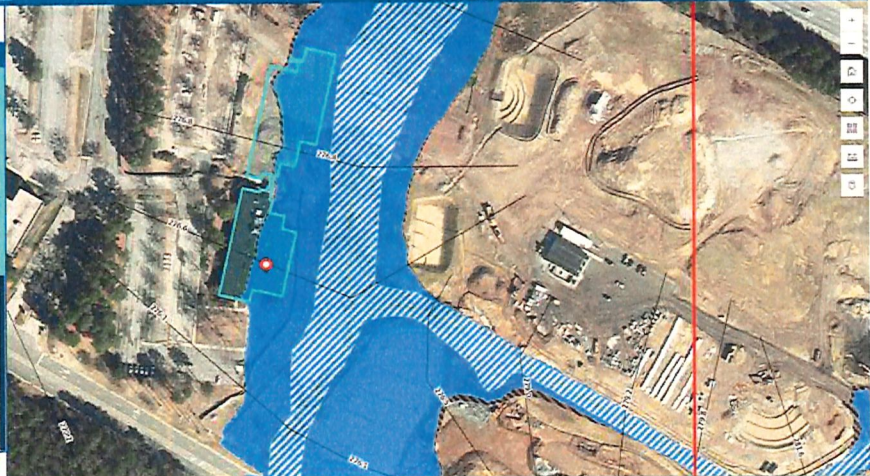
LIMWA Area: No

County: Durham

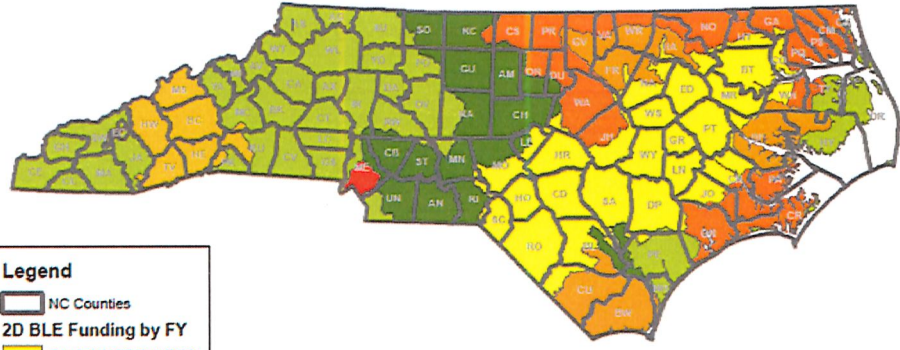
Political Area: Durham County

FID: 372061

Download Options Download

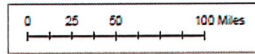


North Carolina Floodplain Mapping Program FY19-FY24 2D BLE Funding Sources and Requests



Legend

- NC Counties
- 2D BLE Funding by FY
 - FY19 STATE FUNDED
 - FY21
 - FY22
 - FY23
 - FY23 STATE FUNDED
 - FY24
 - Mecklenburg



Advisory Flood Mission

The North Carolina Floodplain Mapping Program (NCFMP) has initiated the "Advisory Flood" studies approach to provide non-regulatory flood hazard mapping for previously unmapped portions of the state, and for areas beyond NCFMP's traditional regulatory floodplain mapping extents, to help support more citizens in their decision making processes to mitigate against flood hazards.

- Advisory Flood Goals**
- Provide non-regulatory, multi-recurrence, Advisory Floods hazard mapping for previously unmapped areas in the state
 - Provide structure-specific flood hazard risk information for buildings impacted by Advisory Floods
 - Provide possible mitigation alternatives for buildings impacted by Advisory Floods
 - Communicate non-regulatory, Advisory Flood information, in a separate distinct website than that of NCFMP's regulatory flood hazard platforms, Flood Risk Information System (FRIS), and flood.nc.gov

Advisory Flood

Advisory Flood Mitigation Application

The North Carolina Floodplain Mapping Program (NCFMP), performs flood hazard mapping studies that help inform, protect, and preserve the lives and properties of the citizens in North Carolina. Recent flooding events have shown that substantial flood risk can reside outside of NCFMP's traditional regulatory floodplain boundaries. NCFMP's Advisory Flood Data Website provides flood mapping visualizations and flood risk analyses in non-regulated Advisory Flood areas where these products were previously unavailable. Flood hazard information, risk assessments, and mitigation strategies are offered within this viewer as a tool to help create more resilient communities and reduce future losses due to flooding. The website provides an easy to use interface to enable the user to assess a range of Advisory flooding scenarios, their associated flood risks, potential damages, and possible mitigation alternatives. In addition, areas of mitigation interests data are identified and communicated as a part of a study wide "hot spot" grid to pinpoint areas of concentrated Advisory Flood risk and potential locations for future mitigation actions. Regulatory floodplain information is provided as a static overlay within the Advisory Flood Data Website. Users that click within these regulatory overlay areas will be directed to NCFMP's FRIS website for higher level regulatory flood information.



Launch Viewer

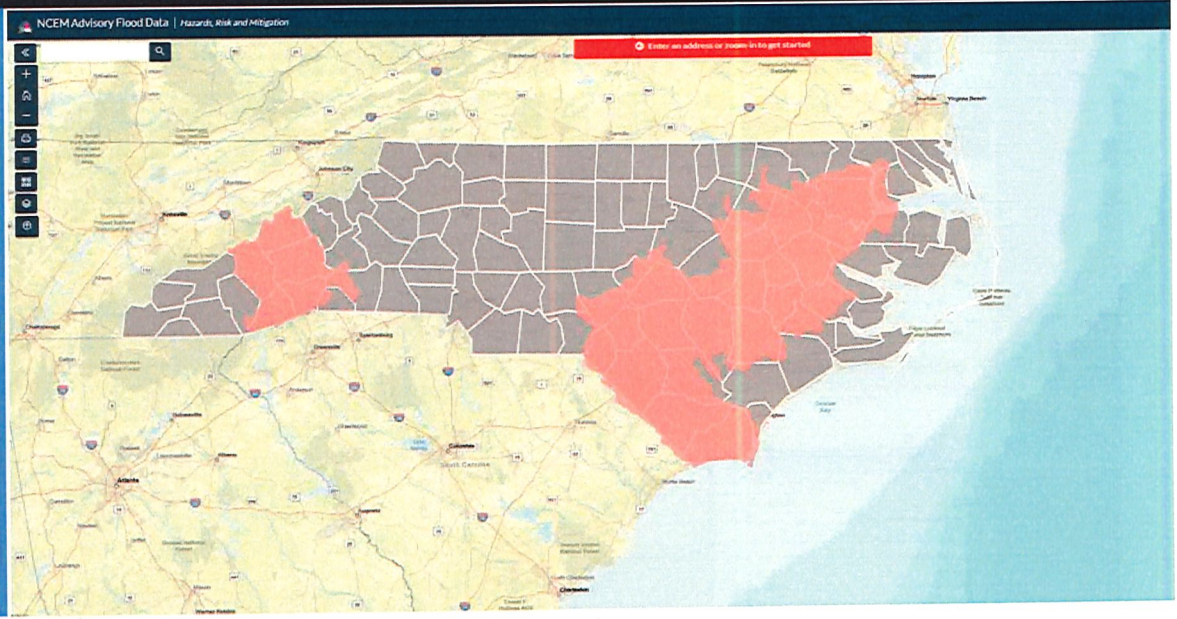
Contact

Advisory Flood Program

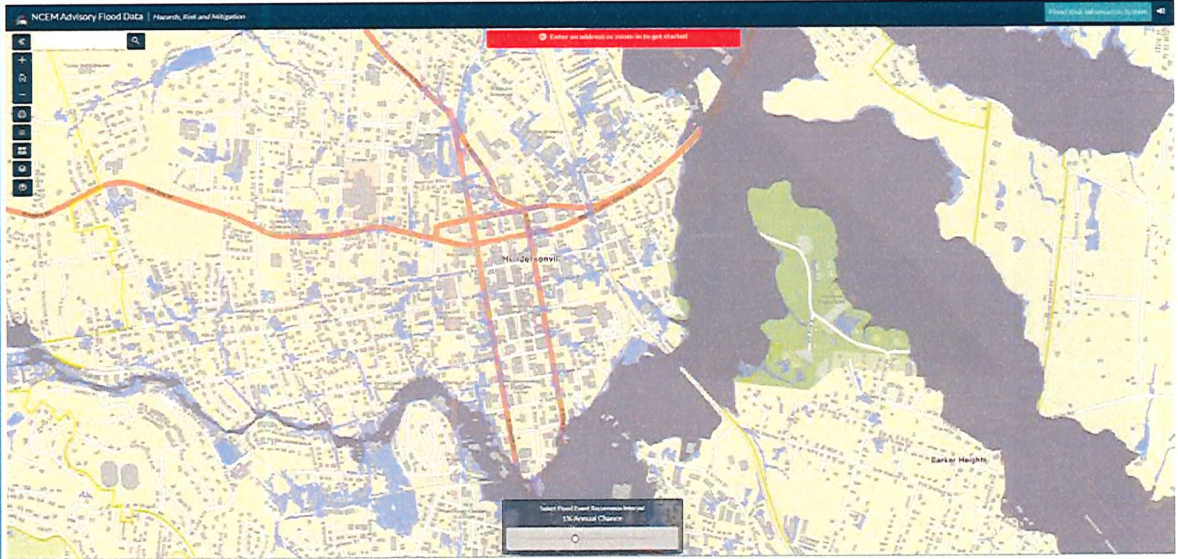
Mailing Address
4218 Mail Service Center
Raleigh, NC 27699-4218

Phone: 919-715-5711
Fax: 919-715-0408

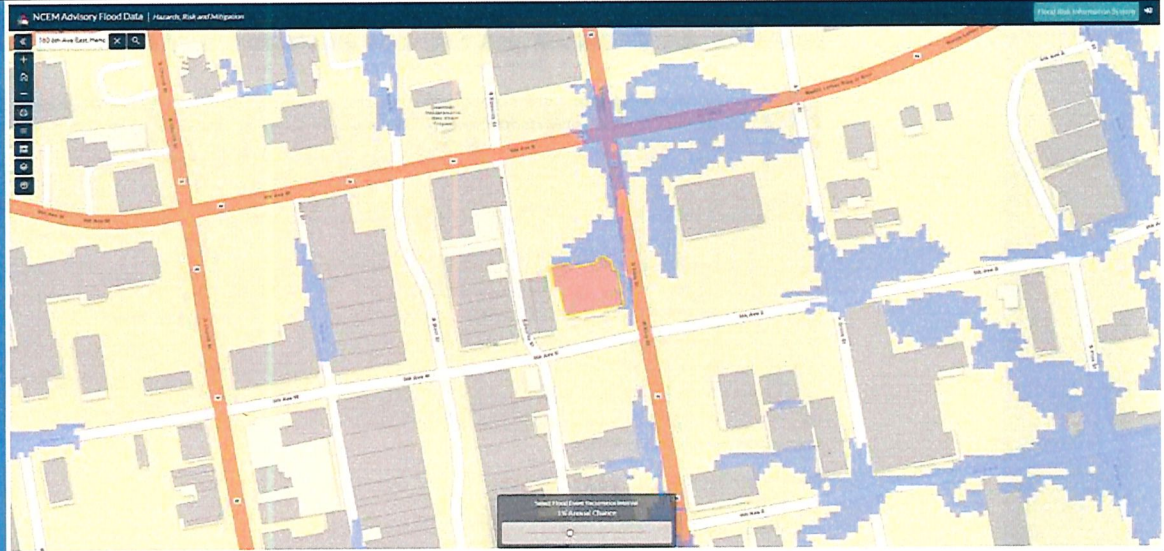
Email:
engineeringhelp@ncdps.gov



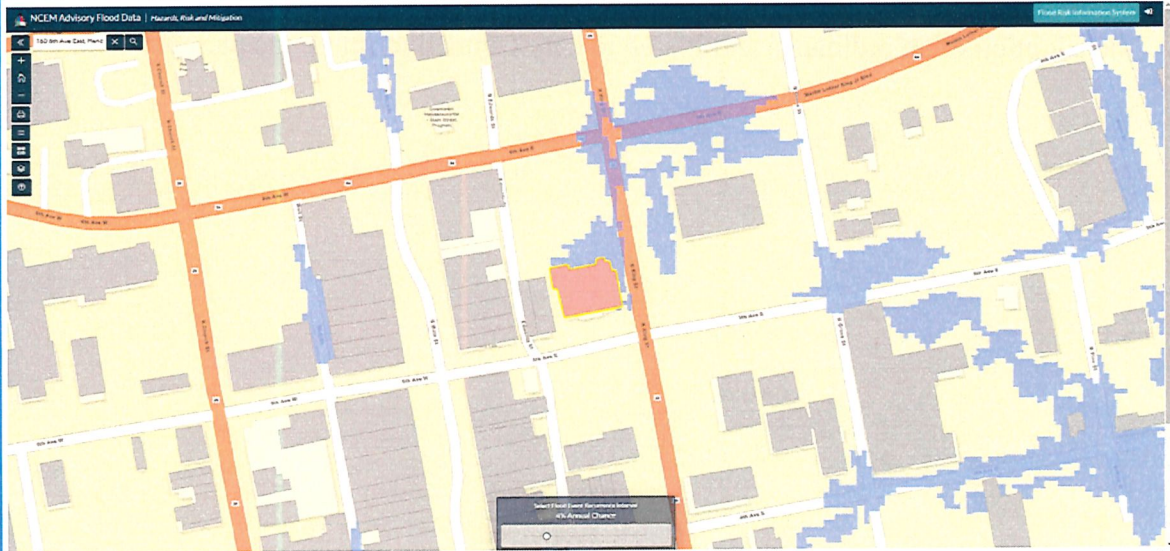
DPS Emergency Management
NC DEPARTMENT OF PUBLIC SAFETY

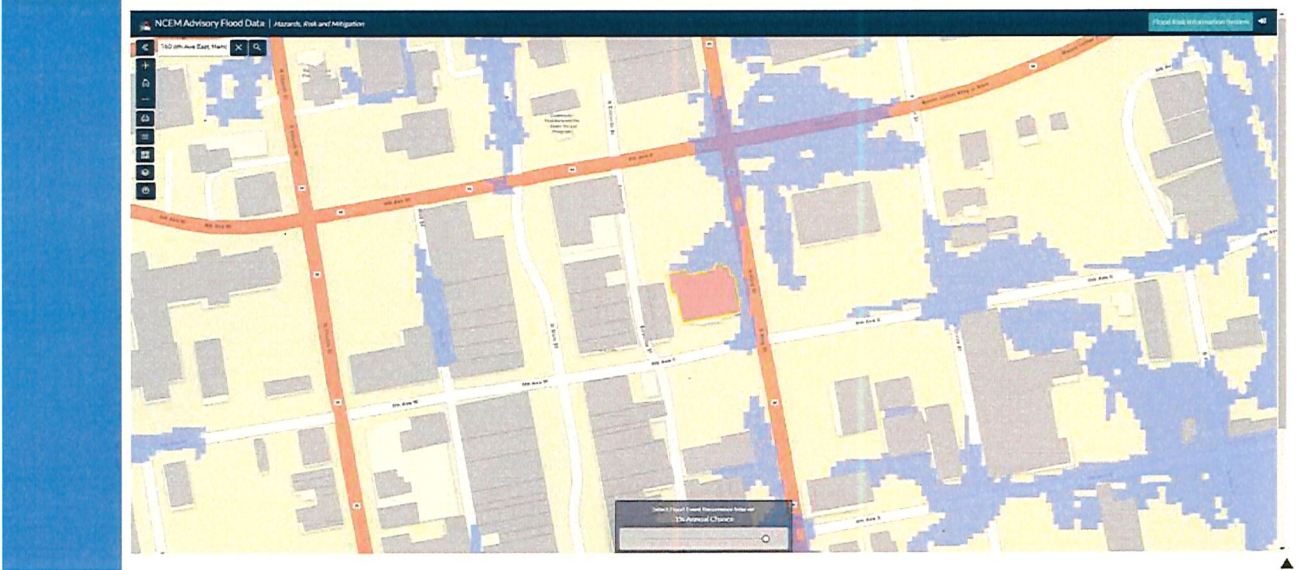


DPS Emergency Management
NC DEPARTMENT OF PUBLIC SAFETY



DPS Emergency Management
NC DEPARTMENT OF PUBLIC SAFETY





Advisory Flood Hazard Data Water Surface Elevation Information

160 6th Avenue East, Hendersonville, North Carolina, 28792
Mud Creek

Event	Elevation ¹
20% Annual Chance (5-Year Flood)	No Data
10% Annual Chance (10-Year Flood)	No Data
4% Annual Chance (25-Year Flood)	2134.5
2% Annual Chance (50-Year Flood)	2134.6
1% Annual Chance (100-Year Flood)	2134.6
1% Rainfall Depth Plus (100-Year Flood (Upper Confidence Bound))	2134.6
1% Rainfall Depth Plus 10% (Median 1% Annual Chance Rainfall Depth plus 10%)	2134.6
1% Rainfall Depth Plus 20% (Median 1% Annual Chance Rainfall Depth plus 20%)	2134.6
1% Rainfall Depth Plus 30% (Median 1% Annual Chance Rainfall Depth plus 30%)	2134.7
.5% Annual Chance (200-Year Flood)	2134.6
.2% Annual Chance (500-Year Flood)	2134.7
.1% Annual Chance (1000-Year Flood)	2134.7

¹ Water surface elevations in feet (NAVD88)

Possible Mitigation Techniques:

- Acquisition
- Relocation
- Wet floodproofing

There are 22 structures potentially affected in this area with projected damages totaling \$19,609,418 for a 30 year time horizon and \$32,682,363 for a 50 year time horizon. With mitigation measures in place \$16,014,178 in flood losses avoided could be achieved over 30 years and \$21,097,701 over 50 years.

[Basin Report](#)

For other data resources visit North Carolina's Spatial Data Download [website](#).



Mike Huffman emphasized that City Council can adopt what they want but they have to be ready and willing to enforce it.

City Attorney Angela Beeker gave a brief overview of Moratoria. She explained that a moratorium is a temporary halt or pause on some type of development and you do that by halting or pausing the issuance of development permits like zoning permits, building permits, certificates of appropriateness. It's any type of administrative or quasi-judicial approval and you do that through the adoption of an ordinance and it's up to City Council to set up the parameters in the ordinance.

Moratoria – NCGS § 160D-107

- May not adopt a moratorium for the purpose of developing new or amended plans or regulations governing residential uses.
- Public Hearing is Required – more notice given if 61+ days
- Vested projects exempted
 - BP issue
 - SUP applied for
 - Common law vested right established
 - Preliminary for final subdivision plat applied for prior to public hearing
- Required Statements:
 - Problems or conditions necessitating moratorium
 - What alternatives to a moratorium were considered and why the alternatives were not deemed adequate
 - Which development approvals* will be subject to a moratorium and how a moratorium on those approvals will address the problems or conditions leading to imposition of the moratorium.
 - *Administrative and quasi-judicial approvals only.
 - A date for termination, and why that duration is reasonably necessary to address the problems or conditions stated.
 - A statement of the actions, and a schedule for those actions, proposed to be taken during the moratorium to address the problems or conditions stated.
- Cannot be extended or renewed unless all actions steps taken and new facts and conditions arise warranting the extension or renewal.

John Connet said we are lucky to have Miike Huffman and thank you to our engineering team and our GIS team.

Additional Information - Time-Permitting Topics

- + Community Rating System (CRS) participation and benefits.
- + Possible ordinance amendments.
- + Comparison of regulations in neighboring jurisdictions.
- + Floodplain mitigation and recovery strategies.

Things that Council may want to think about:

- Development that occurred pre 1982. The comp plan does talk about areas that may have been developed prior to the floodplain maps that we would encourage over time that at least part of that property would be returned to floodplain if it's feasibly possible. We could do that through the FEMA buyout program. It's gonna have to be voluntary or the city will have to buy out those properties from those owners at fair market value. That is one thing to think about with development around the floodplain.
- In the zoning ordinance relating to fill, 25% of the development's parking can be in the floodplain but they cannot fill that area.

Mike Huffman continued to answer many questions from Council.

City Manager Connet finished by saying we will bring a menu of things bck to you all to have a look at, pros and cons and run it by our advisory committees and go through the process.

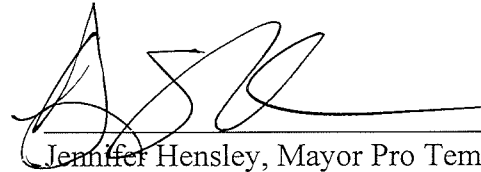
4. CITY COUNCIL COMMENTS

Mayor Pro Tem Hensley said this was a lot to take in and very informative but also very helpful and we appreciate having such great staff to guide us through and help us to learn so we can make good decisions moving forward and be better elected officials and policymakers.

City Council Member Lowrance said that she hopes in the future we will be able to better communicate to the underserved communities that were highly impacted by the floodwaters as they felt like they didn't get information in a timely manner.

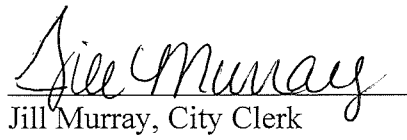
5. ADJOURN

There being no further business, the meeting was adjourned at 6:01 p.m. upon unanimous assent of the Council.



Jennifer Hensley, Mayor Pro Tem

ATTEST:



Jill Murray, City Clerk