



Guilford County
STATE of NORTH CAROLINA

Guilford County Floodplain Education Packet



Flood Awareness

Are you in a floodplain?

What is a Floodplain?

A floodplain is any land area susceptible to being inundated by water from any source.

What is a Special Flood Hazard Area (SFHA)?

The land in the floodplain is subject to a 1% or greater chance of being flooded in any given year. Also referred to as the 1% Annual Chance Flood area or 100-year Flood area.



What is the Floodway?

The channel of a river or other watercourse and the adjacent land areas that must be reserved to discharge the base flood (1% Annual Chance Flood) without cumulatively increasing the water surface elevation more than one (1) foot.

What is the Floodway Fringe?

The floodway fringe is the land area located between the floodway and the outer edge of the SFHA.

Know Your Flood Hazard

- A Flood Watch is issued when conditions are favorable for flooding. Be Prepared!
- A Flood Warning is issued when flooding is imminent or occurring. Act Now!
- A Flash Flood Warning is issued when a flash flood is imminent or in progress. A flash flood is a sudden, violent flood that can develop in minutes or hours. Act Now!

As a public service, the Guilford County Watershed Protection and Stormwater Management Section of the Planning and Development Department will assist you in obtaining flood information. Requests can be made in person, by telephone, or by email. Please refer to the contact information below for any inquiries. Please have the site address and/or parcel number for the property in question available. Staff would be glad to offer any assistance. Contact the Floodplain Administrator at 336-641-3753.

Guilford County participates in the National Flood Insurance Program (NFIP), which makes federally guaranteed flood insurance available to all eligible buildings, whether they are in the floodplain or not.

Insure Against Flood Hazards

Most federally backed mortgage lenders require flood insurance if the building is in a floodplain. Standard property insurance does not cover flood damage. Contact your insurance provider to determine the exact rates and coverage necessary for your home. If you do not have an agent or your agent does not write flood insurance policies, the NFIP has a toll-free number for agent referrals. Please call the NFIP Help Center at 1-800-427-4661 or visit [floodsmart.gov](https://www.floodsmart.gov) for additional flood insurance details.

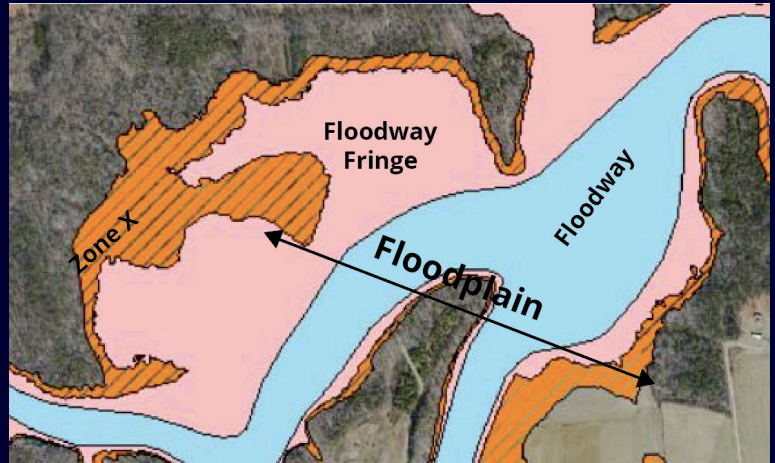
The NFIP insures residential and non-residential buildings, including mobile homes, with two types of coverage: building and contents. Building insurance coverage insures the walls, floors, insulation, furnace, and other items permanently attached to the structure. Contents coverage may be purchased separately if the contents are in an insurable building. There is a 30-day waiting period before flood insurance coverage goes into effect. Premiums for non-SFHA structures can be received at a reduced rate.

Floodway or Non-Encroachment Area: No Structures or fill permitted. Makes up the inner portion of the 100-year floodplain.

Floodway Fringe: Finished floor elevation of buildings must be two (2) feet above the base flood line elevation. Makes up the outer portion of the 100-year floodplain.

Floodplain or Zone AE: Includes Floodway and Floodway Fringe. 1% Annual Chance Flood area (a.k.a. 100-year Flood area).

Zone X: 0.2% Annual Chance Flood area (also known as a 500-year flood area).



Protect Your Family - Develop a Family Emergency Plan

Create an emergency supply kit including:

- Drinking water
- Non-perishable food items
- First aid supplies and medical items
- Radio
- Flashlight
- Extra batteries
- Cash

You should also:

- Post emergency telephone numbers by the phone and teach your children how to dial 911.
- Plan and practice a flood evacuation route with your family. Know safe routes from home, work, and school that are on higher ground.
- Have an emergency contact who is outside of your area.
- Have a plan to protect your pets.

During a storm or flood event, it is important to remember the following safety precautions:

- Do not walk through flowing water.
- Avoid driving through a flooded area.
- Stay away from downed power lines and electrical wires.
- Look out for small animals that have been displaced by flooding. Small animals that have been displaced from their homes may seek shelter in yours.
- Look before you step. After a flood, the ground and floors are covered with debris, including broken bottles and nails. Floors and stairs covered with mud can be slippery.
- Be alert for gas leaks. Use a flashlight to inspect for damage. Don't smoke or use candles, lanterns, or open flames unless you know the gas has been turned off and the area is well ventilated.

For more information on emergency preparation, visit [Ready.gov](https://www.ready.gov) or [redcross.org](https://www.redcross.org).

Protect Your Property

Create a personal flood file containing information about all your possessions and keep it in a secure and safe place, such as a safety deposit box or waterproof container.

This file should have:

- A copy of your insurance policies with your agent's contact information.
- A Household Inventory: For insurance purposes, be sure to keep a written and visual record of all major household items and valuables. Include serial numbers and store receipts for major appliances and electronics. Have jewelry and artwork appraised. These documents are important when filing insurance claims.
- Copies of all other critical documents, including finance records or receipts of major purchases.

How to prepare your house:

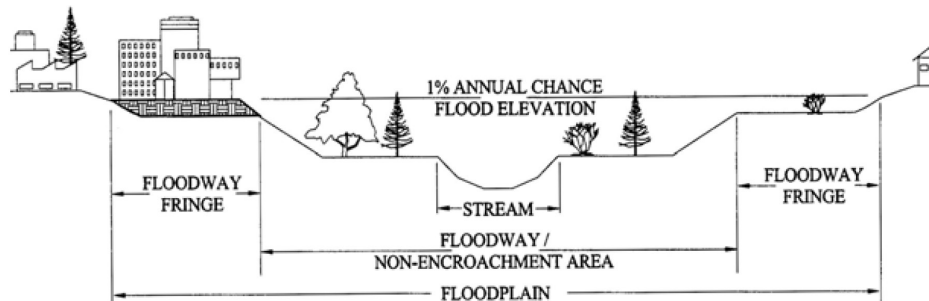
A building can be protected from some flood hazards by installing and maintaining storm shutters, cleaning your gutters, downspouts, and inlets, and making sure they drain away from your house. Move furniture and valuables to a safe place. Check to ensure the sump pump is working properly and consider installing a battery-operated backup and water alarm to alert you if water is accumulating in the basement. Consider having a secondary pump available in case of a pump failure.

New buildings, additions, or renovations can be elevated above flood levels, and the electrical components raised to the Flood Protection Elevation. Do not convert the space below the Base Flood Elevation (BFE) to habitable space. Use the space below BFE solely for parking, storage, or access.

Build Responsibly

Before any development begins in the SFHA, a floodplain development permit is required. You should apply for a permit from the Floodplain Administrator before any development activities are located within Special Flood Hazard Areas.

The Guilford County Development Ordinance and regulations do not imply that land outside the Special Flood Hazard Areas or uses permitted within such areas will be free from flooding or flood damages.



Protect Natural Floodplain Functions

Floodplain land and adjacent waters combine to provide a wide range of benefits to the human and natural systems, including:

- Groundwater recharge
- Surface water quality maintenance
- Natural flood and erosion control
- Providing habitat to fish and wildlife
- Maintain and support biological productivity
- Recreational and educational opportunities

Please help protect our floodplains by not dumping or throwing anything into streams, ditches, swales, storm drains, or any body of water or storm drainage system. If you see these activities occurring, or someone building or filling without a posted permit, please contact the Floodplain Administrator at 336-641-3753.



About the Mandatory Purchase of Flood Insurance

The National Flood Insurance Program (NFIP): Guilford County participates in the National Flood Insurance Program (NFIP), a federal program that enables property owners in participating communities to purchase flood insurance on eligible buildings and contents, regardless of whether they are in a floodplain or not. Flood insurance covers direct losses caused by surface flooding, including a river overflowing its banks, a lake or ocean storm surge, and local drainage problems.

The NFIP insures most walled and roofed buildings that are principally above ground on a permanent foundation, including mobile homes, and buildings during construction. Building coverage is for the walls, floors, insulation, furnace, and other items permanently attached to the structure. Property owners can purchase building and contents coverage from any local property and casualty insurance agent. To find a local insurance agent that writes flood insurance in your area, visit Floodsmart.gov.

Mandatory Purchase Requirement: Under the Flood Disaster Protection Act of 1973 and the National Flood Insurance Reform Act of 1994, the purchase of flood insurance is required for all federal or federally related financial assistance for the acquisition and/or construction of buildings in **Special Flood Hazard Areas** (SFHAs). It also affects all forms of federal or federally related financial assistance for buildings located in SFHAs. The SFHA is the base (100-year) floodplain mapped on a **Flood Insurance Rate Map** (FIRM). It is shown as one or more zones that begin with the letter "A" or "V."

The mandatory purchase requirement also applies to secured loans from such financial institutions as commercial lenders, savings and loan associations, savings banks, and credit unions that are regulated, supervised, or insured by federal agencies, such as the Federal Reserve, the Federal Deposit Insurance Corporation, the Comptroller of Currency, the Farm Credit Administration, the Office of Thrift Supervision, and the National Credit Union Administration. It further applies to all loans purchased by Fannie Mae or Freddie Mac in the secondary mortgage market.

Federal financial assistance programs affected by these laws include loans and grants from agencies such as the Department of Veterans Affairs, the Farmers Home Administration, the Federal Housing Administration, the Small Business Administration, and the Department of Homeland Security's Federal Emergency Management Agency, which provides disaster assistance.

How it Works: Before a person can receive a mortgage, loan or other financial assistance, federal agencies and lenders are required to complete a **Standard Flood Hazard Determination** (SFHD) form whenever they make, increase, extend or renew a mortgage, home equity, home improvement, commercial, or farm credit loan to determine if the building or manufactured (mobile) home is in a SFHA. The SFHA is the base (100-year) floodplain mapped on a Flood Insurance Rate Map (FIRM). It is the responsibility of the federal agency or the lender to check the current Flood Insurance Rate Map (FIRM) to determine if the building is in an SFHA. Copies of the FIRM are available for review in most local government buildings or planning departments. Lenders may also have copies, or they can use a flood zone determination company to provide the SFHD form.

If the building is in an SFHA, the federal agency or lender is required by law to require the recipient to purchase a flood insurance policy on the building. Federal regulations require building coverage equal to the amount of the loan (excluding appraised value of the land) or the maximum amount of insurance available from the NFIP, whichever is less. The maximum amount available for a single-family house is \$250,000. Government-sponsored enterprises, such as Freddie Mac and Fannie Mae, have stricter requirements.

The mandatory purchase requirement does not apply to loans or financial assistance for items not covered by a flood insurance policy, such as vehicles, business expenses, landscaping, and vacant lots. It does not affect loans for buildings that are not in the SFHA, even if a portion of the lot is. While not mandated by law, a lender may require a flood insurance policy, as a condition of a loan, for a property in any zone on a FIRM.

If a person believes that a SHFD form incorrectly classifies the property as being in the SFHA, they may request a Letter of Determination Review from FEMA. This must be submitted within 45 days of the determination. More information can be found at <http://www.fema.gov/bussiness/nfip/lomri.shtm>.



Principal Flood Problems

Low-lying areas of Guilford County are subject to periodic flooding from the Haw and Deep Rivers, their tributaries, and other tributaries. The most severe flooding on the rivers and large tributaries is usually the result of heavy rains from tropical storms, while flooding on small tributaries may result from local thunderstorms. Significant floods in the county occurred in 1916, 1945, and 1954. The September 1945 flood was the maximum flood of record at the time on the Haw River, the Deep River, and its East and West Forks, Reedy Fork, and Horsepen Creek. This flood approximated the 100-year event on the Deep River, Reedy Fork, and Horsepen Creek, and the 50-year event on the Haw River and the East and West Fork Deep River. A severe flood in October 1954 exceeded the 100-year flood on Rock Creek. The Haw River at USGS Gauging Station 02096500 in Burlington, downstream of Guilford County, had its largest peak flow on record in 1996.

Flood Warnings

The U.S. Commerce Department's National Oceanic and Atmospheric Administration (NOAA) keeps a round-the-clock, round-the-calendar surveillance on the nation's rivers. It is prepared to issue warnings when the threat of flooding occurs. A watch on the nation's river system is maintained by NOAA National Weather Service River Forecast Centers located throughout the country. The River Forecast Centers produce flood forecasts for the major river systems and flash flood guidance for the smaller streams and headwater regions. National Weather Service offices use this guidance information to issue flood warnings and flash flood watches to the public. Flash flood warnings are issued by National Weather Service Offices, which have the local and county warning responsibility.

Flood warnings are forecasts of impending floods and are distributed to the public by the NOAA Weather Radio, commercial radio, and television, and through local emergency agencies. The warning message tells the expected degree of flooding, the affected river, when and where flooding will begin, and the expected maximum river level at specific forecast points during the flood crest.

Be Prepared

Early flood and hurricane warnings provide time for people in threatened areas to prepare, and by doing so, to lessen their damage.

Before the storm threatens:

- Find out if your home is subject to flooding. Flood maps and risk information, including Flood Insurance Rate Maps (FIRM), which identify areas subject to a 100-year storm frequency, can be found online at the website below or at your local planning and development or building inspections offices. Note, flooding can occur almost anywhere and does occur both inside and outside of the 100-year floodplain.
 - <https://flood.nc.gov/ncflood/>
 - <https://fris.nc.gov/fris/>



- Inventory your property. A complete inventory of personal property will help obtain insurance settlements and/or tax deductions for losses. Inventory checklists can be obtained from your insurance representative. Be sure to take pictures and list descriptions. Store these and other appropriate insurance papers in waterproof containers or your safety deposit box.
- Review your insurance policies and coverage to avoid misunderstanding later. Standard home insurance does not cover flood damage. Separate policies are needed for protection against flood damage and wind, which many people don't realize until it's too late.
- Develop a disaster response plan for your home and family. See the Red Cross' website below on how to create a plan: <https://www.redcross.org/get-help/how-to-prepare-for-emergencies/make-a-plan.html>
- In addition, consider the following suggestions:
 - Learn to recognize the warning signals your local government uses, how they will be used, and what you should do when you hear them.
 - Listen to local radio/television stations for forecasts and emergency instructions.
 - Learn your children's school and/or day care centers' emergency plans.
 - Learn your work site's emergency plans.
 - Decide on an alternate location to meet if an emergency happens while your family is away from home and cannot return.
 - Know the location of the shelter nearest your home.
 - Post all emergency plans and phone numbers in a prominent place at home and work.
 - Learn your community's evacuation routes, as you may be forced to leave your home. This is especially important in low-lying areas where flooding could make roads impassable.
 - Learn first aid. Professional medical assistance may not be immediately available.

When a watch is issued:

- Monitor storm reports on the radio and television.
- If considering moving to a shelter, plan for all pets. Pets are not allowed in shelters.
- Refill prescriptions.
- If evacuation has not already been recommended, consider leaving the area early to avoid long hours on limited evacuation routes.
- Check battery-powered equipment. It will be needed if the utility service is interrupted.
- Keep your car fueled, should evacuation be necessary. Service stations may be inoperable after the storm strikes.

When a warning is issued:

- Keep your car fueled.
- Listen to local radio/television broadcasts for emergency instructions and the latest information.



- Follow the instructions and advice of your local government. If you are advised to evacuate, do so promptly.
- Keep phone lines open to notify local authorities of occurring events, such as fires, flash floods, tornado sightings, or injuries or damage. Do not use the telephone to obtain emergency information.
- If, and only if, time permits, precautionary steps can be taken:
 - Turn off all utilities at the main power switch and close the main gas valve if evacuation appears necessary. Do not touch any electrical equipment unless it is in a dry area, or you are standing on a piece of dry wood while wearing rubber-soled shoes or boots and rubber gloves.
 - Move valuable papers, furs, jewelry, clothing, and other contents to upper floors or higher elevations.
 - Fill bathtubs, sinks, and jugs with clean water in case regular supplies are contaminated (sanitize these items by first rinsing with bleach).
 - Board up windows or protect them with storm shutters or tape (to prevent flying glass).
 - Bring outdoor possessions (i.e., lawn furniture, trash cans, tools, signs, etc.) inside the house or tie them down securely.
- If you're caught in the house by suddenly rising waters, move to the second floor and, if necessary, to the roof. Take warm clothing, a flashlight, and a portable radio with you. Then wait for help. Rescue teams will be looking for you.
- If it is safe to evacuate by car, you should consider the following:
 - Stock the car with nonperishable foods, a plastic container of water, blankets, a first aid kit, flashlights, dry clothing, and any special medication needed by your family.
 - Do not drive where water is over the road. Parts of the road may be washed out and not be visible under the water.
 - If your car stalls in a flooded area, abandon it as soon as possible. Floodwaters can rise rapidly and sweep a car (and its occupants) away.
- When outside the house, remember floods are deceptive. Avoid flooded areas, and don't attempt to walk across stretches of flood waters that are more than knee deep.

If you go to a shelter:

- Take blankets/sleeping bags, flashlights, special dietary foods, infant needs, and lightweight folding chairs.
- Register every person arriving with you at the shelter.
- Do not take pets, alcoholic beverages, or weapons of any kind to shelters.
- Be prepared to assist shelter workers if necessary, and stress to all family members their obligations to keep the shelter clean and sanitary.
- Carry along survival supplies:
 - First aid kit
 - Canned/dried food, bottled water, utensils, etc.



- Extra family medication, prescriptions.
- Spare eyeglasses, hearing aid, and batteries.
- Keep important papers, such as a Driver's License (or other ID), insurance policies, property inventory, special medical information, and maps to your destination, with you always.
- Take warm, protective clothing.
- Once in a shelter or safer area, stay there until local authorities tell you it is safe to return home.

Property Protection Measures

Every year, flooding causes more property damage in the United States than any other type of natural disaster. While recent improvements in construction practices and regulations have made new homes less prone to flood damage, many existing homes continue to be susceptible to repetitive flood losses. Many homeowners feel trapped in a never-ending cycle of flooding and repairing; their house is rarely the same, and its value usually declines.

However, there are ways this cycle of repetitive flooding can be broken. Throughout the country, numerous examples can be found to illustrate practical, cost-effective methods for reducing or eliminating the risk of a house being flooded again. Or in cases where flooding may be unavoidable, steps are taken to minimize the damage.

Flood losses have been reduced by taking temporary measures such as moving furniture and equipment to higher floors or elevations. Others have held back rising waters by sandbagging or building temporary levees.

More permanent approaches have also been used. FEMA has published guides and documents that describe various retrofitting techniques and methods that can be used to help floodproof and reduce flood damage to your building. The below publications can be downloaded at the links provided or ordered from FEMA at 1-800-480-2520:

- *Homeowner's Guide to Retrofitting – Six Ways to Protect Your House from Flooding* (FEMA P-312) https://www.fema.gov/sites/default/files/2020-07/fema_homeowners-guide-to-retrofitting_guide.pdf
- *Protecting Building Utility Systems from Flood Damage* (FEMA P-348) https://www.fema.gov/sites/default/files/2020-07/fema_p-348_protecting_building_utility_systems_from_flood_damage_2017.pdf
- *Protecting Manufactured Homes from Floods and Other Hazards* (FEMA P-85) https://www.fema.gov/sites/default/files/2020-08/fema_p85.pdf

Flood Insurance

Guilford County is a National Flood Insurance Program (NFIP) community where a detailed flood insurance study has been conducted and a Flood Insurance Rate Map (FIRM) developed. Property owners within the community may purchase flood insurance coverage



for buildings and contents from flood damage.

In the event of flood damage, call the insurance agent or broker who sold you your flood insurance policy immediately if a flood has damaged your home, apartment, or business. The agent will submit a loss form to the NFIP. This will assign an adjuster to inspect the property. That adjuster will call on you as soon as possible to inspect the damage your property has sustained.

Floodplain Development Permits

All properties located in "Zone A" on the County's FIRM map are subject to regulations. Before undertaking development in "Zone A" a builder must secure a Floodplain Development Permit from the Planning & Development Department. Floodplain regulations are for any man-made 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. The county may levy a fine and/or obtain a court order to have the owner correct the construction if it was built without a permit or not following the approved plans.

Drainage System Maintenance

Streams, channels, and detention/retention basins can lose their carrying capacities because of illegal dumping, debris, sedimentation, and the growth of vegetation. When a drainage system loses a portion of its carrying or storage capacity, overbank flooding occurs more frequently, and floods reach higher elevations. Dumping in streams is a violation of county and state regulations and should be reported to the Guilford County Environmental Services Division at 336-641-2082. The Guilford County Watershed / Stormwater Section reviews watershed development plans and handles drainage inquiries and complaints for the unincorporated areas of Guilford County and can be reached at 336-641-3753 or -5565.

This Bulletin is intended for public information purposes only. It summarizes and omits some provisions. It is not to be construed or used as an official Development Ordinance interpretation in any legal proceeding.



Purpose

Guilford County has adopted flood damage prevention regulations to help minimize public and private losses due to flood conditions in areas subject to periodic flooding and to permit only that development within the floodplain areas which is appropriate considering the probability of flood damage. Floodplain development permits are used to track development within the areas of special flood hazard located throughout Guilford County and to ensure compliance with National Flood Insurance Program (NFIP) regulations.

Section 9.3 Flood Damage Prevention of the Guilford County Unified Development Ordinance (UDO) contains the specific regulations about floodplain development and flood protection.

Definitions

The following terms are used throughout the flood damage prevention regulations and discussions relating to floodplain development permits.

Base Flood means the flood having a one (1) percent chance of being equaled or exceeded in any given year. This is often referred to as the 1% Annual Chance Flood or 100-year Flood.

Basement means any area of the building having its floor subgrade (below ground level) on all sides.

Development means any man-made 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.

Elevation Certificate and **Floodproofing Certificate** mean a certificate prepared by a registered land surveyor or registered professional engineer certifying the finished elevation of the lowest floor, floodproofed elevation, or the elevation of the bottom of the lowest floor, whichever is applicable, as built in relation to mean sea level.

FEMA means the Federal Emergency Management Agency, which is responsible for producing flood insurance studies, flood insurance rate maps, and assisting local governments in evaluating no-rise certifications.

Floodplain Development Permit means a permit issued by the Planning & Development Department allowing development, development activities, or land disturbance in a Special Flood Hazard Area (SFHA).

Floodway means the channel of a river or other watercourse and the adjacent land areas that must be reserved to discharge the base flood without cumulatively increasing the water surface elevation more than one (1) foot.

Floodway Fringe means the land area located between the floodway and the outer edge of the SFHA.



Lowest Floor means the subfloor, top of slab, or grade of the lowest enclosed area (including basement). An unfinished or flood-resistant enclosure, usable solely for parking of vehicles, building access, or limited storage in a location other than a basement area, is not considered a building's lowest floor provided that such an enclosure is not built to render the structure in violation of the applicable non-elevation design requirements of this ordinance.

No-Impact Certification means a certification signed and sealed by a registered professional engineer with supporting technical data stating that the proposed development will not change the pre-project base flood elevations, floodway elevations, or floodway widths.

Non-Encroachment Area means the channel of a river or other watercourse and the adjacent land areas that must be reserved to discharge the base flood without cumulatively increasing the water surface elevation more than one (1) foot as designated in the Flood Insurance Study (FIS) report.

Special Flood Hazard Area (SFHA) is the land in the floodplain subject to a one (1%) percent or greater chance of being flooded in any given year. Also referred to as the 1% Annual Chance Flood area or 100-year Flood area.

Permit Required

A Floodplain Development Permit is required before undertaking any development or land disturbance activities within a Special Flood Hazard Area (SFHA, 100-year Floodplain). The information needed to obtain a permit is completed on the Floodplain Development Permit Application and consists of the following:

- Site address.
- Tax map, block, and lot number.
- Zoning and overlay districts.
- Owner's name, address, and phone.
- Plat book, page, and lot number or deed book and page.
- Nature of development
- Site plan, plot plan, or grading plan showing proposed development and floodplain.

When the proposed development is located within the floodway fringe of the SFHA, then a separate Floodplain Development Permit will be issued in the form of a land-use occupancy permit upon receipt of the \$35.00 permit fee and approval of the application and associated documentation. If a building is approved to be located in the SFHA as part of a Floodplain Development Permit, then an Elevation Certificate is required to be submitted before issuance of a Building Permit, and an as-built Elevation Certificate is required before issuance of a Certificate of Occupancy for the building.



If the proposed development or land disturbance activities are not located within the actual SFHA, then a Floodplain Development Permit will not be issued, and no fee will be charged.

Floodway Development

When development is proposed within the floodway of an SFHA, a floodplain development permit will be required, as described for development in the floodway fringe, with some additional documentation and analysis. Development within the floodway also requires a "no-impact" certification stating that the proposed development will not impact the pre-development base flood elevations, floodway elevations, or floodway data widths. The certification shall be signed, sealed, and dated by a registered professional engineer. The "no-impact" certification shall be submitted with supporting technical data that shall include, but not be limited to the following:

- a. Duplicate of the original Flood Insurance Study (FIS) step-backwater model printout or digital format.
- b. Revised existing conditions step-backwater model.
- c. Proposed conditions step-backwater model.
- d. Flood Insurance Rate Map (FIRM) and topographic map, showing floodplain and floodway, the additional cross-sections, the site location with the proposed topographic modifications superimposed onto the maps, and a photocopy of the effective FIRM showing the current regulatory floodway.
- e. Documentation clearly stating the analysis procedures. All modifications made to the original FIS model to represent revised existing conditions, as well as those made to the revised existing conditions model to represent proposed conditions, should be well documented and submitted with all supporting data.
- f. Copy of the effective Floodway Data table copied from the FIS report.
- g. Statement defining source of additional cross-section topographic data and supporting information.
- h. Cross-section plots, of the added cross-sections, for revised existing and proposed conditions.
- i. Certified planimetric (boundary survey) information indicating the location of structures on the property.
- j. Copy of the microfiche, or other applicable source, from which input for the original FIS HEC-2 model was taken.
- k. Floppy disk with all input files.
- l. Printout of output files from EDIT runs for all three floodway models.

The engineering "no-impact" certification and supporting technical data must stipulate no impact on the 100-year flood elevation, floodway elevations, or floodway widths at any new cross-sections and at all existing cross-sections anywhere in the model. Therefore, the revised computer model should be run for a sufficient distance (usually one mile) upstream and downstream of the development site to ensure proper analysis. Once a "no-impact" certification and supporting



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technical data are received, they will be reviewed for completeness and then forwarded to the Federal Emergency Management Agency (FEMA) regional office for review and recommendations. The applicant is responsible for all fees involved in this review. The "no-impact" certification will be verified and approved before issuance of any permit for development in the floodway.

For Assistance

Copies of the Flood Insurance Rate Maps (FIRM) for unincorporated Guilford County are available in the Planning and Development Department or can be viewed and obtained at the following websites:

- FEMA Flood Map Service Center
<https://msc.fema.gov/portal/home>
- NC Flood Risk Information System (FRIS)
- <https://fris.nc.gov/fris/Home.aspx?ST=NC>

Planning staff can assist you in determining permit requirements and fees required for your proposed development plans. Detailed questions regarding floodplain regulations should be directed to the Guilford County Watershed / Stormwater Section at 336-641-3753 or -5565.

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