



CITY OF CONCORD

FLOODPLAIN INFORMATION BOOKLET

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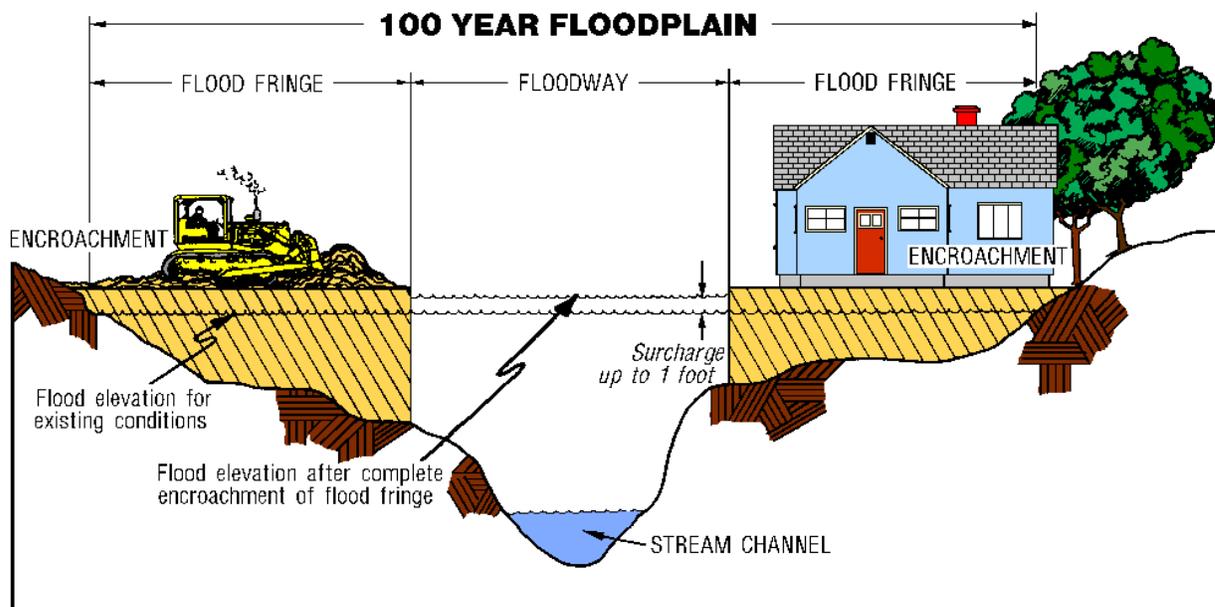


FLOOD HAZARDS

Concord's total land area is more than 60 square miles. Approximately nine percent (9%), or 5.5 square miles of the City lies within the floodplains of streams such as Coddle Creek, Rocky River, Irish Buffalo Creek, Three Mile Branch, and Coldwater Creek, as well as other smaller and unnamed streams. Lands adjacent to the streams which have a one percent (1%) likelihood of being flooded in any given year are known as "100 year floodplains".

Within the 100 year floodplains are areas that include the stream channel, known as "floodways." Together, these areas are known as **Special Flood Hazard Areas (SFHAs)**.

Below is an illustration of the 100 year floodplain.



In an effort to minimize the impact on human life and property, the City restricts and closely regulates development within the SFHA. Please contact the Development Services Department (704-920-5152) regarding development requirements and restrictions for building within the 100 year floodplain.

Since 1950, 40 flood events have been recorded in Concord. These events have resulted in millions of dollars of property damage. All streams in Concord, whether they are the named streams, or the smaller unnamed streams, are prone to flooding.

Below are photos and descriptions of some of the most recent flooding events which have occurred since 2003.

2003	9:00 am - 12:00 pm, March 20
	<p>Heavy rainfall resulted in a rapid rise of water levels along numerous small streams in the County. Several roads were flooded and remained closed for hours. The photo shows the flooding of Coddle Creek in the Weddington Road vicinity.</p>
2003	7:00 am April, 10- 9:00 am, April 11
	<p>After a night of moderate to heavy rainfall, flooding developed during the morning hours along some creeks and streams between Kannapolis and Concord, causing several roads to be closed. Water levels on Rocky River increased to 20 feet above normal. Significant flooding also occurred along Irish Buffalo Creek. In some areas, boats were required to ferry people to and from work. Photos show Green #5 at Rocky River Golf Course.</p>
2003	7:00 am - 11:00 pm, May 23
	<p>Persistent heavy rainfall resulted in slow rises along creeks and streams, which caused flooding during much of the day. Flooding began during the morning near Harrisburg, where a bridge and a road were flooded. The area in the photo is Rocky River beneath US 29 at Lowe's Motor Speedway where campers were evacuated.</p>
2003	May 23
	<p>This flood event was caused by a hydraulic problem with the flood control gates at the Lake Howell Reservoir. During this incident the lake level dropped 1.7 feet and caused localized flooding along Coddle Creek. The site in the photo is the Coddle Creek Bridge on Weddington Road.</p>

2005	4:30 pm - 6:00 pm, June 2
	<p>A severe thunderstorm produced extremely heavy rainfall across northern portions of Cabarrus County. Several roads were under as much as a foot of water, including portions of Sisk-Carter Rd and Shuping Mill Rd. This photo shows Poplar Tent Road near International Drive.</p>
2005	4:26 pm, July 7
	<p>The remnants of Tropical Storm Cindy passed west of the City. Three-quarters of an inch of rain fell within 45 minutes causing localized flash flooding. In the photo, fire department personnel rescue a worker trapped in a trench which collapsed due to heavy rainfall.</p>
2006	5:00 pm to 6:30 pm, August 30
	<p>Numerous streets and highways were flooded and several roads were closed. Although most of the flooding was due to poor drainage, Coddle Creek overflowed its banks and flooded NC Highway 49, resulting in the closure of a section of the road. The photo shows the failure of Mall Drive due to a washout.</p>
2006	5:00 am - 8:00 am, November 22
	<p>Flooding developed along portions of the Rocky River, some of its tributaries, and along other streams, including Back Creek when 4 to 5 inches of rain fell in about an 18 hour period. Several roads were closed, including Mt Pleasant Rd, Pharr Mill Rd, and Stallings Rd, and Highway 200. Locally the event produced an estimated 2 - 2.5 inches of rain per hour. The photo shows flooding in the Old South Subdivision.</p>
2008	3:45 am - 7:00 pm, August 27
	<p>Numerous roads were closed, mainly due to stream flooding. Several homes received significant damage due to floodwater, with homes in Harrisburg receiving the most damage. Closed roads included Highway 73 near Dutch Rd, Red Bird Circle, Morehead Rd from Highway 29 to Highway 49, Miami Church Rd, Stough Rd. near Marlboro Dr., Bowman Barrier Rd., Zion Church Rd. at Flowes Store Rd., Pharr Mill Rd. at Sequoia Hills Dr., and a portion of Highway 200. Total rainfall in the Western North Carolina Piedmont area averaged 8 to 10 inches, with locally higher amounts, resulting in significant urban and stream flooding. The total damage was estimated as over \$6.5 million. Photo is of Old Airport Road.</p>



FLOOD SAFETY

The following tips are designed to help keep you safe in the event of a flood.

- Tune to a National Weather Service Radio during periods of severe weather.
- Prepare an evacuation plan - select a safe destination on higher ground and an evacuation route that avoids flood prone areas.
- Assemble a disaster supply kit.
- Listen to local TV and radio broadcasts for severe weather information. Time Warner Cable Channel 22 will broadcast continuous information in the event of severe weather.
- Do not drive through flooded areas - the water can be deceptively deep and powerful. Six inches of water will reach the bottom of most passenger cars, causing loss of control and possible stalling. One foot of water will float many vehicles, and two feet of water can carry away most vehicles, even SUVs and pickup trucks.
- Pay attention to road signs - the City posts signs along streets and roads that are prone to flooding during heavy rains. Following is a chart that indicates the most flood-prone roads in the City.

Road Name	Location
Stough Rd.	Wolf Meadow Creek between Frank Liske Park and Roberta Rd.
Honeycutt Cir.	North side of NC 73, East
Old Airport Rd.	Coldwater Creek
Old Airport Rd.	Little Coldwater Creek
Old Airport Rd.	Between Lemming Dr. SE and Red Bird Circle, SE
Davidson Hwy. (NC 73 W.)	Stricker Branch
Melrose Dr. SW	Caldwell Park
Poplar Tent Rd.	Dorton Park
Miramar St. NE	Beverly Hills Park

- For further information, and additional safety tips and assistance call the Emergency Management Coordinator at (704) 920-5528.



EVACUATIONS

Please follow these instructions if you are asked or told to evacuate.

- Gather all persons in the household in one place.
- Turn off lights and unplug all unnecessary appliances.
- Close curtains and shades, and close and lock all windows and doors.
- Check with your neighbors to see if they need assistance - offer to share transportation.
- Notify others when you are leaving, and inform them of your anticipated destination.
- Be sure to take the following items:
 - Wallet/purse
 - House and car keys
 - Money
 - Eyeglasses
 - Medications
 - Warm clothing
- It is recommended that you take your pets with you. If you do not, you may not be able to find them when you return.
- Make sure that you bring your pet's food, medicine, litter box, crate, water and feed bowls, etc. Also bring a leash and a way to tie your pet outside, if necessary.
- The local American Red Cross (704-782-9022) has a list of local motels that allow pets.
- For additional information on how to protect your pets during a disaster, please visit <http://fema.gov/kids/pets.htm>.
- If you need a ride, go with a neighbor or contact the Emergency Management Office at (704) 920-5528.
- The following Fire Stations will serve as short-term shelters until the need for a permanent shelter is determined:

- Concord Fire Station #3 - 100 Warren C. Coleman Blvd.
- Concord Fire Station #7 - 250 International Dr. NW
- Concord Fire Station #8 - 1485 Old Charlotte Rd. SW
- Concord Fire Station #9 - 1020 Ivey Cline Rd. (at Poplar Tent Rd.)

- The following Fire Stations can also be utilized on a very limited basis:
 - Concord Fire Station #1 - 31 Church St., N.
 - Concord Fire Station #2 - 42 Palaside Dr. NE
 - Concord Fire Station #4 - 1165 Warren C. Coleman Blvd.
 - Concord Fire Station #5 - 170 Pitts School Rd. NW

- The designated Special Needs Shelter is the Cabarrus County Senior Center, at 331 Corban Ave., SE.



FLOOD INSURANCE

It is important to know that the typical homeowner's insurance policy **does not** cover flood damages. In 1968, Congress created the National Flood Insurance Program (NFIP) to provide flood insurance to homeowners at a reasonable cost.

Flood policies can be issued for most structures and their contents, including single family homes, condominiums and commercial structures. Policies are written for a term of one year.

You can qualify for a flood insurance policy even if you do not live in a Special Flood Hazard Area (SFHA).

The Flood Disaster Prevention Act of 1973 and the National Flood Insurance Reform Act of 1994 makes the purchase of flood insurance mandatory for federally backed mortgages for structures located in the SFHA. The SFHA is the area indicated as the 100-year floodplain on the NFIP maps. This requirement applies to secured mortgage loans from commercial lenders, savings and loan associations, savings banks and credit unions that are regulated, supervised, or insured by Federal agencies such as the Federal Deposit Insurance Corporation and the Office of Thrift Supervision. It also applies to all mortgage loans purchased by Fannie Mae and Freddie Mac in the secondary mortgage market.

A 30 day waiting period is mandatory for new flood insurance policies. Your local insurance agent can provide information on specific rates and coverage.

COMMUNITY RATING SYSTEM

Concord participates in the National Flood Insurance Program's (NFIP) Community Rating System (CRS) program. The City's participation allows for reduced flood insurance premiums for property owners.

Concord's participation in the CRS program requires a City staff member who is a Certified Floodplain Manager (CFM). The CFM can answer questions about flooding, Concord's floodplain development requirements and requirements for new construction.

The CFM can be reached at (704) 920-5152.



PROPERTY PROTECTION MEASURES

The most obvious way to avoid flood damages is to not build on a property within the floodplain/Special Flood Hazard Area (SFHA). However, if the floor level of the structure is located below the level of the Base Flood Elevation (BFE), the structure can be elevated in order to minimize potential damage.

The Certified Floodplain Manager (CFM) in the Development Services Department can provide a list of contractors and consultants who are knowledgeable in floodproofing and retrofitting techniques.

Permanent floodproofing and retrofitting techniques may include, but are not limited to:

- reinforcing and elevating the structure on piers, piles or posts
- relocating the structure to a less flood prone area
- cutting crawlspace vents to accommodate the flow of floodwater
- adding sealants to exterior walls
- constructing floodwalls

The Cabarrus County Library at 27 Union Street, North has numerous publications that discuss floodproofing and retrofitting. These publications are available for review at the Development Services Department and the office of Emergency Management. Some of these documents may also be available on the Federal Emergency Management website at <http://www.fema.gov/library/index.jsp>.

During an actual flooding emergency, various measures can be taken to protect property, such as:

- placing sandbags in areas where water may enter the structure
- placing valuables and furniture on the second floor, or in higher areas of the structure
- placing outdoor plants, lawn furniture and small objects on higher ground where they cannot be impacted by floodwaters

Additionally, keeping your trees and landscape plants maintained will help minimize property damage to your home in periods of severe weather. In periods of wind and heavy rain, overgrown trees are much more likely to drop large limbs than properly trimmed trees.

City staff members are available to meet citizens on-site to review flooding, drainage and sewer problems, and to provide advice. Please contact either the Development Services Department at (704) 920-5152, or the Stormwater Services Department at (704) 920-5360.



NATURAL AND BENEFICIAL FUNCTIONS

Floodplains serve some very valuable natural functions. During large rain events, the water in streams begins to flow very rapidly. It is this fast flowing water that can severely erode the stream banks causing sediment to be released, and trees to fall into the streams. Public safety issues can also arise due to eroded stream banks. When the water overtops its stream banks, the water spreads out.

This spreading out of water provides several benefits. First, the water velocities decrease. The floodplain protects the stream banks by slowing the water. Second, the floodplain stores a lot of extra water. Floodplains are usually large open or wooded areas that are relatively undisturbed. These areas help store some of the stormwater, reducing the flooding effects downstream. These largely undisturbed areas also provide stormwater infiltration and filtering during smaller rain events. This filtering process is very important to maintaining healthy stream habitats and for improving water quality in our streams. In addition, these floodplains usually consist of some special species of plants that can provide important environmental benefits while being able to adapt and survive during wet flood periods.

In Concord, you may notice parks occupy some areas of the floodplain. This is done for many reasons. Floodplain land is very useful during non-flood periods for recreation. Parks typically require few buildings and they also allow people to explore these natural floodplain areas and learn first hand about the benefits of water quality and floodplain protection. Then, when the rains come, the water can fill these floodplains and we benefit from the many natural benefits of floodplains.

City parks and recreation areas that have been developed in the floodplains include Caldwell Park, Dorton Park, Mickey McGee Park and the Three Mile Branch Greenway.



FLOOD WARNING SYSTEM

The National Weather Service (NWS) will broadcast Flood Warning Notices and Flood Warnings through local television, radio and wire services. The purchase of a NWS radio is also a wise investment if you live in a flood prone area. In the event of severe weather, tune to Time Warner Cable Channel 22 for continuous weather updates. If necessary, the City may also provide additional information through the media.

In the event that an evacuation is necessary, follow all instructions from public officials. Door-to-door notifications are time-consuming and time constraints may preclude their use. In that event, orders to evacuate may be supplemented by sirens, air horns, or PA systems.

If you evacuate your home, you may go to a local fire station for temporary shelter.

- Concord Fire Station #3 - 100 Warren C. Coleman Blvd.
- Concord Fire Station #7 - 250 International Dr. NW
- Concord Fire Station #8 - 1485 Old Charlotte Rd. SW
- Concord Fire Station #9 - 1020 Ivey Cline Rd. (at Poplar Tent Rd.)



FLOODPLAIN PERMIT REQUIREMENTS

A permit is required for all development within the 100 year floodplain. This includes construction of a building or an addition, construction of a bridge or stream crossing, grading of land, or construction of a parking or loading area. If the City were to not require floodplain development permits, flood insurance through the National Flood Insurance Program would not be available to the citizens of Concord.

Development in the floodplain without a permit is a violation of the law. Please call (704) 920-5152 to report violations.

Concord regulations limit development in the floodplain. Any fill placed within the floodplain must be taken from the same parcel to insure there will be no "net loss" of capacity within the floodplain.

An elevation certificate must be submitted for all new structures that are proposed within the floodplain. Elevation certificates must be prepared by a registered land surveyor. They are required to insure that new structures are properly elevated above BFE. The Development Services Department also maintains a file of historical elevation certificates that have been issued throughout the City, and is available for anyone to review.

More specific floodplain development requirements are included in section 4.7 of the Concord Development Ordinance.

<http://www.ci.concord.nc.us>

Please call the Development Services Department if you have any questions about developing in a floodplain area.

City of Concord Development Service
66 Union Street, South
PO Box 308
Concord, NC 28026-0308
(704) 920-5152



SUBSTANTIAL IMPROVEMENT REQUIREMENTS

Any rehabilitation, reconstruction, addition or other improvement to an existing structure in a floodplain which equals or exceeds 50% of the market value of the structure is considered a substantial improvement. This generally requires elevating the entire structure at least two feet above the Base Flood Elevation (BFE). These requirements apply when adding to an existing structure, or rebuilding of structures after damage.

Additions or improvements less than 50% of the market value may require varying degrees of compliance with the minimum flood prevention requirements. Please call the Development Services Department (704-920-5152) with questions relative to your particular situation.



DRAINAGE SYSTEM MAINTENANCE

The City of Concord has very strict regulations against dumping into drainage facilities. These regulations are occasionally updated, so visit the City website for current regulations. If you notice illegal dumping, or if you see a spill occur, call the City of Concord's 24 hour Hotline at (704) 920-5555.

It is very important that the drainage system stays clear of obstructions. While some amounts of woody debris can be healthy to stream habitat, larger piles debris and trash can dramatically impact water quality as well as the stream's ability to function during high water levels. These blockages can create inconsistent flooding patterns and impair the stream's ability to fully use its natural floodplain area. If you see major blockages or see a stream that needs to have trash removed, please call (704) 920-5555.

You can help by participating in the City's Adopt-a-Stream efforts on Big Sweep events. Call Stormwater Services at (704) 920-5360 for additional information.



MAP OF FLOOD HAZARDS

[Click here to open up this map as a separate pdf file](#)

