



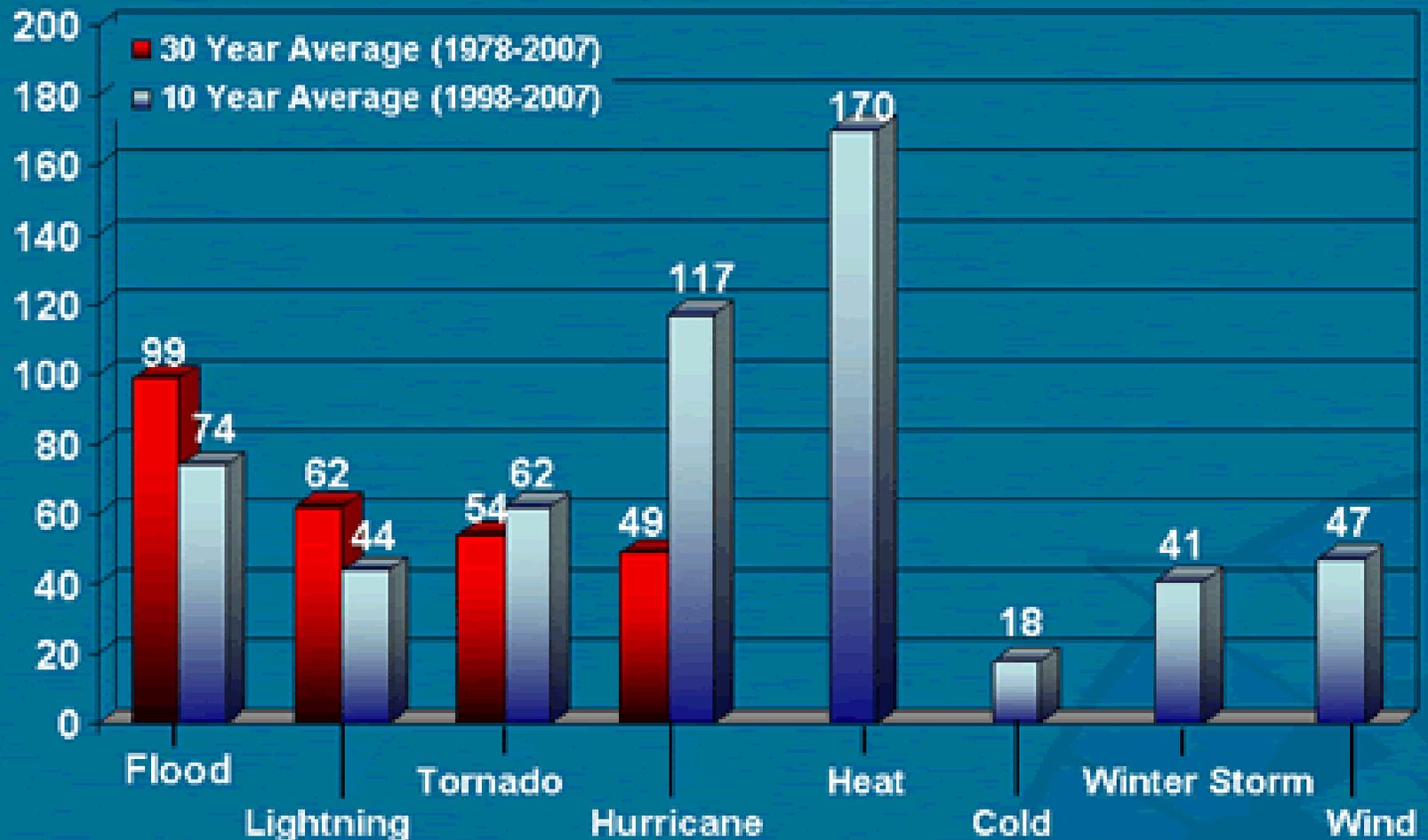
City of Concord

Neighborhood Flood Safety Program





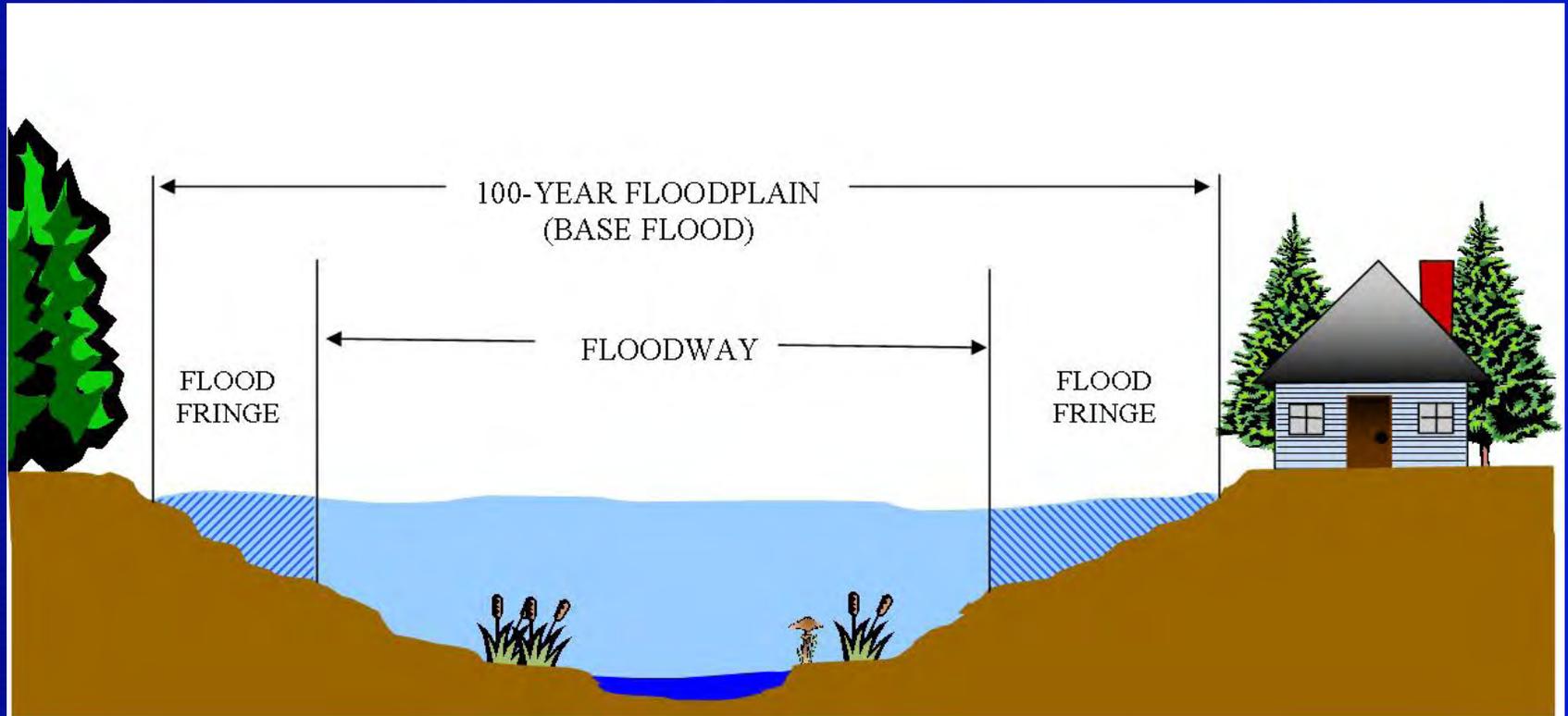
Weather Fatalities



Flood Terms

Flood Fringe

- **Flood fringe-** The portion of the floodplain lying on either side of the floodway.



Flood Plains – 100 Year

- Flood events are usually described according to their probability of occurrence.
- Calculated to be the level of flood water expected to be equaled or exceeded every 100 years on average or
- a flood that has a 1% chance of being equaled or exceeded in any single year
- A 100-year flood has approximately a 63.4% chance of occurring in any 100-year period
- **Base Flood-** the flood having a one percent chance of occurring in any given year, commonly called the “100 year flood”.

100-year floodplains are not arbitrary but they are:

1. Limited to the "best information at the time"
2. Not a determination of where and how frequently actual flood damage will occur.
3. Subject to change

500 Year Flood Plain

- An area which has a .2% chance of flooding in any given year.
- Calculated to be the level of flood water expected to be equaled or exceeded every 100 years on average or



Flood Myths

- Floods only happen to other people.
- There was a flood problem, but it has been fixed.
- If flooding were a problem, someone would have told us. That's why we pay taxes.
- It's only water. It's no big deal to be flooded.
 - **If** you are a typical homeowner, living in a single-story \$100,000 home
 - 1 foot of water = \$14,000 + residue/mud clean-up
 - 3 feet of water = \$27,000 + residue/mud clean-up



JUST THE FACTS!!!

- We can't predict when floods will occur, but we can usually tell where they will occur.
- Just because it hasn't flooded in the past doesn't mean it won't in the future.
- Just because you had a flood does not mean it won't happen again soon.
- Floods are caused by weather conditions and are unpredictable. If the conditions are right, floods will occur again.
- It is almost impossible to "fix" a flood problem.
- Real estate agents usually don't know whether flooding has ever occurred on the property.
- Government assistance after a flood is usually limited to loans which have to be repaid. Who needs a second mortgage?
- Figuring out how to cope with a flood is your responsibility.

Additional Facts

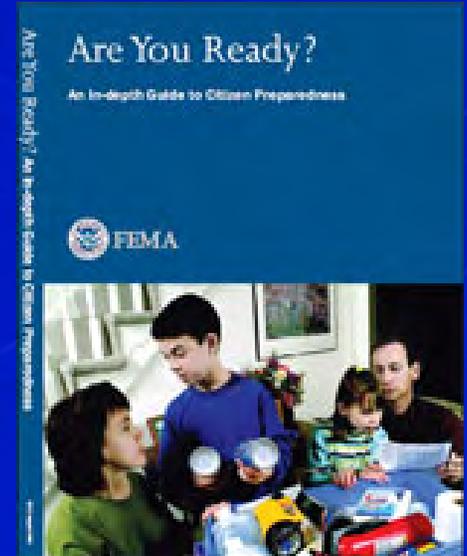
Your chances of being flooded are much greater than some other risks you face daily:

- If you live in a 100-year floodplain, there is more than a 1 in 4 chance that you will be flooded during your 30-year mortgage.
- During a 30-year mortgage period you are 27 times more likely to experience a flood than having a fire.

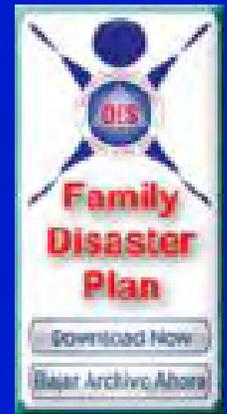
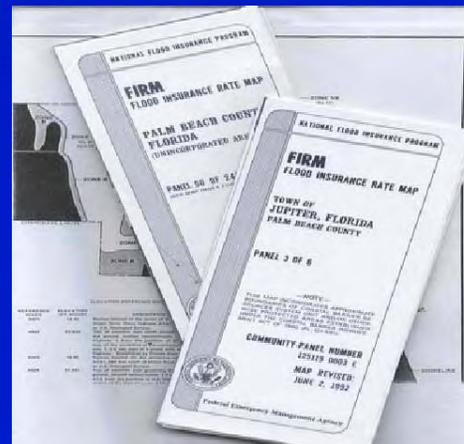
U.S. Flood Insurance Loss Statistics Jan 1, 1978 through Sep 30, 2001:

Ranking	Total Payments
1. Texas	\$2,249,450,933.34
2. Louisiana	\$1,542,959,989.27
3. Florida	\$1,479,585,524.19
4. New Jersey	\$577,019,343.82
5. North Carolina	\$550,946,543.87
6. South Carolina	\$414,951,356.42
7. Missouri	\$407,742,372.26
8. New York	\$360,534,936.08
9. California	\$353,244,485.27
10. Pennsylvania	\$313,186,521.60

FLOOD PREPAREDNESS



FIRM MAPS



KNOW YOUR RISKS

- The bulk of the work for keeping yourself and your family safe comes down to you.



What is Concord's Risk

- Over 40 flood events since 1993
- 5.6 square miles of flood plain
 - 9.28% of the total city area
- 2.05 square miles in the unbuildable floodway
- 33 buildings located in identified flood prone areas.
- Only 42 have flood insurance policies
- 5 losses since 1980

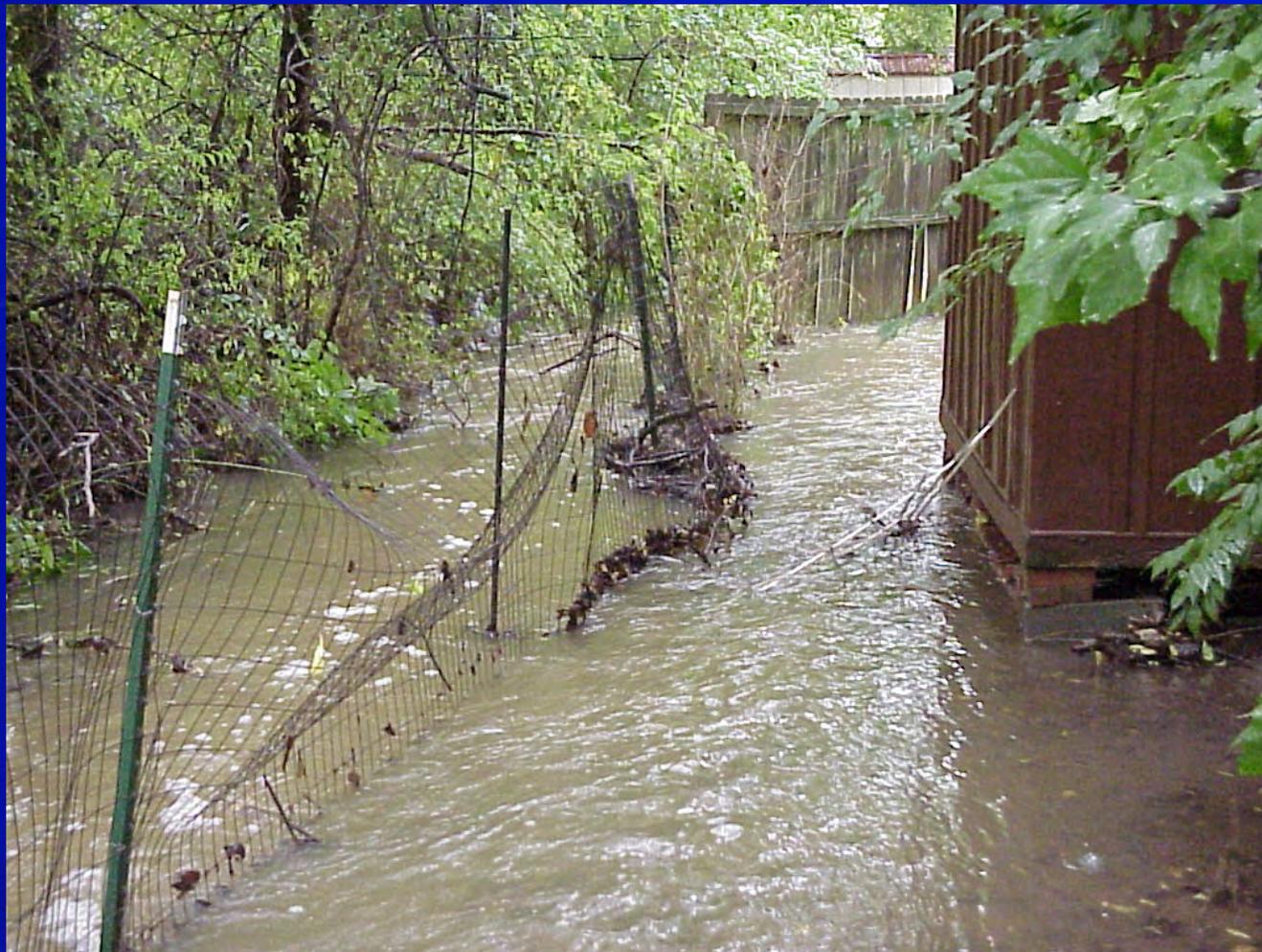
Learn Your Neighborhood/Community

- Find out if you live in a flood prone area;
- Find out where the local streams and drainages;
- Are the roads you travel subject to flooding;
- Local rainfall patterns;
- Locations of dams.



2001

07/05/2001 Lake Side Drive



09/24/2001 Triple Crown Drive



2003

March 19, 2003



Coddle Creek at Weddington Road



Dorton Park



Off Wedding Road

April 8 – 11, 2003 Flooding



Stough Road Panoramic



Old Airport Road

Weddington Road





Rocky River Golf Course



06/18/03



2945 Walter Drive

07/19/03



Rollingwood off SouthUnion





Loading Dock - WalMart

2005

06/07/05



Poplar Tent Road

07/07/05



Rescue workers remove victim from trench collapse during heavy rain and flooding

2006

September 01, 2006



Mall Drive washout due to flood event

Old South Community



11/16/06

11/22/06



Stough Road prior to flooding

2008

1054 Cy Circle (Allen Fire District)

- Water damage to underpinning of structure
- Outbuilding damaged
- Fence damaged

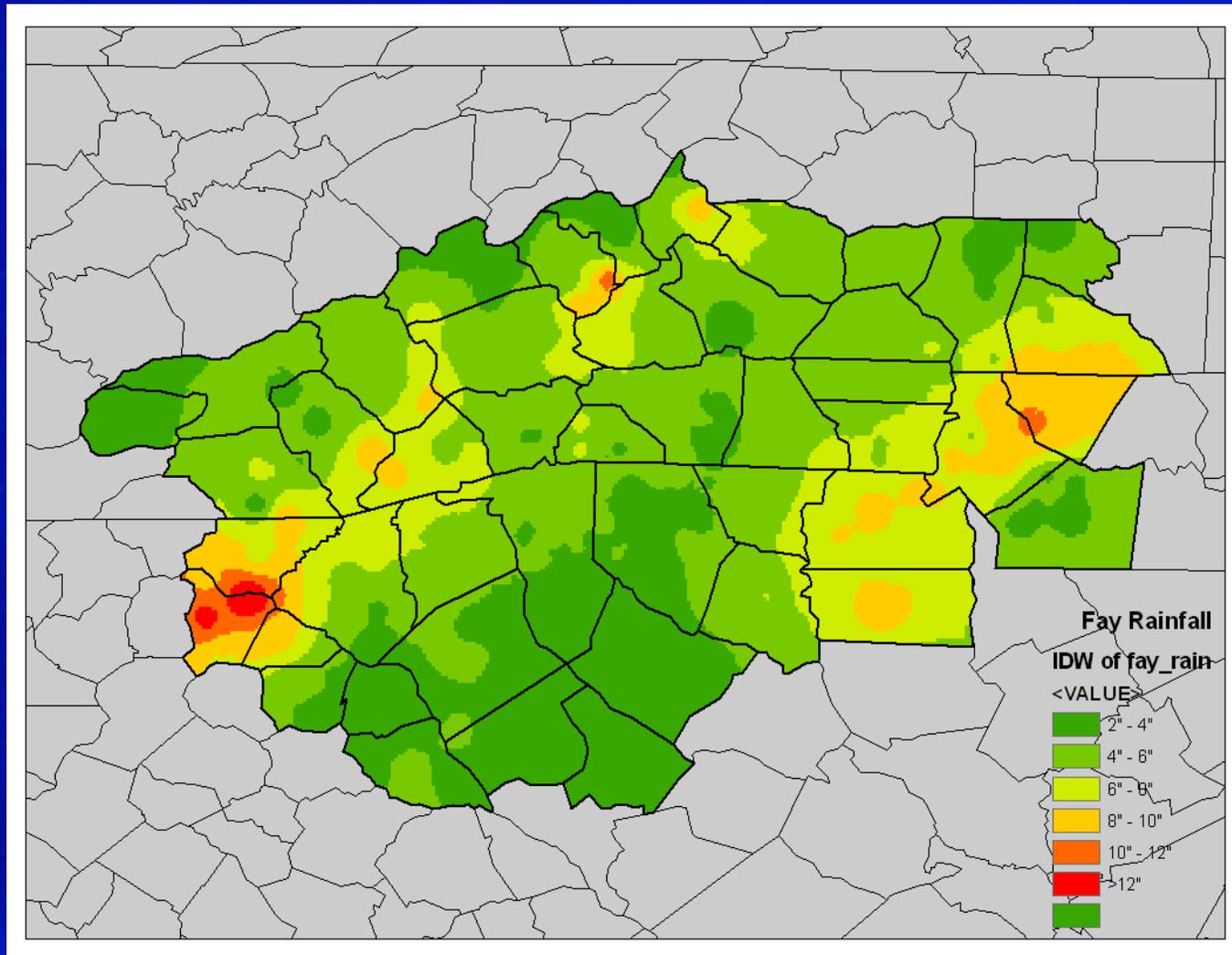


06/22/08



Off DC Drive

August 26 – 27 Flood Event



Damage

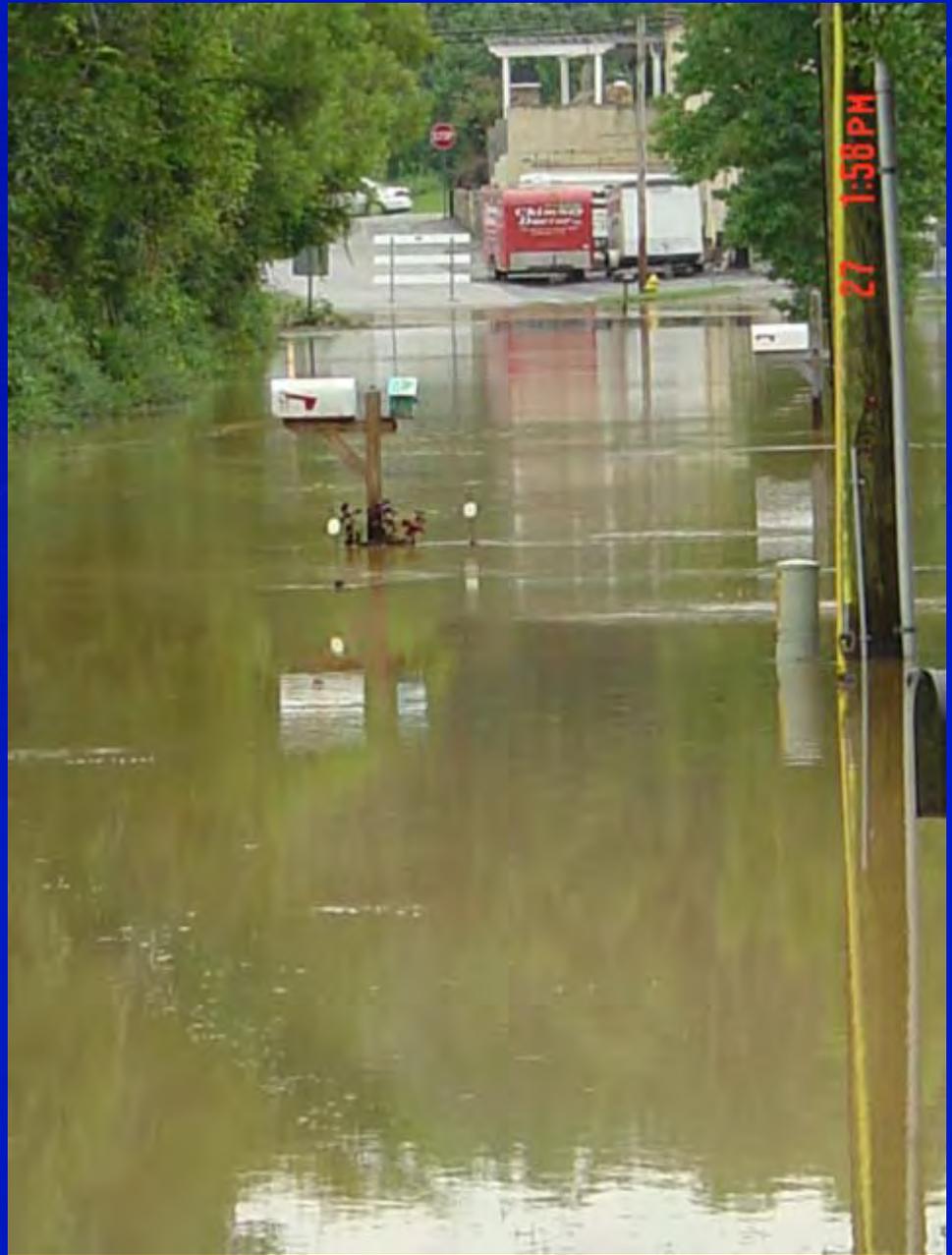
Town/City	Emergency Protective Measures	Roads/Bridges
Mt. Pleasant	\$2,449	\$67,829
Kannapolis	\$228,940	\$1,340,836
Concord	\$200,000	\$1,102,708
TOTALS	\$431,389	\$2,511,373

Fire Department Responses

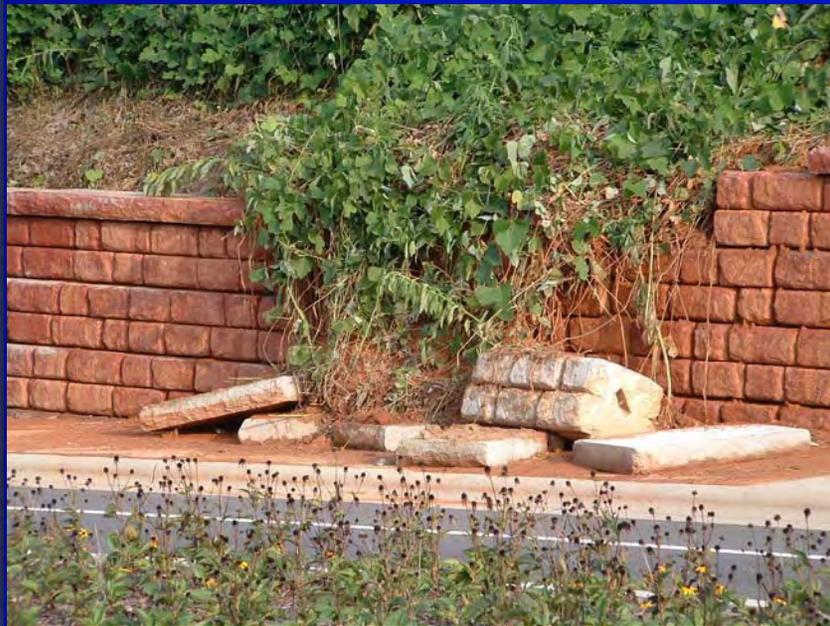
4854	Swift Water Rescue	174 Glenwood	3:55 am
4747	Swift Water Rescue	Saddlewood and Old South	4:23 am
4847	High Water	108 Shamrock	4:33 am
4851	Power Line Down	Branchview at Lake Concord	4:39 am
4854	Swift Water Rescue	2525 Zion Church Road	4:48 am
4855	Flood Assessment	582 Harris Street, NW	4:51 am
4856	Swift Water Rescue	1209 Farm Branch Drive, SW	4:52 am
4857	Bldg Fire due to flooding(shorted fan)	4156 Wrangler Street, SW	4:55 am
4859	Lady trapped in vehicle due to HW	Branchview at Mirmar	5:23 am
4862	Swift Water Rescue	Stough Road at April Court	5:52 am
4867	Possible Bldg collapse	625 Main Street, SW	7:43 am
4868	Juveniles playing in high water	5790 Pitts School Road	7:50 am
4869	Water Rescue	356 Dayvault	8:35 am
4870	Water Rescue	3503 Cedar Springs	8:41 am

Road Closures

- Burrage Rd., NE
- **Brown St., SW**
- Georgia Ave., SW at Cozart Ave., SW and Caldwell Park
- **Barnhardt Avenue, NW**
- Honeycutt Cir., SE
- Chelwood Dr., NW
- Farmwood Blvd., SW
- Hermitage DR., SE
- Virginia Ave., SE
- Cabarrus Ave., W – SR-1002
- Stough Rd. - SR 1309
- Poplar Tent Rd. SR-1394 at / near Cox Mill Rd. – SR-1448
- Old Airport Rd. – SR-2635





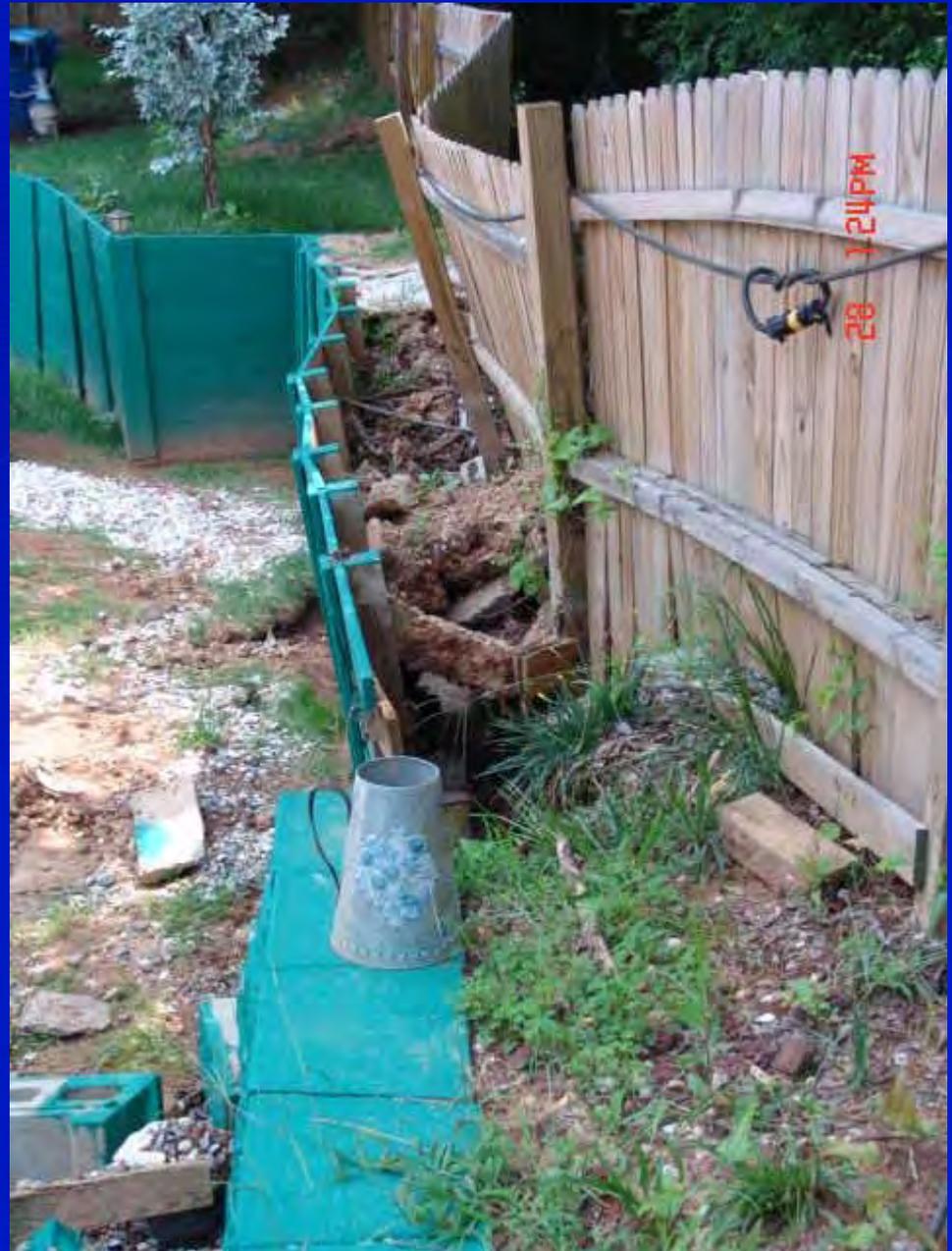




2009

June 5, 2009







FIRM MAPS

- **Flood Insurance Rate Maps**
 - It is the official map of a community on which FEMA has delineated both the special hazard areas and the risk premium zones applicable to the community.
 - New local maps effective 11/05/08
 - Located at the Cabarrus County Library
 - Digital versions are available through GIS at 66 Union Street South (704)920-5153.

The top of sewer manhole covers can indicate the 100 year flood plain level



ROADWAY FLOODING AND DRIVING



<http://www.floodsafety.com/media/interactives/life/index.htm>

Nearly half of all flash flood fatalities are auto related!!!

- ***Never drive your automobile into moving water, especially if you cannot tell how deep the water is.***



Water weighs 62.4 lbs. per cubic foot and typically flows downstream at 6 to 12 miles per hour.



When a vehicle stalls in the water, the water's momentum is transferred to the car. For each foot the water rises, 500 lbs. of lateral force is applied to the automobile.



But the biggest factor is buoyancy. For each foot the water rises up the side of the car, the car displaces 1500 lbs. of water. In effect, the automobile weighs 1500 lbs. less for each foot the water rises.



Two feet of water will carry away most automobiles!!!



YES, EVEN US



REMEMBER



Roadways Subject to flooding

City of Concord



Road #	Road Name	Location of Problem
SR-1309	Stough Road (NCDOT)	Wolf Meadow Creek between Frank Liske Park and Roberta Road
N/A	Honeycutt Circle	Honeycutt Circle, SE, East leg, .11 miles north of NC 73
SR-2635	Old Airport Road (NCDOT)	Cold Water Creek
SR-2635	Old Airport Road (NCDOT)	Little Cold Water Creek
SR-2635	Old Airport Road (NCDOT)	Between Lemming Dr., SE and Red Bird Circle, SE
NC-73	Davidson Hwy (NCDOT)	Stricker Branch
N/A	Melronse Drive, SW	Caldwell Park
SR-1394	Poplar Tent Road	Dorton Park
N/A	Mirmar Street, NE	Beverly Hills Park

Cabarrus County

- NC 49 between Cruse Road and Little Buffalo Creek Road.
- Mt. Pleasant Road, South, between Malibu Drive and Mt. Pleasant City Limits
- Mt. Pleasant Road, North, just south of Mount Olive Road
- Drye Road between St. Stephan's Church Road and Little Buffalo Creek Road.
- Lake Lynn Road and Cal Bost Road between John White Road and Troutman Road
- Reed Mine Road at Meadow Creek
- Bowman Barrier Road Between Long Run Farm Road and Mt. Pleasant City Limits
- Miami Church Road at Teeter Bridge
- NC 200
- Parks Lafferty Road between US 601 and Midland Road
- Midland Road just off of Bethel School Road
- Pharr Mill Road between Rocky River Road and Sequoia Hills
- Stalling Road between Middleton Circle and Hollow Drive
- Hickory Ridge Road between Rocky River Road and Harrisburg City Limits
- Cox Mill Road at Poplar Tent Road
- Earnhardt Lake Road at Coddle Creek
- Barrier Road Between Parkmont Road and Aaron Road.



Local Dams

- Lake Howell Reservoir
- Lake Fisher
- Lake Concord



EMERGENCY ACTION PLAN FOR LAKE DON T. HOWELL

North Carolina Inventory of Dams ID#: CABAR-054

National Inventory of Dams ID#: NC04901

National Weather Service



- **Our area: WXL70 – Charlotte 162.475**
- www.weather.gov
- **Flash Flood or Flood Watch:** Flash flooding or flooding is possible within the designated WATCH area - be alert!
- **Flash Flood or Flood Warning:** Flash flooding or flooding has been reported or is imminent - take necessary precautions at once!
- **Urban and Small Stream Advisory:** Flooding of small streams, streets, and low-lying areas, such as railroad underpasses and urban storm drains, is occurring.



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FAMILY PREPAREDNESS

What YOU can do: BEFORE

- Assemble a disaster supplies kit containing: first aid kit, canned food and can opener, bottled water, rubber boots, rubber gloves, NOAA Weather Radio, battery-powered radio, flashlight, and extra batteries.
- Keep a NOAA Weather Radio, a battery-powered portable radio, emergency cooking equipment, and flashlights in working order.
- Monitor the NOAA Weather Radio, or your favorite news source for vital weather related information.

If flooding occurs, get to higher ground. Get out of areas subject to flooding. This includes dips, low spots, canyons, washes etc.

- Take a CERT or Community Preparedness Course

DURING

- Get out of areas subject to flooding. This includes dips, low spots, canyons, washes, etc.
- Avoid already flooded and high velocity flow areas. Do not attempt to cross flowing streams. If you come upon a flowing stream where water is above your ankles, **STOP! Turn around Don't Drown.**
- If driving, be aware that the road bed may not be intact under flood waters. Turn around and go another way. NEVER drive through flooded roadways!
- If the vehicle stalls, leave it immediately and seek higher ground. Rapidly rising water may engulf the vehicle and its occupants and sweep them away. *Remember, its better to be wet than dead!*
- Be especially cautious at night when it is harder to recognize flood dangers.
- Do not camp or park your vehicle along streams and washes, particularly during dangerous conditions.

AFTER

- If fresh food has come in contact with flood waters, throw it out.
- Boil drinking water before using. Wells should be pumped out and the water tested for purity before drinking. If in doubt, call your local public health authority.
- Seek necessary medical care at the nearest hospital. Food, clothing, shelter, and first aid are available from the Red Cross.
- Do not visit disaster areas. Your presence might hamper rescue and other emergency operations.
- Electrical equipment should be checked and dried before being returned to service.
- Use flashlights, not lanterns, torches or matches, to examine buildings. Flammables may be inside.
- Report broken utility lines to appropriate authorities

PETS

- As many as 30 percent of dogs, cats, birds and other exotic pets are left behind by their owners who believe — in the midst of panic — that they can retrieve them later and that they'll be safer if left in a home's familiar setting.
- Cabarrus County Shelters are Pet Friendly



Please don't forget me!!!!



What Your Community Does

- Storm Water Program
- Safe Havens
- Community Emergency Response Team Program
- Storm Ready Community
- National Flood Insurance Rating System
- Disaster Preparedness
- Greenway Program
- Recognized Neighborhood Program
 - Citizen Corps



Future Programs:

- Turn Around Don't Drown
- River Gage Monitoring
- ReadyKids



Together Emergencies Are Managed

