

# The Torrent



Commissioner Gina McCarthy

## New Haven & Fairfield Counties Receive Preliminary Flood Maps

Through the Federal Emergency Management Agency (FEMA) Map Modernization Program, the municipalities in New Haven and Fairfield counties were issued preliminary Flood Insurance Rate Maps (FIRMs) on September 22, 2008. Unlike previous FIRMs which were produced for each municipality, the new maps are in a countywide format. The new maps are also overlain onto 2004 aerial photographs which will make identifying buildings, streets and other features easier than previous blueprint-style maps. More accurate topographic information and a revised vertical datum was also used to produce these maps. The new digital format of these maps also means that some municipalities will be able to use this data as a GIS layer.

Communities should now be reviewing these maps and providing any comments to FEMA's mapping contractor. It is estimated that these maps will become final effective in early 2010. Communities will be contacted in the near future to attend a final community meeting with CTDEP staff, FEMA and mapping contractors to discuss any issues related to the preliminary maps and explain the mapping process. More information on the map adoption process and timeline can be found in the publication *Adoption of Flood Insurance Rate Maps by Participating Communities (FEM 495)* on FEMA's website at: <http://www.fema.gov/library/viewRecord.do?id=3312>.

With this map update, communities will also be required to update their applicable floodplain zoning regulations or ordinances to formally adopt the new maps and ensure compliance with minimum federal National Flood Insurance Program (NFIP) standards and new state requirements for compensatory storage and equal conveyance. These regulation changes must be completed by the new effective map date or the community will be suspended from the NFIP, meaning flood insurance policies will not be renewed or written in the community. The community will also not be eligible for federal disaster assistance. Recently, CTDEP sent a letter to each municipality requesting a copy of their zoning and subdivision regulations, or floodplain ordinance if applicable, in order to expedite this review process. Each municipality will be receiving a regulation review outlining the necessary changes that need to be made for continued compliance.

For more information on the mapping process, contact Carla Feroni at (860) 424-3390, [carla.feroni@ct.gov](mailto:carla.feroni@ct.gov). For more information on ordinance or regulation updates, please contact Diane Ifkovic at (860) 424-3537.

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A Publication of the  
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Environmental Protection  
Bureau of Water Protection  
& Land Reuse  
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Funded by a grant from the  
Federal Emergency  
Management Agency (FEMA)

# Reducing Flood Damage for Homeowners

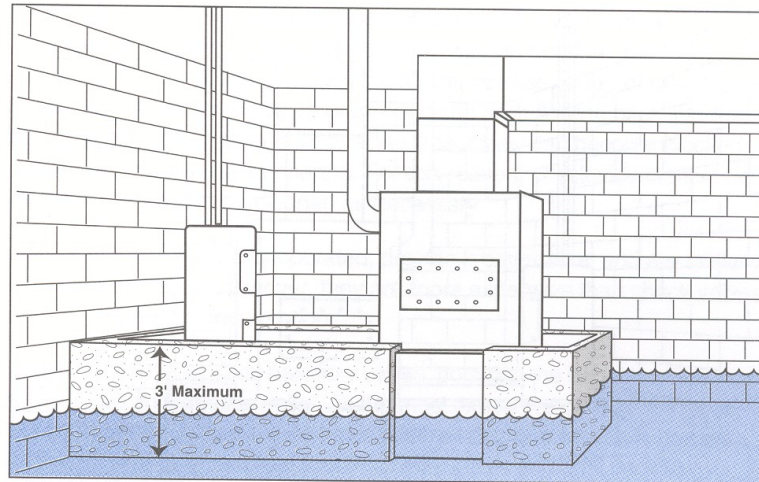
If you are a local floodplain administrator, building official, zoning enforcement officer, or town engineer, homeowners will often ask you for advice on how to protect their home and property from flood damage. Here are some ideas on how to provide easy information to homeowners when the question is asked.

**Raise or floodproof HVAC equipment (heating, ventilation, air conditioning equipment, and associated ductwork or piping).** In floodprone homes, a good way to protect HVAC equipment is to elevate it above the areas that flood. Another method is to leave the equipment where it is and build a concrete or masonry block flood wall around it.

**Raise electrical system components.** Any electrical system component, including service panels (fuse and circuit boxes), meters, switches, and outlets, are easily damaged by floodwaters. All components of the electrical system, including wiring, should be raised at least one foot above the base flood elevation (BFE).

## **Homeowner's Guide to Retrofitting: Six Ways to Protect Your Home From Flooding**

This guide published by FEMA is specifically for homeowners who want information on protecting their houses from flooding. Homeowners need clear information about the options available and



*Figure 8-3  
Hot water heater and furnace protected by a concrete floodwall with opening and shield.*

**Taken from:  
Homeowner's  
Guide to Retrofitting: Six  
Ways to Protect  
Your Home  
From Flooding**

**Install sewer backflow valves.** In some floodprone areas, flood can cause sewage from sanitary sewer lines to back up into houses through drain pipes. Sewage backup not only causes damage, but also creates health hazards. Backflow valves have a variety of designs ranging from simple to complex. This is something that only a licensed plumber or contractor should do.

**Anchor fuel tanks.** Unanchored fuel tanks can be easily moved by floodwaters. One way to anchor a tank is to attach it to a large concrete slab whose weight is great enough to resist the forces of floodwaters. Elevate tanks to a minimum of at least one foot above the base flood elevation (BFE). Floating and/or damaged tanks pose serious threats not only to building occupants and a home, but also to public safety and the environment.

**Raise Washers, Dryers and Freezers.** Washers, dryers and freezers can easily be damaged in a flood. In order to prevent this from happening, utilities can be placed on cinder blocks or a poured concrete pad one foot above the base flood elevation (BFE).

**Add a sump pump in the basement.** Sump pumps can help keep groundwater from entering a home's interior.

### **Cut drywall so that it is one half to one inch off the floor.**

This is especially important in basements. Concrete floors commonly absorb ground moisture—especially in winter months. That moisture can wick up the wall board if it is touching the floor, allowing mold to grow out of sight within the walls. The gap between the floor and the board can be hidden with wood or rubberized floor trim.

straightforward guidance that will help make decisions. This guide gives both, in a form designed for readers who have little or no knowledge about flood protection methods or building construction techniques. Topics discussed include elevation, wet floodproofing, dry floodproofing, elevation, demolition, relocation and floodwalls. The publication can be ordered from the FEMA Publications Warehouse at (800) 480-2520 or downloaded on FEMA's website: <http://www.fema.gov/library/viewRecord.do?id=1420>

**Encourage the purchase of flood insurance.** Flood insurance provides year-round financial protection and improves your ability to quickly recover when severe storms strike and cause unexpected flooding.

# Updated FEMA Technical Bulletins

From 2000 through 2006, FEMA conducted a national program evaluation of the National Flood Insurance Program (NFIP). It identified strengths and weaknesses of the program and made recommendations to enhance its effectiveness and efficiency. The update of current NFIP technical bulletins was one of several implementation actions suggested to help address concerns identified in the evaluation leading towards improved community NFIP compliance.

Last year FEMA solicited comments on all the NFIP Technical Bulletins. Based on these comments and internal review, FEMA began preparing updates to Technical Bulletins 1, 2, 5 and 9. In August 2008, FEMA issued Technical Bulletin 1—Openings in Foundation Walls and Walls of Enclosures and Technical Bulletin 2—Flood Damage-Resistant Materials Requirements, and in October 2008, issued Technical Bulletin 5—Free of Obstruction Requirements and Technical Bulletin 9—Design and Construction Guidance for Breakaway Walls.

## **Technical Bulletin 1 (TB 1) Openings in Foundation Walls and Walls of Enclosures**

The revised, 31-page TB 1 contains improved examples, photographs and illustrations as guidance for openings (flood vents) in enclosures under elevated buildings and it better distinguishes between prescriptive, non-engineered and engineered opening requirements. Revised guidance reflects content from the standard developed by the American Society of Civil Engineer's, *Flood Resistant Design and Construction* (ASCE 24), which is referenced by the International Building Code and clarifies the documentation that is to be obtained

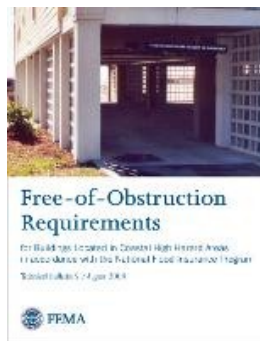
for engineered openings. Other specific topics discussed include openings required in attached garages, unacceptable types of alternative openings, requirements and guidance for installation of openings, and acceptable options for covering the openings while maintaining flow.

## **Technical Bulletin 2 (TB 2) Flood Damage-Resistant Materials Requirements**

TB 2 was first issued in 1993. Many new and innovative construction materials have emerged into the market in the last fifteen years, generating many questions if they meet the requirements of a flood resistant material. The revised, 20-page TB 2 provides much more detailed information on various materials and their acceptable uses within a building. Fasteners and connectors are also discussed. Construction examples and diagrams are also provided for various flood zones and proper use of materials. Wet-floodproofing is also discussed in relation to flood damage-resistant materials. The revised bulletin also contains detailed criteria to evaluate materials, updates classifications based on field research and tests and reflects new materials available.

## **Technical Bulletin 5 (TB 5) Free of Obstruction Requirements**

The revised, 30 page TB 5 contains new sections on shear walls, equipment and detached garages; expanded coverage on fill, slabs, foundation bracing, pools, stairs and decks; and updated guidance on obstruction considerations and erosion control devices.



## **Technical Bulletin 9 (TB 9) Design and Construction Guidance for Breakaway Walls**

The revised, 34 page TB 9 contains improved design and construction guidance for breakaway walls below elevated buildings. The updated bulletin provides three design methods for achieving NFIP and building code compliant performance for breakaway walls. Revised guidance reflects content from the standard developed by the American Society of Civil Engineers, *Flood Resistant Design and Construction* (ASCE 24), which is referenced by the International Building Code.

The revised and existing technical bulletins can be downloaded on FEMA's website at: <http://www.fema.gov/plan/prevent/floodplain/techbul.shtm>

Topics covered in other technical bulletins include:

- Technical Bulletin 3—Non-Residential Floodproofing
- Technical Bulletin 4—Elevator Installation
- Technical Bulletin 6—Below Grade Parking Requirements
- Technical Bulletin 7—Wet Floodproofing
- Technical Bulletin 8—Corrosion Protection for Metal Connectors in Coastal Areas
- Technical Bulletin 10—Ensuring that Structures Built on Fill In or Near Special Flood Hazard Areas are Reasonably Safe from Flooding
- Technical Bulletin 11—Crawlspace Construction for Buildings located in Special Flood Hazard Areas

# Floodplain Focus: 12 Key Issues for Local Floodplain Managers

*The National Flood Insurance Program can be complex . These are the key issues that touch on the basics of the NFIP that are important for any floodplain manager to apply consistently. Consult the appropriate regulations when applying these principles. You are also encouraged to contact the CT NFIP Coordinator Diane Ifkovic at (860) 424-3537 with any questions.*

- 1. Permitting.** A permit is required for all floodplain development. Development includes any man-made changes to improved or unimproved real estate, such as filling, dredging, grading, storage of materials, paving, etc.
- 2. Floodway.** No encroachment such as fill, new construction, substantial improvement of any kind unless there is a engineering analysis that shows **no rise (0.00)** – that means **NO** allowable increase in flood levels.
- 3. Inspections.** Buildings during construction should be inspected when the foundation is complete but **before the framing** to assure the lowest floor including basement will be at or above base flood elevation (BFE).
- 4. Elevation Certificates.** For all new construction and substantial improvements we recommend using the FEMA elevation certificate completed by a registered land surveyor or professional engineer. All elevations must be on kept on file, and using this form assures you have gathered **all** the necessary information for a structure.
- 5. Basements.** A basement is an enclosed area that is below ground level on all side. Basement floors must be at or above the base flood elevation (BFE). Basements are **not allowed** in V zones on the coast.
- 6. Enclosures.** Enclosures below base flood elevation (BFE) must be constructed with flood resistant materials and must have hydrostatic vents (garage doors and windows do not qualify as hydrostatic vents). These enclosures can only be used for storage, building access and parking. Utilities such as furnaces, hot water heaters, duct work, HVAC and electrical units must be located above the BFE or be protected from the infiltration of flood waters.
- 7. Substantial Improvement or Substantial Damage.** Defined as improvements or repairs to a structure valued at 50% or more of the market value of the structure. Substantially improved or damaged structures located in a Special Flood Hazard Area (SFHA), the 100-year floodplain, must meet the NFIP regulations and local floodplain ordinance or regulations as if it was a new structure. This includes interior improvements.
- 8. SFHAs that do not include base flood elevation data in unnumbered A-Zones.** Subdivisions and other development proposals exceeding 5 acres or 50 lots in a Zone A area that does not have a base flood elevation (BFE) determined on the flood map must include a BFE determined by an engineer. Some towns may specify that all development provide a BFE in an unnumbered A zone.
- 9. Critical facilities.** Police stations, hospitals, fire stations and other important emergency response and special need facilities should be located outside the Special Flood Hazard Area whenever possible. They should also be located outside of the 500-year floodplain, also known as the 0.2% annual-chance flood, and represented by Zone X (shaded) or Zone B (shaded) on a Flood Insurance Rate Maps whenever possible to ensure use during an emergency.
- 10. Variances.** In general variances should **not** be granted. Variances can only be granted based on the physical attributes of the land, not personal situation or hardship. Public safety should be of paramount consideration. Your State NFIP Coordinator or FEMA staff should be consulted before the case is heard by the zoning board of appeals.
- 11. Stricter Building Requirements.** Requiring freeboard in your floodplain ordinance or zoning regulations (construction to one foot or more above the base flood elevation) will lower flood insurance premiums for that structure. Lower rates will offset any additional costs of construction.
- 12. V-Zones (Coastal towns only).** Buildings located in coastal V zones must be built on pilings, piers or columns. The lowest horizontal structural member must be at or above the base flood elevation (BFE). Must have certified plans stamped by a professional qualified engineer or architect for construction. Space below the lowest floor must be free of obstructions or constructed with break away walls.

# News Briefs

## NFIP Reauthorized

On September 30, 2008, President Bush signed H.R. 2638, the “Consolidated Security, Disaster Assistance, and Continuing Appropriations Act, 2009.” This law extends the National Flood Insurance Program (NFIP) authority to issue new policies, increase coverage on existing policies, and issue renewal policies until March 6, 2009.

## National Flood Hazard Layer Update

On July 14, 2008, the Federal Emergency Management Agency (FEMA) started updating the National Flood Hazard Layer (NFHL) daily. New Digital Flood Insurance Rate Map (DFIRM) data now is reflected on the NFHL as of their effective dates, providing users with access to the most current flood hazard information. Online NFHL services, including MapViewer—Web, NFHL Web Map Service (WMS), and Google Earth utilities, provide access to these data immediately. The updates also are included in the monthly releases of NFHL Geographic Information System (GIS) data, which is packaged by individual state. For more information, visit the FEMA Map Service Center website at <http://msc.fema.gov> or call toll free at 1-800-358-9616.

## High Risk Structures Lose CRS Discount

Effective May 1, 2008, flood insurance policies for buildings that are rated as having the lowest floor one foot or more below the base flood elevation (BFE) will no longer be eligible for the community’s Community Rating System (CRS) dis-

count. Nationwide, this affects approximately 38,000 policies in 828 of the 1,089 CRS communities.

It has been concluded that a large number of the 38,000 policies in question are rating errors, such as not having grandfathered in the rates based on an earlier Flood Insurance Rate Map (FIRM). There are also policies on properties that were built to the code understood at the time, but new rules have been issued since then.

## New Historic Structures Publication

There is a new FEMA Floodplain Management Bulletin on historic structures. The purpose of this bulletin is to explain how the NFIP defines a historic structure and how it gives relief to historic structures from the NFIP floodplain management requirements.



This bulletin also provides guidance on mitigation measures that can be taken to minimize the devastating effects of flooding to historic structures. This new bulletin is available on FEMA’s website at: [http://](http://www.fema.gov/library/viewRecord.do?id=3282)

[www.fema.gov/library/viewRecord.do?id=3282](http://www.fema.gov/library/viewRecord.do?id=3282). Copies of the Bulletin are now available in the FEMA Distribution Center under publication number FEMA P-467-2. Call the FEMA Publications Warehouse at (800) 480-2520 to order.

## Floodplain Management 2050 Report

The Association of State Floodplain Managers (ASFPM) Foundation recently published *Floodplain Management 2050, A Report of the 2007 Assembly of the Gilbert F. White National Flood Policy Forum*. The primary goal of this forum was to address the question of the long-term future of floodplain management and its role in shaping the United States by 2050. The report can be found on the ASFPM website: [www.floods.org](http://www.floods.org).

## AIR Evaluates NFIP

The American Institutes for Research (AIR) has conducted a comprehensive study of the National Flood Insurance Program (NFIP). The report found that since the NFIP’s inception in 1968, it has made significant progress in attaining its goals, however, more effort will be needed in the future to combat ever-increasing flood losses.

Other related reports include such topics as the actuarial soundness of the NFIP, community compliance evaluation, building standard evaluation, and the costs and consequences of flooding and the impact on the NFIP. The AIR reports can be downloaded from FEMA’s website at <http://www.fema.gov/business/nfip/nfipeval.shtm>.

# UPCOMING CONFERENCES & WORKSHOPS

**March 23-26, 2009. Urban Water Management 2009, Overland Park, Kansas.** <http://uwm09.events.pennet.com/fl/index.cfm>, contact Angela Godwin (603) 891-9449.

**April 19-22, 2009. 2009 National Flood Conference, Boston, Massachusetts.** [www.fema.gov/business/nfip/natl\\_fldconf.shtm](http://www.fema.gov/business/nfip/natl_fldconf.shtm), contact NFIPNFC@nfipstat.com.

**June 7-12, 2009. Association of State Floodplain Managers (ASFPM) 33<sup>rd</sup> Annual National Conference, Orlando, Florida.** [www.floods.org](http://www.floods.org), contact ASFPM (608) 274-0123.

## CERTIFIED FLOODPLAIN MANAGER (CFM) EXAM

If you are interested in taking ASFPM's CFM exam, contact Diane Ifkovic, (860) 424-3537 or [diane.ifkovic@ct.gov](mailto:diane.ifkovic@ct.gov). Arrangements can be made to proctor an exam at a convenient time and location. More info on the CFM exam can be found at [www.floods.org](http://www.floods.org).

## UPCOMING EMERGENCY MANAGEMENT INSTITUTE COURSES

The Emergency Management Institute (EMI) is located at the Federal Emergency Management Agency (FEMA) National Emergency Training Center (NETC) in Emmitsburg, Maryland. EMI serves as the national center for emergency management training of federal, state, and local government officials. Tuition, housing, and all books and materials are provided at no cost. Participants are responsible for the cost of a meal pass (approximately \$100). The following is a list of upcoming EMI courses through September 2009. To apply, call Diane Ifkovic, CTDEP, (860) 424-3537 or email at [diane.ifkovic@ct.gov](mailto:diane.ifkovic@ct.gov). For more information on the courses listed, visit the EMI website: <http://training.fema.gov>.

- E170 HAZUS-MH for Hurricanes—February 2-5, 2009
- E172 HAZUS-MH for Flood—January 12-15, July 27-30, 2009
- E174 HAZUS-MH for Earthquake—April 27-30, 2009
- E179 Application of HAZUS-MH for Disaster Operations—April 20-23, 2009
- E190 Introduction to ArcGIS— February 23-26, 2009
- E194 Advanced Floodplain Management Concepts— May 4-7, August 10-13, 2009
- E202 Debris Management Planning—February 23-26, June 8-11, 2009
- E210 Recovery from Disaster: The Local Government Role—July 20-23, 2009
- E212 Unified Mitigation Assistance Program—March 23-27, June 15-19, 2009
- E241 Cooperating Technical Partners: Special Topics—March 2-5, 2009
- E263 Dam Break Analysis using HEC/HMS & HEC/RAS—May 18-21, 2009
- E271 Hydrologic Engineering Center Hydrologic Modeling System—January 12-15, 2009
- E273 Managing Floodplain Development through NFIP—Dec. 15-18, 2008, May 18-21 & July 20-23, 2009
- E274 National Dam Safety Technical Workshop—February 18-19, 2009
- E275 Benefit Cost User Workshop—January 26-28, 2009
- E276 Benefit Cost Analysis: Entry Level Training—November 17-19, 2008, June 8-10, 2009
- E278 NFIP Community Rating System (CRS)—April 6-9, July 6-9, August 31-September 1, 2009
- E279 Retrofitting Floodprone Residential Buildings—April 6-9, 2009
- E282 Advanced Floodplain Management Concepts II— February 2-5, July 6-9, 2009
- E312 Building Science Seminar—January 20-23, 2009
- E313 Basic HAZUS-MH—December 1-4, 2008, April 6-9, July 13-16, 2009
- E317 Comprehensive Data Management—March 16-19, September 14-17, 2009
- E386 Residential Coastal Construction—August 17-21, 2009
- E727 Executive Order 11988: Floodplain Management Training—April 7-9, 2009