

Introduction to the National Flood Insurance Program

1-hour



Course Information

This course has been approved by the Department of State for In-Service Training credit as follows:

1 hour, Topic 2 – Uniform Code

Course number: T02-07-2948



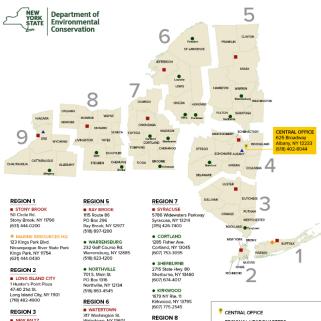


Workshop Overview

- NFIP Background & Goals
- Roles & Responsibilities
- Important Definitions
- FIRMs & FIS
- Development Requirements
- Flood Insurance
- Takeaways & Resources
- Wrap-up & Questions







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- WHITE PLAINS 220 White Plains Road, Suite 110 Tarrytown NY 10591 (914) 428-2505

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REGIONAL SUB-OFFICE

· ENVIRONMENTAL EDITION CENTER MARINE RESOURCES

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Regional Floodplain **Coordinators**

Region 1 – Eric Star/Ryan Porciello

Region 2 – Jean Occidental

Region 3 North – Jacob Addeo

Region 3 South – Berhanu Gonfa

Region 4 – Dave Sherman

Region 5 North – Madisen Hetman/William Bastian

Region 5 South – Danielle Baldwin

Region 6 – Gavin Denison

Region 7 North – Devin Prine

Region 7 South – Dan Fuller/Ben Girtain-Plowe

Region 8 North – Jonathan Tamargo

Region 8 South – Brad Chaffee

Region 9 – Taylor West/Erin Kane



Department of **Environmental** Conservation

National Flood Insurance Program

Background & Goals





The National Flood Insurance Program

- Identify flood-prone areas within the U.S.
- Establish flood-risk zones within those areas.
- •Require new and substantially improved buildings be constructed in ways that minimize flood damage.
- •Transfer cost of private property flood losses from taxpayer to property owner.





Accomplishing NFIP Goals



Require

Require new construction and substantial improvements to be flood resistant

Guide

Guide future development away from flood hazard areas

Transfer

Transfer flood loss costs from taxpayers to floodplain property owners

Prohibit

Prohibit new development in designated floodways that would increase flood heights



Roles & Responsibilities





Federal Government

- Risk Identification and mapping
- Flood insurance
- Assess community compliance
- Enforcement











State Government

- Establish state regulatory requirements
- Provide technical assistance
- Assess community compliance
- Administers Hazard Mitigation Grants







Local Municipality

- Adopts local flood damage prevention ordinance
- Ensures all development is compliant with state and NFIP







Poll Question #1

True or False?

The NYSDEC Permit Unit considers local floodplain regulations and NFIP requirements during the review of **ALL** permit applications.



Important Definitions



Definitions

Development

Special Flood Hazard Area (SFHA) ciation in speaking or singi

Floodway

Lowest Floor

Basement

dictionary /'diksənəri/ n.

Substantial Damage Substantial Improvement

Sources: 2020 BCNYS Section 202 and 44 CFR §59.1

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Development

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.



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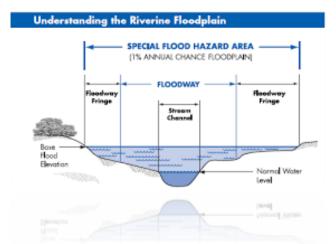
Environmental Conservation

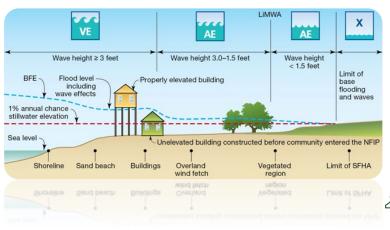
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Special Flood Hazard Area

Is the land in the floodplain within a community subject to a 1 percent or greater chance of flooding in any given year. Zones A, AO, AH, A1-30, AE, A99, AR, AR/A1-30, AR/AE, AR/AO, AR/AH, AR/A, VO, or V1-30, VE, or V.





Base Flood

The flood having a one percent chance of being equaled or exceeded in any given year.







Floodway

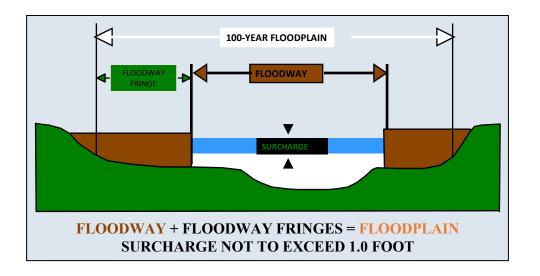
The channel of the river, creek or other watercourse and the adjacent land areas that must be reserved in order to discharge the *base flood* without cumulatively increasing the water surface elevation more than a designated height.

Referred to as a Regulatory Floodway in 44 CFR Part 59.1





Floodway Schematic







Lowest Floor

Lowest Floor means the lowest floor of the lowest enclosed area (including basement). An unfinished or flood resistant enclosure, usable solely for parking of vehicles, building access or storage in an area other than a basement area is not considered a building's lowest floor; *Provided*, that such enclosure is not built so as to render the structure in violation of the applicable non-elevation design requirements of §60.3.





Basement

Basement or Cellar is that portion of a building having its floor subgrade (below ground level) on all sides.

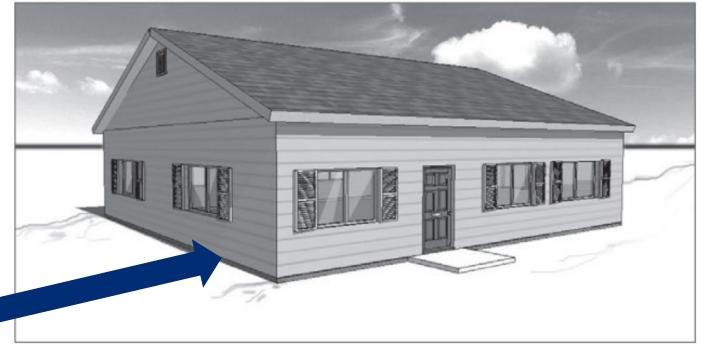
A walkout basement is not a basement in the NFIP, provided that:

- One whole side of the "basement" is above ground.
- The basement is only used for storage and building access
- Utilities are raised above the BFE
- Flood resistant materials



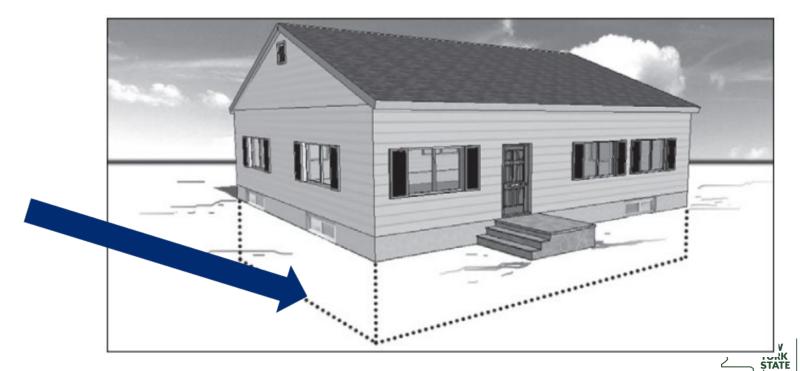


Single Story Slab on Grade





Single Story with Basement



Department of Environmental Conservation



Mobile Home with Vinyl/Aluminum Skirting







Two Story Elevated on Crawlspace



Elevated on Piers, Posts, Piles, of Columns



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Substantial Damage

Damage of <u>any origin</u> sustained by a structure whereby the cost of restoring the structure to its before damaged condition would equal or exceed 50 percent of the market value of the structure before the damage occurred.





Substantial Improvement

Any reconstruction, rehabilitation, addition, or other improvement of a structure, the cost of which equals or exceeds 50 percent of the market value of the structure before the "start of construction" of the improvement. This term includes structures which have incurred "substantial damage", regardless of the actual repair work performed.





The term does not, however, include either:

- 1. Any project for improvement of a structure to correct existing violations of state or local health, sanitary, or safety code specifications which have been identified by the local code enforcement official and which are the minimum necessary to assure safe living conditions or
- 2. Any alteration of a "historic structure", provided that the alteration will not preclude the structure's continued designation as a "historic structure".





Poll Question #2

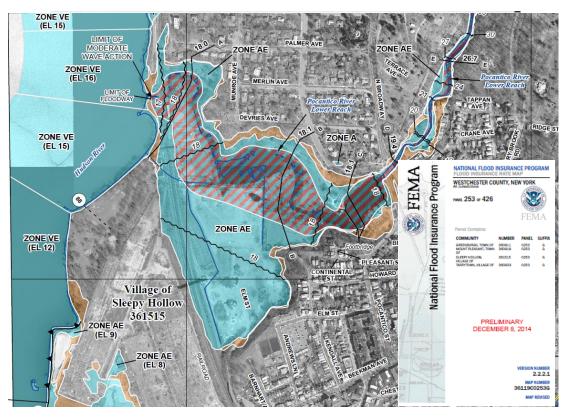
A structure could be considered substantially damaged due to a...

- A. Fire
- B. Flood
- C. Tree falling on the structure
- D. All of the above



Flood Insurance Studies and Maps

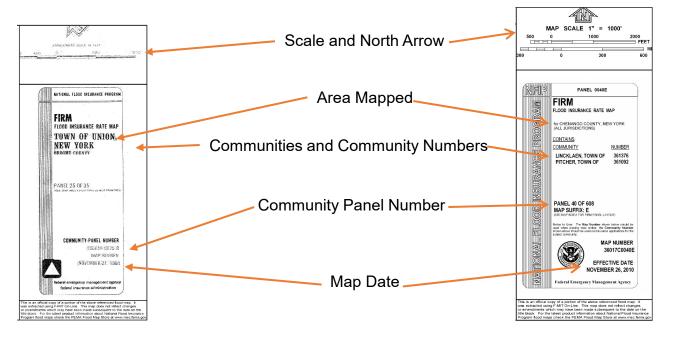








Map Panel Information

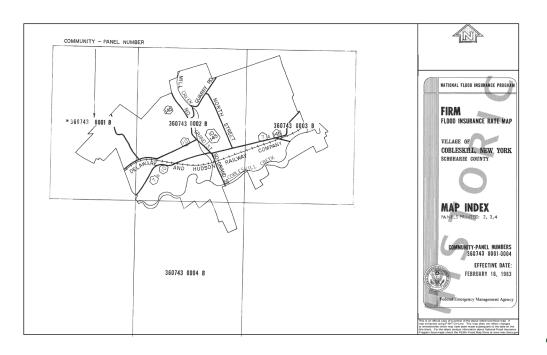






Reading a FIRM

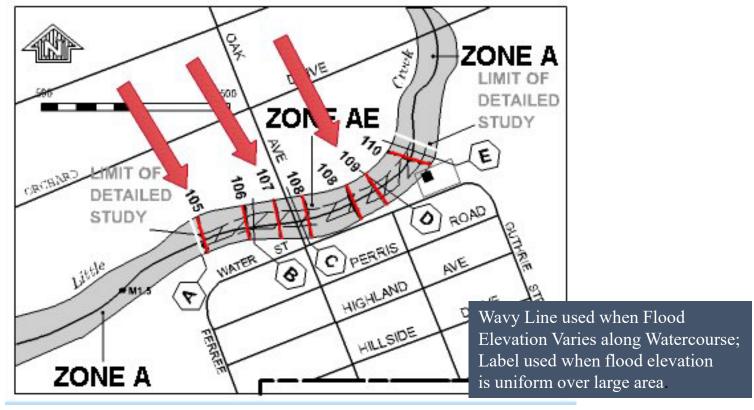
Open Map Index and Find Panel





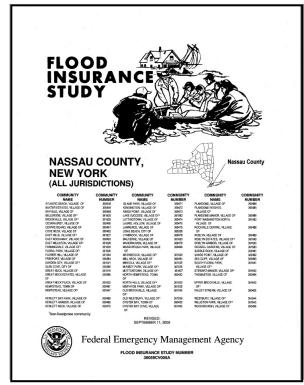


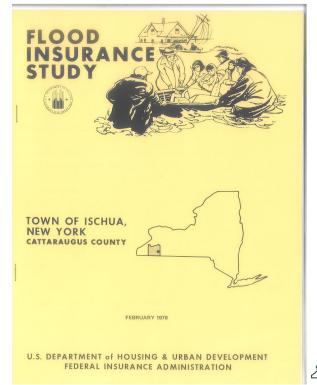
Some Map Features





Flood Insurance Study (FIS)









FIS Stillwater Elevations

TABLE 3 - SUMMART OF STILL WATER ELEVATIONS	TABLE 5 - S	UMMARY OF:	STILLWATER ELEVATIONS
---	-------------	------------	-----------------------

	Elevation (feet)							
	10-Percent-	2-Percent-	1-Percent-	0.2-Percent-				
	Annual	Annual	Annual	Annual				
Flooding Source and Location	Chance	<u>Chance</u>	Chance	Chance				
Cayuga Lake	384.1	385.4	385.8	386.8				
Cross Lake	*	*	381.0	*				
Lake Ontario	Not utilized	Not utilized	248.9	249.6				
Owasco Lake	714.76	716.41	716.92	717.98				

(Reference datum NAVD 88)

*Data not available



		7	
		4	
		4	
		1	
~			

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY (FEET NGVD)	WITH FLOODWAY	INCREASE (FEET)
ANGELÌCA CREEK								
A	19,460 ¹	94	386	11.6	1,375.9	1,375.9	1,375.9	0.0
В	21,600	106	402	11.1	1,402.9	1,402.9	1,402.9	0.0
C	27,400 ¹	89	365	11.5	1,433.8	1,433.8	1,433.8	0.0
TRIBUTARY A-1								
A	9002	60	126	6.4	1,451.4	1,451.4	1,451.4	0.0
В	2,600 ²	25	79	10.1	1,493.9	1,493.9	1,493.9	0.0
					1			
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 $^{^{\}mathrm{l}}\mathrm{Feet}$ above confluence with the Genesee River

²Feet above confluence with Angelica Creek

TAB	FEDERAL EMERGENCY MANAGEMENT AGENCY VILLAGE OF ANGELICA, NY	FLOODWAY DATA			
LE 2	(ALLEGANY CO.)	ANGELICA CREEK AND TRIBUTARY A-1			

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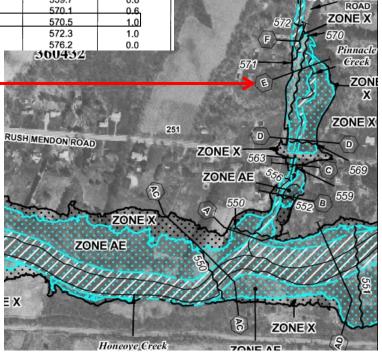


FLOODING SOU	FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD)				
CROSS SECTION	DISTANCE ¹	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT	WITH FLOODWAY	INCREASE
Pinnacle Creek			,					
A	136	28	83	7.1	550.3	546.0 ²	547.0	1.0
В	476	28	66	8.9	552.4	552.4	552.8	0.4
C	704	19	63	9.4	559.1	559.1	559.7	0.6
D	879	26	246	2.4	569.5	569.5	570.1	0.6
E	1,419	26	168	3.5	569.5	569.5	570.5	1.0
F	1,647	50	179	3.3	571.3	571.3	572.3	1.0
G	2,207	33	81	7.3	576.2	576.2	576.2	0.0
			-	-	•	000	300432	

1/	FEDERAL EMERGENCY MANAGEMENT AGENC
TABLE 9	MONROE COUNTY, NY (ALL JURISDICTIONS)

FLOODWAY DATA

PINNACLE CREEK

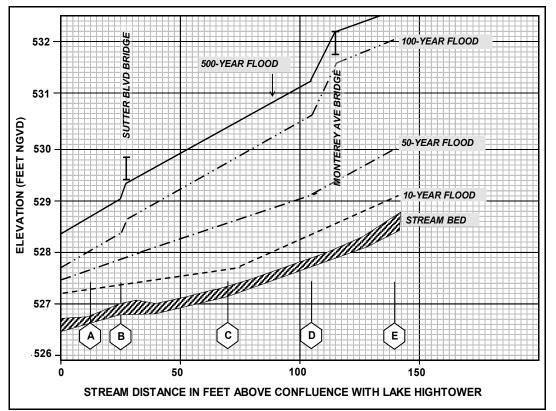


Feet above confluence with Honeoye Creek

²Elevation computed without consideration of backwater effects from Honeoye Creek

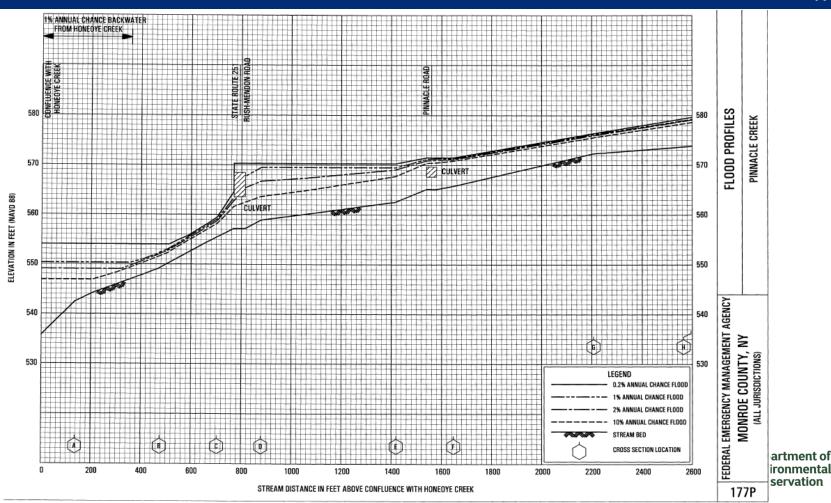


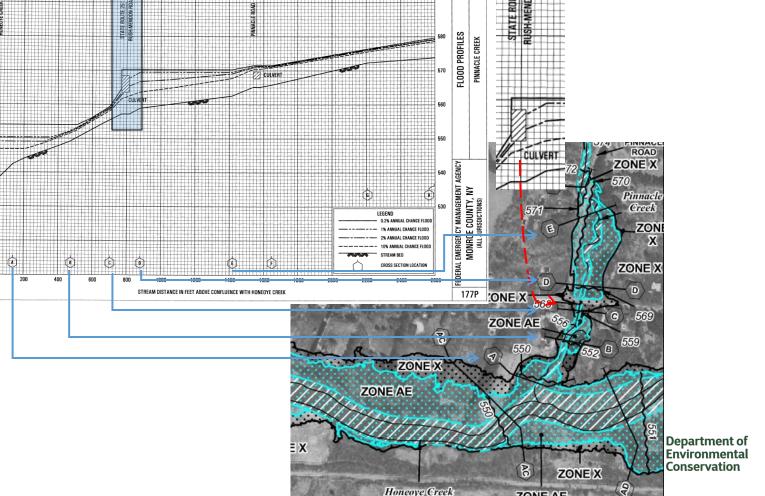
Flood Profile Example













Base Level Engineering (BLE)



Base Level Engineering (BLE) in Region 2 | Region II Mitigation Portal (arcgis.com)



What is BLE?

- BLE is an engineering method that combines high-resolution ground elevation data and the latest modeling software to generate watershed-wide flood hazard information
- As part of the BLE output, peak discharges and flood hazard data for the 50%, 10%, 4%, 2%, 1%, 1%+,1%-, and 0.2% flood events were produced
- This data does not replace a community's FIRM and will not affect flood insurance rates or the federal requirement to purchase flood insurance in designated areas.

How can BLE be used?

- As best available information in areas where BFEs have not been determined
- To support an application for a Letter of Map Amendment (LOMA), Letter of Map Revision Based on Fill (LOMR-F) in Zone A
- Hazard Mitigation Planning
- Community Planning, Land Use, and Zoning
- Emergency Management
- Risk Communication



Where to Find Map Products

- Online: Google "FEMA Map Service Center." or <u>http://www.msc.fema.gov</u>
- Contact a Map Specialist at 1-877-336-2627
- View at:
 - Local Government Offices
 - County and Regional Planning Offices
 - DEC HQ and Regional Offices





Poll Question #3

Where do you get the Base Flood Elevation (BFE) to the nearest tenth of a foot in a riverine floodplain?

- A. The Flood Insurance Rate Map (FIRM)
- B. The flood profile in the back of the Flood Insurance Study(FIS)
- C. The Summary of Stillwater Elevations Table
- D. USGS river gauges



Development Requirements





Who Must Get Local Floodplain Development Permits

- Private Developers
- Counties
- Cities, Towns or Villages
- School Districts
- Public Improvement Districts

Established by Section 36-0107 of Environmental Conservation Law





Elevation Requirements - Residential

- All new construction and substantial improvement shall have the Lowest Floor, including basement, elevated to or above the BFE plus 2 feet of freeboard.
- Obtain and reasonably use data available from a federal, state or other source and add 2 feet, of freeboard.
- Determine the design flood elevation in accordance with accepted hydrologic and hydraulic engineering practices to define special flood hazard areas and add 2 feet of freeboard.
- For subdivisions or other developments over 50 lots or 5 acres, applicant must provide flood elevation data and build accordingly accordingly accordingly and build accordingly accordingly

Elevation Options

- Open foundation (posts, piles, columns, or piers)
- Stem wall
- Full-story foundation walls
- Crawlspace
- Fill pad



Technical Bulletin

Crawlspace Construction

for Buildings Located in Special Flood H National Flood Insurance Program Interii

FEMATB-11 / November 2001





Reasonably Safe from Flooding Requirement for Building on Filled Land

Removed From the Special Flood Hazard Area in Accordance with the National Flood Insurance Program NFIP Technical Bulletin 10 / March 2023





Below Elevated Buildings in Special Flood Hazard Areas In Accordance with the National Flood Insurance Program

NFIP Technical Bulletin 1 / March 2020

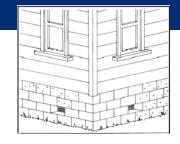




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Openings in Crawlspace



- Nonengineered Openings: Min 1 square inch per 1 square foot of enclosed floor space; measured along exterior of the enclosure walls
- Louvers, blades, or screens shall allow automatic flow of floodwater and shall be accounted for in the determination of the net open area
- At least two openings on two different sides
- The bottom of each opening shall not be more than 12 in. above grade (interior or exterior whichever is higher)



Elevation Requirements - Non-Residential

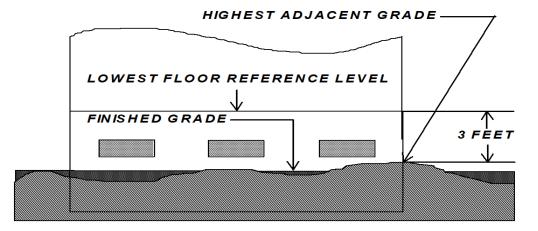
- All new construction or substantial improvement, shall have the lowest floor, including basement, elevated to the design flood elevation plus freeboard
 - Exception: at least three feet above the highest adjacent grade.
- For subdivisions or <u>other development</u> over 50 lots or 5 acres, applicant must provide flood elevation data and build accordingly.





Unnumbered A ZONE REFERENCE LEVELS

(DEPTH 3 FEET)



HIGHEST ADJACENT GRADE - HIGHEST NATURAL GRADE ADJACENT TO THE FOOTPRINT OF THE BUILDING PRIOR TO CONSTRUCTION.





Non-Residential Floodproofing

Require that all new construction and substantial improvements of non-residential structures within Zones A1-30, AE and AH zones on the community's FIRM

- (i) have the lowest floor (including basement) elevated to or above the base flood level or,
- (ii) together with attendant utility and sanitary facilities, be designed so that below the base flood level the structure is watertight with walls substantially impermeable to the passage of water and with structural components having the capability of resisting hydrostatic and hydrodynamic loads and effects of buoyancy



NFIP Technical Bulletin #3

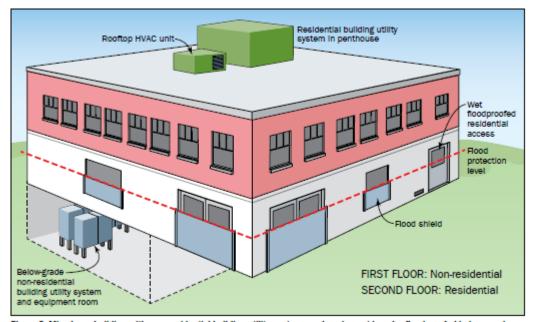


Figure 5: Mixed-use building with non-residential building utility systems and equipment in a dry floodproofed below-grade equipment room and elevated systems that serve the residential uses



Requirements for the Design and Certification of Dry Floodproofed Non-Residential and Mixed-Use Buildings

Located in Special Flood Hazard Areas in Accordance with the National Flood Insurance Program

NFIP Technical Bulletin 3 / January 2021







Utilities

Elevate 2 feet above the BFE, or:

- Designed and installed to prevent water from entering or accumulating within the components and resist hydrostatic and hydrodynamic loads including effects of buoyancy
- Electrical wiring below the 2 feet elevation must conform to provisions for electrical code for wet locations
- Elevate or waterproof electric meters standards apply to replacement components only when new construction or substantial improvement
- Can not be mounted on or penetrate breakaway walls



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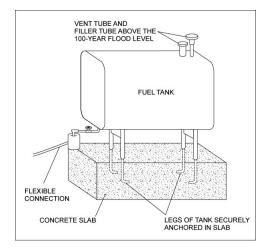
Storage Tanks

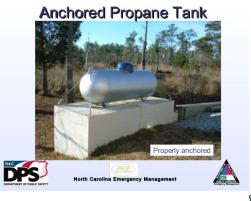
Underground Tanks:

 Anchor against flotation, collapse and lateral movement

Above-Ground Tanks

- Install at or above BFE plus freeboard
- Anchor







Accessory Structures

Garages and Accessory Structures

- Shall be constructed in accordance with ASCE 24
- Structures generally used for storage or parking of vehicles
- Detached garages
- Storage buildings
- Certain agricultural buildings
- Functionally dependent use

Check Local Law for Flood Damage Prevention and also FEMA TB-1, TB-2, and TB-7





Manufactured Homes

- Bottom of the frame elevated 2 feet above the BFE
- Anchor and tie down requirements
- Flood vents if solid foundation below unit
- Floodway encroachment analysis required if in floodway



Protecting Manufactured Homes from Floods and Other Hazards

A Multi-Hazard Foundation and Installation Guide

FEMA P-85, Second Edition / November 2009



FEMA P-85 Protecting Manufactured Homes from Floods and Other Hazards





Recreational Vehicles

If in Zones AE, A1-30, or AH Requirements:

- On site for fewer than 180 days,
- Be fully licensed and ready for highway use, or
- Be elevated and anchored as a manufactured home
- For bullets 1 and 2 above: No permanently attached porches or additions, must have quick disconnect utilities





Technical Bulletins

Guide-01 User's Guide to Technical Bulletins 1/1/2021

TB-1: Requirements for Flood Openings in

Foundation Walls and Walls of Enclosures 3/25/2020

TB-2: Flood-Resistant Materials Requirements

8/1/2008

TB-3: Non-Residential Floodproofing 1/1/2021

TB-4: Elevator Installation 6/8/2019

TB-5: Free-of-Obstruction Requirements 3/23/2020

TB-6: Below-Grade Parking Requirements 1/1/2021

TB-7: Wet Floodproofing Requirements 5/10/2022

TB-8: Corrosion Protection for Metal Connectors in Coastal Areas 8/8/2019

TB-9: Design and Construction Guidance for Breakaway Walls Below Elevated Coastal Buildings 9/30/2021

TB-10: Ensuring that Structures Built on Fill In or Near Special Flood Hazard Areas are Reasonably Safe From Flooding 3/7/2023

TB-11: Crawlspace Construction for Buildings Located in Special Flood Hazard Areas 11/1/2001





Poll Question #4

True or False?

Non-residential structures have the option to dry-floodproof instead of elevating.



Flood Insurance



Risk Rating 2.0-Equity in Action

Became effective for all policies on April 1, 2022. Important take-aways:

- FIRMs and BFEs will still be used to determine mandatory purchase requirement and for floodplain management
- Elevation certificates will no longer be required for insurance rating, but they are still required for floodplain management
- Mitigation discounts are available for:
 - Elevated machinery and equipment above first floor
 - Proper flood openings
 - Elevating on posts, piles, or piers





Flood Insurance Resources

FloodSmart | The National Flood Insurance Program

Information included:

- How to buy flood insurance
- What is covered
- How to find a provider

Floods are becoming more frequent and severe.

Keeping your flood insurance policy active is now more important than ever.

FEMA's new flood insurance pricing system better informs all policyholders about the reality of increasing flood risk, so you can protect the home and life you've built.



Speak with your insurance provider today to understand how this change might affect your policy, and if your property qualifies for any premium discounts.







ICC Coverage

Provides additional funding to either...



Elevate above the flood level required by your community



Relocate to a new site, preferably out of the floodplain



Demolish the building



Dry floodproof the building (primarily non-residential)

From F-663 FEMA's Increased Cost of Compliance Brochure



Eligibility for ICC Claim

A building is eligible for an ICC claim if it is in an A or V zone and the community makes the following determination:

- Substantially Damaged by flood; or
- Repetitively damaged structure in a community that has passed a repetitive damage clause within its local law.





Increased Cost of Compliance (ICC)







Poll Question #5

Residential structures cannot use ICC funds to...

- A. Elevate
- B. Relocate
- C. Dry-floodproof
- D. Demolish

NOTE

If are you are interested in obtaining code credits you must answer EVERY polling question

Takeaways & Resources





Benefits of Proper Enforcement

- Safer, more resilient community
- Safer Public
- Decreased flood damages
- Lower flood insurance rates
- Maintain property values
- Maintain NFIP status and access to Federal funds



Potential Funding Opportunities

- Learning how to be successful at securing and managing grants is critical.
- Check out DEC's new <u>Funding Finder</u>
 <u>Tool</u> to simplify the process
- Learn strategies and methods from peers on this webinar <u>Navigating Grant</u> <u>Funding: Municipal Success Stories</u>





Resources

Overall resources

- o FEMA 480 Floodplain Managers Desk Reference
- <u>Legal Papers from ASFPM</u>
- <u>FEMA P-758, Substantial Improvement/Substantial Damage</u>
- VERTCON North American Vertical Datum Conversion (noaa.gov)

Additional Training

- Floodplain Management Training Resources NYS
 Dept. of Environmental Conservation
- Training New York State Floodplain and Stormwater Managers (nyfloods.org)
- FEMA Emergency Management Institute (EMI)
 Home Page
- o NFIP101 (floods.org)

Floodplain Management Requirements

- o 44 CFR Part 60 CRITERIA FOR LAND MANAGEMENT AND USE
- o NFIP Technical Bulletins (Links to all 11 NFIP TB's)
- Reducing Flood Losses through the International Code Series (sample permit/site plan checklists and a crosswalk between the IBC/IRC and the 44 CFR 60.3 standards are in the appendices)
- ICC Building Code resources for floodplain managers
- FEMA 348, Protecting Building Utilities from Flood Damage (1999)



Thank You

Brad Wenskoski, CFM

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