Floodplain Administrator 101 Workshop

November 7, 2019

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Agenda

- Overview of National Flood Insurance Program
- Flood Insurance
- Floodplain Mapping
- Best Practices for Effective Local Floodplain Management Program
  - Understanding Floodplain Regulations
  - Substantial Damage/Improvement Determinations
  - Floodplain Permitting Process
  - Floodplain Development Monitoring and Compliance
- Wrap Up

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Overview of the National Flood Insurance Program

What is the National Flood Insurance Program?

- Created by Congress in 1968
- Voluntary and a partnership between FEMA and participating communities

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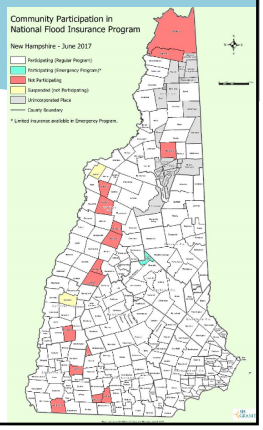
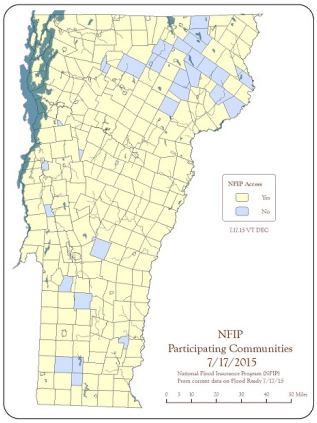
NFIP Participation in New Hampshire

- 219 communities (93%) participate
- 17 communities (7%) do not participate





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NFIP Participation

- Community agrees to adopt local floodplain regulations and enforce them through a local permitting process.
- NFIP flood insurance is available to all property owners and renters in the community.
- No limitations on disaster assistance and mitigation grant programs for an NFIP community following a flood disaster.

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Floodplain Administrator

- Each NFIP community should have at least one person/entity responsible for administering the community's floodplain management program
  - Building inspector
  - Code enforcement officer
  - Planner/Planning & Zoning Administrator
  - Select board
- Usually referenced in the floodplain ordinance
- Community's NFIP responsibilities are the same for all communities.

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NFIP Participation

- Effective implementation of regulations helps minimize future flood damage and helps keep insurance rates affordable for property owners.
- Established administrative and permitting processes are key tools to ensure:
  - Adherence
  - Consistency
  - Good standing in NFIP

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Federal, State, and Local Roles in the NFIP

FEMA

- Provide flood insurance to all residents in a participating community
- Risk identification (mapping)
- National program oversight
- Establish development/building standards and guidance
- Monitor compliance

NATIONAL FLOOD INSURANCE PROGRAM

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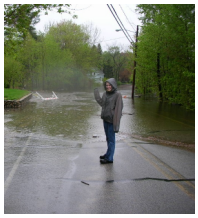
Federal, State, and Local Roles in the NFIP

State Role

- Technical assistance to all stakeholders
- Education and outreach
- Model floodplain regulations
- Assist communities in evaluating compliance of floodplain activities



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Local (Community) Role and Responsibilities

- Understand the regulations and FEMA maps
- Ensure that permits are applied for, for all development in Special Flood Hazard Areas
- Review and process permit applications
- Ensure floodplain development (including community's) is built according to approved permits and floodplain regulations
- Take enforcement actions; correct violations
- Keep records
- Maintain and update flood data & maps
- Update the floodplain ordinance, as needed or required

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Flood Insurance

Flood Insurance

The only residents eligible to purchase flood insurance through the NFIP are those living in a participating community & within a floodplain area.

A. True
B. False

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Insure Your Risk

- Anywhere it can rain, it can flood
- Everyone lives in a flood zone
- Homeowners and renters insurance does not typically cover flood damage.
- If a house is located in a floodplain, there is a 26% chance that the house will be damaged by a flood during the course of a 30-year mortgage

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Insure Your Risk

- Just 1 inch of water in an average-sized home can cause more than $25,000 in damage.
- Flood insurance can pay regardless of whether or not there is a Presidential Disaster Declaration for Individual Assistance

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Lender Floodplain Requirements

- Flood Disaster Protection Act of 1973
- Lending institutions cannot make, increase, extend, or renew a loan for a building located in the floodplain without NFIP flood insurance
- It is the responsibility of the lender to:
  - determine if the property is in the Special Flood Hazard Area,
  - document the determination, and
  - ensure the insurance is maintained through the life of the loan.

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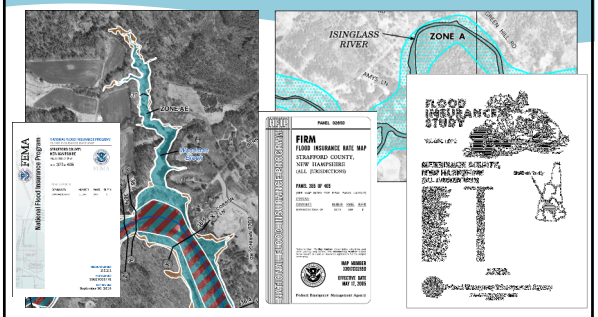
Floodplain Mapping

Flood Insurance Rate Maps (FIRM) and Flood Insurance Study (FIS) Report



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The 1% Annual Chance Flood

- National standard used by the NFIP for regulating new development and flood insurance requirements
- Sometimes called the base flood or the "100-year" flood
- The area of the 1% annual chance flood is shown on the maps and is called the **Special Flood Hazard Area (SFHA)**

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Flood Zones

SFHAs contain all flood zones that start with the letter **A** or **V**.

Areas <u>outside of the SFHA</u> are designated as Zone X.

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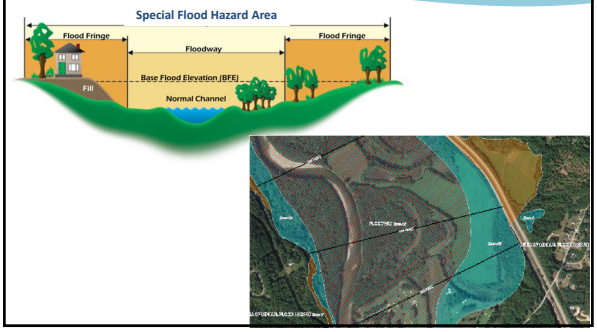
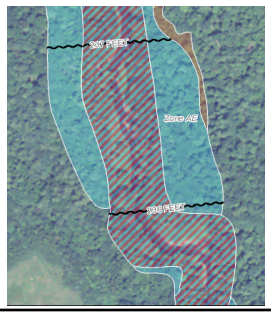
The Regulatory Floodway



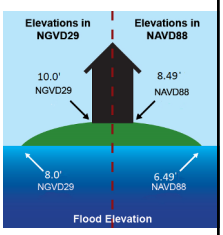
Base Flood Elevation (BFE)

The height above sea level to which flood water would be expected to rise in a 1% annual chance flood event.



What is a Vertical Datum?

- A base measurement point from which elevations are determined.
- 2 vertical datums are used in NH for flood maps:
  - National Geodetic Vertical Datum of 1929 (NGVD29)
  - North American Vertical Datum of 1988 (NAVD88)
- Conversion factor needed to compare elevations in different vertical datums.



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Why do you need to know how to use the flood maps?

- Community floodplain regulations apply to all lands designated as **Special Flood Hazard Areas** as shown on the maps.
- The **flood zone**, **floodway**, and **Base Flood Elevation** designation from the maps and report that apply for sites in the SFHA affect which building requirements in your floodplain regulations that will apply.
- Community is responsible for final determination of a proposed development's location based on current FEMA maps and Flood Insurance Study report.

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Using the Floodplain Maps

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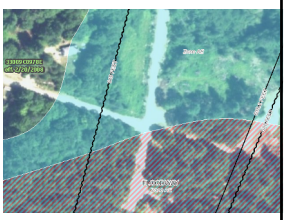
NATIONAL FLOOD INSURANCE PROGRAM

If development is proposed in your community…

- Is the site in the Special Flood Hazard Area (SFHA) on the map?
- If yes…
  - What is the flood zone?
  - Is it also in the floodway?
  - What is the Base Flood Elevation?



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Step 1: Find Your Flood Map

- Paper copies
- Digital copies available on FEMA Map Service Center website for all NFIP communities
- FEMA National Flood Hazard Layer Viewer*
- GIS data available for download from FEMA Map Service Center*
- State map viewers
- Your community may have its own map viewer with the floodplains shown

**For communities with digitally produced FIRMs*

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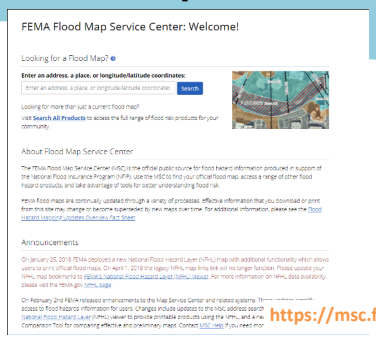
FEMA's Map Service Center



https://msc.fema.gov

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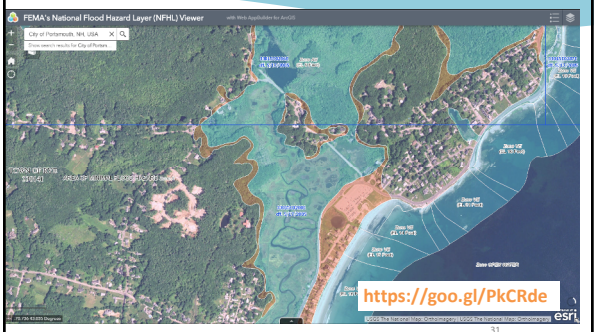
FEMA National Flood Hazard Layer Viewer



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NH Flood Hazards Viewer

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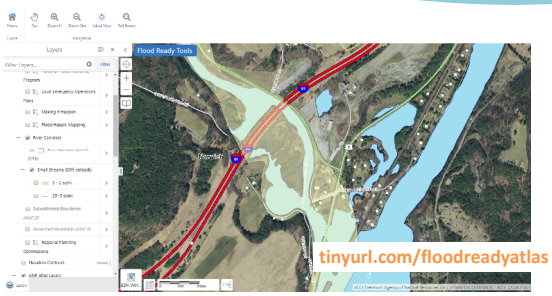
Vermont Flood Ready Atlas



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Step 2: Is the site in an SFHA?

- Use your map to find out if the proposed development site is located in the SFHA (Any zone that starts with an A or V).
- If it is, it is subject to the requirements of your community floodplain development regulations.
- If the proposed site is in more than 1 zone, the more restrictive zone will apply.

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Step 3: If the site is located in the SFHA…

You also need to know:

- what flood zone it is in (A, AE, AO, or VE)
- if it is located in a floodway
- the Base Flood Elevation that applies

These affect which requirements in your floodplain development regulations will apply.

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Flood Zones on the Maps

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Zone AE

- AE zones are the part of the SFHA that have Base Flood Elevations shown on the flood maps and in the Flood Insurance Study reports
- AE zones along a river may have a floodway designated
- On older maps, may be shown as Zone A1-30

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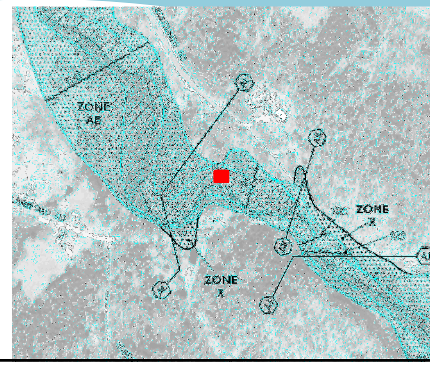
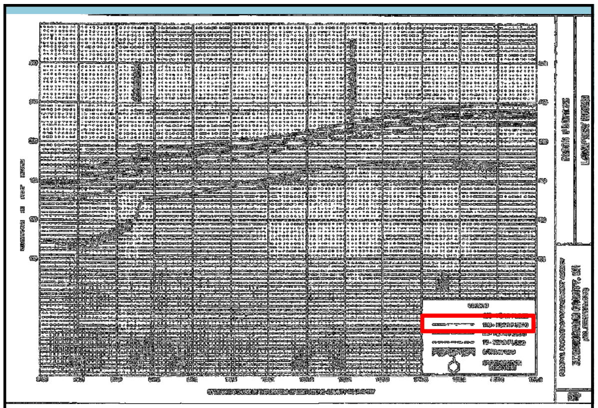
Using the Flood Insurance Study (FIS) Report to Determine the BFE

- For AE zones, the FIS report includes more precise Base Flood Elevation (BFE) data than that included on the map
  - **For example: 140 feet vs. 140.4 feet**
- Use these parts of the FIS report to get the most precise BFE in AE zones:
  - Summary of Stillwater Elevations Table (lakes, ponds)
  - Flood profiles (all rivers and streams)
  - Floodway Data Table (rivers and streams with floodways – only usable in certain situations)

Find the BFE: Zone AE - Riverine





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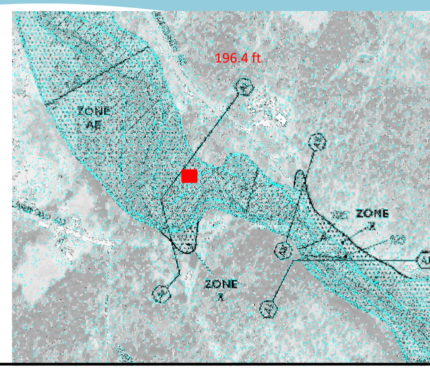

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NGVD)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Lamprey River (continued)								
AA	77,760	113	502	10.5	177.1	177.1	178.1	1.0
AB	77,810	120	501	10.6	178.6	178.6	179.6	1.0
AC	78,190	156	1,197	4.4	181.0	181.0	182.0	1.0
AD	83,080	159	1,658	3.19	184.7	184.7	185.7	1.0
AE	83,910	102	1,277	4.14	185.9	185.9	186.9	1.0
AF	84,610	107	1,149	4.61	186.4	186.4	187.4	1.0
AG	84,830	279	4,359	1.21	190.1	190.1	191.1	1.0
AH	89,830	205	2,666	1.98	190.3	190.3	191.3	1.0
AI	95,610	270	3,362	1.30	190.8	190.8	191.8	1.0
AJ	97,110	51	635	6.88	193.1	193.1	194.1	1.0
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	195.8	196.8	1.0
AL	98,230	177	1,490	2.93	196.4	196.4	197.4	1.0
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	200.6	201.6	1.0
AN	102,430	81	684	6.39	202.6	202.6	203.6	1.0
AO	105,160	81	787	5.55	206.7	206.7	207.7	1.0
AP	107,920	138	1,629	2.68	207.9	207.9	208.9	1.0
AQ	110,110	237	2,271	1.45	211.7	211.7	212.7	1.0
AR	110,410	134	1,568	2.10	213.0	213.0	214.0	1.0
AS	113,530	96	1,041	3.17	214.4	214.4	215.4	1.0
AT	115,130	150	994	3.32	216.4	216.4	217.4	1.0
AU	116,790	203	2,305	1.43	216.7	216.7	217.7	1.0
AV	119,400	1,407	9,085	0.36	216.8	216.8	217.8	1.0

[1]Feet above county boundary

TABLE 9

FEDERAL EMERGENCY MANAGEMENT AGENCY

ROCKINGHAM COUNTY, NH
(ALL JURISDICTIONS)

FLOODWAY DATA

LAMPREY RIVER

Find the BFE: Zone AE – Lakes and Ponds

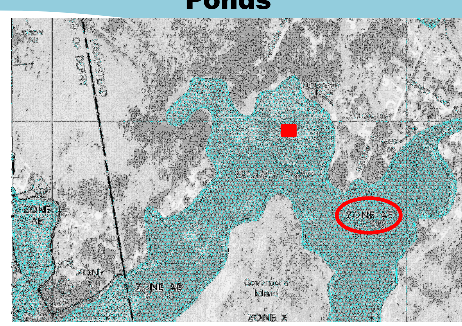

TABLE 5 - SUMMARY OF STILLWATER ELEVATIONS

FLOODING SOURCE AND LOCATION	ELEVATION (Feet NGVD[1]) 10-YEAR	50-YEAR	100-YEAR	500-YEAR
ADAMS POND				
At Derry	326.0	327.1	327.3	328.1
ATLANTIC OCEAN				
Entire shoreline within North Hampton and Rye	8.3	8.9	9.2	9.8
Entire shoreline within Hampton, Hampton Falls, New Castle, Seabrook, and Seabrook Beach	8.2	8.9	9.2	9.8
Entire shoreline within Portsmouth	8.0	8.6	8.9	9.5
BEAVER LAKE				
At Derry	287.9	289.3	289.6	294.0
COUNTRY POND				
Entire shoreline with Kingston	*	*	120.8	*
GREAT BAY				
Entire shoreline of the Squamscott River within the Exeter corporate limits to a point approximately 370 feet downstream of Chestnut Hill Avenue	7.1	7.6	7.9	8.4
Entire shoreline within Greenland, and Newington, and the entire shoreline of Great Bay and Lamprey River downstream of from MacCallen Dam in Newmarket	6.4	7.0	7.2	7.8
Entire shoreline of the Squamscott River within Newfield, and the entire shoreline within Stratham	6.9	7.5	7.7	8.2
GREAT POND				
Entire shoreline within Kingston	*	*	121.8	*
ISLAND POND				
At the Towns of Derry and and Atkinson's corporate limits, in Derry, and the entire shoreline within Hampstead	205.5	206.4	206.8	208.2

[1]National Geodetic Vertical Datum of 1929
*Data Not Available

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Zone A

No Base Flood Elevation (BFE) established by FEMA on the maps or in Flood Insurance Study report

You can use:

- any Federal, State, or other source of BFE data if available;
- historical flood data;
- establish the BFE as 2 feet above highest adjacent grade of building site

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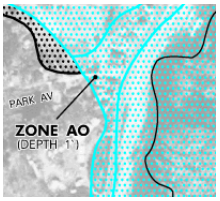
Zone AO

- AO zones have a depth of flooding in feet shown on the maps, not an actual Base Flood Elevation
- There are AO zones in the following communities in NH:
  - Dover
  - Hampton
  - Little Boar's Head Village District
  - Nashua
  - Ossipee
  - Rye
  - Woodstock



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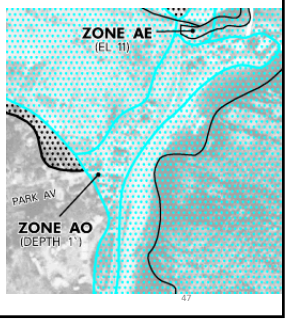
Determining the BFE in Zone AO

Highest Adjacent Grade
+ Depth Number on FIRM
Flood Elevation



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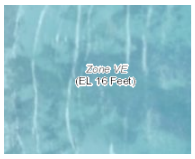
Zone VE

- The Coastal High Hazard Area
  - Areas affected by waves greater than 3 feet
- Use the Base Flood Elevation values shown on the maps



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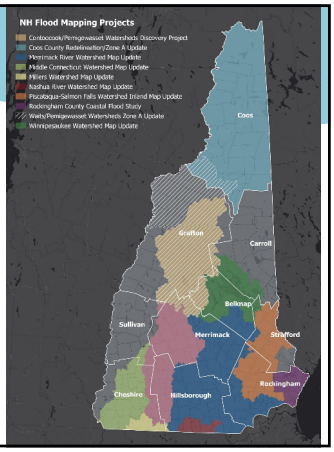
Current FEMA Mapping Projects



Summary of Floodplain Mapping

- Communities must know how to use FEMA FIRMs and FIS report in order to properly enforce their floodplain management regulations
- Mapping available at the FEMA Map Service Center and through the National Flood Hazard Layer Viewer, state viewers
- New mapping in NH underway; stay tuned
- If you need help using the FIRMs and FIS report, contact us!

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Mapping Exercise

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Best Practices for an Effective Local Floodplain Management

Best Practices for an Effective Local Floodplain Program

- Public Outreach
- Understanding the Floodplain Regulations and their Importance
- Administrative Procedures or Adopt New Model
  - Floodplain Administrator
  - Floodplain Mapping Determination Process
  - Floodplain Permitting Process
  - Floodplain Development Monitoring, Compliance, and Enforcement Processes

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Best Practices for an Effective Local Floodplain Program

- **Public Outreach**
- Understanding the Floodplain Regulations and their Importance
- Administrative Procedures or Adopt New Model
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Public Outreach about Floodplain Management Program

- Include information on community web site
  - *OSI has sample web site content available*
- Post information on community social media accounts
- Prepare and have available flyers and/or display a poster at town office
- Include a notice along with annual bill/notice

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Best Practices for an Effective Local Floodplain Program

- Public Outreach
- **Understanding the Floodplain Regulations and their Importance**
- Administrative Procedures or Adopt New Model
  - Floodplain Administrator
  - Floodplain Mapping Determination Process
  - Floodplain Permitting Process
  - Floodplain Development Monitoring, Compliance, and Enforcement Processes

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Floodplain Regulations

- Purpose of regulations is to manage development in floodplain areass
  - Protect lives and property from flooding
  - Flooding is the #1 disaster in NH
- FEMA sets the minimum standards; it is up to the community to take ownership and make the regulations work for the community's specific flood risk

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NFIP Regulations and State Building Code

- NH State Building Code (effective 9/15/19) includes:
  - International Building Code (IBC) 2015
  - International Residential Code (IRC) 2015
  - American Society of Civil Engineers, *Flood Resistant Design and Construction* (ASCE 24-14)
- Codes includes flood provisions which meet or exceed many of the NFIP minimum standards
- New code now requires that the lowest floor of all structures in a special flood hazard area be built at least 1 foot above base flood elevation

Elevating a Structure above BFE

By doing so, the property owner will save $ in two ways:

1. The structure will sustain less damage when it does flood.
2. The flood insurance premium will be lower – the higher the lowest floor is above the BFE, the lower the premium will be.

Flood Insurance Premium Comparison		
Zone	Freeboard	Premium
AE	At BFE (no freeboard)	$2,147
AE	BFE + 1 foot	$1,106
AE	BFE + 2 feet	$734
AE	BFE + 3 feet	$614

Premiums are for a single-family house, one floor, slab on grade, stem wall foundation, or crawlspace with proper flood openings, $200,000 in building coverage, $80,000 in contents coverage, $1,000 deductible, no CRS discount, April 2017 *Flood Insurance Manual*

Permitting for Development

All proposed **development** in a Special Flood Hazard Area shall require a local permit.

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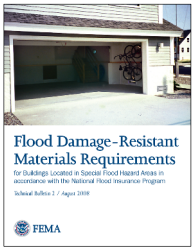
General Construction Requirements

All new construction/substantial improvements:

- Designed (or modified) and adequately anchored to prevent flotation, collapse, and lateral movement.
- Constructed with flood-resistant materials.
- Use methods and practices to minimize flood damage.



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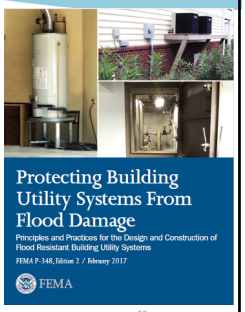
Utility, Water & Sewer Requirements

- Utilities should be designed and/or located so as to prevent water from entering or accumulating within the components



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Other Permits

- Applicant: Must secure other required permits and approvals BEFORE a permit for floodplain development is granted.
- Local Floodplain Manager should know applicable Federal and State regulatory programs.

US Army Corps of Engineers

U.S. Fish & Wildlife Service

New Hampshire Department of Environmental Services

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Lowest Floor

In Zones A, AE, and AO

- The top of the lowest floor must be elevated to the Base Flood Elevation or higher (if community enforces higher standard).

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Non-Residential Structures

Non-Residential

- Have the option of:
  - Elevate the Lowest Floor at or above the Base Flood Elevation

  OR
  - Floodproof (making watertight) the walls of the structure up to or above the Base Flood Elevation

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Flood Insurance & Building Regulations

Number of feet a structure's lowest floor is above or below the BFE

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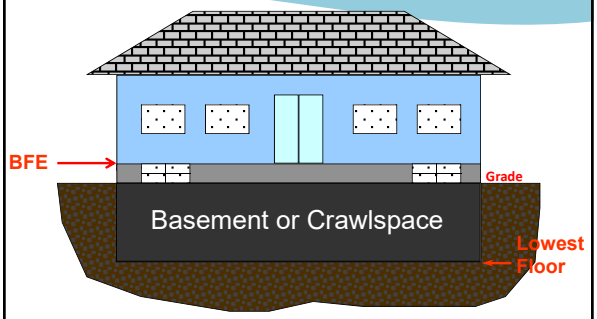
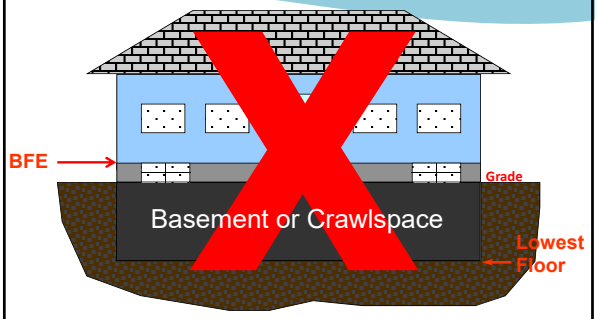
Basements



Any area of a building having its floor below grade on all sides.

Basements for new construction or substantial improvements in a special flood hazard area are prohibited.



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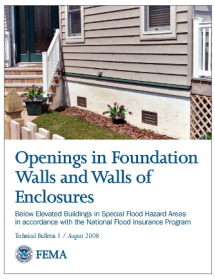
Enclosures Below Lowest Floor

- Enclosure under the lowest floor **must**:
  1. Be used solely for storage, building access, or parking;
  2. Not be below grade on all sides; and
  3. Contain the required amount of flood openings
- When all 3 enclosure criteria are met then the Lowest Floor changes

73

Flood Openings

- Great resource: FEMA Technical Bulletin #1



Openings in Foundation Walls and Walls of Enclosures

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

Technical Bulletin 1 / August 2008

FEMA

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Two Types of Flood Openings

Engineered Openings

– Designed and certified by a registered design professional as meeting the performance required by regulations.

Non-Engineered Openings

– Openings used to satisfy the prescriptive requirements. Wide variety of options are available to satisfy these requirements.

Engineered Vents

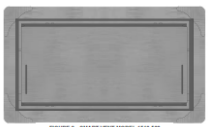
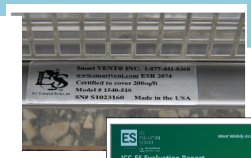
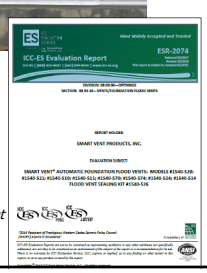


FIGURE 2—SMART VENT MODEL 1540-520

FIGURE 3—SMART VENT: SHOWN WITH FLOOD DOOR PIVOTED OPEN





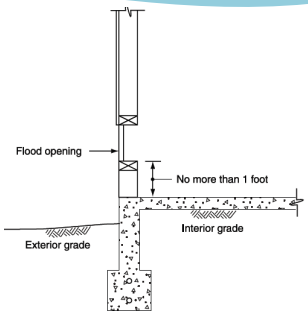
Source: Smart Vent

Non-Engineered Flood Opening Requirements

- Must be on at least 2 different walls
- The total square inches of flood openings must be equal to or greater than the square footage of enclosure
  – Example: An 800 sqft enclosure must have at least 800 square inches of openings

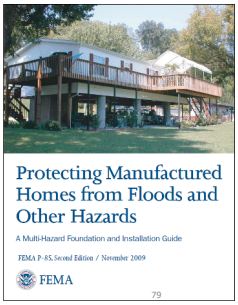
Flood Opening Requirements

- The bottom of a flood opening cannot be more than 1 foot above the grade (interior or exterior, whichever is higher)



Manufactured Home Requirements

- Elevated on permanent foundation with lowest floor at or above BFE
- Be securely anchored



79

Recreational Vehicle Requirements

- Allowed if on-site for fewer than 180 consecutive days, or
- Be fully licensed and ready for highway use
  - No structures attached to RVs
- If not, comply with manufactured home requirements

80

Zone A with no BFE Development Less Than 50 Lots or 5 Acres

- Lowest floor elevated 1 to 2 ft above the experienced flood event; or
- Lowest floor elevated at least 2 ft above highest adjacent grade
- No basements!

81

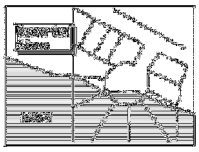
Subdivision and Site Plan NFIP Requirements

- Planning Board shall assure all necessary permits have been received
- Planning Board shall require submittal of evidence:
  - All proposals minimize flood damage
  - All public utilities & facilities are located & constructed to minimize or eliminate flood damage
  - Adequate drainage is provided

82

Development Greater Than 50 Lots or 5 Acres

- Planning Board shall require that all proposals for development greater than 50 lots or 5 acres include BFE data within such proposals
- In Zone A, detailed Engineering Study needed to determine the BFE for any structures proposed in Special Flood Hazard Area



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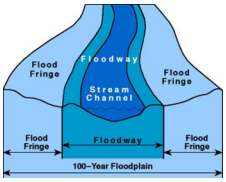
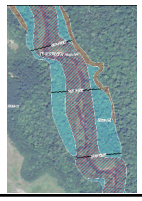
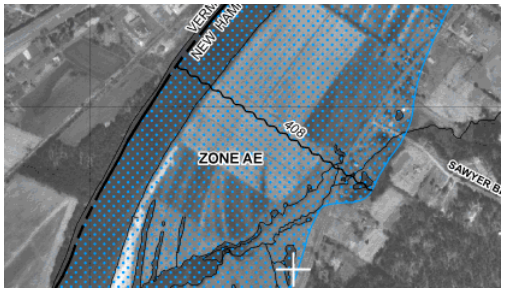
Floodways

- No development is allowed within the floodway unless:
  - Engineering analyses show the proposed development would **not** result in **any increase in BFE**.





Watercourses without a Regulatory Floodway



85

Watercourses without a Regulatory Floodway

- No development shall be permitted within Zone A1-30 or AE on the FIRM **unless**:
- Demonstrated by the applicant that the cumulative effect of the proposed development, when combined with all existing and anticipated development, **will not increase the BFE more than 1 foot at any point** within the community.

86

Variances

- Grant of relief by a community from the terms of floodplain management regulations.
- Granting variances is a local decision that must be based on not only the **3 NFIP variance criteria**, but also the **5 (NH state) variance criteria** and other provisions the community requires.

87

Variances

Reasons for Granting:

- Unnecessary hardship – burden of proof on applicant
- Reasons must be substantial
- Proof must be compelling
- Must weigh hardship against purpose of ordinance

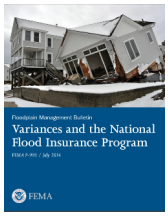
Insufficient Reasons for Granting:

- Significant depreciation of property value
- Convenience of property owner
- Circumstances of owner, not land
- To obtain a better financial return
- Property similar to others in the neighborhood
- Hardship created by the owner's own actions

88

Variances

- Do not grant variances
  - People and property are placed at risk.
  - Flood insurance costs skyrocket.
- But if you do grant a variance, be sure to document.
- Documentation is your community's only protection after a flood that causes damages.



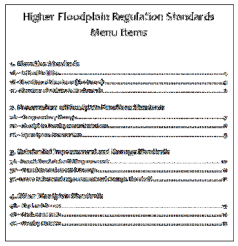
89

NFIP Minimum Regulations are a Good Start but…

- Buildings can still suffer damage
- Do not address changes to floodplain areas since issuance of the FEMA map
- Do not address events greater than 1% annual chance flood
- Do not address future conditions, including climate change

Menu of Higher Floodplain Regulation Standards

- Variety of regulations that go beyond the minimum NFIP regulations.
- **Communities can pick and choose the regulations that work best for them.**
- Some can provide reductions in flood insurance premiums.
- Many can provide points for a community participating in or interested in joining the Community Rating System (CRS).


Higher Floodplain Regulation Standards
Menu Items

Best Practices for an Effective Local Floodplain Program

- Public Outreach
- Understanding the Floodplain Regulations and their Importance
- **Administrative Procedures or Adopt New Model**
  - Floodplain Administrator
  - Floodplain Mapping Determination Process
  - Floodplain Permitting Process
  - Substantial Improvement and Damage Determinations
  - Floodplain Development Monitoring, Compliance, and Enforcement Processes

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Optional Revised Model Floodplain Ordinance

- Includes NFIP minimum requirements and more
- Includes more understandable and definitive language
- Additional Sections for clarity:
  - Floodplain Administrator Duties and Responsibilities
  - Floodplain and Flood Elevation Determinations
  - Floodplain Permitting
  - Substantial Improvement and Damage Determinations
- Optional section for detached accessory structures (non-habitable)

Administrative Procedures for Floodplain Development

- Effective implementation of regulations helps minimize future flood damage and helps keep insurance rates affordable for property owners.
- Establishes administrative and permitting processes, which are key tools to ensure:
  - Adherence
  - Consistency among staff; staff turnover
  - Good standing in NFIP

Best Practices for an Effective Local Floodplain Program

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Floodplain Development Permit Process

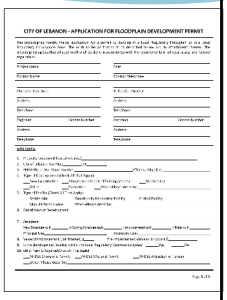
Floodplain Permit Application

- Permit application needed for both building and non-building development (i.e. fill placement)

97

Permit Application Review

- Ensure completeness
- If not already determined, verify flood zone and base flood elevation and floodway, if applicable
- Information needed for application:
  - Description of proposed development
  - Permits for state, federal, local agencies
  - Required accompanying documentation
  - Improvement or repair costs



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Best Practices for an Effective Local Floodplain Program

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Substantial Improvement

The Total Costs of any improvements (whether within existing footprint or not including additions) to a structure

= or >

50% of the Market Value of the structure before the start of construction of the improvement

100

Substantial Damage

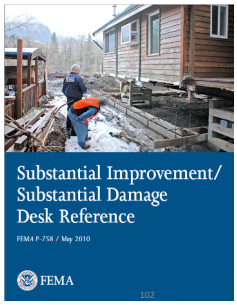
Total Costs of restoring the structure to its before-damaged condition (damage not limited just to flood)

= or >

50% of the Market Value of the structure before the damage occurred.

Substantial Improvement & Damage Determinations

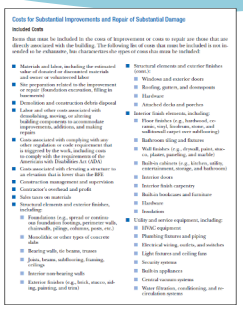
- Determination must be made by community
  - Must review proposed costs for all improvements and repairs submitted by applicant
  - Determine market value of **only** the structure



102

Costs to Include

- Costs directly associated with the building.
- Must include all costs even when donated or discounted.
- Must include all labor even when self-done or volunteer labor.



Costs for Substantial Improvements and Repair of Substantial Damage

Included Costs

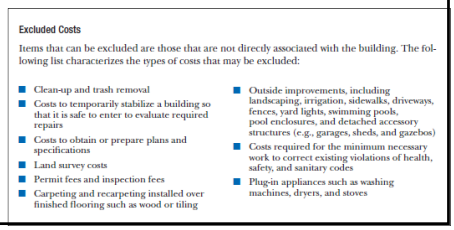
Items that must be included in the cost of improvement or costs to repair are those that are directly associated with the building. The following list of costs that must be included is not intended to be exhaustive, but characterizes the types of costs that must be included:

- Materials and labor, including the estimated value of donated or discounted materials and owner or volunteered labor
- Site preparation related to the improvement or repair (foundation excavation, filling in basements)
- Demolition and construction debris disposal
- Labor and other costs associated with demolishing, moving, or altering building components to accommodate improvements, additions, and making repairs
- Costs associated with complying with any other regulation or code requirement that is triggered by the work, including costs to comply with the requirements of the Americans with Disabilities Act (ADA)
- Costs associated with elevating a structure to an elevation that is lower than the BFE
- Construction management and supervision
- Contractor's overhead and profit
- Sales taxes on materials
- Structural elements and exterior finishes, including:
  - Foundations (e.g., spread or continuous foundation footings, perimeter walls, chainwalls, piling, columns, posts, etc.)
  - Masonrisks or other types of concrete slabs
  - Bearing walls, tie beams, trusses
  - Joists, beams, subflooring, framing, ceilings
  - Interior non-bearing walls
  - Exterior finishes (e.g., brick, stucco, siding, painting, and trim)
- Structural elements and exterior finishes (cont.):
  - Windows and exterior doors
  - Roofing, gutters, and downspouts
  - Hardware
  - Attached decks and porches
- Interior finish elements, including:
  - Floor finishes (e.g., hardwood, ceramic, vinyl, linoleum, stone, and wall-to-wall carpet over subflooring)
  - Bathroom tiling and fixtures
  - Wall finishes (e.g., drywall, paint, stucco, plaster, paneling, and marble)
  - Built-in cabinets (e.g., kitchen, utility, entertainment, storage, and bathroom)
  - Interior doors
  - Interior finish carpentry
  - Built-in bookcases and furniture
  - Hardware
  - Insulation
- Utility and service equipment, including:
  - HVAC equipment
  - Plumbing fixtures and piping
  - Electrical wiring, outlets, and switches
  - Light fixtures and ceiling fans
  - Security systems
  - Built-in appliances
  - Central vacuum systems
  - Water filtration, conditioning, and recirculation systems

103

Costs to Exclude

- Costs not directly associated with building (e.g. landscaping, septic, well, engineering or permits)



Excluded Costs

Items that can be excluded are those that are not directly associated with the building. The following list characterizes the types of costs that may be excluded:

- Clean-up and trash removal
- Costs to temporarily stabilize a building so that it is safe to enter to evaluate required repairs
- Costs to obtain or prepare plans and specifications
- Land survey costs
- Permit fees and inspection fees
- Carpeting and recarpeting installed over finished flooring such as wood or tiling
- Outside improvements, including landscaping, irrigation, sidewalks, driveways, fences, yard lights, swimming pools, pool enclosures, and detached accessory structures (e.g., garages, sheds, and gazebos)
- Costs required for the minimum necessary work to correct existing violations of health, safety, and sanitary codes
- Plug-in appliances such as washing machines, dryers, and stoves

Costs to Exclude

- Any costs required to correct *existing violations* of state or local health, sanitary, or safety code specifications.
  - These violations must have been previously identified by the local code enforcement official before the damage occurred and are the minimum necessary to assure safe living conditions.

105

Market Value

- Suggest using the community's current assessed value of the structure (excluding the land) to determine the market value of the structure prior to the start of the initial repair or improvement, or in the case of damage, the market value prior to the damage occurring.
- If the applicant disagrees with the above, the applicant is responsible for engaging a licensed property appraiser to submit a comparable property appraisal for the total market value of only the structure.

106

Substantial Improvement & Damage Determination

- If determined to be substantially improved or damaged then the structure must:
  - Be brought into or kept in compliance with the community's floodplain regulations (i.e. Lowest floor has to be at or above BFE).
- Notify applicant in writing of determination and what requirements need to be met.

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Improvements within Existing Footprint

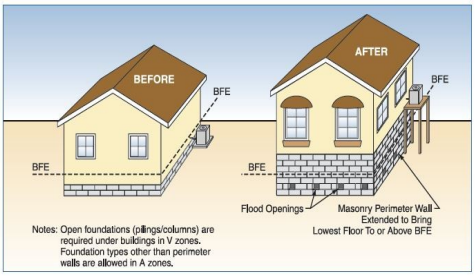

Figure 6-1. Rehabilitation or remodel (no increase in footprint) of residential building in an A zone – the proposed work was determined to be a substantial improvement. The building is brought into compliance by elevating it on an extended perimeter foundation wall, installing flood openings, and raising the HVAC equipment onto a platform.

Substantial Improvements to Existing Structures with Basements

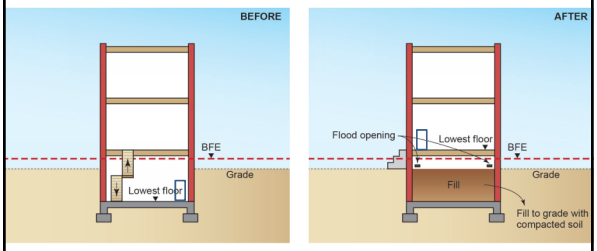

Figure 1: Basement infill before and after mitigation

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Lateral Addition

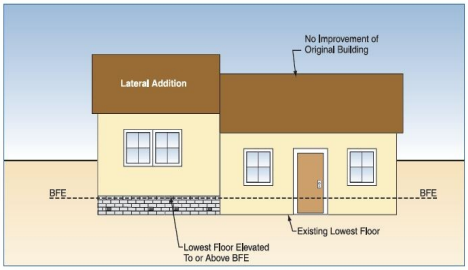

Figure 6-3. Lateral addition to a pre-FIRM building in an A zone – the proposed work is only the addition (no work was performed on the original building and no structural modification was made to the common wall or roof). The addition constitutes a substantial improvement and it complies with all NFIP requirements.

Lateral Addition

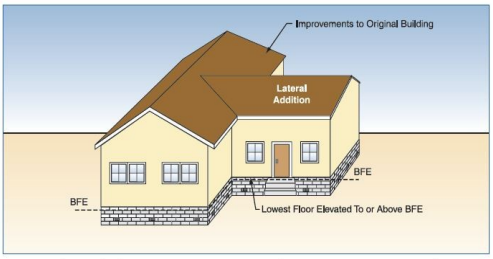

Figure 6-4. Lateral addition to a pre-FIRM building in an A zone – the proposed work includes an addition and work on the original building, including structural modification of the common wall or roof. The proposed work was determined to be a substantial improvement. The addition complies with all requirements and the building is brought into compliance by elevating it on a compliant foundation.

Substantial Damage & Insurance Costs

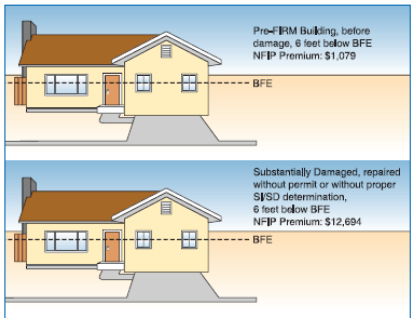

Figure 6-14. The cost of NFIP flood insurance policy varies depending on how a substantially damaged building is repaired. This illustration is for $150,000 in structure coverage with the rates as of October 2009. The figure is for comparison purposes only.

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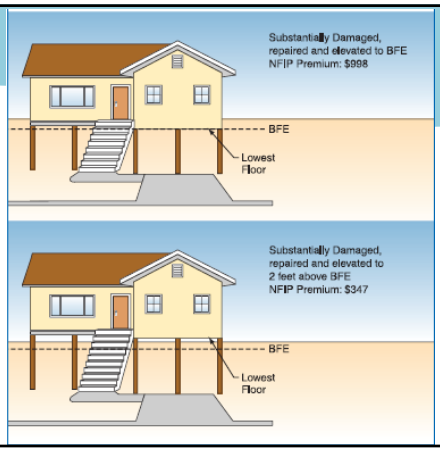

Best Practices for an Effective Local Floodplain Program

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Floodplain Development Monitoring

- Community responsible for ensuring development meets the permit and the requirements of the floodplain regulations.
- Without an inspection process, suggest finding ways to monitor development, such as:
  - Require FEMA Elevation Certificate once foundation is completed to verify lowest floor elevation.
  - Task a community official (e.g., fire official) to drive by periodically and take pictures and inform community permitting official.

115

Floodplain Development Compliance Requirements

- Communities required to obtain and maintain on file:
  - As-built elevation of the lowest floor of a structure that is newly constructed or substantially improved.
  - As-built elevation to which the structure was floodproofed and floodproofing certification for any newly constructed or substantially improved non-residential structure that was floodproofed.

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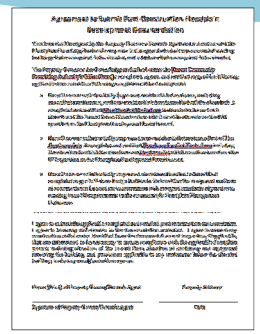
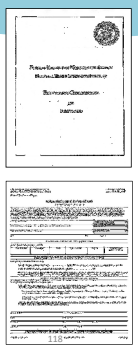
Floodplain Development Compliance Requirements

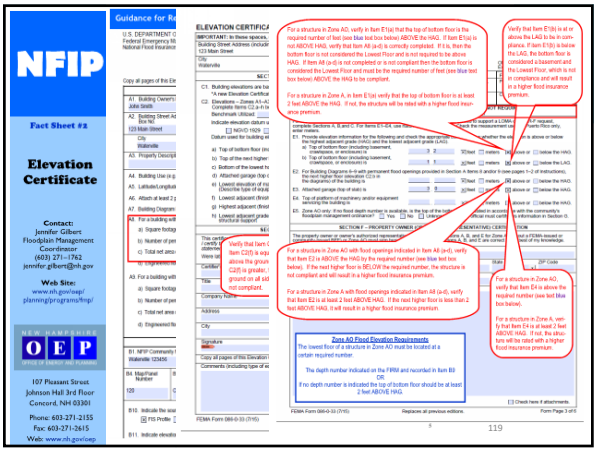
- If a community issues a Certificate of Occupancy (CO), must submit required as-built elevation as a condition.
- If no COs are issued by the community, require an applicant to sign an agreement to submit at time of application.



Certification

- **FEMA Elevation Certificate**
  - Meets as-built data requirement
  - Rates a Flood Insurance Policy
  - Supports a FEMA Letter of Map Amendment application
- **FEMA Floodproofing Certificate**
  - For use on non-residential structures only
  - Used instead of elevation





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Community Enforcement

- Must follow RSA 676 (in NH) just like any other zoning violation.
- Community must notify the applicant/property owner in writing of the violation or non-compliance issue.
- FEMA expects communities to enforce to the maximum extent practicable.
- State and FEMA available to provide technical assistance.

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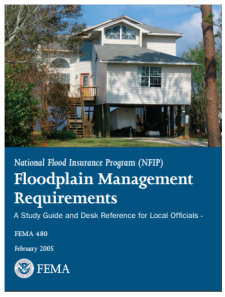
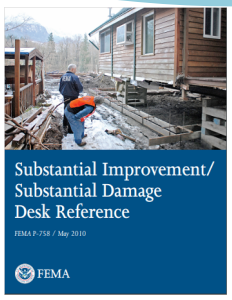
Resources / Wrap Up

NEW HAMPSHIRE OSI OFFICE OF STRATEGIC INITIATIVES

NATIONAL FLOOD INSURANCE PROGRAM

FEMA Resources





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FEMA Resources

NFIP Technical Bulletins

- Provide prescriptive guidance for compliance

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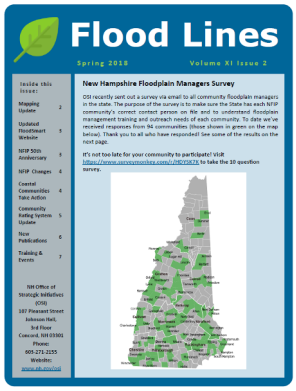
Flood Lines Newsletter

- Distributed via email to the distribution list quarterly
- Provides updates on NFIP issues both nationally and locally



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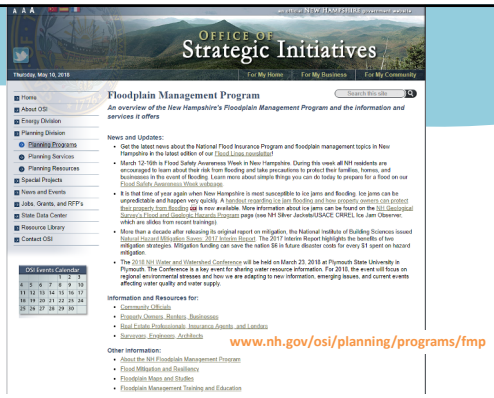

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NH Flood Hazards Handbook

Now Available!

https://silverjackets.nfrmp.us/State-Teams/New-Hampshire.cfm

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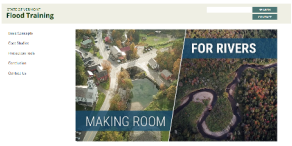
Vermont Resources

- VT Department of Environmental Conservation (dec.vermont.gov/watershed/rivers/river-corridor-and-floodplain-protection/municipal-assistance)
- Flood Ready Vermont (floodready.vermont.gov)
  - Flood Resilience Listserve & Flood Safe Listserve
- State of Vermont Flood Training (floodtraining.vermont.gov)



Summary of NFIP Community Responsibilities

- Understand the regulations and FEMA maps
- Ensure that permits are applied for, for all development in special flood hazard areas
- Review and process permit applications
- Ensure floodplain development (including community's) is built according to approved permits and floodplain regulations
- Take enforcement actions; correct violations
- Keep records
- Update your community's floodplain ordinance, as needed or required

Workshop Summary

- Consider a floodplain permit checklist to help ensure compliance.
- Consider requiring the Elevation Certificate for new construction and substantial improvements.
- Get to know the FIRMs and FIS report and all the data they provide.
- Bookmark and use the FEMA Map Service Center/other available map viewers.
- Take advantage of free NFIP webinars and trainings.
- Contact NHOSI for NFIP guidance or technical assistance.

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NEW HAMPSHIRE OSI OFFICE OF STRATEGIC INITIATIVES

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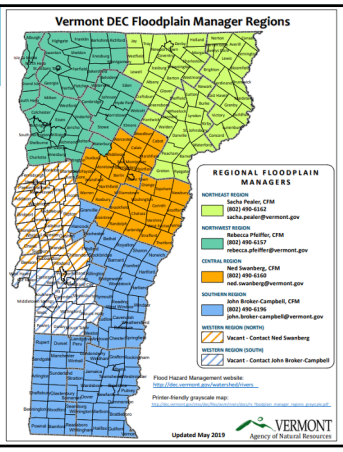

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