Welcome to the PLAN Monthly Webinar Series!
The webinar will begin shortly.

Check out our Planning and Zoning Training website page for:
• Slides and recording of all completed webinars in the PLAN series
• Schedule for upcoming webinars
• A short, anonymous online survey to gather feedback and topics for future webinars

www.nh.gov/osi/planning/planning-training.htm
Webinar Logistics

• Taking questions from the chat during the presentation. There will also be a Question-and-Answer session at the end of the presentation
  • Please type questions into the Chat box

• This webinar will be recorded
FLOODPLAIN DEVELOPMENT
SCENARIOS

PRACTICAL EXAMPLES FOR COMMUNITY OFFICIALS

Jennifer Gilbert
State Floodplain Management Program Coordinator
Director, Office of Planning and Development
AGENDA

- National Flood Insurance Program (NFIP) Overview
- Floodplain Development Scenarios
- Resources
- Questions / Wrap Up
NATIONAL FLOOD INSURANCE PROGRAM (NFIP) OVERVIEW
What is the National Flood Insurance Program (NFIP)?

- Created by Congress in 1968.
- Voluntary partnership between FEMA and participating communities.
- Community agrees to adopt local floodplain regulations that apply in mapped high-risk floodplains and enforce them through a local permitting process.
- NFIP flood insurance is available for purchase for all property owners and renters in the community.
Federal and State Roles in the NFIP

**FEMA**
- National program oversight.
- Risk identification (mapping).
- Establishes standards and guidance.
- Monitors compliance.
- Makes available flood insurance for purchase in participating communities.

**THE STATE**
- Technical assistance to all stakeholders.
- Education and outreach.
- Model floodplain regulations.
- Assists communities in evaluating compliance of floodplain activities and post-disaster activities.
Local Roles in the NFIP

THE COMMUNITY

• Understands community’s regulations and FEMA flood maps.

• Process and procedures in place to address various processes and situations

• Issues local permits for all development in mapped Special Flood Hazard Areas (SFHA) within the community.

• Ensures floodplain development (including community’s) is built according to approved permits and floodplain regulations.

• Takes enforcement actions; correct violations.
93% of New Hampshire communities participate in the NFIP.
Community’s Floodplain Regulations

- Adoption and enforcement of floodplain regulations that meet minimum NFIP standards is required for participating communities.
  - Floodplain ordinance
  - Subdivision and Site Plan Review regulations
- Communities may also choose to adopt standards that go beyond minimum NFIP requirements.
- It is important for a community to take ownership of their floodplain regulations by fully understanding and enforcing requirements.
NH 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)*

The Codes includes flood provisions which meet or exceed many of the NFIP minimum standards.
FEMA Flood Maps

- At a minimum, the requirements of your community’s regulations apply for development in Special Flood Hazard Areas (SFHAs) shown on FEMA flood maps.

- The SFHA includes flood zones A, AE, A1-30, AO, and VE.

- Special requirements also apply for development proposed in the “floodway” area of Zone AE.

- Areas outside of the SFHA are in Zone X, B, or C.

- Learn more about the flood maps and how to read them:
  - FEMA Flood Mapping Basics for NH Community Officials training video
FLOODPLAIN TOOLBOX
FLOODPLAIN DEVELOPMENT SCENARIOS

- Mapping Tool (NH Flood Hazards Viewer)
- Floodplain Permit (for building and non-building)
- Floodplain administrative procedures
- Substantial Improvement/Damage procedures in place
- Floodplain Resource Library
- Floodplain staff (Floodplain Administrator) and training
- State Floodplain Program Contact Info

Floodplain Management Toolbox
FLOODPLAIN DEVELOPMENT SCENARIOS
You are a community official for the Town of Graniteville. Graniteville participates in the National Flood Insurance Program (NFIP) and the required NFIP language has been adopted into the community’s floodplain ordinance, and Subdivision and Site Plan Review regulations.

Several of Graniteville’s residents are interested in developing their land and have contacted you to understand the requirements that apply.
DEVELOPMENT SCENARIO #1
**Scenario #1**

Property owner Errol Hollis is planning to build a new residential building on his property. Will your community’s floodplain regulations apply for this development?

a. Yes  
b. No  
c. Maybe
**Scenario #1**

Property owner Errol Hollis is planning to build a new residential building on his property. Will your community’s floodplain regulations apply for this development?

a. Yes  
b. No  
c. Maybe

The site of the proposed building is located in Zone AE in the SFHA. Therefore, your community’s floodplain regulations will apply.
Scenario #1

Through the permit process, need to determine:

- Flood zone(s) where the proposed structure is located
- If any development proposed in the floodway portion of the property
- Base flood elevation(s)
- What is the proposed elevation of the lowest floor (including a basement) for the proposed structure and does it meet the required height in the ordinance
Scenario #1

What are some other requirements in your community’s floodplain regulations that will apply for the new structure?

a. Flood damage-resistant building materials must be used.
b. The building must be dry-floodproofed.
c. All other necessary Federal and State permits have been received.
d. a and c
Scenario #1

What are some other requirements in your community’s floodplain regulations that will apply for the new structure?

a. Flood damage-resistant building materials must be used.
b. The building must be dry-floodproofed.
c. All other necessary Federal and State permits have been received.
d. a and c

Remember: Other requirements apply too! Check your community’s regulations to confirm what is applicable.
Key Provisions in Your Community’s Floodplain Regulations

General construction requirements for New Construction and Substantial Improvements in the Special Flood Hazard Area:

- Designed (or modified) and adequately anchored to prevent flotation, collapse, and lateral movement.
- Be constructed with flood-resistant materials.
- Use methods and practices to minimize flood damage.
- Utilities must be designed and/or located to prevent water from entering or accumulating within the components.
Key Provisions in Your Community’s Floodplain Regulations

The lowest floor of newly constructed and Substantially Improved residential structures must be elevated to the Base Flood Elevation (BFE) or higher.*

- For Zones A, AE, and AO – elevation of top of the lowest floor to required height.
- For Zone VE, buildings must be elevated on pilings/columns. Elevation of the bottom of lowest horizontal structure member of lowest floor to required height.

*State building code requires the lowest floor be elevated at least 1 foot above the BFE. Communities may choose to adopt an even higher standard.
Non-Residential Structures in A/AE/AO zones have the option to:

• Elevate the Lowest Floor to or above the Base Flood Elevation (BFE)

OR

• Floodproof (make watertight) the walls of the structure up to or above the Base Flood Elevation

* State building code requires the lowest floor be elevated or floodproofed 1 to 2 ft above the BFE depending on use of the building.
**Scenario #1**

_The proposed structure includes an enclosure that is used to elevate the lowest floor at or above the BFE._

What criteria must be met to ensure an enclosure below the lowest floor is compliant with the ordinance?:

a. Floor of enclosure must be at or above the lowest adjacent grade
b. Enclosure can only be used for parking, access, or storage.
c. A required number of flood openings are required in the enclosure walls
d. All of the above.
Scenario #1

The proposed structure includes an enclosure that is used to elevate the lowest floor at or above the BFE.

What criteria must be met to ensure an enclosure below the lowest floor is compliant with the ordinance?:

a. Floor of enclosure must be at or above the lowest adjacent grade
b. Enclosure can only be used for parking, access, or storage.
c. A required number of flood openings are required in the enclosure walls
d. All of the above.
**Scenario #1**

Community has confirmed that the proposed development will meet the requirements of the ordinance and permit is issued.

Now what?

- Are inspections completed to ensure compliance?
- If no inspections, how to ensure compliance during construction?
Scenario #1

Community must obtain and maintain on file as-built elevation data or even better a FEMA Elevation Certificate

- Communities that require a Certificate of Occupancy or Compliance can require this data before issuing these certificates
- Communities with no Certificate requirements need to find a way for the applicant to submit the required information
  - Applicant signs an “Agreement to Submit Post-Construction Floodplain Development Documentation” prior to the issuance of the permit
DEVELOPMENT SCENARIO #2
**Scenario #2**

Meredith Jackson, a property owner, is proposing to perform improvements to her existing house which was originally built in 1964. You have confirmed that the house is located in Zone AE of the SFHA on the FEMA flood map. The building is not located in the floodway.
**Scenario #2**

Whose responsibility is it to make a “Substantial Improvement” determination?

a. FEMA  
b. State  
c. Applicant  
d. Community
Scenario #2

Whose responsibility is it to make a “Substantial Improvement” determination?

a. FEMA
b. State
c. Applicant
d. Community

The community is responsible for determining whether the proposed changes will be a Substantial Improvement. The applicant will need to furnish a cost estimate of the work, including labor, in order for you to make this determination.
What is a Substantial Improvement / Substantial Damage?

- When the total costs of any improvements (whether within existing footprint or not, including additions) to a structure are greater than or equal to 50% of the market value of the structure before the start of construction of the improvement.

- If located in a Special Flood Hazard Area and determined to be a Substantial Improvement (or affected by Substantial Damage*), the structure must be brought into compliance with community’s floodplain regulations as if it is new construction.

- Determination must be made by community.

- Learn more:
  - An Introduction to Substantial Improvements and Substantial Damage training video.

* A similar concept where the total costs of restoring a structure to its before-damaged condition are greater than or equal to 50% of the market value of the structure before the damage occurred. Damage can be from ANY source, not just floods.
Community Substantial Improvement Responsibilities

1. Review permit application to verify if an SI determination must be made.
2. Verify the cost of improvements to the structure.
3. Verify the market value of the structure.
4. Make the SI determination and issue it to property owner.
5. Permit development/ensure compliance with community ordinance.
Substantial Improvement/Damage Application Packet and Property Owner Guide

Ensures that applicants submit the necessary information for community to make an SI determination.

Helps you communicate information about SI to applicants and treat all applicants consistently.

Makes it easier to document determinations and retain the documentation in community's permanent records.
You have performed the Substantial Improvement determination. The cost of the improvements = 32% of the market value of the structure. Will the improvements constitute a Substantial Improvement?

a. Yes
b. No
c. Maybe

Scenario #2

FLOODPLAIN DEVELOPMENT SCENARIOS

The house for which improvements are proposed.
If you have performed the Substantial Improvement determination, the cost of the improvements is 32% of the market value of the structure. Will the improvements constitute a Substantial Improvement?

a. Yes
b. No
c. Maybe

In order for the improvements to constitute a Substantial Improvement, the cost of the improvements must be at least 50% of the market value of the structure.
Scenario #2

Since the work will not be a Substantial Improvement, Meredith’s project is exempt from all of the requirements in your community’s floodplain ordinance.

a. True
b. False


**Scenario #2**

Since the work will not be a Substantial Improvement, Meredith’s project is exempt from all of the requirements in your community’s floodplain ordinance.

a. True

b. False

While the requirements that apply specifically to new construction and Substantial Improvements will not apply, certain requirements apply for any type of development.
**Scenario #3**

Meredith Jackson, a property owner, is proposing to perform repairs to her existing house which was originally built in 1964 and recently experienced damage from a fire.

The community has confirmed that the house is located in Zone AE of the SFHA on the FEMA flood map. The building is not located in the floodway.
Scenario #3

If a structure is damaged by a fire and is located in a SFHA, would a “Substantial Damage” determination be required?

a. Yes
b. No
If a structure is damaged by a fire and is located in a SFHA, would a “Substantial Damage” determination be required?

a. Yes

b. No

c. Substantial Damage (SD) means damage of any origin sustained by a structure whereby the cost of restoring the structure would equal or exceed 50 percent of the market value of the structure before the damage occurred.

Scenario #3

FLOODPLAIN DEVELOPMENT SCENARIOS

Zone AE

Meredith’s Parcel

The house for which improvements are proposed.
**Scenario #3**

You have performed the Substantial Damage determination. The cost of the repairs = 62% of the market value of the structure.

The existing structure must be brought into compliance with the floodplain ordinance as if it was new construction.
DEVELOPMENT SCENARIO #4
**Scenario #4**

Raymond Warren, a property owner, is proposing to place a large amount of fill on a portion of his property.

You have determined that the development site is located in Zone A within the Special Flood Hazard Area.

Raymond says he has never experienced flooding on his property in 30 years.
Scenario #4

All proposed development in a Special Flood Hazard Area requires a local permit.

Under the NFIP, “development” means any man-made change to improved or unimproved real estate, including but not limited to buildings or other structures, mining, dredging, filling, grading, paving, excavating or drilling operations or storage of equipment or materials.
**Scenario #4**

What will Raymond need to submit to you as part of the permit process prior to placing the fill?

a. Completed permit application  
b. Any other required state or federal permits  
c. a & b  
d. No permit is required for this type of development
Scenario #4

What will Raymond need to submit to you as part of the permit process prior to placing the fill?

a. Completed permit application
b. Any other required state or federal permits
c. a & b
d. No permit is required for this type of development

Fill placement and other types of non-building development are subject to your community’s floodplain regulations.
DEVELOPMENT SCENARIO #5
Scenario #4

Property owner Alexandria Fitzwilliam wants to build a new house on her land and she wants it to be by the river. Unfortunately, the proposed location has been determined to be in Zone AE and in a floodway.
No development is allowed in the mapped floodway unless engineering analyses provided by the applicant show the proposed development would not cause ANY increase in the Base Flood Elevation (BFE).

* Along rivers and streams with a Zone AE floodplain and no floodway mapped:

No development is allowed without an analysis that shows 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.
**Scenario #4**

Alexandria can choose to hire an engineer to complete the analysis or choose another location outside of the floodway.
DEVELOPMENT SCENARIO #5
**Scenario #5**

Madison Conway, a property owner and developer, is submitting a proposal to build a subdivision comprised of 30 lots on her parcel of land 16 acres in size. The parcel is partially located in Zone A within the Special Flood Hazard Area (SFHA).

Zone A areas are parts of the SFHA where FEMA has not developed Base Flood Elevations.
Scenario #5

Will Madison be required to develop Base Flood Elevations for the Special Flood Hazard Area on the property as part of her application?

a. Yes

b. No
Scenario #5

Will Madison be required to develop Base Flood Elevations for the Special Flood Hazard Area on the property as part of her application?

a. Yes
b. No

Per the NFIP requirements included in your community’s subdivision regulations, all proposals for development either greater than 50 lots or 5 acres must include Base Flood Elevation information. Madison’s property is 16 acres in size.
Provisions in Subdivision and Site Plan Review Regulations

For subdivisions and site plans that involve land designated as Special Flood Hazard Areas:

A. The Planning Board shall review the proposed development to assure that all necessary permits have been received from those governmental agencies from which approval is required by Federal or State law, including Section 404 of the Federal Water Pollution Control Act Amendments of 1972, 33 U.S.C. 1334.

B. The Planning Board shall require that all proposals for development either greater than 50 lots or greater than 5 acres include Base Flood Elevation (BFE) data within such proposals (i.e. floodplain boundary and base flood elevation).

C. The Planning Board shall require the applicant to submit sufficient evidence (construction drawings, grading and land treatment plans) so as to allow a determination that:

   ► (i) all such proposals are consistent with the need to minimize flood damage;

   ► (ii) all public utilities and facilities, such as sewer, gas, electrical, and water systems are located and constructed to minimize or eliminate flood damage; and,

   ► (iii) adequate drainage is provided so as to reduce exposure to flood hazards.
DEVELOPMENT SCENARIO #6
Scenario #6

Troy Mason, a property owner, requests a variance to the elevation requirement because it will cost him several thousand dollars to elevate the house to comply with the ordinance.

Does the community grant the variance based on personal hardship?

A. Yes
B. No
Scenario #6

Troy Mason, a property owner, requests a variance to the elevation requirement because it will cost him several thousand dollars to elevate the house to comply with the ordinance.

Does the community grant the variance based on personal hardship?

A. Yes
B. No

Personal hardship is not considered an “exceptional hardship” as it relates to floodplain management variances. Must pertain to the property itself.
Variances and Appeals:

- Granting variances is a local decision by the community’s Zoning Board of Adjustment* that must be based on the 5 state variance criteria in RSA 674:33 plus additional NFIP criteria in the community’s floodplain regulations.
- Variances put people and property at risk and are not advised.
- If you do issue a variance, documentation is your community’s only protection after a flood that causes damages.

* For communities with no comprehensive zoning, a special board of adjustment must be appointed by community governing body.
Key Provisions in Your Community’s Floodplain Regulations

Variances and Appeals, cont.

If the applicant, upon appeal, requests a variance as authorized by RSA 674:33, the applicant shall have the burden of showing in addition to the variance standards under state law that:

► 1. The variance will not result in increased flood heights of any magnitude, additional threats to public safety, fraud on or victimization of the public; or extraordinary public expense;

► 2. The issuance of the variance will not conflict with other State, Federal or local laws or Ordinances;

► 3. If the requested variance is for activity within a floodway, no increase in flood levels during the base flood discharge will result; and

► 4. The variance is the minimum necessary, considering the flood hazard, to afford relief.
**Scenario #6a**

Troy Mason, a property owner, requests a variance to the elevation requirement for a proposed small, low-cost shed located in Zone AE (outside the floodway).

It is not always technically feasible for accessory structures to be elevated at or BFE.

FEMA guidance provides conditions that accessory structures can meet with a variance.

Communities can also adopt accessory structure language in their floodplain ordinance that details this criteria and avoids the need for a variance.
Resources

- NH Floodplain Management Program Website
  - Community Officials page
  - Resources Guide for Community Officials
- NH Office of Planning and Development - YouTube Channel
  - Floodplain Management Training Playlist
- NH Flood Hazards Viewer
- FEMA Map Service Center
- NH Flood Hazards Handbook
QUESTIONS?

Jennifer Gilbert
State Floodplain Management Program Coordinator
Director, Office of Planning and Development
Jennifer.R.Gilbert@livefree.nh.gov
(603) 271-1762
THANK YOU!