


Rye Procedural Manual for Development within the Special Flood Hazard Area

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Town of Rye

# Floodplain Management Procedural Manual

For Development within the Special Flood  
Hazard Area

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## **Rye Procedural Manual for Development within the Special Flood Hazard Area**

### **A. INTRODUCTION:**

The Town of Rye is a participating community of the National Flood Insurance Program (NFIP). The NFIP is a Federal program which enables property owners in the Town to purchase insurance as a protection against flood losses in exchange for the adoption and enforcement of the Town's Floodplain Management regulations. These regulations have proven to effectively reduce future flood damages. Participation in NFIP is based on an agreement between the Town and the Federal Government.

Rye joined the NFIP on June 17, 1986 and adopted its first Floodplain Ordinance on March 8, 1988. These were the initial steps taken to enforce floodplain management regulations with respect to construction, repairs, and/or remodeling in order to make flood insurance available to home and business owners. Floodplain management is: *"the operation of a community program of corrective and preventative measures for reducing flood damage. These measures take a variety of forms and generally include requirements for zoning, subdivision or building, and special-purpose floodplain ordinances."*

(<http://www.fema.gov/business/nfip/>)

The emphasis of the NFIP floodplain management requirements is directed toward reducing threats to lives and the potential for damages to property in flood-prone areas. The requirements for NFIP are based on the flood risk data of the Flood Insurance Study (FIS) and the Flood Insurance Rate Maps (FIRM). Flood zones are geographic areas that have been defined according to varying levels of flood risk. These zones are depicted on a community's (FIRM). Each zone reflects the severity or type of flooding in the area. The very first requirement to participate in the NFIP was the adoption of an ordinance, which Rye did on March 8, 1988. The other requirements pertain to the enforcement of the Ordinance and review of proposed construction within the Special Flood Hazard Areas (SFHA).

As part of the agreement of the NFIP; FEMA or State representative(s) come to Rye approximately every five (5) years to conduct a Community Assistance Visit (CAV) to ensure the Town follows the requirements of the NFIP program. The last visit occurred in May, 2009.

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### **B. PURPOSE:**

The purpose of this document is to outline the steps of identifying a structure or proposed development that is within the Special Flood Hazard Area (SFHA) and set in place a procedure for proposed construction, modifications of existing structures, and rebuilding within that flood prone area within the requirements of the NFIP. Most of the information detailed in this plan was taken from Unit 7- Ordinance Administration of FEMA's *Floodplain Management Requirements: A Study Guide and Desk Reference for Local Officials (FEMA-480)*, which can be found on-line at: <http://www.fema.gov/plan/prevent/floodplain/fm.g.shtm>.

Before a property owner can undertake any development in the SFHA, an application must be submitted for permitting, and the permit must be obtained from the Town of Rye prior to the start of construction as specified in the definitions of the adopted Ordinance. It is Rye's responsibility to review the proposed development to ensure that it complies with the community's floodplain management ordinance.

### **C. ROLES AND RESPONSIBILITIES:**

#### **1. NFIP Floodplain Administrator:**

The Town of Rye has designated the Building Inspector as the town's Floodplain Administrator. The Administrator is responsible for administering and enforcing the town's Floodplain Management Ordinance. The following is a summary of the Administrator's responsibilities.

- a. **Understand the regulations:** This is the most important of all of the Administrator's duties. A sound working knowledge of the general and technical provisions of various federal, state and local regulations is essential. The Administrator must be able to provide guidance and interpretation of the regulations to residents and design professionals, and to review permit applications for compliance with the regulations.
- b. **Ensure that permits are applied for:** The Administrator must ensure that the public is informed as to when permits are needed and how they are obtained. Any development in a special flood hazard area (SFHA) requires a permit from the town.

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- c. **Correct violations:** The Administrator must evaluate complaints, conduct investigations and use legal recourse when necessary to correct violations.
- d. **Process permit applications:** The Administrator's primary role is to review permit applications for compliance with applicable local regulations. This involves:
  - 1. Collecting permit fees, where applicable.
  - 2. Assessing the accuracy and completeness of the application.
  - 3. Evaluating site plans, topographical data, building design plans and other technical data.
  - 4. Obtaining a completed Elevation Certificate (EC) when required, and maintaining the EC in a designated file.
  - 5. Identifying deficiencies and devising ways to correct them.
  - 6. Issuing or denying the permit.
  - 7. helping applicants pursue appeals or requests for variances.
- e. **Coordinate with other programs:** The Administrator should advise applicants of additional local, state, and federal requirements and permits, which must be obtained prior to a permit being issued. The Administrator may enlist the assistance of other local and state official in the review process, as needed.
- f. **Ensure projects are built according to approved plans and permits:** The Administrator must perform periodic and timely on-site inspections to confirm visually that development is following the approved plans. The most effective way to do this is with a series of inspections at appropriate stages/phases in the construction process, as provided later in this manual. A Certificate of Occupancy (as per Rye Zoning Ordinance, Section 802) is a final permit that allows the owner to use the structure for its intended purposes issued by the Building Inspector/Administrator after a final inspection confirms a project has been completed and in full compliance to the approved plans. The Administrator should document any findings during each and every inspection. An

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Elevation Certificate is a document required prior to the issuance of a Certificate of Occupancy.

- g. **Take enforcement actions:** When non-compliance activities are discovered, the Administrator must act to resolve the situation. This may involve issuing a cease and desist or stop-work orders, coordinating enforcement procedures with the Town's Attorney, if necessary.
- h. **Keep records:** There should be a sufficient supply of current permit applications, variance requests and other administrative forms at all times. A project file must be kept for each permit application to include, but not limited to, permits issued, approved plans, correspondence, engineers reports, the Elevation Certificate and all inspection reports.
- i. **Maintain and update flood data and maps:** The Town of Rye's current adopted flood maps are dated May 17, 2005 and are on file in the Building Department. All Letters of Map Changes (LOMC) received from FEMA and notices of map revisions should be kept on file with the adopted flood maps (Flood Insurance Rate Map (FIRM)). The Administrator should also cooperate with federal, state and local agencies, and private firms undertaking flood studies. Any new floodplain data must be submitted to the FEMA Regional Office within six months of their development. Revisions to maps (including Letters of Map Revisions, LOMA's) must be reviewed by the Administrator to ensure they meet the Town's regulations.

### **2. Planning Administrator**

The following is a summary of the Town Planning Administrator's responsibility in regards to floodplain development.

- a. **Updated the Ordinance:** The Planning Administrator is responsible for ensuring that any required or proposed amendments to the town's Floodplain Ordinance, Zoning Ordinance and Land Development Regulations are brought to the Planning Board for the review process and adoption. FEMA or the state NFIP coordinating agency may require amendments to the town's floodplain regulations due to a revision to the FIRMs or a compliance review of the regulations.

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### **D. THE FLOODPLAIN DEVELOPMENT PERMITTING PROCESS:**

The key question is: *Will the development present a new obstruction to flood flows, alter drainage or have the potential to be "substantial improvement?"*

The following are the steps that should be taken by the Administrator during the floodplain permitting process. A list of potential obstructions to flood flows which require a permit is listed below.

#### **Step 1: Determine if the structure is within the SFHA.**

Before a property owner can undertake any development in the SFHA, a permit must be obtained. Development includes any man-made changes to improved or unimproved real estate, such as filling, dredging, grading, storage of materials, etc.

The Administrator must review the effective Flood Insurance Rate Map (FIRM) for the town and determine if the proposed development is within the SFHA and which flood zone. Some proposed development properties may be located in close proximity to the boundaries of the SFHA. The exact location of the site may be difficult to determine, due to small map scale, the applicant may need a surveyor to identify the SFHA delineations relative to the proposed development.

A floodplain development permit is required only if the proposed structure is located within the SFHA. For example, if the applicant's property is located partially in the SFHA, but the proposed structure would be built on land outside the SFHA, floodplain regulations would not apply. If clearing, grading, septic system installation, filling or road and/or bridge construction associated with erecting the structure is located within the SFHA, a floodplain development permit is necessary for that development. If it is not in the SFHA, an application for a building permit should be obtained.

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**The following are possible obstructions to flood flows and require a permit:**

1. Construction of new structures, including accessory structures
2. Modifications or improvements to existing structures
3. Excavation
4. Septic systems, new or replacement
5. Underground electrical, water, utilities
6. Driveways
7. Fillings
8. Paving
9. Drilling
10. Driving of piles
11. Mining
12. Dredging
13. Land clearing
14. Grading
15. Permanent storage of materials and/or equipment
16. Fencing
17. Improvements to an existing structure

### **Step 2:Determine Substantial Improvement**

The Administrator must make a determination as to whether any improvements to an existing structure located in a SFHA, is "substantial". Substantial improvements as defined in Ryes Floodplain Ordinance, is determined by whether the cost of any reconstruction, remodeling, addition, or other improvement(s) of a structure equals or exceeds fifty percent (50%) of the market value of the structure before the "start of construction" of the improvement. This includes structures which have incurred "substantial damage," regardless of the cause of the damage, or the actual repair work performed. This does not, however, include either:

1. Any project for improvement of a structure to correct existing violations of state or local healthy, 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



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2. Any alteration of a "historic structure," provided that the alteration will not preclude the structure's continued designation as a "historic structure."

When making a substantial improvement determination, the Administrator should consult FEMA's reference guidance, *Substantial Improvements/Substantial Damage*, Desk Reference (P-758) available on-line at: <http://www.fema.gov/library/viewRecord.do?id=4160>.

If the proposed improvements to a structure are determined by the Administrator to be substantial improvements, the Administrator will inform the applicant of the requirement for the entire structure to be brought to current FEMA standards and a Floodplain Development Permit is required.

### **Step 3: Pre-Application Consultation/Meeting**

If it is determined the project is located in a SFHA, and a Floodplain Development Permit is required, the Administrator will consult with the applicant regarding the applicable requirements in the town's floodplain ordinance and provide the permit application and checklist. This informal part of the permit process can be important in guiding the applicant to locate and design the development in compliance with local regulations. It also can help the applicant to prepare a complete application, avoiding unnecessary delays at the outset.

### **Step 4: Application Review for Completeness**

The submission of a floodplain development permit application starts the permit process. The application package must contain all the administrative forms, plans, blueprints and technical documentation required for the Administrator to review the proposed project for regulatory compliance. If the application package is incomplete, the review cannot go forward. The applicant will be advised of missing documents and told that the review will not officially "receive" the application until it has been reviewed and determined to be complete. The Administrator will review the package within 10 days of receipt. The review will include the following procedures:

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1. **Ensure all administrative forms are completed satisfactorily and properly signed.**  
The Administrator will verify that all questions have been answered on the administrative forms. If important items are left blank or not addressed completely, the Administrator will bring them to the attention of the applicant for completion. The Administrator will also inform the applicant of inaccurate information. The review will be placed on hold until deficiencies are corrected.
  
2. **Briefly review site plans, grading and excavation plans and building design plans for completeness.** Since the site plan is a critical component of floodplain development proposals, the site plan must show:
  - a. Location of property lines.
  - b. Required set back lines and easements.
  - c. Topographical information such as contour lines or spot elevations and interval, consistent with the vertical datum used in the Flood Insurance Study (FIS).
  - d. Streets and right-of way(s).
  - e. Existing and proposed structures.
  - f. Proposed building elevations of all new construction and the existing lowest floor for substantially improved or substantially damaged structures consistent with the vertical datum used in the Flood Insurance Study (FIS).
  - g. All clearing, filing, grading and other proposed changes to the ground.
  - h. Floodplain boundaries
  - i. Base Flood Elevations.
  - j. In V zones, the line of the mean high tide and zone V/zone A boundary.
  - k. If prepared by a certified registered engineer or licensed land surveyor, the plan should be stamped with the registered professional's license seal. . Certification by an architect is acceptable only if NH Statute provides for architects certifying elevation data.
  
3. **Ensure that all necessary certifications are included and properly signed.** The applicant must provide all completed certifications needed for the permit review. Based on the minimum NFIP requirements, four situations would require the filing of certified documents with the permit application:
  - a. **Floodway encroachment:** If any part of the proposed project is to be located in a designated floodway, the applicant must submit an engineering certification and documentation to demonstrate that the proposed encroachment would not result in any increase in base flood heights. If the project is in a riverine floodplain where no floodway has been adopted, the

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certification would show that there the project will not exceed the allowable increase a flood heights.

- b. **Flood-proofed building:** In the event a nonresidential structure is to be flood proofed, the applicant must submit a statement from a registered professional engineer or architect certifying that the design and methods of construction meet these standards (see Item Viii(2)(b) of the Rye Floodplain Ordinance).
- c. **Enclosures below the lowest floor.** If an applicant designs an enclosure below the lowest floor using an alternative to the NFIP Standard, a registered professional architect or engineer must certify the design (see Item Vii(2)(d) of the Rye Floodplain Ordinance).
- d. **V Zone construction.** An applicant proposing to construct a building in a V zone must supply a statement from a registered professional architect or engineer certifying the design and method of construction of the elevated building and the design of breakaway walls (see Item IX(3) of the Rye Floodplain Ordinance).
4. **Ensure that all necessary federal and state permits are being obtained.** The Administrator will review the application package to determine whether federal and state permits are necessary. Obtaining federal and state approval may cause a delay for the applicant. When the proposed project is within the floodway, the Administrator may condition issuance of the permit on the applicant's obtaining such permits later. The applicant should provide documentation to the Administrator stating that the required federal and state permits have been applied for, and that portion of the project affected by permits will not proceed until issued.
5. **Submit copies of appropriate parts of the application package to other departments for review.** The applicant should submit a sufficient number of copies to other Town of Rye Departments for review. Below is a list of Departments who might need to review a portion of the application:
  - Planning Administrator
  - Zoning Administrator
  - Public Works Director
  - Conservation Commission
  - Fire Department

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### **Step 5: Review for Compliance:**

Once a complete application package is received, the Administrator will follow the procedures listed below to verify that the project will meet all the Rye Floodplain Ordinance Requirements.

1. **Examine the site information.** The Administrator will check the site plan to ensure that the floodplain boundaries appear accurately delineated. The site plans should have the SFHA lines as mapped on the FIRM and the site specific delineation where the BFE's are tied to the local topography. The Administrator will look for possible obstructions including fences and attachments to the structure, located in the floodplain as well as potential violations.
2. **Review Building Plans.** If a building site is in the SFHA, all buildings must be protected to the BFE or higher.

The application package must include building design plans that show:

- The type and potential use of the structure.
- The elevation of the lowest floor within the elevation Datum consistent with the FIS.
- The type of foundation system.
- The existence of any enclosure below the lowest floor, as well as, any electrical and/or plumbing plans for the area, location and size of openings and materials proposed for use in an enclosure below the BFE.
- The height to which a nonresidential structure is to be flood proofed and the complete list of flood proofing techniques to be used, with detailed drawings.

Any conflict or inconsistency with applicable regulations on the proposed plans will require revisions to the building plans.

3. **Review Engineering Documents.** All engineering documents should be examined by Rye's engineer, or a consulting engineer available to perform reviews, to ensure that acceptable technical standards were used and that calculations are correct. The costs incurred will be paid for by the applicant. If Rye's engineer is not available, the NH NFIP coordinating agency or FEMA Regional Office may be able to help review the data.
4. **Repetitive Loss Claim:** Review all permits on the proposed project in the SFHA within ten (10) years to determine if the structure has had repetitive work due to flooding and/or water damage.

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### **Step 6: Application Approval or Denial**

Once the application has been reviewed, the Administrator must make a decision on the application.

#### **Application Approval**

If the proposed development is in compliance with the regulations, the Administrator can issue a permit. The permit becomes the official authorization from the Town of Rye allowing the applicant to proceed, based on the information submitted in the application package.

The day a permit is issued is the date of the "Start of Construction", provided construction begins within 180 days. This date determines what FIRM was in effect when the building was constructed, regardless when ground was broken or construction was completed.

For regulatory purposes, a permit is valid in the Town of Rye for one year from the date of issuance. If at the end of this period the project is not complete, the permit technically expires. However, the Building Inspector may issue a written extension to allow for completion of the development under the conditions of the original permit prior to the expiration of such permit.

#### **Application Denial**

If the application is not in compliance with local regulations, the permit must be denied. The applicant then can choose to:

- Withdraw the permit application.
- Redesign the project to bring it into compliance with regulations.
- Appeal to the Board of Adjustment.
- Apply for variances for relief from the ordinance.

The Administrator will provide information to the applicant with respect to areas which are noncompliant so that if the applicant wishes to resubmit the application, appropriate revisions can be made.

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### **Step 7: Inspections:**

The most effective way to ensure compliance is to inspect the site frequently during construction. The Administrator will conduct a minimum of three (3) inspections for every project, especially any project that involves construction of a building.

#### **1. First Inspection**

This inspection should be performed before ground is broken. Ideally, this site visit should be after the site is staked out to allow verification of the plans' details in relation to the ground and lot boundaries. With plans in hand, the Administrator will determine that the site as identified on the proposed plans is consistent with actual ground conditions.

The Administrator will check the following:

- The location of the floodplain boundaries.
- Setbacks from lot lines, water edges, marshes, etc.
- Floodplain encroachment, if applicable.

If the building, filling, etc., as staked out is in violation of the approved plans or of the ordinance requirements, the Administrator will inform the developer to make the necessary revisions.

The project must not be allowed to proceed until it has been verified by the Administrator that the project is in compliance.

#### **2. Second Inspection**

The Administrator will schedule the second inspection of a project involving a new building or addition to a building at the time the foundation is complete, just before installation of the lowest floor. The Administrator must ensure that the lowest floor will be built at the height stipulated in the permit application, and that the foundation is the type specified in the plans.

The type of foundation will dictate the schedule:

- If the building is on a slab foundation, the inspection is best done when the forms are placed. The Administrator can check the proposed floor elevation by checking the

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elevation of the top of the forms. If the forms are high enough, you can approve the pouring the slab. Grade stakes by a surveyor may show the permitted lowest floor elevation to allow for field verification.

- If the building is on an elevated foundation (crawl space, piles, etc.), the inspection is best done when the foundation is completed. If the top of the foundation is high enough, the Administrator can approve placement of the floor. The "under construction" Elevation Certificate may be essential to certify the foundation elevation.
- If the building is to be floodproofed and the floodproofing technique is easy to identify- such as a reinforced concrete stem wall up to the BFE plus freeboard- this inspection should be conducted when that portion of the project is completed.

### **Step 8: Certificate of Occupancy**

Certifying a structure for occupancy is the final step in the permit process. The Administrator must receive and review the Elevation Certificate for final construction to verify that the structure was built in compliance with Rye's Floodplain Ordinance. If the final Elevation Certificate demonstrates the structure's compliance, the Administrator can issue the Certificate of Occupancy. Further information about the Certificate of Occupancy is outlined in the Rye Zoning Ordinance, Section 802.

### **E. ENFORCEMENT**

Adequate, uniform and fair enforcement means two things:

- All development in a floodplain must have a permit.
- All development with a permit must be built according to the approved plans.

In order to ensure that development is meeting these requirements, the floodplain must be monitored, and where necessary, conduct an inspection of a property.

If the Administrator discovers development activities without permits or contrary to the approved plans the ordinance must be enforced.

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### **1. Voluntary Compliance**

The best approach is to convince the developer or property owner that complying with the ordinance is in his or her own best interest.

### **2. Administrative Steps**

Following consultation with the Town's attorney, the Administrator will take the following administrative steps:

- Contact the property owner or building contractor in person or by telephone to explain concerns.
- Notify the property owner (in writing) of the nature of the violations and what to do to correct them.
- Post a violation notice on the property.

If a problem is found during construction of a permitted project, the Administrator can use the following administrative tools for enforcement:

- If the violation is a serious one, or if the problem still exists after a follow-up inspection, the Administrator can issue a cease and desist order.
- The Administrator can withhold the certificate of occupancy until the problem is corrected/resolved.

### **3. Legal Recourses**

A full description of the enforcement and legal resources for enforcement are also described in detail in the Rye Zoning Ordinance, Section 803. If administrative measures do not bring results, the Administrator should consult with the Town Attorney and discuss the next steps.



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**Fine.** As defined in the Rye Zoning Ordinance, Section 803.4 as follows:

**803.4 Penalties:** *Penalties for violation of these regulations shall be as provided by NH RSA 676:17, as amended. Any person who violates any of these regulations:*

*A. Shall be guilty of a misdemeanor if a natural person, or guilty of a felony if any other person (such as a corporation or association).*

*B. Shall be subject to a civil penalty not to exceed \$100 for each day that such violation is found to continue after the conviction date or after the date of which the violator receives written notice from the municipality that he is in violation, whichever is earlier. (Rev. 1990)*

**Injunction.** An injunction is a court order to stop further noncompliance conduct. A temporary restraining order will be issued if the activity can be shown to be a danger to the public and that immediate irreparable harm could occur.

### **4. Section 1316**

Section 1316 of the National Flood Insurance Act authorizes FEMA to deny flood insurance to a property declared by the State or Town of Rye to be in violation of their floodplain management regulations.

Section 1316 is used when all other legal means to remedy the violation have been exhausted and the structure is still noncompliant. Section 1316 is a way the NFIP can support communities in the enforcement of their ordinances.

If invoked under Section 1316, denying flood insurance means:

- The property may be difficult or impossible to sell as any federally backed mortgage would be denied for the purchase of the property.
- The market value of the property may fall.

## **APPENDIX A**

### **1. DEFINITIONS/TERMINOLOGY:**

The Town of Rye follows the minimum guidelines set by the Federal Agency; FEMA. There is specific terminology, which can be confusing and overwhelming when trying to understand the process. Therefore, the terminology and definitions are described below since this is based on the Acronyms from FEMA and they are quoted from FEMA on November 10, 2010.  
[http://\(www.fema.gov/plan/prevent/floodplain/nfipkeywords/sfha.shtm\)](http://www.fema.gov/plan/prevent/floodplain/nfipkeywords/sfha.shtm)

More definitions can be found in the Rye's Floodplain Ordinance.

**Base Flood Elevation:** The computed elevation to which floodwater is anticipated to rise during the base flood. Base Flood Elevations (BFEs) are shown on Flood Insurance Rate Maps (FIRMs) and on the flood profiles. The BFE is the regulatory requirement for the elevation or flood-proofing of structures. The relationship between the BFE and a structure's elevation determines the flood insurance premium.

**Basement:** A basement is any area of the building having its floor sub-grade (below ground level) on all sides. The lowest floor of a residential building including basement must be above the Base Flood Elevation (BFE). Basements below the BFE are only allowed in communities that have obtained a basement exception from FEMA. Flood-proofed non-residential basements are allowed.

**Crawl Space:** Crawlspace foundations are commonly used in some parts of the nation to elevate the lowest floors of residential buildings located in Special Flood Hazard Areas (SFHAs) above the Base Flood Elevation (BFE). Crawlspaces should be constructed so that the floor of the crawlspace is at or above the lowest grade adjacent to the building. Crawlspaces that have their floors below BFE must have openings to allow the equalization of flood forces.

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**Elevation Certificate(s):** Communities must require that all new construction and substantial improvements of residential structures within Zones A1-30, AE and AH Zones on the community's Flood Insurance Rate Map (FIRM) have the lowest floor (including basement) elevated to or above the Base Flood Elevation (BFE). Common elevation techniques include elevation on file, elevation on piles, piers or columns, and elevation on extended foundation walls such as on a crawl space.

In areas designated as Zone A, the community must obtain, review, and reasonably utilize BFE data available from a Federal, State, or other source and use these data as criteria for requiring that new construction and substantial improvements of residential structures have the lowest floor (including basement) elevated to or above the BFE.

All new construction and substantial improvement in Zones V1-30, VE, and also Zone V (if BFE data is available), must be elevated on pilings and columns so that the bottom of the lowest horizontal structural member of the lowest floor (excluding the pilings or columns) is elevated to or above the BFE.

For residential structures in AO Zones, the lowest floor (including basement) must be elevated at least as high as the depth number specified in feet on the community's map, or at least two feet if no number is specified.

**Flood Insurance Rate Map/FIRM:** It is the official map of a community on which FEMA has delineated both the special hazard areas and the risk premium zones applicable to the community.

**Floodplain Management:** Floodplain management is the operation of a community program of corrective and preventative measures for reducing flood damage. These measures take a variety of forms and generally include requirements for zoning, subdivision or building, and special-purpose floodplain ordinances.

A community's agreement to adopt and enforce floodplain management ordinances, particularly with respect to new construction, is an important element in making flood insurance available to

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home and business owners. Currently over 20,100 communities voluntarily adopt and enforce local floodplain management ordinances that provide flood loss reduction building standards for new and existing development.

**Flood Zones:** Flood hazard areas identified on the Flood Insurance Rate Map are identified as a Special Flood Hazard Area (SFHA). SFHA are defined as the area that will be inundated by the flood event having a 1-percent chance of being equaled or exceeded in any given year. The 1-percent annual chance flood is also referred to as the base flood or 100-year flood. SFHAs are labeled as Zone A, Zone AO, Zone AH, Zones A1-A30, Zone AE, Zone A99, Zone AR, Zone AR/AE, Zone AR/AO, Zone AR/A1-A30, Zone AR/A, Zone V, Zone VE, and Zones V1-V30. Moderate flood hazard areas, labeled Zone B or Zone X (shaded) are also shown on the FIRM, and are the areas between the limits of the base flood and the 0.2-percent-annual-chance (or 500-year) flood. The areas of minimal flood hazard, which are the areas outside the SFHA and higher than the elevation of the 0.2-percent-annual-chance flood, are labeled Zone C or Zone X (unshaded).

**Permit for Floodplain Development:** A permit is required before construction or development begins within any Special Flood Hazard Area (SFHA). If FEMA has not defined the SFHA within a community, the community shall require permits for all proposed construction or other development in the community including the placement of manufactured homes, so that it may determine whether such construction or other development is proposed within flood-prone areas. Permits are required to ensure that proposed development projects meet the requirements of the NFIP and the community's floodplain management ordinance.

A community must also review all proposed developments to assure that all necessary permits have been received from those governmental agencies from which approval is required by Federal or State law.

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**Severe Repetitive Loss:** Severe Repetitive Loss (SRL) is a property defined as a **residential property** that is covered under an NFIP flood insurance policy and:

(a) That has at least four NFIP claim payments (including building and contents) over \$5,000 each, and the cumulative amount of such claims payments exceeds \$20,000; or

(b) For which at least two separate claims payments (building payments only) have been made with the cumulative amount of the building portion of such claims exceeding the market value of the building.

For both (a) and (b) above, at least two of the referenced claims must have occurred within any ten-year period, and must be greater than 10 days apart.

**Special Flood Hazard Area (SFHA):** The land area covered by the floodwaters of the base flood is the Special Flood Hazard Area (SFHA) on NFIP maps. The SFHA is the area where the NFIP's floodplain management regulations must be enforced and the area where the mandatory purchase of flood insurance applies. The SFHA includes Zones A, AO, AH, A1-30, AE, A99, AR, AR/A1-30, AR/AE, AR/AO, AR/AH, AR/A, VO, V1-30, VE, and V.

**Substantial Improvement:** A Substantial Improvement is 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

# Rye Procedural Manual for Construction within the Floodplain

## APPENDIX A Moderate to Low Risk Areas

In communities that participate in the NFIP, flood insurance is available to all property owners and renters in these zones:

ZONE	DESCRIPTION
<b>B and X (shaded)</b>	Area of moderate flood hazard, usually the area between the limits of the 100-year and 500-year floods. B Zones are also used to designate base floodplains of lesser hazards, such as areas protected by levees from 100-year flood, or shallow flooding areas with average depths of less than one foot or drainage areas less than 1 square mile.
<b>C and X (unshaded)</b>	Area of minimal flood hazard, usually depicted on FIRMs as above the 500-year flood level. Zone C may have ponding and local drainage problems that don't warrant a detailed study or designation as base floodplain. Zone X is the area determined to be outside the 500-year flood and protected by levee from 100-year flood.

## High Risk Areas

In communities that participate in the NFIP, mandatory flood insurance purchase requirements apply to all of these zones:

ZONE	DESCRIPTION
<b>A</b>	Areas with a 1% annual chance of flooding and a 26% chance of flooding over the life of a 30-year mortgage. Because detailed analyses are not performed for such areas; no depths or base flood elevations are shown within these zones.
<b>AE</b>	The base floodplain where base flood elevations are provided. AE Zones are now used on new format FIRMs instead of A1-A30 Zones.
<b>A1-30</b>	These are known as numbered A Zones (e.g., A7 or A14). This is the base floodplain where the FIRM shows a BFE (old format).
<b>AH</b>	Areas with a 1% annual chance of shallow flooding, usually in the form of a pond, with an average depth ranging from 1 to 3 feet. These areas have a 26% chance of flooding over the life of a 30-year mortgage. Base flood elevations derived from detailed analyses are shown at selected intervals within these zones.
<b>AO</b>	River or stream flood hazard areas, and areas with a 1% or greater chance of shallow flooding each year, usually in the form of sheet flow, with an average depth ranging from 1 to 3 feet. These areas have a

## Rye Procedural Manual for Construction within the Floodplain

	26% chance of flooding over the life of a 30-year mortgage. Average flood depths derived from detailed analyses are shown within these zones.
<b>AR</b>	Areas with a temporarily increased flood risk due to the building or restoration of a flood control system (such as a levee or a dam). Mandatory flood insurance purchase requirements will apply, but rates will not exceed the rates for unnumbered A zones if the structure is built or restored in compliance with Zone AR floodplain management regulations.
<b>A99</b>	Areas with a 1% annual chance of flooding that will be protected by a Federal flood control system where construction has reached specified legal requirements. No depths or base flood elevations are shown within these zones.

### High Risk - Coastal Areas

In communities that participate in the NFIP, mandatory flood insurance purchase requirements apply to all of these zones:

ZONE	DESCRIPTION
<b>V</b>	Coastal areas with a 1% or greater chance of flooding and an additional hazard associated with storm waves. These areas have a 26% chance of flooding over the life of a 30-year mortgage. No base flood elevations are shown within these zones.
<b>VE, V1 - 30</b>	Coastal areas with a 1% or greater chance of flooding and an additional hazard associated with storm waves. These areas have a 26% chance of flooding over the life of a 30-year mortgage. Base flood elevations derived from detailed analyses are shown at selected intervals within these zones.

### Undetermined Risk Areas

ZONE	DESCRIPTION
<b>D</b>	Areas with possible but undetermined flood hazards. No flood hazard analysis has been conducted. Flood insurance rates are commensurate with the uncertainty of the flood risk.

# Rye Floodplain Development Permit Application

Building Permit #	FIRM Panel #	FIRM Date
Applicant's Name		Owner's Name
Address		Address
Phone #		Phone #
Property Location		
Subdivision	Tax #	Parcel #

Description of Work (Check all applicable boxes)

**A. Structural Development**

<u>Activity</u>	<u>Structure Type</u>
<input type="checkbox"/> New Structure	<input type="checkbox"/> Residential (1-4 Family)
<input type="checkbox"/> Addition	<input type="checkbox"/> Residential (4+ Family)
<input type="checkbox"/> Renovations/Repairs/ Maintenance	<input type="checkbox"/> Non-Residential (Floodproofing? <input type="checkbox"/> Yes)
	<input type="checkbox"/> Manufactured Home

**B. Other Development Activities**

- ☐ Paving      ☐ Grading      ☐ Filling      ☐ Mining
- ☐ Excavation (Except for Structural Development Checked Above)
- ☐ Watercourse Alteration (Including Dredging and Channel Modifications)
- ☐ Drainage Improvements (Including Culvert Work)
- ☐ Road, Street, Bridge Construction
- ☐ Subdivision (New or Expansion)
- ☐ Individual Water or Sewer System
- ☐ Other (Please describe) \_\_\_\_\_

To be Completed by Local Administrator

Yes	No	
<input type="checkbox"/>	<input type="checkbox"/>	Is the development located in a Special Flood Hazard Area?
		If yes, complete below:
		a. FIRM Panel No. _____ FIRM Date: _____ Flood Zone: _____
		b. Base Flood Elevation: _____ feet <input type="checkbox"/> NGVD29 <input type="checkbox"/> NAVD88 <input type="checkbox"/> BFE not available
<input type="checkbox"/>	<input type="checkbox"/>	Is the development located in the designated floodway?
		<b>Substantial Improvement Determination</b>
		a. Cost of Improvement/Cost to Repair: \$ _____
		b. Present Market Value of Structure: \$ _____
		c. Ratio of Cost to Market Value: _____ %
<input type="checkbox"/>	<input type="checkbox"/>	Is the development a substantial improvement? (50% or greater)
<input type="checkbox"/>	<input type="checkbox"/>	All applicable Federal and State permits received? Cannot issue floodplain permit until all are received.



Additional Information Required  
To be Completed by Local Administrator

The applicant must submit the documents checked below before the application can be processed.

- ☐ A Site Plan showing the location of all existing and proposed structures, water bodies, adjacent roads, lot dimensions, 100-year floodplain boundary, and floodway boundary, if applicable, and proposed development.
- ☐ Development plans, drawn to scale, including where applicable: details for anchoring structures, types of flood damage-resistant materials used below the first floor, details of floodproofing of utilities located below the first floor, and details of enclosures below the first floor.
- ☐ A certified and completed Elevation Certificate that includes the proposed elevation of lowest floor (including basement). Applicant must submit the Elevation Certificate before construction (based on construction drawings), when building is under construction (before lowest floor is completed), and when construction is finished (as-built elevations).
- ☐ A certified and completed Floodproofing Certificate for floodproofed non-residential structures.
- ☐ For substantial improvements, the actual costs of construction (include all applicable costs including volunteer labor and donated supplies) and Pre-Improvement/Damage Market Value of only the structure (market appraisal or adjusted assessed value before improvement or, if damaged, before the damage occurred).
- ☐ Subdivision or other development plans. (If the subdivision is greater than 50 lots or 5 acres, whichever is lesser, the applicant must provide the Base Flood Elevation in the plans).
- ☐ Plans showing the extent of watercourse relocation and/or landform alteration.
- ☐ Certification from a registered engineer that the proposed activity in a Zone AE or A1-30 with no designated regulatory floodway will not result in an increase of more than one foot in the height of the Base Flood Elevation. A copy of all data and hydraulic/hydrologic calculations supporting this finding must also be submitted.
- ☐ Certification from a registered engineer that the proposed activity in a regulatory floodway will not result in any increase in the height of the Base Flood Elevation. A copy of all data and hydraulic/hydrologic calculations supporting this finding must also be submitted.
- ☐ Other: \_\_\_\_\_

## Floodplain Development Permit Review Checklist

Building Permit #	FIRM Panel #	FIRM Date
Applicant's Name		Owner's Name
Address		Address
Phone #		Phone #
Property Location		
Subdivision	Tax #	Parcel #

**For all development, complete Sections A through D**

### **A. General**

- ☐ Y ☐ N ☐ NA 1. Electrical, heating, ventilation, plumbing, and air conditioning equipment (including duct work), and other service facilities are located above the Base Flood Elevation or floodproofed.
- ☐ Y ☐ N ☐ NA 2. New or replacement water and sewer systems (including on-site systems) are designed to minimize or eliminate infiltration of flood waters into the systems and discharges from the systems into flood waters, and on-site waste disposal systems are located to avoid impairment to them or contamination from them during periods of flooding.
- ☐ Y ☐ N ☐ NA 3. Structure is designed (or modified) and adequately anchored to prevent flotation, collapse, or lateral movement.
- ☐ Y ☐ N ☐ NA 4. Flood damage-resistant materials are used below the Base Flood Elevation.
- ☐ Y ☐ N ☐ NA 5. Other permits required from State or Federal jurisdictions have been received.

### **B. Watercourses**

- ☐ Y ☐ N ☐ NA 1a. Is this development located in the floodway? If yes, complete #1b and #1c. If no, complete #2.
- ☐ Y ☐ N ☐ NA 1b. A copy of all data and hydraulic/hydrologic calculations showing the proposed development's effect on the Base Flood Elevation has been received.
- ☐ Y ☐ N ☐ NA 1c. The hydraulic/hydrologic analysis shows a 0.00 feet or less increase in the Base Flood Elevation as a result of the proposed development.
- If No, a Conditional Letter of Map Revision (CLOMR) is required to be submitted to FEMA.
- ☐ Y ☐ N ☐ NA 2. Is this development located in Zone A or Zone AE with no floodway designated? If Zone A, complete #3. If Zone AE, complete #4a and #4b.
- ☐ Y ☐ N ☐ NA 3. For Zone A, is there another source that has designated a floodway in the area where the proposed development is located? If yes, complete #1a to #1c.

- ☐ Y ☐ N ☐ NA      4a. For Zone AE, a copy of all data and hydraulic/hydrologic calculations showing the proposed development's effect on the Base Flood Elevation has been received.
- ☐ Y ☐ N ☐ NA      4b. For Zone AE, the hydraulic/hydrologic analysis shows a 1.0-foot or less increase in the Base Flood Elevation as a result of the proposed development.
- If No, a Conditional Letter of Map Revision (CLOMR) is required to be submitted to FEMA.
- ☐ Y ☐ N ☐ NA      5a. Will the proposed development alter or relocate a watercourse? If Yes, complete #5b to #5d
- ☐ Y ☐ N ☐ NA      5b. The Wetlands Bureau of the NH Department of Environmental Services has been notified and such notification has been received.
- ☐ Y ☐ N ☐ NA      5c. Other applicable notifications have been completed and received.
- ☐ Y ☐ N ☐ NA      5d. Certification provided by a registered professional engineer assuring that the flood carrying capacity of an altered or relocated watercourse can and will be maintained has been received.

☐ NA      **C. Substantial Improvement/Damage Determination**

For reconstruction, rehabilitation, addition, or other improvements, and repair of damage from any cause.

- \$ \_\_\_\_\_      1. Actual cost of construction (See FEMA Reference Guide P-758 as to what items to include/exclude. Include volunteer labor and donated supplies.)
- \$ \_\_\_\_\_      2. Present Market Value of Structure Only (Market Appraisal or Adjusted Assessed Value BEFORE improvement, or if damaged, BEFORE damage occurred).
- \_\_\_\_\_ %      3. Ratio of Cost of Improvement (or Cost to Repair) to Market Value (#1 divided by #2 then multiplied by 100)

If Ratio is 50% or greater then the proposed development is considered a Substantial Improvement. The entire structure including the existing building must comply with the floodplain regulations including elevating the lowest floor to or above the Base Flood Elevation.

☐ NA      **D. Manufactured Homes and Recreational Vehicles**

- ☐ Y ☐ N ☐ NA      1a. Manufactured home is on a permanent foundation and the lowest floor of the manufactured home is at or above the Base Flood Elevation.
- ☐ Y ☐ N ☐ NA      1b. Manufactured home has been securely anchored.
- ☐ Y ☐ N ☐ NA      2a. The recreational vehicle will be on site for fewer than 180 consecutive days.

☐ Y ☐ N ☐ NA

2b. The recreational vehicle is fully licensed and ready for highway use (on its wheels or jacking system, is attached to the site only by quick disconnect type utilities and security devices, and has no permanently attached additions).

☐ Y ☐ N ☐ NA

2c. If answer to both #2a and #2b is No, the recreational vehicle meets the requirements listed #1a and #1b for a manufactured home.

**Next, complete either Section E or F dependent upon the development's flood zone.**

☐ NA

**E. Development in Zones A, A1-30, AE, and AO**

☐ Y ☐ N ☐ NA

1. The elevation of the lowest floor (including a basement) is located at or above the Base Flood Elevation.

☐ Y ☐ N ☐ NA

2. If development is located in Zone A and no Base Flood Elevation data is available from other sources, the elevation of the lowest floor (including a basement) is located at least 2 feet above the Highest Adjacent Grade.

☐ Y ☐ N ☐ NA

3. If development is located in Zone AO, the elevation of the lowest floor (including a basement) is located at the required flood elevation (Highest Adjacent Grade elevation plus the depth number shown on the FIRM or, if no depth number is shown, the Highest Adjacent Grade elevation plus at least 2 feet).

☐ Y ☐ N ☐ NA

4a. If a non-residential structure is floodproofed, the structure is protected up to or above the Base Flood Elevation.

☐ Y ☐ N ☐ NA

4b. If floodproofed, Floodproofing Certification has been received.

☐ NA

**Enclosures (solid foundation perimeter walls) below Base Flood Elevation**

☐ Y ☐ N ☐ NA

1. Enclosed area is unfinished or flood resistant used solely for parking of vehicles, building access, or storage.

☐ Y ☐ N ☐ NA

2. Enclosed area is not a basement (the floor of the enclosure is NOT below grade on all sides).

☐ Y ☐ N ☐ NA

3a. Minimum of 2 flood vents on two different walls.

\_\_\_\_\_

3b. Square footage of enclosed area below Base Flood Elevation.

\_\_\_\_\_

3c. Square inches of venting required (must be equal or greater than #3b).

\_\_\_\_\_

3d. Square inches per opening (multiply length and width of opening).

\_\_\_\_\_

3d. Number of vents required (#3c divided by #3d).

☐ Y ☐ N ☐ NA

3e. Foundation contains the minimum number of vents.

☐ Y ☐ N ☐ NA

3f. The bottom of each opening is no higher than one (1) foot above either the exterior or interior grade (whichever is higher).

☐ Y ☐ N ☐ NA

3g. If there is any cover on the openings it will permit the automatic flow of floodwaters in both directions.

---

☐ NA

#### **F. Development in Zones V, V1-30, and VE**

☐ Y ☐ N ☐ NA

1. Bottom of the lowest horizontal structural member of the lowest floor (excluding the pilings and columns) is located at or above the Base Flood Elevation.

☐ Y ☐ N ☐ NA

2. Structure is securely anchored to pilings and columns using the appropriate water and wind loading values.

☐ Y ☐ N ☐ NA

3. Certification by a registered professional engineer or architect has been received.

☐ Y ☐ N ☐ NA

4a. Space below the lowest floor is used solely for parking of vehicles, building access, or storage.

☐ Y ☐ N ☐ NA

4b. Space below the lowest floor is either free of obstructions or constructed with non-supporting breakaway walls, open lattice-work or insect screening that meet the minimum design requirements.

☐ Y ☐ N ☐ NA

5. No fill has been used for structural support of the building.

☐ Y ☐ N ☐ NA

6. No man-made alterations of sand dunes that would increase potential flood damage.

☐ Y ☐ N ☐ NA

7. Proposed development is located landward of the reach of mean high tide.

## **Rye FEMA Compliance – Inspection Actions**

Complete this section as applicable based on project inspections and/or elevation and other data received from applicant to ensure compliance with the community's local regulations for floodplain management.

### ***Inspections:***

1. First Inspection (After staking and before ground breaking)

Date: \_\_\_\_\_ By: \_\_\_\_\_

2. Second Inspection (Just prior to the installation of the lowest floor)

Date: \_\_\_\_\_ By: \_\_\_\_\_

3. Final Inspection (Project Completion)

Date: \_\_\_\_\_ By: \_\_\_\_\_

### ***Submittal of Elevation Certificate:***

1. Based on Construction Plans (Pre-Construction)

Submittal Date: \_\_\_\_\_ Verification By: \_\_\_\_\_ Date: \_\_\_\_\_

2. Building Under Construction (Just prior to the installation of the lowest floor)

Submittal Date: \_\_\_\_\_ Verification By: \_\_\_\_\_ Date: \_\_\_\_\_

3. Finished Construction/As-Built (Required before Certificate of Compliance/Occupancy can be issued)

Submittal Date: \_\_\_\_\_ Verification By: \_\_\_\_\_ Date: \_\_\_\_\_

---

### **Certificate of Compliance/Occupancy**

Certificate of Compliance/Occupancy issued: Date: \_\_\_\_\_ By: \_\_\_\_\_

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### **Checklist Completed By :**

\_\_\_\_\_ Date: \_\_\_\_\_

\_\_\_\_\_  
(Signature of Local Administrator)

# NFIP

## New Hampshire's Floodplain Management Program

### Fact Sheet #3

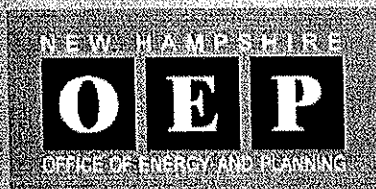
### Preventing Common Building Violations

#### Contact:

Jennifer Gilbert  
Floodplain Management  
Coordinator  
(603) 271-1762  
jennifer.gilbert@nh.gov

#### Web Site:

[http://www.nh.gov/oep/  
programs/  
floodplainmanagement](http://www.nh.gov/oep/programs/floodplainmanagement)



4 Chenell Drive, 2nd Floor  
Concord, NH 03301

Phone: 603-271-2155

Fax: 603-271-2615

Web: [www.nh.gov/oep](http://www.nh.gov/oep)

According to a report that evaluated the National Flood Insurance Program (NFIP), it concluded that the most common types of violation were mechanical and utility equipment located below the base flood elevation (BFE) and flood openings that do not meet the NFIP requirements. These two types of violations accounted for 50.6 percent of the violations found within the report's sample assessment.

The report concluded that more education and outreach was needed to address these two common violations. Therefore, the purpose of the following information is to help explain the requirements and include references where more information can be found to help prevent these violations from continuing.

#### Flood Openings in Residential Structures

One of the main NFIP requirements in a community's floodplain regulations (and in NH's state building code) is that the lowest floor of residential structures must be located at or above the BFE. In many instances, in order to get the lowest floor up to or above the BFE, foundation walls are used which create an enclosure (i.e. crawlspace).

Enclosures are allowed below the BFE but they must meet certain criteria. The purpose of the following criteria is to allow the automatic entry and exit of floodwaters so that interior and exterior pressures of the floodwaters will equalize during a flood and therefore will reduce damage to the enclosure and the structure during a flood event.

Enclosures located below the BFE must meet the following NFIP minimum criteria.

# Preventing Common Building Violations

## 1. Unfinished Area/Limited Uses

The enclosed area must be unfinished or flood resistant and used only for the parking of vehicles, building access, or storage. This area will be subject to water entering and exiting so it should be designed and used to handle wetness.

## 2. No Basements or Areas Below Ground on All Sides

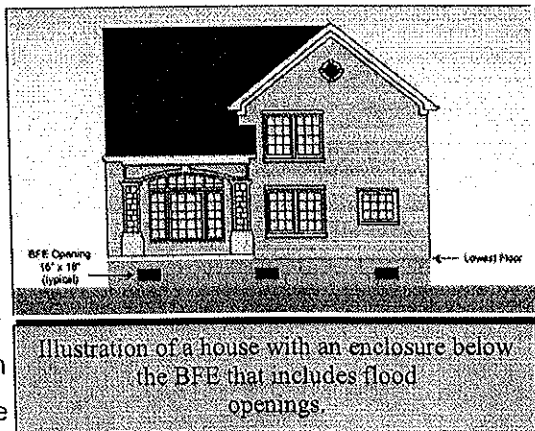
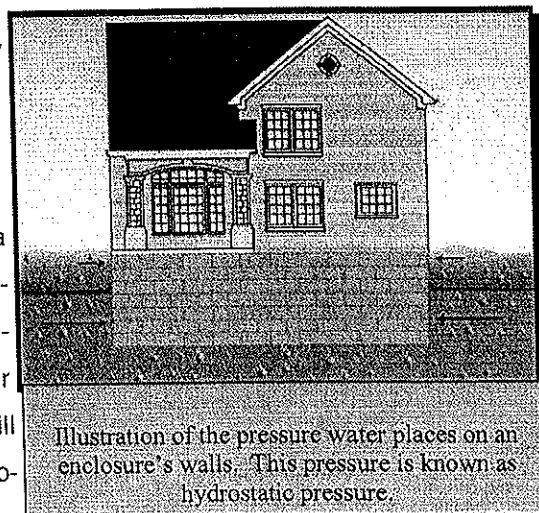
The area cannot be a basement or any other area in which its floor is below the ground on all sides. An area with a floor below the ground on all sides would act as a bathtub as water entered the enclosure and would not allow floodwaters to easily and quickly move out of the enclosure.

## 3. Flood Openings

The enclosed area must have flood openings. Flood openings are a series of small openings installed in the enclosure's walls. The purpose of the flood openings is to relieve the pressure of the floodwater on the exterior enclosure walls by allowing floodwaters to enter the enclosure and put pressure on the interior walls, which will equalize the pressure on the enclosure walls. Structures with enclosures that do not have openings are at risk of damage or collapse due to the uneven pressure the floodwaters will have on the enclosure walls.

Designs for flood openings must either meet or exceed the following minimum criteria:

1. A minimum of two openings with a total net area of not less than 1 square inch for every 1 square foot of enclosed area subject to flooding must be provided. The openings should be installed on at least two sides of each enclosed area to decrease the chances that all opening could be blocked with floating debris.
2. The bottom of each opening must be no higher than 1 foot above the higher of the final interior or exterior grades under the opening.
3. The openings may be equipped with screens, louvers, valves, or other coverings or devices—provided that they permit the automatic entry and exit of floodwaters. The openings must remain open at all times.





# Preventing Common Building Violations

An alternative to meeting criteria #1 above for those who want unique or individually designed openings is having the openings designed and certified by a registered engineer or architect. The openings must still be designed to automatically allow the entry and exit of floodwaters.

## How Openings Affect Flood Insurance Rates

It is not only important for community officials to ensure enclosures below the BFE meet the NFIP requirements to prevent flood damage to the structure but also to prevent the homeowner from paying a high cost for flood insurance. Flood insurance rates are directly tied to how a structure is built and its compliance with the NFIP requirements. If an enclosure below the BFE does not meet the NFIP requirements then the floor of that enclosure becomes the "lowest floor" of the structure. Since the lowest floor is below the BFE, flood insurance rates will be much higher than if it was at or above the BFE as required.

## Mechanical and Utility Equipment

The NFIP requires that electrical, heating, ventilation, plumbing, and air conditioning equipment, and other service facilities are designed and/or located so as to prevent water from entering or accumulating within the components during conditions of flooding. Therefore, these mechanical and utility components are prohibited below the BFE (except for the minimum electric service required to address life safety and electric code requirements).

## Elevation Certificate

One of the best things a community official can do to ensure that enclosures below the BFE are built in compliance is to require the submittal of FEMA's Elevation Certificate. As mentioned on page 1 of this newsletter, the purpose of the Elevation Certificate is to gather elevation information necessary to ensure compliance with community floodplain regulations.

On the next page is a sample Elevation Certificate that is marked up to show where community officials should verify that enclosures below the BFE, flood openings, and mechanical and equipment are compliant with the previously mentioned NFIP requirements.

### Information Resources

#### FEMA How To Guides:

<http://www.fema.gov/library/viewRecord.do?id=3262>

- Raise or Floodproof HVAC Equipment
- Raise Electrical System Components

#### FEMA's Protecting Building Utilities from Flood Damage

<http://www.fema.gov/hazard/flood/pubs/pbuffd.shtm>

#### FEMA Technical Bulletins:

<http://www.fema.gov/plan/prevent/floodplain/techbul.shtm>

- Openings in Foundation Walls and Walls of Enclosure (TB1, Aug 2008)
- Flood Damage Resistant Materials Requirements (TB2, Aug 2008)

# Preventing Common Building Violations

U.S. DEPARTMENT OF HOMELAND SECURITY  
Federal Emergency Management Agency  
National Flood Insurance Program

## ELEVATION CERTIFICATE

OMB No. 1660-0008  
Expires March 31, 2012

Important: Read the instructions on pages 1-9.

### SECTION A - PROPERTY INFORMATION

A1. Building Owner's Name John Smith		For Insurance Company/Use:
A2. Building Street Address (including Apt., Unit, Suite, and/or Bldg. No.) or P.O. Route and Box No. 123 Main Street		Policy Number
City Waterville State NA ZIP Code 12345		Company NAIC Number
A3. Property Description (Lot and Block Numbers, Tax Parcel Number, Legal 12A)		
A4. Building Use (e.g., Residential, Non-Residential, Addition, Accessory, etc.)		
A5. Latitude/Longitude: Lat. _____ Long. _____		
A6. Attach at least 2 photographs of the building if the Certificate is being used		
A7. Building Diagram Number		
A8. For a building with a crawlspace or enclosure(s):		
a) Square footage of crawlspace or enclosure(s)	700 sq ft	Verify that Item A8(c) is equal or greater than Item A8(a). If Item A8(c) is equal or greater, then the crawlspace/enclosure is compliant. If Item A8(c) is less, then the crawlspace/enclosure is not compliant.
b) No. of permanent flood openings in the crawlspace or enclosure(s) within 1.0 foot above adjacent grade	10	
c) Total net area of flood openings in A8.b	720 sq in	
d) Engineered flood openings?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
A9. For a building with an attached garage:		
a) Square footage of attached garage	_____ sq ft	
b) No. of permanent flood openings in the attached garage within 1.0 foot above adjacent grade	_____	
c) Total net area of flood openings in A9.b	_____ sq in	
d) Engineered flood openings?	<input type="checkbox"/> Yes <input type="checkbox"/> No	

### SECTION B - FLOOD INSURANCE RATE MAP (FIRM) INFORMATION

B1. NFIP Community Name & Community Number Waterville 123456		B2. County Name Brown		B3. State NA	
B4. Map/Panel Number 120	B5. Suffix C	B6. FIRM Index Date 01/01/2000	B7. FIRM Panel Effective/Revised Date 01/01/2000	B8. Flood Zone(s) AE	B9. Base Flood Elevation(s) (Zone AO, use base flood depth) 200.5
B10. Indicate the source of the Base Flood Elevation (BFE) data or base flood depth entered in Item B9. <input checked="" type="checkbox"/> FIS Profile <input type="checkbox"/> FIRM <input type="checkbox"/> Community Determined <input type="checkbox"/> Other (Describe) _____					
B11. Indicate elevation datum used for BFE in Item B9: <input type="checkbox"/> NGVD 1929 <input checked="" type="checkbox"/> NAD 1983					
B12. Is the building located in a Coastal Barrier Resources System (CBRS) area? Designation Date _____ <input type="checkbox"/> CBRS					

### SECTION C - BUILDING ELEVATION INFORMATION

C1. Building elevations are based on: <input type="checkbox"/> Construction Drawings* *A new Elevation Certificate will be required when construction of the building	
C2. Elevations - Zones A1-A30, AE, AH, A (with BFE), VE, V1-V30, V (with BFE), below according to the building diagram specified in Item A7. Use the same of Benchmark Utilized _____ Vertical Datum _____ Conversion/Comments _____	
a) Top of bottom floor (including basement, crawlspace, or enclosure floor)	197.75
b) Top of the next higher floor	205.00
c) Bottom of the lowest horizontal structural member (V Zones only)	
d) Attached garage (top of slab)	
e) Lowest elevation of machinery or equipment servicing the building (Describe type of equipment and location in Comments)	210.00
f) Lowest adjacent (finished) grade next to building (LAG)	197.55
g) Highest adjacent (finished) grade next to building (HAG)	202.00
h) Lowest adjacent grade at lowest elevation of deck or porch (if applicable) structural support	

Check the measurement unit: ☒ feet ☐ meters (Puerto Rico)

If Item C2(a) is less than Item B9 but Item A8(a-d) is completed correctly, then Item C2(b) is considered the Lowest Floor. If so, then Item C2(b) must be equal or greater than Item B9 to be compliant.

Verify that Item C2(f) is equal or less than Item C2(a). If Item C2(f) is equal or less, then the Bottom Floor is at or above the ground on all sides (no basement). If Item C2(f) is greater, then the Bottom Floor is below the ground on all sides and is considered a basement.

Verify that Item C2(e) is equal or greater than Item B9 in order to be compliant.

# NFIP

## Fact Sheet #5

### 12 Key Floodplain Management Regulations

#### Terms to Know

**BFE** - Base Flood Elevation: the elevation the base or 1% or 100-year flood is expected to rise to.

**FIRM** - Flood Insurance Rate Map (shows flood zones & BFE)

**SFHA** - Special Flood Hazard Area (includes flood Zones A, AE, AO, V, and VE)

#### Contact:

Jennifer Gilbert  
Floodplain Management  
Coordinator  
(603) 271-1762  
jennifer.gilbert@nh.gov

#### Web Site:


[www.nh.gov/oep/programs/  
floodplainmanagement](http://www.nh.gov/oep/programs/floodplainmanagement)





4 Chenell Drive, 2nd Floor  
Concord, NH 03301  
Phone: 603-271-2155  
Fax: 603-271-2615  
Web: [www.nh.gov/oep](http://www.nh.gov/oep)


# New Hampshire's Floodplain Management Program

The following is a brief summary of the top 12 key regulations of the National Flood Insurance Program (NFIP). More detailed information about these regulations and other regulations can be found in a community's floodplain regulations. For further assistance, please also go to the NH Floodplain Management Program's web site or contact the NH's Floodplain Management Coordinator (see web site and contact information at left).

 **Permitting.** A permit is required for all development in a SFHA. Development includes any man-made changes to improved or unimproved real estate, such as filling, dredging, grading, storage of materials, etc.

 **Construction Requirements.** All new construction or substantial improvements in a SFHA shall be designed (or modified) and adequately anchored; be constructed with flood damage-resistant materials; and be constructed by methods and practices that minimize flood damages.

 **Certification.** The following certification is required for all new construction and substantial improvements in a SFHA: in Zones A, AO, and AE the as-built elevation of the lowest floor (including a basement); Zones V and VE the as-built elevation of the bottom of the lowest horizontal structural member of the lowest floor (including pilings or columns); and if a non-residential structure has been floodproofed, the as-built elevation to which the structure was floodproofed and a floodproofing certificate.

 **Utilities.** Electrical, heating, ventilation, plumbing, and air conditioning equipment (including duct work), and other service facilities must be located above the BFE or be protected from flood waters.

## 12 Key Floodplain Management Requirements

- 🔑 **Other Permits.** A permit cannot be issued by a community for a development in a SFHA until all other necessary permits have been received by federal and state agencies.
- 🔑 **Floodway.** No encroachment such as fill, new construction, substantial improvement, and other development is allowed within the Regulatory Floodway (shown on the FIRM) unless there is an analysis that shows no rise – that means NO allowable increase to the BFE. In Zone AE (with no Regulatory Floodway), an analysis is required that shows an increase of no more than 1.0 foot in the BFE.
- 🔑 **Basements.** A basement (not allowed in V-Zones) is an enclosure that is below ground level on all sides. A crawl space area might be considered a basement if it meets this definition. All basement floors must be at or above BFE.
- 🔑 **Lowest Floor.** In Zones A and AE, the lowest floor of a structure (including a basement) must be located at or above the BFE. Non-residential structures can also be floodproofed up to at least the BFE. In Zone AO, the lowest floor must be located at or above the flood elevation (determined by adding the elevation of the highest adjacent grade to the depth number on the FIRM or if no depth number is shown, the highest adjacent grade plus at least 2 feet). In Zones V and VE, structures must be built on pilings, piers or columns, the lowest horizontal structural member must be at or above the BFE, and certified plans stamped by a professional qualified engineer or architect for construction must be submitted to the community.
- 🔑 **Enclosures/Crawlspaces.** In Zones A and AE, enclosures below BFE must: be constructed with flood resistant materials; can only be used for storage, building access, or parking; cannot be a basement; and must have flood vents that meet certain criteria. In Zones V and VE, the space below the lowest floor can only be used for storage, building access, or parking; and must be free of obstructions or constructed with non-supporting breakaway walls, open lattice-work or insect screening that meet minimum design requirements.
- 🔑 **Zone A with no BFE.** Subdivisions and other development proposals exceeding 5 acres or 50 lots in a Zone A area must include a BFE determined by an engineer. For developments less than 5 acres or 50 lots and no known BFE, it is strongly recommended that the lowest floor (including a basement) be located either at least 2 feet or more above the highest adjacent grade or 1-2 feet above an experienced flood event.
- 🔑 **Substantial Improvement or Substantial Damage.** Defined as repairs or improvements (internal and external) valued at 50% or more of the market value of the structure in a SFHA. Structures in a SFHA that are determined by the community to be substantially damaged or improved must meet the regulations in the community's floodplain ordinance (e.g. lowest floor must be at or above BFE).
- 🔑 **Manufactured Homes and Recreational Vehicles.** Manufactured homes to be placed or substantially improved within a SFHA must be elevated on a permanent foundation; the lowest floor must be at or above BFE; and must be anchored. Recreational vehicles in a SFHA must be either on site for fewer than 180 consecutive days; be fully licensed and ready for highway use; or meet the manufactured home requirements.

# ELEVATION CERTIFICATE

OMB No. 1660-0008  
Expires March 31, 2012

Important: Read the instructions on pages 1-9.

## SECTION A - PROPERTY INFORMATION

- A1. Building Owner's Name \_\_\_\_\_
- A2. Building Street Address (including Apt., Unit, Suite, and/or Bldg. No.) or P.O. Route and Box No. \_\_\_\_\_
- City \_\_\_\_\_ State \_\_\_\_\_ ZIP Code \_\_\_\_\_
- A3. Property Description (Lot and Block Numbers, Tax Parcel Number, Legal Description, etc.) \_\_\_\_\_

- A4. Building Use (e.g., Residential, Non-Residential, Addition, Accessory, etc.) \_\_\_\_\_
- A5. Latitude/Longitude: Lat. \_\_\_\_\_ Long. \_\_\_\_\_ Horizontal Datum: ☐ NAD 1927 ☐ NAD 1983
- A6. Attach at least 2 photographs of the building if the Certificate is being used to obtain flood insurance.
- A7. Building Diagram Number \_\_\_\_\_
- A8. For a building with a crawlspace or enclosure(s):
- a) Square footage of crawlspace or enclosure(s) \_\_\_\_\_ sq ft
  - b) No. of permanent flood openings in the crawlspace or enclosure(s) within 1.0 foot above adjacent grade \_\_\_\_\_
  - c) Total net area of flood openings in A8.b \_\_\_\_\_ sq in
  - d) Engineered flood openings? ☐ Yes ☐ No

- A9. For a building with an attached garage:
- a) Square footage of attached garage \_\_\_\_\_ sq ft
  - b) No. of permanent flood openings in the attached garage within 1.0 foot above adjacent grade \_\_\_\_\_
  - c) Total net area of flood openings in A9.b \_\_\_\_\_ sq in
  - d) Engineered flood openings? ☐ Yes ☐ No

## SECTION B - FLOOD INSURANCE RATE MAP (FIRM) INFORMATION

B1. NFIP Community Name & Community Number		B2. County Name		B3. State	
B4. Map/Panel Number	B5. Suffix	B6. FIRM Index Date	B7. FIRM Panel Effective/Revised Date	B8. Flood Zone(s)	B9. Base Flood Elevation(s) (Zone AO, use base flood depth)

- B10. Indicate the source of the Base Flood Elevation (BFE) data or base flood depth entered in Item B9.
- ☐ FIS Profile ☐ FIRM ☐ Community Determined ☐ Other (Describe) \_\_\_\_\_
- B11. Indicate elevation datum used for BFE in Item B9: ☐ NGVD 1929 ☐ NAVD 1988 ☐ Other (Describe) \_\_\_\_\_
- B12. Is the building located in a Coastal Barrier Resources System (CBRS) area or Otherwise Protected Area (OPA)? ☐ Yes ☐ No
- Designation Date \_\_\_\_\_ ☐ CBRS ☐ OPA

## SECTION C - BUILDING ELEVATION INFORMATION (SURVEY REQUIRED)

- C1. Building elevations are based on: ☐ Construction Drawings\* ☐ Building Under Construction\* ☐ Finished Construction
- \*A new Elevation Certificate will be required when construction of the building is complete.
- C2. Elevations - Zones A1-A30, AE, AH, A (with BFE), VE, V1-V30, V (with BFE), AR, AR/A, AR/AE, AR/A1-A30, AR/AH, AR/AO. Complete Items C2.a-h below according to the building diagram specified in Item A7. Use the same datum as the BFE.
- Benchmark Utilized \_\_\_\_\_ Vertical Datum \_\_\_\_\_
- Conversion/Comments \_\_\_\_\_
- Check the measurement used.
- a) Top of bottom floor (including basement, crawlspace, or enclosure floor) \_\_\_\_\_ ☐ feet ☐ meters (Puerto Rico only)
  - b) Top of the next higher floor \_\_\_\_\_ ☐ feet ☐ meters (Puerto Rico only)
  - c) Bottom of the lowest horizontal structural member (V Zones only) \_\_\_\_\_ ☐ feet ☐ meters (Puerto Rico only)
  - d) Attached garage (top of slab) \_\_\_\_\_ ☐ feet ☐ meters (Puerto Rico only)
  - e) Lowest elevation of machinery or equipment servicing the building (Describe type of equipment and location in Comments) \_\_\_\_\_ ☐ feet ☐ meters (Puerto Rico only)
  - f) Lowest adjacent (finished) grade next to building (LAG) \_\_\_\_\_ ☐ feet ☐ meters (Puerto Rico only)
  - g) Highest adjacent (finished) grade next to building (HAG) \_\_\_\_\_ ☐ feet ☐ meters (Puerto Rico only)
  - h) Lowest adjacent grade at lowest elevation of deck or stairs, including structural support \_\_\_\_\_ ☐ feet ☐ meters (Puerto Rico only)

## SECTION D - SURVEYOR, ENGINEER, OR ARCHITECT CERTIFICATION

This certification is to be signed and sealed by a land surveyor, engineer, or architect authorized by law to certify elevation information. I certify that the information on this Certificate represents my best efforts to interpret the data available. I understand that any false statement may be punishable by fine or imprisonment under 18 U.S. Code, Section 1001. ☐

Check here if comments are provided on back of form. Were latitude and longitude in Section A provided by a licensed land surveyor? ☐ Yes ☐ No

Certifier's Name		License Number	
Title	Company Name		
Address	City	State	ZIP Code
Signature	Date	Telephone	

PLACE  
SEAL  
HERE

**IMPORTANT: In these spaces, copy the corresponding information from Section A.**

Building Street Address (including Apt., Unit, Suite, and/or Bldg. No.) or P.O. Route and Box No.

City State ZIP Code

For Insurance Company Use
Policy Number
Company NAIC Number

**SECTION D - SURVEYOR, ENGINEER, OR ARCHITECT CERTIFICATION (CONTINUED)**

Copy both sides of this Elevation Certificate for (1) community official, (2) insurance agent/company, and (3) building owner.

Comments

Signature

Date

☐ Check here if attachments

**SECTION E - BUILDING ELEVATION INFORMATION (SURVEY NOT REQUIRED) FOR ZONE AO AND ZONE A (WITHOUT BFE)**

For Zones AO and A (without BFE), complete Items E1-E5. If the Certificate is intended to support a LOMA or LOMR-F request, complete Sections A, B, and C. For Items E1-E4, use natural grade, if available. Check the measurement used. In Puerto Rico only, enter meters.

E1. Provide elevation information for the following and check the appropriate boxes to show whether the elevation is above or below the highest adjacent grade (HAG) and the lowest adjacent grade (LAG).

a) Top of bottom floor (including basement, crawlspace, or enclosure) is \_\_\_\_\_ ☐ feet ☐ meters ☐ above or ☐ below the HAG.  
b) Top of bottom floor (including basement, crawlspace, or enclosure) is \_\_\_\_\_ ☐ feet ☐ meters ☐ above or ☐ below the LAG.

E2. For Building Diagrams 6-9 with permanent flood openings provided in Section A Items 8 and/or 9 (see pages 8-9 of Instructions), the next higher floor (elevation C2.b in the diagrams) of the building is \_\_\_\_\_ ☐ feet ☐ meters ☐ above or ☐ below the HAG.

E3. Attached garage (top of slab) is \_\_\_\_\_ ☐ feet ☐ meters ☐ above or ☐ below the HAG.

E4. Top of platform of machinery and/or equipment servicing the building is \_\_\_\_\_ ☐ feet ☐ meters ☐ above or ☐ below the HAG.

E5. Zone AO only: If no flood depth number is available, is the top of the bottom floor elevated in accordance with the community's floodplain management ordinance? ☐ Yes ☐ No ☐ Unknown. The local official must certify this information in Section G.

**SECTION F - PROPERTY OWNER (OR OWNER'S REPRESENTATIVE) CERTIFICATION**

The property owner or owner's authorized representative who completes Sections A, B, and E for Zone A (without a FEMA-issued or community-issued BFE) or Zone AO must sign here. *The statements in Sections A, B, and E are correct to the best of my knowledge.*

Property Owner's or Owner's Authorized Representative's Name

Address

City

State

ZIP Code

Signature

Date

Telephone

Comments

☐ Check here if attachments

**SECTION G - COMMUNITY INFORMATION (OPTIONAL)**

The local official who is authorized by law or ordinance to administer the community's floodplain management ordinance can complete Sections A, B, C (or E), and G of this Elevation Certificate. Complete the applicable item(s) and sign below. Check the measurement used in Items G8 and G9.

G1. ☐ The information in Section C was taken from other documentation that has been signed and sealed by a licensed surveyor, engineer, or architect who is authorized by law to certify elevation information. (Indicate the source and date of the elevation data in the Comments area below.)

G2. ☐ A community official completed Section E for a building located in Zone A (without a FEMA-issued or community-issued BFE) or Zone AO.

G3. ☐ The following information (Items G4-G9) is provided for community floodplain management purposes.

G4. Permit Number	G5. Date Permit Issued	G6. Date Certificate Of Compliance/Occupancy Issued
-------------------	------------------------	---

G7. This permit has been issued for: ☐ New Construction ☐ Substantial Improvement

G8. Elevation of as-built lowest floor (including basement) of the building: \_\_\_\_\_ ☐ feet ☐ meters (PR) Datum \_\_\_\_\_

G9. BFE or (in Zone AO) depth of flooding at the building site: \_\_\_\_\_ ☐ feet ☐ meters (PR) Datum \_\_\_\_\_

G10. Community's design flood elevation \_\_\_\_\_ ☐ feet ☐ meters (PR) Datum \_\_\_\_\_

Local Official's Name

Title

Community Name

Telephone

Signature

Date

Comments

☐ Check here if attachments

## Building Photographs

See Instructions for Item A6.

Building Street Address (including Apt., Unit, Suite, and/or Bldg. No.) or P.O. Route and Box No.			For Insurance Company Use	
			Policy Number	
City	State	ZIP Code	Company NAIC Number	
If using the Elevation Certificate to obtain NFIP flood insurance, affix at least two building photographs below according to the instructions for Item A6. Identify all photographs with: date taken; "Front View" and "Rear View"; and, if required, "Right Side View" and "Left Side View." If submitting more photographs than will fit on this page, use the Continuation Page, following.				