



# Truro Planning Board Agenda

## Remote Public Meeting – Work Session

Wednesday, August 11, 2021 – 5:00 pm

[www.truro-ma.gov](http://www.truro-ma.gov)

### Open Meeting

**Remote Meeting Access Instructions:** Citizens can join the meeting to listen by entering the meeting link; clicking on the Agenda's highlighted link; clicking on the meeting date in the Event Calendar; or by calling in toll free at **1-866-899-4679** and entering the access code **167-227-005#** when prompted. Citizens will be muted upon entering the meeting.

Meeting link: <https://global.gotomeeting.com/join/167227005>

1. Planner Report
2. Chair Report
3. Potential Bylaws for 2022 ATM

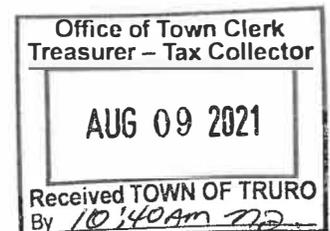
### **WORK SESSION: Environment/Climate Change:**

- 1) Responding to impact of climate change on coastal areas
  - a) Dune Areas – Discussion with Bob Higgins-Steele and Fred Gaechter – Climate Action Committee
    - i) Identify major questions/concerns
    - ii) Best practices for building/rebuilding/moving buildings on coastal dunes/bluffs – full basement, slab, pilings
    - iii) When house is moved – what should happen to old foundation/slab/septic
    - iv) What are good resources (CCC – Climate Action Plan, APCC, other)
  - b) Flood Plane
    - i) Required Floodplain Bylaw Discussion
      - (1) Barnstable County model bylaw – Truro needs to adopt and pass bylaw to be eligible for certain funding
      - (2) Information resources/sources (FEMA)

### 4. Continue ANR and Site Plan Review Discussion

**Next Meeting** – Wednesday, August 18, 2021, at 5:00 pm

### **Adjourn**





## **DRAFT TIMELINE FOR TOWN WARRANT ARTICLES**

### **ATM**

- Town Meeting will be held the last Tuesday of April (2-1-2)
- Warrant opened 90 days before Annual Town Meeting (Truro Town Charter Chapter 2 Section 1: 2-3-4)
- Warrant closed after 30 days (Charter 2-3-4)
- Warrant articles from Town Boards can be added after that date

### **SPECIAL TOWN MEETING**

- Select Board determines dates warrant opens/closes (Charter 2-3-4)

### **2022 DATES**

- Tuesday April 26, 2022 – Annual Town Meeting
- Wednesday January 26, 2022 – Warrant Opens
- Friday February 25, 2022 – Warrant Closes
- January 3 – February 16, 2022 – Window for final Public Hearing

### **GENERAL INFORMATION AND SUGGESTIONS FOR TIMING**

- Notice for Public Hearing of Potential Bylaw Change must be advertised in newspaper for 2 successive weeks prior to meeting. In effect, Public Hearing must be scheduled at least 3 weeks in advance.
- Best not to hold public hearing in between mid-December and first Monday in January (after January 1) due to vacations and holidays.
- Planning Board can solicit community input through community forums, etc., that don't require same advance notice as public hearing but must also hold public hearing prior to voting on potential warrant article.



# Climate Action Plan

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C A P E C O D



## PROMOTE EFFICIENT DEVELOPMENT PATTERNS THROUGH LAND USE POLICIES THAT PROTECT THE NATURE AND CHARACTER OF THE REGION

The development patterns of the latter half of the twentieth century have resulted in spread out development that requires more clearing of land for infrastructure and the development itself and a reliance on cars to get from one place to another. The transportation sector is the largest single GHG emitting sector for the region, in large part because of the pervasive suburban development patterns. Focusing growth into areas with a mix of uses and compact forms will allow greater walkability, reducing the region's reliance on cars and thus reducing GHG emissions. This strategy also helps to protect the sensitive natural resources of our region, which can help to further reduce GHG emissions through carbon sequestration.

- **Encourage a mix of land uses where possible** – Towns can work to change zoning in core areas in their communities to allow for a mix of land uses in a single area. Allowing for a mix of uses

in specific areas can increase the use of alternative modes of transportation, reducing the need to travel by car. The Commission can provide technical assistance to towns for specific zoning changes and amendments.

- **Promote infill and adaptive reuse** – Developing or redeveloping in already developed areas minimizes the clearing of vegetation, protecting those natural resources. Utilizing existing infrastructure and buildings can save energy and reduce emissions related to the production of new materials, infrastructure, and buildings. The Commission can help

promote infill and adaptive reuse through technical assistance to towns, including changes to zoning that promote infill and reuse in appropriate areas.

- **Focus growth in Activity Centers** – Towns and the Commission can work together to focus growth in Activity Centers—areas with existing development that have the potential for greater redevelopment. Focusing growth in these specific areas will concentrate growth, promote more compact forms of development and hence more efficient land use, and will protect the natural and sensitive resources of our region.





## ADDRESS VULNERABILITIES IN PUBLIC INFRASTRUCTURE AND IN THE ROAD NETWORK, INCLUDING ADAPTING CRITICAL TRANSPORTATION INFRASTRUCTURE FOR CLIMATE CHANGE IMPACTS

Decades of development, especially over the last century, have resulted in the development or expansion of roadways and other infrastructure in areas that are increasingly vulnerable to flooding and erosion. Roadways, culverts, bridges, and utilities, many of which were built at a time when the Cape's population and demands on infrastructure were less, are now facing flood threats or were inadequately designed to accommodate the realities of sea level rise or higher intensity storms.

- **Explore remedies to state regulatory barriers that delay or prevent solutions to resiliency problems –**

Towns and others are finding difficulties and delays in permitting solutions to address some of the vulnerabilities they face along the shoreline. A step needed to advance projects that protect infrastructure and other public assets is streamlining the permitting process

for certain types of projects, but without compromising the integrity of the Commonwealth's environmental laws. Assessing and examining the regulatory barriers to certain public infrastructure projects is an important first step.

- **Assess and correct vulnerabilities in utility infrastructure –** Electricity delivery, wastewater conveyance, and other utilities are threatened by flooding, wildfire, and storms. Steps should be taken to install underground utilities for all new construction and as streets are opened for other construction needs. Assessments are needed at the municipal level to determine the nature and the level of risk that utilities face.

- **Conduct vulnerability assessments of municipal facilities and carry out recommendations –** Community shelters, public safety buildings, and other critical facilities may be located in harm's way, and assessments are needed

to prioritize action. Understanding what facilities are threatened in what time frame also requires projections of sea level rise and landward extent under different climate scenarios. Towns should continue to keep their hazard mitigation plans current, and take steps to address the recommended actions within those plans.

- **Improve stormwater management through culvert retrofits and other stormwater best management practices –** Moving water off roadways is a critical component to keeping roadways safe; steps to address this action include updating stormwater management design protocols to address higher rain volumes, and coordinating with MassDOT on state roadway projects and to resolve areas of overlapping authority.

- **Assess low-lying and key roads and elevate, relocate, or abandon as appropriate –** Many roadway segments

across the region already experience flooding during extreme high tides and storm events. Town staff are likely familiar with these problem areas, but assessment and prioritization of the roadway segments most at risk over the near term, as well as assessment of the roadway criticality for transportation, is needed across the Cape. Following these assessments, community discussions about the best approach for each road segment are needed, including elevation, relocation, culvert replacements, bridges, or in some cases, abandonment.

In addition, an examination of the vulnerability of regional roadways to storm threats, including from overhead transmission lines, is needed. Often low-lying roadways, especially those associated with undersized culverts, can be opportunities for implementing nature-based solutions that can restore wetland habitats.

- **Evaluate and address evacuation route vulnerabilities and disconnected areas** – When regional roadways and local roads flood, emergency access and egress to the flooded areas can become difficult. Assessment of evacuation and emergency response routes are needed to ensure safety during flooding events and other climate-related disasters.





## IDENTIFY APPROACHES TO MANAGING DEVELOPMENT IN COASTAL RESOURCE AREAS REGION-WIDE

Part of what defines Cape Cod is the region's beaches and coastline. Because of their draw, and people's desire to live near the water, there is a significant amount of development along our coast. Rising sea levels, intensifying storms, and coastal erosion put development in our coastal resource areas at risk of substantial damage. The proliferation of development in these sensitive ecological areas also threatens ecosystems that are not only critical for our environment but our economy as well. Identifying approaches to managing development in coastal resource areas can help mitigate damages to the buildings and infrastructure and protect the area's natural resources and systems.

- **Draft and adopt floodplain bylaws to address development and redevelopment in vulnerable areas**

– Towns, the Commission and Cape Cod Cooperative Extension, and other research organizations can work

together to develop model bylaws to limit development in vulnerable areas, identify best practices for redeveloping in vulnerable areas, and identify appropriate strategies for conservation commissions and other town boards to take to remediate erosion and/or flooding that may impact vulnerable properties. While many of the implementing factors will be site-specific, compiling best practices or preferred strategies will help conservation commissions to take appropriate action. Additionally, identifying best practices will help foster more consistent action from towns across the region in response to protecting vulnerable properties from erosion and/or flooding. Included in the model bylaws may be methods for reducing new development in vulnerable areas as well as ways to protect public access to the coast.

- **Develop regional sediment management plans**

– Coastal sediment transport is part of a natural system that does not know town boundaries.

Consequently, when management is needed, decisions should consider the natural forces that erode and rearrange sand along the shore. Understanding the sources and sinks of sediment that move seasonally along the Cape Cod shoreline should improve the ability of coastal resource managers to target resource management activities. Developing regional sediment management plans will help assess potential impacts to shorelines and vulnerable properties. Regional sediment management planning will enable more efficient use of resources and the design of coastal management approaches, such as nature-based solutions.

- **Protect properties using green or nature-based solutions**

– As both private and public coastal property owners look to protect their land and buildings, the use of green infrastructure or nature-based solutions should be encouraged. Nature-based solutions can have co-benefits such as providing



needed habitat, supporting critical ecosystems, and potentially sequestering carbon. Towns and the County can work to provide more education on green or nature-based solutions to ensure more property owners are aware of them and understand the benefits of implementing such projects.

- **Explore buy-out possibilities and “undevelop” with willing owners –** Towns and the State can work together to investigate the feasibility of buy-out programs in certain areas or communities. A buy-out program is one in which the government will buy vulnerable properties, allowing those owners to purchase property somewhere else and

reducing the amount of development at risk in a community or area. Once the property is owned by the local or state government, it can be “undeveloped,” meaning buildings and infrastructure are removed and the property is allowed to return to its natural state.





## ADDRESS VULNERABLE BUILDINGS AND STRUCTURES THREATENED BY FLOODING AND EROSION THROUGH RETROFITS AND RELOCATION

This strategy considers the need to reduce the vulnerability of homes, businesses, and infrastructure to the threats posed by climate hazards (specifically flooding and coastal erosion). Thousands of homes and structures are threatened by accelerating erosion along the region's coastlines; many thousands more are threatened by flooding. The Cape community needs to carefully examine the nature of the threats and identify those structures and homes most vulnerable to flooding and erosion. Prominent or expensive properties located along the shoreline often receive attention or headlines during permitting for shoreline structures, or when undermined by coastal storms. Many other, and more modest structures, are at risk of significant damage from flooding, and need to be folded into the region's priority strategies to address threatened property. For historic or iconic neighborhoods, it will be important to carefully determine whether relocation, elevation, or accommodation is the correct approach.

■ **Move buildings and infrastructure out of the floodplain** – This action will need many different approaches to achieve the goal of improving the resilience of the built environment. Steps identified include assessing where the most vulnerable locations are and the buildings and structures under the greatest threat, and developing a plan for relocating certain structures. Not all buildings or structures are suitable for relocation, but where there are iconic (historic) structures or even neighborhoods that should be preserved because of their value to the community, towns should identify and set aside potential areas for them. Other properties, where owners are willing, may be more appropriate for buy-out programs. Limited resources are available for buy-outs of coastal properties, so communities should identify criteria for prioritizing strategic use of public funds to buy-out private homes or businesses.

■ **Floodproof or retrofit buildings to withstand flooding** – Many buildings in the floodplain may be protected from the worst effects of potential flood damage through floodproofing measures. Steps include building retrofits that help a structure withstand flood forces by allowing flood waters to pass through non-habitable portions of the building. Other measures may include installation of break-away walls or moving utilities and HVAC systems to upper levels of a building.

■ **Elevate buildings** – Some buildings in the floodplain may be suitable for elevation, which may provide an effective means for protecting a home or business. Due to the expense, this may not be a universally available measure; additionally, elevation of structures will change the character of a neighborhood, potentially blocking views. Important steps for communities to help manage the desire to elevate structures include the adoption of bylaws and regulations that help guide the form and design of elevated buildings.



# Massachusetts 2020 Model Floodplain Bylaws

Shannon's comments:

- I've highlighted everything the Town of Truro needs to add in yellow, and made comments on what already exists and what could be modified.
- Sections 30.5(C)(1), 30.5(C)(7)(a), and 30.5(C)(7)(c) are covered in the building code. You may want to remove them and instead include a reference to enforcing the building code (780 CMR) so that the town doesn't end up in violation of the building code.

## 1. Stated local purpose for flood resistant standards

The purpose of the Floodplain Overlay District is to:

- 1) Ensure public safety through reducing the threats to life and personal injury
- 2) Eliminate new hazards to emergency response officials
- 3) Prevent the occurrence of public emergencies resulting from water quality, contamination, and pollution due to flooding
- 4) Avoid the loss of utility services which if damaged by flooding would disrupt or shut down the utility network and impact regions of the community beyond the site of flooding
- 5) Eliminate costs associated with the response and cleanup of flooding conditions
- 6) Reduce damage to public and private property resulting from flooding waters

## 2. Use of FEMA maps and supporting studies

**A community must select the appropriate option as follows:**

### *A. Bylaw text for communities with "Community-Based" FIRMs, FBFM and FIS*

The Floodplain District is herein established as an overlay district. The District includes all special flood hazard areas designated on the [Town or City]'s Flood Insurance Rate Map (FIRM) issued by the Federal Emergency Management Agency for the administration of the National Flood Insurance Program, dated [effective map dates on FIRM] and on the Flood Boundary & Floodway Map (if applicable) dated [FBFM effective date.] These maps indicate the 1%-chance regulatory floodplain. The exact boundaries of the District shall be defined by the 1%-chance base flood elevations shown on the FIRM and further defined by the Flood Insurance

Study (FIS) report dated [FIS date.] The effective FIRM, FBFM, and FIS report are incorporated herein by reference and are on file with the Town Clerk, Planning Board, Building Official, Conservation Commission and [other.]

**OR**

*B. Bylaw text for communities with “Countywide” FIRMs and FIS*

The Floodplain District is herein established as an overlay district. The District includes all special flood hazard areas within [Community Name] designated as Zone A, AE, AH, AO, A99, V, or VE on the [County Name] Flood Insurance Rate Map (FIRM) dated [FIRM date] issued by the Federal Emergency Management Agency (FEMA) for the administration of the National Flood Insurance Program. The exact boundaries of the District shall be defined by the 1%-chance base flood elevations shown on the FIRM and further defined by the [County Name] Flood Insurance Study (FIS) report dated [FIS date]. The FIRM and FIS report are incorporated herein by reference and are on file with the Town Clerk, Planning Board, Building Official, Conservation Commission and [other].

**3. Abrogation and greater restriction section**

The floodplain management regulations found in this Floodplain Overlay District section shall take precedence over any less restrictive conflicting local laws, ordinances or codes.

**4. Disclaimer of liability**

The degree of flood protection required by this bylaw [ordinance] is considered reasonable but does not imply total flood protection.

**5. Severability section**

If any section, provision or portion of this bylaw [ordinance] is deemed to be unconstitutional or invalid by a court, the remainder of the ordinance shall be effective.

**6. Designation of community Floodplain Administrator**

The Town/City of \_\_\_\_\_ hereby designates the position of \_\_\_\_\_ to be the official floodplain administrator for the Town/City.

#### 7. Requirement to submit new technical data

If the Town/City acquires data that changes the base flood elevation in the FEMA mapped Special Flood Hazard Areas, the Town/City will, within 6 months, notify FEMA of these changes by submitting the technical or scientific data that supports the change(s.) Notification shall be submitted to:

FEMA Region I Risk Analysis Branch Chief  
99 High St., 6<sup>th</sup> floor, Boston, MA 02110

And copy of notification to:

Massachusetts NFIP State Coordinator  
MA Dept. of Conservation & Recreation, 251 Causeway Street, Boston, MA 02114

#### 8. Variances to building code floodplain standards

CHOOSE THE APPROPRIATE OPTION:

*A. If the State issues variances to the flood-resistant standards as found in the state building code, the community will use this text for local adoption:*

The Town/City will request from the State Building Code Appeals Board a written and/or audible copy of the portion of the hearing related to the variance, and will maintain this record in the community's files.

The Town/City shall also issue a letter to the property owner regarding potential impacts to the annual premiums for the flood insurance policy covering that property, in writing over the signature of a community official that (i) the issuance of a variance to construct a structure below the base flood level will result in increased premium rates for flood insurance up to amounts as high as \$25 for \$100 of insurance coverage and (ii) such construction below the base flood level increases risks to life and property.

Such notification shall be maintained with the record of all variance actions for the referenced development in the floodplain overlay district.

*B. Certain communities have the authority to issue variances to the state building code. If your community has this authority from the BBRS, you will use this text for local adoption:*

Variances to floodplain development regulations shall only be issued upon (i) a showing of good and sufficient cause, (ii) a determination that failure to grant the variance would result in exceptional hardship to the applicant, and (iii) a determination that the granting of a variance will not result in increased flood heights, additional threats to public safety, extraordinary public expense, create nuisances, cause fraud on or victimization of the public, or conflict with existing local laws or ordinances.

A written justification for the variance will be maintained in the Town's/City's building permit files, delineating the technical reason for the variance, and stating that the variance is the minimum necessary (considering the flood hazard) to afford relief.

The Town/City shall also issue a letter to the property owner regarding potential impacts to the annual premiums for the flood insurance policy covering that property, in writing over the signature of a community official that (i) the issuance of a variance to construct a structure below the base flood level will result in increased premium rates for flood insurance up to amounts as high as \$25 for \$100 of insurance coverage and (ii) such construction below the base flood level increases risks to life and property.

Such notification shall be maintained with the record of all variance actions for the referenced development in the floodplain overlay district.

#### 9. Variances to local Zoning Bylaws related to community compliance with the National Flood Insurance Program (NFIP)

A variance from these floodplain bylaws must meet the requirements set out by State law, and may only be granted if: 1) Good and sufficient cause and exceptional non-financial hardship exist; 2) the variance will not result in additional threats to public safety, extraordinary public expense, or fraud or victimization of the public; and 3) the variance is the minimum action necessary to afford relief.

#### 10. Permits are required for all proposed development in the Floodplain Overlay District

The Town/City of \_\_\_\_\_ requires a permit for all proposed construction or other development in the floodplain overlay district, including new construction or changes to existing buildings, placement of manufactured homes, placement of agricultural facilities, fences, sheds, storage facilities or drilling, mining, paving and any other development that might increase flooding or adversely impact flood risks to other properties.

#### 11. Assure that all necessary permits are obtained

(Town/City) \_\_\_\_\_'s permit review process includes the use of a checklist of all local, state and federal permits that will be necessary in order to carry out the proposed development in the floodplain overlay district. The proponent must acquire all necessary permits, and must submit the completed checklist demonstrating that all necessary permits have been acquired.

#### 12. Subdivision proposals

All subdivision proposals and development proposals in the floodplain overlay district shall be reviewed to assure that:

- (a) Such proposals minimize flood damage.
- (b) Public utilities and facilities are located & constructed so as to minimize flood damage.
- (c) Adequate drainage is provided.

#### 13. Base flood elevation data for subdivision proposals

When proposing subdivisions or other developments greater than 50 lots or 5 acres (whichever is less), the proponent must provide technical data to determine base flood elevations for each developable parcel shown on the design plans.

#### 14. Unnumbered A Zones

In A Zones, in the absence of FEMA BFE data and floodway data, the building department will obtain, review and reasonably utilize base flood elevation and floodway data available from a Federal, State, or other source as criteria for requiring new construction, substantial improvements, or other development in Zone A as the

basis for elevating residential structures to or above base flood level, for floodproofing or elevating nonresidential structures to or above base flood level, and for prohibiting encroachments in floodways.

#### 15. Floodway encroachment

In Zones A, A1-30, and AE, along watercourses that have not had a regulatory floodway designated, the best available Federal, State, local, or other floodway data shall be used to prohibit encroachments in floodways which would result in any increase in flood levels within the community during the occurrence of the base flood discharge.

In Zones A1-30 and AE, along watercourses that have a regulatory floodway designated on the Town's/City's FIRM or Flood Boundary & Floodway Map (choose map which delineates floodways for your community) encroachments are prohibited in the regulatory floodway which would result in any increase in flood levels within the community during the occurrence of the base flood discharge.

#### 16. Watercourse alterations or relocations in riverine areas

In a riverine situation, the \_\_\_\_\_ (appropriate official in community) shall notify the following of any alteration or relocation of a watercourse:

- Adjacent Communities, especially upstream and downstream
- Bordering States, if affected
- NFIP State Coordinator  
Massachusetts Department of Conservation and Recreation  
251 Causeway Street, 8<sup>th</sup> floor  
Boston, MA 02114
- NFIP Program Specialist  
Federal Emergency Management Agency, Region I  
99 High Street, 6th Floor  
Boston, MA 02110

#### 17. AO and AH zones drainage requirements

Within Zones AO and AH on the FIRM, adequate drainage paths must be provided around structures on slopes, to guide floodwaters around and away from proposed structures.

## 18. Recreational vehicles

In A1-30, AH, AE Zones, V1-30, VE, and V Zones, all recreational vehicles to be placed on a site must be elevated and anchored in accordance with the zone's regulations for foundation and elevation requirements or be on the site for less than 180 consecutive days or be fully licensed and highway ready.

## 19. Protection of dunes

Alteration of sand dunes is prohibited when the alteration would increase potential flood damage.

## 20. Local Enforcement

**This is not sample bylaw text, but rather an instruction:**

*Please read the explanation in Section 4 about the importance of being able to point to specific local enforcement procedures for non-compliant floodplain development.*

### Section 3. Definitions not found in the State Building Code

National Flood Insurance Program (NFIP) definitions are found in Title 44 of the Code of Federal Regulations, section 59.1. The definitions below refer to their source; if the definition is from the MA building code, it is from the 9<sup>th</sup> Edition, which meets the minimum standards of the NFIP.

In order for the bylaw or ordinance to be clearly understood, it is necessary to define technical terms or key words. An understanding of these terms is a prerequisite to effective administration of the floodplain management bylaw or ordinance.

***Per FEMA Region I, these additional definitions must be included in local bylaws or ordinances.***

**DEVELOPMENT** means any man-made change to improved or unimproved real estate, including but not limited to building or other structures, mining, dredging, filling, grading, paving, excavation or drilling operations or storage of equipment or materials. [US Code of Federal Regulations, Title 44, Part 59]

**FLOOD BOUNDARY AND FLOODWAY MAP** means an official map of a community issued by FEMA that depicts, based on detailed analyses, the boundaries of the 100-year and 500-year floods and the 100-year floodway. (For maps done in 1987 and later, the floodway designation is included on the FIRM.)

**FLOOD HAZARD BOUNDARY MAP (FHBM.)** An official map of a community issued by the Federal Insurance Administrator, where the boundaries of the flood and related erosion areas having special hazards have been designated as Zone A or E. [US Code of Federal Regulations, Title 44, Part 59]

**FLOODWAY.** The channel of the river, creek or other watercourse and the adjacent land areas that must be reserved in order to discharge the base flood without cumulatively increasing the water surface elevation more than a designated height. [Base Code, Chapter 2, Section 202]

**FUNCTIONALLY DEPENDENT USE** means a use which cannot perform its intended purpose unless it is located or carried out in close proximity to water. The term includes only docking facilities, port facilities that are necessary for the loading and unloading of cargo or passengers, and ship building and ship repair facilities, but does not include long-term storage or related manufacturing facilities. [US Code of Federal Regulations, Title 44, Part 59] Also [Referenced Standard ASCE 24-14]

**HIGHEST ADJACENT GRADE** means the highest natural elevation of the ground surface prior to construction next to the proposed walls of a structure. [US Code of Federal Regulations, Title 44, Part 59]

**HISTORIC STRUCTURE** means any structure that is:

- (a) Listed individually in the National Register of Historic Places (a listing maintained by the Department of Interior) or preliminarily determined by the Secretary of the Interior as meeting the requirements for individual listing on the National Register;
- (b) Certified or preliminarily determined by the Secretary of the Interior as contributing to the historical significance of a registered historic district or a district preliminarily determined by the Secretary to qualify as a registered historic district;
- (c) Individually listed on a state inventory of historic places in states with historic preservation programs which have been approved by the Secretary of the Interior; or
- (d) Individually listed on a local inventory of historic places in communities with historic preservation programs that have been certified either:

(1) By an approved state program as determined by the Secretary of the Interior or

(2) Directly by the Secretary of the Interior in states without approved programs.

[US Code of Federal Regulations, Title 44, Part 59]

**NEW CONSTRUCTION**. Structures for which the start of construction commenced on or after the effective date of the first floodplain management code, regulation, ordinance, or standard adopted by the authority having jurisdiction, including any subsequent improvements to such structures. *New construction includes work determined to be substantial improvement.* [Referenced Standard ASCE 24-14]

**RECREATIONAL VEHICLE** means a vehicle which is:

(a) Built on a single chassis;

(b) 400 square feet or less when measured at the largest horizontal projection;

(c) Designed to be self-propelled or permanently towable by a light duty truck; and

(d) Designed primarily not for use as a permanent dwelling but as temporary living quarters for recreational, camping, travel, or seasonal use.

[US Code of Federal Regulations, Title 44, Part 59]

**REGULATORY FLOODWAY** - see FLOODWAY.

**SPECIAL FLOOD HAZARD AREA**. The land area subject to flood hazards and shown on a Flood Insurance Rate Map or other flood hazard map as Zone A, AE, A1-30, A99, AR, AO, AH, V, VO, VE or V1-30. [Base Code, Chapter 2, Section 202]

**START OF CONSTRUCTION**. The date of issuance for new construction and substantial improvements to existing structures, provided the actual start of construction, repair, reconstruction, rehabilitation, addition, placement or other improvement is within 180 days after the date of issuance. The actual start of construction means the first placement of permanent construction of a building (including a manufactured home) on a site, such as the pouring of a slab or footings, installation of pilings or construction of columns.

Permanent construction does not include land preparation (such as clearing, excavation, grading or filling), the installation of streets or walkways, excavation for a basement, footings, piers or foundations, the erection of temporary forms or the installation of accessory buildings such as garages or sheds not occupied as dwelling

units or not part of the main building. For a substantial improvement, the actual “start of construction” means the first alteration of any wall, ceiling, floor or other structural part of a building, whether or not that alteration affects the external dimensions of the building. [Base Code, Chapter 2, Section 202]

**STRUCTURE** means, for floodplain management purposes, a walled and roofed building, including a gas or liquid storage tank, that is principally above ground, as well as a manufactured home. [US Code of Federal Regulations, Title 44, Part 59]

**SUBSTANTIAL REPAIR OF A FOUNDATION**. When work to repair or replace a foundation results in the repair or replacement of a portion of the foundation with a perimeter along the base of the foundation that equals or exceeds 50% of the perimeter of the base of the foundation measured in linear feet, or repair or replacement of 50% of the piles, columns or piers of a pile, column or pier supported foundation, the building official shall determine it to be substantial repair of a foundation. Applications determined by the building official to constitute substantial repair of a foundation shall require all existing portions of the entire building or structure to meet the requirements of 780 CMR. [As amended by MA in 9th Edition BC]

**VARIANCE** means a grant of relief by a community from the terms of a flood plain management regulation. [US Code of Federal Regulations, Title 44, Part 59]

**VIOLATION** means the failure of a structure or other development to be fully compliant with the community's flood plain management regulations. A structure or other development without the elevation certificate, other certifications, or other evidence of compliance required in §60.3(b)(5), (c)(4), (c)(10), (d)(3), (e)(2), (e)(4), or (e)(5) is presumed to be in violation until such time as that documentation is provided. [US Code of Federal Regulations, Title 44, Part 59]

ZONES, FLOOD – *These definitions do not need to be included in local bylaws.*

## Definitions of Flood Zones

*The community shall use the pertinent definitions for flood zones delineated within the community. All of these terms are defined in the US Code of Federal Regulations, Title 44, Part 64.3.*

**ZONE A** means an area of special flood hazard without water surface elevations determined

**ZONE A1-30** and **ZONE AE** means area of special flood hazard with water surface elevations determined

**ZONE AH** means areas of special flood hazards having shallow water depths and/or unpredictable flow paths between (1) and (3) feet, and with water surface elevations determined

**ZONE AO** means area of special flood hazards having shallow water depths and/or unpredictable flow paths between (1) and (3) ft. (*Velocity flow may be evident; such flooding is characterized by ponding or sheet flow.*)

**ZONE A99** means area of special flood hazard where enough progress has been made on a protective system, such as dikes, dams, and levees, to consider it complete for insurance rating purposes. (Flood elevations may not be determined.)

**ZONES B, C, AND X** means areas of minimal or moderate flood hazards or areas of future-conditions flood hazard. (*Zone X replaces Zones B and C on new and revised maps.*)

**ZONE V** means area of special flood hazards without water surface elevations determined, and with velocity, that is inundated by tidal floods (coastal high hazard area)

**ZONE V1-30** and **ZONE VE** (*for new and revised maps*) means area of special flood hazards, with water surface elevations determined and with velocity, that is inundated by tidal floods (coastal high hazard area)

## Section 4. Explanations

The requirements of the NFIP can be found in the US Code of Federal Regulations, Title 44 Emergency Management, generally in sections 59 through 75, although the requirements that most specifically address development in the floodplain are found in section 60.3. The highlighted bold italic type below states the requirement as found in the federal code and is followed by the code citation.

### 1. Stated local purpose for flood resistant standards

To justify the community's reasoning behind local floodplain overlay district zoning bylaws, the NFIP requires:

***A purpose section citing health, safety, and welfare reasons for adoption [44 CFR 59.22(a)(1)]***

The statement of purpose should set forth the goals and objectives to be achieved through the bylaw or ordinance. In other words, the statement of purpose enumerates what the community intends to accomplish by enacting regulations. The underlying purpose of the floodplain management regulations is to protect the public health, safety, and general welfare and to minimize the harmful impacts of flooding upon the community

These stated purposes will be ever more critical as community liabilities increase due to climate changes and increased flooding/ flood damages. The community is responsible to assure that all development is implemented in a safe, healthy, and socially/economically acceptable manner.

### 2. Use of FEMA maps and supporting studies

For local adoption of current effective FEMA flood maps and Flood Insurance Studies (FIS), the NFIP requirements state:

***Adopt or reference correct Flood Insurance Rate Map (and where applicable, Flood Boundary Floodway Map) and date. [44CFR 60.2(h)]***

and

***Adopt or reference correct Flood Insurance Study and date. [44CFR 60.2(h)]***

FEMA guidance (publication #495) states:

*“The basis of your community’s floodplain management regulations is the flood hazard data FEMA provides. In support of the NFIP, FEMA identifies flood hazards nationwide and publishes and periodically updates flood hazard data. These data are provided to communities in the form of a Flood Insurance Rate Map (FIRM) and Flood Insurance Study (FIS) report...”*

and *“Each time FEMA provides your community with new or revised flood hazard data, you must either adopt new floodplain management regulations to incorporate the data into your ordinance or amend the existing ones to reference the new FIRM and FIS report.”*

*Communities that fail to enact the necessary floodplain management regulations will be suspended from participation in the NFIP and subject to the prohibitions contained in Section 202(a) of the 1973 Act as amended. (Text from actual FEMA Letter of Final Determination.)*

### 3. Abrogation and greater restriction section

***The community must provide that floodplain management regulations take precedence over any less restrictive conflicting local laws, ordinances or codes. [44CFR 60.1(b)]***

This is a legal provision that specifies that the floodplain management bylaw, ordinance, regulations, and building codes take precedence over less restrictive requirements.

### 4. Disclaimer of liability

The community must state that the degree of flood protection required by the ordinance is considered reasonable but does not imply total flood protection.

### 5. Severability section

If any section, provision or portion of the ordinance is deemed unconstitutional or invalid by a court, the remainder of the ordinance shall still be effective.

## 6. Designation of community Floodplain Administrator

***Designate the official responsible to submit a report to the Federal Insurance Administrator concerning the community participation in the Program, including, but not limited to the development and implementation of floodplain management regulations. [44CFR 59.22 (b)]***

The community must designate by title one person to act as the community's floodplain administrator (sometimes referred to as the FPA.). This is so that FEMA can use this information in their local contacts database, and so that this person can act on behalf of the community when implementing certain tasks under the National Flood Insurance Program. For example, the local FPA would sign the Community Acknowledgement Form when a property owner wishes to file for a Letter of Map Revision (LOMR).

The designation refers to a local staff position and can be anyone with the local authority to assure that the community is meeting its obligations as a participant in the National Flood Insurance Program. The FPA does not need to be someone who is directly involved in local development, but it should be someone who has at least a general concept of NFIP requirements and of the community's obligations under the Program. Typically, across the nation the FPA can be a building commissioner, town manager, town engineer, director of planning, environmental planner, etc.

Typical duties of an FPA include but are not limited to:

- a) Understanding the regulations for development in the floodplain overlay district
- b) Ensuring that permits are applied for when development of any kind is proposed in the floodplain overlay district
- c) Involvement with the permit process and/or permit application review for development in the floodplain overlay district
- d) Coordinating with other local departments such as public works, stormwater/engineering, planning & zoning, conservation commission, or housing
- e) Notifying adjacent communities prior to alteration of a watercourse
- f) Dealing with compliance issues and enforcement actions such as correcting violations, or working with the appropriate local staff to correct violations
- g) Maintaining records of floodplain development, and keeping FEMA current and historic maps available for public inspection

## 7. Requirement to submit new technical data

***Within 6 months, notify FEMA of changes in the base flood elevation by submitting technical or scientific data so insurance & floodplain management can be based on current data. [44CFR 65.3]***

Many development changes to the floodplain will trigger the requirement to file a Letter of Map Revision or other type of Letter of Map Change. When the development does not trigger the LOMC requirement but impacts the heights or extents of the base flood (usually to lower the risk), FEMA should be notified that a change was made so that in future map studies/updates this can be adequately addressed.

## 8. Variances to building code floodplain standards

### **44CFR 60.6(a)(3-6):**

***(3) Variances shall only be issued by a community upon (i) a showing of good and sufficient cause, (ii) a determination that failure to grant the variance would result in exceptional hardship to the applicant, and (iii) a determination that the granting of a variance will not result in increased flood heights, additional threats to public safety, extraordinary public expense, create nuisances, cause fraud on or victimization of the public, or conflict with existing local laws or ordinances;***

***(4) Variances shall only be issued upon a determination that the variance is the minimum necessary, considering the flood hazard, to afford relief;***

***(5) A community shall notify the applicant in writing over the signature of a community official that (i) the issuance of a variance to construct a structure below the base flood level will result in increased premium rates for flood insurance up to amounts as high as \$25 for \$100 of insurance coverage and (ii) such construction below the base flood level increases risks to life and property. Such notification shall be maintained with a record of all variance actions as required in paragraph (a)(6) of this section.***

***(6) A community shall (i) maintain a record of all variance actions, including justification for their issuance***

Because a variance can lead to an increased risk to life and property, variances from flood elevation requirements or other floodplain management requirements should be granted only rarely. Variances for floodplain development regulations must show that:

- Good and sufficient cause and exceptional hardship exist;
- The variance will not result in additional threats to public safety, extraordinary public expense, or fraud or victimization of the public; and
- The variance is the minimum action necessary to afford relief.

In Massachusetts, typically the State Building Code Appeals Board issues a variance to the state building code, unless your community is one of those approved by BBRS for local variance authority. When a local building official's interpretation of the flood-resistant standards under the building code are contested through the appeal process, the community must keep written documentation of both:

- a. the justification for local decision to deny the permit, and
- b. the results of the state's appeal/variance hearing (either in agreement with the local community, or having granted the variance through appeal.)

The community must also send a letter to the property owner stating that the implications of this variance may adversely impact the cost of the flood insurance policy covering the structure.

A FEMA suggestion for language to be used in such a letter is as follows:

*“The granting of this variance may result in increased flood insurance premium rates, up to \$25 per \$100 of coverage, and such construction below the base flood level increases risks to life and property.”*

The justification for the variance (or the denial of the variance) and the community letter must be maintained as documentation that these actions were taken.

#### [9. Variances to local Zoning Bylaws related to community compliance with the National Flood Insurance Program \(NFIP\)](#)

**Please note:** This section addresses local Zoning Board variances only, and applies only when other variance procedures (such as those under the state building code) do not cover the variance request.

#### ***§60.6 Variances and exceptions. Excerpts:***

***(a) The Federal Insurance Administrator does not set forth absolute criteria for granting variances from the criteria set forth in §§60.3, 60.4, and 60.5. The issuance of a variance is for flood plain management purposes only.***

***The community, after examining the applicant's hardships, shall approve or disapprove a request.***

*The Federal Insurance Administrator may review a community's findings justifying the granting of variances, and if that review indicates a pattern inconsistent with the objectives of sound flood plain management, the Federal Insurance Administrator may take appropriate action under §59.24(b) of this subchapter.*

*Procedures for the granting of variances by a community are as follows:*

*(1) Variances shall not be issued by a community within any designated regulatory floodway if any increase in flood levels during the base flood discharge would result;*

*(3) Variances shall only be issued by a community upon (i) a showing of good and sufficient cause, (ii) a determination that failure to grant the variance would result in exceptional hardship to the applicant, and (iii) a determination that the granting of a variance will not result in increased flood heights, additional threats to public safety, extraordinary public expense, create nuisances, cause fraud on or victimization of the public, or conflict with existing local laws or ordinances;*

*(4) Variances shall only be issued upon a determination that the variance is the minimum necessary, considering the flood hazard, to afford relief;*

*(5) A community shall notify the applicant in writing over the signature of a community official that (i) the issuance of a variance to construct a structure below the base flood level will result in increased premium rates for flood insurance up to amounts as high as \$25 for \$100 of insurance coverage and (ii) such construction below the base flood level increases risks to life and property. Such notification shall be maintained with a record of all variance actions as required in paragraph (a)(6) of this section; and*

*(6) A community shall (i) maintain a record of all variance actions, including justification for their issuance, and (ii) report such variances issued in its annual or biennial report submitted to the Federal Insurance Administrator.*

*(7) Variances may be issued by a community for new construction and substantial improvements and for other development necessary for the conduct of a functionally dependent use provided that (i) the criteria of paragraphs (a)(1) through (a)(4) of this section are met, and (ii) the structure or other development is protected by methods that minimize*

***flood damages during the base flood and create no additional threats to public safety.***

For further information, see FEMA publication P-993, “Variances & the National Flood Insurance Program.”

***From the State NFIP Coordinating Office:*** For all variances to floodplain development regulations, the community must maintain documentation that includes the variance request; determinations made by the entity granting the request that the three criterium listed above have been met; a copy of the letter to the property owner regarding possible insurance premium impacts; and that all appropriate flood protection and hazard mitigation measures were taken where applicable and possible, as specifically described in the variance file.

10. Permits are required for all proposed development in the Floodplain Overlay District

***Require permits for all proposed construction and other developments including the placement of manufactured homes [44CFR 60.3(b)(1)]***

NFIP requirements are focused on “development” in the floodplain. The NFIP definition of development is “*any manmade change to improved or unimproved real estate, including but not limited to building or other structures, mining, dredging, filling, grading, paving, excavation or drilling operations.*” [44CFR 59.1]

Most Massachusetts communities have long used building permits to review construction in their floodplain overlay district, and conservation commissions use several documents for review of other types of development, but the regulation of all development in a floodplain is essential so that flood risks are not increased either on the site or to adjacent or upstream/downstream properties.

Some communities use a ‘Floodplain Development Review Form’ in addition to the traditional building permit, so they can document the review of all activities in the floodplain such as filling and grading; excavation, mining and drilling, storage of materials or equipment, placement of recreational vehicles or temporary stream crossings, and the review of activities conducted by other agencies such as roads or bridges built by state or federal government.

In Massachusetts, the local conservation commission reviews many of the above-listed activities, but use of a floodplain development review form for all floodplain overlay district proposals ensures that nothing slips through the cracks. This NFIP permitting

requirement is not prescriptive, but the documentation of some kind of permit or review process is mandatory for all floodplain development.

An additional benefit of documenting all floodplain development is that when a violation is discovered, the community can demonstrate that they did not approve the development as constructed, or that the developer did not come in for a full review of the development activity.

#### 11. Assure that all necessary permits are obtained

##### ***Assure that all other State and Federal permits are obtained [44CFR 60.3(a)(2)]***

While the community does not have to participate in the acquisition or review of all necessary state and federal permits for floodplain development, the community is obligated to assure that all necessary permits have been obtained by the proponent. The use of a checklist facilitates awareness for the proponent of which other permits must be obtained, generally prior to beginning the development project.

#### 12. Subdivision proposals

##### ***Review subdivision proposals and development proposals to assure that:***

***(a) Such proposals minimize flood damage.***

***(b) Public utilities and facilities are located & constructed so as to minimize flood damage.***

***(c) Adequate drainage is provided.***

***[44CFR 60.3(a)(4) (I thru iii)]***

#### 13. Base flood elevation data for subdivision proposals

##### ***Require base flood elevation data for subdivision proposals or other developments greater than 50 lots or 5 acres. [44CFR 60.3(b)(3)]***

If a subdivision fitting this size description is proposed in the floodplain overlay district where there are not already base flood elevations (BFEs) for each parcel, then the developer must provide BFEs for each parcel so that flood-resistant standards can be appropriately applied. The developer is responsible for providing the necessary technical data to support the base flood elevations shown on his/her design drawings.

#### 14. Unnumbered A Zones

***In A Zones, in the absence of FEMA BFE data and floodway data, obtain, review and reasonably utilize base flood elevation and floodway data available from available from a Federal, State, or other source as criteria for requiring new construction, substantial improvements, or other development in Zone A as the basis for elevating residential structures to or above base flood level, for floodproofing or elevating nonresidential structures to or above base flood level, and for prohibiting encroachments in floodways. [44CFR 60.3(b)(4)]***

If the community has the engineering resources required to determine the base flood elevation in an unnumbered A zone, these resources can be used to meet this requirement. For those communities that do not have these resources, and even in communities that do, the permitting office can require that the proponent pay for resources to determine the base flood elevation when a development is being proposed. Historical records can be used, as well as any other data that reasonably indicates the 1% chance flood event. Two notes about this requirement:

- a) FEMA does allow a “defacto” elevation of two (2) feet above the highest adjacent grade in cases where the BFE cannot be reasonably determined, but the 9<sup>th</sup> Edition of the Massachusetts building code requires an additional foot of freeboard. This means that the top of the lowest floor would have to be three (3) feet above the highest adjacent grade.
- b) The 9<sup>th</sup> Edition of the MA building code allows communities to use preliminary FEMA maps once the Letter of Final Determination has been issued. These maps may indicate a BFE where none existed before, by virtue of the map update process.

#### 15. Floodway encroachment

***310 CMR 10.57(4) General Performance Standards.***

***(a) Bordering Land Subject to Flooding.***

***1. Compensatory storage shall be provided for all flood storage volume that will be lost as the result of a proposed project within Bordering Land Subject to Flooding, when in the judgment of the issuing authority said loss will cause an increase or will contribute incrementally to an increase in the horizontal extent and level of flood waters during peak flows.***

***Compensatory storage shall mean a volume not previously used for flood storage and shall be incrementally equal to the theoretical volume of flood water at each elevation, up to and including the 100-year flood elevation, which would be displaced by the proposed project. Such compensatory volume shall have an unrestricted hydraulic connection to the same waterway or water body. Further, with respect to waterways, such compensatory volume shall be provided within the same reach of the river, stream or creek.***

***2. Work within Bordering Land Subject to Flooding, including that work required to provide the above-specified compensatory storage, shall not restrict flows so as to cause an increase in flood stage or velocity.***

This standard is found in the Wetlands Protection Act (WPA), and essentially means that there is no rise allowed in the elevation of the base flood anywhere in the entire floodplain. While an official certification is not required in floodways that are not regulated (shown on the FEMA map), for the intent of the WPA to be fulfilled the community must be sure that there will be no rise in the base flood elevation. If the area is located in an unnumbered A zone, a BFE must be determined before the development is designed, so that the “no rise” standard can be demonstrated.

***Prohibit encroachments, including fill, new construction, substantial improvements, and other development within the adopted regulatory floodway unless it has been demonstrated through hydrologic and hydraulic analyses performed in accordance with standard engineering practice that the proposed encroachment would not result in any increase in flood levels within the community during the occurrence of the base flood discharge. [44CFR 60.3(b)(6)]***

Under federal NFIP requirements, the community must require certification from a registered professional that shows there will be no rise in the base flood elevation when development takes place in the regulated floodway. This cannot be accomplished by showing compensatory alone; the documentation must include a hydrologic and hydraulic (H&H) analysis.

#### 16. Watercourse alterations or relocations in riverine areas

***In riverine areas, notify neighboring communities of watercourse alterations or relocations. [44CFR 60.3(b)(6)]***

Neighboring communities (and possibly a neighboring state) need to know in advance if the alteration or relocation of a watercourse might change their floodplain or flood risk. Send plans for this development to the CEOs of those communities, as well as to the Massachusetts NFIP State Coordinator and to the FEMA Regional Office.

#### 17. AO and AH zones drainage requirements

***In Zones AO and AH, require drainage paths around structures on slopes to guide water away from structures. [44CFR 60.3(c)(11)]***

Guiding water away from the structure must also consider adjacent properties, where drainage cannot impact those lots or structures.

#### 18. Recreational vehicles

***In A1-30, AH, and AE Zones, all recreational vehicles to be placed on a site must be elevated and anchored or be on the site for less than 180 consecutive days or be fully licensed and highway ready. [44CFR 60.3(c)(14)]***

***In V1-30, VE, and V Zones, all recreational vehicles to be placed on a site must be elevated and anchored or be on the site for less than 180 consecutive days or be fully licensed & highway ready. [44CFR 60.3(e)(9)]***

“Fully licensed and highway ready” means that wheels must be inflated; the vehicle must be self-propelled or towable by a light-duty truck; have no attached deck, porch or shed; and have quick-disconnect sewage, water and electrical connections. In other words, the vehicle must be ready to relocate immediately upon notification of the possibility of flooding in the area.

#### 19. Protection of dunes

***Prohibit alteration of sand dunes which would increase potential flood damage. [44CFR 60.3(e)(7)]***

## 20. Local Enforcement

***The NFIP requires that the floodplain management ordinance be legally enforceable and enforced uniformly throughout the community. [44 CFR 60.1(b)]***

Sample bylaw language has not been offered regarding local enforcement of flood-resistant and flood reduction standards because enforcement is typically already addressed elsewhere in codes that are locally enforced.

As a part of implementing the NFIP in a local community, however, FEMA will need to know how the community enforces these regulations and standards. Each NFIP community should be prepared to answer the following questions:

1. How do you enforce the building code in your community? What specific actions are taken, and how are these actions documented? What penalties are specified? *[Definitions and regulations related to building code enforcement are found in CMR 780 Chapter 1 Sections 114 and 115, which refer to M.G.L. c. 143, c. 148, and M.G.L. c. 148A, and specifically M.G.L. c. 143, section 94(a.)]*
2. How do you enforce the Wetlands Protection Act? What actions and documentation exist to prove that enforcement was implemented? *[Enforcement regulations related to the Wetlands Protection Act are found in 310 CMR section 10.08.]*
3. How are other NFIP floodplain development requirements enforced, such as fencing that increases flood risk, the placement of recreational vehicles in the floodplain, re-grading of large commercial properties, construction of agricultural structures, placement of tanks, pools, temporary construction offices, etc.?

FEMA will expect to hear about a rigorous enforcement program that includes specific actions taken by the community for non-compliant floodplain development.

Enforcement provisions establish the responsibilities of persons, enforcement authority, what makes a violation, notice of violation, stop work and other orders, and citation and penalties for violations. These penalties may include fines and/or jail sentences.

## Explanations for Definitions found in Section 3

Development. FEMA’s minimum standards for the NFIP require review of, and possibly permitting for all activities defined as development within the Special Flood Hazard Area (SFHA.) Some of these activities might not normally require permitting under existing state or local regulations, and not all of these activities might be reviewed by the building department in a community.

Flood Boundary & Floodway Map. Some communities with older mapping (typically 1987 and prior) have two sets of flood maps, the familiar Flood Insurance Rate Map (FIRM) and the Flood Boundary & Floodway Map (FBFM). The floodway is delineated only on the FBFM. Communities with a FBFM must include it in the district definition in order to enforce floodway standards.

Flood Hazard Boundary Map. Communities with very old mapping (usually prior to 1980) might have a Flood Hazard Boundary Map (FHBM). This map must be referenced in the community’s floodplain district definition. In most cases the FHBM has been converted to a FIRM by letter but the map will still say “Flood Hazard Boundary Map.”

Floodway, Regulatory Floodway. The floodway, or regulatory floodway, is established by regulation and through hydraulic analysis. It is not a natural, physical feature of the watercourse. It is part of the 100-year floodplain but has specific requirements that exceed those in the floodplain fringe (the rest of the floodplain). The NFIP standards for floodway encroachments (for example including no-rise analysis) are not in state regulations.

Functionally dependent use. This term is used in the evaluation of variances to floodplain management standards. Sometimes variances can be issued for functionally dependent uses.

Highest adjacent grade. In an AO zone, the base flood elevation is determined by adding the depth indicated on the FIRM to the highest adjacent grade, or two feet if no depth is indicated (and if no alternative floodplain analysis is conducted and applied.)

Historic structure. NFIP standards for substantial improvement include an exception for structures that are identified as historic structures. Only those structures meeting this definition are eligible for this exception.

New construction. NFIP minimum standards apply to all new construction, which includes improvements to structures defined as new construction. as follows: (1) new

construction, including subsequent work to such structures, and (2) work classified as substantial improvement of an existing structure that is not an historic structure. [ASCE 24-14]

Recreational vehicle. NFIP elevation standards can sometimes apply to these vehicles when they are placed in the SFHA.

Special Flood Hazard Area (SFHA). The flood-prone areas on the FEMA maps (and subsequently adopted in a community's Floodplain Overlay District) where NFIP minimum standards apply. within special flood hazard areas.

Start of construction. Knowing the start of construction, as defined, can sometimes determine which version of a FIRM or regulation is used in situations where the FIRM or the regulation has been or is being updated.

Structure. NFIP minimum standards apply to all structures meeting this definition.

Substantial Repair of a Foundation. This is a Massachusetts unique definition included in the 9th Edition Building Code. It is important to be familiar with this definition as Building Code standards will apply.

Variance. It is important to understand the term in order to properly administer, consider and potentially issue variances. Note that variances are not the same as (and shouldn't be confused with) similar terms and/or processes such as special permits, exceptions or exemptions. Variances to standards enforced under state regulations must be administered through the proper state authority.

Violation. Violations can affect the community's standing in the NFIP and will likely result in higher flood insurance premiums. Violations can also prevent a community from entering participating in the Community Rating System.



## 2020 MA Model Floodplain Bylaw **Frequently Asked Questions**

These questions were posed during the 2020 Model Bylaw training sessions offered by the state and FEMA in early October 2020. To access the Model and the presentation, go to:

<https://www.mass.gov/guides/floodplain-management>

### Adoption deadline

#### **By what date will these bylaws need to be adopted?**

If your community will be receiving new maps, then the 2020 Model will be used to review your bylaws (or ordinances) as a part of your map adoption process by the effective date of the new maps.

If the state or FEMA conducts a monitoring visit or interview with your community, the 2020 Model will be used in reviewing your bylaws, and you will need to provide a date by which you will adopt them.

If neither of the above applies to your community within the next year, then we will expect that you will adopt the 2020 Model bylaws at your next earliest town meeting, or at least by the spring of 2022.

### Location of bylaws in local codes

#### **In what part of the local code should a community place these floodplain bylaws?**

This decision is up to the community, but the bylaws need to reside in an adopted and enforceable part of your codes (bylaws or ordinances.) You may gather them together under your Floodplain Overlay District section of your zoning bylaws, put them together in your wetlands bylaws, or other reasonable location where citizens and floodplain developers can find them. Some of these pertain to subdivisions, and may go in that section. Wherever the bylaws reside, we will need you to cite them for us when we review your code if we cannot find them.

#### **What about towns that don't have wetlands bylaws?**

Many communities put these bylaws in their zoning regulations, typically under a Floodplain Overlay District section.

#### **If we address subdivisions and flood elevations in the Subdivisions Rules & Regulations, do we also need to include the subdivision language in our Floodplain Overlay District zoning bylaw?**

The bylaws do not need to be duplicated in different parts of your local codes, but you will need to enforce them throughout your floodplains, so it would be best to put them where developers can find them for proposed projects.

## Map references

### **How do we know whether to use the community or county map references section?**

On your community's flood maps, the name of the community (town, city, or county) is shown on the title panel at the lower right corner. If you need assistance in making this determination, you can contact Eric Carlson at [eric.carlson@mass.gov](mailto:eric.carlson@mass.gov).

### **Do we still need to insert all the panel numbers and dates as we did before?**

FEMA is no longer requiring that each map panel be separately referenced. The date of the Index (of maps) and the Flood Insurance Study must each be referenced. Using the provided bylaw text should make this easy.

## Legal purpose bylaws

### **What if we have these (abrogation/ greater restriction, disclaimer of liability, severability) in a different part of our local codes? Do we have to move or add them to the Floodplain Overlay District section?**

No. As long as you can cite them from an enforceable part of your adopted code, they can stay right where they are. No need to add to another section.

## Floodplain Administrator (FPA)

### **Can a Floodplain Administrator be designated as more than one position?**

No. The purpose of designating an FPA is so that both FEMA and the state will have one contact for the community for communication regarding NFIP and floodplain matters. While we understand that best practice floodplain management means that an integrated team of people will review and enforce floodplain development, we will still need the position (and thereby the name, title, and contact information) of your designated FPA.

### **For FPA, is it acceptable for a community to designate an entire board or committee?**

No, it's not acceptable for an entire board or committee to be the FPA. You may, however, designate the head of that group as the FPA, or perhaps the staff contact for the group.

### **Does the floodplain administrator need to be a Certified Floodplain Manager (CFM)?**

No, but that's a worthy goal as this certification indicates both the person's and the community's desire to put forth the best floodplain management possible. Also, there may be additional points for a CRS community that requires certified staff.

### **Can you define the role of the Administrator more specifically?**

The role of the FPA is more fully explained in the 2020 Model Bylaw, section 4.

## Variations

### **Which communities have the authority to issue a variance to the state building code? How do we know if we are one of them?**

There are very few. These communities have local Building Code Appeals Boards (in contrast to a Zoning Code Appeals Board.) If you aren't sure, you're probably not one of them. To find out, contact the staff at the Board of Building Regulations and Standards: Dan Walsh, Chief of Inspections, 617-826-5236 or [dan.p.walsh@mass.gov](mailto:dan.p.walsh@mass.gov)

### **If building code variations are issued by the state, why is the town held responsible?**

The community is not held responsible for actions by the state. The variance sections found in the 2020 Model Bylaw are there to assure that 1) the community is aware of the request for a variance from floodplain regulations; 2) if the variance is granted, that the community notify the applicant in writing that there may be increased flood risk associated with the variance, and an increase in annual flood insurance premiums; and 3) the community documents the variance and notification in their permit files for future reference.

### **Would allowing a variance disqualify a community from the Community Rating System?**

The allowance of a variance does not disqualify a community from the Community Rating System (CRS.) A pattern of allowing frequent or unjustified variations may impact a community's standing in the NFIP, however, and may be investigated in order to find a way to reduce this practice. If the state is approving the variations, the state will be involved in such an inquiry.

### **Is a variance also required from the ordinance/bylaw itself?**

Yes, if the variance is to the floodplain development regulations found in your local code. See the explanation for bylaw #9 in the Model, section 4.

## Permit for all development

### **The suggested bylaw states that the community will require "a permit for all proposed construction or other development in the floodplain..." Does this mean that we have to institute a new permit form and fees for things other than the building code?**

Not necessarily. Different communities use different methods to assure that all floodplain development is reviewed. The intention here is to assure that all development in the floodplain is reviewed by the community, using whatever tools the community deems best for this practice. For example, some communities use an integrated online review tool for every activity in their floodplains. Others use a checklist showing that pertinent departments and boards have signed off on the development as proposed. You may develop or use a form if that best fits your needs—whatever assures that appropriate review is being conducted for all development in the floodplain. Please see the NFIP definition of "development" in the Model to understand the reach of this bylaw.

## **Can things like fences and driveways be permitted through a building permit, rather than a special permit?**

Your local building official knows which things can be permitted through the building code. Paving is generally covered under local bylaws; some communities put these in their zoning regulations and some in their stormwater management plans. If the pavement is to be placed where it will impact a resource area, the conservation commission will most likely need to review the proposal to determine its impact on area resources including the floodplain. However your community reviews these development types, the review needs to be documented.

## **Do solar arrays need to be permitted?**

If the development (e.g. proposed solar arrays) is in the floodplain, then yes—it needs to be fully reviewed using some kind of documentable process such as described above.

## All permits must be acquired

### **How do we know what other permits would apply to a particular development?**

There is currently no complete checklist for permits required, but relevant state and federal agencies can help you determine what permits might be required. Here are a few suggestions:

MA Office of Coastal Zone Management (CZM) can assist with understanding coastal permits: <https://www.mass.gov/orgs/massachusetts-office-of-coastal-zone-management>

MA Dept. of Environmental Protection regional coordinators can advise on soil, water and air quality permits: <https://www.mass.gov/orgs/massachusetts-department-of-environmental-protection> DEP can also advise for mining, dredging and drilling operations, as well as federal permits required by the EPA.

The US Army Corps of Engineers has permits for some work in waterways and tidal wetlands: <https://www.usace.army.mil/> CZM will often know about these, too.

### **Who is responsible to get these permits?**

The applicant is responsible to get the permits, but this bylaw states that the community will assure that the necessary permits are obtained for all development in the floodplain.

## More restrictive codes—comp storage vs. H&H study-- Floodway Encroachments

### **Is the NFIP requirement more restrictive than the MA Wetlands Protection Act for compensatory storage in the floodplain?**

Possibly. The Wetlands Protection Act requires that *“Compensatory storage shall be provided for all flood storage volume that will be lost as the result of a proposed project within Bordering Land Subject to Flooding...”* [310 CMR 10.57(4)(a)]

The NFIP requires that the developer prove that a) in floodplains without a regulatory floodway, the development will cause no more than one foot of rise in the base flood, or b) in regulatory floodways the development will cause absolutely no rise in the base flood. This certification needs to be demonstrated through hydrologic and hydraulic analyses performed in accordance with standard engineering practice. For more information, see the Model, section 4, item 15, or contact the state or FEMA references at the bottom of this document.

### Submitting technical data & watercourse alteration notifications

#### **What's the difference between these two bylaws? (See bylaws #7 and #16 in the Model)**

Bylaw #7 regards the submission of new technical data that the community may have about the floodplain maps. This needs to go to FEMA for their files. Bylaw #16 regards changes in a watercourse (if this is allowed to happen in a community)—this information needs to be shared with adjacent communities and FEMA for their awareness. In both cases, the information should be copied to the state NFIP coordinator. See section 4 of the model for further explanation.

#### **How do you define watercourse alteration?**

A watercourse is any natural channel conveying water such as a river, stream, or creek. The alteration of this might include such practices as channelization, culverting, diversion or even daylighting a stream that was previously channeled underground.

#### **Does changing a water course in land subject to coastal storm flowage apply?**

Yes, if there is a watercourse in this resource area, the same notification would be required.

#### **Does this only apply to watercourses within the mapped flood zones?**

Good question! Most watercourses will be found in the mapped floodplain, but yes, in any case the alteration of a watercourse must be notified as written in the bylaw requirement.

### Local Enforcement

#### **Is there model language for bylaws item #20 on local enforcement?**

No. A community can describe their process of local enforcement, but many of those “pieces” are found in existing codes such as the building code. Please see the explanation for this in section 4 in the Model.

#### **What about towns that don't have non-criminal disposition to be able to issue fines?**

Even if your community has not adopted the provisions of Mass General Law chapter 40, section 21D (non-criminal disposition), you must still be able to levy some type of penalty for non-compliant floodplain development. The NFIP community should work with their attorney to assure that non-compliant floodplain development will be addressed through

both violation notifications and penalties. *“The NFIP requires that the floodplain management ordinance be legally enforceable and enforced uniformly throughout the community.”* [44 CFR 60.1(b)]

## Recreational Vehicles

### **Is recreational vehicle defined? Would it apply to food trucks?**

Yes, the definition for a recreational vehicle is found in section 3 of the Model. Since part of the definition includes *“designed primarily not for use as a permanent dwelling but as temporary living quarters for recreational, camping, travel, or seasonal use,”* a food truck may or may not be considered a recreational vehicle.

### **Is there a difference between a recreational vehicle and a park model?**

Typically a park model is treated like a manufactured home, and would need to be installed on a permanent foundation. The primary concern with a park model is that to fit under the definition of recreational vehicle, it must be self-propelled or towable by a “light-duty truck.” A light-duty truck is a United States designation for trucks and vehicles that have a gross vehicle weight of up to 8500 pounds and payload capacities of up to 4000 pounds.

[<https://www.epa.gov/moves/how-does-moves-define-light-duty-trucks>]

### **Is there a grandfather clause for recreational vehicles?**

No. All RVs must be either installed on a permanent foundation (as would a manufactured home), or be highway ready.

### **What about an RV sales operation?**

Great question. In most cases the RV dealership will have temporary tags so they can move the RVs (hopefully all in good operating order!) out of the floodplain should a flood alert be issued.

## Protection of dunes

### **If we don't have dunes do we have to include the #19 bylaw about dunes?**

No.

## Definitions

### **Since these definitions seem to come primarily from the federal code, could we simply reference that code instead of adopting in local bylaw/ordinance?**

No. The definitions have been in the federal code for more than four decades, but there have been many instances where local folks don't seem to be aware of them. Many other states require a much longer list of definitions (e.g. Florida), but we've slimmed down the list to those that are critical to compliant floodplain management.

**The definition of structure does not appear to include decks or carports because they don't have walls and roofs. Correct?**

Correct, although if a deck or carport is attached to a structure then it would be a part of the structure. A self-standing deck or carport would not necessarily be a structure, per this definition.

**If we do not have the Flood Boundary & Floodway Map (FHBM) or the Flood Hazard Boundary Map (FHBM), do we have to include these definitions?**

If you do not have these types of map as your current effective maps, then you do not need to include these terms in your list of definitions.

### Subdivisions

**Please provide some guidance in the FAQ regarding Approval Not Required (ANR) plans, as we have limited control and some can be over 5 acres. Right now we cannot treat these as a subdivision.**

Even though you do not treat ANR dispositions as subdivisions, if the structure or other development in the ANR is sited in a regulated floodplain you will need to apply all of the requirements for flood resistant construction and drainage, just as you would for any other development in the floodplain.