

VERMONT
MODEL FLOOD HAZARD AREA REGULATIONS
(2.08)

I. Statutory Authorization

To effect the purposes of 10 V.S.A. Chapter 32, and in accordance with 24 V.S.A. § 4424, there is hereby established an ordinance for areas of special flood hazard in the City/Town/Village of _____, Vermont.

II. Statement of Purpose

It is the purpose of this ordinance to:

- A. Minimize and prevent the loss of life and property, the disruption of commerce, the impairment of the tax base, and the extraordinary public expenditures and demands on public services that result from flooding and other flood related hazards; and
- B. Ensure that the design and construction of development in flood and other hazard areas are accomplished in a manner that minimizes or eliminates the potential for flood and loss or damage to life and property; and
- C. Manage all flood hazard areas designated pursuant to 10 V.S.A. § 753; and
- D. Make the state, municipalities, and individuals eligible for federal flood insurance and other federal disaster recovery and hazard mitigation funds as may be available.

III. Lands to Which These Regulations Apply

These regulations shall apply to all areas in the City/Town/Village of _____, Vermont identified as areas of special flood hazard in and on the most current flood insurance studies and maps published by the Department of Homeland Security (DHS), Federal Emergency Management Agency (FEMA), National Flood Insurance Program (NFIP), as provided by the Secretary of the Agency of Natural Resources pursuant to 10 V.S.A. § 753, which are hereby adopted by reference and declared to be part of these regulations.

IV. Development Permit Required

A permit is required, to the extent authorized by State law, for all proposed construction or other development, including the placement of manufactured homes, in areas of special flood hazard. Conditional use approval by the appropriate municipal panel is required for:

- 1. New buildings,
- 2. Substantial improvement of existing buildings, and
- 3. Development in a floodway

prior to being permitted by the administrative officer. All development and subdivisions shall be reviewed to assure that such proposals minimize potential flood damage, public facilities and utilities such as sewer, gas, electrical, and water systems are constructed so

as to minimize flood damage, and adequate drainage is provided to reduce exposure to flood hazards.

V. Procedures

A. Prior to issuing a permit a copy of the application and supporting information shall be submitted by the administrative officer to the State National Floodplain Insurance Program Coordinator at the Vermont Agency of Natural Resources, Department of Environmental Conservation, River Management Section in accordance with 24 V.S.A. § 4424. A permit may be issued only following receipt of comments from the Agency or the expiration of 30 days from the date the application was mailed to the Agency, whichever is sooner.

B. Adjacent communities and the Stream Alteration Engineer at the Vermont Agency of Natural Resources, Department of Environmental Conservation, River Management Section shall be notified at least 30 days prior to issuing any permit for the alteration or relocation of a watercourse and copies of such notification shall be submitted to the Administrator of the National Flood Insurance Program. Any permit issued shall assure that the flood carrying capacity within the altered or relocated portion of any watercourse is maintained.

C. Proposed development shall be reviewed by the administrative officer or the appropriate municipal panel to assure that all necessary permits have been received from those government agencies from which approval is required by Federal, State or Municipal law.

VI. Base Flood Elevations and Floodway Limits

A. Where available, base flood elevations and floodway limits (or data from which a community can designate regulatory floodway limits) provided by the National Flood Insurance Program in the Flood Insurance Study and accompanying maps shall be used to administer and enforce these regulations.

B. In areas where base flood elevations and floodway limits have not been provided by the National Flood Insurance Program in the Flood Insurance Study and accompanying maps, base flood elevations and floodway data provided by FEMA or available from State or Federal agencies or other sources, shall be obtained and utilized to administer and enforce these regulations.

C. Until a regulatory floodway has been designated, no new construction, substantial improvements, or other development shall be permitted in Zones A1-30, AE, and AH unless it is demonstrated that the cumulative effect of the proposed development, when combined with all other existing development and anticipated development will not increase the water surface elevation of the base flood more than one foot at any point within the community.

VII. Development Standards

A. Floodway Areas

1. Development within the regulatory floodway, as determined by Section VI.A, is prohibited unless it has been demonstrated through hydrologic and hydraulic analyses performed in accordance with standard engineering practice by a registered professional engineer certifying that the proposed development will result in no increase in flood levels during the occurrence of the base flood.

2. Junkyards, on-site wastewater disposal systems, and storage facilities for floatable materials, chemicals, explosives, flammable liquids, or other hazardous or toxic materials, are prohibited within the floodway.¹

B. All Special Flood Hazard Areas (within mapped Floodway Areas, the following Section B. provisions are additive to the Section A provisions above).

1. **All Development** - All development shall be reasonably safe from flooding and:

- (a) designed (or modified) and adequately anchored to prevent flotation, collapse, or lateral movement of the structure during the occurrence of the base flood,
- (b) constructed with materials resistant to flood damage,
- (c) constructed by methods and practices that minimize flood damage, and
- (d) constructed with electrical, heating, ventilation, plumbing and air conditioning equipment and other service facilities that are designed and/or located so as to prevent water from entering or accumulating within the components during conditions of flooding.

2. **Residential Development:**

- (a) New construction and existing buildings to be substantially improved that are located in Zones A1-30, AE, and AH shall have the lowest floor, including basement, elevated to or above the base flood elevation. New construction and existing buildings to be substantially improved that are located in Zone AO shall have the lowest floor, including basement, elevated above the highest adjacent grade at least as high as the depth number specified in the feet on the community's FIRM or at least two feet if no depth number is specified.²
- (b) Manufactured homes to be placed and existing manufactured homes to be substantially improved that are:
 - (i) located in a new manufactured home park or subdivision, outside of a manufactured home park or subdivision, in an expansion to an existing manufactured home park or subdivision, or in a manufactured home park or subdivision which has incurred substantial damage from a flood shall

¹ This is more restrictive than required by NFIP regulations. However, it is a recommended standard to prevent obvious problems associated with having these materials washed downstream by a flood.

² Communities without mapped AO Zones do not need to include this requirement.

be elevated on a permanent foundation such that the lowest floor of the manufactured home is elevated to no less than one foot above the base flood elevation³ and be securely anchored to an adequately anchored foundation system to resist floatation, collapse, and lateral movement during the occurrence of the base flood.

- (ii) located in an existing manufactured home park, where elevating a replacement home to or above base flood elevation is not possible, the lowest floor shall be supported by reinforced piers or other foundation elements of at least equivalent strength that are no less than 48 inches in height above grade⁴ and be securely anchored to an adequately anchored system to resist floatation, collapse, and lateral movement.
- (c) Residential construction located within Zones AH and AO shall have adequate drainage paths around structures on slopes, to guide floodwater around and away from the proposed structures.⁵

3. Non-residential Development:

- (a) New construction located in Zones A1-30, AE, and AH shall have the lowest floor, including basement, elevated to or above the base flood elevation.⁶ New construction located in Zone AO shall have the lowest floor, including basement, elevated above the highest adjacent grade at least as high as the depth number specified in the feet on the community's FIRM or no less than two feet if no depth number is specified.⁷
- (b) Existing buildings to be substantially improved located in Zones A1-30, AE, and AH shall have the lowest floor, including basement, elevated to or above the base flood elevation or together with attendant utility and sanitary facilities be designed so that below the base flood elevation the structure is watertight with walls substantially impermeable to the passage of water and with structural components having the capability of resisting hydrostatic and hydrodynamic loads and effects of buoyancy.⁸ Existing buildings to be substantially improved located in AO zones shall have the lowest floor,

³ This is more restrictive than required by NFIP regulations. If a community wishes to just meet the NFIP criteria, replace with: "...elevated to at or above the base flood elevation..."

⁴ This is more restrictive than required by NFIP regulations. If a community wishes to just meet the NFIP criteria, replace with: "...no less than 36 inches in height above grade..."

⁵ Communities without mapped AH or AO Zones do not need to include this requirement.

⁶ This is more restrictive than required by NFIP regulations. If a community wishes to just meet the NFIP criteria, remove (a) from this section and replace (b) with: "*New construction and* existing buildings to be substantially improved..."

⁷ Communities without mapped AO Zones do not need to include this requirement.

⁸ Note: while buildings need only be floodproofed to the base flood elevation for floodplain management purposes, the building must be floodproofed to an elevation at least one foot above the base flood elevation to receive credit for base flood protection for flood insurance rating purposes.

including basement, elevated above the highest adjacent grade at least as high as the depth number specified in feet on the community's FIRM or no less than two feet if no depth number is specified or together with attendant utility and sanitary facilities be designed so that below the base flood elevation the structure is watertight with walls substantially impermeable to the passage of water and with structural components having the capability of resisting hydrostatic and hydrodynamic loads and effects of buoyancy.⁹

- (c) A permit for a building proposed to be floodproofed shall not be issued until a registered professional engineer or architect has reviewed the structural design, specifications and plans, and has certified that the design and proposed methods of construction are in accordance with accepted standards of practice for meeting the provisions of this subsection.
- (d) Non-residential construction located within Zones AH and AO shall have adequate drainage paths around structures on slopes, to guide floodwater around and away from the proposed structures.¹⁰

4. Subdivisions:

- (a) New subdivision proposals and other proposed development (including proposals for manufactured home parks and subdivisions) that are greater than 50 lots or 5 acres, whichever is the lesser, shall include base flood elevation data.
- (b) Subdivisions (including manufactured home parks) shall be designed to assure:
 - (i) such proposals minimize flood damage within the flood-prone area,
 - (ii) public utilities and facilities, such as sewer, gas, electrical, and water systems are located and constructed to minimize or eliminate flood damage, and
 - (iii) adequate drainage is provided to reduce exposure to flood hazards.

5. Enclosed Areas Below the Lowest Floor:

- (a) Enclosed areas below the lowest floor which are subject to flooding shall be used solely for parking of vehicles, building access, or storage.
- (b) New construction and existing buildings to be substantially improved with fully enclosed areas below the lowest floor that are subject to flooding shall be designed to automatically equalize hydrostatic flood forces on exterior walls by allowing for the entry and exit of floodwaters.
- (c) Designs for meeting this requirement must either be certified by a registered professional engineer or architect or meet or exceed the following minimum criteria: A minimum of two openings having a total net area of not less than one square inch for every square foot of enclosed area subject to flooding shall be provided. The bottom of all openings shall be no higher than one foot above grade. Openings may be equipped with screens, louvers, valves, or other coverings or devices provided that they permit the automatic entry and exit of floodwaters.

⁹ Communities without mapped AO Zones do not need to include this requirement.

¹⁰ Communities without mapped AH or AO Zones do not need to include this requirement.

6. Recreational Vehicles: Recreational Vehicles placed on sites with special flood hazard areas shall either:
 - (a) be on the site for fewer than 180 consecutive days,
 - (b) be fully licensed and ready for highway use, or
 - (c) be permitted in accordance with the elevation and anchoring requirements for “manufactured homes” in section B.2.(b).

7. Accessory Structures: A small accessory building that represents a minimal investment need not be elevated to the base flood elevation provided the structure meets the following requirements:
 - (a) The structure must only be used for parking or storage,
 - (b) The structure must have the required openings to allow floodwaters in and out,
 - (c) The structure must be constructed using flood resistant materials below the Base Flood Elevation,
 - (d) The structure must be adequately anchored to resist flotation, collapse, and lateral movement, and
 - (e) All building utility equipment including electrical and heating must be elevated or floodproofed.

8. Water Supply Systems: New and replacement water supply systems shall be designed to minimize or eliminate infiltration of flood waters into the systems.

9. Sanitary Sewage Systems: New and replacement sanitary sewage systems shall be designed to minimize or eliminate infiltration of flood waters into the systems and discharges from the systems into flood waters.

10. On-Site Waste Disposal Systems: On-site wastewater disposal systems shall be located to avoid impairment to them or contamination from them during flooding.

11. Watercourse Carrying Capacity: The flood carrying capacity within any altered or relocated portion of a watercourse shall be maintained.

VIII. Duties and Responsibilities of the Administrative Officer

The administrative officer shall maintain a record of:

- (a) All permits issued for development in areas of special flood hazard;
- (b) The elevation (consistent with the datum of the elevation on the NFIP maps for the community) of the lowest floor, including basement, of all new or substantially improved buildings;
- (c) The elevation (consistent with the datum of the elevation on the NFIP maps for the community) to which buildings have been floodproofed;
- (d) All floodproofing certifications required under this regulation; and
- (e) All variance actions, including justification for their issuance.

IX. Variances to the Development Standards

Variations shall be granted by the appropriate municipal panel only in accordance with 24 V.S.A. § 4469 and in accordance with the criteria for granting variations found in 44 CFR, Section 60.6, of the National Flood Insurance Program regulations.

X. Warning of Disclaimer of Liability

This ordinance does not imply that land outside of the areas of special flood hazard or land use permitted within such districts will be free from flooding or flood damages. This ordinance shall not create liability on the part of the Town of _____ or any town official or employee thereof for any flood damages that result from reliance on this ordinance or any administrative decision lawfully made thereunder.

XI. Validity and Severability

If any portion of this ordinance is held unconstitutional or invalid by a competent court, the remainder of this ordinance shall not be affected.

XII. Precedence of Ordinance

The provisions of this ordinance shall not in any way impair or remove the necessity of compliance with any other applicable ordinances. Where this ordinance imposes a greater restriction, the provisions of this ordinance shall take precedence.

XIII. Enforcement and Penalties

It shall be the duty of the Administrative Officer to enforce the provisions of this ordinance. Whenever any development occurs contrary to these flood hazard area regulations, the Administrative Officer, in his/her discretion, shall institute appropriate action in accordance with the provisions of 24 V.S.A. §1974a or pursuant to 24 V.S.A. § 4451 or 24 V.S.A. § 4452 to correct the violation. No action may be brought unless the alleged offender has had at least a seven-day warning notice by certified mail. An action may be brought without the seven-day notice and opportunity to cure if the alleged offender repeats the violation after the seven-day notice period and within the next succeeding twelve months. The seven-day warning notice shall state that a violation exists, that the alleged offender has an opportunity to cure the violation within the seven days, and that the alleged offender will not be entitled to an additional warning notice for a violation occurring after the seven days.

If the structure is still noncompliant after the opportunity to cure has passed, and any appeals have been resolved, the Administrative Officer shall submit a declaration to the Administrator of the NFIP requesting a denial of flood insurance. Section 1316 of the National Flood Insurance Act of 1968, as amended, authorizes FEMA to deny flood insurance to a property declared by a community to be in violation of their flood hazard area regulations. The declaration shall consist of: (a) the name of the property owner and address or legal description of the property sufficient to confirm its identity or location, (b) a clear and unequivocal declaration that the property is in violation of a cited State or

local law, regulation, or ordinance, (c) a clear statement that the public body making the declaration has authority to do so and a citation to that authority, (d) evidence that the property owner has been provided notice of the violation and the prospective denial of insurance, and (e) a clear statement that the declaration is being submitted pursuant to Section 1316 of the National Flood Insurance Act of 1968, as amended.

XIV. Definitions

Appropriate Municipal Panel means a planning commission performing development review, a board of adjustment, a development review board, or a legislative body performing development review.

Base Flood means the flood having a one percent chance of being equaled or exceeded in any given year.

Base Flood Elevation (BFE) the height of the base flood, usually in feet, in relation to the National Geodetic Vertical Datum of 1929, the North American Vertical Datum of 1988, or other datum referenced in the Flood Insurance Study report, or average depth of the base flood, usually in feet, above the ground surface.

Basement means any area of the building having its floor elevation subgrade (below ground level) on all sides.

Development means any man-made change to improved or unimproved real estate, including but not limited to buildings or other structures, mining, dredging, filling, grading, paving, excavation or drilling operations or storage of equipment or materials.

Existing manufactured home park or subdivision means a manufactured home park or subdivision for which the construction of facilities for servicing the lots on which the manufactured homes are to be affixed (including, at a minimum, the installation of utilities, the construction of streets, and either final site grading or the pouring of concrete pads) is completed before the effective date of the floodplain management regulations adopted by a community.

Expansion to an existing manufactured home park or subdivision means the preparation of additional sites by the construction of facilities for servicing the lots on which the manufacturing homes are to be affixed (including the installation of utilities, the construction of streets, and either final site grading or the pouring of concrete pads).

Flood means (a) A general and temporary condition of partial or complete inundation of normally dry land areas from: the overflow of inland or tidal waters; the unusual and rapid accumulation or runoff of surface waters from any source; and mudslides which are proximately caused by flooding and are akin to a river of liquid and flowing mud on the surfaces of normally dry land areas, as when earth is carried by a current of water and deposited along the path of the current. (b) The collapse or subsidence of land along the shore of a lake or other body of water as a result of erosion or undermining caused by waves or currents of water exceeding anticipated cyclical levels or suddenly caused by an

unusually high water level in a natural body of water, accompanied by a severe storm, or by an unanticipated force of nature, such as flash flood or abnormal tidal surge, or by some similarly unusual and unforeseeable event which results in flooding.

Flood Insurance Rate Map (FIRM) means an official map of a community, on which the Federal Insurance Administrator has delineated both the special hazard areas and the risk premium zones applicable to the community.

Flood Insurance Study means an examination, evaluation and determination of flood hazards and, if appropriate, corresponding water surface elevations or an examination, evaluation and determination of mudslide (i.e., mudflow) and /or flood related erosion hazards.

Floodplain or flood-prone area means any land area susceptible to being inundated by water from any source (see definition of “flood”).

Flood proofing means any combination of structural and non-structural additions, changes, or adjustments to structures which reduce or eliminate flood damage to real estate or improved real property, water and sanitary facilities, structures and their contents.

Floodway means the channel of a river 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 one foot at any point.

Historic Structure means any structure that is: (a) Listed individually in the National Register of Historic Places (a listing maintained by the Department of the 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: (i) By an approved state program as determined by the Secretary of the Interior or (ii) Directly by the Secretary of the Interior in states without approved programs.

Legislative Body means the selectboard in the case of a town, the trustees in the case of an incorporated village, and the mayor, alderpersons, and city council members in the case of a city, and the supervisor in the case of an unorganized town or gore.

Lowest Floor means the lowest floor of the lowest enclosed area, including basement. An unfinished or flood resistant enclosure, usable solely for parking of vehicles, building access or storage in an area other than a basement area is not considered a building's

lowest floor; *Provided*, that such enclosure is not built so as to render the structure in violation of the applicable non-elevation design requirements of 44 CFR 60.3.

Manufactured home means a structure, transportable in one or more sections, which is built on a permanent chassis and is designed for use with or without a permanent foundation when attached to the required utilities. The term “manufactured home” does not include a “recreational vehicle”.

Manufactured home park or subdivision means a parcel (or contiguous parcels) of land divided into two or more manufactured home lots for rent or sale.

New construction means, for the purposes of determining insurance rates, structures for which the “start of construction” commenced on or after the effective date of an initial FIRM or after December 31, 1974, whichever is later, and includes any subsequent improvements to such structures. For floodplain management purposes, *new construction* means structures for which the *start of construction* commenced on or after the effective date of the floodplain management regulation adopted by a community and includes any subsequent improvements to such structures.

New manufactured home park or subdivision means a manufactured home park or subdivision for which the construction of facilities for servicing the lots on which the manufactured homes are to be affixed (including at a minimum, the installation of utilities, the construction of streets, and either final site grading or the pouring of concrete pads) is completed on or after the effective date of the floodplain management regulations adopted by a community.

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 a temporary living quarters for recreational, camping, travel, or seasonal use.

Special Flood Hazard Area is the land in the floodplain within a community subject to a 1 percent or greater chance of flooding in any given year. The area may be designated a Zone A on the Flood Hazard Boundary Map (FHBM). After detailed ratemaking has been completed in preparation for publication of the Flood Insurance Rate Map (FIRM), Zone A usually is refined into Zones A, AO, AH, A1-30, AE, A99, AR, AR/AI-30, AR/AE, AR/AO, AR/AH, AR/A, VO or V1-30, VE, or V. For purposes of these regulations, the term “special flood hazard area” is synonymous in meaning with the phrase “area of special flood hazard”.

Start of Construction includes substantial improvement, and means the date the building permit was issued, provided the actual start of construction, repair, reconstruction, rehabilitation, addition placement, or other improvement was within 180 days of the permit date. The actual start means either the first placement of permanent construction of a structure on a site, such as the pouring of slab or footings, the installation of piles,

the construction of columns, or any work beyond the stage of excavation; or the placement of a manufactured home on a foundation. Permanent construction does not include land preparation, such as clearing, grading and filling; nor does it include the installation of streets and/or walkways; nor does it include excavation for a basement, footing, piers, or foundations or the erection of temporary forms; nor does it include the installation on the property of accessory buildings, such as garages or sheds not occupied as dwelling units or not part of the main structure. 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, regardless whether that alteration affects the external dimensions of the building.

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. *Structure*, for insurance purposes, means: (a) A building with two or more outside rigid walls and a fully secured roof, that is affixed to a permanent site; (b) A manufactured home (“a manufactured home,” also known as a mobile home, is a structure: built on a permanent chassis, transported to its site in one or more sections, and affixed to a permanent foundation); or (c) A travel trailer without wheels, built on a chassis and affixed to a permanent foundation, that is regulated under the community’s floodplain management and building ordinances or laws. For the latter purpose, “structure” does not mean a recreational vehicle or a park trailer or other similar vehicle, except as described in (c) of this definition, or a gas or liquid storage tank.

Substantial damage means damage of any origin sustained by a structure whereby the cost of restoring the structure to its before damaged conditions would equal or exceed 50 percent of the market value of the structure before the damage occurred.

Substantial Improvement means any reconstruction, rehabilitation, addition, alteration or other improvement of a structure, during any 5 year period, the cumulative 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 any project for improvement of a structure to correct existing violations of state or local health, sanitary, or safety code specification which have been identified by the state or local code enforcement official and which are the minimum necessary to ensure safe conditions, or any alteration of a “historic structure” provided that the alteration will not preclude the structure’s continued designation as a “historic structure”.¹²

Violation means the failure of a structure or other development to be fully compliant with the community’s floodplain management regulations. A structure or other development without the elevation certificate, other certifications, or other evidence of compliance required in 44 CFR 60.3 is presumed to be in violation until such time as that documentation is provided.

¹²This definition of “Substantial Improvement” is cumulative and more restrictive than the minimum FEMA regulations. The community may choose any period of time over which to track the costs of cumulative improvements.