

**ARTICLE XV
FLOOD HAZARD OVERLAY DISTRICT**

175-77. Applicability.

A. Purpose

Certain areas of the Town of Durham, New Hampshire are subject to periodic flooding, causing serious damages to properties within these areas. Relief is available in the form of flood insurance as authorized by the National Flood Insurance Act of 1968. Therefore, the Town of Durham, New Hampshire has chosen to become a participating community in the National Flood Insurance Program, and agrees to comply with the requirements of the National Flood Insurance Act of 1968 (P.L. 90-488, as amended) as detailed in this Floodplain Management Ordinance.

The following regulations in this ordinance shall apply to all lands designated as special flood hazard areas by the Federal Emergency Management Agency (FEMA) in its "Flood Insurance Study for the County of Strafford, N.H." dated September 30, 2015, together with the following associated Flood Insurance Rate Map panel numbers for the Town of Durham: 33017C0314E, 33017C0315E, 33017C0318E, 33017C0320E, 33017C0340E, 33017C0376E, 33017C0377E, 33017C0378E, 33017C0379E, 33017C0381E, 33017C0383E, 33017C0385E, 33017C0405E, dated September 30, 2015, which are declared to be a part of this ordinance and are hereby incorporated by reference.

Advisory Climate Change Risk Areas. As a coastal community with significant waterfront property along Great Bay, Little Bay, and tidal portions of the Oyster River, the Town of Durham recognizes the future threats that climate change and projected sea level rise pose to the health, safety, and general welfare of its citizens. The Town of Durham, in its "Vulnerability Assessment of projected impacts from sea-level rise and coastal storm surge flooding" identified areas likely to be at risk to coastal flooding in the future under projections for rising sea-levels associated with global climate change. These areas may be subject to a higher likelihood of flood damage, and as base flood elevations change over time, may be added to FEMA special flood hazard areas in the future. The map titled "Advisory Climate Change Risk Areas" dated February 21, 2018 (for moderate level projected rise of 3.9 feet, as referred to on the map under Map Feature Notes) is declared to be an advisory and non-binding part of this ordinance and is hereby incorporated by reference. The Town of Durham recommends (but does not require) that landowners, homeowners, developers, and any parties seeking to build in lands designated as advisory climate change risk areas elevate proposed structures to the levels, and follow best practices, as presented herein. See subsection 175-83 C. below.

B. Building Permit Required.

All proposed development in any special flood hazard area shall require a building permit.

175-77.1 Definitions.

Specific definitions pertinent to the Flood Hazard Overlay District, as defined by the Federal Emergency Management Agency, follow:

Area Of Special Flood Hazard - The land in the floodplain within the Town of Durham subject to a 1 percent or greater possibility of flooding in any given year. The area is designated as Zones A and AE on the FIRM.

Base Flood - The flood level having a 1 percent possibility of being equaled or exceeded in any given year.

Base Flood Elevation - The water surface elevation having a 1 percent possibility of being equaled or exceeded in any given year.

Basement - Any area of a building having its floor subgrade on all sides.

Building - Any structure designed or intended for the support, enclosure, shelter or protection of persons, domestic animals, chattels or property. For purposes of determining exterior measurements or footprint in order to locate the setback line, "building" shall include all attached structures such as open or closed porches, carports, garages, balconies, stairways and other similar structures. (Also see "Structure" for floodplain management purposes.)

Development - 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.

FEMA - The Federal Emergency Management Agency.

FIRM - Flood Insurance Rate Map

Flood or Flooding - A general and temporary condition of partial or complete inundation of normally dry land areas resulting from the overflow of inland or tidal waters or the unusual and rapid accumulation or runoff of surface waters from any source.

Flood Insurance Rate Map (FIRM) - The official map incorporated with this ordinance, on which the Federal Emergency Management Agency has delineated both the special flood hazard areas and the risk premium zones applicable to the community.

Flood Insurance Study - An examination, evaluation, and determination of flood hazards and if appropriate, corresponding water surface elevations, or an examination and determination of mudslide or flood-related erosion hazards.

Floodplain or Flood-Prone Area - Any land area susceptible to being inundated by water from any source. *See "flood or flooding."*

Floodproofing - Any combination of structural and nonstructural 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, Regulatory - 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 increasing the water surface elevation more than a designated height.

Highest Adjacent Grade - The highest natural elevation of the ground surface prior to construction next to the proposed walls of a structure.

Historic Structure - Any structure that is:
1. 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;

2. 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;
3. 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
4. Individually listed on a local inventory of historic places in communities with historic preservation programs that have been certified either:
 - a. by an approved state program as determined by the Secretary of the Interior, or
 - b. directly by the Secretary of the Interior in states without approved programs.

Lowest Floor - The lowest floor of the lowest enclosed area, including basement. An unfinished or flood-resistant enclosure, usable solely for the 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 an enclosure is not built so as to render the structure in violation of the applicable non-elevation design requirements of this Chapter.

Manufactured Home - 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 connected to the required utilities. For floodplain management purposes the term "manufactured home" includes park trailers, travel trailers, and other similar vehicles placed on site for greater than 180 consecutive days. This includes manufactured homes located in a manufactured home park or subdivision.

Manufactured Home Park Or Subdivision - A parcel (or contiguous parcels) of land divided into two or more manufactured home lots for rent or sale.

Mean Sea Level - The National Geodetic Vertical Datum (NGVD) of 1929, North American Vertical Datum (NAVD) of 1988, or other datum to which base flood elevations shown on a community's Flood Insurance Rate Map are referenced.

New Construction - 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 a floodplain management regulation adopted by a community and includes any subsequent improvements to such structures.

Recreational Vehicle - A vehicle which is: (1) built on a single chassis, (2) 400 square feet or less when measured at the largest horizontal projections; (3) designed to be self-propelled or permanently towable by a light duty truck; and (4) designed primarily for use as temporary living quarters for recreational, camping, travel or seasonal use.

Special Flood Hazard Area - See "*Area of Special Flood Hazard*."

Start Of Construction - Includes substantial improvements, and means the date the building permit was issued, provided that the actual start of construction, repair, reconstruction, placement or other improvement occurs 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 a slab or footings, the installation of piles, the construction of columns or any work beyond the stage of excavation, or the placement of manufactured housing or pre-site built housing 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, footings, 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 part of the main structure.

Structure (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.

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

Substantial Improvement - Any combination of repairs, reconstruction, alteration or improvements to a structure in which the cumulative cost equals or exceeds 50 percent of the market value of the structure. The market value of the structure shall be the appraised value prior to the start of the initial repair or improvement or, in the case of damage, the value of the structure prior to the damage occurring. For the purposes of this definition, "substantial improvement" is considered to occur when the first alteration of any wall, ceiling, floor or other structural part of the building commences, whether or not that alteration affects the external dimensions of the structure. The term includes structures that have incurred substantial damage, regardless of actual repair work performed. The term does not, however, include any project for improvement of a structure required to comply with existing health, sanitary or safety code specifications which are solely necessary to assure safe living conditions or any alteration of a structure listed on the National Register of Historic Places, provided that the alteration will not preclude the structure's continued designation as a "historic structure."

Violation - 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 under this ordinance is presumed to be in violation until such time as that documentation is provided.

Water Surface Elevation - The height, in relation to the National Geodetic Vertical Datum (NGVD) of 1929, North American Vertical Datum (NAVD) of 1988, (or other datum, where specified), of floods of various magnitudes and frequencies in the floodplains.

175-78. General Design Standards.

The Code Enforcement Officer shall review all building permit applications for new construction or substantial improvements to determine whether proposed building sites will be reasonably safe from flooding. If a proposed building site is in a flood-prone area, all new construction or substantial improvements shall be:

- A. Be designed or modified, and adequately anchored to prevent flotation, collapse or lateral movement of the structure resulting from hydrodynamic and hydrostatic loads, including the effects of buoyancy.
- B. Use flood damage-resistant materials for building components located below the base flood elevation.
- C. Be reasonably safe from flooding and be designed and constructed with methods, practices and materials that minimize flood damage.
- D. Be 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.

175-79. Water and Sewer Systems.

Where new or replacement water and sewer systems, including on-site systems, are proposed in special flood hazard areas, the applicant shall provide the Code Enforcement Officer with assurance that these systems will be designed to minimize or eliminate infiltration of floodwaters into the systems and discharges from the systems into floodwaters, and on-site waste-disposal systems will be located to avoid impairment to them or contamination from them during periods of flooding.

175-80. Certification Records.

The Code Enforcement Officer shall maintain for public inspection and furnish upon request any certifications of flood proofing and the as-built elevation, in relation to mean sea level, of the lowest floor, including basement, of all new or substantially improved structures and include whether or not such structures contain a basement. If the structure has been flood proofed, the as-built elevation, in relation to mean sea level, to which the structure was flood proofed must be furnished by the applicant.

175-81. Review of Proposed Developments.

The Code Enforcement Officer shall review proposed developments to assure that all necessary permits have been received from those governmental agencies from which approval is required by federal or state law, including Section 404 of the Federal Water Pollution Control Act Amendments of 1972, 33 U.S.C.S. 1334. It shall be the responsibility of the applicant to certify these assurances to the Code Enforcement Officer.

175-82. Watercourses.

- A. In riverine situations, prior to the alteration or relocation of a watercourse, the applicant for such authorization shall notify the Wetlands Bureau of the New Hampshire Environmental Services Department and submit copies of such notification to the Code Enforcement Officer, in addition to the copies required by RSA 482-A: 3. Further, the applicant shall be required to submit copies of said notification to those adjacent communities as determined by the Code Enforcement Officer, including notice of all scheduled hearings before the Wetlands Bureau.
- B. The applicant shall submit to the Code Enforcement Officer certification provided by a registered professional engineer assuring that the flood-carrying capacity of an altered or relocated watercourse can and will be maintained.

- C. Along watercourses with a designated Regulatory Floodway no encroachments, including fill, new construction, substantial improvements, and other development are allowed within the floodway unless it has been demonstrated through hydrologic and hydraulic analyses performed in accordance with standard engineering practices that the proposed encroachment would not result in any increase in flood levels within the community during the base flood discharge.
- D. Along watercourses that have not had a regulatory floodway designated, no new construction, substantial improvements or other development, including fill, shall be permitted within Zone AE on the FIRM, unless it is demonstrated that the cumulative effect of the proposed development, when combined with all existing and anticipated development, will not increase the water surface elevation of the base flood more than 1 foot at any point within the community.
- E. The Code Enforcement Officer shall obtain, review, and reasonably utilize any floodway data available from Federal, State, or other sources as criteria for requiring that all development located in Zone A meet the following floodway requirement: "No encroachments, including fill, new construction, substantial improvements, and other development are allowed within the floodway that would result in any increase in flood levels within the community during the base flood discharge."

175-83. Base Flood Elevation.

- A. In special flood hazard areas, the Code Enforcement Officer shall determine the base flood elevation in the following order of precedence according to the data available:
 - 1. In Zone AE, the Code Enforcement Officer shall refer to the elevation data provided in the community's Flood Insurance Study and accompanying FIRM.
 - 2. In Zone A, the Code Enforcement Officer shall obtain, review and reasonably utilize any base flood elevation data available from federal, state, development proposals submitted to the community (i.e., subdivisions or site approvals) or other sources.
 - 3. In Zone A where a base flood elevation is not available, the base flood-elevation shall be at least 2 feet above the highest adjacent grade.
- B. The Code Enforcement Officer's base flood elevation determination will be used as criteria for requiring in Zones A and AE that:
 - 1. The lowest floor of all new construction or substantial improvements of residential structures be elevated to at least 2 feet above the base flood elevation.
 - 2. The lowest floor all new construction or substantial improvements of nonresidential structures be elevated to at least 2 feet above the base flood elevation or, together with attendant utility and sanitary facilities, shall:
 - a. Be flood proofed at least 2 feet above the base flood elevation so that below this elevation the structure is watertight with walls substantially impermeable to the passage of water.
 - b. Have structural components capable of resisting hydrostatic and hydrodynamic loads and the effects of buoyancy.

- c. Be certified by a registered professional engineer or architect that the design and methods of construction are in accordance with accepted standards of practice for meeting the provisions of this section.
- 3. All manufactured homes to be placed or substantially improved within special flood hazard areas shall be elevated on a permanent reinforced foundation such that the lowest floor of the manufactured home is at least 2 feet above the base flood elevation and be securely anchored to resist flotation, collapse or lateral movement. Methods of anchoring may include but are not limited to use of over-the-top or frame ties to ground anchors. This requirement is in addition to applicable state and local anchoring requirements for resisting wind forces. Fully enclosed areas below elevated manufactured homes shall comply with the requirements of Section 175-83 B.4. of this ordinance.
 - 4. For all new construction and substantial improvements, fully enclosed areas below the lowest floor that are subject to flooding are permitted, provided that they meet the following requirements:
 - a. The enclosed area is unfinished or flood-resistant, usable solely for the parking of vehicles, building access or storage.
 - b. The floor of the enclosed area is not below grade on all sides of the structure.
 - c. They shall be designed to automatically equalize hydrostatic flood forces on exterior walls by allowing for the entry and exit of floodwaters. Designs for meeting this requirement must either be certified by a registered professional engineer or architect or must meet or exceed the following minimum criteria:
 - i. A minimum of 2 openings having a total net area of not less than 1 square inch for every square foot of enclosed area subject to flooding shall be provided.
 - ii. The bottom of all openings shall be no higher than 1 foot above grade.
 - iii. Openings may be equipped with screens, louvers or other coverings or devices, provided that they permit the automatic entry and exit of floodwaters.
 - 5. Recreational vehicles placed on sites within Zones A and AE shall: (1) be on the site for fewer than 180 consecutive days, (2) be fully licensed and ready for highway use, or (3) meet all standards of section 175-77 of this ordinance and the elevation and anchoring requirements for “manufactured homes” in section 175-83(B)(3) of this ordinance. A recreational vehicle is ready for highway use if it is on its wheels or jacking system, is attached to the site only by quick disconnect type utilities and security devices, and has no permanently attached additions.

C. Advisory Climate Change Risk Areas.

The Town of Durham recommends (but does not require) that landowners, homeowners, developers, and other parties seeking to build on properties located in advisory climate change risk areas as designated on the Advisory Climate Change Risk Areas map, but not in a special flood hazard area, review the provisions of this chapter and apply them proactively to construction and development projects as applicable. All applicants seeking to build in these areas shall inform the Durham Building Official which standard they intend to follow. See purpose statement, above.

Flood Elevation Determination. In Advisory Climate Change Risk Areas where base flood elevation is not available, applicants are advised to determine the flood elevation by adding at least 2 feet above the highest point around the perimeter of the building footprint.