

ARTICLE 110, Flood Hazard Zone [Added effective 4-24-1978]

§ 118-1100. Flood Hazard Zone. [Amended effective 8-19-1986; 2-26-1993; 6-18-2010; 12-24-2010; 7-8-2013; 7-25-2014, 2-15-2019]

A. Purpose and intent.

- (1) It is declared that a need is present in Norwalk for greater protection of its citizens and their property from the ravages of flooding.
- (2) It is the purpose of this regulation to control the construction of buildings in areas which are subject to flooding in order to minimize the damages of such flooding and to promote the health and safety of the city's residents.
- (3) It is the purpose of this regulation to enable the City of Norwalk to continue its eligibility for federal flood insurance and, in doing so, to meet the minimum standards set forth by the Federal Emergency Management Agency.

B. Special definitions. As used in the Flood Hazard Zone regulations, the following terms shall have the meanings indicated:

ADMINISTRATOR -- The Federal Flood Administrator who has been designated the responsibility for the administration of this program.

BASE FLOOD -- The flood having a one-percent chance of being equaled or exceeded in any given year.

BASE FLOOD ELEVATION (BFE) -- The elevation of the crest of the base flood or 100-year flood. The height in relation to mean sea level expected to be reached by the waters of the base flood at pertinent points in the floodplains of coastal and riverine areas.

BASEMENT -- Any area of the building having its floor subgrade (below ground level) on all sides.

BREAKAWAY WALLS -- A wall that is not part of the structural support of the building and is intended through its design and construction to collapse under specific lateral loading forces without causing damage to the elevated portion of the building or supporting foundation system

BUILDING -- see definition for "Structure".

COASTAL AE ZONE – The portion of the Coastal High Hazard Area with wave heights between 1.5 feet and 3.0 feet during the base flood and seaward of the line labeled the “Limit of Moderate Wave Action” (LiMWA) on a Flood Insurance Rate Map (FIRM). [Added effective 2-15-2019]

COASTAL HIGH-HAZARD AREA – An area of special flood hazard extending from offshore to the inland limit of a primary frontal dune along an open coast and any other area subject to high velocity wave action from storms or seismic sources. Coastal High Hazard Areas are designated as Zones VE and Coastal AE on a Flood Insurance Rate Map (FIRM). [Added effective 2-15-2019]

DEVELOPMENT -- Any man-made change to improved or unimproved real estate, including but not limited to the construction of buildings or structures; the construction of additions, alterations or substantial improvements to buildings or structures; the placement of buildings or structures; mining, dredging, filling, grading, paving, excavation or drilling operations or storage of equipment; the storage, deposition, or extraction of materials; and the installation, repair or removal of public or private sewage disposal systems or water supply facilities.

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 home are to be affixed (including, as 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, April 24, 1978, of the floodplain management ordinance adopted by the community.

EXPANSION TO AN EXISTING MANUFACTURED HOME PARK OR SUBDIVISION -- 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).

FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA) -- The federal agency that administers the National Flood Insurance Program (NFIP).

FLOOD or FLOODING -- A general and temporary condition of partial or complete inundation of normally dry land areas from either 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) -- An official map of the City of Norwalk on which the Administrator has delineated both the areas of special flood hazard and the risk premium zones applicable to Norwalk.

FLOOD INSURANCE STUDY (FIS) -- The official study of a community in which the Federal Emergency Management Agency (FEMA) has conducted an examination, evaluation and determination of flood hazards and, if appropriate, corresponding water surface elevations.

FLOODPROOF -- 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.

FLOODWAY -- 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 (1.0) foot. The "floodway" is shown on the Fairfield County, Connecticut Flood Insurance Rate Maps prepared by the Federal Emergency Management Agency, dated June 18 2010, as amended.

FUNCTIONALLY DEPENDENT USE OR FACILITY -- A use or facility that cannot perform its intended purpose unless it is located or carried out in close proximity to water. The term includes but is not limited to docking facilities, port facilities that are necessary for the loading and unloading of cargo or passengers, ship building and ship repair facilities. The term does not include seafood processing facilities, long-term storage, manufacturing, sales or service facilities.

HISTORIC STRUCTURE -- Any structure that is: (a) Listed individually in the National Register of Historic Places maintained by the U. S. 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 historic 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 by an approved State program as determined by the Secretary of the Interior.

LIMIT OF MODERATE WAVE ACTION (LiMWA) – **The landward limit of the 1.5 foot Breaking wave within a Coastal AE Zone. These areas are seaward of the line labeled “Limit of**

Moderate Wave Action” (LiMWA) on a Flood Insurance Rate Map (FIRM). [Added effective 2-15-2019]

LOWEST FLOOR -- 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.

MANUFACTURED HOME -- A structure, transportable in one (1) or more sections, which is built on a permanent chassis and designed to be used with or without a permanent foundation when connected to the required utilities. The term "manufactured home" does not include a "recreational vehicle."

MANUFACTURED HOME PARK OR SUBDIVISION -- A parcel or contiguous parcels of land divided into two (2) or more manufactured home lots for rent or sale.

MARKET VALUE -- The market value of a structure shall be determined by an independent appraisal by a licensed professional appraiser 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.

MEAN SEA LEVEL (MSL) – The North American Vertical Datum (NAVD) of 1988 or other datum, to which base flood elevations shown on a community’s Flood Insurance Rate Map (FIRM) are referenced.

NEW MANUFACTURED HOME PARK OR SUBDIVISION - 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, April 24, 1978, of the floodplain management regulation adopted by the community.

RECREATIONAL VEHICLE -- A vehicle which is (i) built on a single chassis; (ii) four hundred (400) square feet or less when measured at the largest horizontal projections; (iii) designed to be self-propelled or permanently towable by a light-duty truck; and (iv) designed primarily not for use as a permanent dwelling, but as temporary living quarters for recreational, camping, travel or seasonal use.

SAND DUNES – Naturally occurring accumulations of sand in ridges or mounds landward of the beach.

SPECIAL FLOOD HAZARD AREA (SFHA) – The land in the floodplain subject to a one-percent or greater chance of flooding in any given year, as shown on the Fairfield County, Connecticut Flood Insurance Rate Maps, City of Norwalk applicable panels 0389, 0391-0394, 0526, 0527, 0529, 0531-0534, 0537, 0541, 0542, prepared by the Federal Emergency Management Agency, dated June 18 2010, as amended. **SFHAs are determined utilizing the base flood elevations (BFE) provided on the flood profiles in the Flood Insurance Study (FIS) for a community. BFEs provided on Flood Insurance Rate Map (FIRM) are only approximate (rounded up or down) and should be verified with the BFEs published in the FIS for a specific location. SFHAs include, but are not necessarily limited to, the land shown as Zones A, AE, AO, AH, and the Coastal High Hazard Areas shown as Zones VE and Coastal AE on a FIRM. The SFHA is also called the Area of Special Flood Hazard.**

START OF CONSTRUCTION -- The date the building permit was issued, provided the actual start of construction, repair, reconstruction, rehabilitation, addition, placement or other improvement was within one hundred eighty (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 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, 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 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, whether or not that alteration affects the external dimensions of the building. (This definition is for other than new construction of substantial improvements under the coastal barrier resources act. (Pub.L. 97-348)

STRUCTURE – A walled and roofed building which is principally above ground, including a manufactured home, a gas or liquid storage tank, or other man-made facilities or infrastructures.

SUBSTANTIAL DAMAGE – Damage of any origin sustained by a structure, whereby the cost of restoring the structure to its pre-damaged condition would equal or exceed fifty percent (50%) of the market value of the structure before the damage occurred.

SUBSTANTIAL IMPROVEMENT – Any repair, reconstruction or improvement of a structure, the cumulative cost of which equals or exceeds fifty percent (50%) of the market value of the structure either before the “start of construction” of the improvement or repair is started or, if the structure has been damaged and is being restored, before the damage occurred, including the cumulative cost of improvements taking place after the original effective date of these regulations April 24, 1978. This term includes structures that have incurred “substantial damage”, regardless of the actual repair work performed. For the purpose 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 does not, however, include either any project for improvement of a structure to comply with existing state or local health, sanitary or safety code specifications which have been previously identified by the local code enforcement official and which are the minimum necessary to assure safe living conditions nor any alteration of a historic structure listed on the National Register of Historic Places or a State Inventory of Historic Places, provided that the alteration will not preclude the structure’s continued designation as a historic structure. [Amended effective 12-24-2010, effective 7-8-2013]

VARIANCE - A grant of relief by the Norwalk Zoning Board of Appeals from the terms of the Flood Hazard Zone regulation that allows construction in a manner otherwise prohibited and where specific enforcement would result in unnecessary hardship.

VIOLATION – The failure of a structure or other development to be fully compliant with the City of Norwalk’s Flood Hazard Zone regulations. A structure or other development without required permits, lowest floor elevation documentation, flood-proofing certificates or required floodway encroachment calculations is presumed to be in violation until such time as that documentation is provided.

WATER SURFACE ELEVATION – The height, in relation to the North American Vertical Datum (NAVD) of 1988, (or other datum, where specified) of floods of various magnitudes and frequencies in the flood plains of coastal or riverine areas.

C. Regulations for development.

- (1) Flood zones. All references to flood zones in this section refer to the areas of special flood hazard (**SFHA**) identified by the Federal Emergency Management Agency (FEMA) in its Flood Insurance Study (FIS) for Fairfield County, Connecticut, dated **October 16, 2013** and accompanying Flood Insurance Rate Maps (FIRM), dated **October 16, 2013** (Panel 09001C0393G), **July 8, 2013** (Panels 09001C0529G, 09001C0531G, 09001C0532G, 09001C0533G, 09001C0534G, 09001C0537G, 09001C0541G, 09001C0542G) and June 18, 2010 (Panels 09001C0389F, 09001C0391F, 09001C0392F, 09001C0394F, 09001C0526F, 09001C0527F), and other supporting data applicable to the City of Norwalk,

and any subsequent revisions thereto, are adopted by reference and declared to be a part of this regulation as cited in Section 118-200. Since mapping is legally adopted by reference into this regulation it must take precedence until such time as a map amendment or map revision is obtained from FEMA. The area of special flood hazard (SFHA) **includes any area shown on the FIRM as Zones A, AE, AO, AH, Coastal AE and VE, including areas designated as a floodway on a FIRM. Zones VE and Coastal AE are also identified as Coastal High Hazard Areas.** Areas of special flood hazard are determined utilizing the base flood elevations (BFE) provided on the flood profiles in the Flood Insurance Study (FIS) for Norwalk. BFEs provided on a Flood Insurance Rate Map (FIRM) are approximate (rounded up or down) and should be verified with the BFEs published in the FIS for a specific location. [Amended effective 7-8-2013, 2-15-2019]

- (2) Base flood elevation data. All proposed developments shall include within such proposals base flood elevation data.
 - (a) In A Zones where base flood elevations have been determined, but before a floodway is designated, require that no new construction, substantial improvement or other development (including fill) be permitted which will increase base flood elevations more than one (1) foot at any point along the watercourse when all anticipated development is considered cumulatively with the proposed development.
 - (b) Should data be requested and/or provided, adopt a regulatory floodway based on the principle that the floodway must be able to convey the waters of the base flood without increasing the water surface elevation more than one (1) foot at any point along the watercourse.
- (3) In all special flood hazard areas designated as Flood Zones A, AE, **Coastal AE** and VE the following provisions shall apply: [Amended effective 2-15-2019]
 - (a) Proposed development shall be reviewed 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. Section 1334, and to determine whether proposed building sites will be reasonably safe from flooding. **New construction, substantial improvements, and repair to structures that have sustained substantial damage shall be constructed with materials and utility equipment that are flood-damage resistant and conform to the provisions of FEMA Technical Bulletin 2, Flood Damage-Resistant Material Requirements. This includes, but is not limited to, flooring, interior and exterior walls, wall coverings and other materials installed below the base flood elevation plus one (1.0) foot.**
 - (b) Permits shall be required for all new construction, substantial improvements and other development and shall be designed (or modified) and adequately anchored to prevent flotation, collapse or lateral movement of the structure, be constructed with materials resistant to flood damage and be constructed by methods and practices that minimize flood damage. **The bottom of all electrical, heating, plumbing, ventilation and air conditioning equipment, appliances, fixtures and components, HVAC duct work and duct systems, and any other utility service equipment, facilities, machinery, or connections servicing a structure shall be elevated to the base flood elevation plus one (1) foot. This includes, but is not limited to, furnaces, oil or propane tanks, air conditioners, heat pumps, hot water heaters, ventilation duct work, washer and dryer hook-ups, electrical**

junction boxes, and circuit breaker boxes. Systems, fixtures, equipment and components shall not be mounted on or penetrate through breakaway walls intended to fail under flood loads. Connections or other equipment that must be located below the BFE plus 1.0 foot elevation are permitted only when no other elevation alternative is available and provided they are designed and installed to prevent water from entering or accumulating within the components and to resist hydrostatic and hydrodynamic loads and stresses, including the effects of buoyancy, during the occurrence of the base flood event. Electrical wiring systems that must be located below the BFE plus 1.0 foot shall conform to the standards for wet locations.

- (c) For all new construction and substantial improvements in A and AE zones, fully enclosed areas below the lowest floor that are usable solely for parking of vehicles, building access or storage in an area other than a basement and which 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. Designs for meeting this requirement must be certified by a registered professional engineer or architect and must meet or exceed the following minimum criteria: A minimum of two (2) openings having a total net area of not less than one (1) 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 (1) foot above grade. Openings may be equipped with screens, louvers or other coverings or devices provided that they permit the automatic entry and exit of floodwaters.
- (d) The placement of mobile homes and manufactured homes shall be prohibited in flood hazard areas A, AE, shaded X, and VE. This prohibition includes placement outside of a manufactured home park or subdivision, in a new manufactured home park or subdivision, in an existing manufactured home park or subdivision, in an expansion to an existing manufactured home park or subdivision, or in an existing manufactured home park or subdivision on which a manufactured home has incurred substantial damage as a result of a flood. Recreational vehicles placed on sites within Zones A, AE and VE shall: (1) be on the site for fewer than one hundred eighty (180) consecutive days; and (2) be fully licensed and ready for highway use. (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.)
- (e) New and replacement water supply and sanitary sewer systems shall be designed to minimize or eliminate infiltration of floodwaters into the system. Sanitary sewer systems shall also minimize or eliminate discharge from the system into floodwaters. On-site waste disposal systems shall be located and constructed to avoid impairment to them or contamination from them during flooding.
- (f) **In all flood zones, underground tanks shall be anchored to prevent flotation, collapse and lateral movement under conditions of the base flood. In VE and Coastal AE zones, above-ground storage tanks which are located outside or inside of a structure must be elevated one (1.0) foot above the base flood elevation (BFE). Where elevated on platforms, the platforms shall be cantilevered from or knee braced to the building or shall be supported on elevated foundations that conform to the standards for the particular flood zone as described in Section 5.3. In A and AE zones, above-ground storage tanks which are located outside or inside of a structure shall be elevated one**

(1.0) foot above the base flood elevation (BFE) or shall be securely anchored to prevent flotation, collapse or lateral movement under conditions of the base flood. Anchored tanks must have the top of the fill pipe located at least one (1.0) foot above the BFE and have a screw fill cap that does not allow for the infiltration of flood water.

- (g) If any portion of a structure lies within the Special Flood Hazard Area (SFHA), the entire structure is considered to be located within the SFHA and must meet the construction requirements of the flood zone. The structure includes any structurally attached additions, garages, decks, porches, sunrooms, patios or any other structure attached to the main structure.**
 - (h) If a structure lies within two or more flood zones, the construction standards of the most restrictive zone apply to the entire structure (i.e., VE zone is more restrictive than AE zone; structure must be built to the highest BFE). The structure includes any structurally attached additions, garages, decks, porches, patios, sunrooms, or any other structure attached to the main structure.**
 - (i) The property owner, or his agent, shall notify adjacent communities and the Connecticut Department of Environment Protection of any alteration or relocation of a watercourse. This notification shall be by certified mail, return receipt requested, with evidence of such notification submitted to the Zoning Commission and the Federal Emergency Management Agency. The property owner shall file in the Town Clerk's Office a maintenance agreement assuring that the flood-carrying capacity of the altered or relocated watercourse is not diminished.
 - (j) The Zoning Inspector will obtain, record and maintain the elevation (in relation to mean sea level) of the lowest floor (including basement) of all new construction and substantial improvements. For coastal high hazard areas (VE zones and Coastal AE Zones), the Zoning Inspector will obtain, record and maintain the elevation of the bottom of the lowest horizontal structural member for all new construction and substantial improvements.**
- (4) Flood Zone A, unnumbered. The following provisions additionally shall apply:
- (a) The Zoning Inspector shall require the applicant to utilize any base flood elevation and floodway data available from a federal, state or other source as criteria for requiring that all new construction and substantial improvements of residential structures have the lowest floor, including basement, elevated to or above the base flood elevation plus one (1) foot and all new construction and substantial improvements of nonresidential structures have the lowest floor, including basement, elevated or floodproofed so that it is watertight above the base flood elevation. **A registered professional engineer must determine the BFE in accordance with accepted hydrologic and hydraulic engineering practices and document the technical methods used. Studies, analyses and computations shall be submitted in sufficient detail to allow thorough review and approval.** Where floodproofing is utilized for a particular structure, a Connecticut registered professional engineer or architect shall certify that the floodproofing methods are adequate to withstand the flood depths, pressures, velocities, impact and uplift forces and other factors associated with the base flood, and a record of such certificate indicating the specific elevation, in relation to mean sea level, to which such structures are floodproofed shall be maintained with the Zoning Inspector.

- (5) Flood Zone AE. The following provisions additionally shall apply: [Amended effective 2-15-2019]
- (a) **Residential construction:** All new construction and substantial improvements of residential structures shall have the lowest floor (including basement) elevated to or above the base flood elevation plus one (1) foot. All new construction, substantial improvements, and repair to structures that have sustained substantial damage which are residential structures shall have the bottom of the lowest floor, including basement, elevated one (1.0) foot above the base flood elevation (BFE). Electrical, plumbing, machinery or other utility equipment that service the structure must be elevated one (1.0) foot above the BFE.
 - (b) **Non-Residential Construction:** All new construction, substantial improvements, and repair to structures that have sustained substantial damage which are commercial, industrial or non-residential structures shall:
 - 1. Have the bottom of the lowest floor, including basement, elevated one (1.0) foot above the base flood elevation (BFE); or
 - 2. In lieu of being elevated, non-residential structures may be dry flood-proofed to one (1.0) foot above the BFE provided that together with all attendant utilities and sanitary facilities the areas of the structure below the required elevation are watertight with walls substantially impermeable to the passage of water, and provided that such structures are composed of structural components having the capability of resisting hydrostatic and hydrodynamic loads and the effects of buoyancy. A registered professional engineer or architect shall review and/or develop structural design specifications and plans for the construction, and shall certify that the design and methods of construction are in accordance with acceptable standards of practice for meeting the provisions of this section. Such certification shall be provided to the [title of local administrator] on the FEMA Floodproofing Certificate, Form 81-65.
 - 3. Electrical, plumbing, machinery or other utility equipment that service the structure must be elevated one (1.0) foot above the BFE.
 - (c) **Fully Enclosed Areas Below The Base Flood Elevation Of Elevated Buildings:** All new construction, substantial improvements, or repair to structures that have sustained substantial damage, whether residential or non-residential, that include fully enclosed areas formed by a foundation and other exterior walls shall have the lowest floor (including basement) elevated to one (1.0) foot above the base flood elevation (BFE). The elevated building shall be designed to preclude finished living space below the lowest floor and be designed to allow for the entry and exit of flood waters to automatically equalize hydrostatic flood forces on exterior walls (wet flood-proofing). Designs for complying with this requirement must either be certified by a registered professional engineer or architect as meeting the requirements of ASCE 24 Section 2.6.2.2, or meet the following minimum criteria listed in sections (a)-(h) below:
 - 1. Provide a minimum of two (2) openings (hydraulic flood vents) having a total net area of not less than one square inch for every one square foot of enclosed area subject to flooding. The enclosed area is measured on the exterior of the enclosure walls. These hydraulic openings must be located

on at least two different exterior walls of each enclosed area. If the structure has more than one enclosed area, openings must be installed in the exterior walls of each enclosed area so that flood waters can enter directly from the outside;

2. The bottom of all openings shall be no higher than one (1.0) foot above the higher of either the final interior grade or floor elevation, or the finished exterior grade adjacent to the outside of the foundation wall. At least one entire side of the structure's fully enclosed area must be at or above grade. Fill placed around the foundation walls must be graded so that the elevation inside the enclosed area is equal to or higher than the adjacent outside elevation on at least one side of the building. The finished floor of the enclosed area shall be no lower than the bottom of the foundation openings. The foundation slab of a residential structure, including the slab of a crawlspace, must be set equal to the outside finished grade on at least one side of the building;
3. The openings may be equipped with screens, louvers, valves or other coverings or devices provided they permit the automatic entry and exit of flood waters in both directions without any external influence or control such as human intervention, including the use of electrical and other non-automatic mechanical means. These coverings must not block or impede the automatic flow of floodwaters into and out of the enclosed area. Other coverings may be designed and certified by a registered professional engineer or approved by the Zoning Inspector;
4. Openings shall not be less than three (3) inches in any direction in the plane of the wall;
5. The area cannot be used as finished living space. Use of the enclosed area shall be the minimum necessary and shall only be used for the parking of vehicles, building access or limited storage. Access to the enclosed area shall be the minimum necessary to allow for the parking of vehicles (garage door) or limited storage of maintenance equipment used in connection with the premises (standard exterior door) or entry to the living area (stairway or elevator). The enclosed area shall not be used for human habitation;
6. All interior walls, floor, and ceiling materials located below one (1.0) foot above the BFE shall be unfinished and flood damage-resistant in accordance with FEMA Technical Bulletin 2, Flood Damage-Resistant Requirements.
7. Electrical, plumbing, HVAC duct work, machinery or other utility equipment and connections that service the structure (including, but not limited to, furnaces, oil or propane tanks, air conditioners, heat pumps, hot water heaters, ventilation, washer and dryer hook-ups, electrical junction boxes, circuit breaker boxes and food freezers) are prohibited in the fully enclosed area below the BFE plus one (1.0) foot. Utilities or service equipment located in this enclosed area, even if elevated to one (1.0) foot above the BFE in the space, may subject the structure to increased flood insurance rates.
8. A residential building with a structurally attached garage having the floor slab below the BFE is considered an enclosed area below the BFE and

must meet FEMA standards. A garage attached to a residential structure, constructed with the garage floor slab below the BFE, must be designed to allow for the automatic entry and exit of floodwaters in both directions. Flood openings or vents are required in the exterior walls of the garage or in the garage doors. Garage doors that must be manually opened do not meet the flood vent opening requirements. In addition to the automatic entry of floodwaters, the areas of the garage below BFE plus one (1.0) foot must be constructed with flood damage-resistant materials per the requirements of FEMA Technical Bulletin 2. Garages attached to non-residential structures must also meet the aforementioned requirements or be dry floodproofed.

(6) Flood Zone VE and Coastal AE. The following provisions additionally shall apply.
[Amended effective 2-15-2019]

- (a) All new construction and substantial improvements shall be located landward of the reach of the Connecticut Coastal Jurisdiction Line as defined in CGS 22a-359 as amended by Public Act 12-101. [Amended effective 7-8-2013]
- (b) All new construction and substantial improvements **and repair to structures that have sustained substantial damage** shall be elevated on adequately anchored pilings or columns, and securely anchored to such piles or columns so that the lowest portion of the lowest horizontal structural members of the lowest floor (excluding the pilings, **pile caps**, or columns) is elevated to or above the base flood elevation plus one (1) foot **with all space below the lowest horizontal supporting member open and free of obstruction so as not to impede the flow of water. Basement floors that are below ground on all sides are prohibited. The bottom of all electrical, plumbing, machinery or other utility equipment that service the structure must be elevated one (1.0) foot above the BFE and cannot be located below the structure. Any service equipment that must be located below the BFE must be floodproofed to prevent water from entering during conditions of flooding. Electrical, mechanical and plumbing system components are not to be mounted on or penetrate through walls designed to breakaway under flood loads.** A Connecticut registered professional engineer or architect shall certify that the structure is securely anchored to adequately anchored pilings or columns in order to resist flotation, collapse and lateral movement; in order to withstand the effects of wind and water loads acting simultaneously on all building components as well as velocity waters and hurricane wave wash from a one-hundred-year storm event and the space beneath the lowest floor shall be free of obstruction, or be constructed with breakaway walls intended to collapse under stress; said space shall not be used for human habitation. Non-supporting breakaway walls, lattice work or mesh screening shall be allowed below the base flood elevation provided it is not part of the structural support of the structure and is designed so as to break away, under abnormally high tides or wave action, without damage to the structural integrity of the structure on which it is to be used and provided the following design specifications are met: (1) Design safe loading resistance of each wall shall not be less than ten (10) pounds per square foot or more than twenty (20) pounds per square foot; or (2) If more than twenty (20) pounds per square foot, a licensed professional engineer or architect shall certify that the design wall collapse would result from a water load less than that which would occur during the base flood event and the elevated portion of the building and supporting foundation system shall not be subject to collapse, displacement or other structural

damage due to the effects of wind and water loads acting simultaneously on all building components prior to or during the collapse of such wall. If breakaway walls, lattice work or screening are utilized, the resulting enclosed space shall not be designed to be used for human habitation, but shall be designed to be used only for parking of vehicles, building access, or limited storage of maintenance equipment used in connection with the premises. **Areas enclosed by breakaway walls shall contain hydraulic flood vents.** Electrical, plumbing, machinery or other utility equipment that service the structure must be elevated to or above the BFE and cannot be located below the structure. Any service equipment that must be located below the BFE must be floodproofed to prevent water from entering during conditions of flooding.

- (c) No use of fill for structural support of buildings shall be permitted. **Minor grading and the placement of minor quantities of non-compacted fill shall be permitted for landscaping and drainage purposes under and around buildings, and for support of parking slabs, pool decks, patios and walkways installed at current grade. The fill must wash out from storm surge, thereby rendering the building free of obstruction, prior to generating excessive loading forces, ramping effects, or wave deflection.**
 - (d) Man-made alterations of sand dunes which would increase potential flood hazard damage is prohibited.
 - (e) **To protect the building envelope, an exterior door shall be installed at the top of the stairs that provides access to the lowest (habitable) floor of the structure.**
 - (f) **The base of a chimney or fireplace shall not extend below the BFE plus one foot. When vertical support is required, a chimney or fireplace shall be vertically supported on pile or column foundations embedded at least as deep as the rest of the structure foundation or deeper where needed to support the chimney against water and wind loads. The chimney and fireplace system shall be designed to minimize transfer of water and wind loads to the structure or structure foundation.**
- (7) Floodway. In the floodway designated on the Flood Insurance Rate Map the following shall additionally apply:
- (a) Encroachments, including fill, new construction, substantial improvements and other development that would result in any (0.00 feet) increase in flood levels within the community during the occurrence of the base flood discharge shall be prohibited. The provision of proof that there shall be no (0.00 feet) increase in flood levels during occurrence of the base flood discharge due to the proposed construction or encroachment shall be the responsibility of the applicant and shall be based on hydrologic and hydraulic studies, performed in accordance with standard engineering practice, and certification, with supporting technical data, by a Connecticut Registered Professional Engineer. **Buildings and structures meeting the standard above and located in whole or in part in the floodway shall be designed and constructed in accordance with ASCE 24.**
 - (b) **Variances shall not be issued within any designated floodway if any increase in flood levels during the base flood discharge would result.**
- (8) Variances. In addition to the provisions set forth in Article 140, § 118-1410, Board of Appeals, the following shall apply in flood hazard areas:

- (a) The applicant for a variance shall be notified in writing over the signature of the Zoning Inspector that the issuance of a variance to construct a structure below the base flood **elevation** will result in increased premium rates for flood insurance, and such construction below the base flood **elevation** increases risks to life and property. Such notification shall be maintained with a record of all variance actions as required in Subsection C. (8) (b) of this section.
- (b) The city shall maintain a record of all variance actions, including justification for their issuance, and report such variances issued in its annual report submitted to the Administrator.

(9) Compliance.

- (a) Upon completion of the foundation for all structures in a flood hazard area and before any further construction can occur, an as-built drawing prepared by a licensed surveyor shall be submitted to the Zoning Officer. The as-built drawing shall show the location of the foundation on the property as well as the elevation of the top of the foundation.
- (b) Upon completion of all structures in a flood hazard area, a professional engineer or registered architect shall certify that the structure has been constructed in compliance with the standards set forth in § 118-1100 of the Building Zone Regulations.

(10) Abrogation and Greater Restrictions

- (a) This regulation is not intended to repeal, abrogate or impair any existing easements, covenants, or deed restrictions. However, where this regulation and another ordinance, regulation easement, covenant or deed restriction conflict or overlap, whichever imposes the more stringent restrictions shall prevail.

(11) Warning and Disclaimer of Liability

- (a) The degree of flood protection required by this regulation is considered the minimum reasonable for regulatory purposes and is based on scientific and engineering consideration and research. Larger floods can and will occur on rare occasions. Flood heights may be increased by man-made or natural causes. This regulation does not imply or guarantee that land outside the Special Flood Hazard Area or uses permitted in such areas will be free from flooding and flood damages. This regulation shall not create liability on the part of the City of Norwalk or by any officer or employee thereof for any flood damages that result from reliance on this regulation or any administrative decision lawfully made thereunder. The City of Norwalk, its officers and employees shall assume no liability for another person's reliance on any maps, data or information provided by the City of Norwalk.