

CHAPTER 38

Floodplain Construction

3800.1 Definitions.

In this chapter the following terms have the meanings indicated. Any term not defined in this chapter shall have the meaning as defined in Chapter 153 of the Code.

ACCESSORY STRUCTURE -- An accessory structure is a structure which is on the same parcel of property as a principal structure and the use of which is incidental to the use of the principal structure

BASE BUILDING - The building to which an addition is being added. This term is used in provisions relating to additions.

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

CERTIFICATE OF OCCUPANCY OR USE -- A permit to legally occupy or use a building for the intended purpose.

DECLARATION OF LAND RESTRICTION (Nonconversion Agreement) - A form signed by the owner to agree not to convert or modify in any manner that is inconsistent with the terms of the permit and these regulations, certain enclosures below the lowest floor of elevated buildings and certain accessory structures. The form requires the owner to record it on the property deed to inform future owners of the restrictions.

ELEVATION CERTIFICATE – Federal Emergency Management Administration (FEMA) form on which surveyed elevations and other data pertinent to a property and a building are identified and which shall be completed by a licensed professional land surveyor or a licensed professional engineer, as specified by the Floodplain Administrator. When used to document the height above grade of buildings in special flood hazard areas for which base flood elevation data are not available, the Elevation Certificate shall be completed in accordance with the instructions issued by FEMA.

ENCLOSURE BELOW THE LOWEST FLOOR - An unfinished or flood-resistant enclosure that is located below an elevated building, is surrounded by walls on all sides, and is usable solely for parking of vehicles, building access or storage, in an area other than a basement area, provided that such enclosure is built in accordance with the applicable design requirements specified in these regulations. Also see “Lowest Floor.”

FLOOD DAMAGE RESISTANT MATERIALS - Any construction material that is capable of withstanding direct and prolonged contact with floodwaters without sustaining any damage that requires more than cosmetic repair. [Note: See NFIP Technical Bulletin #2, “Flood Damage-

Resistant Materials Requirements.”**FLOOD OPENING** -- A flood opening (non-engineered) is an opening that is used to meet the prescriptive requirement of 1 square inch of net open area for every square foot of enclosed area. An engineered flood opening is an opening that is designed and certified by a licensed professional engineer or licensed architect as meeting certain performance characteristics, including providing automatic entry and exit of floodwaters; this certification requirement may be satisfied by an individual certification for a specific structure or issuance of an Evaluation Report by the Increased Cost of Compliance (ICC) Evaluation Service, Inc. [NOTE: See National Flood Insurance Program (NFIP) Technical Bulletin #1, “Openings in Foundation Walls and Walls of Enclosures.”]

FLOOD PROOFING -- Any combination of structural and nonstructural additions, changes, or adjustments to buildings or structures which reduce or eliminate flood damage to real estate or improved real property, water and sanitary facilities, structures and their contents, such that the buildings or structures are 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.

FLOODPROOFING CERTIFICATE -- FEMA form that is to be completed, signed and sealed by a licensed professional engineer or licensed architect to certify that the design of floodproofing and proposed methods of construction are in accordance with the applicable requirements

FLOOD PROTECTION ELEVATION (FPE) -- The freeboard required by Carroll County, which is the base flood elevation plus three feet

HISTORIC STRUCTURE -- Any structure that is:

(1) Individually listed in the National Register of Historic Places (a listing maintained by the U.S. Department of Interior) or preliminarily determined by the Secretary of the Interior as meeting the requirements for individual listings 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; or

(3) Individually listed on the Maryland Register of Historic Places.

LOWEST FLOOR -- The lowest floor of the lowest enclosed area (including basement) of a building or structure; the floor of an enclosure below the lowest floor is not the lowest floor provided the enclosure is constructed in accordance with these regulations. The lowest floor of a manufactured home is the bottom of the lowest horizontal supporting member (longitudinal chassis frame beam).

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. The term manufactured home does not include a recreational vehicle.

MARKET VALUE -- The price at which a property will change hands between a willing buyer and a willing seller, neither party being under compulsion to buy or sell and both having reasonable knowledge of relevant facts. For the purposes of these regulations, the market value of a building is determined by a licensed real estate appraiser or the most recent, full phased-in assessment value of the building (improvement) determined by the Maryland Department of Assessments and Taxation.

NAVD -- North American Vertical Datum of 1988 elevation datum set by the National Geodetic Survey.

NEW CONSTRUCTION -- Structures, including additions and improvements, and the placement of manufactured homes, for which the start of construction commenced on or after August 1, 1978, the initial effective date of the Carroll County, Maryland Flood Insurance Rate Map, including any subsequent improvements, alterations, modifications, and additions to such structures.

PERMANENT STRUCTURE -- Any structure occupying a site for more than 180 days per year.

RECREATIONAL VEHICLE -- A vehicle built on a single chassis which is 400 square feet or less at the longest horizontal projection, self-propelled or towable, and designed primarily for temporary living while traveling or camping.

REPETITIVE LOSS -- Flood-related damage sustained by a building on two separate occasions during a ten year period for which the cost of repairs at the time of each event, on the average, equals or exceeds 25% of the market value of the building before the damage occurred.

START OF CONSTRUCTION --

- (1) 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.
- (2) 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 structures, such as garages or sheds not occupied as dwelling units or not part of the main structure.

- (3) For substantial improvements, 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.

SUBSTANTIAL DAMAGE -- Damage of any origin sustained by a building or structure whereby the cost of restoring the building or structure to its before damaged condition would equal or exceed 50% of the market value of the building or structure before the damage occurred. Also used as “substantially damaged” structures. [Note: See “Substantial Improvement/Substantial Damage Desk Reference” (FEMA P-758).]

SUBSTANTIAL IMPROVEMENT -- Any reconstruction, rehabilitation, addition, or other improvement of a building or structure, the cost of which equals or exceeds 50% of the market value of the building or structure before the start of construction of the improvement. The term includes structures which have incurred substantial damage, regardless of the actual repair work performed. For purposes of this definition, substantial improvements/repairs shall be documented and tracked on a cumulative basis for a period of ten (10) years from the date of the issuance of the certificate of use and occupancy. It will be tracked using an appraisal provided by the applicant. The applicant/owner must sign an affidavit that allows the County to inspect the improvements once a year during regular business hours with prior notice. The term does not, however, include either:

a. Any project for improvement of a building or structure to correct existing violations of State or local health, sanitary, or safety code specifications which have been identified by the local code enforcement official prior to submission of an application for a permit and which are the minimum necessary to assure safe living conditions; or

b. Any alteration of a historic structure, provided that the alteration will not preclude the structure’s continued designation as a historic structure.

TEMPORARY STRUCTURE -- Any structure completely removed within 180 days from issuance of the permit.

VARIANCE -- A grant of relief from the strict application of one or more requirements of these regulations.

VIOLATION -- Any construction or development in a special flood hazard area that is being performed without an issued permit. The failure of a building, structure, or other development for which a permit is issued to be fully compliant with these regulations and the conditions of the issued permit. A building, structure, or other development without the required design certifications, the Elevation Certificate, or other evidence of compliance required is presumed to be a violation until such time as the required documentation is provided.

WATER-CONVEYING STRUCTURE. A water conveyance, including but not limited to bridges, culverts, dikes, flumes, or levees.

FLOODPLAIN AND STORM DRAINAGE AREAS SUBJECT TO FLOODING BY SURFACE WATERS OR RUNNING STREAMS

3800.2. Delineation of the floodplain. For the purposes of these regulations, the minimum basis for establishing special flood hazard areas and base flood elevations is the Flood Insurance Study (FIS) for Carroll County, Maryland and Incorporated Areas dated October 2, 2015, or the most recent revision thereof, and the accompanying Flood Insurance Rate Maps (FIRMs) and all subsequent amendments and revisions to the FIRMs. The FIS, FIRM, and Flood Boundary and Floodway Map (FBFM) shall be used to guide the County or any other Authority Having Jurisdiction in determining the relative location of the proposed building or development with respect to FEMA mapped streams, floodplains, or floodways. If building or development is proposed in a contested FEMA or unmapped floodplain, the floodplain shall be delineated in accordance with Chapter 153. The FIS and FIRMs are retained on file and available to the public at the Department of Land and Resource Management, or its successor agency.

3800.3 Permits.

- (A) It shall be unlawful for any person to begin any development or construction which is wholly within, partially within, or in contact with any flood hazard area, including but not limited to: filling; grading; construction of new structures and additions; the substantial improvement of buildings or structures, including repair of substantial damage; placement or replacement of manufactured homes, including substantial improvement or repair of substantial damage of manufactured homes; erecting or installing a temporary structure, or alteration of a watercourse, until a permit is obtained from the Carroll County. No such permit shall be issued until the requirements of these regulations have been met.

- (B) In addition to the permits required in paragraph (A), applicants for permits in nontidal waters of the State are advised to contact MDE. Unless waived by MDE, pursuant to Code of Maryland Regulations 26.17.04, Construction on Nontidal Waters and Floodplains, MDE regulates the “100-year frequency floodplain of free-flowing waters,” also referred to as nontidal waters of the State. To determine the 100-year frequency floodplain, hydrologic calculations are based on the ultimate development of the watershed, assuming existing zoning. The resulting flood hazard areas delineated using the results of such calculations may be different than the special flood hazard areas. A permit from Carroll County is still required in addition to any State requirements.

3800.4 Construction of buildings or other structures in floodplains. Construction of buildings or other walled and roofed structures in the floodplain is prohibited. This includes accessory and temporary structures. Water-conveying structures are not included in this prohibition. A variance cannot be requested for relief of this prohibition. CLOMR-Fs and LOMR-Fs cannot be used to circumvent this prohibition and will not be recognized by the County. Critical facilities, including but not limited to, wastewater treatment plants and pumping stations, are exempt from this prohibition. Recreational vehicles may not occupy a site for more than 180 days out of the year and shall be fully licensed and ready for highway use to be allowed seasonally in the FEMA

floodplain. 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.

3800.5 Filling. Filling within the floodplain will not be permitted, unless compelling reasons are submitted to the County and approved through the variance process in accordance with Chapter 153. Only the minimum amount of fill necessary to support the buildings will be allowed. Detailed plans will be necessary to evaluate the effect of any filling. Landfills, rubble fills, dumps, and sanitary fills are not permitted in the floodplain. The use of fill may not increase flooding or cause drainage problems on neighboring properties. A variance shall not be granted for any building or fill which will result in any increase in water surface elevations during the base flood unless the applicant acquires floodplain easements on areas outside the property limits that are affected by any water surface rise resulting from the development. Any land disturbance shall be graded and planted with adequate vegetative cover to prevent erosion immediately after disturbance.

3800.6 Existing buildings, manufactured homes, or other structures in the FEMA floodplain. Existing base buildings, manufactured homes, or other structures in the floodplain are nonconforming with respect to this chapter only and shall be substantially improved only if they can be brought into conformance with Chapter 38 without increasing the footprint. Improvements, Modifications, and additions to existing structures are counted cumulatively for 10 years. Reconstruction and repairs shall also be counted cumulatively for 10 years. Minor additions (less than substantial improvement) shall be elevated at least three feet above the elevation of the base flood on pilings or columns. In the event of substantial damage or repetitive loss, the applicant shall submit an alternative analysis to demonstrate that the building cannot be moved out of the floodplain. If a building is replaced in the floodplain, it shall be limited to the footprint of the previous building. Use flood damage-resistant materials below the elevation of the lowest floor.

3800.7 Construction requirements in the floodplain. All buildings shall be oriented so as to offer the least resistance to the flow of flood waters. Materials which are buoyant, flammable, explosive, hazardous to health, or which at times of flooding may be injurious to human, animal, or plant life, shall not be stored less than three feet above the elevation of the base flood. All buildings shall be firmly anchored in accordance with acceptable engineering practices to prevent flotation, collapse, and lateral movement during flooding. All air ducts, large pipes, and storage tanks located below three feet above the elevation of the base flood shall be firmly anchored to resist flotation.

3800.8 Inspections

The Floodplain Administrator or designee shall make periodic inspections of development permitted in special flood hazard areas, at appropriate times throughout the period of construction in order to monitor compliance. Such inspections may include:

- (A) Stake-out inspection, to determine location on the site relative to the flood hazard area.

- (B) Foundation inspection, upon placement of the lowest floor and prior to further vertical construction, to collect information or certification of the elevation of the lowest floor.
- (C) Inspection of enclosures below the lowest floor, including crawl/underfloor spaces, to determine compliance with applicable provisions.
- (D) Utility inspection, upon installation of specified equipment and appliances, to determine appropriate location with respect to the base flood elevation.
- (E) Final inspection prior to issuance of the Certificate of Occupancy.

3800.9 Flood protection setback requirement. Any new or replacement buildings shall be located no less than 100 feet from the top of bank of all FEMA mapped streams measured perpendicular to the stream bank and outside of the area calculated to be within the variable width stream buffer per the Carroll County Water Resource Manual. Natural vegetation shall be maintained in the setback zone, and where natural vegetation does not exist along the banks, high priority shall be given to planting trees in the setback area to prevent erosion and enhance aquatic resources.

ADDITIONAL CONSTRUCTION REQUIREMENTS

3800.10 Certifications

Certifications and/or technical analyses prepared or conducted by a licensed professional engineer or licensed architect, as appropriate, including:

- (A) The determination of the base flood elevations or hydrologic and hydraulic engineering analyses prepared by a licensed professional engineer that are required by the Floodplain Administrator or are required by these regulations for: certain subdivisions and development; development in flood hazard areas with base flood elevations but no designated floodways; and deliberate alteration or relocation of watercourses.
- (B) The Floodproofing Certificate for nonresidential structures that are floodproofed as required.
- (C) Certification that engineered flood openings are designed to meet the minimum requirement to automatically equalize hydrostatic flood forces.
- (D) For nonresidential structures that are proposed with floodproofing, an operations and maintenance plan as specified in Section.
- (E) Such other material and information as may be requested by the Floodplain Administrator and necessary to determine conformance with these regulations.

3800.11 Elevation requirement. All new or substantially improved buildings or repair or reconstruction of repetitive loss shall have the lowest floor elevated three feet above the elevation of the base flood. Basements are not permitted. Less than substantial horizontal additions shall be elevated three feet above the elevation of the base flood. The elevation of the lowest floor shall be certified by a registered professional engineer or surveyor on the elevation certificate form and provided to the Code Official. Enclosures below three feet above the elevation of the base flood shall be constructed with water equalizing vents to meet the specifications of Section 3800.12.

3800.12 Flood opening requirement. Buildings which have been elevated but have fully enclosed foundation areas below three feet above the elevation of the base flood shall be constructed with flood openings. This also includes attached garages and accessory buildings which are not fully elevated. These areas below flood level shall be used solely for parking of vehicles, storage, or access to the building. A non-conversion agreement shall be recorded in these cases and the County shall inspect the area once per calendar year. The flood openings shall meet or exceed the following standards:

a. A minimum of two flood openings on different sides of each enclosed area; if a building has more than one enclosure below the lowest floor, each enclosure shall have two flood openings on exterior walls;

b. The total net area of all flood openings shall be at least one square inch for every square foot of enclosed area (non-engineered flood openings), or the flood openings shall be engineered flood openings that are designed and certified by a licensed professional engineer to automatically allow entry and exit of floodwaters; the certification requirement may be satisfied by an individual certification or an Evaluation Report issued by the ICC Evaluation Service, Inc.;

c. The bottoms of all openings shall be no more than one foot above grade;

d. Openings may be equipped with screens, louvers, valves, or other coverings or devices, provided that they permit the automatic entry and exit of flood waters to equalize hydrostatic forces on the walls; and

e. If installed in doors, flood openings that meet requirements of paragraphs (a) through (d), are acceptable; however, doors without installed flood openings do not meet the requirements of this section.

3800.13 Utilities.

a. **Electric.** All electric utilities to the building side of the meter are regulated by this Chapter 170, Construction Codes, and shall be elevated a minimum of three feet above the base flood elevation. Distribution panel boxes shall be a minimum of three feet above the lowest floor. All outlets and electric installations, such as heat pumps, air conditioners, water heaters, furnaces, generators, and distribution systems including duct work, shall be installed a minimum of three feet above the elevation of the base flood.

b. **Plumbing.** Toilets, sinks, showers, water heaters, pressure tanks, furnaces, and other permanent plumbing installations shall be installed three feet above the elevation of the base flood.

c. **Gas.** Meters, distribution lines, and gas appliances shall be installed three feet above the elevation of the base flood.

d. **Fuel tanks.** All propane tanks installed in the floodplain are required to be anchored to prevent flotation in accordance with the National Fire Protection Association (NFPA) 58, 6.6.1.6 which states: "Where necessary to prevent flotation due to possible high flood waters around aboveground or mounded containers, or high water table for those underground and partially underground, containers shall be securely anchored." This chapter also requires that all tanks installed in floodplain areas be either elevated or adequately anchored to prevent flotation up to the FPE. All fuel oil storage tanks installed in the floodplain shall be either elevated or securely anchored to prevent flotation up to the FPE. Vent pipes shall extend to or above the FPE and fill caps below the FPE shall be screw type with a tight-fitting gasket to prevent mixing of water with oil.

e. **Water supply and waste disposal facilities.** Distribution and disposal collection facilities shall be designed to minimize or eliminate the infiltration of flood waters into the systems or discharges from the systems into flood waters.

3800.14 Sewers and wells. New individual sewage systems, whether public or private, shall be prohibited from being located within the floodplain. Replacement individual sewage systems, whether public or private, may be located within the floodplain subject to state rules and regulations and any state or county regulations which prohibit location, or otherwise regulate location in floodplain soils, including horizontal separation distance. New or replacement individual wells may be located within the floodplain, subject to state rules and regulations and the Plumbing Code.

3800.15 Variances to additional construction requirements outlined in Sections 3800.4 through 3800.14. Any variance shall be the minimum necessary, considering the flood hazard, to afford relief. Variances must address **153.065 and § 153.081.**

A letter shall be sent by the Code Official to the applicant indicating the terms of the variance, identify any increased risk to-property in granting the variance, and that increased premium rates for flood insurance coverage may apply.

The Code Official shall maintain a record of all building variances, with a justification for their issuance.