

ARTICLE 28. FLOODPLAIN DISTRICTS AND DAM BREAK INUNDATION ZONES

Sec. 15-451 Statement of intent

In the interest of promoting the public health, public safety, and public welfare, the regulations of this district are intended to protect areas of floodplain necessary for floodwaters, and to permit and encourage the retention of open land uses located and designed to constitute a harmonious and appropriate part of the physical development of the county as provided for in the comprehensive plan. In advancing these principles, the specific purpose of this district is to minimize and reduce the loss of life and property, reduce health and safety hazards, avoid disruption of commerce and governmental services, and eliminate the extraordinary and unnecessary expenditure of public funds for flood protection and relief, or the impairment of the tax base by:

- A. Regulating uses, activities, and developments which, along or in combination with other existing or future uses, activities, and development, will cause unacceptable increases in flood heights, velocities, and frequencies.
- B. Restricting or prohibiting certain uses, activities, and developments from locating within districts subject to flooding.
- C. Requiring all those uses, activities, and developments that occur in flood-prone districts to be protected and/or floodproofed against flooding and flood damage.
- D. Protecting individuals from buying land and structures which are unsuitable for intended purposes because of flood hazards.
- E. Protecting individuals from the impacts within dam break inundation zones from failure of impounding structures.

Sec. 15-452 Applicability

These provisions apply to all lands within the county identified as being in the 100-year floodplain as shown in the flood insurance study for Goochland County prepared by the Federal Emergency Management Agency, dated December 2, 2008.

Sec. 15-453 Compliance and liability

- A. No land can be developed and no structure can be located, relocated, constructed, reconstructed, enlarged, or structurally altered except in full compliance with the terms and provisions of this article and any other applicable ordinances and regulations which apply to uses within the jurisdiction of this article.
- B. This article does not create liability on the part of the county or any of its officers or employees for any flood damages that result from reliance on this article, or any administrative decision lawfully made thereunder. This article does not imply that districts outside the floodplain district, or that land uses permitted within such district, will be free from flooding or flood damages.

Sec. 15-454 Definitions

The following words and phrases mean the following for this article:

- A. Base flood/100-year flood. A flood that, on average, is likely to occur once every 100 years (i.e., that has a 1% chance of occurring each year, although the flood may occur in any year).
- B. Base flood elevation (BFE). The Federal Emergency Management Agency designated 100-year water surface elevation.
- C. Basement. Any area of the building having its floor subgrade (below ground level) on all sides.

- D. Development. Any manmade 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.
- E. Elevated building. For insurance purposes, a no basement building which has its lowest elevated floor raised above ground level by foundation walls, shear walls, posts, piers, pilings, or columns.
- F. Encroachment. The advance or infringement of uses, plant growth, fill, excavation, buildings, permanent structures, or development into a floodplain, which may impede or alter flow capacity of a floodplain.
- G. Flood.
- (1) A general and temporary condition of partial or complete inundation of normally dry land areas from:
 - a. The overflow of inland waters; or
 - b. The unusual and rapid accumulation or runoff of surface waters from any source; or
 - c. Mudflow - 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.
 - (2) The collapse or subsidence of land along the shore of a lake or similar 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 due to a severe storm; or by an unanticipated force of nature, such as a flash flood; or by some similarly unusual and unforeseeable event that results in a flood.
- H. Floodprone area. Any land area susceptible to being inundated by water from any source.
- I. Floodplain.
- (1) A relatively flat or low land area adjoining a river, stream, or watercourse which is subject to partial or complete inundation; or
 - (2) An area subject to the unusual and rapid accumulation or runoff of surface water from any source.
- J. Floodproofed. A structure designed to be 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 design and specifications must be developed or reviewed by a registered professional engineer or architect to certify that the design and methods are in accordance with the Federal Emergency Management Agency's national flood insurance regulations.
- K. Floodway. The channel of a river or other watercourse and the adjacent land areas that must be reserved in order to carry and discharge floodwaters of a given magnitude without cumulatively increasing the water surface elevation more than a designated height. For purposes of this article, the floodway must be capable of accommodating a flood of the 100-year magnitude.
- L. Freeboard. A factor of safety usually expressed in feet above a flood level for purposes of flood plain management. "Freeboard" tends to compensate for the many unknown factors that could contribute to flood heights greater than the height calculated for a selected size flood and floodway conditions, such as wave action, bridge openings, and the hydrological effect of urbanization of the watershed.
- M. Historic structure. Any structure that is:
- (1) Listed individually in the department of interior's national register of historic places, or preliminarily determined by the secretary of the interior as meeting the requirements for individual listing on the national register; or

- (2) Certified or preliminarily determined by the secretary of 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 state inventory of historic places.
- N. Lowest floor. The lowest floor of the lowest enclosed area (including basement). An unfinished or flood resistant enclosure, usable solely for vehicle parking, building access, or storage in an area other than a basement is not considered a building's lowest floor; provided, that the enclosure is not built so as to render the structure in violation of the applicable nonelevation design requirements of 44 CFR § 60.3.
- O. New construction. For purposes of determining insurance rates, structures for which the "start of construction" commenced on or after the effective date of an initial flood insurance rate map (FIRM), or after December 31, 1974, whichever is later, and includes any subsequent improvements of those structures. For floodplain management purposes, "new construction" means structures for which the "start of construction" began on or after December 2, 2008, and includes any subsequent improvements to the structures.
- P. Special flood hazard area. The land in the floodplain subject to a 1% or greater chance of flooding in any given year. The area may be designated as Zone A on the flood insurance rate map. After detailed ratemaking has been completed in preparation for publication of the flood insurance rate map, Zone A usually is refined into Zones A, A1-30, AE, A99, etc.
- Q. 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 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 state 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 of accessory buildings, such as garages or sheds not occupied as dwelling units or not part of the main building. For a substantial improvement, the actual start of construction means the first alteration on any wall, ceiling, floor, or other structural part of a building, even if the alteration does not affect the external dimensions of the building.
- R. Substantial damage. Damage of any origin sustained by a structure whereby the cost of restoring the structure to its before-damaged condition would equal or exceed 50% of the market value of the structure before the damage occurred.
- S. Substantial improvement. Any reconstruction, rehabilitation, addition, or other improvement of a structure, the cost of which equals or exceeds 50% 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 either: (1) any project for improvement of a structure to correct existing violations of state or local health, sanitary, or safety codes which have been identified by a code enforcement official and which are the minimum necessary to assure safe living conditions or (2) any alteration of an "historic structure," provided that the alteration will not preclude the structure's continued designation as an historic structure.
- T. Watercourse. A lake, river, creek, stream, wash, channel or other topographic feature on or over which waters flow at least periodically. Watercourse includes specifically designated areas in which substantial flood damage may occur.

Sec. 15-455 Description of districts

- A. *Basis of districts.* The various floodplain districts include areas subject to inundation by waters of the 100-year flood. The basis for the delineation of these districts is the flood insurance study and the flood insurance rate maps for the county prepared by the Federal Emergency Management Agency, dated December 2, 2008.
- (1) The floodway district is delineated for purposes of this article using the criteria that a certain area within the floodplain must be capable of carrying the waters of the 100-year flood without increasing the water surface elevation. The areas included in this district are specifically defined in the flood insurance study and shown on the accompanying flood insurance rate map.
 - (2) The flood fringe district is that area of the 100-year floodplain not included in the floodway district. The basis for the outermost boundary of this district shall be the 100-year flood elevations contained in the flood profiles of the above-referenced flood insurance study and as shown on the accompanying flood insurance rate map.
 - (3) The special floodplain hazard area district is those areas identified as either an AE zone or A1-30 zone on the maps accompanying the flood insurance study for which 100-year flood elevations have been provided but for which no floodway has been delineated.
 - (4) The approximated floodplain district is that floodplain area for which no detailed flood profiles or elevations are provided, but where a 100-year floodplain boundary has been approximated. These areas are shown as Zone A on the maps accompanying the flood insurance study. For these areas, the 100-year flood elevations with floodway information from federal, state and other acceptable sources will be used, when available. Where the specific 100-year flood elevation cannot be determined for this area using other sources of data, such as the U.S. Army Corps of Engineers floodplain information reports, U.S. geological survey flood-prone quadrangles, etc., then the applicant for the proposed use, development and/or activity must determine this elevation in accordance with hydrologic and hydraulic engineering techniques. Hydrologic and hydraulic analyses may be undertaken only by professional engineers or others of demonstrated qualifications, who are required to certify that the technical methods used correctly reflect currently accepted technical concepts. Studies, analyses, computations, etc., must be submitted in sufficient detail to allow a thorough review.
- B. *Overlay concept.*
- (1) The floodplain districts described above are overlays to the existing underlying districts as shown on the official zoning map, and as such, the provisions for the floodplain districts supplement the underlying district provisions.
 - (2) Where there is any conflict between the provisions or requirements of any of the floodplain districts and those of any underlying district, the more restrictive provisions apply.

Sec. 15-456 Official map

The boundaries of the floodplain districts are established as shown on the flood insurance rate map, which is declared to be a part of this article. The flood insurance rate maps and dam break inundation zone maps will be kept on file at the community development department.

Sec. 15-457 District boundary changes

The delineation of any of the floodplain districts may be revised by the board of supervisors where natural or manmade changes have occurred or where more detailed studies have been conducted or undertaken by the county, the U.S. Army Corps of Engineers or other qualified agency, or an individual documents the need for such change. However, prior to any change, approval must be obtained from the Federal Emergency Management Agency.

Sec. 15-458 Interpretation of district boundaries

Initial interpretations of the boundaries of the floodplain districts will be made by the zoning administrator, whose determination may be appealed to the board of zoning appeals.

Sec. 15-459 General provisions

- A. *Development requirement.* Beyond the permitted uses identified in Sec. 15-460, all other uses, activities and developments occurring within any floodplain district must be undertaken only with a conditional use permit. Development must comply with this article and with all other applicable codes and ordinances, such as the Virginia Uniform Statewide Building Code and the county subdivision ordinance. Under no circumstances shall any use, activity, or development adversely affect the capacity of the channels or floodway or any watercourse, drainage ditch, or any other drainage facility or system.
- B. *Alteration or relocation of watercourse.* Prior to any proposed elevation or relocation of any channels or of any watercourse, streams, etc., a permit must be obtained from the U.S. Army Corps of Engineers, the state water control board, and the state marine resources commission (a joint permit application is available from any of these organizations). Furthermore, notification of the proposal must be given by the applicant to all affected adjacent jurisdictions, the division of dam safety and floodplain management (department of conservation and recreation), and the Federal Emergency Management Agency, with proof of notice being provided to the zoning administrator. The flood-carrying capacity within an altered or relocated portion of any watercourse must be maintained.
- C. *Site plans and permit applications.* All applications for development in the floodplain district or within a dam break inundation zone must include the following information:
 - (1) Elevation of the lowest floor (including basement) shown at or above the base flood elevation.
 - (2) For structures to be floodproofed (nonresidential only), the elevation to which the structure will be floodproofed.
 - (3) The elevation of the 100-year flood.
 - (4) Topographic information showing existing and proposed ground elevations.
 - (5) Dam break inundation zone, if available.
- D. *Preexisting and nonconforming structures.* A structure, or use of a structure or premises which lawfully existed before the enactment of these provisions, but which is not in conformity with these provisions, may be continued subject to the following conditions:
 - (1) Existing structures in the floodway district cannot be expanded or enlarged unless it has been demonstrated through hydrologic and hydraulic analyses performed in accordance with standard engineering practices that the proposed expansion would not result in any increase in the base flood elevation.

(2) Any modification, alteration, repair, reconstruction, or improvement of any kind to a structure and/or use located in any floodplain areas to an extent or amount of less than 50% of its market value must conform to the Virginia Uniform Statewide Building Code.

(3) The modification, alteration, repair, reconstruction, or improvement of any kind to a structure and/or use, regardless of its location in a floodplain area, to an extent or amount of 50% or more of its market value can be undertaken only in full compliance with this article and the entire structure must conform to the Virginia Uniform Statewide Building Code.

E. *Dam break inundation zones.* No land can be developed or subdivided within the boundaries of a mapped dam break inundation zone unless it complies with the provisions of Virginia Code § 10.1-606.3. If the state department of conservation and recreation determines that the development or subdivision would change the spillway design flood standards of the impounding structure, and the proposed subdivision would allow development of three or more units (commercial, industrial, or residential in use), the county cannot permit the subdivision unless:

(1) The applicant agrees to alter the development so that it does not alter the spillway design flood standard required of the impounding structure; or

(2) The applicant contributes payment to construct the necessary upgrades to the affected impounding structure pursuant to Virginia Code § 15.2-2243.1.

Sec. 15-460 Uses and structures permitted by right (P) or conditional use permit (CUP)

The following uses and activities are permitted provided that they are in compliance with the provisions of the underlying area, are not prohibited by any other ordinance, and do not require structures, fill, or storage of materials and equipment:

Principal Uses and Structures	P or CUP
Accessory use customarily and clearly incidental and subordinate to any use permitted by right	CUP
Agricultural use, such as general farming, pasture, grazing, outdoor plant nurseries, horticulture, truck farming, forestry, sod farming, and wild crop harvesting	P
Accessory residential use, such as yard areas, garden, play area, and pervious loading areas	P
Carnival; circus; fair; any similar transient amusement enterprise	CUP
Commercial and industrial structures and use, including warehousing, which may require railroad frontage, provided they are located so as not to impede the flow of floodwaters pursuant to Sec. 15-464. Earthen or other fill material or nonresidential elevated structures may be utilized so long as the purpose and intent of Sec. 15-464 are upheld. Nonresidential structures located in the 100-year floodplain must satisfy the performance standards of the Virginia Uniform Statewide Building Code and Sec. 15-464.	CUP
Commercial campground	CUP
Front, side and rear yard of use permitted in an adjoining district when expressly permitted by this article and other county ordinances	CUP
Game farm; fish hatchery (excluding rearing structure); hunting and fishing reserves; boat landing	P

Principal Uses and Structures	P or CUP
Gas transmission line	CUP
Hunting; fishing	P
Office quarters housed in a temporary structure such as a mobile home or trailer which may be readily towed or otherwise removed from the flood fringe prior to inundation by floodwaters	CUP
Outlet installation for sewage treatment plant; sealed public or private water supply well	P
Park; playground; day camp; picnic ground; golf course; golf driving range; miniature golf course; yacht club	CUP
Paved off-street parking, or loading and unloading area related to a use in an adjoining district	CUP
Public park; public recreational facility	P
Public and commercial swimming pool	CUP
Public utility distribution facility	P
Public utility transmission line (including liquid and natural gas), transmission tower, pipe, meter, railroad	CUP
Pulpwood receiving and storage yard, wood shipping scale, scalehouse, pumping station, and loading dock, provided these structures do not impede the flow of floodwaters or restrict the flow of debris	CUP
Retaining wall; channel improvement; flood retention dam and levee; culvert and bridge; all approved by state department of highways	P
Roadside stand for the sale of fish bait, or agricultural or horticultural products produced on the premises	CUP
Sand and gravel pit; quarry; soil removal; mining operation; all in accordance with Sec. 15-283.F	CUP
Structure customarily accessory and clearly incidental and subordinate to agricultural uses; park, playground, day camp, picnic ground, golf course/driving range, yacht club; sand and gravel pit and quarry, soil removal, mining operation; and commercial campground	CUP
Wildlife preserve; conservation area; woodland preserve; arboretum	P

Sec. 15-461 Prohibited uses and structures

- A. Any use or structure not of a character indicated under uses and structures permitted by right or with a conditional use permit.
- B. Manufactured homes.
- C. Filling in with dirt, gravel, minerals or refuse, or regrading of land in a floodplain in any manner that would obstruct, interfere, or otherwise adversely affect flow patterns and currents during flooding.

- D. Private package sewage treatment plants, including conventional and alternative onsite septic systems.

Sec. 15-462 Design criteria for utilities and facilities

- A. *Sanitary sewer facility.* All new or replacement sanitary sewer facilities (including all pumping stations and collector systems) must be designed to minimize or eliminate infiltration of floodwaters into the systems and discharges from the systems into the floodwaters. In addition, they should be located and constructed to minimize or eliminate flood damage and impairment.
- B. *Onsite septic systems.* All new or replacement onsite waste disposal systems must be located and constructed to avoid impairment to them or contamination from them during flooding.
- C. *Water facilities.* All new or replacement water facilities must be designed to minimize or eliminate infiltration of floodwaters into the system and be located and constructed to minimize or eliminate flood damages.
- D. *Drainage facilities.* All storm drainage facilities must be designed to convey the flow of surface waters without damage to persons or property. The systems must ensure drainage away from buildings and onsite waste disposal sites.
- E. *Utilities.* All utilities, such as gas lines, or electrical and telephone systems, being placed in floodprone areas should be elevated, where possible, and constructed to minimize the chance of impairment during a flooding occurrence.
- F. *Streets and sidewalks.* Streets and sidewalks should be designed to minimize their potential for increasing and aggravating the levels of flood flow. Drainage openings are required to sufficiently discharge flood flows without unduly increasing flood heights.

Sec. 15-463 Area regulations

The minimum lot area for each permitted use is eight acres; provided, however, this requirement does not apply to off-street parking, loading or unloading, and front, side and rear yard of uses permitted in an adjoining district. Maximum lot coverage by all structures cannot exceed 5% of total lot area.

Sec. 15-464 Special requirements applicable to floodplain districts

- A. *Flood flow not to be obstructed.* Any provisions to the contrary notwithstanding, no use or structure is permitted in any floodplain if it will adversely affect normal flood flow, or will increase flooding of lands above or below the property, or will increase erosion within or adjoining the floodplain, or will cause diversion of floodwaters in a manner more likely to create damage than does flow in a normal course, or will increase peak flows or velocities in a manner likely to lead to added property damage or hazards to life, or will increase amounts of damaging materials (including those likely to be injurious to health) which might be carried downstream in floods.
- B. *Obstruction minimized; safety maximized.* Every structure permitted in floodplains must be located, elevated, and constructed to resist flotation and to offer minimum obstruction to flood flow. The ground floor level of every dwelling must be a minimum of three feet above the 100-year floodplain. No use is permitted if it will increase the amounts of potentially damaging materials, including those likely to be injurious to health, which might be carried downstream in floods.
- C. *Floodway district.* No encroachments, including fill, new construction, substantial improvements, or other development are permitted 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 the 100-year flood elevation.

- D. *Flood fringe and approximated floodplain districts.* When base flood elevation data or floodway data has not been provided, the zoning administrator will obtain, review, and reasonably utilize any base flood elevation and floodway data available from a federal or state agency, or any other source, in order to administer the provisions under this section and those under Sec. 15-459.

Sec. 15-465 Additional factors to satisfy conditional use permits and variances

In approving applications for conditional use permits, the board of supervisors and, for variances, the board of zoning appeals must satisfy all relevant factors and procedures specified in other sections of this ordinance and the following factors:

- A. The danger to life and property due to increased flood heights or velocities caused by encroachments. No conditional use permit or variance may be granted for any proposed use, development, or activity within the floodway district that will cause any increase in flood levels during the 100-year flood.
- B. The danger that materials may be swept onto other lands or downstream to the injury of others.
- C. The proposed water supply and sanitation systems and the ability of these systems to prevent disease, contamination, and unsanitary conditions.
- D. The susceptibility of the proposed facility and its contents to flood damage and the effect of such damage on the individual owners.
- E. The importance of the services provided by the proposed facility to the community.
- F. The facility's need for a waterfront location.
- G. The availability of alternative locations not subject to flooding for the proposal use.
- H. The compatibility of the proposed use with existing development and development anticipated in the foreseeable future.
- I. The relationship of the proposed use to the comprehensive plan.
- J. The safety of access to the property in time of flood of ordinary and emergency vehicles.
- K. The expected heights, velocity, duration, rate of rise, and sediment transport of the floodwaters expected at the site.
- L. Such other factors which are relevant to the purposes of this article.
- M. The board of supervisors and/or the board of zoning appeals may obtain the services of an engineer or other qualified person or agency for technical assistance in evaluating the proposed project in relation to flood heights and velocities, and the adequacy of the plans for protection and other related matters.
- N. Conditional use permits and variances can be issued only after it has been determined that the granting of them will not result in:
 - (1) Unacceptable or prohibited increases in flood heights;
 - (2) Additional threats to public safety;
 - (3) Extraordinary public expense;
 - (4) Nuisances;
 - (5) Fraud or victimization of the public; or
 - (6) Conflict with local laws or ordinances.
- O. Variances should only be issued if they will provide the minimum relief to exceptional hardship.

- P. An applicant who obtains approval to construct a structure below the 100-year flood elevation must be notified that it:
- (1) Increases risks to life and property; and
 - (2) Will result in increased premium rates for flood insurance.
- Q. A record of the notification to the application, and a record of all conditional use permits or variances, including justification for their issuance, must be maintained and noted in the annual report submitted to the Federal Emergency Management Agency.

Sec. 15-466 Appeals

Original determinations under this article, including questions or the boundaries of the flood hazard district, will be made by the zoning administrator. The boundaries can be validated by detailed on-site surveys approved by the Federal Emergency Management Agency. In rendering decisions under this article, the board of zoning appeals shall consider, in addition to other evidence and standards, the findings and recommendations of the monacan soil and water conservation district directors and staff, and the recommendations of the planning commission and other appropriate agencies. In any appeal procedure, both the property owner, at his expense, and the county or any other of its agencies or agents, will have the right to conduct on-site surveys and other studies, and present testimony and evidence of them to the zoning administrator and to the board of zoning appeals.

The board of zoning appeals may require the applicant to submit to it engineering or other studies, prepared by competent engineers or other technical persons, when such information is needed to determine the effects of flooding on a proposed structure or use.

The approximated floodplain district is that floodplain area for which no detailed flood profiles or elevations are provided, but where a 100-year floodplain boundary has been approximated. These areas are shown on the flood boundary and floodway map. Where the specific 100-year flood elevation cannot be determined for the area using other sources of data such as the U.S. Army Corps of Engineers, flood plain information reports, U.S. geological survey flood-prone quadrangles, etc., the applicant for the proposed use, development and/or activity must determine this elevation in accordance with hydrologic and hydraulic engineering techniques. Hydrologic and hydraulic analyses can be undertaken only by professional engineers or others of demonstrated qualifications, who shall certify that the technical methods used correctly reflect currently accepted technical concepts. Studies, analyses, computations, etc., must be submitted in sufficient detail to allow a thorough review by the board of zoning appeals.

Secs.15-467 through 15-480. Reserved.