

§4.15. FLOODPLAIN REGULATIONS

§4.15.1. Authority

These regulations are adopted pursuant to the authority granted to localities by Code of Virginia, §15.2 - 2280.

§4.15.2. Purpose

The purpose of these regulations is to prevent: the loss of life and property, the creation of health and safety hazards, the disruption of commerce and governmental services, the extraordinary and unnecessary expenditure of public funds for flood protection and relief, and the impairment of the tax base by:

- A. Regulating uses, activities, and development which, alone 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 development from locating within districts subject to flooding;
- C. Requiring all those uses, activities, and developments that do occur in flood-prone districts to be protected and/or floodproofed against flooding and flood damage; and
- D. Protecting individuals from buying land and structures that are unsuited for intended purposes because of flood hazards.

§4.15.3. General Provisions

A. Applicability

These regulations shall apply to all privately and publicly owned lands within the city and identified as areas of special flood hazard identified by the city of Fairfax or shown on the flood insurance rate map (FIRM) or Flood Insurance Study (FIS) that is provided to the city of Fairfax by the Federal Emergency Management Agency (FEMA).

B. Compliance and liability

1. No land shall hereafter be developed and no structure shall be located, relocated, constructed, reconstructed, enlarged, or structurally altered except in full compliance with the terms and provisions of these regulations and any other applicable ordinances and regulations, which apply to uses within the city.
2. The degree of flood protection sought by the provisions of these regulations is considered reasonable for regulatory purposes and is based on acceptable engineering methods of study, but does not imply total flood protection. Larger floods may occur on rare occasions. Flood heights may be increased by man-made or natural causes, such as ice jams and bridge openings restricted by debris. These regulations do not imply that districts outside the floodplain district or land uses permitted within such district will be free from flooding or flood damages.
3. These regulations shall not create liability on the part of the city or any officer or employee thereof for any flood damages that result from reliance on these regulations or any administrative decision lawfully made thereunder.

C. Records

Records of actions associated with administering these regulations shall be kept on file and maintained by or under the direction of the floodplain administrator in perpetuity.

D. Abrogation and greater restrictions

These regulations supersede any regulations currently in effect in flood-prone districts. Any existing regulation, however, shall remain in full force and effect to the extent that its provisions are more restrictive than the provisions of these regulations.

These regulations are not intended to repeal or abrogate any existing ordinances including the subdivision ordinance, zoning ordinance, or building codes. In the event of a conflict between these regulations, the more restrictive shall govern.

E. Severability

See provisions of §1.1.9 for severability clause.

F. Penalty for violations

See Article 8 of the zoning ordinance for enforcement and penalties for violations.

§4.15.4. Administration**A. Duties and responsibilities of the floodplain administrator**

The duties and responsibilities of the floodplain administrator designated in §5.9 shall include but are not limited to:

1. Do the work themselves. In the absence of the designated floodplain administrator, the duties are conducted by the City Manager.
2. Delegate duties and responsibilities set forth in these regulations to qualified technical personnel, plan examiners, inspectors, and other employees.
3. Enter into a written agreement or written contract with another community or private sector entity to administer specific provisions of these regulations. Administration of any part of these regulations by another entity shall not relieve the city of its responsibilities pursuant to the participation requirements of the National Flood Insurance Program (NFIP) as set forth in the Code of Federal Regulations at 44 CFR 59.22.
4. Review applications for floodplain permits to determine whether proposed activities will be located in the special flood hazard area (SFHA).
5. Interpret floodplain boundaries and provide available base flood elevation and flood hazard information.
6. Review applications to determine whether proposed activities will be reasonably safe from flooding and require new construction and substantial improvements to meet the requirements of these regulations.
7. Review applications to determine whether all necessary permits have been obtained from the federal, state or local agencies from which prior or concurrent approval is required; in particular, permits from state agencies for any construction, reconstruction, repair, or alteration of a dam, reservoir, or waterway obstruction (including bridges, culverts, structures), any alteration of a watercourse, or any change

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of the course, current, or cross section of a stream or body of water, including any change to the 1-percent annual chance floodplain of free-flowing nontidal waters of the state.

8. Verify that applicants proposing an alteration of a watercourse have notified adjacent communities, the Virginia Department of Conservation and Recreation (DCR) Division of Dam Safety and Floodplain Management, and other appropriate agencies (Virginia Department of Environmental Quality [VADEQ], United States Army Corps of Engineers [USACE]) and have submitted copies of such notifications to FEMA.
9. Approve applications and issue floodplain permits to develop in flood hazard areas if the provisions of these regulations have been met, or disapprove applications if the provisions of these regulations have not been met.
10. Inspect or cause to be inspected, buildings, structures, and other development for which permits have been issued to determine compliance with these regulations or to determine if non-compliance has occurred or violations have been committed.
11. Review elevation certificates and require incomplete or deficient certificates to be corrected.
12. Submit to FEMA via a LOMR, or require applicants to submit to FEMA, data and information necessary to maintain FIRMs, including hydrologic and hydraulic engineering analyses prepared by or for the city of Fairfax, within six months after such data and information becomes available if the analyses indicate changes in base flood elevations.
13. Maintain and permanently keep records that are necessary for the administration of these regulations, including:
 - (a) Flood insurance studies, FIRMs (including historic studies and maps and current effective studies and maps) and letters of map change; and
 - (b) Documentation supporting issuance and denial of permits, elevation certificates, documentation of the elevation (in relation to the datum on the FIRM) to which structures have been floodproofed, inspection records, other required design certifications, special exceptions, and records of enforcement actions taken to correct violations of these regulations.
14. Enforce the provisions of these regulations, investigate violations, issue notices of violations or stop work orders, and require permit holders to take corrective action.
15. Advise the board of zoning appeals, or the city council, as appropriate, regarding the intent of these regulations and, for each application for special exceptions, prepare a staff report and recommendation.
16. Administer the requirements related to proposed work on existing buildings:
 - (a) Make determinations as to whether buildings and structures that are located in flood hazard areas and that are damaged by any cause have been substantially damaged.
 - (b) Make reasonable efforts to notify owners of substantially damaged structures of the need to obtain a permit to repair, rehabilitate, or reconstruct. Prohibit the non-compliant repair of substantially damaged buildings except for temporary

emergency protective measures necessary to secure a property or stabilize a building or structure to prevent additional damage.

17. Undertake, as determined appropriate by the floodplain administrator due to the circumstances, other actions which may include but are not limited to: issuing press releases, public service announcements, and other public information materials related to permit requests and repair of damaged structures; coordinating with other Federal, State, and local agencies to assist with substantial damage determinations; providing owners of damaged structures information related to the proper repair of damaged structures in special flood hazard areas; and assisting property owners with documentation necessary to file claims for Increased Cost of Compliance coverage under NFIP flood insurance policies.
18. Notify FEMA when the corporate boundaries of the city have been modified and:
 - (a) Provide a map that clearly delineates the new corporate boundaries or the new area for which the authority to regulate pursuant to these regulations has either been assumed or relinquished through annexation; and
 - (b) If the FIRM for any annexed area includes special flood hazard areas that have flood zones that have regulatory requirements that are not set forth in these regulations, prepare amendments to these regulations to adopt the FIRM and appropriate requirements, and submit the amendments to the city council for adoption; such adoption shall take place at the same time as or prior to the date of annexation and a copy of the amended regulations shall be provided to DCR Division of Dam Safety and Floodplain Management and FEMA.
19. Upon the request of FEMA, complete and submit a report concerning participation in the NFIP which may request information regarding the number of buildings in the special flood hazard area, number of permits issued for development in the special flood hazard area, and number of special exceptions issued for development in the special flood hazard area.
20. Take into account flood, mudslide and flood-related erosion hazards, to the extent that they are known, in all official actions relating to land management and use throughout the entire jurisdictional area of the city, whether or not those hazards have been specifically delineated geographically (e.g. via mapping or surveying).

B. Use and interpretation of FIRMs

The floodplain administrator shall make interpretations, where needed, as to the exact location of special flood hazard areas, floodplain boundaries, and floodway boundaries. The following shall apply to the use and interpretation of FIRMs and data:

1. Where field surveyed topography indicates that adjacent ground elevations:
 - (a) Are below the base flood elevation in riverine SFHAs, even in areas not delineated as a special flood hazard area on a FIRM, the area shall be considered as special flood hazard area and subject to the requirements of these regulations.
 - (b) Are above the base flood elevation and the area is labeled as a SFHA on the FIRM, the area shall be regulated as special flood hazard area unless the applicant obtains a letter of map change that removes the area from the special flood hazard area.

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2. In FEMA-identified special flood hazard areas where base flood elevation and floodway data have not been identified and in areas where FEMA has not identified special flood hazard areas, any other flood hazard data available from a federal, state, or other source shall be reviewed and reasonably used.
3. Base flood elevations and designated floodway boundaries on FIRMs and in flood insurance studies shall take precedence over base flood elevations and floodway boundaries by any other sources if such sources show reduced floodway widths and/or lower base flood elevations.
4. Other sources of data shall be reasonably used if such sources show increased base flood elevations and/or larger floodways than are shown on FIRMs and in flood insurance studies.
5. If a Preliminary FIRM and/or a Preliminary Flood Insurance Study has been provided by FEMA:
 - (a) Upon the issuance of a letter of final determination by FEMA, the preliminary flood hazard data shall be used and shall replace the flood hazard data previously provided from FEMA for the purposes of administering these regulations.
 - (b) Prior to the issuance of a letter of final determination by FEMA, the use of preliminary flood hazard data shall be deemed the best available data pursuant to §4.15.5.A.3 regarding A Zones, and used where no base flood elevations and/or floodways are provided on the effective FIRM.
 - (c) Prior to issuance of a letter of final determination by FEMA, the use of preliminary flood hazard data is permitted where the preliminary base flood elevations or floodways exceed the base flood elevations and/or designated floodway widths in existing flood hazard data provided by FEMA. Such preliminary data may be subject to change and/or appeal to FEMA.

C. Jurisdictional boundary changes

1. The city floodplain regulations then in effect on the date of annexation or agreed upon boundary line adjustment shall remain in effect and shall be enforced by the city for all annexed areas until the city adopts and enforces an ordinance which meets the requirements for participation in the NFIP. It is a requirement that municipalities with existing floodplain ordinances shall pass a resolution acknowledging and accepting responsibility for enforcing floodplain ordinance standards prior to annexation of any area containing identified flood hazards. If the FIRM for any annexed area includes special flood hazard areas that have flood zones that have regulatory requirements that are not set forth in these regulations, the city shall prepare amendments to these regulations to adopt the FIRM and appropriate requirements, and submit the amendments to the city council for adoption; such adoption shall take place at the same time as or prior to the date of annexation and a copy of the amended regulations shall be provided to the DCR Division of Dam Safety and Floodplain Management and FEMA.
2. In accordance with the Code of Federal Regulations, Title 44 Subpart (B) Section 59.22 (a) (9) (v) all NFIP participating communities must notify the Federal Emergency Management Agency and optionally the State Coordinating Office (Virginia Department of Conservation and Recreation – Division of Dam Safety and Floodplain Management)

in writing whenever the boundaries of the community have been modified by annexation or the community has otherwise assumed or no longer has authority to adopt and enforce floodplain management regulations for a particular area.

3. In order that all FIRMs accurately represent the city's boundaries, a copy of a map of the city suitable for reproduction, clearly delineating the new corporate limits or new area for which the community has assumed or relinquished floodplain management regulatory authority must be included with the notification.

D. District boundary changes

The delineation of any of the Floodplain Districts may be revised by the city where natural or man-made changes have occurred and/or where more detailed studies have been conducted or undertaken by the U.S. Army Corps of Engineers or other qualified agency, or an individual documents the need for such change. However, prior to any such change, approval must be obtained from FEMA. A completed LOMR is a record of this approval.

E. Interpretation of district boundaries

The floodplain administrator shall be responsible for initial interpretations of the boundaries of the floodplain districts. Should a dispute arise concerning the boundaries of any of the districts, the aggrieved party may appeal the determination to the board of zoning appeals pursuant to §6.22. The party questioning or contesting the location of the district boundary shall be given a reasonable opportunity to present their case to the board and to submit their own technical evidence if they so desire.

F. Submitting model backed technical data

The city's base flood elevations may increase or decrease resulting from physical changes affecting flooding conditions. As soon as practicable, but not later than six months after the date such information becomes available, the city shall notify FEMA of the changes by submitting technical or scientific data. The community may submit data via a LOMR. Such a submission is necessary so that upon confirmation of those physical changes affecting flooding conditions, risk premium rates and flood plain management requirements will be based upon current data.

G. Letters of map revision

When development in the floodplain will cause or causes a change in the base flood elevation, the applicant, including state agencies, must notify FEMA by applying for a Conditional Letter of Map Revision (CLOMR) prior to construction, and a Letter of Map Revision (LOMR) after construction. Example cases:

1. Any development that causes a rise in the base flood elevations within the floodway.
2. Any development outlined in §4.15.6.B.1 occurring in Zone AE without a designated floodway that will cause a cumulative rise of one (1) foot or more in the base flood elevation on the property or on an offsite property.
3. Any development not defined in §4.15.6.B.1 occurring in Zone AE without a designated floodway, which will cause a rise in the base flood elevation either on the property or on an offsite property.
4. Alteration or relocation of a stream, including but not limited to installing culverts and bridges. [44 CFR 65.3 and 65.6(a)(12)]

§4.15.5. Establishment of special flood hazard districts

A. Description of special flood hazard districts

The various special flood hazard districts shall include the special flood hazard areas. The basis for the delineation of these districts shall be the flood insurance study and the FIRM for the city prepared by FEMA, dated June 2, 2006, and any subsequent revisions or amendments thereto upon Letter of Final Determination issuance.

The city may identify and regulate local flood hazard or ponding areas that are not delineated on the FIRM. These areas may be delineated on a local flood hazard map using best available topographic data and locally derived information such as flood of record, historic high water marks or approximate study methodologies. The boundaries of the SFHA Districts are established as shown on the FIRM which is declared to be a part of these regulations and which shall be kept on file at the city offices.

The mapped floodplain includes all of the below regions and also the regions designated as having a 0.2 percent annual chance of flooding on any flood map or flood insurance study. In this area, emergency service, medical service, or governmental records storage shall be built above or protected to a 1-foot above the 0.2 percent annual chance water surface elevation.

1. The Floodway District is in an AE Zone and is delineated, for purposes of these regulations, using the criterion that certain areas within the floodplain must be capable of carrying the waters of the one percent annual chance flood without increasing the water surface elevation of that flood more than one (1) foot at any point. The areas included in this District are specifically defined in Table 23 of the above-referenced FIS and shown on the accompanying FIRM.

The following provisions shall apply within the floodway district of an AE Zone [44 CFR 60.3(d)]:

- (a) Within any floodway, no encroachments, including fill, new construction, substantial improvements, or other development shall be permitted unless it has been demonstrated through hydrologic and hydraulic analysis performed in accordance with standard engineering practice that the proposed encroachment will not result in any increase in flood elevations within the community during the occurrence of the base flood discharge. Hydrologic and hydraulic analyses shall 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., shall be submitted in sufficient detail to allow a thorough review by the floodplain administrator.
 - (b) Development activities which increase the water surface elevation of the base flood may be allowed, provided that the applicant first applies – with the city’s endorsement – for a conditional letter of map revision (CLOMR), and receives the approval of FEMA.
 - (c) If §4.15.5.A.1(a) is satisfied, all new construction and substantial improvements shall comply with all applicable flood hazard reduction provisions of §4.15.6, §4.15.7, and §4.15.8.
2. The AE or AH Zones on the FIRM accompanying the Flood Insurance Study shall be those areas for which one-percent annual chance flood elevations have been provided

and the floodway has not been delineated. The following provisions shall apply within an AE or AH Zone [44 CFR 60.3(c)] where FEMA has provided base flood elevations and no floodway:

- (a) Until a regulatory floodway is designated, no new construction, substantial improvements, or other development (including fill) shall be permitted within the areas of special flood hazard, designated as Zones AE or AH on the FIRM, unless it is demonstrated that the cumulative effect of the proposed development, when combined with all other existing and anticipated development, will not increase the water surface elevation of the base flood more than one foot at any point within the city.
 - (b) Development activities in Zones AE or AH, on the city of Fairfax FIRM which increase the water surface elevation of the base flood by more than one foot may be allowed, provided that the applicant first applies – with the city’s endorsement – for a Conditional Letter of Map Revision, and receives the approval of FEMA.
3. The A Zone on the FIRM accompanying the Flood Insurance Study shall be those areas for which no detailed flood profiles or elevations are provided, but the one percent annual chance floodplain boundary has been approximated. For these areas, the following provisions shall apply [44 CFR 60.3(b)]:
 - (a) The approximated floodplain district shall be that floodplain area for which no detailed flood profiles or elevations are provided, but where a 1-percent annual chance floodplain boundary has been approximated. Such areas are shown as Zone A on the maps accompanying the Flood Insurance Study. For these areas, the base flood elevations and floodway information from federal, state, and other acceptable sources shall be used, when available. For development proposed in the approximate floodplain the applicant must use technical methods that correctly reflect currently accepted non-detailed technical concepts, such as point on boundary, high water marks, or detailed methodologies hydrologic and hydraulic analyses. Studies, analyses, computations, etc., shall be submitted in sufficient detail to allow a thorough review by the floodplain administrator.
 - (b) The floodplain administrator reserves the right to require a hydrologic and hydraulic analysis for any development. When such base flood elevation data is utilized, the lowest floor shall be elevated at least two (2) feet above the base flood elevation.
 - (c) During the permitting process, the floodplain administrator shall obtain:
 - (1) The elevation of the lowest floor (in relation to mean sea level), including the basement, of all new and substantially improved structures; and,
 - (2) If the structure has been floodproofed in accordance with the requirements of this article, the elevation (in relation to mean sea level) to which the structure has been floodproofed.

Base flood elevation data shall be obtained from other sources or developed using detailed methodologies comparable to those contained in a FIS for subdivision proposals and other proposed development proposals (including manufactured home parks and subdivisions) that exceed fifty lots or five acres, whichever is the lesser.

§4.15.6 Development standards

4. The AO Zone on the FIRM accompanying the Flood Insurance Study shall be those areas of shallow flooding identified as AO on the FIRM. For these areas, the following provisions shall apply [44 CFR 60.3(c)].
 - (a) All new construction and substantial improvements of residential structures shall have the lowest floor, including basement, elevated above the highest adjacent grade at least as high as the depth number specified in feet on the FIRM plus two (2) feet. If no flood depth number is specified, the lowest floor, including basement, shall be elevated no less than four (4) feet above the highest adjacent grade.
 - (b) All new construction and substantial improvements of nonresidential structures shall:
 - (1) Have the lowest horizontal structural member, including basement, elevated above the highest adjacent grade at least as high as the depth number specified in feet on the FIRM plus two (2) feet. If no flood depth number is specified, the underside of the lowest floor, including basement, shall be elevated at least four (4) feet above the highest adjacent grade; or,
 - (2) Together with attendant utility and sanitary facilities be completely floodproofed to the specified flood elevation so that any space below that level is watertight with walls substantially impermeable to the passage of water and with structural components having the capability of resisting hydrostatic and hydrodynamic loads and effects of buoyancy.
 - (c) Adequate drainage paths around structures on slopes shall be provided to guide floodwaters around and away from proposed structures.
5. Overlay concept

The Floodplain Districts described above shall be overlays to the existing underlying districts as shown on the city's zoning map, and as such, the provisions for the Floodplain Districts shall serve as a supplement to the underlying district provisions.

 - (a) If there is any conflict between the provisions or requirements of the Floodplain Districts and those of any underlying district, the more restrictive provisions and/or those pertaining to the floodplain districts shall apply.
 - (b) In the event any provision concerning a Floodplain District is declared inapplicable as a result of any legislative or administrative actions or judicial decision, the basic underlying provisions shall remain applicable.

§4.15.6. Development standards

A. General standards

The following standards shall apply to all permits:

1. New construction and substantial improvements shall be built according to these regulations and the Virginia USBC, and anchored to prevent flotation, collapse or lateral movement of the structure.
2. New construction and substantial improvements shall be constructed with materials and utility equipment resistant to flood damage.

3. New construction or substantial improvements shall be constructed by methods and practices that minimize flood damage.
4. Electrical, heating, ventilation, plumbing, air conditioning equipment and other service facilities, including duct work, shall be elevated to or above the base flood elevation plus 2 feet or be designed so as to prevent water from entering or accumulating within the components during conditions of flooding.
5. New and replacement water supply systems shall be designed to minimize or eliminate infiltration of floodwaters into the system.
6. New and replacement sanitary sewage systems shall be designed to minimize or eliminate infiltration of floodwaters into the systems and discharges from the systems into floodwaters.
7. On-site waste disposal systems shall be located and constructed to avoid impairment to them or contamination from them during flooding.
8. In addition to the provisions 1-7 above, in all special flood hazard areas, these additional provisions shall apply:
 - (a) Prior to any proposed alteration or relocation of any channels or of any watercourse, stream, etc., within this jurisdiction a permit shall be obtained from the U.S. Corps of Engineers, the Virginia Department of Environmental Quality, and the Virginia Marine Resources Commission (a joint permit application is available from any of these organizations). Furthermore, in riverine areas, notification of the proposal shall be given by the applicant to all affected adjacent jurisdictions, the Department of Conservation and Recreation (Division of Dam Safety and Floodplain Management), other required agencies, and the Federal Emergency Management Agency.
 - (b) The flood carrying capacity within an altered or relocated portion of any watercourse shall be maintained.
9. Any activities that cause an offsite rise in the BFE require notification by the responsible party to the affected property owner(s) and the written authorization that the affected property owner(s) accept the potential for a rise in the BFE on their property.

B. Site development standards

The following development shall be permitted within the floodplain, provided, that such activity is permitted in the underlying zoning district within which they are located, and a floodplain permit is obtained as specified in §6.11.

1. Utilities and public facilities and improvements such as streets, trails, channel improvements, bridges, utility pipes, utility transmission lines and stormwater management facilities and any improvements required for public safety or welfare shall be permitted subject to §4.15.4.G.
2. All development not included in §4.15.6.B.1 within the floodplain shall be permitted subject to §4.15.4.G, provided that the development or use is otherwise permitted in this chapter and that the area of impervious surface shall not exceed 2,500 square feet and such uses or improvements shall not contain areas of fill in excess of 12 inches in depth.

§4.15.7 Elevation and construction standards

3. Applications for a variance will be subject to the criteria contained in §6.18.7.

§4.15.7. Elevation and construction standards

In all identified flood hazard areas where base flood elevations have been provided in the Flood Insurance Study or generated by a certified professional in accordance with §4.15.5.A.3, the following provisions shall apply:

A. Residential construction

New construction or substantial improvement of any residential structure in Zones AE, AH and A with detailed base flood elevations shall have the lowest floor, including basement, elevated at least two (2) feet above the base flood elevation.

B. Non-Residential construction

1. New construction or substantial improvement of any commercial, industrial, or nonresidential building shall have the lowest floor, including basement, elevated at least two (2) feet above the base flood elevation.
2. New construction or substantial improvement of any building designated as Flood Design Class 4 in the Virginia USBC shall have the lowest floor, including basement, elevated at least two (2) feet above the base flood elevation, or the 0.2 percent annual chance flood elevation, whichever is higher.
3. Buildings located in all AE and AH Zones may be floodproofed in lieu of being elevated provided that all areas of the building components below the elevation corresponding to the base flood elevation plus two (2) feet are watertight with walls substantially impermeable to the passage of water, and use structural components having the capability of resisting hydrostatic and hydrodynamic loads and the effect of buoyancy. A registered professional engineer or architect shall certify that the standards of this §4.15.7 are satisfied. Such certification, including the specific elevation (in relation to mean sea level) to which such structures are floodproofed, shall be maintained by the floodplain administrator. For buildings designated as Flood Design Class 4 in the Virginia USBC the elevation of floodproofing shall be at least two (2) feet above the base flood elevation, or the 0.2 percent annual chance flood elevation, whichever is higher.

C. Space below the lowest floor

In Zones A, AE, AH, and AO, fully enclosed areas, of new construction or substantially improved structures, which are below the base flood elevation plus two (2) feet shall:

1. Not be designed or used for human habitation, but shall only be used for parking of vehicles, building access, or limited storage of maintenance equipment used in connection with the premises. Access to the enclosed area shall be the minimum necessary to allow for parking of vehicles (garage door) or limited storage of maintenance equipment (standard exterior door), or entry to the living area (stairway or elevator).
2. Be constructed entirely of flood damage-resistant materials below the base flood elevation plus two (2) feet.
3. Include measures to automatically equalize hydrostatic flood forces on walls by allowing for the entry and exit of floodwaters. To meet this requirement, flood openings shall meet the following minimum design criteria:

- (a) There shall be 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 such enclosure shall have flood openings on exterior walls.
- (b) The total net area of all flood openings shall be at least one (1) square inch for each 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 bottom of each flood opening shall be one (1) foot or less above the higher of the interior floor or grade, or the exterior grade, immediately below the opening.
- (d) Any louvers, screens or other covers for the flood openings shall allow the automatic flow of floodwaters into and out of the enclosed area.
- (e) Foundation enclosures made of flexible skirting are not considered enclosures for regulatory purposes, and, therefore, do not require openings. Masonry or wood underpinning, regardless of structural status, is considered an enclosure and requires openings as outlined above.

D. Accessory structures

1. All accessory structures in the SFHA shall comply with the elevation requirements and other requirements of §3.5.5 and §6.11.5 or, if not elevated or floodproofed, shall:
 - (a) Be at or above grade on at least one side.
 - (b) Not be used for human habitation.
 - (c) Be limited to no more than one story in height and 600 square feet in total floor area.
 - (d) Be useable only for parking of vehicles or limited storage.
 - (e) Be constructed with flood damage-resistant materials below the base flood elevation plus two (2) feet.
 - (f) Be constructed and placed to offer the minimum resistance to the flow of floodwaters.
 - (g) Be anchored to prevent flotation, collapse, and lateral movement.
 - (h) Have electrical service and utility and mechanical equipment elevated to or above the base flood elevation plus two (2) feet.
2. Shall be provided with flood openings which shall meet the requirements of §4.15.7.C.3.
3. A signed Declaration of Land Restriction (Non-Conversion Agreement) shall be recorded on the property deed.

E. Manufactured homes

All manufactured homes shall be prohibited within the city of Fairfax. No special exceptions or variances will be granted.

§4.15.8 Existing structures in floodplain areas

F. Recreational vehicles

All recreational vehicles shall be prohibited within any special flood hazard area. No special exceptions or variances will be granted.

G. Subdivisions

For Subdivision standards, see Chapter 86, Subdivision Ordinance.

§4.15.8. Existing structures in floodplain areas

A structure, including accessory structures, 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:

- A. Existing structures in the floodway shall not 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.
- B. 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 49 percent of its market value shall conform to the Virginia USBC and the appropriate provisions of these regulations.
- C. 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 49 percent or more of its market value shall be undertaken only in full compliance with these regulations and shall require the entire structure to conform to the Virginia USBC.

§4.15.9. Variances

See provisions of §6.18 for variances.

§4.16. STORM DRAINAGE FACILITIES**§4.16.1. Purpose**

- A. The purpose of §4.16 to define those storm drainage facilities which must be provided by landowners to control rainfall runoff from and across their property in a manner not detrimental to other inhabitants of the city and to preserve, where possible, presently existing natural creek channels. It is the further purpose of §4.16 to minimize the adverse effects of stormwater runoff on downstream drainageways within the city.
- B. Article 2.3 (§62.1-44.15:27) of Chapter 3.1 of Title 62.1 of the Code of Virginia establishes the requirement for localities to establish a stormwater management program. §4.16 is adopted pursuant to Chapter 3.1 of Title 62.1 of the Code of Virginia (§62.1-44.15:25 and §62.1-44.15:28 et seq.).

§4.16.2. Performance standards for facilities

Stormwater BMPs, on-site detention facilities, and on-site drainage facilities shall be designed and maintained in such a manner as to minimize economic and environmental costs to the city and its inhabitants in accordance with §4.16.7.