

ARTICLE VI. – SPECIAL AND OVERLAY ZONES

Sec. 6-300 Floodplain district

6-301 Purpose and intent.

(A) This ordinance is adopted pursuant to the authority granted to all localities by Va. Code § 15.2-2280, as well as the authority specifically granted to the city in its Charter. The purpose of these provisions 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:

- (1) 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~~ frequency;

6-302 Applicability.

(A) These provisions shall apply to all privately and publicly owned lands within the jurisdiction of the City of Alexandria and identified as being in a ~~floodplain as designated in the~~ Special Flood Hazard Area (SFHA) identified by the community or included in the Federal Emergency Management Agency (FEMA) flood insurance study (FIS) or shown on the flood insurance rate map (FIRM) that are provided to the Federal Emergency Management Agency (City of Alexandria by FEMA) dated June 16, 2011 January 11, 2024.

(C) This section shall be applicable to all applicants for building permits in the floodplain ~~area~~ SFHA.

(D) All buildings, not previously mapped into any AE Zone by FEMA and are newly mapped partially or wholly into any AE Zone by new effective FEMA maps, for which a building permit shall have been duly and regularly issued by the director of ~~building and mechanical inspections~~ the Department of Code Administration on or before ~~May 24, 1977~~ January 11, 2024, which permit has not expired, may be completed without the necessity of complying with the floodplain district regulations in section 6-300, but after completion, any such building or structure and the land on which it is situated shall be subject to all the provisions of said section.

(E) All preliminary site plans, not previously mapped into any AE Zone by FEMA and are newly mapped partially or wholly into any AE Zone by new effective FEMA maps, which have been duly and regularly approved on or before ~~May 24, 1977~~ January 11, 2024, and which have not expired, may be completed without the necessity of complying with the floodplain district regulations in section 6-300, but

after completion, any building or structure on said site plan together with the land included in said site plan shall be subject to all the provisions of said section.

- (F) All final site plans, not previously mapped into any AE Zone by FEMA and are newly mapped partially or wholly into any AE Zone by new effective FEMA maps, which have been duly and regularly approved and released on or before ~~May 24, 1977~~ January 11, 2024, and which have not expired may be completed without the necessity of complying with the floodplain district regulations in section 6-300, but after completion, any building or structure on said site plan together with the land included in said site plan shall be subject to all the provisions of said section.
- (G) Any building or structure, not previously mapped into any AE Zone by FEMA and are newly mapped partially or wholly into any AE Zone by new effective FEMA maps, which is in existence on or before ~~June 15, 2011~~ January 11, 2024, or for which a preliminary or combination site plan, building permit or subdivision approved on or before ~~June 15, 2011~~ January 11, 2024, continues-in force and effect shall not be deemed a nonconforming use provided, that any such building or structure which, following ~~June 15, 2011~~ January 11, 2024, is the subject of substantial improvement shall comply with the floodplain regulations in effect at the time of such improvement.

6-303 Definitions.

For the purposes of this section 6-300 the following terms and phrases shall have the meaning ascribed as follows below. Should any uncertainty occur with respect to the definition of any word, term or phrase used in this section, the applicable definitions set out in 44 CFR 59.1, as amended, shall apply.

- (A) *A Zone.* An area of the ~~one hundred~~ 1-percent annual chance flood as shown on the Flood Insurance Rate Map. This zone is also referred to as the Approximated Floodplain District.
- (B) *AE Zone.* An area shown of the ~~100-year~~ 1-percent annual chance flood on the flood insurance rate map for which corresponding base flood elevations have been provided. This zone is also referred to as the Special ~~Floodplain~~ Flood Hazard Area District.
- (C.1) *Appurtenant or accessory structure.* A non-residential structure which is on the same parcel of property as the principal structure and the use of which is incidental to the use of the principal structure.

- (D) *Base flood elevation (BFE).* The water surface elevations of the base flood, that is, the flood level that has a one percent or greater chance of occurrence in any given year. The water surface elevation ~~as shown on of the base flood insurance rate map that corresponds in relation~~ to the datum specified on the community's Flood Insurance Rate Map. For the purposes of this section, the base flood is the 1-percent annual chance flood.

(E.1) City Vertical Datum. For purposes of the National Flood Insurance Program, the North American Vertical Datum (NAVD) of 1988 to which base flood elevations shown on a community's FIRM are referenced.

(F) Development. Any man-made change to improved or unimproved real estate, including, but not limited to, ~~the construction of buildings or other structures, the placement of manufactured homes temporary structures,~~ the construction of streets, the installation of utilities and other activities or operations involving paving, filling, grading, excavating, mining, dredging-~~or~~, drilling, or other land-disturbing activities or permanent or temporary storage of equipment or materials.

(G) Existing manufactured home park or subdivision. ~~A manufactured home park or subdivision for which the construction/structures.~~ For the purposes of ~~facilities for servicing the lots on which the manufactured homes are to be affixed (including, at a minimum, the installation~~ the flood insurance program, structures for which the start of utilities, the construction of streets, and either final site grading or the pouring of concrete pads) is completed commenced before the effective date of the latest FIRM or before May 8, 1970 for FIRMs effective before that date. "Existing construction" may also be referred to as "existing structures" and "pre-FIRM." For floodplain management purposes, the term "existing structure" refers to buildings that predate a community's adoption of its first floodplain management regulations. ~~adopted by a community.~~

(H) Flood or flooding.

(2) The collapse or ~~subsistence~~ subsidence of land along the shore of a lake or other 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, accompanied by a severe storm, or by an unanticipated force of nature such as flash flood or an abnormal tidal surge, or by some similarly unusual and unforeseeable event which results in flooding as defined in paragraph (1)(a) of this definition.

(H.1) Flood Damage-Resistant Material. Any building product capable of withstanding direct and prolonged contact with floodwaters without sustaining significant damage." The term "prolonged contact" means at least 72 hours, and the term "significant damage" means any damage requiring more than cosmetic repair. "Cosmetic repair" includes cleaning, sanitizing, and resurfacing of the material.

(I) Flood insurance rate map (FIRM). An official map of a community, on which ~~the FEMA Federal Insurance Administrator~~ has delineated both the special flood hazard areas and the risk premium zones applicable to the community. ~~A flood insurance rate map~~ FIRM that has been made available digitally is called a digital flood insurance rate map (DFIRM). The official Flood Insurance Rate Map for the City of Alexandria shall be the in the digital format prepared by FEMA, Federal Insurance Administration, dated ~~June 16, 2011~~ January 11, 2024, as amended.

(J) Flood insurance study (FIS). An examination, evaluation, and determination of flood hazards and, if appropriate, corresponding water surface elevations, or an

examination, evaluation, and determination of mudflow and/or flood-related erosion hazards. The official Flood Insurance Study for the City of Alexandria shall be the flood insurance study prepared by FEMA, Federal Insurance Administration, dated ~~June 16, 2011~~January 11, 2024, as amended.

- (K) ~~*Floodplain.* A relatively flat or low land flood prone area, adjoining a river, stream or other watercourse which is subject. Any land area susceptible to partial or complete inundation being inundated by water from such watercourse, or a land area which is subject to the unusual and rapid accumulation or runoff of surface waters from any source.~~
- (L) *Floodplain district.* The areas encompassed by the ~~100-year~~1-percent annual chance floodplain as shown on the flood insurance rate map.
- (M) ~~*Reserved. Flood-prone area.* Any land area susceptible to being inundated by water from any source more often than once in a 100-year period.~~
- (N) *Floodproofing.* Also called “dry floodproofing.” A combination of measures that results in a structure, including the attendant utilities and equipment, being watertight with all elements substantially impermeable and with structural ~~and non-structural additions, changes, or adjustments to structures which reduce or eliminate flood damage to real estate or improved real property, water and sanitary facilities, structures and their contents~~ components having the capacity to resist flood loads.
- (O) *Floodway.* The ~~designated area channel~~ of a floodplain required to carry river or other watercourse and the adjacent land areas that must be reserved in order to discharge the base flood waters of a given magnitude. For purposes of this section 6-300, a floodway must be capable of accommodating a flood of ~~without cumulatively increasing the 100-year magnitude~~ water surface elevation more than 0.5-feet at any point within the community.

- (P.1) *Functionally dependent use.* A use which cannot perform its intended purpose unless it is located or carried out in close proximity to water. This term includes only docking facilities, port facilities that are necessary for the loading and unloading of cargo or passengers, and shipbuilding and ship repair facilities, but does not include long-term storage or related manufacturing facilities.

- (R.1) *Hydrologic and Hydraulic Engineering Analysis.* Analyses performed by a licensed professional engineer, in accordance with standard engineering practices that are accepted by the Virginia Department of Conservation and Recreation and FEMA, used to determine the base flood, other frequency floods, flood elevations, floodway information and boundaries, and flood profiles.

- (R.2) *Letters of Map Change (LOMC).* A Letter of Map Change is an official FEMA determination, by letter, that amends or revises an effective Flood Insurance Rate Map or Flood Insurance Study. Letters of Map Change include:

Letter of Map Amendment (LOMA). An amendment based on technical data showing that a property was incorrectly included in a designated special flood hazard area. A

LOMA amends the current effective Flood Insurance Rate Map and establishes that a land as defined by meets and bounds or structure is not located in a special flood hazard area.

Letter of Map Revision (LOMR). A revision based on technical data that may show changes to flood zones, flood elevations, floodplain and floodway delineations, and planimetric features. A Letter of Map Revision Based on Fill (LOMR-F), is a determination that a structure or parcel of land has been elevated by fill above the base flood elevation and is, therefore, no longer exposed to flooding associated with the base flood. In order to qualify for this determination, the fill must have been permitted and placed in accordance with the community's floodplain management regulations.

Conditional Letter of Map Revision (CLOMR). A formal review and comment as to whether a proposed flood protection project or other project complies with the minimum NFIP requirements for such projects with respect to delineation of special flood hazard areas. A CLOMR does not revise the effective Flood Insurance Rate Map or Flood Insurance Study.

(R.3) Lowest adjacent grade. The lowest natural elevation of the ground surface next to the walls of a structure.

(T) *Manufactured home.* A structure, transportable in one or more sections, which is built on a permanent chassis and is designed ~~to be used as a single family dwelling, for use~~ with or without permanent foundation, when connected to the required facilities, and utilities which includes the plumbing, heating, air conditioning and electrical systems contained in the structure. For floodplain management purposes the term “manufactured home” also includes park trailers, travel trailers, and other similar vehicles when placed on a site for greater than 180 consecutive days.

(V) *New construction.* For the purposes of determining insurance rates, structures ~~as to~~ for which the “start of construction” commenced on or after May 24, 1977 January 11, 2024 and includes any subsequent improvements to such buildings or structures. For floodplain management purposes, new construction means structures for which the start of construction commenced on or after the effective date of a floodplain management regulation adopted by a community and includes any subsequent improvements to such structures.

(W.1) Pre-FIRM structures. A structure for which construction or substantial improvement occurred before May 8, 1970.

(W.2) Post-FIRM structures. A structure for which construction or substantial improvement occurred on or after May 8, 1970.

(X.1) Repetitive Loss Structure. A building covered by a contract for flood insurance that has incurred flood-related damages on two occasions in a 10-year period, in which the cost of the repair, on the average, equaled or exceeded 25 percent of the market value of the structure at the time of each such flood event; and at the time of the second incidence of flood-related damage, the contract for flood insurance contains increased cost of compliance coverage.

(Y) *Residential building.* Any single-family dwelling, two-family dwelling, row or townhouse dwelling, or multi-family dwelling, including any mixed-use building not meeting the criteria for nonresidential and any accessory building or structure.

(Y.1) Severe Repetitive Loss Structure. A structure that:

(1) Is covered under a contract for flood insurance made available under the NFIP; and

(2) Has incurred flood related damage –

i. For which 4 or more separate claims payments have been made under flood insurance coverage with the amount of each such claim exceeding \$5,000, and with the cumulative amount of such claims payments exceeding \$20,000; or

ii. For which at least 2 separate claims payments have been made under such coverage, with the cumulative amount of such claims exceeding the market value of the insured structure.

(AA) *Special flood hazard area (SFHA).* The land in the floodplain subject to a one percent or greater chance of being flooded-inundated in any given year as ~~designated on the official Flood Insurance Rate Map for the City of Alexandria.~~ determined in section 6-304(A).

(BB) *Start of construction.* For other than new construction and substantial improvement, under the Coastal Barriers Resource Act (P.L. – 97-348), means the date a building permit was issued, provided that the actual start of construction, repair, reconstruction, rehabilitation, addition, placement, substantial improvement, or other improvement was within 180 days of the permit issuance date. ~~For new construction,~~ The actual start of construction means either the initial placement of permanent construction of a structure on the site, such as the pouring of footings or a slab, 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 or for, footings, piers or foundations, or the erection of temporary forms; nor does it include the installation on the property of accessory buildings, such as garages or sheds not occupied as dwelling units and not part of the main structure. For a substantial ~~improvements~~ improvement, the actual start of construction means the first alteration of any wall, ceiling, floor, or other structural part of a building, whether or not the alteration affects the external dimensions of the buildings.

(CC) *Structure*. For ~~flood plain~~ floodplain management purposes, a walled and roofed building, including a gas or liquid storage tank, that is principally above ground, as well as a manufactured home. "Structure" ~~for insurance coverage purposes, means:~~

- ~~(1) A building with two or more outside rigid walls and a fully secured roof, that is affixed to a permanent site;~~
- ~~(2) A manufactured home (also known as a mobile home), is a structure: built on a permanent chassis, transported to its site in one or more sections, and affixed to a permanent foundation; or~~
- ~~(3) A travel trailer without wheels, built on a chassis and affixed to a permanent foundation, that is regulated under the community's floodplain management and building ordinances or laws.~~

~~For the latter purpose, "structure" does not mean a recreational vehicle or a park trailer or other similar vehicle, except as described in paragraph (3) of this definition, or a gas or liquid storage tank.~~

(EE) *Substantial improvement*. Any repair, reconstruction, rehabilitation, addition or other improvement of a building or structure, the cost of which equals or exceeds 50 percent of the market value of the building or structure ~~immediately before the start of construction of the improvement is commenced, or any restoration of a building or structure which has incurred substantial damage; provided, that~~. The term does not, however, include either:

- ~~(1) Any project for improvement of a building or structure that is necessary to correct existing violations of state or local health, sanitary or safety code specifications which have been identified by appropriate officials of the state or city and which are the minimum necessary to assure safe living conditions; or~~
- ~~(2) Any improvement alteration of a "historic structure," as defined in this section, so long as provided that the improvement does alteration will not preclude the structure's continued designation as a "historic structure."~~
- (3) Historic structures undergoing repair or rehabilitation that would constitute a substantial improvement as defined above, must comply with all ordinance requirements that do not preclude the structure's continued designation as a historic structure. Documentation that a specific ordinance requirement will cause removal of the structure from the National Register of Historic Places or the State Inventory of Historic places must be obtained from the Secretary of the Interior or the State Historic Preservation Officer. Any exemption from ordinance requirements will be the minimum necessary to preserve the historic character and design of the structure.

(FF) *Violation*. The failure of a structure or other development to be fully compliant with the ~~City of Alexandria's~~ community's floodplain management regulations. A structure or other development without the elevation certificate, other certifications, or other evidence of compliance required in 44 CFR 60.3(b)(5), (e)(4), (e)(10), (d)(3), (e)(2);

~~(e)(4), or (e)(5)~~ this ordinance is presumed to be in violation until such time as that documentation is provided.

(SS) 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.

6-304 Description of ~~floodplain~~ Special Flood Hazard districts.

(A) Description of Special Flood Hazard districts. The various ~~floodplain~~ special flood hazard districts shall include the special flood hazard areas described below. The basis for the delineation of these districts shall be the flood insurance study and the flood insurance rate maps for the City of Alexandria prepared by FEMA, Federal Insurance Administration, dated ~~June 16, 2011~~ January 11, 2024, and any subsequent revisions and amendments thereto.

~~(1) The special floodplain district shall include those areas identified as an AE zone on the flood insurance rate map for which 100-year base flood elevations have been provided.~~

~~(2) The approximated floodplain district shall include those areas identified as an A zone on the flood insurance rate map. In these zones, no detailed flood profiles or elevations are provided, but the 100-year floodplain boundary has been approximated. For these areas, the 100-year flood elevations and floodway information from federal, state, and other acceptable sources shall 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 Flood Plain Information Reports, U.S. Geological Survey Flood-prone Quadrangles, etc., then the applicant for the proposed use, development and/or activity shall determine this elevation in accordance with FEMA-approved hydrologic and hydraulic engineering techniques. The City of Alexandria 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 this ordinance, and which shall be kept on file at the City of Alexandria offices.

(1) The Floodway District is in an AE Zone and is delineated, for purposes of this ordinance, 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 0.5-feet 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 area, 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 levels 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 director of the department of transportation and environmental services or the Floodplain Administrator. Development activities which increase the water surface elevation of the base flood may be allowed, provided that the applicant first applies – with the City of Alexandria’s endorsement – for a Conditional Letter of Map Revision (CLOMR) and receives the approval of the Federal Emergency Management Agency. If 6-304(A)(1)(a) is satisfied, all new construction and substantial improvements shall comply with all applicable flood hazard reduction provisions of 6-307 through 6-310.

(b) The placement of manufactured homes (mobile homes) is prohibited.

(2) The AE or AH Zones on the FIRM accompanying the FIS 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:

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 A, 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 0.5-feet at any point within the City of Alexandria.

(3) The A Zone on the FIRM accompanying the FIS 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)]:

The Approximated Floodplain District shall be that floodplain area for which no detailed flood profiles or elevations are provided, but where a one percent annual chance floodplain boundary has been approximated. Such areas are shown as Zone A on the maps accompanying the FIS. For these areas, the base flood elevations and floodway information from Federal, State, and other acceptable sources shall be used, when available. Where the specific one percent annual chance flood elevation cannot be determined for this area using other sources of data, then the applicant for the proposed use, development and/or activity shall determine this base flood elevation. For development proposed in the approximate floodplain

the applicant must use technical methods that correctly reflect currently accepted practices, 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 ~~director of transportation and environmental services~~-Floodplain Administrator. The director of the department of transportation and environmental services or 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 to or above the base flood level plus 1-foot. During the permitting process, the Floodplain Administrator shall obtain:

(a) The elevation of the lowest floor (in relation to City Vertical Datum), including the basement, of all new and substantially improved structures; and,

(b) If the structure has been floodproofed in accordance with the requirements of this article, the elevation (in relation to City Vertical Datum) 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 that exceed fifty lots or five acres, whichever is the lesser.

- (4) The mapped floodplain includes all of the above 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 no emergency service, medical service, or governmental records storage shall be allowed except by special exception using the variance process.
- (B) The delineation of any of the floodplain districts may be revised by the City of Alexandria 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. Updates to the effective regulatory delineation of the floodplain districts require approval from both the City of Alexandria and ~~the FEMA Federal Insurance Administration~~.
- (C) Any uncertainty on the floodplain district map, or flood insurance rate map, with respect to the boundary of any floodplain district, either A or AE zone, shall be determined by the director of transportation and environmental services or the Floodplain Administrator by scaling and computation from the map or by land survey information- for the purposes of these development regulations. Individual property owners or developers must receive this determination from FEMA for the purposes of determining the federal requirement for flood insurance.

6-305 Administration.

- (A) ~~The director of the department of transportation and environmental Services shall be responsible for the administration of the floodplain management regulations set forth in this section 6-300. He or she shall be responsible for the review of all proposed uses and development to determine whether the land on which the proposed use or development is located in the Special Flood Hazard Area (SFHA) and that the site is reasonably safe from flooding.~~ and shall hereby designate a Floodplain Administrator to administer and implement these regulations. The Floodplain Administrator may:
- (1) Do the work themselves. In the absence of a Floodplain Administrator, the duties are conducted by the City of Alexandria chief executive officer or authorized designee, or
 - (2) Delegate duties and responsibilities set forth in these regulations to qualified technical personnel, plan examiners, inspectors, and other employees, or
 - (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 community of its responsibilities pursuant to the participation requirements of the National Flood Insurance Program as set forth in the Code of Federal Regulations at 44 C.F.R. Section 59.22.
- (B) ~~An applicant must apply for a permit and issuance of the permit is required prior to the start of any development within the special flood hazard area.~~ The duties and responsibilities of the Floodplain Administrator
- (1) Review applications for permits to determine whether proposed activities will be located in the Special Flood Hazard Area (SFHA) and that the site is reasonably safe from flooding.
 - (2) Interpret floodplain boundaries and provide available base flood elevation and flood hazard information.
 - (3) 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.
 - (4) 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 of the course, current, or cross section of a stream or body of water, including any change to the 1-percent annual chance frequency floodplain of free-flowing non-tidal waters of the State.
 - (5) Verify that applicants proposing an alteration of a watercourse have notified adjacent communities, the Virginia Department of Conservation and Recreation (Division of Dam Safety and Floodplain Management), and other appropriate

agencies (VADEQ, USACE), and have submitted copies of such notifications to FEMA.

- (6) Advise applicants for new construction or substantial improvement of structures that are located within an area of the Coastal Barrier Resources System established by the Coastal Barrier Resources Act that Federal flood insurance is not available on such structures; areas subject to this limitation are shown on Flood Insurance Rate Maps as Coastal Barrier Resource System Areas (CBRS) or Otherwise Protected Areas (OPA).
- (7) Approve applications 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.
- (8) 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.
- (9) Review Elevation Certificates and require incomplete or deficient certificates to be corrected.
- (10) Submit to FEMA, 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 Alexandria, within six months after such data and information becomes available if the analyses indicate changes in base flood elevations. The community or applicant should submit data via a LOMR.
- (11) Maintain and permanently keep records that are necessary for the administration of these regulations, including:

 - (a) Flood Insurance Studies, Flood Insurance Rate Maps (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, variances, and records of enforcement actions taken to correct violations of these regulations.
- (12) Promote enforcement of the provisions of these regulations including investigation of violations, issuance of notices of violations or stop work orders, and requiring permit holders to take corrective action.
- (13) Advise the City Council regarding the intent of these regulations and, for each application for a variance, prepare a staff report and recommendation.
- (14) Administer the requirements related to proposed work on existing buildings:

- (a) Make determinations as to whether buildings and structures that are 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.
- (15) 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.
- (16) Notify the Federal Emergency Management Agency when the corporate boundaries of the City of Alexandria 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 governing body 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 Department of Conservation and Recreation (Division of Dam Safety and Floodplain Management) and FEMA.
- (17) 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 SFHA, number of permits issued for development in the SFHA, and number of variances issued for development in the SFHA.
- (18) It is the duty of the director of the department of transportation and environmental services or the Floodplain Administrator to 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 Community, whether or not those hazards have been specifically delineated geographically (e.g. via mapping or surveying).
- (19) 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 Community, whether or not those hazards have been specifically delineated geographically (e.g. via mapping or surveying).

(20) The director of the department of transportation and environmental services or the Floodplain Administrator may require information from the applicant, including, but not limited to, an engineering study of the floodplain. Upon a determination that the land on which the proposed use or development is located in a floodplain, the Floodplain Administrator shall determine whether such use or development may be permitted in accordance with the provisions of section 6-307 through 6-309 or requires the approval of a variance as set forth in section 6-312.

(21) The director of the department of transportation and environmental services or the Floodplain Administrator shall be responsible for the collection and maintenance of records necessary for the city's participation in the National Flood Insurance Program. 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 Floodplain Administrator shall notify or require the applicant to notify the FEMA Federal Insurance Administrator of any change in base flood elevation or the boundaries of any special flood hazard area depicted on the city's flood insurance rate map by submitting technical and scientific data to FEMA for a letter of map revision.

(C) ~~No site plan, subdivision plat or building permit application which proposes to construct or make substantial improvements within any floodplain district shall be approved by any agency of the City of Alexandria without certification by the director of transportation and environmental services that the plan, plat or permit application meets the requirements of this section 6-300. The director of transportation and environmental services shall insure that all other required permits related to development in the floodplain from state or federal governmental agencies have been obtained.~~ Permit Requirement. All uses activities and development occurring within any floodplain district, including placement of manufactured homes, shall be undertaken only upon the issuance of a permit. Such development shall be undertaken only in strict compliance with the provisions of this Ordinance and with all other applicable codes and ordinances, as amended, such as the Virginia Uniform Statewide Building Code (VA USBC) and the City of Alexandria Subdivision Regulations. Prior to the issuance of any such permit, the Floodplain Administrator shall require all applications to include compliance with all applicable State and Federal laws and shall review all sites to assure they are reasonably safe from flooding. Under no circumstances shall any use, activity, and/or development adversely affect the capacity of the channels or floodways of any watercourse, drainage ditch, or any other drainage facility or system.

(D) Site Plans and Permit Applications

An applicant must apply for a permit and issuance of the permit is required prior to the start of any development within the special flood hazard area.

No site plan, subdivision plat or building permit application which proposes to construct or make substantial improvements within any floodplain district shall be

approved by any agency of the City of Alexandria without certification by the director of the department of transportation and environmental services or the Floodplain Administrator that the plan, plat or permit application meets the requirements of this section 6-300. The director of the department of transportation and environmental services or the Floodplain Administrator shall insure that all other required permits related to development in the floodplain from state or federal governmental agencies have been obtained.

~~(D)~~ All applications for new construction or substantial improvement within any floodplain district, and all building permits issued for the floodplain shall incorporate the following information:

- (1) The base flood elevation(s) at the site;
- (2) The elevation of the lowest floor (including basement);
- (3) For structures to be floodproofed (nonresidential only), the elevation to which the structure will be floodproofed; and,
- (4) Topographic information showing existing and proposed ground elevations.

(E) Use and Interpretation of FIRMS. The director of the department of transportation and environmental services or the Floodplain Administrator may require information from the applicant, including, but not limited to, an engineering study of the floodplain. Upon a determination that the land on which the proposed use or development is located in a floodplain, the director or the Floodplain Administrator shall determine whether such use or development may be permitted in accordance with the provisions 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, or below the 1% storm surge elevation in coastal 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 all applicable requirements of section 6-306 through 6-308300; or requires the approval of a variance as set forth in section 6-311.

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 SFHA.

(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 SFHAs, 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 FISs 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 floodway areas than are shown on FIRMs and in FISs.
- (5) If a Preliminary Flood Insurance Rate Map 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 6-304(A)(3) and used where no base flood elevations and/or floodway areas 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 floodway areas 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.

(F) Jurisdictional Boundary Changes

The director of transportation and environmental services shall be responsible for the collection and maintenance of records necessary for the city's participation in the National Flood Insurance Program city floodplain ordinance in effect on the date of annexation shall remain in effect and shall be enforced by the municipality for all annexed areas until the municipality adopts and enforces an ordinance which meets the requirements for participation in the National Flood Insurance Program. 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 governing body shall prepare amendments to these regulations to adopt the FIRM and appropriate requirements, and submit the amendments to the governing body 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 Department of Conservation and Recreation (Division of Dam Safety and Floodplain Management) and FEMA.

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 Insurance Administration and optionally the State Coordinating Office 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.

In order that all Flood Insurance Rate Maps accurately represent the community's boundaries, a copy of a map of the community 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.

(G) District Boundary Changes

The delineation of any of the Floodplain Districts may be revised by the City of Alexandria 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 the Federal Emergency Management Agency. A completed LOMR is a record of this approval.

(I) Submitting Model Backed Technical Data

A community'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 ~~director of transportation and environmental services~~ community shall notify ~~or require~~ the applicant to notify the FEMA Federal Insurance Administrator of any change in base flood elevation or the boundaries of any special flood hazard area depicted on the city's flood insurance rate map Emergency Management Agency of the changes by submitting technical ~~and~~ scientific data to FEMA for. The community may submit data via a letter of map revision LOMR. Such a submission is necessary so that upon confirmation of those physical changes affecting flooding conditions, risk premium rates and floodplain management requirements will be based upon current data.

(J) Letters of Map Revisions

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 and then a Letter of Map Revision.

Example Cases:

- (1) Any development that causes a rise in the base flood elevations within the floodway.
- (2) Any development occurring in Zones A and AE without a designated floodway, which will cause a rise of more than 0.5-feet in the base flood elevation.
- (3) Alteration or relocation of a stream (including but not limited to installing culverts and bridges) 44 Code of Federal Regulations §65.3 and §65.6(a)(12).

6-306 General Standards

The following provisions shall apply to all permits in all Special Flood Hazard Area districts:

- (A) New construction and substantial improvements shall be built according to this ordinance and the VA USBC, and anchored to prevent flotation, collapse, or lateral movement of the structure.
- (B) Manufactured homes including non-residential trailers shall be anchored to prevent flotation, collapse, or lateral movement. Methods of anchoring may include, but are not limited to, use of over-the-top or frame ties to ground anchors. This standard shall be in addition to and consistent with applicable state anchoring requirements for resisting wind forces.
- (C) New construction and substantial improvements shall be constructed with materials and utility equipment resistant to flood damage.
- (D) New construction or substantial improvements shall be constructed by methods and practices that minimize flood damage.
- (E) 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 1-foot so as to prevent water from entering or accumulating within the components during conditions of flooding.
- (F) New and replacement water supply systems shall be designed to minimize or eliminate infiltration of flood waters into the system.
- (G) New and replacement sanitary sewage systems shall be designed to minimize or eliminate infiltration of flood waters into the systems and discharges from the systems into flood waters.

In addition to provisions A – G above, in all special flood hazard areas, the additional provisions shall apply:

- (1) 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.
- (2) The flood carrying capacity within an altered or relocated portion of any watercourse shall be maintained.

6-307 Special regulations.

Within the boundaries of any A or AE zones in any floodplain district as shown on the flood insurance rate map, buildings or structures and their extensions and accessory buildings or

structures may be constructed or substantially improved only in accordance with the following requirements of this section 6-300 and all other applicable provisions of law.

In all identified flood hazard areas where base flood elevations have been provided in the FIS or generated by a certified professional in accordance with 6-304(A)–The elevation of)(3)the following provisions shall apply:

(A) Residential Construction

(1) New Construction or substantial improvement or any residential building or structure and their extensions and accessory buildings or structures in Zones A, AE, and with detailed base flood elevations shall have the lowest floor, including the basement, for any new residential building or any extension to a residential building shall be issued unless the building has the lowest floor (including the basement) elevated to or above the base flood elevation plus 1-foot.

(2) No building permit for the substantial improvement of an existing residential building shall be at least one foot issued unless the building has the lowest floor (including the basement) elevated to or above the base flood elevation– plus 1-foot.

(B) ~~The elevation~~ Non-residential Construction

(1) New construction or substantial improvement of the lowest floor, including the basement for any new nonresidential commercial, industrial, or non-residential building or structure and any extension or accessory to a nonresidential non-residential building shall behave the lowest floor, including basement, elevated to or above the base flood elevation plus 1-foot.

(2) New construction or substantial improvement of any building designated as Flood Design Class 4 in the VA USBC shall have the lowest floor, including basement, elevated at least one 1-foot above the base flood elevation. Nonresidential, or the 0.2-percent annual chance flood elevation, whichever is higher.

(3) Non-residential buildings located in all A-~~or~~, AE, and AH zones may be dry-floodproofed in lieu of being elevated provided that all areas of the building components below the elevation corresponding to the base flood elevation plus ~~one~~ 1-foot 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. In no event shall any floor below at least one foot above the elevation corresponding to the base flood elevation plus 1-foot be used for human or animal habitation, food storage or food preparation. A registered professional engineer or architect shall certify the design and construction using the required FEMA floodproofing certification forms that the standards of this subsection are satisfied. Such certifications, including the specific elevation in relation to City Vertical Datum to which such structures are floodproofed, shall be maintained by the Floodplain Administrator.

~~(C)~~(4) No building permit for the substantial improvement of an existing nonresidential building shall be issued unless the building, together with attendant utility and sanitary facilities, has the lowest floor (including the basement) elevated to or above the base flood elevation plus 1-foot. Should this not be

feasible, no such permit shall be issued unless the existing structure is dry-floodproofed as described in section 6-307 in all areas below the base flood elevation to the classification designated by the Floodplain Administrator.

(5) Any mixed-use building may be considered a nonresidential building for purposes of this section 6-307 if all of the following conditions are met; otherwise, the building shall be considered a residential building:

(a) No more than 20 percent of the development site is within the boundaries of any A or AE zones in any floodplain district as shown on the flood insurance rate map;

(b) At least 20,000 square feet of finished floor area of the proposed mixed-use building is devoted to nonresidential use;

(c) Basement areas (including below grade parking) must be located outside the boundaries of any A or AE zones in any floodplain district; and,

(d) All floodproofing requirements specified in this ordinance 6-300 and as specified in NFIP Technical Bulletin 3 (2021 or later) Requirements for the Design and Certification of Dry Floodproofed Non-Residential and Mixed-Use Buildings - Requirements and Certification must be met.

(C) Space Below the Lowest Floor

In zones A, AE, and AH, fully enclosed areas, of new construction or substantially improved structures, which are below the base flood elevation plus 1-foot shall:

(1) Not be designed or used for human habitation, but shall be used solely 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 1-foot.

(3) Include measures to automatically equalize hydrostatic flood forces on walls by allowing for the entry and exit of floodwaters. To meet this requirement, the openings must either be certified by a professional engineer or architect or meet the following minimum design criteria:

(a) Provide a minimum of two openings on different sides of each enclosed area subject to flooding.

(b) The total net area of all openings must be at least one (1) square inch for each square foot of enclosed area subject to flooding.

(c) If a building has more than one enclosed area, each area must have openings to allow floodwaters to automatically enter and exit.

(d) The bottom of all required openings shall be no higher than one (1) foot above the adjacent grade.

(e) Openings may be equipped with screens, louvers, or other opening coverings or devices, provided they permit the automatic flow of floodwaters in both directions.

(f) 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) All new and replacement public utilities, water mains and sanitary sewers shall be designed to minimize or eliminate infiltration and exfiltration and to insure their structural integrity under flood conditions to the satisfaction of the director of the department of transportation and environmental services or the Floodplain Administrator.

~~(DE)~~ Water heaters, furnaces, electrical distribution panels and other critical mechanical or electrical installations shall not be installed below the base flood elevation. Separate electrical circuits shall serve areas below the base flood elevation and shall be dropped from above.

~~(EF)~~ Any proposed use of land, development and any new construction or substantial improvement of a building or structure within an A or AE zone, in conjunction with all other uses, existing or possessing a valid permit for construction, shall not increase the water-surface elevation of the ~~100-year~~ 1-percent annual chance flood by more than 0.5 foot. Any party proposing a land use or development or such construction or improvement within an A or AE zone shall furnish specific engineering data and information as to the effect of the proposed action on future flood heights and obtain approval from the director of the department of transportation and environmental services or the Floodplain Administrator prior to undertaking the action.

~~(FG)~~ No building permit shall be issued for the construction or substantial improvement of a building or structure unless the applicant submits to the department of code administration a certification from a duly registered architect or engineer that the proposed construction (including prefabricated homes) or improvement meets the following requirements:

- (1) The construction shall be protected against flood damage;
- (2) The construction shall be designed (or modified) and anchored to prevent flotation, collapse or lateral movement of the building and structure;
- (3) The construction shall be built using materials and utility equipment that are resistant to flood damage; and,
- (4) The construction shall be built using methods and practices that will minimize flood damage. The certification required ~~be in~~ section 6-306 ~~(F307(H))~~(1) and (2) shall be based on the ~~100-year~~ 1-percent annual chance flood level as noted on the flood insurance rate map.

~~(G) No building permit for the substantial improvement of an existing nonresidential building shall be issued unless the building, together with attendant utility and sanitary facilities, has the lowest floor (including the basement) elevated at least one foot above~~

the base flood elevation. Should this not be feasible, no such permit shall be issued unless the existing structure is watertight floodproofed as described in section 6-306 in all areas below the base flood elevation to the classification designated by the director of transportation and environmental services.

~~(H) No building permit for the substantial improvement of an existing residential building shall be issued unless the building has the lowest floor (including the basement) elevated at least one foot above the base flood elevation.~~

(H) Wherever floodproofing is utilized within the scope of this section 6-300, such floodproofing shall be done by approved methods. A registered professional engineer or architect shall certify the adequacy of the floodproofing design to withstand the stresses of the base flood and such plan shall cite the elevation to which the structure is floodproofed. All certified floodproofing shall be designed as passive and without the need for human intervention. Certifications must be in accordance with the NFIP Technical Bulletin 3, latest version. Such certification shall be provided on Federal Emergency Management Agency, National Flood Insurance Program, elevation certificate and/or floodproofing certificate as applicable. ~~Designs meeting the requirements of the W-1 and W-2 without human intervention technique as outlined in floodproofing regulations of the Office of the Chief of Engineers, U.S. Army, December 15, 1995, shall be deemed to comply with this requirement.~~ deemed applicable by the Floodplain Administrator. The building or code official shall maintain a file of such certifications, including the elevation of the lowest floor for structures that are elevated in lieu of watertight floodproofing.

~~(I) For all~~ Wherever pilings or columns are used for new construction or and substantial improvements the following provisions shall apply:

(1) The bottom of the lowest horizontal structural member of the lowest floor (excluding the pilings or columns) is elevated to or above the base flood level plus 1-foot. If the lowest horizontal structural member is parallel to the direction of wave approach or elevated at least two feet above the base flood level if the lowest horizontal structural member is perpendicular to the direction of wave approach; and

(2) The pile or column foundation and structure attached thereto is anchored to resist flotation, collapse, and lateral movement due to the effects of wind and water loads acting simultaneously on all building components. Wind and water loading values shall each have a one percent chance of being equaled or exceeded in any given year (one percent annual chance).

(3) A registered professional engineer or architect shall develop or review the structural design, specifications, and plans for the construction, and shall certify that the design and methods of construction to be used are in accordance with accepted standards of practice for meeting the provisions of 6-307(J).

(4) The Floodplain Administrator shall obtain the elevation (in relation to City Vertical Datum) of the bottom of the lowest horizontal structural member of the lowest floor (excluding pilings and columns) of all new and substantially

improved structures, ~~fully enclosed areas~~. The Floodplain Administrator shall maintain a record of all such information.

(5) All new construction and substantial improvements shall have the space below the lowest floor (other than a basement) which are either free of obstruction or constructed with non-supporting breakaway walls, open wood-lattice work, or insect screening intended to collapse under wind and water loads without causing collapse, displacement, or other structural damage to the elevated portion of the building or supporting foundation system. For the purpose of this section, a breakaway wall shall have a design safe loading resistance of not less than 10 and no more than 20 pounds per square foot. Use of breakaway walls which exceed a design safe loading resistance of 20 pounds per square foot (either by design or when so required by local codes) may be permitted only if a registered professional engineer or architect certifies that the designs proposed meet the following conditions:

(a) Breakaway wall collapse shall result from water load less than that which would occur during the base flood; and

(b) The elevated portion of the building and supporting foundation system shall not be subject to collapse, displacement, or other structural damage due to the effects of wind and water loads acting simultaneously on all building components (structural and nonstructural). Maximum wind and water loading values to be used in this determination shall each have a one percent chance of being equaled or exceeded in any given year.

(6) The enclosed space below the ~~base flood elevation~~ lowest floor shall:

~~(1) Only be used solely for the parking of vehicles, building access, or limited storage of maintenance equipment used in connection with the premises and. Such space shall not be designed partitioned into multiple rooms, temperature-controlled, or used for human habitation. 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 the entry to the living area (stairway or elevator);~~

~~(2) Be constructed entirely of flood resistant materials below the base flood elevation; and;~~

~~(3) Include, in A and AE zones, measures to automatically equalize hydrostatic flood forces on walls by allowing for the entry and exit of floodwaters. To meet this requirement, the openings must be certified by a professional engineer or architect or meet the minimum design criteria:~~

~~(a) Provide a minimum of two openings on different sides of each enclosed area subject to flooding;~~

~~(b) The total net area of all openings must be at least one square inch for each square foot of enclosed area subject to flooding;~~

~~(c) If a building has more than one enclosed area, each area must have openings to allow floodwaters to automatically enter and exit;~~

- ~~(d) The bottom of all required openings shall be no higher than one foot above the adjacent grade;~~
- ~~(e) Openings may be equipped with screens, louvers, or other opening coverings or devices, provided they permit the automatic flow of floodwaters in both directions; and,~~
- ~~(f) 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.~~
- ~~(K) Any mixed-use building may be considered a nonresidential building for purposes of this section 6-306 if all of the following conditions are met; otherwise, the building shall be considered a residential building:~~
 - ~~(1) No more than 20 percent of the development site is within the boundaries of any A or AE zones in any floodplain district as shown on the flood insurance rate map;~~
 - ~~(2) At least 20,000 space shall be less than 300 square feet of finished floor area of the proposed mixed-use building is devoted to nonresidential use;~~
 - ~~(3) Basement areas (including below grade parking) must be located outside the boundaries of any A or AE zones in any floodplain district; and,~~
- ~~(4) All floodproofing requirements specified in this section 6-300 and as specified in FEMA Technical Bulletin 3-93 Non-Residential Floodproofing Requirements and Certification must be met.~~
- (7) 6-307 The use of fill for structural support of buildings is prohibited. When non-structural fill is proposed in a coastal high hazard area, appropriate engineering analyses shall be conducted to evaluate the impacts of the fill prior to issuance of a permit.

6-308 Other conditions.

- (A) No filling of any kind shall be allowed within the boundaries of any A or AE zone except where such filling, when considered in conjunction with all other uses, existing and proposed, will not increase the base flood elevation more than 0.5 foot. Persons proposing such filling shall furnish specific engineering data and information as to the effect of their proposed action on future flood heights and shall obtain approval from the director of the department of transportation and environmental services or the Floodplain Administrator prior to any filling.
- (B) All uses, activities and development occurring within any floodplain district shall only be undertaken in strict compliance with the Virginia Uniform Statewide Building Code (VA USBC).
- (C) No wall, fence or other outdoor obstruction shall be constructed in any floodplain district unless such structure is approved by the director of the department of transportation and environmental services or the Floodplain Administrator; provided that open mesh wire fences of not less than No. 9 wire, with mesh openings of not

less than six inches times six inches, whose supports shall be securely anchored in concrete and whose wire shall be securely fastened to the supports, may be erected without any review by or approval of the director of the department of transportation and environmental services or the Floodplain Administrator under this section 6-300.

- (D) The provisions of this section 6-300 shall not be construed to prevent the remodeling (not amounting to substantial improvement), maintenance or floodproofing of buildings and structures now existing, or prevent the surfacing or resurfacing of existing streets or parking lots within two inches of the existing grade.

6-308309 Subdivision requirements.

~~(A) All subdivision proposals which are located in A or AE zones must comply with the provisions of section 6-300 and shall:~~

- (A) ~~(1) be consistent with the need to minimize flood damage;~~
- (B) ~~(2) All subdivision proposals shall have public utilities and facilities such as sewer, gas, electrical and water systems located and constructed to minimize flood damage;~~
- (C) ~~(3) All subdivision proposals shall have adequate drainage provided to reduce exposure to flood hazards; and,~~
- ~~(4) Include base flood elevation data.~~
- (D) Include base flood elevation data. Where no base flood elevation data is determined, base flood elevation data shall be obtained from other sources or developed using detailed methodologies, hydraulic and hydrologic analysis, comparable to those contained in a Flood Insurance Study for subdivision proposals and other proposed development proposals that exceed fifty lots or five acres, whichever is lesser.

6-309310 Trailer camps, manufactured homes, mobile homes, recreational vehicles, and septic tank systems.

- (A) In zones A, AE, and AH, all trailer camps, manufactured homes, and mobile homes are not permitted in any floodplain district.
- (B) All recreational vehicles in the floodplain must be on the site for fewer than 180 consecutive days and, be fully licensed and ready for highway use: (a recreational vehicle is ready for highway use if it is on its wheels or jacking system, is attached to the site only by quick disconnect type utilities and security devices and has no permanently attached additions)
- (C) Installation of septic tank systems in any floodplain district is prohibited.

6-310311 Projects in Floodplain Areas.

(A) Existing Structures

Any structure or use of a structure or premises must be brought into conformity with these provisions when it is changed, repaired, or improved unless one of the following exceptions is established before the change is made:

- (1) The director of the department of transportation and environmental services or the Floodplain Administrator has determined that:
 - (a) Change is not a substantial repair or substantial improvement AND
 - (b) No new square footage is being built in the floodplain that is not compliant AND
 - (c) No new square footage is being built in the floodway AND
 - (d) The change complies with this ordinance and the VA USBC
- (2) The changes required to comply with a citation for a health or safety violation.
- (3) The structure is a historic structure and the change required would impair the historic nature of the structure.

~~(A)~~(B) Flood Prevention Projects-

Nothing in ~~sections~~sections 6-304 through section 6-~~308~~309 shall be construed to prohibit the City of Alexandria or any person from undertaking lawful filling, draining, construction, realignment or relocation of stream channels or any other improvement that is intended to eliminate or reduce the danger of flooding, provided:

- ~~(A1)~~ The improvement is in accord with the City of Alexandria's flood improvement plan for the floodplain district involved and the director of the department of transportation and environmental services or the Floodplain Administrator has issued a certificate to that effect;
- ~~(B2)~~ The improvement is under the general supervision of the director of the department of transportation and environmental services or the Floodplain Administrator;
- ~~(C3)~~ The realignment or relocation of any stream channel is designed and constructed so that there will be no reduction in the natural valley storage capacity of the area with respect to the ~~100-year~~1-percent annual chance flood, unless such relocation or realignment is designed to contain the ~~100-year~~1-percent annual chance flood within the banks of the channel;
- ~~(D4)~~ Notification, in riverine situations, is provided to adjacent communities, Virginia Department of Conservation and Recreation, FEMA, and other required agencies prior to any alteration or relocation of a watercourse; and,
- ~~(E5)~~ The requirements of section 6-~~306~~(E307)(G) and section 6-~~307~~308(A) must be met.

6-~~311~~312 Variances.

- ~~(A)~~(A) Variances shall be issued only upon (i) a showing of good and sufficient cause, (ii) after City Council has determined that failure to grant the variance would result in

exceptional hardship to the applicant, and (iii) after the City Council has determined that the granting of such variance will not result in (a) unacceptable or prohibited increases in flood heights, (b) additional threats to public safety, (c) extraordinary public expense; and will not (d) create nuisances, (e) cause fraud or victimization of the public, or (f) conflict with local laws or ordinances.

(B) The city council may, for good and sufficient cause, permit less than full compliance with or waive the provisions of ~~section~~sections 6-304 through ~~section 6-310~~311, provided:

- (1) Written application is made stating the hardship which will occur if the variance is not granted;
- (2) A public hearing is held;
- (3) The decision is made by a majority vote of the entire membership of city council upon finding that the variance is the minimum necessary, considering the flood hazard, to afford relief;
- (4) The director of the department of transportation and environmental services or the Floodplain Administrator states in writing that the variance(s) will not result in unacceptable or prohibited increases in flood heights, additional threats to public safety, extraordinary public expense; and will not create nuisances, cause fraud or victimization of the public, or conflict with local laws and ordinances; and,
- (5) The director of the department of transportation and environmental services or the Floodplain Administrator notifies the applicant in writing that the issuance of a variance to construct a structure below the base flood elevation will result in increased insurance premium rates for flood insurance and that such construction will increase the risks to life and property.

(C) While the granting of variances generally is limited to a lot size less than one-half acre, deviations from that limitation may occur. However, as the lot size increases beyond one-half acre, the technical justification required for issuing a variance increases. Variances may be issued by City Council for new construction and substantial improvements to be erected on a lot of one-half acre or less in size contiguous to and surrounded by lots with existing structures constructed below the base flood level, in conformance with the provisions of this Section.

(D) Variances may be issued for new construction and substantial improvements and for other development necessary for the conduct of a functionally dependent use provided that the criteria of this Section are met, and the structure or other development is protected by methods that minimize flood damages during the base flood and create no additional threats to public safety.

(E) In ~~evaluating~~passing upon applications for variances, the director of the department of transportation and environmental services or the Floodplain Administrator shall satisfy all relevant factors and procedures specified in other sections of the city's zoning ordinance and consider the following additional factors:

- (1) The danger to life and property due to increased flood heights or velocities caused by encroachments; No variance shall be granted for any proposed use,

development, or activity within any Floodway District that will cause any increase in the one percent (1%) chance flood elevation;

- (2) The danger that materials may be swept onto other lands or downstream to the injury of others;
- (3) The susceptibility of the proposed facility and its contents to flood damage and the effect of such damage on the individual owners;
- (4) The importance of the services provided by the proposed facility to the community;
- (5) The requirements of the facility for a waterfront location;
- (6) The availability of alternative locations not subject to flooding for the proposed use;
- (7) The compatibility of the proposed use with existing development and development anticipated in the foreseeable future;
- (8) The relationship of the proposed use to the comprehensive plan and floodplain management program for the area;
- (9) The safety of access by ordinary and emergency vehicles to the property in time of flood;
- (10) The expected heights, velocity, duration, rate of rise, and sediment transport of the flood waters expected at the site; ~~and,~~

~~(11)~~ Variances will not be issued for any accessory structure within the SFHA (Note: See section 6-307(D)(1)).

(12) Such other factors which are relevant to the purposes of this ordinance.

~~(F)~~ The director of the department of transportation and environmental services or the Floodplain Administrator may refer any application and accompanying documentation pertaining to any request for a variance to any 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 flood protection and other related matters.

~~(G)~~ Variances shall be issued only after City Council has determined that the granting of such will not result in (a) unacceptable or prohibited increases in flood heights, (b) additional threats to public safety, (c) extraordinary public expense; and will not (d) create nuisances, (e) cause fraud or victimization of the public, or (f) conflict with local laws or ordinances.

(H) Variances shall be issued only after City Council has determined that the variance will be the minimum required to provide relief.

(I) The director of the department of transportation and environmental services or the Floodplain Administrator shall notify the applicant for a variance, in writing that the issuance of a variance to construct a structure below the one percent (1%) chance flood elevation (a) increases the risks to life and property and (b) will result in increased premium rates for flood insurance.

(J) A record shall be maintained of the above notification as well as all variance actions, including justification for the issuance of the variances. Any variances that are issued shall be noted in the annual or biennial report required to be submitted to the FEMA Federal Insurance Administrator.

~~(E) Variances may be issued by a community for new construction and substantial improvements and for other development necessary for the conduct of a functionally dependent use.~~

6-312313 Compliance, liability, severability, and penalties.

(A) 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 this section 6-300 and any other applicable ordinances and regulations which apply to uses within the jurisdiction of these floodplain district regulations.

(B) ~~The degree of flood protection required~~sought by these floodplain district regulations and all other applicable local, state and federal regulations~~the provisions of this ordinance section 6-300 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 or.~~ Flood heights may be increased by man-made or natural causes, such as ice jams and bridge openings restricted by debris. Therefore, ~~the regulations set forth in this section 6-300 do~~does not imply that areas outside the floodplain districts, or land uses permitted within such districts, will be free from flooding and flood damages ~~under all conditions.~~ Additionally, the granting of a permit or approval of a development in an identified floodplain district shall not constitute a representation, guarantee, or warranty of any kind by any official or employee of the City of Alexandria of the practicability or safety of the proposed use, and shall create no liability upon the City of Alexandria, its officials or employees..

~~(C) This ordinance shall not constitute a representation, guarantee, or warranty of any kind by any official or employee~~create liability on the part of the City of Alexandria of the practicability or safety of the proposed use, and shall create no liability upon the City of Alexandria, its officials or employees or any officer or employee thereof for any flood damages that result from reliance on this ordinance, or any administrative decision lawfully made thereunder.

~~(D)~~ (E) If any section, subsection, paragraph, sentence, clause, or phrase of this section 6-300 shall be declared invalid for any reason ~~by a court of competent jurisdiction~~whatsoever, such decision shall not affect the remaining portions of this section 6-300. The remaining portions shall remain in full force and effect; and for this purpose, the provisions of this section 6-300 are hereby declared to be severable.

~~(D)~~ (E) Penalty for Violations

Any person who fails to comply with any of the requirements or provisions of this article or directions of the director of the planning and zoning department or any authorized

employee of the City of Alexandria shall be guilty of the appropriate violation and subject to the penalties thereof.

The VA USBC addresses building code violations and the associated penalties in Section 104 and Section 115. Any person who shall engage in new construction, substantial improvement or development without a building permit as required by VA USBC and these floodplain management regulations shall be subject to the violations and associated penalties provided of the Zoning Ordinance of the City of Alexandria are addressed in Section 11-200 of the Zoning Ordinance.

6-313 Appeals.

In addition to the above penalties, all other actions are hereby reserved, including an action in equity for the proper enforcement of this article. The imposition of a fine or penalty for any violation of, or noncompliance with, this article shall not excuse the violation or noncompliance or permit it to continue; and all such persons shall be required to correct or remedy such violations within a reasonable time. Any structure constructed, reconstructed, enlarged, altered, or relocated in noncompliance with this article may be declared by the City of Alexandria to be a public nuisance and abatable as such. Flood insurance may be withheld from structures constructed in violation of this ordinance.

6-314 Abrogation and Greater Restrictions.

To the extent that the provisions are more restrictive, this ordinance supersedes any ordinance currently in effect in floodplain districts. To the extent that any other existing law or regulation is more restrictive or does not conflict it shall remain in full force and effect.

Any person aggrieved by a decision of the director of the department of transportation and environmental services or the Floodplain Administrator under this section 6-300 may appeal that decision to City Council; provided, that the appeal shall be filed in writing with the city clerk within 15 days of the decision being appealed and shall describe the decision being appealed and the reasons why the person believes the decision to be invalid.

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

6-314315 Records and Annual report.

Records of actions associated with administering this ordinance shall be kept on file and maintained by or under the direction of the director of the department of transportation and environmental services or the Floodplain Administrator in perpetuity.

It shall be the city manager's duty to submit any reports to FEMA and the floodplain coordinator at the Virginia Department of Conservation and Recreation that may be required regarding the City of Alexandria's compliance with ~~flood~~ floodplain management regulations.
