

City of Garland, TX
Wednesday, March 12, 2025

Chapter 31. Engineering

ARTICLE VII. FLOOD DAMAGE PREVENTION

§ 31.100. Preamble.

- (A) Statutory authorization. The Legislature of the State of Texas has in the Flood Control Insurance Act, Texas Water Code, section 16.315, delegated the responsibility of local governmental units to adopt regulations designed to minimize flood losses. Therefore, the City does ordain as follows.
- (B) Findings of fact.
- (1) The special flood hazard areas of the City are subject to periodic inundation which results in loss of life and property, health and safety hazards, disruption of commerce and governmental services, extraordinary public expenditures for flood protection and relief, and impairment of the tax base, all of which adversely affect the public health, safety, and general welfare.
 - (2) These flood losses are caused by the cumulative effect of obstructions in areas of special flood hazard which cause an increase in flood heights and velocities. Uses that are inadequately elevated, anchored, floodproofed or otherwise protected from flood damage also contribute to the flood loss.
- (C) Statement of purpose. It is the purpose of this article to promote the public health, safety, and general welfare, and to minimize public and private losses due to flood conditions in specific areas by provisions designed:
- (1) To protect human life and health;
 - (2) To minimize expenditure of public money for costly flood-control projects;
 - (3) To minimize the need for rescue and relief efforts associated with flooding and generally undertaken at the expense of the general public;
 - (4) To minimize prolonged business interruptions;
 - (5) To minimize damage to public facilities and utilities such as water and gas mains, electric, telephone and sewer lines, streets and bridges located in areas of special flood hazard;
 - (6) To help maintain a stable tax base by providing for the sound use and development of floodprone areas in such a manner as to minimize future flood blight areas;
 - (7) To provide a means whereby potential buyers and adjacent property owners may be notified that property is in an area of special flood hazard and to attempt to insure that property one foot above the base flood elevation is not imposed with flood hazard by development of the area;
 - (8) To insure that those who occupy the areas of special flood hazard assume responsibility for their actions; and

- (9) To provide a uniform procedure by which all alterations to the floodway and floodway fringe will be documented, reviewed, inspected and maintained within guidelines herein established.
- (D) Methods of reducing flood losses. In order to accomplish its purposes, this article uses the following methods and provisions for:
- (1) Restricting or prohibiting uses that are dangerous to health, safety, or property in times of flood, or cause excessive increases in flood heights or velocities.
 - (2) Requiring that uses vulnerable to floods, including facilities which serve such uses, be protected against flood damage at the time of initial construction.
 - (3) Controlling and regulating the alteration of natural floodplains, stream channels and natural protective barriers, which are involved in the accommodation of floodwaters.
 - (4) Controlling and regulating filling, grading, dredging, and other development which may increase flood damage.
 - (5) Preventing or regulating the construction of flood barriers which will unnaturally divert floodwaters or which may increase flood hazards in other lands.
 - (6) Purchasing floodprone residential properties through a voluntary acquisition process initiated by the property owner. The property shall be dedicated to the city and maintained by the city in perpetuity as open space for the conservation of natural floodplain functions unless otherwise approved by the Director of Engineering.

(Ordinance 4078, sec. 1, adopted 3/10/87; Ordinance 6707, sec. 1, adopted 6/17/14; Ordinance 7382 adopted 11/15/2022)

§ 31.101. Definitions.

Unless specifically defined below, words or phrases used in this article shall be interpreted to give them the meaning they have in common usage and to give this article its most reasonable application.

Appeal. A request for a review of the floodplain administrator's interpretation of any provision of this article or a request for a variance.

Area of shallow flooding. A designated AO, AH, AR/AO, AR/AH, or VO zone on the community's flood insurance rate map (FIRM) with a 1% chance or greater annual chance of flooding to an average depth of 1 to 3 feet where a clearly defined channel does not exist, where the path of flooding is unpredictable and where velocity flow may be evident. Such flooding is characterized by ponding or sheet flow.

Area of special flood hazard. The land in the floodplain within a community subject to a 1% or greater chance of flooding in any given year. The area may be designated as Zone A on the FHBM. After detailed ratemaking has been completed in preparation for publication of the FIRM, the area, Zone A, usually is refined into Zones A, AO, AH, A1-30, AE, AH, AO, A1-99, A99, AR, AR/A1-30, AR/AE, AR/AO, AR/AH, AR/A, VO, or V1-30, VE, or V. For purposes of this ordinance, the term "special flood hazard area" is synonymous in meaning with the phrase "area of special flood hazard."

Base flood. The flood having a 1% chance of being equaled or exceeded in any given year.

Base flood elevation (BFE). The elevation shown on the flood insurance rate map (FIRM) and found in the accompanying flood insurance study (FIS) for zones A, AE, AH, A1-A30, AR, V1-V30, or VE that indicates the water surface elevation resulting from the flood that has a 1% chance of equaling or exceeding that level in any given year. Also called the base flood.

Breakaway wall. A wall that is not part of the structural support of the building and is intended through its design and construction to collapse under specific lateral loading forces, without causing damage to the

elevated portion of the building or supporting foundation system.

Critical feature. An integral and readily identifiable part of a flood protection system, without which the flood protection provided by the entire system would be compromised.

Developed area. An area of the City that is:

- (1) A primarily urbanized, built-up area that is a minimum of 20 contiguous acres, has basic urban infrastructure, including roads, utilities, communications, and public facilities, to sustain industrial, residential, and commercial activities, and:
 - (a) Within which 75 percent or more of the parcels, tracts, or lots contain commercial, industrial, or residential structures or uses;
 - (b) Is a single parcel, tract, or lot in which 75 percent of the area contains existing commercial or industrial structures or uses; or
 - (c) Is a subdivision developed at a density of at least two residential structures per acre within which 75 percent or more of the lots contain existing residential structures at the time the designation is adopted.
- (2) Undeveloped parcels, tracts, or lots, the combination of which is less than 20 acres and contiguous on at least 3 sides to areas meeting the criteria of subsection (1) at the time the designation is adopted.
- (3) A subdivision that is a minimum of 20 contiguous acres that has obtained all necessary government approvals, provided that the actual "start of construction" of structures has occurred on at least 10 percent of the lots or remaining lots of a subdivision or 10 percent of the maximum building coverage or remaining building coverage allowed for a single lot subdivision at the time the designation is adopted and construction of structures is underway. Residential subdivisions must meet the density criteria in subsection (1)(c).

Development. Any manmade change in improved and unimproved real estate, including, but not limited to, buildings or other structures, mining, dredging, filling, grading, paving, excavation, drilling operations or storage of equipment or materials.

Elevated building. A nonbasement building: (1) built, in the case of a building in zones A1-30, AE, A, A99, AO, AH, B, C, X, and D, to have the top of the elevated floor, or in the case of a building in zones V1-30, VE, or V, to have the bottom of the lowest horizontal structure member of the elevated floor elevated above the ground level by means of pilings, columns (posts and piers), or shear walls parallel to the floor of the water; and (2) adequately anchored so as not to impair the structural integrity of the building during a flood of up to the magnitude of the base flood. In the case of zones A1-30, AE, A, A99, AO, AH, B, C, X, D, elevated building also includes a building elevated by means of fill or solid foundation perimeter walls with openings sufficient to facilitate the unimpeded movement of floodwaters. In the case of zones V1-30, VE, or V, elevated building also includes a building otherwise meeting the definition of elevated building, even though the lower area is enclosed by means of breakaway walls if the breakaway walls meet the standards of section 60.3(e)(5) of the National Flood Insurance Program regulations.

Existing construction. For the purposes of determining rates, structures for which the start of construction commenced before the effective date of the FIRM or before January 1, 1975, for FIRMs effective before that date. Existing construction may also be referred to as existing structures.

Existing manufactured home park or subdivision. A manufactured home park or subdivision for which the construction of facilities for servicing the lots on which the manufactured homes are to be affixed (including, at a minimum, the installation of utilities, the construction of streets, and either final site grading or the pouring of concrete pads) is completed before the effective date of the floodplain management regulations adopted by the City.

Expansion to an existing manufactured home park or subdivision. The preparation of additional sites by the construction of facilities for servicing the lots on which the manufactured homes are to be affixed (including the installation of utilities, the construction of streets, and either final site grading or the pouring of concrete pads).

Flood fringe. The area between the floodway and the boundary of the base or 100-year flood.

Flood or flooding.

- (1) A general and temporary condition of partial or complete inundation of normally dry land areas from:
 - (a) The overflow of inland and tidal waters;
 - (b) The unusual and rapid accumulation or runoff of surface waters from any source; or
 - (c) Mudslides (i.e., mudflows) which are proximately caused by flooding as defined in subsection (1)(b) of this definition and are akin to a river of liquid and flowing mud on the surfaces of normally dry land areas, as when earth is carried by a current of water and deposited along the path of the current.
- (2) The collapse or 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 subsection (1)(a) of this definition. a general and temporary condition of partial or complete inundation of normally dry land areas from (1) the overflow of inland or tidal waters; (2) the unusual and rapid accumulation or runoff of surface waters from any source; or (3) mudslides (i.e., mudflows) which are proximately caused by flooding as defined in subsection (1)(b) of this definition and are akin to a river of liquid and flowing mud on the surfaces of normally dry land areas, as when earth is carried by a current of water and deposited along the path of the current. The collapse or 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 subsection (1)(a) of this definition.

Flood insurance rate map (FIRM). The official map of a community, on which the Federal Emergency Management Agency has delineated both the areas of special flood hazards and the risk premium zones applicable to the City. A FIRM that has been made available digitally is called a "Digital Flood Insurance Rate Map" or "DFIRM."

Flood insurance study. The official report provided by the Federal Emergency Management Agency. The report contains flood profiles, water surface elevation of the base flood, as well as the flood boundary-floodway map. Also known as a "flood elevation study."

Flood protection system. Those physical structural works for which funds have been authorized, appropriated, and expended and which have been constructed specifically to modify flooding in order to reduce the extent of the areas within a community subject to a special flood hazard and the extent of the depths of associated flooding. Such a system typically includes hurricane tidal barriers, dams, reservoirs, levees or dikes. These specialized flood modifying works are those constructed in conformance with sound engineering standards.

Floodplain or floodprone area. Any land area susceptible to being inundated by water from any source (see definition of flooding).

Floodproofing. Any combination of 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.

Floodway (regulatory floodway). The channel of a river or other watercourse and the adjacent land areas that must be reserved in order to discharge the base flood without cumulatively increasing the water surface elevation more than one (1) foot.

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

Habitable floor. Any floor usable for the following purposes; which include working, sleeping, eating, cooking or recreation, or a combination thereof. A floor used for storage purposes only is not a habitable floor.

Highest adjacent grade. The highest natural elevation of the ground surface prior to construction next to the proposed walls of a structure.

Historic structure. Any structure that is:

- (1) Listed individually in the National Register of Historic Places (a listing maintained by the Department of the Interior) or preliminarily determined by the Secretary of the Interior as meeting the requirements for individual listing on the National Register;
- (2) Certified or preliminarily determined by the Secretary of the Interior as contributing to the historical significance of a registered historic district or a district preliminarily determined by the Secretary [of the Interior] to qualify as a registered historic district;
- (3) Individually listed on a state inventory of historic places in states with historic preservation programs which have been approved by the Secretary of the Interior;
- (4) Individually listed on a local inventory of historic places in communities with historic preservation programs that have been certified either:
 - (a) By an approved state program as determined by the Secretary of the Interior; or
 - (b) Directly by the Secretary of the Interior in states without approved programs.

Levee. A manmade structure, usually an earthen embankment, designed and constructed in accordance with sound engineering practices to contain, control, or divert the flow of water so as to provide protection from temporary flooding.

Levee system. A flood protection system which consists of a levee, or levees, and associated structures, such as closure and drainage devices, which are constructed and operated in accordance with sound engineering practices.

Lowest floor. The lowest floor of the lowest enclosed area (including basement). An unfinished or flood resistant enclosure, usable solely for parking of vehicles, building access or storage in an area other than a basement area is not considered a building's lowest floor; provided that such enclosure is not built so as to render the structure in violation of the applicable nonelevation design requirement of section 60.3 of the National Flood Insurance Program regulations.

Manufactured home. A structure transportable in one or more sections, which is built on a permanent chassis and is designed for use with or without a permanent foundation when connected to the required utilities. For floodplain management purposes, the term manufactured home also includes park trailers, travel trailers, and other similar vehicles placed on a site for greater than 180 consecutive days. For insurance purposes, the term manufactured home does not include park trailers, travel trailers, and other similar vehicles.

Manufactured home park or subdivision. A parcel (or contiguous parcels) of land divided into two or more manufactured home lots for rent or sale.

Mean sea level. For purposes of the National Flood Insurance Program, the National Geodetic Vertical Datum (NGVD) of 1929 or other datum, to which base flood elevations shown on a community's flood insurance rate map are referenced.

New construction. For the purposes of determining insurance rates, structures for which the "start of construction" commenced on or after the effective date of an initial FIRM or after December 31, 1974, whichever is later, and includes any subsequent improvements to such 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 the City and includes any subsequent improvements to such structures.

New manufactured home park or subdivision. A manufactured home park or subdivision for which the construction of facilities for servicing the lots on which the manufactured homes are to be affixed (including at a minimum, the installation of utilities, the construction of streets, and either final site grading or the pouring of concrete pads) is completed on or after the effective date of floodplain management regulations adopted by the City.

Person. An individual or group of individuals, corporation, partnership, association, or any other entity, including State and local governments and agencies.

Principally above ground. A structure is principally above ground if at least 51% of the actual cash value of the structure, less land value, is above ground.

Recreational vehicle. A vehicle which is:

- (1) Built on a single chassis;
- (2) 400 square feet or less when measured at the largest horizontal projections;
- (3) Designed to be self-propelled or permanently towable by a light duty truck; and
- (4) Designed primarily not for use as a permanent dwelling but as temporary living quarters for recreational, camping, travel, or seasonal use.

Riverine. Relating to, formed by, or resembling a river (including tributaries), stream, brook, etc.

Start of construction. For other than new construction or substantial improvements under the Coastal Barrier Resources Act (pub. L. 97-348), includes substantial improvement and means the date the building permit was issued, provided the actual start of construction, repair, reconstruction, placement, or other improvement was within 180 days of the permit date. The actual start means either the first placement of permanent construction of a structure on a site, such as the pouring of slab or footings, the installation of piles, the construction of columns, or any work beyond the stage of excavation; or the placement of a manufactured home on a foundation. 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 basement, footings, piers, or foundations or the erection of temporary forms; nor does it include the installation on the property of accessory buildings, such as garages or sheds not occupied as dwelling units or not part of the main structure.

Structure. For 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 can also mean any physical body which is capable of diverting floodwaters.

Substantial damage. Damage of any origin sustained by a structure whereby the cost of restoring the structure to its before-damaged condition would equal or exceed 50 percent of the market value of the structure before the damage occurred.

Substantial improvement. Any repair, reconstruction, or improvement of a structure, the cost of which equals or exceeds fifty (50) percent of the market value of the structure either:

- (1) Before the improvement or repair is started; or
- (2) If the structure has been damaged and is being restored, before the damage occurred.
- (3) For the purposes of this definition substantial improvement is considered to occur when the first alteration of any wall, ceiling, floor, or other structural part of the building commences, whether or not that alteration affects the external dimensions of the structure. The term does not, however, include either:
 - (a) Any project for improvement of a structure to comply with existing state or local health, sanitary, or safety code specifications which are solely necessary to assure safe living conditions; or
 - (b) Any alteration of a structure listed on the National Register of Historic Places or a state inventory of historic places.

Variance. A grant of relief to a person from the requirements of this article when specific enforcement would result in unnecessary hardship. A variance, therefore, permits construction or development in a manner otherwise prohibited by this article. (For full requirements, see section 60.6 of the National Flood Insurance Program regulations.)

Violation. The failure of a structure or other development to be fully compliant with the City's floodplain management regulations. A structure or other development without the elevation certificate, other certifications, or other evidence of compliance required in section 60.3(b)(5), (c)(4), (c)(10), (d)(3), (e)(2), (e)(4), or (e)(5) of the National Flood Insurance Program regulations is presumed to be in violation until such time as that documentation is provided.

Water surface elevation. The height, in relation to the National Geodetic Vertical Datum (NGVD) of 1929 (or other datum, where specified), of floods of various magnitudes and frequencies in the floodplains of coastal or riverine areas.

(Ordinance 4078, sec. 1, adopted 3/10/87; Ordinance 6707, sec. 1, adopted 6/17/14; Ordinance 7052, sec. 25, adopted 5/7/19)

§ 31.102. General provisions.

- (A) Lands to which this article applies. This article shall apply to all locations in or near areas of special flood hazards within the jurisdiction of the City, as delineated in the last published National Flood Insurance Program maps and all letters of map amendment or revision thereto.
- (B) Basis for establishing the areas of special flood hazard. The areas of special flood hazard identified by the Federal Emergency Management Agency (FEMA) in scientific and engineering reports entitled "The Flood Insurance Study for the Dallas County, Texas and Incorporated Areas," "The Flood Insurance Study for Collin County, Texas and Incorporated Areas," and "The Flood Insurance Study for Rockwall County, Texas and Incorporated Areas," with accompanying flood insurance rate maps (FIRM), dated July 7, 2014, June 2, 2009, and September 26, 2008, respectively, and any amendments/revisions thereto are hereby adopted by reference and declared to be a part of this article.
- (C) The following FIRM maps and associated flood insurance study (FIS), as approved by FEMA on the dates listed in subsection (B) above, and any amendments or revisions thereto, are hereby effective and adopted for use and shall supersede any FIRM maps or FIS previously adopted for their specific coverage:

4811300210

L

48113C0215	L
48113C0220	L
48113C0230	L
48113C0235	L
48113C0240	L
48113C0360	L
48113C0380	L
48113C0385	L
48085C0510	J
48085C0530	J
4808500535	J
4839700010	L

- (D) Establishment of development permit. A development permit shall be required to ensure conformance with the provisions of this article.
- (E) Compliance. No structure or land shall hereafter be located, altered, or have its use changed without full compliance with the terms of this article and other applicable regulations.
- (F) Abrogation and greater restrictions. This article is not intended to repeal, abrogate, or impair any existing easements, covenants, or deed restrictions. However, where this article and another conflict or overlap, whichever imposes the more stringent restrictions shall prevail.
- (G) Interpretation. In the interpretation and application of this article, all provisions shall be:
- (1) Considered as minimum requirements;
 - (2) Liberally construed in favor of the governing body; and
 - (3) Deemed neither to limit nor repeal any other powers granted under state statutes.
- (H) Warning and disclaimer of liability. The degree of flood protection required by this article is considered reasonable for regulatory purposes and is based on scientific and engineering considerations. On occasion, greater floods can and will occur and flood heights may be increased by manmade or natural causes. This article does not imply that land outside the areas of special flood hazards or uses permitted within such areas will be free from flooding or flood damages.

(Ordinance 4078, sec. 1, adopted 3/10/87; Ordinance 4442, sec. 1, adopted 8/21/90; Ordinance 4696, sec. 1, adopted 7/20/93; Ordinance 5587, sec. 1, adopted 8/7/01; Ordinance 5703, sec. 1, adopted 2/4/03; Ordinance 6323, secs. 1, 2, adopted 6/16/09; Ordinance 6707, sec. 1, adopted 6/17/14)

§ 31.103. Administration.

- (A) Designation of the floodplain administrator. The Director of Engineering is hereby appointed the floodplain administrator to administer and implement the provisions of this article and other appropriate sections of 44 CFR (National Flood Insurance Program Regulations) pertaining to floodplain management.
- (B) Duties and responsibilities of the floodplain administrator. Duties and responsibilities of the floodplain administrator shall include, but not be limited to, the following:
- (1) Maintain and hold open for public inspection all records pertaining to the provisions of this article.

- (2) Review permit application to determine whether proposed building site will be reasonably safe from flooding.
- (3) Review, approve or deny all applications for development permits required by this article.
- (4) Review permits for proposed development to determine that all necessary permits have been obtained from those federal, state, or local governmental agencies (including section 404 of the Federal Water Pollution Control Act Amendments of 1972, 33 U.S.C. 1334) from which prior approval is required.
- (5) Where interpretation is needed as to the exact location of the boundaries of the areas of special flood hazards (for example, where there appears to be a conflict between a mapped boundary and actual field conditions) the floodplain administrator may make the necessary interpretation.
- (6) Notify, in riverine situations, adjacent communities and the state water development board, prior to any alteration or relocation of a watercourse, and submit evidence of such notification to the Federal Emergency Management Agency.
- (7) Assure that the flood-carrying capacity within the altered or relocated portion of any watercourse is maintained.
- (8) When base flood elevation data has not been provided in accordance with section **31.102(B)**, the floodplain administrator may obtain, review and reasonably utilize any base flood elevation data and floodway data available from a federal, state or other source, in order to administer the provisions of section **31.104**.
- (9) When a regulatory floodway has not been designated, the floodplain administrator must require that no new construction, substantial improvements, or other development (including fill) shall be permitted within zones A1-30, and AE on the City's 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.

(C) Permit procedures.

- (1) Application for a development permit shall be presented to the floodplain administrator on forms furnished by him/her and may include, but not be limited to, plans in duplicate drawn to scale showing the location, dimensions, and elevation of proposed landscape alterations, existing and proposed structures, and the location of the foregoing in relation to areas of special flood hazard. Additionally, the following information is required:
 - (a) Elevation (in relation to mean sea level), of the lowest floor (including basement) of all new and substantially improved structures.
 - (b) Elevation in relation to mean sea level to which any nonresidential structure shall be floodproofed.
 - (c) A certificate from a registered professional engineer or architect that the nonresidential floodproofed structure shall meet the floodproofing criteria of section **31.104(B)(2)**.
 - (d) Description of the extent to which any watercourse or natural drainage will be altered or relocated as a result of proposed development.
 - (e) Maintain a record of all such information in accordance with subsection (B)(1).
- (2) Approval or denial of a development permit by the floodplain administrator shall be based on all of the provisions of this article and the following relevant factors:
 - (a) The danger to life and property due to flooding or erosion damage.

- (b) The susceptibility of the proposed facility and its contents to flood damage and the effect of such damage on the individual owner.
 - (c) The danger that materials may be swept onto other lands to the injury of others.
 - (d) The compatibility of the proposed use with existing and anticipated development.
 - (e) The safety of access to the property in times of flood for ordinary and emergency vehicles.
 - (f) The costs of providing governmental services during and after flood conditions including maintenance and repair of streets and bridges, and public utilities and facilities such as sewer, gas, electrical and water systems.
 - (g) The expected heights, velocity, duration, rate of rise and sediment transport of the floodwaters and the effects of wave action, if applicable, expected at the site.
 - (h) The necessity to the facility of a waterfront location, where applicable.
 - (i) The availability of alternative locations, not subject to flooding or erosion damage, for the proposed use.
 - (j) The relationship of the proposed use to the comprehensive plan for that area.
- (D) Variance procedures.
- (1) The City Council may hear and render judgment on requests for variances from the requirements of this article.
 - (2) The City Council shall hear and render judgment on an appeal only when it is alleged there is an error in any requirement, decision, or determination made by the floodplain administrator in the enforcement or administration of this article.
 - (3) Any person or persons aggrieved by the decision of the City Council may appeal such decision in the courts of competent jurisdiction.
 - (4) The floodplain administrator shall maintain a record of all actions involving an appeal and shall report variances to the Federal Emergency Management Agency upon request.
 - (5) Variances may be issued for the reconstruction, rehabilitation or restoration of structures listed on the National Register of Historic Places or the state inventory of historic places, without regard to the procedures set forth in the remainder of this article.
 - (6) Variances may be issued 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, providing the relevant factors in subsection (C)(2) of this section have been fully considered. As the lot size increases beyond the one-half acre, the technical justification required for issuing the variance increases.
 - (7) Upon consideration of the factors noted above and the intent of this article, the City Council may attach such conditions to the granting of variances as it deems necessary to further the purpose and objectives of this article.
 - (8) Variances shall not be issued within any designated floodway if any increase in flood levels during the base flood discharge would result.
 - (9) Prerequisites for granting variances:
 - (a) Variances shall only be issued upon a determination that the variance is the minimum necessary, considering the flood hazard, to afford relief.
 - (b) Variances shall only be issued upon:
 - (i) Showing a good and sufficient cause;

- (ii) A determination that failure to grant the variance would result in exceptional hardship to the applicant; and
 - (iii) A determination that the granting of a variance will not result in increased flood heights, additional threats to public safety, extraordinary public expense, create nuisances, cause fraud on or victimization of the public, or conflict with existing local laws or ordinances.
- (c) Any applicant to whom a variance is granted shall be given written notice that the structure will be permitted to be built with the lowest floor elevation below the base flood elevation, and that the cost of flood insurance will be commensurate with the increased risk resulting from the reduced lowest floor elevation.
- (10) 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:
- (a) The criteria outlined in subsections **(1)** through **(9)** above are met; and
 - (b) 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.

(Ordinance 4078, sec. 1, adopted 3/10/87; Ordinance 6707, sec. 1, adopted 6/17/14; Ordinance 7052, sec. 26, adopted 5/7/19)

§ 31.104. Provisions for flood hazard reduction.

- (A) General standards. In all areas of special flood hazards, the following provisions are required for all new construction and substantial improvements:
- (1) All new construction or substantial improvements shall be designed (or modified) and adequately anchored to prevent flotation, collapse or lateral movement of the structure resulting from hydrodynamic and hydrostatic loads, including the effects of buoyancy;
 - (2) All new construction or substantial improvements shall be constructed by methods and practices that minimize flood damage;
 - (3) All new construction or substantial improvements shall be constructed with materials resistant to flood damage;
 - (4) All new construction or substantial improvements shall be constructed with electrical, heating, ventilation, plumbing, and air-conditioning equipment and other service facilities that are designed or located with the minimum required freeboard set forth in sections **31.104(B)** and **31.104(D)** so as to prevent water from entering or accumulating within the components during conditions of flooding;
 - (5) All 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 system and discharge from the systems into floodwaters; and
 - (7) On-site waste disposal systems shall be located to avoid impairment to them or contamination from them during flooding.
- (B) Specific standards. In all areas of special flood hazards where base flood elevation data has been provided as set forth in section **31.102(B)**, section **31.103(B)(8)**, or subsection **(C)(3)**, the following provisions are required:
- (1) Residential construction. New construction and substantial improvement of any residential structure shall have the lowest floor (including basement), elevated two (2) feet above the base

flood elevation. The bottom of all associated machinery and equipment shall be elevated a minimum of one (1) foot above the base flood elevation. A registered professional engineer, architect, or land surveyor shall submit a certification to the floodplain administrator that the standard of this subsection as proposed in section **31.103(C)(1)(a)**, is satisfied.

- (2) **Nonresidential construction.** New construction and substantial improvements of any commercial, industrial, or other nonresidential structure shall either have the lowest floor (including basement) elevated two (2) feet above the base flood level or, together with attendant utility and sanitary facilities, be designed so that below the base flood level the structure is watertight with walls substantially impermeable to the passage of water and with structural components having the capacity of resisting hydrostatic and hydrodynamic loads and effects of buoyancy. A registered professional engineer or architect shall develop and review structural design, specifications, and plans for the construction, and shall certify that the design and methods of construction are in accordance with accepted standards of practice as outlined in this subsection. A record of such certification which includes the specific elevation (in relation to mean sea level) to which such structures are floodproofed shall be maintained by the floodplain administrator.
- (3) **Enclosures.** New construction and substantial improvements, with fully enclosed areas below the lowest floor that are subject to flooding shall be designed to automatically equalize hydrostatic flood forces on exterior walls by allowing for the entry and exit of floodwaters. Designs for meeting this requirement must either be certified by a registered professional engineer or architect or meet or exceed the following minimum criteria:
 - (a) A minimum of two openings having a total net area of not less than one square inch for every square foot of enclosed area subject to flooding shall be provided.
 - (b) The bottom of all openings shall be no higher than one foot above grade.
 - (c) Openings may be equipped with screens, louvers, valves, or the coverings or devices provided that they permit the automatic entry and exit of floodwaters.
- (4) **Manufactured homes.**
 - (a) All manufactured homes to be placed within zone A shall be installed using methods and practices which minimize flood damage. For the purpose of this requirement, manufactured homes must be elevated and anchored to resist 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 requirement is in addition to applicable state and local anchoring requirements for resisting wind forces.
 - (b) All manufactured homes, including machinery and equipment, shall be elevated in compliance with subsection **(1)** above.
 - (c) All manufactured homes to be placed or substantially improved within zones A1-30, AH and AE on the FIRM shall be elevated on a permanent foundation such that the lowest floor of the manufactured home is two (2) feet above the base flood elevation; and be securely anchored to an adequately anchored foundation system in accordance with the provision of subsection (a) above.
- (5) **Recreational vehicles.** Recreational vehicles placed on sites within zones A1-30, AH, and AE on the flood insurance rate maps either: (a) be on the site for fewer than 1809 consecutive days; or (b) be fully licensed and ready for highway use; or (c) meet the permit requirements of section **31.103(C)(1)** and the elevation and anchoring requirements for manufactured homes in subsection **(4)** above. 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.
- (6) **Lowest finished floor elevations.** Any requirement contained in this article regarding the certification of the lowest finished floor elevation of a building or structure shall mean the as-

built elevation of the building or structure. A certification based upon construction plans shall only be valid during the course of construction and an as-built certification shall be submitted upon the completion of construction. The certification shall be in the form prescribed by the Federal Emergency Management Agency under the National Flood Insurance Program.

(C) Standards for subdivision proposals.

- (1) All subdivision proposals, including manufactured home parks and subdivisions shall be consistent with section **31.100(B)**, **(C)**, and **(D)** of this article.
- (2) All proposals for the development of subdivisions, including manufactured home parks and subdivisions, shall meet development permit requirements of section **31.102(D)**, section **31.103(C)**, and the provisions of this section.
- (3) Base flood elevation data shall be generated for subdivision proposals and other proposed development including manufactured home parks and subdivisions, which contain greater than 30 lots or 3 acres, whichever is less, if not otherwise provided pursuant to section **31.102(B)** or section **31.103(B)(8)** of this article.
- (4) All subdivision proposals, including manufactured home parks and subdivisions, shall have adequate drainage provided to reduce exposure to flood hazards.
- (5) All subdivision proposals, including manufactured home parks and subdivisions, shall have public utilities and facilities such as sewer, gas, electrical and water systems located and constructed to minimize or eliminate flood damage.

(D) Standards for areas of shallow flooding (AO/AH zones). Located within the areas of special flood hazard, established in section **31.102(B)**, are areas designated as shallow flooding. These areas have special flood hazards associated with base flood depths of one (1) to three (3) feet where a clearly defined channel does not exist and where the path of flooding is unpredictable and where velocity flow may be evident. Such flooding is characterized by ponding or sheet flow; therefore, the following provisions apply:

- (1) All new construction and substantial improvements of residential structures shall have the lowest floor (including basement, machinery, and equipment) elevated above the highest adjacent grade a minimum of one (1) foot higher than the depth number specified in feet on the FIRM (at least three (3) feet if no depth number is specified).
- (2) All new construction and substantial improvements of nonresidential structures:
 - (a) 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 (at least two (2) feet if no depth number is specified); or
 - (b) Together with attendant utility and sanitary facilities shall be designed so that below the base flood level the structure 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 the effects of buoyancy.
- (3) A registered professional engineer or architect shall submit a certification to the floodplain administrator that the standards of this section, as proposed in section **31.103(C)(1)(a)**, are satisfied.
- (4) Within zones AH or AO adequate drainage paths shall be provided around structures on slopes, to guide floodwaters around and away from proposed structures.

(E) Floodways. Portions of the areas of special flood hazard, established in section **31.102(B)**, are areas designated as floodways. Since the floodway is an extremely hazardous area due to the velocity of floodwaters which carry debris, potential projectiles and erosion potential, the following provisions shall apply:

- (1) The placement of any manufactured home within the floodways is prohibited. Other encroachments are prohibited, including fill, new construction, substantial improvements and other development unless certification by a professional registered engineer is provided demonstrating that encroachments shall not result in any increase in flood levels within the community during the occurrence of the base flood discharge.
 - (2) If subsection (1) above is satisfied, all new construction and substantial improvements shall comply with all applicable flood hazard reduction provisions of this section.
- (F) Penalties for noncompliance. No structure or land shall hereafter be constructed, located, extended, converted or altered without full compliance with the terms of this article and other applicable regulations. Violation of the provisions of this article by failure to comply with any of its requirements (including violations of conditions and safeguards established in connection with conditions) shall constitute a misdemeanor. Any person who violates this article or fails to comply with any of its requirements shall upon conviction thereof be fined not more than \$500.00 for each violation and in addition shall pay all costs and expenses involved in the case. Nothing herein contained shall prevent the City from taking such other lawful action as is necessary to prevent or remedy any violation.

(Ordinance 4078, sec. 1, adopted 3/10/87; Ordinance 4717, sec. 1, adopted 10/19/93; Ordinance 6707, sec. 1, adopted 6/17/14; Ordinance 7349 adopted 8/2/22)

§ 31.105. Inspection by City.

The City may make inspections of construction or development within any area of special flood hazard established in section **31.102(B)**. Records shall be maintained of as-built elevations and the location of the development with reference to the floodway limits. Costs of subsequent inspections required by noncomplying construction or development may be billed directly to the developer requesting the final inspection at current standard industry rates.

(Ordinance 4078, sec. 1, adopted 3/10/87; Ordinance 6707, sec. 1, adopted 6/17/14)

§ 31.106. Special development regulations for the Rowlett and Spring Creek 100-year floodplains.

- (A) The following provisions shall apply to all proposed development within the Rowlett and Spring Creek 100-year floodplains, as more particularly described on the Albert H. Half Associates, Inc., series April 1987 topographical maps, Project AVO-8470, Sheets 6-7, 18-20, 31-34, 45-57, 59-66 and 72-78:
- (1) Base flood elevations (BFE) for the 100-year flood event that reflect ultimate development land use throughout the watershed shall be used for design and planning of floodplain development.
 - (2) Development within the floodplain shall be permitted only if it can be demonstrated that there will be no rise in the base flood elevation.
 - (3) Fill volumes shall be balanced (+/- 15%) by excavation volumes to preserve overall valley storage within the floodplain. Areas excavated shall be landscaped to restore a natural cover.
 - (4) The bed and banks of Rowlett and Spring Creeks shall be left in a natural state to control erosive velocities, prevent excessive downstream discharges and preserve the natural effect of the stream. Exceptions are permitted for major bridge crossings, public welfare and safety.
 - (5) Increases to existing average velocities shall be allowed to a maximum average velocity of no greater than six (6) feet per second.

(6) Significant stands of trees and other environmental features within the floodplain shall be preserved.

(B) The provisions of this article (sections **31.100–31.105**) shall apply, and remain in full force and effect, as to all development covered by this section. However, where this section and other provisions of this article conflict, then the provisions of this section shall control.

(Ordinance 4114, sec. 1, adopted 8/4/87; Ordinance 6707, sec. 1, adopted 6/17/14)

§ 31.107. Floodplain fees assessed for letters of map amendments.

Federal Emergency Management Agency (FEMA) letter of map amendment (LOMA). Upon request by a property owner, the Engineering Department may prepare a FEMA compliant LOMA for the individual property. The property owner will provide the City with a FEMA-compliant elevation certificate. The property owner shall pay the City a nonrefundable fee in the amounts designated in the Master Fee and Rate Schedule, Article VII, Section **10.85**, of Chapter **10**. The fee is due before the City begins work. The work will be accomplished within the City's typical operating schedule.

(Ordinance 5847, sec. 9, adopted 9/7/04; Ordinance 6707, sec. 1, adopted 6/17/14; Ordinance 7052, sec. 27, adopted 5/7/19; Ordinance 7363 adopted 9/6/2022)

§ 31.108. Voluntary floodprone property buyout.

(A) The Director of Engineering is authorized to solicit applications from potential property owners whose residential property is susceptible to flooding. For the purpose of this section, a residential property shall be defined as a single-family, single-family attached or duplex.

(B) The Director of Engineering is authorized to negotiate and execute all documents and instruments necessary to acquire the highest prioritized property applications with the purchases being approved by City Council.

(C) Acquired properties shall be dedicated to the City and maintained by the City in perpetuity as open space for the conservation of natural floodplain functions unless otherwise directed or approved by the Director of Engineering.

(D) The buyout shall be in accordance with the current Engineering Department's Floodprone Property Buyout Program Guidelines.

(Ordinance 7382 adopted 11/15/2022)

§ 31.109. through § 31.114. (Reserved)