

Chapter 58 – FLOODS⁽¹⁾

Footnotes:

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Cross reference- Buildings and building regulations, ch. 14; civil emergencies, ch. 34; environment, ch. 50; fire prevention and protection, ch. 54; health and sanitation, ch. 62; planning, ch. 98; platting, ch. 118; utilities, ch. 130; vegetation, ch. 134; vehicles for hire, ch. 138; zoning, ch. 144.

State Law reference- Municipal water control, V.T.C.A., Local Government Code§ 401.001 et seq.; municipal drainage utility systems, V.T.C.A., Local Government Code§ 402.041 et seq.; city-county water control, V.T.C.A., Local Government Code§§ 411.002, 411.003; Flood Control and Insurance Act, V.T.C.A., Water Code§ 16.311 et seq.; contracts with conservation districts for flood control and drainage, V.T.C.A., Agriculture Code§ 201.152; disaster prevention, V.T.C.A., Government Code§

418.121 et seq.

ARTICLE I. - IN GENERAL

Secs. 58-1-58-25. - Reserved.

ARTICLE II. - FLOOD DAMAGE PREVENTION.1J

Footnotes:

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Editor's note- Ord. No. 2011-53, § 1, adopted June 27, 2011, repealed and reenacted article II in its entirety to read as herein set out. Formerly, article II pertained to similar subject matter and derived from Ord. No. 2010-04, § 1, adopted January 11, 2010.

Sec. 58-26. - Statutory authorization, findings of fact, purpose and methods.

58-26.1. *Statutory authorization.* The legislature of the state has in the Flood Control Insurance Act, V.T.C.A., Water Code§ 16.315, delegated the responsibility of local governmental units to adopt regulations designed to minimize flood losses. Therefore, the city does ordain as follows.

58-26.2. *Findings of fact.*

- (1) The 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, and extraordinary public expenditures for flood protection and relief, all of which adversely affect the public health, safety and general welfare.
- (2) These flood losses are created by the cumulative effect of obstructions in floodplains which cause an increase in flood heights and velocities, and by the occupancy of flood hazard areas by uses vulnerable to floods and hazardous to other lands because they are inadequately elevated, floodproofed or otherwise protected from flood damage.

58-26.3. *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 to:

- (1) Protect human life and health;
- (2) Minimize expenditure of public money for costly flood control projects;
- (3) Minimize the need for rescue and relief efforts associated with flooding and generally undertaken at the expense of the general public;
- (4) Minimize prolonged business interruptions;
- (5) Minimize damage to public facilities and utilities such as water and gas mains, electric, telephone and sewer lines, streets and bridges located in floodplains;
- (6) Help maintain a stable tax base by providing for the sound use and development of flood-prone areas in such a manner as to minimize future flood blight areas; and
- (7) Insure that potential buyers are notified that property is in a flood area.

58-26.4. *Methods of reducing flood losses.* In order to accomplish its purposes, this article uses the following methods:

- (1) Restrict or prohibit uses that are dangerous to health, safety or property in times of flood, or cause excessive increases in flood heights or velocities;
- (2) Require that uses vulnerable to floods, including facilities which serve such uses, be protected against flood damage at the time of initial construction;
- (3) Control the alteration of natural floodplains, stream channels, and natural protective barriers, which are involved in the accommodation of flood waters;
- (4) Control filling, grading, dredging and other development which may increase flood damage;
- (5) Prevent or regulate the construction of flood barriers which will unnaturally divert flood waters or which may increase flood hazards to other lands.

(Ord. No. 2011-53, § 1, 6-27-11)

Sec. 58-27. - 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.

Alluvial fan flooding means flooding occurring on the surface of an alluvial fan or similar landform which originates at the apex and is characterized by high-velocity flows; active processes of erosion, sediment transport, and deposition; and unpredictable flow paths.

Apex means a point on an alluvial fan or similar landform below which the flow path of the major stream that formed the fan becomes unpredictable and alluvial fan flooding can occur.

Appurtenant structure means a structure which is on the same parcel of property as the principal structure to be insured and the use of which is incidental to the use of the principal structure.

Area of future conditions flood hazard means the land area that would be inundated by the one- percent-annual chance (100-year) flood based on future conditions hydrology.

Area of shallow flooding means a designated AO, AH, AR/AO, AR/AH, or VO zone on a community's flood insurance rate map (FIRM) with a one percent or greater annual chance of flooding to an average depth of one to three 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 is the land in the floodplain within a community subject to a

one percent or greater chance of flooding in any given year. The area may be designated as Zone A on the flood hazard boundary map (**FHBM**). After detailed rate making has been completed in preparation for publication of the **FIRM**, Zone A usually is refined into Zones A, AO, AH, A1-30, AE, A99, AR, AR/A1-30, AR/AE, AR/AO, AR/AH, AR/A, VO, V1-30, VE or V.

Atlas 14 refers to rainfall data obtained from NOAA Atlas 14, Volume 11 Precipitation Frequency Atlas of Current United States published September 27, 2018 for the State of Texas.

Base flood means the flood having a one percent chance of being equaled or exceeded in any given year.

Base flood elevation (BFE) means 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 one percent chance of equaling or exceeding that level in any given year. Also called the "Base flood."

Basement means any area of the building having its floor subgrade (below ground level) on all sides.

Breakaway wall means 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 means an integral and readily identifiable part of a flood protection system, without which the flood protection provided by the entire system would be compromised.

Compensatory excavation means excavation to offset/mitigate lost floodplain volume due to fill placed in a special flood hazard area.

Development means any man-made change to improved and unimproved real estate, including but not limited to buildings or other structures, mining, dredging, filling, grading, paving, excavation or drilling operations or storage of equipment or materials.

Elevated building means, for insurance purposes, a non-basement building, which has its lowest elevated floor, raised above ground level by foundation walls, shear walls, posts, piers, pilings, or columns.

Existing construction means 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 means 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 a community.

Expansion to an existing manufactured home park or subdivision means 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 or flooding means 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.

Flood elevation study means an examination, evaluation and determination of flood hazards and,

if appropriate, corresponding water surface elevations, or an examination, evaluation and determination of mudslide (i.e., mudflow) and/or flood-related erosion hazards.

Flood insurance rate map (FIRM) means an official map of a community, on which the Federal Emergency Management Agency has delineated both the special flood hazard areas and the risk premium zones applicable to the community.

Flood insurance study (FIS). See "Flood elevation study."

Floodplain or *flood-prone area* means any and all land area adjoining the channel of a river, stream, lake, watercourse, marshy area, or other drainage element, which has been or may be inundated by stormwater runoff. The extent of the floodplain shall be determined by the crest of a flood having a one percent chance of occurrence in one year. (see definition of "Flooding").

Floodplain fill means earthen fill placed in the special flood hazard area for development within the floodplain based on a permit under applicable Federal, state, and local laws, ordinances, and regulations.

Floodplain management means the operation of an overall program of corrective and preventive measures for reducing flood damage, including but not limited to emergency preparedness plans, flood control works and floodplain management regulations.

Floodplain management regulations means zoning ordinances, subdivision regulations, building codes, health regulations, special purpose ordinances (such as a floodplain ordinance, grading ordinance and erosion control ordinance) and other applications of police power. The term describes such state or local regulations, in any combination thereof, which provide standards for the purpose of flood damage prevention and reduction.

Floodplain reclamation means the area in the special flood hazard area that can be potentially used for fill placement and future development based on a permit under applicable Federal, state, and local laws, ordinances, and regulations.

Flood protection system means 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 area 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.

Flood proofing means 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. See "Regulatory floodway."

Functionally dependent use means 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.

Future condition means the condition of the watershed assumed to be fully built out based on zoning and/or future land use projections. See "Area of future conditions flood hazard."

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

Historic structure means any structure that is:

- (1) Listed individually in the National Register of Historic Places (a listing maintained by the Department of 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 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; or
- (4) Individually listed on a local inventory or 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 means a man-made 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 means 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 means the lowest floor of the lowest enclosed area (including basement). An unfinished or flood resistant enclosure, usable solely for parking or 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 non-elevation design requirement of Section 60.3 of the National Flood Insurance Program regulations.

Manufactured home means a structure transportable in one or more sections, which is built on a permanent chassis and is designed for use with or without a permanent foundation when connected to the required utilities. The term "manufactured home" does not include a "recreational vehicle."

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

Mean sea level means, for purposes of the National Flood Insurance Program, the North American Vertical Datum (NAVD) of 1988 or other datum, to which base flood elevations shown on a community's flood insurance rate map are referenced.

New construction means, for the purpose 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 a community and includes any subsequent improvements to such structures.

New manufactured home park or subdivision means 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 a community.

Pre-development conditions means the conditions of the site within the Special Flood Hazard Area before making any changes within the floodplain. Can also be referred to as Pre-Project Conditions

Post-development conditions means the conditions of the site either before or after construction is complete. Can also be referred to as Post-Project Conditions.

Recreational vehicle means a vehicle which is:

- (1) Built on a single chassis;
- (2) Four hundred 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.

Regulatory floodplain means the land within the community subject to a one (1) percent or greater chance of flooding in any given year assuming Ultimate Development has occurred throughout the contributing watershed, which the city or community will use to future regulate design and construction within their municipality.

Regulatory floodway means 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.

Regulatory water surface elevation means the water surface elevation within the community subject to a one (1) percent or greater chance of flooding in any given year assuming Ultimate Development has occurred throughout the contributing watershed, which the city or community will use to future regulate design and construction within their municipality.

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

Shaded-X means areas of moderate flood hazard from the principal source of flood in the area, determined to be within the limits of one percent and 0.2 percent annual chance floodplain. (Shaded Zone X is used on new and revised maps in place of Zone B).

Special flood hazard area. See "Area of special flood hazard."

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, rehabilitation, addition placement, or other improvement was within 180 days of the permit date. The actual start means either the first placement of permanent construction of a structure on a site, such as the pouring of slab or footings, the installation of piles, the construction of columns, or any work beyond the stage of excavation, or the placement of a manufactured home on a foundation. Permanent construction does not include land preparation, such as clearing, grading and filling; nor does it include the installation of streets and/or walk ways; 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. For a substantial 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 that alteration affects the external dimensions

of the building.

Structure means, 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.

Substantial damage means 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 means any reconstruction, rehabilitation, addition, or other improvement of a structure, the cost of which equals or exceeds 50 percent of the market value of the structure before "start of construction" of the improvement. This term includes structures which have incurred "substantial damage", regardless of the actual repair work performed. The term does not, however, include either:

- (1) Any project for improvement of a structure to correct existing violations of state or local health, sanitary, or safety code specifications which have been identified by the local code enforcement official and which are the minimum necessary to assure safe living conditions, or
- (2) Any alteration of a "historic structure", provided that the alteration will not preclude the structure's continued designation as a "historic structure."

Ultimate development means a hypothetical condition where it is assumed the entire watershed is fully developed. Ultimate development can also refer to an urban watershed which is already fully developed, in which case, the existing conditions represents Ultimate Development. Also, see "Future Conditions"

Variance means a grant of relief by a community from the terms of a floodplain management regulation. (For full requirements see Section 60.6 of the National Flood Insurance Program regulations.)

Violation means the failure of a structure or other development to be fully compliant with the community'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) is presumed to be in violation until such time as that documentation is provided.

Water surface elevation means the height, in relation to the North American Vertical Datum (NAVO) of 1988 (or other datum, where specified), of floods of various magnitudes and frequencies in the floodplains of coastal or riverine areas. See "*Regulatory water surface elevation*."

(Ord. No. 2011-53, § 1, 6-27-11)

Sec. 58-28. - General provisions.

58-28.1. *Lands to which this article applies.* The article shall apply to all areas of and adjacent to special flood hazard within the jurisdiction of the city.

58-28.2. *Basis for establishing the areas of special flood hazard.*

The areas of special flood hazard identified by the Federal Emergency Management Agency in the current scientific and engineering report entitled "The Flood Insurance Study (FIS) for Comal County, Texas and Incorporated Areas," dated September 2, 2009, with accompanying flood insurance rate maps and/or flood boundary-floodway maps (FIRM and/or FBFM) dated September 2, 2009, and any revisions thereto are hereby adopted by reference and declared to be a part of this article; and

The areas of special flood hazard identified by the Federal Emergency Management Agency in the current scientific and engineering report entitled, "The Flood Insurance Study (FIS) for Guadalupe County, Texas and Incorporated Areas," dated November 2, 2007, with accompanying flood insurance rate maps and/or flood boundary-floodway maps (FIRM and/or FBFM) dated November 2, 2007, and any revisions thereto are hereby adopted by reference and declared to be part of this article.

The City requires the establishment of the one percent annual chance ultimate development conditions floodplain using Atlas 14 rainfall data as the regulatory floodplain. Until such time as such floodplain exists, it will be necessary for development to utilize the above information from Comal and Guadalupe County and their Incorporated Areas to develop and establish the regulatory floodplain.

58-28.3. – Establishment of development permit. A floodplain development permit shall be required to ensure conformance with the provisions of this article.

58-28.4. *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.

58-28.5. *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 ordinance, easement, covenant, or deed restriction conflict or overlap, whichever imposes the more stringent restrictions shall prevail.

58-28.6. *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.

58-28.7. *Warning and disclaimer or 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 occasions, greater floods can and will occur and flood heights may be increased by man-made 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. This article shall not create liability on the part of the community or any official or employee thereof for any flood damages that result from reliance on this article or any administrative decision lawfully made hereunder.

(Ord. No. 2011-53, § 1, 6-27-11)

Sec. 58-29. - Administration.

58-29.1. *Designation of the floodplain administrator.* The City Engineer or his/her designee is hereby appointed the floodplain administrator to administer and implement the provisions of this article and other appropriate sections of 44 CFR (Emergency Management and Assistance - National Flood Insurance Program Regulations) pertaining to floodplain management.

58-29.2. *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) Collaborate with the Planning and Development Services Department on review of permit applications to determine whether to ensure that the proposed building site project, including the placement of manufactured homes and RVs, will be

reasonably safe from flooding.

- (3) Collaborate with the Planning and Development Services Department to review, approve or deny all applications for development permits required by adoption of this article.
- (4) Review permits for proposed development to assure 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 shall make the necessary interpretation.
- (6) Notify, in riverine situations, adjacent communities and the state coordinating agency which is the Texas Water Development Board (TWDB) and also the Texas Commission on Environmental Quality (TCEQ), 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 regulatory flood elevation data has not been provided in accordance with subsection 58-28.2, the floodplain administrator shall obtain, review and reasonably utilize any regulatory flood elevation data and floodway data available from a federal, state or other source, or request the engineer to develop such study in accordance to the guidelines specified by City of New Braunfels Drainage and Erosion Control Design manual (DCM), in order to administer the provisions of section 58-30.
- (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 community's FIRM, unless it is demonstrated to the City 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 community.
- (10) Under the provisions of 44 CFR Chapter 1, Section 65.12, of the National Flood Insurance Program regulations, in some cases, a community may approve certain development in Zones A1-30, AE, AH on the community's FIRM which increases the water surface elevation of the base flood by more than one foot, provided that the community first completes all of the provisions required by Section 65.12.
- (11) Any requirements necessary for the strength, stability or proper operation of an existing or proposed building, structure, electrical, gas, mechanical or plumbing system, or for the public safety, health and general welfare, not specifically covered by this chapter or the other technical codes, shall be determined by the floodplain administrator or his/her designee. In addition, other requirements to implement, clarify or set procedures to accomplish the intent of this chapter may be set in writing by the floodplain administrator and may be posted electronically for public access.

58-29.3. *Permit procedures.*

- (1) Application for a floodplain 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, including the placement of manufactured homes and RVs, 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 subsection 58-30.2(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 58-29.2(1);
 - f. Detailed drawings for the proposed development. Drawings must clearly indicate that all provisions of these regulations will be met. On developments other than residential accessory buildings less than 150 square feet or other insignificant developments (carports, well houses, gazebos, etc.) drawings must be sealed by a licensed professional engineer or registered architect certifying that all provisions of these regulations will be met if the development is completed in accordance with the sealed drawings.
 - g. A topographic survey of the property to be developed. This requirement may be waived for fences or other insignificant types of development.
 - h. In cases where a determination must be made as to whether the construction is substantial improvement, additional information may need to be submitted as outlined in these regulations.
 - i. The top of the slab of the lowest habitable floor must be elevated to two feet or more above the regulatory floodplain elevation.
 - j. A form board survey with elevations signed by a registered public land surveyor (R.P.L.S.) will be required before framing begins. Approval must be given by the floodplain administrator **or his/her designee** to begin framing if the survey meets all requirements.
 - k. A completed elevation certificate with the necessary regulatory floodplain elevations, hydrological and hydraulic data as needed must be submitted when the structure is completed (completed and ready for habitation for residential structures).
 - l. All structures will be constructed and anchored to prevent flotation, collapse or lateral movement of the structure resulting from the hydrodynamic and hydrostatic loads, including the effect of buoyancy.
 - m. Construction shall use methods that will minimize flood damage and

construction materials and utility equipment that are resistant to flood damage. FEMA technical bulletins will serve as the guideline for this requirement.

- n. Unless dry-proofed, enclosed areas below the regulatory floodplain elevation must be equipped with flood openings or vents capable of equalizing water levels and hydrostatic loads. Covers for these openings must not interfere with the equalization of water levels in the event of a flood and should minimize potential blockage by debris. FEMA Bulletin 1 or subsequent revisions shall serve as the guideline for this requirement. A licensed architect or licensed professional engineer shall certify the flood openings. (This can only be done within the floodplain not the floodway.
 - o. Thermal insulation used below the regulatory floodplain elevation shall be of a type that does not absorb water.
 - p. Water heaters, furnaces, air conditioning systems, electrical distribution panels and any other mechanical or electrical equipment must be elevated at least two feet above the regulatory floodplain elevation. Separate electrical circuits shall serve any level below the regulatory floodplain elevation and shall be dropped from above.
 - q. All air ducts, loose pipes, propane tanks and storage tanks located at or below the regulatory floodplain level shall be firmly anchored to prevent floatation. Tanks and ducts shall be vented to at least two feet above the regulatory floodplain elevation.
- (2) The floodplain development permit application may be filed with the application for building permit or separately prior to application for building permit. The floodplain development permit application shall include the following information:
- a. Completed floodplain development permit application form.
 - b. Applicable permit fees:
 - 1. One-and two-family dwelling floodplain permit + (\$.05/sf for residential) \$100.00
 - 2. Other than one- and two-family dwelling floodplain permit + (\$.10/sf for commercial) \$250.00.
 - 3. Any other applicable fees in accordance with the current Fee Schedule.
 - c. Plans, sealed by a Texas registered engineer, architect or land surveyor meeting (at minimum) requirements set forth in this chapter.
- (3) Approval or denial of a floodplain 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.

58-29.4. *Variance procedures.*

- (1) The [City Council](#), shall 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 regulatory floodplain level, providing the relevant factors in subsection 58-29.3(2) 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 construction board of appeals may attach such conditions to the granting of variances as it deems necessary to further the purpose and objectives of this article (subsection 58-26.3).
- (8) Variances shall not be issued within any designated floodway if any increase in flood levels during the base flood discharge would result.
- (9) Variances may be issued for the repair or rehabilitation of historic structures upon a determination that the proposed repair or rehabilitation will not preclude the structure's continued designation as a historic structure and the variance is the minimum necessary to preserve the historic character and design of the structure.
- (10) 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:
 - 1. Showing a good and sufficient cause;

2. A determination that failure to grant the variance would result in exceptional hardship to the applicant, and
 3. 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 application to which 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.
- (11) 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 provided that:
- a. The criteria outlined in subsections 58-29.4(1)-(9) are met, and
 - b. The structure or other development is protected by methods that minimize flood damages during the regulatory flood event and create no additional threats to public safety.

(Ord. No. 2011-53, § 1, 6-27-11)

Sec. 58-30. - Provisions for flood hazard reduction.

58-30.1. *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) to be 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 two feet above the regulatory floodplain elevation with electrical, heating, ventilation, plumbing, and air conditioning equipment and other service facilities that are designed and/or located so as to prevent water from entering or accumulating within the components during conditions of flooding;
- (5) The total value of improvements, repairs, modifications, and additions to existing buildings are counted cumulatively;
- (6) All new and replacement water supply systems shall be designed to minimize or eliminate infiltration of flood waters into the system;
- (7) New and replacement sanitary sewage systems shall be designed to minimize or eliminate infiltration of flood waters into the system and discharge from the systems into flood waters; and,
- (8) On-site waste disposal systems shall be located to avoid impairment to them or contamination from them during flooding.

58-30.2. *Specific standards.* In all areas of special flood hazards where base flood elevation data has been provided as set forth in (i) subsection 58-28.2, (ii) subsection 58-29.2(8), or (iii) subsection 58- 30.3(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 to a minimum of two feet above the regulatory floodplain elevation together with attendant utility and sanitary facilities. 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 subsection 58-29.3(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 to minimum of two feet or above the regulatory flood level or together with attendant utility and sanitary facilities, be designed so that below the regulatory 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 effects of buoyancy. A registered professional engineer or architect shall develop and/or 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 usable solely for parking of vehicles, building access or storage in an area other than a basement and which 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 on separate walls 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 other coverings or devices provided that they permit the automatic entry and exit of floodwaters.
- (4) *Manufactured homes.*
 - a. Require that all manufactured homes to be placed within Zone A on a community's FHBM or FIRM shall be installed using methods and practices which minimize flood damage. For the purposes 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. Require that manufactured homes that are placed or substantially improved within Zones A1-30, AH, and AE on the community's FIRM on sites (i) outside

of a manufactured home park or subdivision, (ii) in a new manufactured home park or subdivision, (iii) in an expansion to an existing manufactured home park or subdivision, or (iv) in an existing manufactured home park or subdivision on which a manufactured home has incurred "substantial damage" as a result of a flood, be elevated on a permanent foundation such that the lowest floor of the manufactured home is elevated to minimum of two feet or above the regulatory floodplain elevation and be securely anchored to an adequately anchored foundation system to resist flotation, collapse, and lateral movement.

- c. Require that manufactured homes be placed or substantially improved on sites in an existing manufactured home park or subdivision with Zones A1-30, AH, and AE on the community's FIRM that are not subject to the provisions of subsection (4) be elevated so that either:
 1. The lowest floor of the manufactured home is at minimum of two feet or above the regulatory floodplain elevation, or
 2. The manufactured home chassis is supported by reinforced piers or other foundation elements of at least equivalent strength that are no less than 36 inches in height above grade and be securely anchored to an adequately anchored foundation system to resist flotation, collapse, and lateral movement.

- (5) *Recreational vehicles.* Recreational vehicles are not permitted within the regulatory floodway. Require that recreational vehicles placed on sites within Zones A1-30, AH, and AE on the community's FIRM either (i) be on the site for fewer than 180 consecutive days, or (ii) be fully licensed and ready for highway use, or (iii) meet the permit requirements of subsection 58-29.3 (1), and the elevation and anchoring requirements for "manufactured homes" in subsection (4). 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.

58-30.3. *Standards for subdivision proposals.*

- (1) All subdivision proposals including the placement of manufactured home parks and subdivisions shall be consistent with subsections 58-26.2, 58-26.3 and 58-26.4.
- (2) All proposals for the development of subdivisions including the placement of manufactured home parks and subdivisions shall meet floodplain development permit requirements of subsections 58-28.3, 58-29.3, and the provisions of section 58-30.
- (3) Regulatory floodplain elevation data shall be generated for subdivision proposals and other proposed development including the placement of manufactured home parks and subdivisions which is greater than 50 lots or five acres, whichever is lesser, if not otherwise provided pursuant to subsection 58-28.2 or 58-29.2(8).
- (4) All subdivision proposals including the placement of manufactured home parks and subdivisions shall have adequate drainage provided to reduce exposure to flood hazards.
- (5) All subdivision proposals including the placement of 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.

58-30.4. *Standards for areas of shallow flooding (AO/AH Zones).* Located within the areas of special flood hazard established in subsection 58-28.2, are areas designated as shallow

flooding. These areas have special flood hazards associated with flood depths of one to three 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; therefore, the following provisions apply:

- (1) All new construction and substantial improvements of residential structures have the lowest floor (including basement) elevated to or above the base flood elevation or the highest adjacent grade at least as high as the depth number specified in feet on the community's FIRM (at least two feet if no depth number is specified).
- (2) All new construction and substantial improvements of non-residential structures:
 - a. Have the lowest floor (including basement) elevated to or above the base flood elevation or the highest adjacent grade at least as high as the depth number specified in feet on the community's FIRM (at least two feet if no depth number is specified), or
 - b. Together with attendant utility and sanitary facilities be designed so that below the base specified flood depth in an AO Zone, or below the base flood elevation in an AH Zone, 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 of 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 subsection 58-29.3 are satisfied.
- (4) Require within Zones AH or AO adequate drainage paths around structures on slopes, to guide flood waters around and away from proposed structures.

58-30.5. Floodplains. Any and all land area adjoining the channel of a river, stream, lake, watercourse, marshy area, or other drainage element, which has been or may be inundated by stormwater runoff. The extent of the floodplain shall be determined by the crest of a flood having a one percent chance of occurrence in one year. The following provisions shall apply:

- (1) The City evaluated precipitation based on NOAA Atlas 14, Texas statewide precipitation study and updated the City's DCM with revised rainfall data. The one percent annual chance 24-hour rainfall depth for City is adopted to be 13.1 inches. Additional rainfall depth-duration-frequency values and intensity-duration-frequency values for the 2-year, 5-year, 10-year, 25-year, 50-year, 100-year and 500-year storm frequencies are included in the Drainage and Erosion Control Design Manual. The City requires all flood study submittals to be performed using rainfall data published in the DCM. In case of mapped floodplains where FEMA submittals are needed, the study should use the rainfall data used in the current effective FEMA models, as required by FEMA for their submittals. In addition to this, the City requires a separate analysis using the rainfall data published in the Drainage and Erosion Control Design Manual, prepared for City's review and approval. Proposed conditions shall account for ultimate development of the watershed. All studies shall be in accordance with the Drainage and Erosion Control Design Manual.
- (2) The one percent annual chance floodplain, also known as the 100-year floodplain is the area subject to one percent or greater chance of flooding in any given year, as described in FEMA guidelines. These zones are typically represented as Zone A, AE, AH or AO on FEMA Flood Insurance Rate Maps (FIRM Panels) and are classified as High-Risk flood zones. Most FEMA FIRMs also identify areas of

Medium-Risk flood zones classified as Zone X, which are printed with a shade and hence are also known as Shaded-X. Based on FEMA guidelines, the Shaded-X area can be delineated either using the 0.2 percent annual chance storm or the one percent annual chance storm based on Ultimate Development Conditions, also known as Future Conditions. For all future studies, the City has adopted the one percent annual chance Ultimate Development floodplain mapped using rainfall data published in the Drainage and Erosion Control Design Manual, as the regulatory floodplain. Such floodplain is delineated based on flows developed by assuming the entire watershed is fully developed. The City's GIS portal provides information regarding future zoning projections, which can be used to determine fully developed conditions.

- a) The City requires all new and re-studied FEMA floodplains to delineate the Shaded-X areas based on the one percent annual chance Ultimate Development conditions. The City's regulatory criteria will require all storm water management facilities or a combination of facilities, stream crossings, new-development or re-development in the floodplain to be designed for Ultimate Development Conditions.
 - b) The City requires demonstration of the elevation of fill placed in the one percent annual chance Ultimate Development floodplain for construction of habitable structures to be greater than the one percent annual chance Ultimate Development water surface elevation. This includes but is not restricted to back of lot elevations, finished floor elevations, drainage facilities etc.
 - c) The City requires all future drainage easements and crossings in the floodplains to be based on the one percent annual chance Ultimate Development conditions.
 - d) For drainage areas greater than 150 acres, the City requires a rainfall-runoff model (such as HEC-HMS or similar) to support engineering calculations used to develop the one percent annual chance flows. The City will issue a floodplain development permit upon receiving and reviewing a signed report from an engineer, licensed to practice in the State of Texas. The report shall consist of all supporting information, data and calculations and may be accompanied with exhibits to support their one percent annual chance Ultimate Development flows and floodplain delineation. The City permits floodplain reclamation if accompanied with a signed and sealed study which demonstrates no adverse impacts to any property outside of the requester and demonstrates a no-impact to the one percent annual chance Ultimate Development water surface elevation outside of the requestor's property limits.
 - e) For streams which have a drainage area greater than 150 acres and currently not-mapped by FEMA, the City requires the requestor to submit a flood study report which is signed and sealed by a Professional Engineer registered in the State of Texas, which establishes a one percent annual chance Ultimate Development floodplain along, within or adjacent to the project site and plat the floodplain delineation as a drainage easement.
- (3) The stream setback limits, stream buffers, are different than the one percent annual chance floodplain. In some cases, the setback limits could be greater than the one percent annual chance Ultimate Development floodplain. Details for the City's requirements for setbacks/buffers are illustrated in the Drainage and Erosion Control Design Manual.
- (4) The City's goal is conservation of floodplain areas, avoid potential impacts on

structures adjacent to the currently mapped floodplains and ensure no net-loss of floodplain volume to preserve the area of conveyance. As such, the City will require Compensatory-Cut, also known as Compensatory-Excavation to offset/mitigate fill placed in the one percent annual chance Ultimate Development floodplain. The City permits floodplain reclamation if accompanied with a signed and sealed study which demonstrates no adverse impacts to any property outside of the requester and demonstrates a no-rise in the one percent annual chance Ultimate Development water surface elevation outside of the requestor's property limits. The City permits excavation in the floodplain to mitigate the increases to one percent annual chance Ultimate Development water surface elevations, in addition to excavation compensation along the same flooding source. All submittals will need a signed drawing by a licensed Professional Engineer (from the State of Texas) clearly marking the areas of Cut and Fill in the floodplain and should also include a table showing both volumes. The City will require the plan to show cut volume be equal to or greater than the volume of fill. Additionally, the compensatory excavation is only allowable within the same flooding source or stream on which floodplain reclamation is being requested within the general vicinity of the fill.

- a) If excavation is performed in the floodplain, the City requires a signed and sealed report/memo from a Professional Engineer registered to practice in the State of Texas to demonstrate excavation is performed outside of the Waters of the United States (WOUS) also known as Jurisdictional Waters, including an exhibit clearly showing the Jurisdictional Delineation. If WOUS are impacted by the project, the City will require coordination and approval from the US Army Corps of Engineers.
- (5) If subsection 58-30.5(1) is satisfied, all new construction and substantial improvements shall comply with all applicable flood hazard reduction provisions of section 58-30.
- (6) "No adverse impact" certification is required for all new construction in or adjacent to a stream designated with a regulatory floodplain.

58-30.6. *Floodways*. Located within areas of special flood hazard established in subsection 58-28.2, are areas designated as floodways. Since the floodway is an extremely hazardous area due to the velocity of flood waters which carry debris, potential projectiles and erosion potential, the following provisions shall apply:

- (7) Encroachments are prohibited, including fill, new construction, substantial improvements and other development within the adopted regulatory floodway unless it has been demonstrated through hydrologic and hydraulic analyses performed in accordance with standard engineering practice that the proposed encroachment would not result in any increase in flood levels within the community during the occurrence of the regulatory flood discharge a "no-rise/no- impact" certification.
- (8) If subsection 58-30.5(1) is satisfied, all new construction and substantial improvements shall comply with all applicable flood hazard reduction provisions of section 58-30.
- (9) Under the provisions of 44 CFR Chapter 1, Section 65.12, of the National Flood Insurance Program Regulation, a community may permit encroachments within the adopted regulatory floodway that would result in an increase in base flood elevations, provided that the community first completes all of the provisions required by Section 65.12.

58-30.7. "No-rise/no-impact" certification. The engineering "no-rise/no-impact" certification and supporting technical data must stipulate no impact or no changes to 25-year water surface elevations, base flood elevations, regulatory floodway elevations, or regulatory floodway widths at the new cross-sections and at all existing cross-sections anywhere in the model. Therefore, the revised computer model should be run for a sufficient distance, typically 1,000 feet, upstream and downstream of the development site or at the discretion of the floodplain administrator to insure proper "no-rise/no-impact" certifications.

"No adverse impact" certification. The engineering "no adverse impact" certification and supporting technical data must stipulate no adverse impacts to any habitable structures within the regulatory floodplain at the new cross-sections and at all existing cross-sections anywhere in the model. Therefore, at the floodplain administrator's discretion, the revised computer model should be sufficiently extended upstream and downstream of the development site such that the Engineer can insure proper "no adverse impact" certifications.

The "no-rise/no adverse impact" supporting data should include, but may not be limited to:

- (1) Copy of the currently effective FIS hydraulic models (legible hard copy and a disc (if available).
- (2) Duplicate effective FIS hydraulic models (hard copy and a disc).
- (3) Existing conditions hydrology models **developed using Atlas 14 analysis** (hard copy and a disc).
- (4) Proposed conditions hydrology models **developed using Atlas 14 analysis** (hard copy and a disc).
- (5) **Ultimate development conditions (or future conditions) hydrology model developed using Atlas 14 rainfall data for the one percent annual chance flood event and its supporting data (hard copy and a disc).**
- (6) **Existing conditions hydraulic models (hard copy and a disc).**
- (7) **Proposed conditions hydraulics models (hard copy and a disc).**
- (8) **Ultimate development conditions hydraulics model (hard copy and a disc).**
- (9) Annotated effective FIRM or FBFM and topographic map, showing regulatory floodplain and floodway boundaries, the additional cross-sections, and the site location along with the proposed topographic modifications.
- (10) Documentation clearly stating analysis procedures. All modifications made to the duplicate effective hydraulic models to correctly represent existing conditions, as well as those made to the existing conditions models to represent proposed conditions should be well documented and submitted with all supporting data.
- (11) **Floodway analysis using Method 1 or Method 4 encroachment methodology as described in FEMA Guidelines and Specifications for Hydrologic and Hydraulic modeling**
- (12) Annotated effective floodway data table (from the FIS report).
- (13) Statement defining source of additional cross-sections, topographic data, and other supporting information.
- (14) Cross-section plots of the additional cross sections for existing, proposed, and ultimate development conditions hydraulic models.

- (15) Certified planimetric (boundary survey) information indicating the location of structures on the property.
- (16) Hard copy of all output files.
- (17) Clear explanation of how roughness parameters were obtained (if different from those used in the effective hydraulic models).
- (18) Engineering certification.
- (19) No wall enclosures over the allowed 120 square feet or breakaway walls within the floodway.

The "no rise or adverse impact" analysis along with supporting data and the original engineering certification must be reviewed by the floodplain administrator prior to issuing a development permit. The original effective FIS model, the duplicate effective FIS model, the existing conditions model, and the proposed conditions model should be reviewed for any changes in the base and regulatory flood elevations, base and regulatory floodplain widths, regulatory floodway elevations and floodway widths.

58-30.8. *Severability.* If any section, clause, sentence, or phrase of this article is held to be invalid or unconstitutional by any court of competent jurisdiction, then said holding shall in no way affect the validity of the remaining portions of this article.

58-30.9. *Penalties for non-compliance.* No structure or land shall hereafter be constructed, located, extended, converted, or altered without full compliance with the terms of this court order and other applicable regulations. Violation of the provisions of this court order by failure to comply with any of its requirements (including violations of conditions and safeguards established in connection with conditions) shall constitute a misdemeanor. Each and every day or portion thereof during which any violation or failure to comply is committed or continued shall be deemed a separate offense subject to a fine of not more than \$2,000.00 for each day. And each offense upon conviction in a court of competent jurisdiction, 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.

(Ord. No. 2011-53, § 1, 6-27-11)

Secs. 58-31-58-55. - Reserved.

ARTICLE III. - UNDERGROUND STORAGE TANK REGULATION

Sec. 58-56. - Definitions.

Edwards Recharge Zone. Generally, that area where the stratigraphic units constituting the Edwards Aquifer crop out, and including the outcrops of other formations in proximity to the Edwards Aquifer, where caves, sinkholes, faults, fractures, or other permeable features would create a potential for recharge of surface waters into the Edwards Aquifer. The recharge zone is identified as that area designated as such on official maps located in the offices of the Texas Natural Resource Conservation Commission (TNRCC) and the Edwards Aquifer Authority.

Tertiary protection. A method by which a third level of protection is provided for underground storage tank systems by means of either 1) a physical level to be installed around a double-walled tank and piping system, designed to prevent a release of the regulated substance as defined by the Environmental Protection Agency from migrating into the environment, should such a release go undetected at the secondary containment level; or 2) equivalent technology,

which shall include: a. continuous electronic leak detection for the entire system at a centralized location; b. site specific training; c. annual testing for system integrity; and d. reporting to the city sanitarian any release from the primary system.

Underground storage tank. Any one or combination of underground tanks and any connecting underground pipes used to contain an accumulation of regulated substances that is one percent or more under the natural level of the ground.

Underground storage tank system. An underground storage tank, all associated piping and ancillary equipment, spill and overfill prevention equipment, release detection equipment, corrosion protection system, secondary and tertiary containment equipment (as applicable), and all other related systems and equipment.

(Ord. No. 95-11, § 1(5-32), 3-13-95; Ord. No. 01-09, § I, 1-22-01)

Sec. 58-57. - Underground storage tanks.

- (a) The installation of any new underground storage tank systems within the city limits of the City of New Braunfels and its extraterritorial jurisdiction is prohibited unless the underground storage tank system includes tertiary protection and meets all the requirements of this section.
- (b) All new underground storage tanks shall meet the following standards:
 - (1) All new underground storage tank systems shall comply with this section and the most current regulations in 31 Texas Administrative Code, Chapter 334, Underground and Aboveground Storage Tanks, which is incorporated by reference as part of this chapter; and
 - (2) All new underground storage tanks shall require tertiary protection. A tertiary barrier shall consist of an artificially constructed material that is sufficiently thick and impermeable (at least 10⁻⁶ cm/sec or allow permeation at a rate of no more than 0.25 ounces per square foot per 24 hours for the regulated substance stored) and be able to direct a release to the monitoring point and permit its detection. The barrier material shall be compatible with the regulated substance stored so that a release from the underground storage tank system will not cause a deterioration of the barrier allowing a release to pass through undetected; or (and, if over the Edwards Recharge Zone)
 - (3) All new underground storage tank systems shall include a monitoring and leak detection system able to detect a release between the underground storage tank and the tertiary barrier. The monitoring and release detection system must be capable of detecting a two-tenths gallon per hour leak rate or a release of 150 gallons within 30 days such that the probability of detection shall be at least 90 percent and the probability of false alarm shall be no greater than five percent.
 - (4) In the event the new underground storage tank and underground storage tank system is located over the Edwards Recharge Zone, that facility shall comply with subsection 58-57(b)(1), (2) and (3).
- (c) The property where a new underground storage tank is located shall contain a reasonable amount of impermeable material on the surface of the ground and an emergency drainage system to direct regulated substances to a safe location and to prevent any regulated substance from leaking into the ground. The city fire marshal may require curbs, scuppers, or a special drainage system to carry out

the purpose of this section. The facility shall also be equipped with a hazardous material trap to prevent the discharge or leakage of regulated substances to public waterways, public sewers or adjoining property.

(Ord. No. 95-11, § I(5-33), 3-13-95; Ord. No. 01-09, § II, 1-22-01)

Sec. 58-58. - Reserved.

Sec. 58-59. - Nuisance.

The placement of any new underground storage tanks within the city limits or extraterritorial jurisdiction of the City of New Braunfels that are not in compliance with this section is hereby declared to be a nuisance.

(Ord. No. 01-09, § III, 1-22-01)

Sec. 58-60. - Penalty.

- (a) *Criminal penalty.* It shall be unlawful and a Class C Misdemeanor for any person, firm, or corporation to violate any provision of this article. No culpable mental state shall be required and the requirement of a culpable mental state pursuant to Chapter 6.02 of the Texas Penal Code is hereby specifically negated. The fine for a violation of this article shall be not less than \$500.00 nor more than \$2,000.00. Each day the violation exist shall constitute a new offense.
- (b) *Civil penalty.* Nothing in this article shall prohibit the City of New Braunfels from taking the appropriate civil action to enjoin and abate any action hereby prohibited.

(Ord. No. 01-09, § IV, 1-22-01)