

## Chapter 8.5 - FLOOD DAMAGE PREVENTION<sup>11</sup>

### Footnotes:

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**Editor's note**— Ord. No. 2000-511, adopted May 8, 2000, enacted new flood damage prevention provisions. Said provisions have been included herein as superseding former flood damage prevention provisions derived from Ord. No. 87-351, adopted May 11, 1987; and Ord. No. 96-470, adopted Oct. 14, 1996.

**Cross reference**— Buildings and construction, Ch. 4; planning and development, Ch. 15; streets, sidewalks and other public ways, Ch. 17; utilities and services, Ch. 20; zoning, App. A; subdivisions, App. B.

### ARTICLE I. - GENERAL PROVISIONS

#### Sec. 8.5-1. - Statutory authorization.

The Legislature of the State of Texas has, in V.T.C.A., Water Code section 16.318, delegated the responsibility of local governmental units to adopt regulations designed to minimize flood losses.

(Ord. No. 2000-511, Art. I, § A, 5-8-2000)

#### Sec. 8.5-2. - Findings of fact.

The flood hazard areas of Nassau Bay 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.

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.

(Ord. No. 2000-511, Art. I, § B, 5-8-2000)

#### Sec. 8.5-3. - Statement of purpose.

It is the purpose of this chapter 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 and the uses available to that property.

(Ord. No. 2000-511, Art. I, § C, 5-8-2000)

Sec. 8.5-4. - Methods of reducing flood losses.

In order to accomplish its purposes, this chapter 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 floodwaters;
- (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 floodwaters or which may increase flood hazards to other lands.

(Ord. No. 2000-511, Art. I, § D, 5-8-2000)

Sec. 8.5-5. - Definitions.

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

*Area of shallow flooding* means a designated AO, AH, or VO zone on a community's flood insurance rate map (FIRM) with a one percent chance or greater annual chance of flooding to an average depth of one to three (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* 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 (FHB). After detailed ratemaking has been completed in preparation for publication of the FIRM, Zone A usually is refined into zones A, AE, AH, AO, A1-99, VO, V1-30, VE, or V.

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

*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.

*Coastal high hazard area* means an area of special flood hazard extending from offshore to the inland limit of a primary frontal dune along an open coast and any other area subject to high velocity wave action from storms or seismic sources.

*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.

*Development* means any man-made change in 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 a nonbasement building:

- (i) 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 structural member of the elevated floor elevated above the ground level by means of pilings, columns (posts and piers), or shear walls parallel to the flow of the water; and
- (ii) 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, and 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 flood waters. 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 met the standards of section 60.3(e) of the National Flood Insurance Program regulations.

*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 insurance rate map (FIRM)* means an 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 community.

*Flood insurance study* is 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.

*Floodplain or flood-prone area* means any land area susceptible to being inundated by water from any source (see definition of "Flooding").

*Floodplain management* means the operation of an overall program of correction 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 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.

*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

*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 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.

*Floodway (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 more than a designated height.

*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.

*Habitable floor* means any floor usable for living purposes, which includes working, sleeping, eating, cooking or recreation, or a combination thereof. A floor used for garaging vehicles, storage purposes or for access only is not a "habitable floor."

*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:

- (a) 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;
- (b) 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;
- (c) Individually listed on a state inventory of historic places in states with historic preservation programs which have been approved by the Secretary of Interior; or
- (d) Individually listed on a local inventory of historic places in communities with historic preservation programs that have been certified either:
  - (1) By an approved state program as determined by the Secretary of the Interior or;
  - (2) 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. 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 one hundred eighty (180) consecutive days. For insurance purposes 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 (2) or more manufactured home lots for rent or sale.

*Mean sea level* means, 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* 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.

*Recreational vehicle* means a vehicle which is:

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

*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 one hundred eighty (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 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. 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 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 fifty (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 fifty (50) percent of the market value of the structure before "start of construction" of the improvement. This 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 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."

*Variance* is a grant of relief to a person from the requirement of this chapter when specific enforcement would result in unnecessary hardship. A variance, therefore, permits construction or development in a manner otherwise prohibited by this chapter. (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) [of the National Flood Insurance Program Regulations] is presumed to be in violation until such time as that documentation is provided.

*Water surface elevation* means 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.

(Ord. No. 2000-511, Art. 2, 5-8-2000)

Sec. 8.5-6. - Lands to which this chapter applies.

This chapter shall apply to all areas within the jurisdiction of the City of Nassau Bay, Texas.

(Ord. No. 2000-511, Art. 3, § A, 5-8-00; Ord. No. 2007-621, 4-9-07)

Sec. 8.5-7. - Basis for establishing the areas of special flood hazard.

The areas of special flood hazard identified by Federal Emergency Management Agency on Flood Insurance Rate Map 48201C109OL, dated June 18, 2007, with accompanying flood boundary-floodway maps and any revisions hereto, are hereby adopted by reference and declared to be a part of this chapter.

(Ord. No. 2000-511, Art. 3, § B, 5-8-00; Ord. No. 2000-524, 9-11-00; Ord. No. 2007-621, 4-9-07)

Sec. 8.5-8. - Compliance.

No structure or land shall hereafter be located, altered, or have its use changed without full compliance with the terms of this chapter and other applicable regulations.

(Ord. No. 2000-511, Art. 3, § D, 5-8-00)

Sec. 8.5-9. - Abrogation and greater restrictions.

This chapter is not intended to repeal, abrogate, or impair any existing easements, covenants, or deed restrictions. However, where this chapter and another ordinance, easement, covenant, or deed restriction conflict or overlap, whichever imposes the more stringent restrictions shall prevail.

(Ord. No. 2000-511, Art. 3, § E, 5-8-00)

Sec. 8.5-10. - Interpretation.

In the interpretation and application of this chapter, 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.

(Ord. No. 2000-511, Art. 3, § F, 5-8-00)

Sec. 8.5-11. - Warning and disclaimer of liability.

The degree of flood protection required by this chapter is considered reasonable for regulatory purposes and is based on scientific and engineering considerations. On rare occasions greater floods can and will occur and flood heights may be increased by man-made or natural causes. This chapter 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 chapter 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 chapter or any administrative decision lawfully made thereunder.

(Ord. No. 2000-511, Art. 3, § G, 5-8-00)

Sec. 8.5-12. - Penalties for noncompliance.

No structure or land shall hereafter be constructed, located, extended, converted, or altered without full compliance with the terms of this chapter and other applicable regulations. Violation of the provisions of this chapter 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 chapter or fails to comply with any of its requirements shall upon conviction thereof be fined not more than one thousand dollars (\$1,000.00) for each violation, and in addition shall pay all court costs. Nothing herein contained shall prevent the City of Nassau Bay from taking such other lawful action as is necessary to prevent or remedy any violation.

(Ord. No. 2000-511, Art. 5, 5-8-00)

Secs. 8.5-13—8.5-20. - Reserved.

## ARTICLE II. - ADMINISTRATION

Sec. 8.5-21. - Floodplain administrator.

- (a) *Designation.* The building official is hereby appointed the floodplain administrator to administer and implement the provisions of this chapter and other appropriate sections of 44 CFR (National Flood Insurance Program Regulations) pertaining to floodplain management.
- (b) *Duties and responsibilities.* 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 chapter.
  - (2) Review permit application to determine whether proposed building site will be reasonably safe from flooding.
  - (3) Review, approve or deny all applications for building permits required by adoption of this chapter.

- (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 agencies, 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 8.5-7, the floodplain administrator shall 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 article III.
- (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 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, 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 applies for a conditional FIRM revision through FEMA.

(Ord. No. 2000-511, Art. 4, §§ A, B, 5-8-2000)

Sec. 8.5-22. - Establishment of development permit.

A building permit and/or a site development plan shall be required to ensure conformance with the provisions of this chapter.

(Ord. No. 2000-511, Art. 3, § C, 5-8-2000)

Sec. 8.5-23. - Permit procedures.

- (1) Application for a building permit and/or site development plan shall be presented to the floodplain administrator on forms furnished by him/her and may include, but not be limited to, plans in triplicate 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 subsection 8.5-32(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 8.5-21(b)(1).
- (2) Approval or denial of a building permit and/or its development plan by the floodplain administrator shall be based on all of the provisions of this chapter and the following relevant factors:
- a. The danger of 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 flood waters 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.

(Ord. No. 2000-511, Art. 4, § C, 5-8-2000)

Sec. 8.5-24. - Review of proposed map and floodway revisions.

Prerequisite requirements by the city to allow review and evaluation of a possible map and floodway revision shall be as follows:

- (1) Revisions to FIRM. When the developer requests a revision to the effective FIRM, the revision request must include "as-built" plans of the channel improvements, certified by a registered engineer, and the hydraulic data listed below:
  - a. Revised water surface profiles of the ten-, fifty-, 100-, and 500-year floods, including a zone determination:
    - 1. The methodology and starting parameters for the revised profiles should be consistent with the present effective flood insurance study; i.e., same discharges and hydraulic model as used in the effective Flood Insurance Study (FIS) have been superseded by more current and technically superior data and analysis (FEMA approval should be obtained before deviating from the effective FIS parameters).
    - 2. If only a portion of the existing profiles is revised, the upstream and downstream portions of the revised profiles should coincide with the effective FIS profiles; i.e., hydraulic calculations should be continued for a great enough distance upstream and downstream of the revised area until water surface elevations coincide with those in the effective FIS.
  - b. The floodway hydraulic backwater models should be submitted. The first model should reflect current conditions on the stream. The second model should incorporate proposed changes in stream geometry and may reflect a revised floodway configuration:

1. The methodology and parameters for the revised floodway should be consistent with the effective FIS; i.e., equal conveyance reduction to establish encroachment limits, unless changes as specified in subsection (1)a, above, have been approved by FEMA.
  2. If only portions of the floodway are revised then it must tie into the effective FIS floodway upstream and downstream of the revised area without causing surcharges in excess of one foot above the original 100-year flood elevation, or the surcharge established in the effective FIS, whichever is less.
- c. Delineation of the 100- and 500-year flood boundaries, and the location of alignment of cross-sections and flow line used in the hydraulic model:
1. This information should be shown on a map of suitable scale and topographic definition to provide reasonable accuracy.
  2. All items should be labeled for easy cross-reference to hydraulic model and summary data.
- d. Evidence indicating that the community has agreed to maintain the channel improvements, in the form of an ordinance which specifies the maintenance activities to be performed, the frequency of their performance, and the community ties to be performed, the frequency of their performance, and the community official(s) responsible for their performance. If the detail or complexity of such maintenance activities precludes their incorporation into an ordinance, the ordinance should reference a maintenance plan document, which contains such details.
- (2) Floodway predevelopment regulations:
- a. The developer shall submit to the city plans and specifications to be used to construct any structure, roadway, water channel or other object including any fill or grading within the Cow Bayou and Clear Creek floodways. Said floodways are defined on the Federal Emergency Management floodplain map. Community panel numbers are: City of Nassau Bay, Map No. 485491, Panel No. 1090, City of League City, Map No. 485488, City of Webster, Map No. 485516, Panel 1070.
  - b. The city shall hold three (3) public hearings, one by the planning and zoning commission and two (2) by the city council. The two (2) city council meetings shall be held not less than twenty-eight (28) days apart. The city shall publish in the official newspaper a one-half-page notice of the meeting at least once each week during the four weeks between city council meetings. The cost of the notices shall be borne by the person or persons requesting construction within the floodway.
  - c. Planning commission requirements. The planning commission, acting as a fact-finding body for the city council, and after reviewing the information and conducting the appropriate public hearing, shall make recommendation as to the effects upon the city of the proposed floodway diversion or alteration project. In order to conduct this task the prospective developer shall require the following be submitted to the city offices no less than fourteen (14) working days prior to the scheduled meeting date:
    1. Detailed drawings, including plan & profiles, indicating the present elevation of all natural obstructions presently within the floodway.
    2. Detailed drawings, including plan and profiles, showing proposed improvements the developer wishes to construct (this shall include sewer and water lines, streets and other public-owned improvements).
    3. An engineering study showing the additional floodwater elevation, if any, the new construction will cause.
    4. Bulkhead, canal and waterway releases as may be required by the Corps of Engineers, Texas Land Office, Texas Water Resources, Texas Wildlife Agency and any other

agencies that may have an interest. This shall include any environmental impact studies as required to obtain the above permits and releases.

- d. City council requirements. The city council shall require the same information as the planning commission and a favorable recommendation from the planning commission.
- e. Upon the passage of a favorable review by both the planning commission and city council, a request shall be forwarded to the Federal Emergency Management Agency in Denton, Texas, that indicates that the city has reviewed the proposed floodway project and that the developer's request for floodway construction should be considered by FEMA.

(Ord. No. 2000-511, Art. 4, § E, 5-8-2000)

Sec. 8.5-25. - Variance procedures.

- (1) The board of adjustment shall hear and render judgement on requests for variances from the requirements of this chapter.
- (2) The board of adjustment shall hear and render judgement on an appeal only when it is an error in any requirement, decision, or determination made by the floodplain administrator in the enforcement or administration of this chapter.
- (3) Any person or persons aggrieved by the decision of the appeal board may appeal such decision in district court.
- (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 chapter.
- (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 section 8.5-23(2) of this article 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 chapter, the board of adjustment may attach such conditions to the granting of variances as it deems necessary to further the purpose and objectives of this chapter (section 8.5-3).
- (8) Variances shall not be issued within any designated floodway if any increase in 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:
    - (i) Showing a good and sufficient cause;
    - (ii) A determination to not 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 application 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.
  - d. Variances for new construction shall not be issued where the lowest habitable floor elevation is below the base flood elevation as defined on the city FIRM.
  - e. Variances may only be granted where the lot in question is in a developed neighborhood, and where the lot in question is one of not more than four (4) contiguous vacant lots, and where hardship to the owner and severe structural or drainage problems would be caused by strict enforcement of the terms and conditions of this chapter.
  - f. Variances for substantial repairs to residences damaged as a result of natural disasters or fires may be granted in accordance with the procedures described herein above. In no event shall any variance be granted allowing substantial repair to a structure whose first floor is more than twenty-four (24) inches below base flood 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:
- (i) The criteria outlined in section 8.5-25(1)—(9) are met; and
  - (ii) 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.

(Ord. No. 2000-511, Art. 4, § E, 5-8-2000)

Secs. 8.5-26—8.5-30. - Reserved.

### ARTICLE III. - PROVISIONS FOR FLOOD HAZARD REDUCTION

Sec. 8.5-31. - 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 and/or located 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.

(Ord. No. 2000-511, Art. 5, § A, 5-8-2000)

Sec. 8.5-32. - Specific standards.

In all areas of special flood hazard where base flood elevation data has been provided as set forth in (i) section 8.5-7, (ii) section 8.5-21(8), or (iii) section 8.5-33(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 a minimum of twenty-four (24) inches above the base flood elevation. A registered professional engineer, architect, or land surveyor shall submit a certification of the floodplain administrator that the standard of this subsection as proposed in section 8.5-23(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 a minimum of twenty-four (24) inches above the base flood level or together with attendant utility and sanitary facilities, be designed so that below the base flood level and twenty-four (24) inches above the BFE, 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 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 be certified by a registered professional engineer or architect or meet or exceed the following minimum criteria:
  - a. A minimum of two (2) 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 other coverings or devices provided that they permit the automatic entry and exit of floodwaters without any restriction.
- (4) *Manufactured homes*:
  - a. Manufactured Homes shall not be placed on any lot, parcel or tract of land in the city.
- (5) *Recreational vehicles*—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 fewer than one hundred eighty (180) consecutive days;
  - (ii) Be fully licensed and ready for highway use; or
  - (iii) Meet the permit requirements of section 8.5-23(1). 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.

(Ord. No. 2000-511, Art. 5, § B, 5-8-2000; Ord. No. 2000-524, 9-11-2000)

Sec. 8.5-33. - Standards for subdivision proposals.

- (1) All subdivision proposals shall be consistent with sections 8.5-2, 8.5-3, and 8.5-4 of this chapter.
- (2) All proposals for the development of subdivisions shall meet site development requirements of section 8.5-22 and the provisions of article III of this chapter.
- (3) Base flood elevation data shall be generated for subdivision proposals and other proposed development which is greater than 50 lots or 5 acres, whichever is lesser, if not otherwise provided pursuant to section 8.5-7 or section 8.5-22(b)(8) of this chapter.
- (4) All subdivision proposals shall have adequate drainage provided to reduce exposure to flood hazards.
- (5) All subdivision proposals shall have public utilities and facilities such as sewer, gas, electrical and water systems located and constructed to minimize or eliminate flood damage.

(Ord. No. 2000-511, Art. 5, § C, 5-8-2000)

Sec. 8.5-34. - Standards for areas of shallow flooding (AO/AH zones).

Located within the areas of special flood hazard established in section 8.5-7 are areas designated as shallow flooding. These areas have special flood hazards associated with base flood depths of one 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 have the lowest floor, including basement, elevated above the highest adjacent grade, at least as high as twenty-four (24) inches above the depth number specified in feet on the community's FIRM or at least two (2) feet if no depth number is specified.
- (2) All new construction and substantial improvements of non-residential structures:
  - (i) Have the lowest floor, including basement, elevated above the highest adjacent grade, at least as high as twenty-four (24) inches above the depth number specified in feet on the community's FIRM or at least two (2) feet if no depth number is specified.
  - (ii) Together with attendant utility and sanitary facilities be designed so that below the base 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 and 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 8.5-23(1)a. are satisfied.
- (4) Require within zones AH or AO adequate drainage paths around structures or slopes, to guide flood waters around and away from proposed structures.

(Ord. No. 2000-511, Art. 5, § D, 5-8-2000)

Sec. 8.5-35. - Floodways.

Located within areas of special flood hazard established in section 8.5-7 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) 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 base flood discharge. No fill shall be allowed except by special permit through the board of adjustment.
- (2) If subsection (1) above is satisfied, all new construction and substantial improvements shall comply with all applicable flood hazard reduction provisions of this article III.
- (3) Under the provisions of 44 CFR chapter 1, section 65.12, of the National Flood Insurance Program Regulations, a community may permit encroachments within the adopted regulatory floodway that would result in an increase in base elevations, provided that the community first applies for a conditional FIRM and floodway revision through FEMA.

(Ord. No. 2000-511, Art. 5, § E, 5-8-2000)

Sec. 8.5-36. - Coastal high hazard areas.

Located within the areas of special flood hazard established in section 8.5-7 are areas designated as Coastal High Hazard Areas (zones V1-30, VE, and/or V). These areas have special flood hazards associated with high-velocity waters from tidal surges and hurricane wave wash; therefore, in addition to meeting all the provisions outlined in this chapter, the following provisions must also apply:

- (1) The following information shall be obtained: elevation in relation to mean sea level of the bottom of the lowest floor, excluding pilings and columns, of all new and substantially improved structures, and whether or not such structures contain a basement. The Floodplain Administrator shall maintain a record of all such information.
- (2) All new construction shall be located landward of the reach of mean high tide.
- (3) All new construction and substantial improvements shall be elevated on pilings and columns so that:
  - (i) The bottom of the lowest horizontal structural member of the lowest floor, excluding the pilings or columns, is elevated to or above the base flood level;
  - (ii) The pile or column foundation and structure attached thereto is anchored to resist flotation, collapse and lateral movement due to the effects of wind and water loads acting simultaneously on all building components. Water loading values used shall be those associated with the base flood. Wind loading values used shall be those required by applicable state or local building standards. A registered professional engineer or architect shall develop or review the structural design, specifications and plans for the construction and shall certify that the design and methods of construction to be used are in accordance with accepted standards of practice for meeting the provisions of subsections (3)(i) and (ii) of this section.
- (4) All new construction and substantial improvements have the space below the lowest floor either free of obstruction or constructed with non-supporting breakaway walls, open wood lattice-work, or insect screening intended to collapse under wind and water loads without causing collapse, displacement, or other structural damage to the elevated portion of the building or supporting foundation system.

For the purpose of this section, a breakaway wall shall have a design safe loading resistance of not less than ten (10) and no more than twenty (20) pounds per square foot. Use of breakaway walls which exceed a design safe loading resistance of twenty (20) pounds per square feet (either by design or when so required by local or state codes) may be permitted only if a registered professional engineer or architect certifies that the designs proposed will meet the following conditions:

- (i) Breakaway wall collapse shall result from a water load less than that which would occur during the base flood; and
  - (ii) The elevated portion of the building and supporting foundation system shall not be subject to collapse, displacement, or other structural damage due to the effects of wind and water loads acting simultaneously on all building components (structural and nonstructural). Water loading values used shall be those associated with the base flood. Wind loading values used shall be those required by applicable state or local building standards. Such enclosed space shall be usable solely for parking of vehicles, building access, or storage. Such space shall not be used for human habitation.
- (5) The use of fill for structural support of buildings is prohibited.
- (6) Man-made alteration of sand dunes, which increase potential flood damage, is prohibited.
- (7) Recreational vehicles. Require that recreational vehicles placed on sites within zones V1-30, V, and VE on the community's FIRM either:
- (i) Be on the site for fewer than one hundred eighty (180) consecutive days;
  - (ii) Be fully licensed and ready for highway use; or
  - (iii) Meet the requirements in section 8.5-22 of this chapter and paragraphs (1) through (6) of this section. 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.

(Ord. No. 2000-511, Art. 5, § F, 5-8-2000)

Sec. 8.5-37. - Areas between limits of 100-year flood and 500-year flood (shaded zone X).

All new construction and substantial improvement of residential and nonresidential structures within shaded zone X designations shall meet the following standards:

- (1) All new construction and substantial improvements of residential structures shall have the lowest floor, including basement, elevated twenty-four (24) inches above the nearest adjacent A zone base flood elevation specified in feet on the community flood insurance rate map, as determined by the floodplain administrator.
- (2) All new construction and substantial improvements of nonresidential structures shall:
  - a. Have the lowest floor, including basement, elevated twenty-four (24) inches above the nearest adjacent A zone base flood elevation specified in feet on the community flood insurance rate map, as determined by the floodplain administrator; or
  - b. Together with attendant utility and sanitary facilities, be designed so that below the base flood level of the nearest adjacent A zone 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 effect of buoyancy. A registered professional engineer or architect shall submit a certification to the floodplain administrator that the standards of this subsection as proposed in section 8.5-23(1)c. are satisfied.
- (3) A registered professional engineer or registered public surveyor shall submit a certification to the floodplain administrator that the standards of this section, as proposed in section 8.5-23(1) are satisfied.

(Ord. No. 2000-511, Art. 5, § G, 5-8-2000)