

ARTICLE VIII. - FLOOD DAMAGE PREVENTION

Editor's note—Section 1 of Ord. No. 3310, adopted April 6, 1987, specifically repealed former Art. VIII, "Flood Hazard Prevention," and § 2 enacted a new Art. VIII to read as set out in §§ 5-110—5-130. Former Art. VIII contained substantive §§ 5-110—5-126, 5-128 and 5-129, which derived from Ord. No. 1841, Arts. I—V, adopted May 16, 1977, and Ord. No. 3207, § 1, adopted Jan. 7, 1985.

State Law reference— Authority, V.T.C.S. art. 1581e.

Sec. 5-110. - Statutory authorization.

The legislature of the State of Texas has, in the Texas Water Code, section 16.315, delegated the responsibility to local governmental units to adopt regulations designed to minimize flood losses, and the city council does accept the responsibilities of local regulations as set forth below.

Sec. 5-111. - Findings of fact.

- (a) 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.
- (b) 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 hazards 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. 3310, § 2, 4-6-87)

Sec. 5-112. - 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.

(Ord. No. 3310, § 2, 4-6-87)

Sec. 5-113. - 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 floodwaters;
- (4) Control fillings, 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. 3310, § 2, 4-6-87)

Sec. 5-114. - Definitions.

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

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

Area of shallow flooding means a designated AO, AH, or VO zone on a community's flood insurance rate map (FIRM) with a one-per-cent chance or greater annual chance of flooding to an average depth of one (1) 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-per-cent 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

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-per-cent chance of being equalled or exceeded in any given year.

Breakaway walls 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 the area subject to high velocity waters, including but not limited to hurricane wave wash or tsunamis. The area is designated on a FIRM as zone V1-30, VE or V.

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.

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

Existing construction 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."

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).

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.

Freeboard means the additional height, usually expressed as a factor of safety in feet, above a flood level for purposes of floodplain management. Freeboard tends to compensate for many unknown factors, such as wave action, blockage of bridge or culvert openings, and hydrological effect of urbanization of the watershed, which could contribute to flood heights greater than the heights calculated for a selected frequency flood and floodway conditions.

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.

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

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 nonelevation design requirements of section 60.3 of the National Flood Insurance Program regulations.

Manufactured home means a structure transportable in one (1) 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 park trailers, travel trailers, and other similar vehicles.

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 floodplain management purposes, structures for which the "start of construction" commenced on or after the effective date of a floodplain management regulation adopted by a community.

Start of construction (for other than new construction or substantial improvements under the Coastal Barrier Resources Act (Public Law 97-348)), includes substantial improvement and means the date the building permit was issued, provided the actual start of construction, repair, [reconstruction, placement or other improvement was within 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 the pouring of slab or footings, the installation of piles, the construction of a manufactured home on a foundation. Permanent construction does not include land preparation, such as clearing, grading and filling; nor does it include the installation of streets and/or walkways; nor does it include excavation for basement, footings, piers or foundations or the erection of temporary forms; nor does it include the installation on the property of accessory buildings, such as garages or sheds not occupied as dwelling units or not part of the main structure.

Structure 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 improvement means any repair, reconstruction, or improvement of a structure, the cost of which equals or exceeds fifty (50) per cent of the market value of the structure either before the improvement or repair is started, or, if the structure has been damaged and is being restored, before the damage occurred. For the purpose of this definition, "substantial improvement" is considered to occur when the first alteration of any wall, ceiling, floor, or other structural part of the building commences, whether or not that alteration affects the external dimensions of the structure. The term does not, however, include either any project for improvement of a structure to comply with existing state or local health, sanitary, or safety code specifications which are solely necessary to assure safe living conditions, or any alteration of a structure listed on the National Register of Historic Places or a state inventory of historic places.

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

Violation 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. 3310, § 2, 4-6-87; Ord. No. 4059, 1-6-13)

Sec. 5-115. - Lands to which this article applies.

The article shall apply to all areas of special flood hazard within the jurisdiction of the city.

(Ord. No. 3310, § 2, 4-6-87)

Sec. 5-116. - Basis for establishing areas of special flood hazard.

The areas of special flood hazard identified by the Federal Emergency Management Agency in a scientific and engineering report entitled, "The Flood Insurance Study for the City of Aransas Pass, Texas," dated March 4, 1985, with accompanying flood insurance rate maps and flood boundary-floodway maps (FIRM and FBFM) and any revisions thereto are hereby adopted by reference and declared to be a part of this article.

(Ord. No. 3310, § 2, 4-6-87)

Sec. 5-117. - Establishment of development permit.

A development permit shall be required to ensure conformance with the provisions of this article.

(Ord. No. 3310, § 2, 4-6-87)

Sec. 5-118. - 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.

(Ord. No. 3310, § 2, 4-6-87)

Sec. 5-119. - Abrogation and greater restrictions.

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

(Ord. No. 3310, § 2, 4-6-87)

Sec. 5-120. - 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.

(Ord. No. 3310, § 2, 4-6-87)

Sec. 5-121. - Warning and disclaimer of liability.

The degree of flood protection required by this article is considered reasonable for regulatory purposes and is based on scientific and engineering considerations. On rare occasions greater floods can and will occur and flood heights may be increased by manmade or natural causes. This article does not imply that land outside the areas of special flood hazards or uses permitted within such areas will be free from flooding or flood damages. This article shall not create liability on the part of the community for any official or employee thereof for any flood damages that result from reliance on this article or any administrative decision lawfully made thereunder.

(Ord. No. 3310, § 2, 4-6-87)

Sec. 5-122. - Floodplain administrator—Designated.

The city inspector is hereby appointed the floodplain administrator to administer and implement the provisions of this article and other appropriate sections of 44 CFR (National Flood Insurance Program Regulations) pertaining to floodplain management.

(Ord. No. 3310, § 2, 4-6-87)

Sec. 5-123. - Same—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 article.

- (2) Review permit application to determine whether proposed building site will be reasonably safe from flooding.
- (3) Review, approve or deny all applications for development permits required by 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 Commission, 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 5-116, 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 this article.
- (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 (1) foot at any point within the community.

(Ord. No. 3310, § 2, 4-6-87)

Sec. 5-124. - Permit procedures.

- (a) Application for a development permit shall be presented to the floodplain administrator on forms furnished by him/her and may include, but not be limited to, plans in duplicate drawn to scale showing the location, dimensions, and elevation of proposed landscape alterations, existing and proposed structures, and the location of the foregoing in relation to areas of special flood hazard. Additionally, the following information is required:
 - (1) Elevation (in relation to mean sea level), of the lowest floor (including basement) of all new and substantially improved structures;

- (2) Elevation in relation to mean sea level to which any non-residential structure shall be floodproofed;
 - (3) A certificate from a registered professional engineer or architect that the nonresidential floodproofed structure shall meet the floodproofing criteria of section 5-127 (b);
 - (4) Description of the extent to which any watercourse or natural drainage will be altered or relocated as a result of proposed development;
 - (5) Maintain a record of all such information in accordance with section 5-123 (a).
- (b) Approval or denial of a development permit by the floodplain administrator shall be based on all of the provisions of this article and the following relevant factors:
- (1) The danger to life and property due to flooding or erosion damage;
 - (2) The susceptibility of the proposed facility and its contents to flood damage and the effect of such damage on the individual owner;
 - (3) The danger that materials may be swept onto other lands to the injury of others;
 - (4) The compatibility of the proposed use with existing and anticipated development;
 - (5) The safety of access to the property in times of flood for ordinary and emergency vehicles;
 - (6) 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;
 - (7) 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;
 - (8) The necessity to the facility of a waterfront location, where applicable;
 - (9) The availability of alternative locations, not subject to flooding or erosion damage, for the proposed use;
 - (10) The relationship of the proposed use to the comprehensive plan for that area.

(Ord. No. 3310, § 2, 4-6-87)

Sec. 5-125. - Variance procedures.

- (a) The city council shall hear and render judgment on requests for variances from the requirements of this article.
- (b) 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.
- (c) Any person or persons aggrieved by the decision of the city council may appeal such decision in the courts of competent jurisdiction.

- (d) 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.
- (e) 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.
- (f) 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 this article have been fully considered. As the lot size increases beyond one-half acre, the technical justification required for issuing the variance increases.
- (g) Upon consideration of the factors noted above and the intent of this article, the city council may attach such conditions to the granting of variances as it deems necessary to further the purpose and objectives of this article.
- (h) Variances shall not be issued within any designated floodway if any increase in flood levels during the base flood discharge would result.
- (i) Prerequisites for granting variances:
 - (1) Variances shall only be issued upon a determination that the variance is the minimum necessary, considering the flood hazard, to afford relief.
 - (2) Variances shall only be issued upon:
 - a. Showing a good and sufficient cause;
 - b. A determination that failure to grant the variance would result in exceptional hardship to the applicant; and
 - c. 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.
 - (3) 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.
- (j) 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 (1) the criteria outlined in section 5-125 are met, and (2) 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. 3310, § 2, 4-6-87)

Sec. 5-126. - Flood hazard reduction—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. 3310, § 2, 4-6-87)

Sec. 5-127. - Same—Specific standards.

In all areas of special flood hazards where base flood elevation data has been provided as set forth in section 5-116, 5-123 (h) or 5-128 (d), 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 at a minimum to the base flood elevation plus one (1) foot of freeboard. A registered professional engineer, architect or land surveyor shall submit a certification to the floodplain administrator that the standard of this subsection as set forth in section 5-124(a)(1), 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 at a minimum to the base flood level plus one (1) foot of freeboard or, together with attendant utility and sanitary

facilities, be designed so that below the base flood level the structure is watertight with walls substantially impermeable to the passage of water and with structural components having the 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 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 (2) openings having a total net area of not less than one (1) 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 (1) 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 shall be installed using methods and practices which minimize flood damage. For the purpose of this requirement, manufactured homes must be elevated and anchored to resist flotation, collapse or lateral movement. Methods of anchoring may include, but are not limited to, use of over-the-top or frame ties to ground anchors. This requirement is in addition to applicable state and local anchoring requirements for resisting wind forces.
 - b. All manufactured homes shall be in compliance with section 5-127 (a).
 - c. Require that all manufactured homes to be placed or substantially improved within zones A1—30, AH and AE on the community's FIRM be elevated on a permanent foundation such that the lowest floor of the manufactured home is at or above the base flood elevation; and be securely anchored to an adequately anchored foundation system in accordance with the provisions of section 5-127 (d).

(Ord. No. 3310, § 2, 4-6-87; Ord. No. 4059, 1-6-13)

Sec. 5-128. - Same—Standards for subdivision proposals.

- (a) All subdivision proposals including manufactured home parks and subdivisions shall be consistent with sections 5-111, 5-112 and 5-113.
- (b) All proposals for the development of subdivisions including manufactured home parks and subdivisions shall meet development permit requirements of sections 5-117 and 5-124, and the provisions of sections 5-126, 5-127, 5-128, 5-129 and 5-130.
- (c) Base flood elevation data shall be generated for subdivision proposals and other proposed development, including manufactured home parks and subdivisions, which is greater than fifty (50) lots or five (5) acres, whichever is lesser, if not otherwise provided pursuant to section 5-116 or 5-123 (h).
- (d) All subdivision proposals including manufactured home parks and subdivisions shall have adequate drainage provided to reduce exposure to flood hazards.
- (e) All subdivision proposals including manufactured home parks and subdivisions shall have public utilities and facilities such as sewer, gas, electrical and water systems located and constructed to minimize or eliminate flood damage.

(Ord. No. 3310, § 2, 4-6-87)

Sec. 5-129. - Same—Standards for areas of shallow flooding (AO/AH zones).

Located within the areas of special flood hazard established in [section 5-116] are areas designated as shallow flooding. These areas have special flood hazards associated with base flood depths of one (1) to three (3) feet where a clearly defined channel does not exist and where the path of flooding is unpredictable and where velocity flow may be evident. Such flooding is characterized by ponding or sheet flow; therefore, the following provisions apply:

- (1) All new construction and substantial improvements of residential structures have the lowest floor (including basement) elevated above the highest adjacent grade at least as high as the depth number specified in feet on the community's FIRM plus one (1) foot of freeboard (at least two (2) 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 above the highest adjacent grade at least as high as the depth number specified on the community's FIRM plus one (1) foot of freeboard (at least two (2) feet if no depth number is specified); or
 - b. Together with attendant utility and sanitary facilities be designed so that below the base flood level the structure is watertight with walls substantially impermeable to the passage of water and with structural components having the capability of resisting hydrostatic and hydrodynamic loads and 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 set forth in section 5-124 (a) (1), are satisfied.
- (4) Require, within zones AH or AO, adequate drainage paths around structures on slopes, to guide floodwaters around and away from proposed structures.

(Ord. No. 3310, § 2, 4-6-87; Ord. No. 4059, 1-6-13)

Sec. 5-130. - Same—Coastal high hazard areas.

Located within the areas of special flood hazard established in section 5-116 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 provisions outlined in this article, the following provisions must also apply:

- (1) Obtain the elevation (in relation to mean sea level) of the bottom of the lowest structural member 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:
 - a. The bottom of the lowest horizontal structural members of the lowest floor (excluding the pilings or columns) is elevated at a minimum to the base flood level plus one (1) foot of freeboard;
 - b. The pile or column foundation and structure attached thereto is anchored to resist flotation, collapse and lateral movement due to the effects of wind and water loads acting simultaneously on all building components. Wind and water loading values shall each have a one (1) per cent chance of being equalled or exceeded in any given year (one hundred-year mean recurrence interval);
 - c. 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 this section.
- (4) Provide that all new construction and substantial improvements in zones V1-30, VE and V, if base flood elevation data are available on the community's FIRM, are elevated on pilings and columns so that:

- a. 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; and
- b. The pile or column foundation and structure attached thereto is anchored to resist flotation, collapse and lateral movement due to the effects of wind and water loads acting simultaneously on all building components.

Wind and water loading values shall each have a one (1) per cent chance of being equalled or exceeded in any given year (one hundred-year mean recurrence interval). 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 (4)a. and b. of this paragraph.

- (5) Provide that all new construction and substantial improvements, within zones V1-30, VE, and V on the community's FIRM, have the space below the lowest floor either free of obstruction or constructed with nonsupporting 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 foot (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 meet the following conditions:
 - a. Breakaway wall collapse shall result from a water load less than that which would occur during the base flood; and
 - b. The elevated portion of the building and supporting foundation system shall not be subject to collapse, displacement, or other structural damage due to the effects of wind and water loads acting simultaneously on all building components (structural and nonstructural). Maximum wind and water loading values to be used in this determination shall each have one (1) per cent chance of being equalled or exceeded in any given year (one hundred-year mean recurrence interval).
- (6) If breakaway walls are utilized, such enclosed space shall be useable solely for parking of vehicles, building access, or storage. Such space shall not be used for human habitation.
- (7) Prohibit the use of fill for structural support of buildings.
- (8) Prohibit man-made alteration of sand dunes and mangrove stands which would increase potential flood damage.

(Ord. No. 3310, § 2, 4-6-87; Ord. No. 4059, 1-6-13)

Sec. 5-131. - Location of the lowest structural member.

The lowest horizontal structural members of the lowest floor, excluding footings, pilings, columns, pile caps, nonstructural slabs, bracing and grade beams, shall be elevated twelve (12) inches above the crown of the existing street. When located in a coastal flood zone as determined by the community's FIRM, the bottom of the lowest horizontal structural members of the lowest floor is elevated at a minimum to the base flood level plus one (1) foot of freeboard;

(Ord. No. 3608, § 1, 6-17-96; Ord. No. 4059, 1-6-13)

Secs. 5-132—5-134. - Reserved.