

CITY OF HIGHLAND HAVEN, TEXAS
ORDINANCE #051 Revision 1

AN ORDINANCE OF THE CITY OF HIGHLAND HAVEN, TEXAS ENACTED FOR THE PURPOSE OF PROMOTING PUBLIC HEALTH, SAFETY, AND GENERAL WELFARE, AND TO MINIMIZE PUBLIC AND PRIVATE LOSSES DUE TO FLOOD CONDITIONS WITHIN THE BOUNDARIES OF THE CITY OF HIGHLAND HAVEN

Whereas, the City of Highland Haven enacted City Ordinance #010 (Flood Damage Prevention Ordinance) on the 26th day of June, 1996; and

Whereas, said ordinance has undergone three revisions, the last being on the 21st day of May, 2002; and

Whereas, there have been numerous and significant changes in federal rules governing flood management implementation; and

Whereas, the Board of Aldermen of the City of Highland Haven have determined that the most recent model floodplain management ordinance, provided by the Federal Emergency Management Agency, meets the needs and requirements of the City with minor modifications, mainly deleting areas not applicable to the City (i.e. - costal flood areas, mudslide, manufactured home parks and sub-divisions, etc.); and

Whereas, FEMA has issued a revised FIRM effective March 15, 2012

NOW THEREFORE, BE IT ORDAINED BY THE BOARD OF ALDERMEN OF THE CITY OF HIGHLAND HAVEN, TEXAS; that

Ordinance #051, a document of 27 pages, dated January 17, 2012, titled "Floodplain Management Ordinance Revision 1" and attached hereto be adopted; and that

Ordinance #010 and all revisions thereto are hereby rescinded and superceded by Ordinance #051.

PASSED AND APPROVED THIS THE 17th DAY OF January 2012 BY THE BOARD OF ALDERMEN OF THE CITY OF HIGHLAND HAVEN, TEXAS.

City Secretary

Mayor

**CITY OF HIGHLAND HAVEN
FLOODPLAIN MANAGEMENT
ORDINANCE #051 Revision 1
January 17, 2012**

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SECTION 1.0

STATUTORY AUTHORIZATION, FINDINGS OF FACT, PURPOSE AND METHODS

1.1 STATUTORY AUTHORIZATION. The Legislature of the State of Texas, in Chapter 16 of the Texas Water Code, has conferred upon local government units the authority to adopt regulations designed to promote the public health, safety, and general welfare of its citizenry. Therefore, the Board of Aldermen of the City of Highland Haven does hereby adopt the following floodplain management regulations.

1.2 FINDINGS OF FACT.

A. The flood hazard areas of the City of Highland Haven are subject to periodic inundation which can result in loss of life and property, health and safety hazards, disruption of commerce and governmental services, extraordinary public expenditures for flood protection and relief, and impairment of the tax base, all of which adversely affect the public health, safety, and general welfare.

B. These flood losses are caused by uses that are inappropriately placed and/or inadequately elevated, floodproofed, or protected from flood damage. The cumulative effect of obstructions in areas of special flood hazards which increase flood heights and velocities also contribute to the flood loss.

1.3 STATEMENT OF PURPOSE. It is the purpose of this ordinance 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:

- A. protect human life and health;
- B. minimize expenditure of public money for costly flood control projects;
- C. minimize the need for rescue and relief efforts associated with flooding and generally undertaken at the expense of the general public;
- D. minimize prolonged business interruptions;
- E. minimize damage to public facilities and utilities such as water and gas mains; electric, telephone and sewer lines; and streets and bridges located in areas of special flood hazard;
- F. help maintain a stable tax base by providing for the sound use and development of areas of special flood hazard so as to minimize future blighted areas caused by flood damage;
- G. ensure that potential buyers are notified that property is in an area of special flood hazard; and

H. ensure that those who occupy the areas of special flood hazard assume responsibility for their actions.

1.4 METHODS OF REDUCING FLOOD LOSSES. In order to accomplish its purposes, this ordinance includes methods and provisions to:

A. restrict or prohibit uses which are dangerous to health, safety, and property due to water or erosion hazards, or which result in damaging increases in erosion or flood heights or velocities;

B. require that uses vulnerable to floods, including facilities which serve such uses, be protected against flood damage at the time of initial construction;

C. control the alteration of natural floodplains, stream channels, and natural protective barriers, which help accommodate or channel flood waters;

D. control filling, grading, dredging, and other development which may increase flood damage; and

E. Prevent or regulate the construction of flood barriers which will unnaturally divert floodwaters or which may increase flood hazards in other areas.

SECTION 2.0

DEFINITIONS

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

"Accessory use" means a use, which is incidental and subordinate to the principal use of the parcel of land on which it is located.

"Appeal" means a request for a review of the Floodplain Administrator's interpretation of any provision of this ordinance.

"Area of shallow flooding" means a designated AO or AH Zone on the Flood Insurance Rate Map (FIRM). The base flood depths range from one to three feet; a clearly defined channel does not exist; the path of flooding is unpredictable and indeterminate; and velocity flow may be evident. Such flooding is characterized by ponding or sheet flow.

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

"Area of special flood-related erosion hazard" is the land within a community, which is most likely to be subject to severe flood-related erosion losses. The area may be designated as Zone E on the Flood Insurance Rate Map (FIRM).

"Base flood," means a flood that has a one percent chance of being equaled or exceeded in any given year (also called the "100-year flood"). Base flood is the term used throughout this ordinance.

"Basement" means any area of the building having its floor subgrade - i.e., below ground level - on all sides.

"Breakaway walls" are any type of walls, whether solid or lattice, and whether constructed of concrete, masonry, wood, metal, plastic or any other suitable building material which is not part of the structural support of the building and which is designed to break away under abnormally high tides or wave action without causing any damage to the structural integrity of the building on which they are used or any buildings to which they might be carried by flood waters. A breakaway wall shall have a safe design loading resistance of not less than ten and no more than twenty pounds per square foot. Use of breakaway walls must be certified by a registered engineer or architect and shall meet the following conditions:

1. Breakaway wall collapse shall result from a water load less than that which would occur during the base flood, and
2. The elevated portion of the building shall not incur any structural damage due to the effects of wind and water loads acting simultaneously in the event of the base flood.

"Building" - see **"Structure"**.

"Development" means any man-made change to improved or 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.

"Elevation Reference Mark" means a point of vertical ground elevation reference to be shown on the FIRM for comparison to the BFE. ERMs shall be referenced to the National Geodetic Vertical Datum (NGVD) or the North American Vertical Datum (NAVD).

"Encroachment" means the advance or infringement of uses, plant growth, fill, excavation, buildings, permanent structures or development into a floodplain that may impede or alter the flow capacity of a floodplain.

"Existing manufactured home" means a manufactured home for which the construction of facilities for servicing the lot on which the manufactured home are to be affixed (including, at a minimum, the installation of utilities, and either final site grading or the pouring of concrete pad) is completed before the effective date of the floodplain management regulations adopted by a community.

"Flood, flooding, or flood water" means:

1. A general and temporary condition of partial or complete inundation of normally dry land areas from the overflow of inland or tidal waters; the unusual and rapid accumulation or runoff of surface waters from any source; and/or mudslides (i.e., mudflows); and
2. The condition resulting from flood-related erosion

"Flood Boundary and Floodway Map (FBFM)" means the official map on which the Federal Emergency Management Agency or Federal Insurance Administration has delineated both the areas of special flood hazards and the floodway.

"Flood Hazard Boundary Map" means the official map on which the Federal Emergency Management Agency or Federal Insurance Administration has delineated the areas of flood hazards.

"Flood Insurance Rate Map (FIRM)" means the official map on which the Federal Emergency Management Agency or Federal Insurance Administration has delineated both the areas of special flood hazards and the risk premium zones applicable to the community.

"Flood Insurance Study" means the official report provided by the Federal Insurance Administration that includes flood profiles, the Flood Insurance Rate Map, the Flood Boundary and Floodway Map, and the water surface elevation of the base flood.

"Flood-related erosion" means the collapse or subsidence of land along the shore of a lake or other body of water as a result of undermining caused by waves or currents of water exceeding anticipated cyclical level or suddenly caused by an unusually high water level in a natural body of water, accompanied by a severe storm, or by an unanticipated force of nature, such as a flash flood or an abnormal tidal surge, or by some similarly unusually and unforeseeable event which results in flooding.

"Flood-related erosion area" or "Flood-related erosion prone area" means a land area adjoining the shore of a lake or other body of water, which due to the composition of the shoreline or bank and high water levels or wind-driven currents, is likely to suffer flood-related erosion damage.

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

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

"Floodplain Administrator" is the individual appointed to administer and enforce the floodplain management regulations.

"Floodplain management" means the operation of an overall program of corrective and preventive measures for reducing flood damage and preserving and enhancing, where possible, natural resources in the floodplain, including but not limited to emergency preparedness plans, flood control works, floodplain management regulations, and open space plans.

"Floodplain management regulations" means this ordinance and other zoning ordinances, subdivision regulations, building codes, health regulations, special purpose ordinances (such as grading and erosion control) and other application of police power which control development in flood-prone areas. This term describes federal, state or local regulations in any combination thereof that provide standards for preventing and reducing flood loss and damage.

"Floodproofing" means any combination of structural and nonstructural 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 (**Refer to FEMA Technical Bulletins TB 1-93, TB 3-93, and TB 7-93 for guidelines on dry and wet floodproofing.**)

"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 one foot. Also referred to as "Regulatory Floodway".

"Floodway fringe" is that area of the floodplain on either side of the "Regulatory Floodway" where encroachment may be permitted.

"Fraud and victimization" as related to Section 6, **Variances**, of this ordinance, means that the variance granted must not cause fraud on or victimization of the public. In examining this requirement, the city will consider the fact that every newly constructed building adds to government responsibilities and remains a part of the community for fifty to one hundred years. Buildings that are permitted to be constructed below the base flood elevation are subject during all those years to increased risk of damage from floods, while future owners of the property and the community as a whole are subject to all the costs, inconvenience, danger, and suffering that those increased flood damages bring. In addition, future owners may purchase the property, unaware that it is subject to potential flood damage, and can be insured only at very high flood insurance rates.

"Functionally dependent use" means a use that cannot perform its intended purpose unless it is located or carried out in close proximity to water. The term includes only docking facilities.

"Governing body" is the local governing unit, i.e. county or municipality that is empowered to adopt and implement regulations to provide for the public health, safety and general welfare of its citizenry.

"Hardship" as related to Section 6, **Variances**, of this ordinance means the exceptional hardship that would result from a failure to grant the requested variance. The Board of Aldermen requires that the variance be exceptional, unusual, and peculiar to the property involved. Economic or financial hardship alone is not exceptional. Inconvenience, aesthetic considerations, physical handicaps, personal preferences, or the disapproval of one's neighbors likewise cannot, as a rule, qualify as an exceptional hardship. All of these problems can be resolved through other means without granting a variance, even if the alternative is more expensive, or requires the property owner to build elsewhere or put the parcel to a different use than originally intended.

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

"Lowest floor" means the lowest floor of the lowest enclosed area, including basement (see **"Basement"** definition).

1. An unfinished or flood resistant enclosure below the lowest floor that is usable solely for parking of vehicles, building access or storage in an area other than a basement area, is not considered a building's lowest floor provided it conforms to applicable non-elevation design requirements, including, but not limited to:

- a. The wet floodproofing standard in section 5.1 C.3.
- b. The anchoring standards in section 5.1 A.
- c. The construction materials and methods standards in section 5.1 B.
- d. The standards for utilities in section 5.2.

2. For residential structures, all subgrade-enclosed areas are prohibited as they are considered to be basements (see **"Basement"** definition). This prohibition includes below-grade garages and storage areas.

"Manufactured home" means a structure, transportable in one or more sections, which is built on a permanent chassis and is designed for use with a permanent foundation when attached to the required utilities. The term "manufactured home" does not include a "recreational vehicle".

"Market Value" shall be determined by estimating the cost to replace the structure in new condition and adjusting that cost figure by the amount of depreciation that has accrued since the structure was constructed. The cost of replacement of the structure shall be based on a square foot cost factor determined by reference to a building cost estimating guide recognized by the building construction industry. The amount of depreciation shall be determined by taking into account the age and physical deterioration of the structure and functional obsolescence as approved by the floodplain administrator, but shall not include economic or other forms of external obsolescence. Use of replacement costs or accrued depreciation factors different from those contained in recognized building cost estimating guides may be considered only if such factors are included in a report prepared by an independent professional appraiser and supported by a written explanation of the differences.

"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," for floodplain management purposes, means structures for which the "start of construction" commenced on or after the effective date of floodplain management regulations adopted by this community, and includes any subsequent improvements to such structures.

"New manufactured home" means a manufactured home for which the construction for servicing the lot on which the manufactured home is to be affixed (including at a minimum, the installation of utilities and either final site grading or the pouring of concrete pad) is completed on or after the effective date of floodplain management regulations adopted by this community.

"North American Vertical Datum" (NAVD) as corrected in 1988 is a vertical control used as a reference for establishing elevations. If a datum other than NAVD 88 is used, then use the datum listed as the reference datum on the applicable FIRM panel for use on Elevation Certificate completion.

"Obstruction" includes, but is not limited to, any dam, wall, wharf, embankment, levee, dike, pile, abutment, protection, excavation, channelization, bridge, conduit, culvert, building, wire, fence, rock, gravel, refuse, fill, structure, vegetation or other material in, along, across or projecting into any watercourse which may alter, impede, retard or change the direction and/or velocity of the flow of water, or due to its location, its propensity to snare or collect debris carried by the flow of water, or its likelihood of being carried downstream.

"One-hundred-year flood" or "100-year flood" - see **"Base flood."**

"Public safety and nuisance" as related to Section 6, **Variances**, of this ordinance means that the granting of a variance must not result in anything which is injurious to safety or health of an entire community or neighborhood, or any considerable number of persons, or unlawfully obstructs the free passage or use, in the customary manner, of any navigable lake, or river, bay, stream, canal, or basin.

"Recreational vehicle" means a vehicle that is

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

"Regulatory 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 one foot.

"Remedy a violation" means to bring the structure or other development into compliance with State or local floodplain management regulations, or, if this is not possible, to reduce the impacts of its noncompliance. Ways that impacts may be reduced include protecting the structure or other affected development from flood damages, implementing the enforcement provisions of the ordinance or otherwise deterring future similar violations, or reducing State or Federal financial exposure with regard to the structure or other development.

"Repetitive Loss" means flood-related damages sustained by a structure on two occasions during a ten year period, for which the cost of repair, at the time of each flood event, on the average, equals or exceeds 25% of the market value of the structure before the damage occurred.

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

"Sheet flow area" - see **"Area of shallow flooding"**.

"Special flood hazard area (SFHA)" means an area in the floodplain subject to a 1 percent or greater chance of flooding in any given year. It is shown on an FHBM or FIRM as Zone A, AO, A1-A30, AE, A99, AH, V1-V30, VE or V.

"Start of construction" includes substantial improvement and other proposed new development and means the date the building permit was issued, provided the actual start of construction, repair, reconstruction, rehabilitation, addition, placement, or other improvement was within 180 days from the date of the permit. The actual start means either the first placement of permanent construction of a structure on a site, such as the pouring of slab or footings, the installation of piles, the construction of columns, or any work beyond the stage of excavation; or the placement of a manufacture home on a foundation. Permanent construction does not include land preparation, such as clearing, grading, and filling; nor does it include the installation of streets and/or walkways; nor does it include excavation for a basement, 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 that is principally above ground; this includes a gas or liquid storage tank or a manufactured home.

"Substantial damage" means damage of any origin sustained by a structure whereby the cost of restoring the structure to its before damaged condition

would equal or exceed 50 percent of the market value of the structure before the damage occurred.

"Substantial improvement" means any reconstruction, rehabilitation, addition, or other proposed new development of a structure, the cost of which equals or exceeds 50 percent of the market value of the structure before the "start of construction" of the improvement. This term includes structures that have incurred "substantial damage", regardless of the actual repair work performed. The term does not, however, include any project for improvement of a structure to correct existing violations or state or local health, sanitary, or safety code specifications which have been identified by the local code enforcement official and which are the minimum necessary to assure safe living conditions.

"Variance" means a grant of relief from the requirements of this ordinance that permits construction in a manner that would otherwise be prohibited by this ordinance.

"Violation" means the failure of a structure or other development to be fully compliant with this ordinance. A structure or other development without the elevation certificate, other certifications, or other evidence of compliance required in this ordinance 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.

"Watercourse" means a lake, river, creek, stream, wash, arroyo, channel or other topographic feature on or over which waters flow at least periodically. Watercourse includes specifically designated areas in which substantial flood damage may occur.

SECTION 3.0

GENERAL PROVISIONS

3.1 LANDS TO WHICH THIS ORDINANCE APPLIES. This ordinance shall apply to all areas of special flood hazards within the jurisdiction of the City of Highland Haven.

3.2 BASIS FOR ESTABLISHING THE AREAS OF SPECIAL FLOOD HAZARD. The areas of special flood hazard identified by the Federal Insurance and Mitigation Administration (FIMA) of the Federal Emergency Management Agency (FEMA) in the Flood Insurance Study (FIS) dated March 15, 2012 and accompanying Flood Insurance Rate Maps (FIRMs) and Flood Boundary and Floodway Maps (FBFMs), dated March 15, 2012 and all subsequent amendments and/or revisions, are hereby adopted by reference and declared to be a part of this ordinance. This FIS and attendant mapping is the minimum area of applicability of this ordinance and may be supplemented by studies for other areas which allow implementation of this ordinance and which are recommended to the City of Highland by the Floodplain Administrator. The study, FIRMs and FBFMs are on file at Highland Haven City Hall, 510-A Highland Dr., Highland Haven, TX 78654-8223.

3.3 COMPLIANCE. No structure or land shall hereafter be constructed, located, extended, converted, or altered without full compliance with the term of this ordinance and other applicable regulations. Violation of the requirements (including violations of conditions and safeguards established in connection with conditions) shall constitute a misdemeanor. Nothing herein shall prevent the City of Highland Haven from taking such lawful action as is necessary to prevent or remedy any violation.

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

3.5 INTERPRETATION. In the interpretation and application of this ordinance, all provisions shall be

- A. Considered as minimum requirements;
- B. Liberally construed in favor of the governing body; and
- C. Deemed neither to limit nor repeal any other powers granted under state statutes.

3.6 WARNING AND DISCLAIMER OF LIABILITY. The degree of flood protection required by this ordinance is considered reasonable for regulatory purposes and is based on scientific and engineering considerations. Larger floods can and will occur on rare occasions. Flood heights may be increased by human-made or natural causes. This ordinance 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 ordinance shall not create liability on the part of the City of Highland Haven, any officer or employee thereof, the State of Texas, or the Federal Insurance and Mitigation Administration, Federal Emergency Management Agency, for any flood damages that result from reliance on this ordinance or any administrative decision lawfully made hereunder.

3.7 SEVERABILITY. This ordinance and the various parts thereof are hereby declared to be severable. Should any section of this ordinance be declared by the courts to be unconstitutional or invalid, such decision shall not affect the validity of the ordinance as a whole, or any portion thereof other than the section so declared to be unconstitutional or invalid.

SECTION 4.0

ADMINISTRATION

4.1 ESTABLISHMENT OF DEVELOPMENT/BUILDING PERMIT. A

development/building permit shall be obtained before any construction or other development begins within any area of the jurisdiction of the City of Highland Haven. Application for a development permit shall be made on forms furnished by the Floodplain Administrator and for sites located in the special flood hazard area established in Section 3.2, may include, but not be limited to: plans in duplicate drawn to scale showing the nature, location, dimensions, and elevation of the area in question; existing or proposed structures, fill, storage of materials, drainage facilities; and the location of the foregoing. Specifically, the following information is required.

- A. Site plan, including but not limited to:
 - 1. For all proposed structures, spot ground elevations at building corners and one foot contour elevations throughout the building site; and
 - 2. Proposed locations of water supply, sanitary sewer, and utilities; and
 - 3. If available, the base flood elevation from the Flood Insurance Study and/or Flood Insurance Rate Map; and
 - 4. If applicable, the location of the special flood hazard area and floodway; and
- B. Foundation design detail, including but not limited to:
 - 1. Proposed elevation in relation to mean sea level, of the lowest floor (including basement) of all structures; and
 - 2. For a crawl-space foundation, location and total net area of foundation openings as required in Section 5.1.F.3 of this ordinance and FEMA Technical Bulletins 1-93 and 7-93; and
 - 3. For foundations placed on fill, the location and height of fill, and compaction to be achieved (compacted to a minimum of 95 percent using the Standard Proctor Test method); and
- C. Proposed elevation in relation to mean sea level to which any nonresidential structure will be floodproofed, as required in Section 5.1 F.2 of this ordinance and FEMA Technical Bulletin TB 3-93; and
- D. All appropriate certifications listed in Section 4.4 D of this ordinance; and

E. Description of the extent to which any watercourse will be altered or relocated as a result of proposed development.

4.2 Approval or denial of a Development Permit by the Floodplain Administrator shall be based on all of the provisions of this ordinance and the following relevant factors:

- A. The danger to life and property due to flooding or erosion;
- B. The susceptibility of the proposed facility and its contents to flood damage and the effect of such damage on the individual owner;
- C. The danger that materials may be swept onto other lands to the injury of others;
- D. The compatibility of the proposed use with existing and anticipated development;
- E. The safety of access to the property in times of flood for ordinary and emergency vehicles;
- F. The costs of providing governmental services during and after flood conditions including maintenance and repair of streets and bridges, and public utilities and facilities such as sewer, gas, electrical, and water systems;
- G. The expected heights, velocity, duration, rate of rise and sediment transport of the floodwaters and the effects of wave action, if applicable, expected at the site;
- H. The necessity to the facility of a waterfront location, where applicable;
- I. The availability of alternative locations, not subject to flooding or erosion damage, for the proposed use;
- J. The relationship of the proposed use to the comprehensive plan for that area.

4.3 DESIGNATION OF THE FLOODPLAIN ADMINISTRATOR. A Floodplain Administrator appointed by Resolution of the Board of Aldermen to administer, implement, and enforce this ordinance by granting or denying development permits in accord with its provisions.

4.4 DUTIES AND RESPONSIBILITIES OF THE FLOODPLAIN ADMINISTRATOR. The duties and responsibilities of the Floodplain Administrator shall include, but not be limited to the following.

A. Permit Review. Review and recommend to Board of Aldermen approval or disapproval of all development/building permits regarding to new construction, building additions, or any additions within a designated flood hazard area to determine that

1. Permit requirements of this ordinance have been satisfied,
2. All other required state and federal permits have been obtained,
3. The site is reasonably safe from flooding, and
4. The proposed development does not adversely affect the carrying capacity of areas where base flood elevations have been determined but a floodway has not been designated. For purposes of this ordinance, "adversely affects" means that the cumulative effect of the proposed development when combined with all other existing and anticipated development will increase the water surface elevation of the base flood more than one foot at any point.

B. Review, Use and Development of Other Base Flood Data.

1. When base flood elevation data has not been provided in accordance with Section 3.2, the Floodplain Administrator may obtain, review, and reasonably utilize any base flood elevation and floodway data available from a federal or state agency, or other source, in order to administer Section 5. Any such information shall be submitted to the {governing body} for adoption; or
2. If no base flood elevation data is available from a federal or state agency or other source, then a base flood elevation shall be obtained using one of two methods from the FEMA publication "Managing Floodplain Development in Approximate Zone A Areas - A Guide for Obtaining and Developing Base (100-year) Flood Elevations" dated July 1995 in order to administer Section 5:
 - a. Simplified method
 - i. 100 year or base flood discharge shall be obtained using the appropriate regression equation found in a U.S. Geological Survey publication, or the discharge-drainage area method; and
 - ii. Base flood elevation shall be obtained using the Quick-2 computer program developed by FEMA; or
 - b. Detailed method

i. 100 year or base flood discharge shall be obtained using the U.S. Army Corps of Engineers' HEC-HMS computer program; and

ii. Base flood elevation shall be obtained using the U.S. Army Corps of Engineers' HEC-RAS computer program.

C. Notification of Other Agencies. In alteration or relocation of a watercourse:

1. Notify adjacent communities, the Texas Commission on Environmental Quality, and US Army Corps of Engineers prior to development approval;
2. Submit evidence of such notification to the Federal Insurance and Mitigation Administration, Federal Emergency Management Agency; and
3. Assure that the flood carrying capacity within the altered or relocated portion of said watercourse is maintained.

D. Documentation of Floodplain Development. Require and maintain for public inspection and make available as needed the following:

1. Certification required by Section 5.1.F.1 and 5.4 (lowest floor elevations),
2. Certification required by Section 5.1.F.2 (elevation or floodproofing of nonresidential structures),
3. Certification required by Sections 5.1.F.3 (wet floodproofing standard),
4. Certification of elevation required by Section 5.3 B (subdivision standards),
5. Certification required by Section 5.6 A (floodway encroachments),

E. Map Determinations. Make interpretations where needed, as to the exact location of the boundaries of the areas of special flood hazard. Where there appears to be a conflict between a mapped boundary and actual field conditions, grade and base flood elevations shall be used to determine the boundaries of the special flood hazard area. The person contesting the location of the boundary shall be given a reasonable opportunity to appeal the interpretation as provided in Section 6.

F. Remedial Action. Take action to remedy violations of this ordinance as specified in Section 3.3.

4.5 APPEALS. The Board of Aldermen of the City of Highland Haven shall hear and decide appeals 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 ordinance.

SECTION 5.0

PROVISIONS FOR FLOOD HAZARD REDUCTION

5.1 STANDARDS OF CONSTRUCTION. In all areas of special flood hazards the following standards are required:

A. No rise of BFE in the floodplain: No new construction, substantial improvements, or other development (including cut and/or fill) shall be permitted within zones A and A0-A30 on the community's flood insurance rate maps unless it is first demonstrated by engineering data submitted by the applicant's engineer in accordance with the various requirements and procedures set forth in this division that the cumulative effect of the proposed development will not increase the water surface elevation of the base flood at any point within the community, or immediately adjacent to its territory.

B. Compensatory storage: Whenever any portion of a floodplain is authorized for use, the space occupied by the authorized fill or structure below the base flood elevation shall be compensated for and balanced by a hydraulically equivalent volume of excavation taken from below the base flood elevation when the fill would measurably raise the floodplain elevation. All such excavations shall be constructed to drain freely to the watercourse.

C. New development or substantial improvement in the 100-year floodplain may not increase erosive water velocity on-site or off-site.

D. Anchoring

1. All new construction and substantial improvements shall be adequately anchored to prevent flotation, collapse or lateral movement of the structure resulting from hydrodynamic and hydrostatic loads, including the effects of buoyancy.

2. All manufactured homes shall meet the anchoring standards of Section 5.4.

E. Construction materials and methods. All new construction and substantial improvement shall be constructed

1. With flood resistant materials as specified in FEMA Technical Bulletin TB 2-93, and utility equipment resistant to flood damage;

2. Using methods and practices that minimize flood damage;

3. 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; located two feet above the Base Flood Elevation; and if

F. Elevation and floodproofing. (See Section 2 definitions for "basement," "lowest floor," "new construction," "substantial damage" and "substantial improvement".)

1. Residential construction, new or substantial improvement, shall have the lowest floor, including basement, elevated to or above two feet above the base flood elevation; said base flood elevation shall be determined by one of the methods in Section 4.3 B of this ordinance.

Upon the completion of construction of the foundation, and prior to any additional construction, the elevation of the lowest floor including basement shall be certified by a registered professional engineer or surveyor, and verified by the community building inspector to be properly elevated. Such certification and verification shall be provided to the Floodplain Administrator.

2. Nonresidential construction, new or substantial improvement, shall either be elevated to conform with Section 5.1 E or together with attendant utility and sanitary facilities,

a. Be floodproofed below the elevation recommended under Section 5.1.F.1 so that the structure is watertight with walls substantially impermeable to the passage of water;

b. Have structural components capable of resisting hydrostatic and hydrodynamic loads and effects of buoyancy; and

c. Be certified by a registered professional engineer or architect that the standards of this section (5.1.F.2) are satisfied. Such certification shall be provided to the Floodplain Administrator.

3. All new construction and substantial improvement with fully enclosed areas below the lowest floor (excluding basements) that are usable solely for parking of vehicles, building access or storage, 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 floodwater. Designs for meeting this requirement shall follow the guidelines in FEMA Technical Bulletins TB 1-93 and TB 7-93, and must exceed the following minimum criteria:

a. Have a minimum of two openings having a total net area of not less than one square inch for every square foot of enclosed area subject to flooding. The bottom of all openings shall be no higher than one foot above grade. Openings may be equipped with screens, louvers, valves or other coverings or devices provided that they permit the automatic entry and exit of floodwater; and

b. Be certified by a registered professional engineer or architect.

4. Manufactured homes shall also meet the standards in Section 5.4.

5.2 STANDARDS FOR UTILITIES.

A. All new and replacement water supply and sanitary sewage systems shall be designed and placed to minimize or eliminate:

1. Infiltration of flood waters into the systems, and
2. Discharge from the systems into floodwaters.

B. On-site waste disposal systems shall be located to minimize impairment to them, or contamination from them during flooding.

5.3 STANDARDS FOR SUBDIVISIONS.

A. All preliminary subdivision proposals shall identify the special flood hazard area and the elevation of the base flood.

B. All subdivision plans will provide the elevation of proposed structure(s) and pad(s). If the site is filled above the base flood elevation, the lowest floor and pad elevations shall be certified by a registered professional engineer or surveyor and provided to the Floodplain Administrator.

C. All subdivision proposals shall be consistent with the need to minimize flood damage.

D. All subdivision proposals shall have public utilities and facilities such as sewer, gas, electrical and water systems located and constructed to minimize flood damage.

E. All subdivisions shall provide adequate drainage to reduce exposure to flood hazards.

F. All subdivision plans shall identify at least one surveyed, permanently installed monument. Additional monuments will be required for every 100 acres on the site described for development.

5.4 STANDARDS FOR MANUFACTURED HOMES.

A. All manufactured homes that are placed or substantially improved, within Zones A1-30, AH, and AE on the community's Flood Insurance Rate Map, shall be elevated on a permanent foundation such that the lowest floor of the manufactured home is elevated to or above two feet above the base flood elevation and be securely fastened to an adequately anchored foundation system to resist flotation, collapse, and lateral movement.

B. All manufactured homes that are placed or substantially improved on sites located within Zones V1-30, V, and VE on the community's Flood Insurance Rate Map will meet the requirements of Section 5.4 A and Section 5.7.

C. All manufactured homes to be placed or substantially improved on sites in a subdivision within Zones A1-30, AH, AE, V1-30, V, and VE on the community's Flood Insurance Rate Map that are not subject to the provisions of paragraph 5.4 A will be securely fastened to an adequately anchored foundation system to resist flotation, collapse, and lateral movement, and be elevated so that either the

1. Lowest floor of the manufactured home is at or above two feet above the base flood elevation, or
2. Manufactured home chassis is supported by reinforced piers or other foundation elements of at least equivalent strength that are no less than 36 inches in height above grade.

Upon the completion of construction of the foundation, and prior to any additional construction, the elevation of the lowest floor including basement shall be certified by a registered professional engineer or surveyor, and verified by the community building inspector to be properly elevated. Such certification and verification shall be provided to the Floodplain Administrator.

5.5 STANDARDS FOR RECREATIONAL VEHICLES.

A. All recreational vehicles placed on sites within Zones A1-30, AH, and AE on the community's Flood Insurance Rate Map will either:

1. Be on the site for fewer than 180 consecutive days, and be fully licensed and ready for highway use - a recreational vehicle is ready for highway use if it is on its wheels or jacking system, is attached to the site only by quick disconnect type utilities and security devices, and has no permanently attached additions, or
2. Meet the permit requirements of Section 4 of this ordinance and the elevation and anchoring requirements for manufactured homes in Section 5.4 A.

B. Recreation vehicles placed on sites within Zones V1-30, V, and VE on the community's Flood Insurance Rate Map will meet the requirements of Section 5.5 A and Section 5.7.

5.6 FLOODWAYS. Located within areas of special flood hazard established in Section 3.2 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 apply.

A. Prohibit encroachments, including fill, new construction, substantial improvement, and other new development.

5.7 FLOOD-RELATED EROSION-PRONE AREA

- A. The Floodplain Administrator shall require permits for proposed construction and other development within all flood-related erosion-prone areas as known to the community.
- B. Permit applications shall be reviewed to determine whether the proposed site alterations and improvements will be reasonably safe from flood-related erosion and will not cause flood-related erosion hazards or otherwise aggravate the existing hazard.
- C. If a proposed improvement is found to be in the path of flood-related erosion or would increase the erosion hazard, such improvement shall be relocated or adequate protective measures shall be taken to avoid aggravating the existing erosion hazard.
- D. Within Zone E on the Flood Insurance Rate Map, a setback is required for all new development from the ocean, lake, bay, riverfront or other body of water to create a safety buffer consisting of a natural vegetative or contour strip. This buffer shall be designated according to the flood-related erosion hazard and erosion rate, in relation to the anticipated useful life of structures, and depending upon the geologic, hydrologic, topographic, and climatic characteristics of the land. The buffer may be used for suitable open space purposes, such as for agricultural, forestry, outdoor recreation and wildlife habitat areas, and for other activities using temporary and portable structures only.

SECTION 6.0

VARIANCE PROCEDURE

6.1 NATURE OF VARIANCES. The variance criteria set forth in this section of the ordinance are based on the general principle of zoning law that variances pertain to a piece of property and are not personal in nature. A variance may be granted for a parcel of property with physical characteristics so unusual that complying with the requirements of this ordinance would create an exceptional hardship to the applicant or the surrounding property owners. The characteristics must be unique to the property and not be shared by adjacent parcels. The unique characteristic must pertain to the land itself, not to the structure, its inhabitants, or the property owners.

It is the duty of the City of Highland Haven to help protect its citizens from flooding. This need is so compelling and the implications of the cost of insuring a structure built below flood level are so serious that variances from the flood elevation or from other requirements in the flood ordinance shall be strictly limited.

[NOTE: The long-term goal of preventing and reducing flood loss and damage can only be met if variances are strictly limited. Therefore, the variance guidelines provided in this ordinance are more detailed and contain multiple provisions that must be met before a variance can be properly granted. The criteria are designed to screen out those situations in which alternatives other than a variance are more appropriate.]

6.2 APPEAL BOARD.

A. In responding to requests for variances, the Board of Aldermen shall consider all technical evaluations, all relevant factors, standards specified in other sections of this ordinance, and the

1. Danger that materials may be swept onto other lands to the injury of others;
2. Danger of life and property due to flooding or erosion damage;
3. Susceptibility of the proposed facility and its contents to flood damage and the effect of such damage on the existing individual owner and future owners of the property;
4. Importance of the services provided by the proposed facility to the community;
5. Necessity to the facility of a waterfront location, where applicable;
6. Availability of alternative locations for the proposed use that are not subject to flooding or erosion damage;

7. Compatibility of the proposed use with existing and anticipated development;
8. Relationship of the proposed use to the comprehensive plan and floodplain management program for that area;
9. Safety of access to the property in time of flood for ordinary and emergency vehicles;
10. Expected heights, velocity, duration, rate of rise, and sediment transport of the flood waters expected at the site; and
11. Costs of providing governmental services during and after flood conditions, including rescue services, maintenance and repair of public utilities and facilities such as sewer, gas, electrical, and water system, and maintenance and repair of streets and bridges.

B. Any applicant to whom a variance is granted shall be given written notice over the signature of a community official that

1. The issuance of a variance to construct a structure below the base flood level may result in increased premium rates for flood insurance, and
2. Such construction below the base flood level increases risks to life and property. It is recommended that a copy of the notice shall be recorded by the Floodplain Administrator in the Burnet County Official Public Records and shall be recorded in a manner so that it appears in the chain of title of the affected parcel of land.

C. The Floodplain Administrator will maintain a record of all variance actions, including justification for their issuance, and report such variances issued in its biennial report submitted to the Federal Insurance and Mitigation Administration, Federal Emergency Management Agency.

6.3 CONDITIONS FOR VARIANCES.

A. Generally, variances may be issued for new construction, substantial improvement, and other proposed new development 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 that the procedures of this ordinance have been fully considered. As the lot size increases beyond one-half acre, the technical justification required for issuing the variance increases.

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B. Variances shall not be granted within any special flood hazard area if any measurable increase in flood levels during the base flood discharge would result.

C. Variances shall only be issued upon a determination that the variance is the "minimum necessary" considering the flood hazard, to afford relief. "Minimum necessary" means to afford relief with a minimum of deviation from the requirements of this ordinance. For example, in the case of variances to an elevation requirement, this means the city need not grant permission for the applicant to build at grade, or even to whatever elevation the applicant proposes, but only to that elevation which the city determines will both provide relief and preserve the integrity of the local ordinance.

D. Variances shall only be issued upon a

1. Showing of good and sufficient cause;
2. Determination that failure to grant the variance would result in exceptional "hardship" (as defined in Section 2 of this ordinance) to the applicant; and
3. Determination that the granting of a variance will not result in substantial increased flood heights, additional threats to public safety, or extraordinary public expense, create a nuisance (as defined in Section 2 - see "**Public safety or nuisance**"), cause fraud or victimization (as defined in Section 2) of the public, or conflict with existing local laws or ordinances.

E. Variances may be issued for new construction, substantial improvement, and other proposed new development necessary for the conduct of a functionally dependent use provided that the provisions of sections 6.3 A through 6.3 D are satisfied and that the structure or other development is protected by methods that minimize flood damages during the base flood and does not result in additional threats to public safety and does not create a public nuisance.

E. Upon consideration of the factors of Section 6.2 A and the purposes of this ordinance, the Board of Aldermen may attach such conditions to the granting of variances as it deems necessary to further the purposes of this ordinance.

6.4 - EFFECTIVE DATE

This ordinance shall become effective on March 15, 2012 following approval and passage of the Board of Aldermen of the City of Highland Haven.

PASSED AND APPROVED ON THIS, THE 17th DAY OF January, 2012
BY THE BOARD OF ALDERMEN OF THE CITY OF HIGHLAND HAVEN,
TEXAS.

ATTEST:

Dana Turner, City Secretary

Peter E Freehill, Mayor