

1 **Chapter 38 - FLOODS**

2 **ARTICLE I. - IN GENERAL**

3

4 **Secs. 38-1—38-25. - Reserved.**

5 **ARTICLE II. - FLOOD DAMAGE PREVENTION** <sup>[1]</sup>

6 **Footnotes:**

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8 **Editor's note—Ordinance No. 2008-10, § 1, adopted July 15, 2008, repealed the former art. II, §§ 38-**  
9 **26—38-81, and enacted a new art. II as set out herein. The former art. II pertained to similar subject**  
10 **matter and derived from Code 1976; Code 1996; Ord. No. 96-19, adopted Nov. 19, 1996; and Ord.**  
11 **No. 97-08, adopted June 3, 1997.**

12 **State Law reference— Authority of city to adopt regulations designed to minimize flood losses,**  
13 **V.T.C.A., Water Code §§ 16.315 and 16.321; Flood Control and Insurance Act authorizes city to**  
14 **take all necessary actions to comply with requirements of National Flood Insurance Program,**  
15 **Vernon's Ann. Texas Civ. St., art. 8280-13 (Water Aux.).**

16

17 **DIVISION 1. - GENERAL PROVISIONS**

18

19 **Sec. 38-26. - Statutory authorization.**

20 **The legislature of the State of Texas has in the Flood Control Insurance Act, V.T.C.A., Water**  
21 **Code, § 16.315, delegated the responsibility of local governmental units to adopt regulations**  
22 **designed to minimize flood losses and promote the public health, safety and general welfare of its**  
23 **citizenry. Therefore, the city council of the City of Seabrook, Texas does ordain as follows.**

24 **(Ord. No. 2008-10, § 1, 7-15-2008)**

25 **Sec. 38-27. - Findings of fact.**

26 **(a) The flood hazard areas of the city are subject to periodic inundation, which results in loss of**  
27 **life and property, health and safety hazards, disruption of commerce and governmental**  
28 **services, and extraordinary public expenditures for flood protection and relief, all of which**  
29 **adversely affect the public health, safety and general welfare.**

30 **(b) These flood losses are created by the cumulative effect of obstructions in floodplains which**  
31 **cause an increase in flood heights and velocities, and by the occupancy of flood hazard areas**  
32 **by uses vulnerable to floods and hazardous to other lands because they are inadequately**  
33 **elevated, flood proofed or otherwise protected from flood damage.**

34 **(c) Special flood hazard areas (SFHA) in the city are identified on the Harris County Flood**  
35 **Insurance Rate Maps (FIRMs) and the accompanying flood insurance study (FIS) published**  
36 **by the Federal Emergency Management Agency (FEMA).**

37 (d) The term floodplain has broader scope than the special flood hazard areas (SFHAs) and  
38 refers to any land which is subject to periodic inundation. Floodplains are important to the  
39 city because they convey and store floodwaters; they contribute to better water quality and  
40 water supply; they provide habitat for fish, game and wildlife; they provide open space for  
41 leisure and recreational activities; and they have productive soils for agriculture and timber.  
42 Floodplains, by nature, change over time due to natural processes and from human  
43 development.

44 (Ord. No. 2008-10, § 1, 7-15-2008)

45 Sec. 38-28. - Statement of purpose.

46 It is the purpose of this article to promote the public health, safety and general welfare, to  
47 minimize public and private losses due to flood conditions in specific areas, and to maintain  
48 healthy and functional floodplains by provisions designed to:

- 49 (1) Protect human life and health;
- 50 (2) Minimize expenditure of public money for costly flood control projects;
- 51 (3) Minimize the need for rescue and relief efforts associated with flooding and generally  
52 undertaken at the expense of the general public;
- 53 (4) Minimize prolonged business interruptions;
- 54 (5) Minimize damage to public facilities and utilities such as water and gas mains, electric,  
55 telephone and sewer lines, streets and bridges located in floodplains;
- 56 (6) Help maintain a stable tax base by providing for the sound use and development of  
57 flood-prone areas in such a manner as to minimize future flood-blight areas;
- 58 (7) Ensure that potential buyers are notified that property is in a flood area;
- 59 (8) Help citizens to realize that those who occupy areas of special flood hazard assume  
60 responsibility for their actions;
- 61 (9) Ensure that floodplains continue to convey and store flood waters; contribute to the  
62 better water quality and water supply; provide habitat for fish, game and wildlife; provide  
63 open space for leisure and recreational activities; and have productive soils for  
64 agriculture and timber; and
- 65 (10) Comply with V.T.C.A., Water Code, § 16.315.

66 (Ord. No. 2008-10, § 1, 7-15-2008)

67 Sec. 38-29. - Methods of reducing flood losses.

68 In order to accomplish its purposes, this article uses the following methods:

- 69 (1) Restrict or prohibit uses that are dangerous to health, safety or property in times of  
70 flood, or cause excessive increases in flood heights or velocities;
- 71 (2) Require that uses vulnerable to floods, including facilities which serve such uses, be  
72 protected against flood damage at the time of initial construction;
- 73 (3) Control the alteration of natural floodplains, stream channels, and natural protective  
74 barriers, which are involved in the accommodation of floodwaters;
- 75 (4) Control filling, grading, dredging and other development which may increase flood  
76 damage;

77 (5) Prevent or regulate the construction of flood barriers which will unnaturally divert  
78 floodwaters or which may increase flood hazards to other lands;

79 (6) Promote uses of land in the floodplain that are consistent with the natural and beneficial  
80 functions of the floodplain.

81 (Ord. No. 2008-10, § 1, 7-15-2008)

82 Sec. 38-30. - Definitions.

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

86 A zone. See "Area of shallow flooding" and "Area of special flood hazard."

87 Accessory structure means a structure which is on the same parcel of property as the  
88 principal structure and the use of which is incidental and subordinate to the use of the principal  
89 structure. This includes, but is not limited to, a detached garage, storage shed, gazebo, picnic  
90 pavilion, boathouse, barn or other similar building.

91 Addition means an improvement that increases the square footage of structures including  
92 lateral additions added to the side or rear of a structure, vertical additions added on top of a  
93 structure, and enclosures added underneath a structure. Related to "substantial improvement."

94 Alluvial fan flooding means flooding occurring on the surface of an alluvial fan or similar  
95 landform which originates at the apex and is characterized by high-velocity flows; active  
96 processes of erosion, sediment transport, and deposition; and unpredictable flow paths. Alluvial  
97 fan flooding is depicted on a flood insurance rate map (FIRM) as zone AO, with a flood depth and  
98 velocity.

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

101 Appurtenant structure. See "Accessory structure."

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

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

109 Area of special flood hazard means the land in the floodplain within a community subject to a  
110 one percent or greater chance of flooding in any given year. The area may be designated as zone  
111 A on the flood hazard boundary map (FHBM). After detailed rate making has been completed in  
112 preparation for publication of the FIRM, zone A usually is refined into zones A, AO, AH, A1—30,  
113 AE, A99, AR, AR/A1—30, AR/AE, AR/AO, AR/AH, AR/A, VO, V1—30, VE or V.

114 Area of special mudslide (i.e., mudflow) hazard means the land within a community most  
115 likely to be subject to severe mudslides (i.e., mudflows). The area may be designated as zone M  
116 on the FHBM. After the detailed evaluation of the special mudslide (i.e., mudflow) hazard area in  
117 preparation for publication of the FIRM, zone M may be further refined.

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

120 Base flood elevation (BFE) means the computed elevation shown on the flood insurance rate  
121 map (FIRM) and found in the accompanying flood insurance study (FIS) for zones A, AE, AH, A1—

122 A30, AR, V1—V30, or VE that indicates the water surface elevation resulting from the flood that  
123 has a one percent chance of equaling or exceeding that level in any given year, also called "the  
124 base flood."

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

127 Benchmark. See "Reference mark."

128 Breakaway wall means a wall that is not part of the structural support of the building and is  
129 intended through its design and construction to collapse under specific lateral loading forces,  
130 without causing damage to the elevated portion of the building or supporting foundation system.  
131 Use of breakaway walls must be certified by a registered engineer or architect and shall meet the  
132 following conditions:

133 (1) Breakaway wall collapse shall result from a water load less than that which would occur  
134 during the base flood, and

135 (2) The elevated portion of the building shall not incur any structural damage due to the  
136 effects of wind and water loads acting simultaneously in the event of the base flood.

137 Building. See "Structure."

138 Chief executive officer of the community (CEO) means the official of the community who is  
139 charged with the authority to implement and administer laws, ordinances and regulations for that  
140 community.

141 Coastal high hazard area means an area of special flood hazard extending from offshore to  
142 the inland limit of a primary frontal dune along an open coast and any other area subject to high  
143 velocity wave action from storms or seismic sources. The area is designated on a flood insurance  
144 rate map (FIRM) as zones V1—V30, VE, or V.

145 Community means any state or area or political subdivision thereof, or any indian tribe or  
146 authorized tribal organization, or Alaska Native village or authorized native organization, which  
147 has authority to adopt and enforce floodplain management regulations for the areas within its  
148 jurisdiction.

149 Critical facility. Typical critical facilities include hospitals, fire stations, police stations,  
150 storage of critical records, and similar facilities. These facilities should be given special  
151 consideration when formulating regulatory alternatives and floodplain management plans.

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

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

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

160 Elevation reference mark. See "Reference mark."

161 Enclosure means a fully enclosed walled in area below the lowest floor of an elevated  
162 building (includes crawlspaces). See "Lowest floor."

163 Encroachment means the advance or infringement of uses, plant growth, fill, excavation,  
164 buildings, permanent structures or development into a regulatory floodplain which may impede or  
165 alter its flow capacity.

166 Erosion means the process of the gradual wearing away of land masses.

167 Exemption certificate means a certificate issued by the community defining that the proposed  
168 activity within the special flood hazard area does not meet the definition of development and not  
169 subject to the requirements of this article. Activities may include painting, minor repairs and  
170 landscaping.

171 Existing construction means for the purposes of determining flood insurance rates,  
172 structures for which the "start of construction" commenced before the effective date of the FIRM  
173 or before January 1, 1975, for FIRMs effective before that date. "Existing construction" may also  
174 be referred to as "existing structures."

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

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

184 Flood or flooding means a general and temporary condition of partial or complete inundation  
185 of normally dry land areas from:

186 (1) The overflow of inland or tidal waters;

187 (2) The unusual and rapid accumulation or runoff of surface waters from any source;

188 (3) Mudslides (i.e., mudflows) which are proximately caused by flooding and are akin to a  
189 river of liquid and flowing mud on the surfaces of normally dry land areas, as when earth  
190 is carried by a current of water and deposited along the path of the current.

191 Flood elevation study means an examination, evaluation and determination of flood hazards  
192 and, if appropriate, corresponding water surface elevations, or an examination, evaluation and  
193 determination of mudslide (i.e., mudflow) and/or flood-related erosion hazards.

194 Flood hazard boundary map (FHBM) means an official map of a community, issued by the  
195 administrator, where the boundaries of the flood, mudslide (i.e., mudflow) related erosion areas  
196 having special hazards have been designated as zones A, M, and/or E.

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

200 Flood insurance study (FIS) means official report provided by the Federal Emergency  
201 Management Agency that examines, evaluates and determines the flood hazards and, if  
202 appropriate, corresponding flood profiles and water surface elevations. It can also be the  
203 examination, evaluation, and determination of mudslide and/or flood-related erosion hazards.

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

210 Floodplain or flood-prone area means any land area susceptible to being inundated by water  
211 from any source (See definition of "flooding").

212 Floodplain management means the operation of an overall program of corrective and  
213 preventive measures for reducing flood damage and preserving and enhancing, where possible,  
214 natural resources in the floodplain including, but not limited to, emergency preparedness plans.

215 flood control works, floodplain management regulations, subdivision regulations, open space  
216 plans and floodplain management plans.

217 *Floodplain management regulations* means this article, zoning ordinances, subdivision  
218 regulations, building codes, health regulations, special purpose ordinances (such as grading  
219 ordinance and erosion control ordinances) and other applications of police power which apply to  
220 the development and land use in flood-prone areas. The term describes such federal, state or  
221 local regulations, in any combination thereof, which provide standards for the purpose of  
222 floodplain management.

223 *Flood-proofing* means any combination of structural and nonstructural additions, changes, or  
224 adjustments to structures which reduce or eliminate flood damage to real estate or improved real  
225 property, water and sanitary facilities, structures and their contents. Also see "Wet flood-  
226 proofing." Refer to FEMA technical bulletins TB 1-93, TB 3-93, and TB 7-93 for guidelines on dry  
227 and wet flood-proofing.

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

232 *Flood-resistant* means any building material capable of withstanding direct and prolonged  
233 contact with floodwaters for at least 72 hours without sustaining any damage requiring more than  
234 low-cost cosmetic repair (such as painting). Refer to FEMA Technical Bulletin 2-93, "Flood-  
235 resistant materials requirements for buildings located in the special flood hazard areas in  
236 accordance with the National Flood Insurance Program."

237 *Floodway.* See "Regulatory floodway."

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

243 *Future conditions flood hazard areas or future conditions floodplain.* See "Area of future  
244 conditions flood hazard."

245 *Future conditions hydrology* means the flood discharges associated with projected land-use  
246 conditions based on a community's zoning maps and/or comprehensive land-use plans and  
247 without consideration of projected future construction of flood detention structures or projected  
248 future hydraulic modifications within a stream or other waterway, such as bridge and culvert  
249 construction, fill, and excavation.

250 *Governing body* means the local governing unit (i.e., county or municipality) that is  
251 empowered to adopt and implement regulations to provide for the public health, safety and  
252 general welfare of its citizenry.

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

255 *Highway ready with respect to a recreational vehicle* means ready for highway use if it is on  
256 its wheels or jacking system, is attached to the site only by quick disconnect type utilities and  
257 security devices, and has no permanently attached additions, and is fully licensed.

258 *Historic structure* means any structure that is:

259 (1) *Listed individually in the National Register of Historic Places (a listing maintained by the*  
260 *Department of Interior) or preliminarily determined by the Secretary of the Interior as*  
261 *meeting the requirements for individual listing on the National Register;*

262 (2) Certified or preliminarily determined by the Secretary of the Interior as contributing to  
263 the historical significance of a registered historic district or a district preliminarily  
264 determined by the secretary to qualify as a registered historic district;

265 (3) Individually listed on a state inventory of historic places in states with historic  
266 preservation programs which have been approved by the Secretary of the Interior; or

267 (4) Individually listed on a local inventory or historic places in communities with historic  
268 preservation programs that have been certified either:

269 a. By an approved state program as determined by the Secretary of the Interior, or

270 b. Directly by the Secretary of the Interior in states without approved programs.

271 Hydrodynamic forces are imposed on an object, such as a building, by water flowing against  
272 and around it. Among the forces are positive frontal pressure against the structure, drag effect  
273 along the sides, and negative pressure in the downstream side.

274 Hydrostatic forces. Standing water or slowly moving water can induce horizontal hydrostatic  
275 forces against a structure, especially when floodwater levels on different sides of a wall are not  
276 equal. Also flooding can cause vertical hydrostatic forces, or flotation.

277 Letter of map change (LOMC) means a general term used to refer to the several types of  
278 revisions and amendments to FEMA maps that can be accomplished by letter. They include letter  
279 of map amendment (LOMA), letter of map revision (LOMR), and letter of map revision based on fill  
280 (LOMR-F).

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

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

287 Limited storage means the type of storage permitted in an enclosed area below the base  
288 flood elevation and is limited to that which is incidental and accessory to the principal use of the  
289 structure. For example, if the structure is a residence, storage should be limited to items such as  
290 lawn and garden equipment, snow tires, and other low value items which can be conveniently  
291 moved to the elevated part of the building.

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

298 Lowest horizontal structural member in an elevated building means the lowest beam, joist, or  
299 other horizontal member that supports the building. Grade beams installed to support vertical  
300 foundation members where they enter the ground are not considered lowest horizontal members.

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

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

307 Mean sea level means, for purposes of the National Flood Insurance Program, the National  
308 Geodetic Vertical Datum (NGVD) of 1929, North American Vertical Datum of 1988 (NAVD 88), or

309 other datum, to which base flood elevations shown on a community's flood insurance rate map  
310 are referenced.

311 *Mudslide (i.e., mudflow)* describes a condition where there is a river, flow or inundation of  
312 liquid mud down a hillside usually as a result of a dual condition of loss of brush cover, and the  
313 subsequent accumulation of water on the ground preceded by a period of unusually heavy or  
314 sustained rain. A mudslide (i.e., mudflow) may occur as a distinct phenomenon while a landslide  
315 is in progress, and will be recognized as such by the Administrator only if the mudflow, and not  
316 the landslide, is the proximate cause of damage that occurs.

317 *Mudslide (i.e., mudflow) prone area* means an area with land surfaces and slopes of  
318 unconsolidated material where the history, geology and climate indicate a potential for mudflow.

319 *National Flood Insurance Program (NFIP)* means a federal program enabling property owners  
320 in participating communities to purchase insurance as a protection against flood losses in  
321 exchange for state and community floodplain management regulations that reduce future flood  
322 damages. Participation in the NFIP is based on an agreement between communities and the  
323 federal government. If a community adopts and enforces a floodplain management ordinance to  
324 reduce future flood risk to new construction in floodplains, the federal government will make flood  
325 insurance available within the community as a financial protection against flood losses. This  
326 insurance is designed to provide an insurance alternative to disaster assistance to reduce the  
327 escalating costs of repairing damage to buildings and their contents caused by floods. The U.S.  
328 Congress established the National Flood Insurance Program (NFIP) with the passage of the  
329 National Flood Insurance Act of 1968.

330 *New construction for floodplain management purposes* means structures for which the start  
331 of construction commenced on or after the effective date of a floodplain management regulation  
332 adopted by a community and includes any subsequent improvements to such structures.

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

338 *Nonresidential structure* means a structure that is primarily used for uses other than  
339 residential including, but is not limited to: small business concerns, churches, schools, farm  
340 buildings (including grain bins and silos), pool houses, boat houses, clubhouses, recreational  
341 buildings, mercantile structures, agricultural and industrial structures, warehouses, hotels and  
342 motels with normal room rentals for less than six months' duration, and nursing homes.

343 *One percent annual chance flood.* See "Base flood."

344 *One hundred year flood or 100-year flood.* See "Base flood."

345 *Primary frontal dune* means a continuous or nearly continuous mound or ridge of sand with  
346 relatively steep seaward and landward slopes immediately landward and adjacent to the beach  
347 and subject to erosion and overtopping from high tides and waves during major coastal storms.  
348 The inland limit of the primary frontal dune occurs at the point where there is a distinct change  
349 from a relatively mild slope.

350 *Recreational vehicle* means a vehicle which is:

351 (1) Built on a single chassis;

352 (2) Four hundred square feet or less when measured at the largest horizontal projections;

353 (3) Designed to be self-propelled or permanently towable by a light duty truck; and

354 (4) Designed primarily not for use as a permanent dwelling but as temporary living quarters  
355 for recreational, camping, travel, or seasonal use.

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

359 Regulatory floodway means the channel of a river or other watercourse and the adjacent land  
360 areas that must be reserved in order to discharge the base flood without cumulatively increasing  
361 the water surface elevation more than a designated height.

362 Repetitive loss (RL) means any insurable building for which two or more claims of more than  
363 \$1,000.00 were paid by the National Flood Insurance Program (NFIP) within any rolling ten-year  
364 period, since 1978. A RL property may or may not be currently insured by the NFIP.

365 Residential structure means a structure that is considered to be a domicile or is used for  
366 residential purposes for six months or more. Residential structures include a single family home,  
367 multiple unit apartment buildings, a residential condominium, or a manufactured or modular  
368 home.

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

371 Sand dunes mean naturally occurring accumulations of sand in ridges or mounds landward  
372 of the beach.

373 Severe repetitive loss property means a residential property that is covered under flood  
374 insurance by the National Flood Insurance Program (NFIP):

375 (1) That has at least four NFIP claim payments over \$5,000.00 each, when at least two such  
376 claims have occurred within any ten-year period, and the cumulative amount of such  
377 claims payments exceeds \$20,000.00, or

378 (2) For which at least two separate claims payments have been made with the cumulative  
379 amount of the building portion of such claims exceeding the value of the property, when  
380 two such claims have occurred within any ten-year period.

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

382 Special flood-related erosion hazard area. See "Area of special flood-related erosion hazard."

383 Start of construction (for other than new construction or substantial improvements under the  
384 Coastal Barrier Resources Act (Pub. L. 97-348)), includes substantial improvement and means the  
385 date the building permit was issued, provided the actual start of construction, repair,  
386 reconstruction, rehabilitation, addition placement, or other improvement was within 180 days of  
387 the permit date. The actual start means either the first placement of permanent construction of a  
388 structure on a site, such as the pouring of slab or footings, the installation of piles, the  
389 construction of columns, or any work beyond the stage of excavation; or the placement of a  
390 manufactured home on a foundation. Permanent construction does not include land preparation,  
391 such as clearing, grading and filling; nor does it include the installation of streets and/or  
392 walkways; nor does it include excavation for basement, footings, piers or foundations or the  
393 erection of temporary forms; nor does it include the installation on the property of accessory  
394 buildings, such as garages or sheds not occupied as dwelling units or not part of the main  
395 structure. For a substantial improvement, the actual start of construction means the first  
396 alteration of any wall, ceiling, floor, or other structural part of a building, whether or not that  
397 alteration affects the external dimensions of the building.

398 Structure means, for floodplain management purposes, a walled and roofed building,  
399 including a gas or liquid storage tank, that is principally above ground, as well as a manufactured  
400 home.

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

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

409 (1) Any project for improvement of a structure to correct existing violations of state or local  
410 health, sanitary, or safety code specifications which have been identified by the local  
411 code enforcement official and which are the minimum necessary to assure safe living  
412 conditions, or

413 (2) Any alteration of a "historic structure", provided that the alteration will not preclude the  
414 structure's continued designation as a "historic structure."

415 V zone. See "Coastal high hazard area."

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

419 Violation means the failure of a structure or other development to be fully compliant with the  
420 community's floodplain management regulations. A structure or other development without the  
421 elevation certificate, other certifications, or other evidence of compliance required in this  
422 ordinance is presumed to be in violation until such time as that documentation is provided.

423 Watercourse means a definite channel with bed and banks within which concentrated water  
424 flows continuously, frequently or infrequently.

425 Water surface elevation means the height, in relation to the National Geodetic Vertical Datum  
426 of 1929 (NGVD 29), North American Vertical Datum of 1988 (NSVD 88), or other datum, where  
427 specified, of floods of various magnitudes and frequencies in the floodplains of coastal or riverine  
428 areas.

429 Wet flood-proofing includes permanent or contingent measures applied to a structure or its  
430 contents that prevent or provide resistance to damage from flooding while allowing floodwaters to  
431 enter the structure or area.

432 (Ord. No. 2008-10, § 1, 7-15-2008)

433 Sec. 38-31. - Lands to which this article applies.

434 The article shall apply to all areas within the jurisdiction of Seabrook, Texas, including areas  
435 of special flood hazard.

436 (Ord. No. 2008-10, § 1, 7-15-2008)

437 Sec. 38-32. - Basis for establishing the areas of special flood hazard.

438 The areas of special flood hazard identified by the Federal Emergency Management Agency  
439 in the current scientific and engineering report entitled, "The Flood Insurance Study (FIS) for  
440 Harris County, Texas," dated January 6, 2017, with accompanying flood insurance rate maps  
441 dated January 6, 2017, and all subsequent amendments and/or revisions thereto are hereby  
442 adopted by reference and declared to be a part of this article. Such maps are available for review  
443 in the office of the floodplain administrator.

444 (Ord. No. 2008-10, § 1, 7-15-2008)

445 Sec. 38-33. - Establishment of development permit.

446 A floodplain development permit or exemption certificate shall be required to ensure  
447 conformance with the provisions of this article.

448 (Ord. No. 2008-10, § 1, 7-15-2008)

449 Sec. 38-34. - Compliance.

450 No development shall occur, nor any structure or land shall hereafter be located, altered, or  
451 have its use changed without full compliance with the terms of this article and other applicable  
452 regulations.

453 (Ord. No. 2008-10, § 1, 7-15-2008)

454 Sec. 38-35. - Abrogation and greater restrictions.

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

459 (Ord. No. 2008-10, § 1, 7-15-2008)

460 Sec. 38-36. - Interpretation.

461 In the interpretation and application of this article, all provisions shall be:

462 (1) Considered as minimum requirements;

463 (2) Liberally construed in favor of the governing body; and

464 (3) Deemed neither to limit nor repeal any other powers granted under state statutes.

465 (Ord. No. 2008-10, § 1, 7-15-2008)

466 Sec. 38-37. - Warning and disclaimer or liability.

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

474 (Ord. No. 2008-10, § 1, 7-15-2008)

475 Sec. 38-38. - Severability.

476 This article and the various parts thereof are hereby declared to be severable. Should any  
477 section of this article be declared by the courts to be unconstitutional or invalid, such decision

478 shall not affect the validity of the article as a whole, or any portion thereof other than the section  
479 so declared to be unconstitutional or invalid.

480 (Ord. No. 2008-10, § 1, 7-15-2008)

481 Secs. 38-39—38-55. - Reserved.

482 DIVISION 2 - ADMINISTRATION, VARIANCE PROCEDURES AND PENALTIES

483

484 Sec. 38-56. - Designation of the floodplain administrator.

485 The chief building official is hereby appointed the "floodplain administrator" to administer  
486 and implement the provisions of this article and other appropriate sections of 44 CFR (Emergency  
487 Management and Assistance—National Flood Insurance Program Regulations) pertaining to  
488 floodplain management.

489 (Ord. No. 2008-10, § 1, 7-15-2008)

490 Sec. 38-57. - Duties and responsibilities of the floodplain administrator.

491 Duties and responsibilities of the floodplain administrator shall include, but not be limited to,  
492 the following:

493 (1) Maintain and hold open for public inspection all records pertaining to the provisions of  
494 this article. This includes, but is not limited to:

495 a. All application, review and permitting forms;

496 b. All current and past versions of the flood insurance rate maps (FIRMs), flood  
497 boundary and floodway maps (FBFMs), flood insurance studies (FISs);

498 c. Any other studies, information or data used in regulating development in the  
499 floodplain;

500 d. Applicable elevation certificates;

501 e. Applicable flood-proofing certificates; and

502 f. Correspondence, applications, studies, and reports related to letters of map  
503 amendments, letters of map revisions and conditional letters of map revision as  
504 submitted to and approved by FEMA.

505 (2) Review all development to:

506 a. Determine that all requirements of this article have been satisfied;

507 b. Ensure that the proposed building site project, including the placement of  
508 manufactured homes, will be reasonably safe from flooding;

509 c. Ensure that development in flood-prone areas would not adversely impact other  
510 properties;

511 d. Assure that all necessary permits have been obtained from those federal, state or  
512 local governmental agencies (including Section 404 of the Federal Water Pollution  
513 Control Act Amendments of 1972, 33 U.S.C. 1334; and compliance with Sections 9  
514 and 10 of the Endangered Species Act ) from which prior approval or permits are  
515 required; and

516 e. Assure that the flood-carrying capacity within the altered or relocated portion of any  
517 watercourse is maintained.

518 **(3) Determine regulatory floodplain and floodway designation, delineation, and elevation:**

519 a. For the purposes of determining if a floodplain development permit is required in  
520 accordance with this article;

521 b. Where interpretation is needed as to the exact location of the boundaries of the  
522 areas of special flood hazards (for example, where there appears to be a conflict  
523 between a mapped boundary and actual field conditions) the floodplain  
524 administrator shall make the necessary interpretation; and

525 c. When base flood elevation data has not been provided in accordance with section  
526 38-32, the floodplain administrator shall either:

527 1. Obtain, review and reasonably utilize any base flood elevation data and  
528 floodway data available from a federal, state or other source, in order to  
529 administer the provisions of subsection (5). Reference: "Managing Floodplain  
530 Development in Approximate Zone A Areas—A Guide for Obtaining and  
531 Developing Base (100-year) Flood Elevations," dated July 1995, or

532 2. Require the applicant to provide hydrological and hydraulic data prepared by a  
533 professional engineer licensed in the State of Texas which established the base  
534 flood elevation.

535 d. When a regulatory floodway has not been designated, the floodplain administrator  
536 must require that no new construction, substantial improvements, or other  
537 development (including fill) shall be permitted within zones A1—30 and AE on the  
538 community's FIRM, unless it is demonstrated that the cumulative effect of the  
539 proposed development, when combined with all other existing and anticipated  
540 development, will not increase the water surface elevation of the base flood more  
541 than one foot at any point within the community.

542 **(4) Notify, in riverine situations, adjacent communities and the state coordinating agency**  
543 **which is the Texas Water Development Board (TWDB), prior to any alteration or**  
544 **relocation of a watercourse, and submit evidence of such notification to the Federal**  
545 **Emergency Management Agency.**

546 **(5) Under the provisions of 44 CFR Chapter 1, Section 65.12, of the National Flood Insurance**  
547 **Program regulations, a community may approve certain development in zones A1—30,**  
548 **AE, AH, on the community's FIRM which increases the water surface elevation of the**  
549 **base flood by more than one foot, provided that the community first completes all of the**  
550 **provisions required by Section 65.12.**

551 **(6) Take action to remedy violations of this article as specified in sections 38-59 and 38-60 of**  
552 **this article.**

553 **(Ord. No. 2008-10, § 1, 7-15-2008)**

554 **Sec. 38-58. - Permit procedures.**

555 **A floodplain development permit shall be obtained before any construction or other**  
556 **development may begin in any special flood hazard area or other regulatory floodplain within the**  
557 **jurisdiction of Seabrook, Texas. A record of all such information shall be maintained in**  
558 **accordance with subsection 38-57(1).**

559 **(1) Application for a floodplain development permit shall be presented to the floodplain**  
560 **administrator, on forms furnished by him/her. Applications must be filled out completely**  
561 **and include:**

- 562 **a. Site plan, drawn to scale, which include, but is not limited to:**
- 563 **1. Location and dimensions of all existing and proposed structures, including**
- 564 **manufactured homes;**
- 565 **2. Ground elevations at building corners of proposed new and substantially**
- 566 **improved structures;**
- 567 **3. Location, dimensions and elevation of proposed landscape and terrain**
- 568 **alterations;**
- 569 **4. Proposed locations of water supply, sanitary sewer, and utilities;**
- 570 **5. The location of the special flood hazard area and floodway; and**
- 571 **6. If available, the base flood elevation from the flood insurance study.**
- 572 **b. Building plans, if applicable, drawn to scale, which include, but are not limited to:**
- 573 **1. Elevation in relation to mean sea level of the lowest floor (including basement)**
- 574 **of all existing and proposed new and substantially improved structures;**
- 575 **2. For a crawl space foundation, the elevation of the crawl space, location and**
- 576 **total net area of foundation openings and venting (see FEMA Technical**
- 577 **Bulletins 1-93 and 7-93);**
- 578 **3. For foundations placed on fill, the location and height of fill, and compaction to**
- 579 **be achieved (compacted to a minimum of 95 percent using the standard proctor**
- 580 **test method);**
- 581 **4. Proposed elevation in relation to mean sea level to which any nonresidential**
- 582 **structure will be flood-proofed, (see FEMA Technical Bulletin TB 3-93).**
- 583 **c. If applicable, a certificate from a registered professional engineer that the**
- 584 **nonresidential flood-proofed structure shall meet the flood-proofing criteria of**
- 585 **section 38-30; and**
- 586 **d. A description of the extent to which any watercourse or natural drainage will be**
- 587 **altered or relocated as a result of proposed development.**
- 588 **e. All elevation requirements noted in this article shall be documented using the**
- 589 **elevation certificate, FEMA Form 086-0-33 (7/15) and shall be certified by a registered**
- 590 **professional engineer or surveyor, and shall be submitted to the floodplain**
- 591 **administrator (reference to architect removed).**
- 592 **(2) Approval or denial of a floodplain development permit by the floodplain administrator**
- 593 **shall be based on all of the provisions of this article and the following relevant factors:**
- 594 **a. The danger to life and property due to flooding or erosion damage;**
- 595 **b. The susceptibility of the proposed facility and its contents to flood damage and the**
- 596 **effect of such damage on the individual owner;**
- 597 **c. The danger that materials may be swept onto other lands to the injury of others;**
- 598 **d. The compatibility of the proposed use with existing and anticipated development;**
- 599 **e. The safety of access to the property in times of flood for ordinary and emergency**
- 600 **vehicles;**
- 601 **f. The costs of providing governmental services during and after flood conditions**
- 602 **including maintenance and repair of streets and bridges, and public utilities and**
- 603 **facilities such as sewer, gas, electrical and water systems;**
- 604 **g. The expected heights, velocity, duration, rate of rise and sediment transport of the**
- 605 **floodwaters and the effects of wave action, if applicable, expected at the site;**

- 606 h. The necessity to the facility of a waterfront location, where applicable;
- 607 i. The availability of alternative locations, not subject to flooding or erosion damage,
- 608 for the proposed use; and
- 609 j. The relationship of the proposed use to other community plans (hazard mitigation,
- 610 flood management, comprehensive, neighborhood) applicable to that area.

611 (Ord. No. 2008-10, § 1, 7-15-2008)

612 Sec. 38-59. - Variance procedures.

613 (a) Variance process.

- 614 (1) The appeal board, as established by the community, shall hear and render judgment on
- 615 requests for variances from the requirements of this article. The appeal board for
- 616 Seabrook, Texas is the "Board of Adjustments."
- 617 (2) The appeal board shall hear and render judgment on an appeal only when it is alleged
- 618 there is an error in any requirement, decision, or determination made by the floodplain
- 619 administrator in the enforcement or administration of this article.
- 620 (3) Any person or persons aggrieved by the decision of the appeal board may appeal such
- 621 decision in the courts of competent jurisdiction.
- 622 (4) The floodplain administrator shall maintain a record of all actions involving an appeal
- 623 and shall report variances to the Federal Emergency Management Agency upon request.

624 (b) Variance considerations.

- 625 (1) Variances shall only be issued upon a determination that the variance is the minimum
- 626 necessary, considering the flood hazard, to afford relief. The appeals board shall
- 627 consider all technical evaluations, all relevant factors, standards specified in other
- 628 sections of this article and the:
- 629 a. Danger that materials may be swept onto other lands to the injury of others;
- 630 b. Danger of life and property due to flooding or erosion damage;
- 631 c. Susceptibility of the proposed facility and its contents to flood damage and the
- 632 effect of such damage on the existing individual owner and future owners of the
- 633 property;
- 634 d. Importance of the services provided by the proposed facility to the community;
- 635 e. Necessity to the facility of a waterfront location, where applicable;
- 636 f. Availability of alternative locations for the proposed use which are not subject to
- 637 flooding or erosion damage;
- 638 g. Compatibility of the proposed use with existing and anticipated development;
- 639 h. Relationship of the proposed use to the comprehensive plan and floodplain
- 640 management program for that area;
- 641 i. Safety of access to the property in time of flood for ordinary and emergency
- 642 vehicles;
- 643 j. Expected heights, velocity, duration, rate of rise, and sediment transport of the
- 644 floodwaters expected at the site; and
- 645 k. Costs of providing governmental services during and after flood conditions,
- 646 including rescue services, maintenance and repair of public utilities and facilities

647 such as sewer, gas, electrical, and water system, and maintenance and repair of  
648 streets and bridges.

649 (2) Variances may be issued for the reconstruction, rehabilitation or restoration of  
650 structures listed on the National Register of Historic Places or the State Inventory of  
651 Historic Places, without regard to the procedures set forth in the remainder of this  
652 article.

653 (3) Variances may be issued for the repair or rehabilitation of historic structures upon a  
654 determination that the proposed repair or rehabilitation will not preclude the structure's  
655 continued designation as a historic structure and the variance is the minimum necessary  
656 to preserve the historic character and design of the structure.

657 (4) Upon consideration of the factors noted above and the intent of this article, the appeal  
658 board may attach such conditions to the granting of variances as it deems necessary to  
659 further the purpose and objectives of this article (section 38-28).

660 (5) Variances shall not be issued within any designated floodway if any increase in flood  
661 levels during the base flood discharge would result.

662 (6) Variances shall only be issued upon:

663 a. Showing a good and sufficient cause;

664 b. A determination that failure to grant the variance would result in exceptional  
665 hardship to the applicant; and

666 c. A determination that the granting of a variance will not result in increased flood  
667 heights, additional threats to public safety, extraordinary public expense, create  
668 nuisances, cause fraud on or victimization of the public, or conflict with existing  
669 local laws or ordinances.

670 (7) Variances may be issued by a community for new construction and substantial  
671 improvements and for other development necessary for the conduct of a functionally  
672 dependent use provided that:

673 a. The criteria outlined in section 38-28 are met, and

674 b. The structure or other development is protected by methods that minimize flood  
675 damages during the base flood and create no additional threats to public safety.

676 (8) Under some circumstances it may be appropriate to wet-flood-proof certain types of  
677 agricultural structures when located in wide, expansive floodplains through issuance of  
678 a variance. This should only be done for structures used for temporary storage of  
679 equipment or crops or temporary shelter for livestock and only in circumstances where it  
680 can be demonstrated that agricultural structures can be designed in such a manner that  
681 results in minimal damage to the structure and its contents and will create no additional  
682 threats to public safety.

683 (9) Under limited circumstances, variances may be issued for functionally dependent uses  
684 provided that the structure is protected by methods that minimize flood damages during  
685 the base flood and there are no additional threats to public safety.

686 (c) Issuance and record of a variance.

687 (1) Any application to which a variance is granted shall be given written notice that the  
688 structure will be permitted to be built with the lowest floor elevation below the base flood  
689 elevation, and that the cost of flood insurance will be commensurate with the increased  
690 risk resulting from the reduced lowest floor elevation;

691 (2) A copy of the notice shall remain on file with the city; and

692 (3) A copy of the notice shall be recorded with the office of the city secretary (or other  
693 recording office) as a public record and shall be recorded in a manner so that it appears  
694 in the chain of title of the affected parcel of land.

695 (Ord. No. 2008-10, § 1, 7-15-2008)

696 Sec. 38-60. - Penalties for noncompliance.

697 No structure or land shall hereafter be constructed, located, extended, converted, or altered  
698 without full compliance with the terms of this ordinance and other applicable regulations.  
699 Violation of the provisions of this ordinance by failure to comply with any of its requirements  
700 (including violations of conditions and safeguards established in connection with conditions)  
701 shall constitute a misdemeanor. Any person who violates this article or fails to comply with any of  
702 its requirements shall upon conviction thereof be fined not more than \$500.00, (or the maximum  
703 amount permitted by law); or imprisoned for not more than 30 days (or the maximum amount  
704 permitted by law); or both, for each violation; and in addition shall pay all costs and expenses  
705 involved in the case. Nothing herein contained shall prevent the city from taking such other lawful  
706 action as is necessary to prevent or remedy any violation.

707 (Ord. No. 2008-10, § 1, 7-15-2008)

708 Secs. 38-61—38-75. - Reserved.

709 DIVISION 3. - PROVISIONS FOR FLOOD HAZARD REDUCTION

710

711 Sec. 38-76. - General standards.

712 In all areas of special flood hazards the following provisions are required for all new  
713 construction and substantial improvements:

714 (1) All new construction or substantial improvements shall be designed (or modified) and  
715 adequately anchored to prevent flotation, collapse or lateral movement of the structure  
716 resulting from hydrodynamic and hydrostatic loads, including the effects of buoyancy;

717 (2) All new construction or substantial improvements shall be constructed by methods and  
718 practices that minimize flood damage;

719 (3) All new construction or substantial improvements shall be constructed with materials  
720 resistant to flood damage;

721 (4) All new construction or substantial improvements shall be constructed with electrical,  
722 heating, ventilation, plumbing, and air conditioning equipment and other service facilities  
723 that are designed and/or located so as to prevent water from entering or accumulating  
724 within the components during conditions of flooding;

725 (5) All new and replacement water supply systems shall be designed to minimize or  
726 eliminate infiltration of floodwaters into the system;

727 (6) New and replacement sanitary sewage systems shall be designed to minimize or  
728 eliminate infiltration of floodwaters into the system and discharge from the systems into  
729 flood waters;

730 (7) On-site waste disposal systems shall be located to avoid impairment to them or  
731 contamination from them during flooding;

732 (8) A structure shall be deemed to be substantially improved or substantially damaged when  
733 the costs of the improvements or damage repairs, equal or exceed 50 percent of the  
734 market value of the structure;

735 (Ord. No. 2008-10, § 1, 7-15-2008)

736 Sec. 38-77. - Specific standards (A and AE zones).

737 In all areas of special flood hazards where base flood elevation data has been provided as set  
738 forth in (i) section 38-32, (ii) section 38-33, or (iii) section 38-35, the following provisions are  
739 required:

740 (1) All development.

741 a. If fill material is to be used to elevate any structure, the following will apply:

742 1. Fill material must be compacted to at least 95 percent of standard laboratory  
743 maximum density (standard proctor) according to ASTM Standard D—698.

744 2. Fill soils must be fine grained soils of low permeability, such as those classified  
745 as CH, CL, SC, or ML according to ASTM Standard D—2487, "Classification of  
746 soils for engineering purposes".

747 3. The fill material must be homogeneous and isotropic; that is, the soil must be  
748 all of one material, and the engineering properties must be the same in all  
749 directions.

750 b. All elevation requirements noted in this article shall be documented using the  
751 elevation certificate, FEMA Form 086-0-33 (7/15), and shall be certified by a  
752 registered professional engineer or surveyor, and shall be submitted to the  
753 floodplain administrator (reference to architect removed).

754 (2) Residential construction (including manufactured homes). New construction and  
755 substantial improvement of any residential structure as well as all manufactured homes  
756 to be placed or substantially improved within a SFHA:

757 a. Shall have the lowest floor (including basement), any ductwork, exposed plumbing  
758 and electrical components elevated to or above a minimum of eighteen inches  
759 above the base flood elevation;

760 b. If a detailed base flood elevation is unavailable, the lowest floor (including  
761 basement) and any ductwork, and exposed plumbing and electrical components  
762 shall be elevated a minimum of eighteen inches above the highest adjacent grade;

763 c. Shall be elevated and anchored to resist flotation, collapse, or lateral movement.  
764 Methods of anchoring may include, but are not limited to, use of over-the-top or  
765 frame ties to ground anchors. This requirement is in addition to applicable state and  
766 local manufactured home anchoring requirements for resisting wind forces;

767 d. For any area below the elevation which is eighteen inches above the base flood  
768 elevation, all structures must be installed with flood-resistant materials.

769 (3) Nonresidential construction. New construction and substantial improvements of any  
770 commercial, industrial or other nonresidential structure:

771 a. Shall either have the lowest floor (including basement) elevated to or above a  
772 minimum of eighteen inches above the base flood elevation.

773 b. Together with attendant utility and sanitary facilities, be designed so that the  
774 structure is watertight to a minimum level eighteen inches above the base flood  
775 elevation with walls substantially impermeable to the passage of water and with

- 776 structural components having the capability of resisting hydrostatic and  
777 hydrodynamic loads and effects of buoyancy.
- 778 c. A registered professional engineer or architect shall develop and/or review  
779 structural design, specifications, and plans for the construction, and shall certify  
780 that the design and methods of construction are in accordance with accepted  
781 standards of practice as outlined in this subsection.
- 782 d. A record of such certification which includes the specific elevation (in relation to  
783 mean sea level) to which such structures are flood-proofed shall be maintained by  
784 the floodplain administrator.
- 785 **(4) Enclosures. New construction and substantial improvements may have enclosures**  
786 **below the lowest floor provided that the enclosure is:**
- 787 a. Used solely for parking of vehicles, building access or limited storage in an area  
788 other than a basement,
- 789 b. Designed to automatically equalize hydrostatic flood forces on exterior walls by  
790 allowing for the entry and exit of floodwaters. Designs for meeting this requirement  
791 must either be certified by a registered professional engineer or architect or meet or  
792 exceed the following minimum criteria:
- 793 1. A minimum of two openings on separate walls having a total net area of not less  
794 than one square inch for every square foot of enclosed area subject to flooding  
795 shall be provided.
- 796 2. The bottom of all openings shall be no higher than one foot above grade.
- 797 3. Openings may be equipped with screens, louvers, valves, or other coverings or  
798 devices provided that they permit the automatic entry and exit of floodwaters.
- 799 c. Enclosed areas below the lowest floor elevation must be constructed using flood-  
800 resistant materials.
- 801 **(5) Recreational vehicles. Require that recreational vehicles placed on sites within zones**  
802 **A1—30, AH, and AE on the community's FIRM either:**
- 803 a. Be on the site for fewer than 180 consecutive days, or
- 804 b. Be fully licensed and ready for highway use.
- 805 If neither of these conditions can be achieved, it is considered to be a manufactured  
806 home and is subject to the requirements of subsection (2).
- 807 **(6) Utilities. If a proposed building site is in a special flood hazard area (SFHA), the building**  
808 **support utility systems for all new construction and substantial improvements shall:**
- 809 a. Be constructed with electrical, heating, ventilation, plumbing, and air conditioning  
810 equipment and other service facilities that are designed and/or located so as to  
811 prevent water from entering or accumulating within the components during  
812 conditions of flooding;
- 813 b. Require within flood-prone areas new and replacement water supply systems to be  
814 designed to minimize or eliminate infiltration of flood waters into the systems;
- 815 c. Require within flood-prone areas new and replacement sewage systems be  
816 designed to minimize or eliminate infiltration of floodwaters into the systems and  
817 discharges from the systems into flood waters; and
- 818 d. Require on-site water disposal systems be located to avoid impairment to them or  
819 contamination from them during flooding.

820 (Ord. No. 2008-10, § 1, 7-15-2008; Ord. No. 2008-29, § 1, 11-18-2008)

821 Sec. 38-78. - Specific standards for areas of shallow flooding (AO/AH zones).

822 Located within the areas of special flood hazard established in section 38-32, are areas  
823 designated as shallow flooding. These areas have special flood hazards associated with flood  
824 depths of one to three feet where a clearly defined channel does not exist, where the path of  
825 flooding is unpredictable, and where velocity flow may be evident. Such flooding is characterized  
826 by ponding or sheet flow; therefore, the following provisions apply:

827 (1) All development.

828 a. If fill material is to be used to elevate any structure, the following will apply:

829 1. Fill material must be compacted to at least 95 percent of standard laboratory  
830 maximum density (standard proctor) according to ASTM standard D-698;

831 2. Fill soils must be fine grained soils of low permeability, such as those classified  
832 as CH, CL, SC, or ML according to ASTM standard D-2487, "Classification of  
833 soils for engineering purposes".

834 3. The fill material must be homogeneous and isotropic; that is, the soil must be  
835 all of one material, and the engineering properties must be the same in all  
836 directions.

837 b. All elevation requirements noted in this article shall be documented using the  
838 elevation certificate, FEMA Form 086-0-33 (7/15), and shall be certified by a  
839 registered professional engineer, surveyor, or architect, and shall be submitted to  
840 the floodplain administrator.

841 (2) Residential construction. New construction and substantial improvements of residential  
842 structures as well as manufactured homes to be placed or substantially improved within  
843 the SFHA:

844 a. Shall have the lowest floor (including basement) any ductwork, exposed plumbing  
845 and electrical components elevated to or above a minimum of eighteen inches  
846 above the base flood elevation or a minimum of eighteen inches above the highest  
847 adjacent grade at least as high as the depth number specified in feet on the  
848 community's FIRM (at least eighteen inches if no depth number is specified);

849 b. If a detailed base flood elevation is unavailable, the lowest floor (including  
850 basement) and any ductwork, and exposed plumbing and electrical components  
851 shall be elevated a minimum of eighteen inches above the highest adjacent grade;

852 c. Shall be elevated and anchored to resist flotation, collapse, or lateral movement.  
853 Methods of anchoring may include, but are not limited to, use of over-the-top or  
854 frame ties to ground anchors. This requirement is in addition to applicable state and  
855 local manufactured home anchoring requirements for resisting wind forces;

856 d. For any area below the elevation which is eighteen inches above the base flood  
857 elevation, all structures must be installed with flood resistant materials.

858 (3) Nonresidential construction. All new construction and substantial improvements of  
859 nonresidential structures:

860 a. Have the lowest floor (including basement) elevated to or above a minimum of  
861 eighteen inches above the base flood elevation or a minimum of eighteen inches  
862 above the highest adjacent grade at least as high as the depth number specified in  
863 feet on the community's FIRM (at least eighteen inches if no depth number is  
864 specified);

- 865 b. Together with attendant utility and sanitary facilities be designed so that the  
866 structure is watertight to a minimum level eighteen inches above the base flood  
867 elevation or a minimum of eighteen inches above the highest adjacent grade at least  
868 as high as the depth number specified in feet on the community's FIRM (at least  
869 eighteen inches if no depth number is specified) with walls substantially  
870 impermeable to the passage of water and with structural components having the  
871 capability of resisting hydrostatic and hydrodynamic loads of effects of buoyancy;
- 872 c. A registered professional engineer or architect shall submit a certification to the  
873 floodplain administrator that the standards of this section, as proposed in section  
874 38-76 are satisfied;
- 875 d. Require within zones AH or AO that adequate drainage paths around structures on  
876 slopes, to guide floodwaters around and away from proposed structures.
- 877 (4) Enclosures. New construction and substantial improvements may have enclosures  
878 below the lowest floor provided that the enclosure is:
- 879 a. Used solely for parking of vehicles, building access or limited storage in an area  
880 other than a basement,
- 881 b. Designed to automatically equalize hydrostatic flood forces on exterior walls by  
882 allowing for the entry and exit of floodwaters. Designs for meeting this requirement  
883 must either be certified by a registered professional engineer or architect or meet or  
884 exceed the following minimum criteria:
- 885 1. A minimum of two openings on separate walls having a total net area of not less  
886 than one square inch for every square foot of enclosed area subject to flooding  
887 shall be provided.
- 888 2. The bottom of all openings shall be no higher than one foot above grade.
- 889 3. Openings may be equipped with screens, louvers, valves, or other coverings or  
890 devices provided that they permit the automatic entry and exit of floodwaters.
- 891 c. For any enclosed area below the lowest floor which is eighteen inches above the  
892 base flood elevation, all structures must be installed with flood-resistant materials.
- 893 (5) Recreational vehicles. Require that recreational vehicles placed on sites within zones  
894 A1—30, AH, and AE on the community's FIRM either:
- 895 a. Be on the site for fewer than 180 consecutive days, or
- 896 b. Be fully licensed and ready for highway use.
- 897 If neither of these conditions can be achieved, it is considered to be a manufactured  
898 home and is subject to the requirements of subsection 38-77(2).
- 899 (6) Utilities. If a proposed building site is in a special flood hazard area (SFHA), the building  
900 support utility systems for all new construction and substantial improvements shall:
- 901 a Be constructed with electrical, heating, ventilation, plumbing, and air conditioning  
902 equipment and other service facilities that are designed and/or located so as to  
903 prevent water from entering or accumulating within the components during  
904 conditions of flooding;
- 905 b Require within flood-prone areas new and replacement water supply systems to be  
906 designed to minimize or eliminate infiltration of floodwaters into the systems;
- 907 c. Require within flood-prone areas new and replacement sewage systems be  
908 designed to minimize or eliminate infiltration of floodwaters into the systems and  
909 discharges from the systems into floodwaters; and

910 d. Require on-site water disposal systems be located to avoid impairment to them or  
911 contamination from them during flooding.

912 (Ord. No. 2008-10, § 1, 7-15-2008; Ord. No. 2008-29, § 1, 11-18-2008)

913 Sec. 38-79. - Floodways.

914 Since the floodway is an extremely hazardous area due to the velocity of floodwaters which  
915 carry debris, potential projectiles and erosion potential, the following provisions shall apply to  
916 floodways:

917 (1) Encroachments to the floodway, including fill material of any kind, new construction and  
918 substantial improvements are prohibited;

919 (2) Drilling of water, gas and/or oil wells is prohibited;

920 (3) Storage of hazardous materials, in any form, is prohibited;

921 (4) Storage of any unanchored materials (which aren't considered fill or construction) are  
922 prohibited;

923 (5) For any other proposed development, hydrologic and hydraulic analyses must  
924 performed in accordance with standard engineering practice to demonstrate that the  
925 proposed development would not result in any increase in flood levels within the  
926 community during the occurrence of the base flood discharge;

927 (6) Under the provisions of 44 CFR Chapter 1, Section 65.12, of the National Flood Insurance  
928 Program Regulation, a community may permit encroachments within the adopted  
929 regulatory floodway that would result in an increase in base flood elevations, provided  
930 that the community first completes all of the provisions required by Section 65.12.

931 (Ord. No. 2008-10, § 1, 7-15-2008)

932 Sec. 38-80. - Coastal high hazard areas. (Zones V1-30, VE, and/or V)

933 Located within the areas of special flood hazard established in section 38-76, are areas  
934 designated as coastal high hazard areas (zones V1-30, VE, and/or V). These areas have special  
935 flood hazards associated with high velocity waters from tidal surges and hurricane wave wash;  
936 therefore, in addition to meeting all provisions outlined in this article, the following provisions  
937 must also apply:

938 (1) Obtain the elevation (in relation to mean sea level) of the bottom of the lowest structural  
939 member of the lowest floor (excluding pilings and columns) of all new and substantially  
940 improved structures, and whether or not such structures contain a basement. The  
941 floodplain administrator shall maintain a record of all such information.

942 (2) All new construction shall be located landward of the reach of mean high tide.

943 (3) All new construction and substantial improvements shall be elevated on pilings and  
944 columns so that:

945 a. The bottom of the lowest horizontal structural member of the lowest floor (excluding  
946 the pilings or columns) is elevated a minimum of eighteen inches above the base  
947 flood level,

948 b. The pile or column foundation and structure attached thereto is anchored to resist  
949 flotation, collapse and lateral movement due to the effects of wind and water loads  
950 acting simultaneously on all building components. Water loading values used shall  
951 be those associated with the base flood. Wind loading values used shall be those

952 required by applicable state or local building standards. A registered professional  
953 engineer or architect shall develop or review the structural design, specifications  
954 and plans for the construction, and shall certify that the design and methods of  
955 construction to be used are in accordance with accepted standards of practice for  
956 meeting the provisions of subsection (3) a. and b. of this section.

957 (4) Provide that all new construction and substantial improvements have the space  
958 below the lowest floor either free of obstruction or constructed with non-supporting  
959 breakaway walls, open wood lattice-work, or insect screening intended to collapse under  
960 wind and water loads without causing collapse, displacement, or other structural  
961 damage to the elevated portion of the building or supporting foundation system.

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

968 a. Breakaway wall collapse shall result from a water load less than that which would  
969 occur during the base flood, and

970 b. The elevated portion of the building and supporting foundation system shall not be  
971 subject to collapse, displacement, or other structural damage due to the effects of  
972 wind and water loads acting simultaneously on all building components (structural  
973 and nonstructural). Water loading values used shall be those associated with the  
974 base flood. Wind loading values used shall be those required by applicable State or  
975 local building standards. Such enclosed space shall be useable solely for parking of  
976 vehicles, building access, or storage. Such space shall not be used for human  
977 habitation.

978 (5) Prohibit the use of fill for structural support of buildings.

979 (6) Prohibit manmade alteration of sand dunes and mangrove stands that increase potential  
980 flood damage.

981 (7) Manufactured homes—Require that manufactured homes placed or substantially  
982 improved within zone V1-30, V, and VE on the community's FIRM on sites (i) outside of a  
983 manufactured home park or subdivision, (ii) in a new manufactured home park or  
984 subdivision, (iii) in an expansion to an existing manufactured home park or subdivision,  
985 or (iv) in an existing manufactured home park or subdivision on which a manufactured  
986 home has incurred "substantial damage" as the result of a flood, meet the standards of  
987 subsections (1) through (6) and that manufactured homes placed or substantially  
988 improved on other sites in an existing manufactured home park or subdivision within  
989 zones V1—30, V, and VE on the community's FIRM meet the requirements of subsection  
990 38-77(2) of this article.

991 (8) Recreational vehicles— Require that recreational vehicles placed on sites within zones  
992 V1—30, V, and VE on the community's FIRM either:

993 a. Be on the site for fewer than 180 consecutive days;

994 b. Be fully licensed and ready for highway use;

995 If neither of these conditions can be achieved, it is considered to be a manufactured  
996 home and is subject to the requirements of subsection 38-77(2).

997 c. Or meet the requirements of subsection 38-77(1)—(6).

998 (9) Utilities—If a proposed building site is in a special flood hazard area (SFHA), the building  
999 support utility systems for all new construction and substantial improvements shall:

- 1000            a. Be constructed with electrical, heating, ventilation, plumbing, and air conditioning  
1001            equipment and other service facilities that are designed and/or located so as to  
1002            prevent water from entering or accumulating within the components during  
1003            conditions of flooding;
- 1004            b. Require within flood-prone areas new and replacement water supply systems to be  
1005            designed to minimize or eliminate infiltration of floodwaters into the systems;
- 1006            c. Require within flood-prone areas new and replacement sewage systems be  
1007            designed to minimize or eliminate infiltration of floodwaters into the systems and  
1008            discharges from the systems into floodwaters; and
- 1009            d. Require on-site water disposal systems be located to avoid impairment to them or  
1010            contamination from them during flooding.

1011    (Ord. No. 2008-10, § 1, 7-15-2008; Ord. No. 2008-29, § 1, 11-18-2008)

1012    Sec. 38-81. - Standards for subdivision proposals within the SFHA.

- 1013    (a) All subdivision proposals including the placement of manufactured home parks and  
1014    subdivisions shall be consistent with section 38-32 of this article.
- 1015    (b) All proposals for the development of subdivisions including the placement of manufactured  
1016    home parks and subdivisions shall meet floodplain development permit requirements of  
1017    section 38-58 of this article.
- 1018    (c) Base flood elevation data shall be generated (or provided to the community) for subdivision  
1019    proposals and other proposed development including the placement of manufactured home  
1020    parks and subdivisions which is greater than 20 lots or two acres, whichever is lesser, if not  
1021    otherwise provided pursuant to section 38-76 of this article.
- 1022    (d) All subdivision proposals including the placement of manufactured home parks and  
1023    subdivisions shall have adequate drainage provided to reduce exposure to flood hazards.
- 1024    (e) All subdivision proposals including the placement of manufactured home parks and  
1025    subdivisions shall have public utilities and facilities such as sewer, gas, electrical and water  
1026    systems located and constructed to minimize or eliminate flood damage.

1027    (Ord. No. 2008-10, § 1, 7-15-2008)

1028    Sec. 38-82. - Areas outside of the SFHA.

- 1029    (a) Residential construction outside of SFHA (including manufactured homes). New construction  
1030    and substantial improvement of any residential structure as well as all manufactured homes  
1031    to be placed or substantially improved outside of a SFHA (or, but within 200 feet of a  
1032    watercourse) shall have the lowest floor, any ductwork, exposed plumbing and electrical  
1033    components elevated eighteen inches above the natural grade.
- 1034    (b) Areas between limits of 100-year flood and 500-year flood (shaded zone X). All new  
1035    construction and substantial improvement of residential and nonresidential structures within  
1036    shaded zone X designations shall meet the following standards:
- 1037            (1) All new construction and substantial improvements of residential structures shall have  
1038            the lowest floor, including basement, elevated 18 inches above the nearest adjacent A  
1039            zone base flood elevation specified in feet on the community flood insurance rate map,  
1040            as determined by the floodplain administrator.
- 1041            (2) All new construction and substantial improvements of nonresidential structures shall:

- 1042            a. Have the lowest floor, including basement, elevated 18 inches above the nearest  
1043            adjacent A zone base flood elevation specified in feet on the community flood  
1044            insurance rate map, as determined by the floodplain administrator;
- 1045            b. Together with attendant utility and sanitary facilities, be designed so that below the  
1046            base flood level of the nearest adjacent A zone the structure is watertight with walls  
1047            substantially impermeable to the passage of water and with structural components  
1048            having the capability of resisting hydrostatic and hydrodynamic loads and effect of  
1049            buoyancy. A registered professional engineer or architect shall submit a  
1050            certification to the floodplain administrator that the standards of this subsection as  
1051            proposed are satisfied;
- 1052            c. A registered professional engineer or registered public surveyor shall submit a  
1053            certification to the floodplain administrator that the standards of this subsection, as  
1054            proposed are satisfied.

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1057    (Ord. No. 2008-10, § 1, 7-15-2008; Ord. No. 2008-29, § 1, 11-18-2008)

1058    Sec. 38-83. - Alteration of a watercourse.

- 1059    (a) In a case where alterations are made to the channels of rivers, stream, or drainage ways, the  
1060    flood carrying capacity must be the same or greater as the original watercourse. Additionally,  
1061    once the alteration is made, the capacity of the altered or relocated watercourse must be  
1062    maintained over time.
- 1063    (b) If a development permit application proposes a stream alteration, the local official must notify  
1064    adjacent communities, the Texas Water Development Board, and provide a copy to the FEMA  
1065    region VI office.

1066    (Ord. No. 2008-10, § 1, 7-15-2008)