

# UDC ANNUAL UPDATE REQUEST FLOODPLAINS – AREAS OF SPECIAL FLOOD HAZARDS

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## Summary

Criteria for allowable development within floodplains are changed to enhance preservation of natural vegetation and ecological function of floodplains and maintain or improve water quality in streams, creeks, and rivers.

Among the specific changes are:

- Floodplain reclamation is disallowed in most situation
- Residential and non-residential buildings and parking are disallowed
- Manufactured houses are disallowed.
- Construction in areas of shallow flooding is disallowed.

## 35-F104 Statement of purpose.

The purpose of this division is to promote land use controls necessary to qualify the city for flood insurance under requirements of the National Flood Insurance Act of 1968 with provisions designed:

- (1) To protect human life and property exposed to the hazards of flooding;
- (2) To avoid increasing flood levels or flood hazards or creating new flood hazards areas;
- (3) To minimize public and private property losses due to flooding;
- (4) To preserve the natural floodplains where at all possible;
- (5) To ensure that potential property owners are notified if property is in a special flood hazard area;
- (6) To minimize the need for rescue and relief efforts associated with flooding and generally undertaken at the expense of the general public;
- (7) To minimize prolonged business interruptions;
- (8) To minimize damage to public facilities and utilities such as water and gas mains, electric, telephone and sewer lines, streets, and bridges located in special flood hazard areas;
- (9) To minimize expenditure of future public money for costly flood control projects; and
- (10) [To preserve the natural vegetation and ecological function of floodplains and improve or maintain water quality in streams, creeks, and rivers.](#)
- ~~(11) To help maintain a stable tax base by providing for the sound use and development of flood-prone areas in such a manner as to minimize future flood blight areas.~~

## Section A - Allowable Development Within the Regulatory Floodplain

- (f) The following development may be allowed in the regulatory 100-year floodplain and will require a Floodplain Development Permit:
- (1) All weather (passes the ultimate development 100-year flood) street crossings.
  - (2) Utility Construction [for stormwater or wastewater conveyance only.](#)
  - (3) Parks.
  - (4) Greenways.

- (5) ~~Recreational Facilities and Golf Courses.~~
- (6) Hike and bike trails.
- (7) Drainage improvements that mitigate existing or anticipated flood hazards where it is determined that no other viable alternative exists.
- (8) Capital Improvement Projects.
- (9) Maintenance activities necessary to maintain the storm water conveyance of the floodplain.
- (10) Drainage infrastructure repair.
- (11) Floodplain restoration.
- (12) Wetland reestablishment or mitigation.
- (13) Habitat reestablishment.
- (14) Installation of Flood Monitoring Controls – rain gages, early flood warning systems, high water detection systems, etc.
- (15) Installations of emergency devices necessary to warn, alarm and protect citizens at flood hazards.
- (16) Improvements to a structure that does not fall under the definition of Substantial Improvement.
- (17) ~~Elevating and /-or floodproofing structures in the floodplain.~~
- (18) ~~100-year floodplain reclamation where the watershed drainage area is less than 320 acres.~~
- (19) ~~Parking lot construction where water depths do not exceed 6".~~
- (20) ~~100-year floodplain reclamation in areas of ineffective flow.~~
- (21) ~~100-year floodplain reclamation in overbank areas subject to extensive shallow (0'-3') flooding where flood velocities in the overbank area are less than 3 fps.~~
- (22) Historic structure reconstruction, rehabilitation or restoration.
- (23) Development in the Low Risk Flood Area subject to the requirements of Section 35-505(q).
- (24) ~~Reclamation between the 100-year floodplain and the regulatory 100-year floodplain. Elevate development one foot (1') above the water surface elevations established for the regulatory 100-year floodplain.~~
- (25) Projects that are in the best interest of the public.
- (26) ~~Non-residential construction. Some or all of the following restrictions will be placed on non-residential construction in the floodplain:~~
  - ~~A. Demonstrate that no alternate site is available for development within the property that is out of the floodplain.~~
  - ~~B. Meet all the requirements of Sec. 35-505(n)(2) Nonresidential Construction.~~
  - ~~C. Ensure the lowest finished floor elevation and/or the height to which the building must be floodproofed is no lower than the higher elevation of the energy grade line or the water surface elevation plus one foot (1') of the regulatory 100-year floodplain.~~
  - ~~D. No increase in water surface elevations over ultimate conditions is permitted anywhere within the watershed as a result of the construction. An increase in water surface elevation is permitted on the developer's property if the floodplain is contained in a dedicated drainage easement or right-of-way.~~
  - ~~E. Unflooded vehicular access must be available to the development from a public street.~~
  - ~~F. Demonstrate that the development will not increase the 100-year floodplain predevelopment velocities above 6 fps. No increase in velocity will be permitted if predevelopment velocities exceed 6 fps.~~
  - ~~G. Demonstrate that the development will not be subject to damage from hydrostatic or hydrodynamic forces, debris impact, soaking, sediments and contaminants.~~
  - ~~H. Provide, operate and maintain an early flood warning system for the development. Warning Systems will be subject to periodic inspection by the City of San Antonio to ensure they are maintained and operated as intended.~~

- I. ~~Complete the Letter of Map Revision process for the development.~~
  - J. ~~The owner shall indemnify the City of San Antonio against damages resulting from flooding on the owner's site.~~
  - K. ~~Other site-specific restrictions and / or requirements deemed appropriate by the Floodplain Administrator.~~
- (27) ~~Construction in areas of Flood Inundation must meet the requirements of Sec. 35-F-141 General Standards.~~ Structures associated with park and recreation development (fences, open construction type bleachers, concession stands etc.) ~~may be~~ are not permitted in areas of flood inundation. ~~Keep this construction out of the flood conveyance section of the floodplain. Compensate for loss of storage. Secure structures to minimize damage from hydrostatic or hydrodynamic forces (including buoyancy) and debris impact.~~

## Section B - Prohibited Development within the Regulatory Floodplain

- (a) The following development will not be allowed in the regulatory floodplain.
- 1) Development without first obtaining a Floodplain Development Permit.
  - 2) Habitable structures.
  - 3) Street or access construction that does not provide all weather access.
  - 4) Activity prohibited by Chapter 34, Article VI of the City Code "Aquifer Recharge Zone and Watershed Protection".
  - 5) 100-year floodplain reclamation where the watershed drainage area exceeds 100-acres except as provided in Section A.
  - 6) Structures other than vehicle or pedestrian bridges.
  - 7) Streets other than those crossing at approximately a right angle to the centerline of the watercourse.
  - 8) Parking areas.

## 35-F141. General standards

- (a) In all areas of special flood hazards the following provisions are required;
- (1) All new construction or substantial improvements shall be anchored to prevent flotation, collapse or lateral movement of the structure resulting from hydrodynamic and hydrostatic loads including the effects of buoyancy (see U .S. Corps of Engineers Flood Proofing Regulations, Chapter 6, Section 610).
  - (2) All new construction or substantial improvements shall be constructed by methods and practices that minimize flood damage (see the United States Corps of Engineers Flood Proofing Regulations, Chapter 5 and Chapter 6).
  - (3) All new construction or substantial improvements shall be constructed with materials and utility equipment resistant to flood damage (see the United States Corps of Engineers Flood Proofing Regulations, Chapter 12 and Chapter 13).
  - (4) ~~All new and replacement toilet, sinks, showers, water heaters, pressure tanks, furnaces, and other permanent plumbing installations shall be installed at or above the base flood elevation or floodproofed.~~
  - (5) All ~~new and~~ replacement water supply systems shall be designed to San Antonio Water System standards to minimize or eliminate infiltration of flood waters into the system and discharges from the systems into flood water.
  - (6) New and replacement sanitary sewage systems shall be designed to city sanitary sewer standards to minimize or eliminate infiltration of flood waters into the system and discharges from the systems into flood water.

- (7) On-site waste disposal systems shall be located to avoid impairment to them or contamination from them during flooding. Waste disposal systems shall be located above the base flood water surface elevation.
- (8) Filling or the disposal of any materials ~~is prohibited, which will diminish the water flow capacity of any waterway or floodplain defined by this ordinance must be compensated for with remedial action by additional excavation or otherwise so as not to diminish water capacity.~~ is prohibited.
- (9) Floodplain engineering and procedures requirements within FEMA or United States Corps of Engineers official flood prone areas shall conform to the engineering criteria as set out in Exhibit D.

### 35-F142 Specific standards

In all areas of special flood hazards where base flood elevation data has been provided in accordance with these regulations, the following provisions are required:

- (a) Residential construction. Construction of habitable structures within the regulatory floodplain (base flood) is not allowed ~~unless the floodplain is revised with a floodplain permit. Residential construction must be elevated one foot (1') above the regulatory floodplain.~~
- (b) **Nonresidential construction.**
  - 1. ~~New construction or substantial improvements of any commercial, industrial or other nonresidential structure is not allowed. shall have either (a) the lowest floor, including basement, elevated to one foot (1') above the level of base flood elevation, or (b) have the lowest floor, including basement, with attendant utility and sanitary facilities, be floodproofed so that below the base flood level plus one foot (1') and above the lowest floor, the structure is watertight with walls substantially impermeable to the passage of water and with structural components having the capability of resisting hydrostatic and hydrodynamic loads and the effects of buoyancy.~~
  - 2. ~~New construction and substantial improvements, with fully enclosed areas below the lowest floor (including basement) that are subject to flooding shall be designed to automatically equalize hydrostatic flood forces on exterior walls by allowing for the entry and exit of floodwaters. A minimum of two (2) openings having a total net area of not less than one square inch for every square foot of enclosed area subject to flooding shall be provided. The bottom of all openings shall be no higher than one foot above grade. Openings may be equipped with screens, louvers, or other covering or devices provided that they permit the automatic entry and exit of floodwaters.~~
  - 3. ~~Electrical heating, ventilation, plumbing and air conditioning equipment and other service facilities shall be designed and/or located so as to prevent water from entering or accumulating within the components during conditions of flooding.~~
  - 4. ~~A registered professional engineer or registered architect shall submit a certification to the director of public works that the standards of this subsection are satisfied. The certification shall include a statement to the effect that the engineer has developed and/or reviewed structural design, specifications, and plans for the construction and finds them to be in accordance with this subsection. The director of public works shall utilize the flood proofing regulations manual prepared by the United States Army Corps of Engineers as a guide in determining construction requirements.~~
- (c) **Manufactured homes.**

(1) Manufactured homes are not allowed within the 100 year floodplain. ~~All manufactured homes shall be anchored to resist flotation, collapse, or lateral movement. Methods of anchoring may include, but are not limited to the following (refer to FEMA Manual #85, Manufactured Home Installation in Flood Hazard Areas):~~

- A. ~~Over the top ties at each of the four (4) corners of the manufactured home with two (2) additional ties per side at intermediate locations. Manufactured homes more than fifty (50) feet long require one (1) additional tie per side.~~
- B. ~~Frame ties at each corner of the home with five (5) additional ties per side at intermediate points. Manufactured homes more than fifty (50) feet long require four (4) additional ties per side.~~
- C. ~~All components of the anchoring system shall be capable of carrying a force of four thousand eight hundred (4,800) pounds;~~
- D. ~~Any additions to the manufactured home shall be similarly anchored.~~

(2) All manufactured homes to be placed or substantially improved within Zones AI-30, AH, and AE shall conform to the following criteria:

- A. ~~Stands or lots are elevated on compacted fill or on pilings so that the lowest floor of the mobile home will be one (1) foot above the base flood level. A registered professional civil engineer, registered architect, or registered public surveyor shall submit a certification to the director of public works that the standard of this paragraph complies with subsection (a).~~
- B. ~~Adequate surface drainage and access for a hauler are provided.~~
- C. ~~In the instance of elevation of pilings: (i) lots are large enough to permit steps, (ii) piling foundations are placed in stable soil no more than ten (10) feet apart, and (iii) reinforcement is provided for pilings more than six (6) feet above the ground level.~~

(d) Floodways. Located within the areas of special flood hazard are areas designated as floodways. Since the floodway is an extremely hazardous area due to the velocity of flood waters which carry debris, potential projectiles and erosion potential, the following provisions shall apply:

- 1. ~~Encroachments are prohibited, including fill, new construction, substantial improvements and other developments, unless certification by a registered professional engineer or architect is provided demonstrating that encroachments shall not result in any increase in flood levels during occurrence of the base flood discharge.~~
- 2. ~~If subparagraph (1) above is satisfied, all new construction and substantial improvements shall comply with all applicable flood hazard reduction provisions of this article.~~
- 3. ~~The placement of any manufactured home is prohibited except in an existing manufactured home park or subdivision.~~

### **35-F143 Areas of shallow flooding (AO Zones).**

(a) Located within the areas of special flood hazard are areas designated as areas of shallow flooding. These areas have special flood hazards associated with base flood depths one (1) to three (3) feet where a clearly defined channel does not exist and where the path of flooding is unpredictable and indeterminate. Therefore, in these areas the following provisions shall apply:

- (1) All new construction and substantial improvements of residential structures are prohibited, shall have the lowest floor elevated one (1) foot above the highest adjacent grade or one (1) foot above the depth number specified on the community's FIRM (at least two (2) feet if no depth number is specified), whichever is higher controls.
- (2) All new construction and substantial improvements of nonresidential structures shall:
  - a. Have the lowest floor elevated above the highest adjacent grade as high as the depth number specified on the community's FIRM, (at least two (2) feet if no depth number is specified).
  - b. Together with attendant utility and sanitary facilities, be completely floodproofed to or above that level so that any space below that level is watertight with walls substantially impermeable to the passage of water and with structural components having the capability of resisting hydrostatic and hydrodynamic loads and effects of buoyancy.
  - c. A registered professional civil engineer, registered public surveyor, or registered architect shall submit a certification to the director of public works that the standards of this section are satisfied.
  - d. Require within Zones AH and AO, adequate drainage paths around structures on slopes to guide floodwaters around and away from proposed structures.