

Chapter 16.18

FLOOD HAZARD AREAS AND IMPLEMENTATION OF NATIONAL FLOOD INSURANCE PROGRAM**Sections:**

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Section 16.18.010 Findings of fact.

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

B. These flood losses are caused by uses that are inadequately elevated, floodproofed, or protected from flood damage. The cumulative effect of obstructions in areas of special flood hazards which increase flood heights and velocities also contributes to flood losses. (Ord. 6997 §§ 5, 6, 2008; Ord. 5640 § 1, 1988)

Section 16.18.015 Purpose.

This chapter is adopted pursuant to the requirements of the National Flood Insurance Program, 42 USC 4001 et seq., including all regulations adopted pursuant thereto, and

supplements the regulations previously adopted and codified in this code. The purpose of this chapter is to promote and protect the public health, safety, and general welfare, and to minimize public and private losses due to flood conditions in specific areas by provisions designed:

- A. To protect human life and health;
- B. To minimize expenditure of public money for costly flood control projects;
- C. To minimize the need for rescue and relief efforts associated with flooding and generally undertaken at the expense of the general public;
- D. To minimize prolonged business interruptions;
- E. To minimize damage to public facilities and utilities such as water and gas mains, electric, telephone and sewer lines, streets and bridges located in areas of special flood hazard;
- F. To help maintain a stable tax base by providing for the sound use and development of areas of special flood hazard so as to minimize future flood blight areas;
- G. To insure that potential buyers are notified that property is in an area of special flood hazard; and
- H. To insure that those who occupy the areas of special flood hazard assume responsibility for their actions. (Ord. 6997 §§ 5, 6, 2008; Ord. 5640 § 1, 1988; Ord. 5039 § 1, 1982)

Section 16.18.020 Methods of reducing flood losses.

In order to accomplish its purposes, this chapter includes methods and provisions for:

- A. Restricting or prohibiting uses which are dangerous to health, safety, and property due to water or erosion hazards, or which result in damaging increases in erosion or flood heights or velocities;
- B. Requiring that uses vulnerable to floods, including facilities which serve such uses, be protected against flood damage at the time of initial construction;
- C. Controlling the alteration of natural floodplains, stream channels, and natural protective barriers, which help accommodate or channel floodwaters;
- D. Controlling filling, grading, dredging, and other development which may increase flood damage; and
- E. Preventing or regulating the construction of flood barriers which will unnaturally divert floodwaters or which may increase flood hazards in other areas. (Ord. 6997 §§ 5, 6, 2008; Ord. 5640 § 1, 1988)

Section 16.18.025 Definitions.

Unless specifically defined below, words or phrases used in this chapter shall be interpreted so as to give them the meaning they have in common usage and to give this chapter its most reasonable application. These definitions are for the purpose of this chapter, and are specific to this chapter, except as explicitly stated otherwise.

"A zone" see "Special flood hazard area".

"Accessory structure" means a structure that is either:

1. Solely for the parking of no more than 2 cars; or
2. A small, low cost shed for limited storage, less than 150 square feet and \$1,500 in value.

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

"Alluvial fan" means a geomorphologic feature characterized by a cone or fan shaped deposit of boulders, gravel, and fine sediments that have been eroded from mountain slopes, transported by flood flows, and then deposited on the valley floors, and which is subject to flash flooding, high velocity flows, debris flows, erosion, sediment movement and deposition, and channel migration.

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

"Appeal" means a request for a review of any provision of this chapter.

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

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

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

"Base flood elevation" (BFE) means the elevation shown on the Flood Insurance Rate Map for Zones AE, AH, A1-30, VE and V1-V30 that indicates the water surface elevation resulting from a flood that has a one percent or greater chance of being equaled or exceeded in any given year.

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

"Building" see "Structure".

"Development" means any man made change to improved or unimproved real estate, including but not limited to buildings or other structures, mining, dredging, filling, grading, paving, excavation or drilling operations or storage of equipment or materials. "Development Permit" means a permit issued by the City of Riverside for any Development as defined in Title 19, Article X of this Code.

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

"Existing manufactured home park or subdivision" means a manufactured home park or subdivision for which the construction of facilities for servicing the lots on which the manufactured homes are to be affixed (including, at a minimum, the installation of utilities, the construction of streets, and either final site grading or the pouring of concrete pads) was completed before 1983.

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

"Flood, flooding, or flood water" means a general and temporary condition of partial or complete inundation of normally dry land areas from the overflow of inland or tidal waters; the unusual and rapid accumulation or runoff of surface waters from any source; and/or mudslides (i.e., mudflows);

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

"Flood Insurance Study (FIS)" means the official report provided by FEMA that includes flood profiles, the Flood Insurance Rate Map, and the water surface elevation of the base flood.

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

"Floodplain Administrator" is the community official designated by title to administer, implement, and enforce the floodplain management regulations, including granting or denying floodplain variances. The City Engineer is the Floodplain Administrator for the City of Riverside.

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

"Floodplain management regulations" means this chapter and other zoning chapters, subdivision regulations, building codes, health regulations, special purpose chapters (such as grading and erosion control) and other application of police power which control development in

flood prone areas. This term describes federal, state or local regulations in any combination thereof which provide standards for preventing and reducing flood loss and damage.

"Floodplain variance" means a grant of relief from the requirements of this chapter which permits construction in a manner that would otherwise be prohibited by this chapter.

"Floodproofing" means any combination of structural and nonstructural additions, changes, or adjustments to structures which reduce or eliminate flood damage to real estate or improved real property, water and sanitary facilities, structures, and their contents. For guidelines on dry and wet floodproofing, see FEMA Technical Bulletins TB 1-93, TB 3-93, and TB 7-93.

"Floodway" means the channel of a river or other watercourse and the adjacent land areas that must be reserved in order to discharge the base flood without cumulatively increasing the water surface elevation more than one foot. Also referred to as "Regulatory Floodway."

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

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

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

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

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

"Historic structure" means any structure so defined in Title 20 of this Code, or that is:

1. Listed individually in the National Register of Historic Places (a listing maintained by the Department of Interior) or preliminarily determined by the Secretary of the Interior as meeting the requirements for individual listing on the National Register; Certified or preliminarily determined by the Secretary of the Interior as contributing to the historical significance of a registered historic district or a district preliminarily determined by the Secretary to qualify as a registered historic district;

2. Individually listed on a state inventory of historic places in states with historic preservation programs which have been approved by the Secretary of Interior; or

3. Individually listed on a local inventory of historic places in communities with historic preservation programs that have been certified either by an approved state program as determined by the Secretary of the Interior or directly by the Secretary of the Interior in states without approved programs.

"Levee" means a man made structure, usually an earthen embankment, designed and constructed in accordance with sound engineering practices to contain, control or divert the flow of

water so as to provide protection from temporary flooding.

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

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

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

- a. The flood openings standard in Section 16.18.100.C.4;
- b. The anchoring standards in Section 16.18.100.A;
- c. The construction materials and methods standards in Section 16.18.100.B; and
- d. The standards for utilities in Section 16.18.105.

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

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

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

"Market value" is determined by estimating the cost to replace the structure in new condition and adjusting that cost figure by the amount of depreciation which has accrued since the structure was constructed. See Section 16.18.050.

"Mean sea level" means, for purposes of the National Flood Insurance Program, the National Geodetic Vertical Datum (NGVD) of 1929, North American Vertical Datum (NAVD) of 1988, or other datum, to which base flood elevations shown on a community's Flood Insurance Rate Map are referenced.

"New construction", for floodplain management purposes, means structures for which the "start of construction" commenced on or after 1983, and includes any subsequent improvements to such structures.

"New manufactured home park or subdivision" means a manufactured home park or subdivision for which the construction of facilities for servicing the lots on which the manufactured homes are to be affixed (including at a minimum, the installation of utilities, the construction of streets, and either final site grading or the pouring of concrete pads) is completed on or after 1983.

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

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

"Person" means an individual, firm, partnership, association or corporation, or an agent of the aforementioned, or this State or its agencies or political subdivisions.

"Program deficiency" means a defect in a community's floodplain management regulations or administrative procedures that impairs effective implementation of those floodplain management regulations.

"Public safety and nuisance" means that the granting of a Floodplain variance must not result in anything which is injurious to safety or health of an entire community or neighborhood, or any considerable number of persons, or unlawfully obstructs the free passage or use, in the

customary manner, of any navigable lake, or river, bay, stream, canal, or basin.

"Recreational vehicle" means a vehicle which is:

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

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

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

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

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

"Special Flood Hazard Area (SFHA)" means an area in the floodplain subject to a one percent or greater chance of flooding in any given year. It is shown on an FHBM or FIRM as Zone A, AO, A1-A30, AE, A99, or AH.

"Start of construction" includes substantial improvement and other proposed new development and means the date the building permit was issued, provided the actual start of construction, repair, reconstruction, rehabilitation, addition, placement, or other improvement was within 180 days from the date of the permit. The actual start means either the first placement of permanent construction of a structure on a site, such as the pouring of slab or footings, the installation of piles, the construction of columns, or any work beyond the stage of excavation; or the placement of a manufacture home on a foundation. Permanent construction does not include land preparation, such as clearing, grading, and filling; nor does it include the installation of streets and/or walkways; nor does it include excavation for a basement, footings, piers, or foundations or the erection of temporary forms; nor does it include the installation on the property of accessory buildings, such as garages or sheds not occupied as dwelling units or not part of the main structure. For a substantial improvement, the actual start of construction means the first alteration of any wall, ceiling, floor, or other structural part of a building, whether or not that alteration affects the external dimensions of the building.

"Structure" means a walled and roofed building that is principally above ground; this includes a gas or liquid storage tank or a manufactured home.

"Substantial damage" means either:

1. Damage of any origin sustained by a structure whereby the cost of restoring the structure to its before damaged condition would equal or exceed 50 percent of the market value of the structure before the damage occurred; or
2. Flood-related damages sustained by a structure on two separate occasions during a 10-year period for which the cost of repairs at the time of each such event, on the average, equals or exceeds 25 percent of the market value of the structure before the damage occurred. This is also known as "repetitive loss."

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

1. Any project for improvement of a structure to correct existing violations or state or

local health, sanitary, or safety code specifications which have been identified by the local code enforcement official and which are the minimum necessary to assure safe living conditions; or

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

"Violation" means the failure of a structure or other development to be fully compliant with this chapter. A structure or other development without the elevation certificate, other certifications, or other evidence of compliance required in this chapter is presumed to be in violation until such time as that documentation is provided.

"Water surface elevation" means the height, in relation to the National Geodetic Vertical Datum (NGVD) of 1929, North American Vertical Datum (NAVD) of 1988, or other datum, of floods of various magnitudes and frequencies in the floodplains of coastal or riverine areas.

"Watercourse" means a lake, river, creek, stream, wash, arroyo, channel or other topographic feature on or over which waters flow at least periodically. Watercourse includes specifically designated areas in which substantial flood damage may occur. (Ord. 6997 §§ 5, 6, 2008; Ord. 5640 § 1, 1988; Ord. 5039 § 2, 1982)

Section 16.18.030 Applicability.

This chapter shall apply to all areas of special flood hazards within the jurisdiction of the City of Riverside. The areas of special flood hazard identified by the Federal Emergency Management Agency (FEMA) in the "Flood Insurance Study (FIS) for City of Riverside" and accompanying Flood Insurance Rate Maps (FIRMs) dated August 2, 1996, and all subsequent amendments and/or revisions, are hereby adopted by reference and declared to be a part of this chapter. This FIS and attendant mapping is the minimum area of applicability of this chapter and may be supplemented by studies for other areas which allow implementation of this chapter and which are recommended to the City Council by the Floodplain Administrator. The FIS, FIRMs and any other studies are on file at the City of Riverside, Public Works Department, 3900 Main Street, Riverside, CA 92522. (Ord. 6997 §§ 5, 6, 2008; Ord. 6369 § 1, 1997; Ord. 6181 § 1, 1994; Ord. 5640 § 1, 1988; Ord. 5039 § 3, 1982)

Section 16.18.035 Compliance.

A. No structure or land shall hereafter be constructed, located, extended, converted, or altered without full compliance with the terms of this chapter and other applicable regulations. Violation of the provisions of this chapter by failure to comply with any of its requirements (including violations of conditions and safeguards) shall constitute a misdemeanor. Nothing herein shall prevent the City Council from taking such lawful action as is necessary to prevent or remedy any violation.

B. This chapter is not intended to repeal, abrogate, or impair any existing easements, covenants, or deed restrictions. However, where this chapter and another chapter, easement, covenant, or deed restriction conflict or overlap, whichever imposes the more stringent restrictions shall prevail. (Ord. 6997 §§ 5, 6, 2008; Ord. 5640 § 1, 1988; Ord. 5039 § 4, 1982)

Section 16.18.040 Interpretation.

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

A. Considered as minimum requirements;

B. Liberally construed in favor of the City of Riverside; and

C. Deemed neither to limit nor repeal any other powers granted under State statutes.

(Ord. 6997 §§ 5, 6, 2008; Ord. 5640 § 1, 1988)

Section 16.18.045 Permit Review.

The Floodplain Administrator or designee shall review all development permits to determine:

A. Permit requirements of this chapter have been satisfied, including determination of substantial improvement and substantial damage of existing structures;

- B. All other required state and federal permits have been obtained;
- C. The site is reasonably safe from flooding;
- D. The proposed development does not adversely affect the carrying capacity of areas where base flood elevations have been determined but a floodway has not been designated. This means that the cumulative effect of the proposed development when combined with all other existing and anticipated development will not increase the water surface elevation of the base flood more than one foot at any point within the City of Riverside; and
- E. All Letters of Map Revision (LOMR's) for flood control projects are approved prior to the issuance of building permits. Building Permits must not be issued based on Conditional Letters of Map Revision (CLOMR's). Approved CLOMR's allow construction of the proposed flood control project and land preparation as specified in the "start of construction" definition.
- F. No permit or approval for development in any area of special flood hazards will be granted until the Floodplain Administrator or designee has determined that the provisions of this chapter have been met. When the information required or the procedures involved in the processing of such application or permit is not sufficient to address the matters required by this chapter, such additional information as reasonably required by the Floodplain Administrator shall be filed by the applicant prior to the processing of the application. Such additional information shall include the following: proposed elevation in relation to mean sea level of the lowest floor (including basement) of all structures; proposed elevation in relation to mean sea level to which any structure will be floodproofed; all required certifications; and description of the extent to which any watercourse will be altered or relocated as a result of the proposed development. (Ord. 6997 §§ 5, 6, 2008; Ord. 5640 § 1, 1988; Ord. 5039 § 5, 1982)

Section 16.18.050 Development of Substantial Improvement and Substantial Damage Procedures.

The Floodplain Administrator or designee shall develop detailed procedures for identifying and administering requirements for substantial improvement and substantial damage.

- A. The cost of replacement of the structure shall be based on a square foot cost factor determined by reference to a building cost estimating guide recognized by the building construction industry.
- B. The amount of depreciation shall be determined by taking into account the age and physical deterioration of the structure and functional obsolescence as approved by the Floodplain Administrator, but shall not include economic or other forms of external obsolescence.
- C. Use of replacement costs or accrued depreciation factors different from those contained in recognized building cost estimating guides may be considered only if such factors are included in a report prepared by an independent professional appraiser and supported by a written explanation of the differences.

The Floodplain Administrator or designee shall assure procedures are coordinated with other departments/divisions and implemented by community staff. (Ord. 6997 §§ 5, 6, 2008; Ord. 5640 § 1, 1988; Ord. 5039 § 6, 1982)

Section 16.18.055 Review, Use and Development of Other Base Flood Data.

When base flood elevation data has not been provided in accordance with Section 16.18.030, the Floodplain Administrator shall obtain, review, and reasonably utilize any base flood elevation and floodway data available from a federal or state agency, or other source, in order to administer Sections 16.18.100 through 16.18.120. Any such information shall be submitted to the City Council for adoption. In the Floodplain Administrator or designee's discretion, a base flood elevation may be obtained using one of two methods from the FEMA publication, FEMA 265, "Managing Floodplain Development in Approximate Zone A Areas - A Guide for Obtaining and Developing Base (100-year) Flood Elevations" dated July 1995. (Ord. 6997 §§ 5, 6, 2008)

Section 16.18.060 Notification of Other Agencies.

A. Notification of other agencies is necessary so that upon confirmation of physical changes affecting flooding conditions, risk premium rates and floodplain management requirements are based on current data.

B. When undertaking or approving the alteration or relocation of a watercourse, the Floodplain Administrator or designee shall:

1. Notify adjacent communities and the California Department of Water Resources prior to alteration or relocation;
2. Submit evidence of such notification to the Federal Emergency Management Agency; and
3. Assure that the flood carrying capacity within the altered or relocated portion of said watercourse is maintained.

C. If physical alterations cause Base Flood Elevation changes:

1. Within 6 months of information becoming available or project completion, whichever comes first, the Floodplain Administrator shall submit or assure that the permit applicant submits technical or scientific data to FEMA for a Letter of Map Revision (LOMR).

2. All LOMR's for flood control projects are approved prior to the issuance of building permits. Building Permits must not be issued based on Conditional Letters of Map Revision (CLOMR's). Approved CLOMR's allow construction of the proposed flood control project and land preparation as specified in the "start of construction" definition.

D. Upon changes in corporate boundaries: Notify FEMA in writing whenever the corporate boundaries have been modified by annexation or other means and include a copy of a map of the community clearly delineating the new corporate limits. (Ord. 6997 §§ 5, 6, 2008; Ord. 5640 § 1, 1988; Ord. 5039 § 9, 1982)

Section 16.18.065 Documentation of Floodplain Development.

The Floodplain Administrator or designee shall obtain, maintain for public inspection, and make available as needed the following:

1. Certification required by Section 16.18.100.C.1 and Section 16.18.110 (lowest floor elevations);
2. Certification required by Section 16.18.100.C.2 (elevation or floodproofing of nonresidential structures);
3. Certification required by Section 16.18.100.C.4 (wet floodproofing standard);
4. Certification of elevation required by Section 16.18.110.A.3 (subdivisions and other proposed development standards);
5. Certification required by Section 16.18.125 (floodway encroachments); and
6. A record of all Floodplain variance actions, including justification for their issuance, and report such Floodplain variances issued in its biennial report submitted to FEMA. (Ord. 6997 §§ 5, 6, 2008; Ord. 5640 § 1, 1988)

Section 16.18.070 Map Determination.

Where there appears to be a conflict between a mapped boundary and actual field conditions, the Floodplain Administrator or designee shall interpret the exact location of the special flood hazard area boundaries. The person contesting the location of the boundary shall be given a reasonable opportunity to appeal the interpretation as provided in Section 16.18.080. (Ord. 6997 §§ 5, 6, 2008; Ord. 5039 § 7, 1982)

Section 16.18.075 Remedial Action.

The Floodplain Administrator or designee may take action to remedy violations of this Chapter as specified in Section 16.18.035. (Ord. 6997 §§ 5, 6, 2008; Ord. 5039 § 11, 1982)

Section 16.18.080 Biennial Report.

The Floodplain Administrator or designee shall complete and submit Biennial Report to FEMA. (Ord. 6997 §§ 5, 6, 2008)

Section 16.18.085 Planning.

The Floodplain Administrator or designee shall assure community's General Plan is consistent with floodplain management objectives herein. (Ord. 6997 §§ 5, 6, 2008; Ord. 5640 § 1, 1988; Ord. 5039 § 12, 1982)

Section 16.18.090 Development Permits.

Application for a development permit, including manufactured homes, within any area of special flood hazard established in Section 16.18.030 shall be made on forms furnished by the City of Riverside. The applicant shall provide the following minimum information:

- A. Plans in duplicate, drawn to scale, showing:
 1. Location, dimensions, and elevation of the area in question, existing or proposed structures, storage of materials and equipment and their location;
 2. Proposed locations of water supply, sanitary sewer, and other utilities;
 3. Grading information showing existing and proposed contours, any proposed fill, and drainage facilities;
 4. Location of the regulatory floodway when applicable;
 5. Base flood elevation information as specified in Section 16.18.030 or Section 16.18.055;
 6. Proposed elevation in relation to mean sea level, of the lowest floor (including basement) of all structures; and
 7. Proposed elevation in relation to mean sea level to which any nonresidential structure will be floodproofed, as required in Section 16.18.100.C.2 of this chapter and detailed in FEMA Technical Bulletin TB 3-93.
- B. Certification from a registered civil engineer or architect that the nonresidential floodproofed building meets the floodproofing criteria in Section 16.18.100.C.2.
- C. For a crawl-space foundation, location and total net area of foundation openings as required in Section 16.18.100.C.4 of this chapter and detailed in FEMA Technical Bulletins 1-93 and 7-93.
- D. Description of the extent to which any watercourse will be altered or relocated as a result of proposed development.
- E. All appropriate certifications listed in Section 16.18.065 of this chapter. (Ord. 6997 §§ 5, 6, 2008; Ord. 5640 § 1, 1988; Ord. 5039 § 13, 1982)

Section 16.18.095 Appeals.

An aggrieved applicant may appeal any requirement, decision, or determination made by the Floodplain Administrator in the enforcement or administration of this chapter. Such appeal shall be made in accordance with the procedures set forth in Section 2.40.030 of the Riverside Municipal Code. (Ord. 6997 §§ 5, 6, 2008; Ord. 5640 § 1, 1988)

Section 16.18.100 Standards of Construction.

In all areas of special flood hazards the following standards are required:

- A. Anchoring. All new construction and substantial improvements of structures, including manufactured homes, shall be adequately anchored to prevent flotation, collapse or lateral movement of the structure resulting from hydrodynamic and hydrostatic loads, including the

effects of buoyancy.

B. Construction Materials and Methods. All new construction and substantial improvements of structures, including manufactured homes, shall be constructed:

1. With flood resistant materials, and utility equipment resistant to flood damage;
2. Using methods and practices that minimize flood damage;
3. With electrical, heating, ventilation, plumbing and air conditioning equipment and other service facilities that are designed and/or located so as to prevent water from entering or accumulating within the components during conditions of flooding; and
4. Within Zones AH or AO, so that there are adequate drainage paths around structures on slopes to guide flood waters around and away from proposed structures.

C. Elevation and Floodproofing.

1. Residential construction. Upon the completion of the structure pad, the elevation of the lowest floor, including basement, shall be certified by a registered civil engineer or licensed land surveyor, and verified by the community inspector to be properly elevated. Such certification and verification shall be filed by the Public Works Department. All new construction or substantial improvements of residential structures shall have the lowest floor, including basements:

- a. In AE, AH, A1-30 Zones, elevated to or above the base flood elevation.
- b. In an AO Zone, elevated above the highest adjacent grade to a height equal to or exceeding the depth number specified in feet on the FIRM, or elevated at least 2 feet above the highest adjacent grade if no depth number is specified.
- c. In an A Zone, without BFE's specified on the FIRM [unnumbered A zone], elevated to or above the base flood elevation; as determined under Section 16.18.055.

2. Nonresidential construction. All new construction or substantial improvements of nonresidential structures shall either be elevated to conform with Section 16.18.100.C.1 or:

- a. Be floodproofed, together with attendant utility and sanitary facilities, below the elevation recommended under Section 16.18.100.C.1, so that the structure is watertight with walls substantially impermeable to the passage of water;
- b. Have structural components capable of resisting hydrostatic and hydrodynamic loads and effects of buoyancy; and
- c. Be certified by a registered civil engineer or architect that the standards of Section 16.18.100.C.2.a & b are satisfied. Such certification shall be provided to the Floodplain Administrator.

3. Garages and low-cost accessory structures.

a. A garage attached to a residential structure, constructed with the garage floor slab below the BFE, must be designed to allow for the automatic entry of flood waters. See Section 16.18.100.C.3. Areas of the garage below the BFE must be constructed with flood resistant materials. See Section 16.18.100.B.

b. A garage attached to a nonresidential structure must meet the above requirements or be dry floodproofed. For guidance on below grade parking areas, see FEMA Technical Bulletin TB-6.

c. "Accessory structures" used solely for parking (2 car detached garages or smaller) or limited storage (small, low-cost sheds), as defined in Section 16.18.025, may be constructed such that its floor is below the base flood elevation (BFE), provided the structure is designed and constructed in accordance with the following requirements:

1. Use of the accessory structure must be limited to parking or limited storage;
2. The portions of the accessory structure located below the BFE must be built using flood-resistant materials;
3. The accessory structure must be adequately anchored to prevent flotation, collapse and lateral movement;
4. Any mechanical and utility equipment in the accessory structure must be elevated or floodproofed to or above the BFE;

5. The accessory structure must comply with floodplain encroachment provisions in Section 16.18.125; and

6. The accessory structure must be designed to allow for the automatic entry of flood waters in accordance with Section 16.18.100.C.4.

d. Detached garages and accessory structures not meeting the above standards must be constructed in accordance with all applicable standards in Section 16.18.100.

4. Flood openings. All new construction and substantial improvements of structures with fully enclosed areas below the lowest floor (excluding basements) that are usable solely for parking of vehicles, building access or storage, and which are subject to flooding, shall be designed to automatically equalize hydrostatic flood forces on exterior walls by allowing for the entry and exit of floodwater. Designs for meeting this requirement must either be certified by a registered civil engineer or architect, or meet the following minimum criteria:

a. Have a minimum of two openings on different sides having a total net area of not less than one square inch for every square foot of enclosed area subject to flooding;

b. The bottom of all openings shall be no higher than one foot above grade;

c. Openings may be equipped with screens, louvers, valves or other coverings or devices provided that they permit the automatic entry and exit of floodwater; and

d. Buildings with more than one enclosed area must have openings on exterior walls for each area to allow flood water to directly enter. (Ord. 6997 §§ 5, 6, 2008)

Section 16.18.105 Standards for Utilities.

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

1. Infiltration of flood waters into the systems; and

2. Discharge from the systems into flood waters.

B. On-site waste disposal systems shall be located to avoid impairment to them, or contamination from them during flooding. (Ord. 6997 §§ 5, 6, 2008)

Section 16.18.110 Standards for Subdivisions and Other Proposed Development.

A. All new subdivisions proposals and other proposed development, including proposals for manufactured home parks and subdivisions, greater than 50 lots or 5 acres, whichever is the lesser, shall:

1. Identify the Special Flood Hazard Areas (SFHA) and Base Flood Elevations (BFE).

2. Identify the elevations of lowest floors of all proposed structures and pads on the final plans.

3. If the site is filled above the base flood elevation, the as-built lowest floor elevation, pad elevation, and lowest adjacent grade information for each structure, certified by a registered civil engineer or licensed land surveyor, shall be provided as part of an application for a Letter of Map Revision based on Fill (LOMR-F) to the Floodplain Administrator.

B. All subdivision proposals and other proposed development shall be consistent with the need to minimize flood damage.

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

D. All subdivisions and other proposed development shall provide adequate drainage to reduce exposure to flood hazards. (Ord. 6997 §§ 5, 6, 2008)

Section 16.18.115 Standards for Manufactured Homes.

A. All manufactured homes within FIRM Zones A1-30, AH, and AE, that are placed or substantially improved, on sites located: (1) outside of a manufactured home park or subdivision; (2) in a new manufactured home park or subdivision; (3) in an expansion to an existing manufactured home park or subdivision; or (4) in an existing manufactured home park or

subdivision upon which a manufactured home has incurred "substantial damage" as the result of a flood, shall be elevated on a permanent foundation such that the lowest floor of the manufactured home is elevated to or above the base flood elevation and be securely fastened to an adequately anchored foundation system to resist flotation, collapse, and lateral movement.

B. All manufactured homes to be placed or substantially improved on sites in an existing manufactured home park or subdivision within FIRM Zones A1-30, AH, and AE that are not subject to the provisions of subsection A above will be securely fastened to an adequately anchored foundation system to resist flotation, collapse, and lateral movement, and be elevated so that either the:

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

C. Upon the completion of the structure, the elevation of the lowest floor including basement shall be certified by a registered civil engineer or licensed land surveyor, and verified by the community building inspector to be properly elevated. Such certification and verification shall be provided to the Floodplain Administrator. (Ord. 6997 §§ 5, 6, 2008)

Section 16.18.120 Standards for Recreational Vehicles.

A. All recreational vehicles placed in Zones A1-30, AH, and AE will either:

1. Be on the site for fewer than 180 consecutive days; or
2. Be fully licensed and ready for highway use. A recreational vehicle is ready for highway use if it is on its wheels or jacking system, is attached to the site only by quick disconnect type utilities and security devices, and has no permanently attached additions; or
3. Meet the permit requirements of Section 16.18.090 of this chapter and the elevation and anchoring requirements for manufactured homes in Section 16.18.110.A. (Ord. 6997 §§ 5, 6, 2008)

Section 16.18.125 Floodways.

Since floodways are an extremely hazardous area due to the velocity of flood waters which can carry debris, potential projectiles, and erosion potential, the following provisions apply:

A. Until a regulatory floodway is adopted, no new construction, substantial development, or other development (including fill) shall be permitted within Zones A1-30 and AE, unless it is demonstrated that the cumulative effect of the proposed development, when combined with all other development, will not increase the water surface elevation of the base flood more than 1 foot at any point within the City of Riverside.

B. Within an adopted regulatory floodway, the City of Riverside shall prohibit encroachments, including fill, new construction, substantial improvements, and other development, unless certification by a registered civil engineer is provided demonstrating that the proposed encroachment shall not result in any increase in flood levels during the occurrence of the base flood discharge. (Ord. 6997 §§ 5, 6, 2008)

Section 16.18.130 Floodplain variances.

Floodplain variances under this chapter are for floodplain management purposes only, and are different from the variances in Title 19 of this Code. Insurance premium rates are determined by statute according to actuarial risk and will not be modified by the granting of a Floodplain variance.

The need to prevent flood damage is so compelling and the implications of the cost of insuring a structure built below flood level are so serious that Floodplain variances from the flood elevation or from other requirements in the flood chapter are quite rare. The long term goal of preventing and reducing flood loss and damage can only be met if Floodplain variances are strictly limited. Floodplain variances are specific to property and are not personal in nature. (Ord. 6997 §§ 5, 6, 2008)

Section 16.18.135 Floodplain Variances, Considerations and Findings.

A. In passing upon requests for Floodplain variances, the City of Riverside shall consider all technical evaluations, all relevant factors, standards specified in other sections of this chapter, and the:

1. Danger that materials may be swept onto other lands to the injury of others;
2. Danger of life and property due to flooding or erosion damage;
3. Susceptibility of the proposed facility and its contents to flood damage and the effect of such damage on the existing individual owner and future owners of the property;
4. Importance of the services provided by the proposed facility to the community;
5. Necessity to the facility of a waterfront location, where applicable;
6. Availability of alternative locations for the proposed use which are not subject to flooding or erosion damage;
7. Compatibility of the proposed use with existing and anticipated development;
8. Relationship of the proposed use to the comprehensive plan and floodplain management program for that area;
9. Safety of access to the property in time of flood for ordinary and emergency vehicles;
10. Expected heights, velocity, duration, rate of rise, and sediment transport of the flood waters expected at the site; and
11. Costs of providing governmental services during and after flood conditions, including maintenance and repair of public utilities and facilities such as sewer, gas, electrical, and water system, and streets and bridges.

B. Findings. The Floodplain Administrator, Planning Commission or the City Council may approve a floodplain variance or Designee if it makes all of the following findings. Failure to make all of the required findings shall require denial of the floodplain variance:

1. The property has physical characteristics so unusual that complying with the requirements of this chapter would create an exceptional hardship to the applicant or the surrounding property owners;
2. The characteristics are unique to the property and not typical of other property in the vicinity and under the identical FIRM zone;
3. The unique characteristics pertain to the land itself, not to the structure, its inhabitants, or the property owners; and
4. Granting of a Floodplain variance will not result in increased flood heights, additional threats to public safety, or extraordinary public expense, create a nuisance (see "Public safety and nuisance"), cause "fraud and victimization" of the public, or conflict with existing local laws or chapters. (Ord. 6997 §§ 5, 6, 2008)

Section 16.18.140 Conditions for Floodplain variances.

A. Generally, Floodplain variances may be issued for new construction, substantial improvement, and other proposed new development to be erected on a lot of one-half acre or less in size contiguous to and surrounded by lots with existing structures constructed below the base flood level, providing that the procedures of Sections 16.18.045 through 16.18.125 have been fully considered. As the lot size increases beyond one-half acre, the technical justification required for issuing the Floodplain variance increases.

B. Floodplain variances may be issued for the repair or rehabilitation of "historic structures" upon a determination that the proposed repair or rehabilitation will not preclude the structure's continued designation as an historic structure and the Floodplain variance is the minimum necessary to preserve the historic character and design of the structure.

C. Upon consideration of the factors of Subsection A and the purposes of this Chapter, the City of Riverside may attach such conditions to the granting of Floodplain variances as it deems necessary to further the purposes of this chapter.

D. Floodplain variances shall not be issued within any mapped regulatory floodway if any increase in flood levels during the base flood discharge would result.

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

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

1. The issuance of a Floodplain variance to construct a structure below the base flood level will result in increased premium rates for flood insurance up to amounts as high as \$25 for \$100 of insurance coverage, and

2. Such construction below the base flood level increases risks to life and property. It is recommended that a copy of the notice shall be recorded by the Floodplain Administrator in the Office of the County of Riverside Recorder and shall be recorded in a manner so that it appears in the chain of title of the affected parcel of land.

G. The Floodplain Administrator will maintain a record of all Floodplain variance actions, including justification for their issuance, and report such Floodplain variances issued in its biennial report submitted to the Federal Emergency Management Agency. (Ord. 6997 §§ 5, 6, 2008)

Section 16.18.145 Warning and disclaimer of liability.

The degree of flood protection required by this chapter is considered reasonable for regulatory purposes and is based on scientific and engineering considerations. Larger floods can and will occur on rare occasions. Flood heights may be increased by man-made or natural causes. This chapter does not imply that land outside the areas of special flood hazards or uses permitted within such areas will be free from flooding or flood damages. This chapter shall not create liability on the part of the City of Riverside, any officer or employee thereof, the State of California, or the Federal Emergency Management Agency, for any flood damages that result from reliance on this chapter or any administrative decision lawfully made hereunder. (Ord. 6997 §§ 5, 6, 2008)

Section 16.18.150 Severability.

This chapter and the various parts thereof are hereby declared to be severable. Should any section of this chapter be declared by the courts to be unconstitutional or invalid, such decision shall not affect the validity of the chapter as a whole, or any portion thereof other than the section so declared to be unconstitutional or invalid. (Ord. 6997 §§ 5, 6, 2008)