

Chapter 18-52 FLOOD DAMAGE PROTECTION

18-52.010 Purpose-Adoption.

(A) This chapter is adopted to comply with the National Flood Disaster Protection Act and the National Flood Insurance Program Regulation, and shall apply to all areas of special flood hazards within the jurisdiction of the city.

(B) The areas of special flood hazard identified by the Federal Emergency Management Agency (FEMA) in the "Flood Insurance Study for Sonoma County, California, and Incorporated Areas" (FIS) dated effective December 2, 2008, with accompanying Flood Insurance Rate Maps (FIRMs) and Flood Boundary and Floodway Maps (FBFMs), dated December 2, 2008, and all subsequent amendments and/or revisions, are hereby adopted by reference and declared to be 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 Council of the City of Santa Rosa by the Floodplain Administrator. The FIS, FIRMs and FBFMs are on file at Planning & Economic Development; City Hall Room 3, 100 Santa Rosa Avenue. (Ord. 3894 § I, 2008; Ord. 2859 § I, 1990; Ord. 2671 § 1, 1988)

18-52.020 Definitions.

Unless specifically defined in this section, 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.

- (1) "Appeal" means a request for a review of the Floodplain Administrator's interpretation of any provision of this chapter, or a request for a variance.
- (2) "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.
- (3) "Area of special flood-related erosion hazard" means the area subject to severe flood-related erosion losses. The area is designated as zone E on the Flood Insurance Rate Map (FIRM).
- (4) "Area of special flood hazard" means the area in the community subject to a one percent or greater chance of flood in any given year. It is shown on a Flood Insurance Rate Map or other flood hazard map as Zone A, AE, A1-30, A99, AR, AO, AH, V, VO, VE, or V1-30. Also referred to as "special flood hazard area."
- (5) "Area of special mudslide (i.e., mudflow) hazard" means the area subject to severe mudslides (i.e., mudflows). The area is designated as zone M on the Flood Insurance Rate Map (FIRM).
- (6) "Base flood" means the flood having a one-percent chance of being equaled or exceeded in any given year (also called the "100-year flood").

- (7) "Basement" means any area of the building having its floor subgrade (below ground level) on all sides.
- (8) "Breakaway walls" means any type of walls, whether solid or lattice, and whether constructed of concrete, masonry, wood, metal, plastic or any other suitable building material which is not part of the structural support of the building and which is designed to break away under abnormally high tides or wave action without causing any damage to the structural integrity of the building on which they are used or any buildings to which they might be carried by flood waters. A breakaway wall shall have a safe design loading resistance of not less than 10 and no more than 20 pounds per square foot. Use of breakaway walls must be certified by a registered engineer or architect and shall meet the following conditions:
- (i) Breakaway wall collapse shall result from a water load less than that which would occur during the base flood; and
 - (ii) The elevated portion of the building shall not incur any structural damage due to the effects of wind and water loads acting simultaneously in the event of the base flood.
- (9) "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.
- (10) "Flood" or "flooding" means a general and temporary condition of partial or complete inundation of normally dry land areas from:
- (i) The overflow of flood waters;
 - (ii) The unusual and rapid accumulation or runoff of surface waters from any source and/or
 - (iii) The collapse or subsidence of land along the shore of a lake or other body of water as a result of erosion or undermining caused by waves or currents of water exceeding anticipated cyclical levels or suddenly caused by an unusually high water level in a natural body of water, accompanied by a severe storm, or by an unanticipated force of nature, such as a flash flood or an abnormal tidal surge, or by some similarly unusual and unforeseeable event which results in flooding as defined in this section.
- (11) "Flood boundary and floodway map" means the official map on which the Federal Emergency Management Agency or Federal Insurance Administration has delineated both the areas of flood hazard and the floodway.
- (12) "Flood Insurance Rate Map (FIRM)" means the official map on which the Federal Emergency Management Agency or Federal Insurance Administration has delineated both the areas of special flood hazards and the risk-premium zones applicable to the community.

- (13)"Flood insurance study" means the official report provided by the Federal Insurance Administration that includes flood profiles, the Flood Insurance Rate Map, the flood boundary and floodway map, and the water surface elevation of the base flood.
- (14)"Floodplain" or "flood-prone area" means any land area susceptible to being inundated by water from any source (see definition of "flooding").
- (15)"Floodplain management" means the operation of an overall program of corrective and preventive measures for reducing flood damage, including, but not limited to, emergency preparedness plans, flood control works and floodplain management regulations.
- (16)"Floodplain management regulations" means zoning ordinances, subdivision regulations, building codes, health regulations, special purpose ordinances (such as floodplain ordinances, grading ordinances and erosion control ordinances) and other applications of police power. The term describes such state or local regulations in any combination thereof, which provide standards for the purpose of flood damage prevention and reduction.
- (17)"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 property, water and sanitary facilities, structures and their contents.
- (18)"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."
- (19)"Highest adjacent grade" means the highest natural elevation of the ground surface prior to construction next to the proposed walls of a structure.
- (20)"Lowest floor" means the lowest floor of the lowest enclosed area (including basement). An unfinished or flood resistant enclosure, 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, that such enclosure is not built so as to render the structure in violation of the applicable nonelevation design requirements of this chapter.
- (21)"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 connected to the required utilities. For floodplain management purposes, the term "manufactured home" also includes park trailers, travel trailers and other similar vehicles placed on a site for greater than 180 consecutive days.
- (22)"Manufactured home park or subdivision" means a parcel (or contiguous parcels) of land divided into two or more manufactured home lots for sale or rent.
- (23)"New construction" means, for floodplain management purposes, structures for which the "start of construction" commenced on or after the effective date of a floodplain management regulation adopted by this community.

- (24)"100-year flood" means a flood which has a one percent annual probability of being equaled or exceeded. It is identical to the "base flood," which will be the term used throughout this chapter.
- (25)"Person" means an individual or his agent, firm, partnership, association or corporation, or agent of the aforementioned groups, or this state or its agencies or political subdivisions.
- (26)"Remedy a violation" means to bring the structure or other development into compliance with state or local floodplain management regulations, or, if this is not possible, to reduce the impacts of its noncompliance. Ways that impacts may be reduced include protecting the structure or other affected development from flood damages, implementing the enforcement provisions of this chapter or otherwise deterring future similar violations, or reducing federal financial exposure with regard to the structure or other development.
- (27)"Recreational Vehicle" means a vehicle that is built on a single chassis, 400 square feet or less when measured at the largest horizontal projection, designed to be self-propelled or permanently towable by a light-duty truck, and designed primarily not for use as a permanent dwelling but as temporary living quarters for recreational, camping, travel or seasonal use. A recreational vehicle is ready for highway use when 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.
- (28)"Riverine" means relating to, formed by or resembling a river (including tributaries), stream, brook, etc.
- (29)"Start of construction" includes substantial improvement, and means the date the building permit was issued, provided the actual start of construction, repair, reconstruction, placement or other improvement was within 180 days of the permit date. The actual start means either the first placement of permanent construction of a structure on a site, such as the pouring of slabs or footings, the installation of piles, the construction of columns, or any work beyond the stage of excavation; or the placement of a manufactured home on a foundation. Permanent construction does not include land preparation, such as clearing, grading and filling; nor does it include the installation of streets, and/or walkways; nor does it include excavation for 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.
- (30)"Structure" means a walled and roofed building, including a gas or liquid storage tank, that is principally above ground, as well as a manufactured home.
- (31)"Substantial damage" means damage of any origin sustained by a structure whereby the cost of restoring the structure to its before-damaged condition would equal or exceed 50 percent of the market value of the structure before the damage occurred.
- (32)(a) "Substantial improvement" means any repair, reconstruction or improvement of a structure, the cost of which equals or exceeds 50 percent of the market value of the structure, either:
- (i) Before the improvement is started; or

- (ii) If the structure has been damaged and is being restored, before the damage occurred.

(b) For the purposes of this definition, "substantial improvement" is considered to occur when the first alteration of any wall, ceiling, floor or other structural part of the building commences, whether or not that alteration affects the external dimensions of the structure. The term does not, however, include either:

- (i) Any project for improvement of a structure to comply with existing state or local health, sanitary or safety code specifications which are solely necessary to assure safe living conditions; or
- (ii) Any alteration of a structure listed on the National Register of Historic Places or a State Inventory of Historic Places. (Ord. 2671 § 1, 1988)

18-52.030 Compliance.

No structure or land shall, after the effective date of the ordinance codified in this chapter, be constructed, located, extended, converted or altered without full compliance with the terms of said ordinance and other applicable regulations. Violations of the provisions of this chapter by failure to comply with any of its requirements (including violations of conditions and safeguards established in connection with conditions) shall constitute an infraction punishable by a fine of \$100.00. (Ord. 2671 § 1, 1988)

18-52.040 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. The ordinance codified in this chapter does not imply that land outside the areas of special flood hazards, areas of flood-related erosion hazards and areas of mudslide hazards or uses permitted within such areas, will be free from flooding or flood damages. The ordinance codified in this chapter shall not create liability on the part of the City, any officer or employee thereof, for any flood damages that result from reliance on this chapter or any administrative decision lawfully made thereunder. All duties of the Floodplain Administrator are discretionary and this chapter shall not create liability on the part of the City or any officer or employee thereof for failure to act or carry out the requirements of this chapter. (Ord. 2671 § 1, 1988)

18-52.050 Development permit.

(A) A development permit shall be obtained before construction or development begins within any area of special flood hazards, areas of flood-related erosion hazards or areas of mudslide established in subsection B of Section 18-52.010. Application for a development permit shall be made on forms furnished by the Floodplain Administrator, and may include, but not be limited to, plans in duplicate drawn to scale showing the nature, location, dimensions and elevations of the area in question; existing or proposed structures, fill, storage of materials, drainage facilities; and the location of the foregoing.

(B) Specifically, the following information is required:

- (1) Proposed elevation in relation to mean sea level of the lowest floor, including basement, of all structures; in zone AO or VO, elevation of the highest adjacent grade and proposed elevation of the lowest floor of all structures.
- (2) Proposed elevation in relation to mean sea level to which any structure will be floodproofed;
- (3) All appropriate certifications listed in subsection C of Section 18-52.080; and
- (4) Description of the extent to which any watercourse will be altered or relocated as a result of proposed development. (Ord. 2671 § 1, 1988)

18-52.060 Designation of the Floodplain Administrator.

The Building Official is the Floodplain Administrator. (Ord. 2671 § 1, 1988)

18-52.070 Duties of the Floodplain Administrator.

The duties and responsibilities of the Floodplain Administrator may include, but are not limited to:

- (A) Permit Review.
 - (1) Review all development permits to determine that the permit requirements of this chapter have been satisfied;
 - (2) All other required State and Federal permits have been obtained;
 - (3) The site is reasonably safe from flooding;
 - (4) The proposed development does not adversely affect the carrying capacity of the floodplain. For purposes of this chapter, "adversely affects" 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.
 - (5) Letters of Map Change. Require applicants who submit hydrologic and hydraulic engineering analyses to support permit applications to submit to FEMA the data and information necessary to maintain the Flood Insurance Rate Maps when the analyses indicate changes in base flood elevations, flood hazard area boundaries, or floodway designations; such submissions shall be made within 6 months of such data becoming available.
- (B) Use of Other Base Flood Data. When base flood elevation data has not been provided in accordance with subsection B of Section 18-52.010, the Floodplain Administrator may obtain, review and reasonably utilize any base flood elevation data available from a federal, state or other source.
- (C) Whenever a watercourse is to be altered or relocated:

- (1) Notification of adjacent communities and the California Department of Water Resources prior to such alteration or relocation of a watercourse, and submission of evidence of such notification to the Federal Insurance Administration;
- (2) Requirement that the flood carrying capacity of the altered or relocated portion of the watercourse is maintained.
- (D) Maintenance of records required in this chapter.
- (E) Interpretation of location of boundaries of the areas of special flood hazards, areas of flood-related erosion hazards or areas of mudslide.
- (F) Substantial improvement and substantial damage determinations. For applications for building permits to improve buildings and structures, including alterations, movement, enlargement, replacement, repair, additions, rehabilitations, renovations, substantial improvements, repairs of substantial damage, and any other improvement of or work on such buildings and structures, the Floodplain Administrator shall:
 - (1) Estimate the market value, or require the applicant to obtain an appraisal of the market value prepared by a qualified independent appraiser, of the building or structure before the start of construction of the proposed work; in the case of repair, the market value of the building or structure shall be the market value before the damage occurred and before any repairs are made.
 - (2) Compare the cost to perform the improvement, the cost to repair the damaged building to its pre-damaged condition, or the combined costs of improvements and repairs, when applicable, to the market value of the building or structure.
 - (3) Determine and document whether the proposed work constitutes substantial improvement or repair of substantial damage.
 - (4) Notify the applicant when it is determined that the work constitutes substantial improvement or repair of substantial damage and that compliance with the flood resistant construction requirements of the building code is required and notify the applicant when it is determined that work does not constitute substantial improvement or repair of substantial damage.
- (G) Enforcement of this chapter. (Ord. 2671 § 1, 1988)

18-52.080 Standards of construction.

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

- (A) Anchoring.
 - (1) All new construction and 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.
 - (2) All manufactured homes shall meet the anchoring standards of Section 18-52.110.
- (B) Construction Materials and Methods.

- (1) All new construction and substantial improvements shall be constructed with materials and utility equipment resistant to flood damage.
 - (2) All new construction and substantial improvements shall be constructed using methods and practices that minimize flood damage.
 - (3) All new construction and substantial improvements shall be constructed with electrical, heating, ventilation, plumbing and air conditioning equipment and other service facilities that are designed and/or located so as to prevent water from entering or accumulating within the components during conditions of flooding.
 - (4) Require within zones AH or AO, adequate drainage paths around structures on slopes to guide floodwaters around and away from proposed structures.
- (C) Elevation and Floodproofing.
- (1) New construction and substantial improvement of any structure shall have the lowest floor, including basement, elevated to or above one foot above base flood elevation. Nonresidential structures may meet the standards of subdivision 3 of this subsection. Upon the completion of the structure, the elevation of the lowest floor, including basement, shall be certified by a registered professional engineer or surveyor, or verified by the Building Inspector to be properly elevated. Such certification or verification shall be provided to the Floodplain Administrator.
 - (2) New construction and substantial improvement of any structure in zones AH or AO shall have the lowest floor, including basement, elevated above the highest adjacent grade at least as high as the depth number specified in feet on the FIRM, or at least two feet if no depth number is specified. Nonresidential structures may meet the standards of subdivision 3 of this subsection. Upon the completion of the structure, the elevation of the lowest floor, including basement, shall be certified by a registered professional engineer or surveyor, or verified by the Building Inspector to be properly elevated. Such certification or verification shall be provided to the Floodplain Administrator.
 - (3) Nonresidential construction shall either be elevated in conformance with subdivisions 1 and 2 of this subsection, or, together with attendant utility and sanitary facilities, shall:
 - (a) Be floodproofed so that below the base flood level 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) Statement by a registered professional engineer or architect that the standards of this subsection are satisfied. Such certifications shall be provided to the Floodplain Administrator.
 - (4) All new construction and substantial improvements that have fully enclosed areas below the lowest floor that are subject to flooding shall be designed to automatically equalize hydrostatic flood forces on exterior walls by allowing for the entry and exit of floodwaters. Designs for meeting this requirement must either be certified by a registered professional engineer or architect or meet or exceed the following minimum criteria:

- (a) Either a minimum of two openings having a total net area of not less than one square inch for every square foot of enclosed area subject to flooding shall be provided. The bottom of all openings shall be no higher than one foot above grade. Openings may be equipped with screens, louvers, valves or other coverings or devices provided they permit the automatic entry and exit of floodwaters; or
 - (b) Be certified to comply with a local floodproofing standard approved by the Federal Flood Insurance Administration.
- (5) Manufactured homes shall also meet the standards in Section 18-52.110. (Ord. 2780 § 25, 1989; Ord. 2671 § 1, 1988)

18-52.090 Utilities.

- (A) All new and replacement water-supply and sanitary sewage systems shall be designed to minimize or eliminate infiltration of floodwaters into the system and discharge from systems into floodwaters.
- (B) On-site waste disposal systems shall be located to avoid impairment to them or contamination from them during flooding. (Ord. 2671 § 1, 1988)

18-52.100 Standards for subdivisions.

- (A) All preliminary subdivision proposals shall identify the flood hazard area and the elevation of the base flood.
- (B) All final subdivision plans will provide the elevation of proposed structure(s) and pads. If the site is filled above the base flood, the final pad elevation shall be certified by a registered professional engineer or surveyor and provided to the Floodplain Administrator.
- (C) All subdivision proposals shall be consistent with the need to minimize flood damage.
- (D) All subdivision proposals shall have public utilities and facilities, such as sewer, gas, electrical and water systems, located and constructed to minimize flood damage.
- (E) All subdivisions shall provide adequate drainage to reduce exposure to flood damage. (Ord. 2671 § 1, 1988)

18-52.105 Standards for recreational vehicles.

- (A) All recreational vehicles placed in areas of special flood hazard shall either:
 - (i) Be on the site for fewer than one hundred eighty consecutive days; or
 - (ii) Be fully licensed and ready for highway use; or
 - (iii) Meet the elevation and anchoring requirements for manufactured homes in Section 18-52.110.

18-52.110 Standards for manufactured homes.

All new and replacement manufactured homes and additions to manufactured homes shall:

- (A) Be elevated so that the lowest floor is at or above the base flood elevation; and
- (B) Be securely anchored to a permanent foundation to resist flotation, collapse or lateral movement. (Ord. 2671 § 1, 1988)

18-52.120 Floodways.

The following provisions apply to floodways:

- (A) Encroachments, including fill, new construction, substantial improvements and other development are prohibited unless certification by a registered professional engineer or architect is provided demonstrating that encroachments shall not result in any increase in flood levels during the occurrence of the base flood discharge.
- (B) If the requirements of this section are satisfied, all new construction and substantial improvements shall comply with all other applicable flood hazard reduction provisions.
- (C) The minimum exterior boundary of the setback area on each side of a natural or modified natural waterway shall be 30 feet distant from the top of the highest bank on that side of the waterway, as determined by the building division of the Department of Community Development. When the bank of a natural or modified waterway is steeper than 2.5:1, the exterior setback boundary shall be measured by the projections of a slope of 2.5:1 from the toe of the stream bank to ground level, plus 30 feet. (Ord. 2671 § 1, 1988)

18-52.130 Appeal Board.

- (A) The Board of Building Regulations Appeals (the "Board"), shall hear and decide appeals and requests for variances from the requirements of this chapter.
- (B) The Board shall hear and decide appeals when it is alleged that there is an error in any requirement, decision or determination made by the Floodplain Administrator in the enforcement or administration of this chapter.
- (C) In passing upon such applications, the Board may consider all technical evaluations, all relevant factors, standards specified in other sections of this chapter, and:
 - (1) The danger that materials may be swept onto other lands to the injury of others;
 - (2) The danger to life and property due to flooding or erosion damage;
 - (3) The susceptibility of the proposed facility and its contents to flood damage, and the effect of such damage on the individual owner;

- (4) The importance of the services provided by the proposed facility to the community;
 - (5) The necessity to the facility of a waterfront location, where applicable;
 - (6) The availability of alternative locations for the proposed use which are not subject to flooding or erosion damage;
 - (7) The compatibility of the proposed use with existing and anticipated development;
 - (8) The relationship of the proposed use to the comprehensive plan and floodplain management program for that area;
 - (9) The safety of access to the property in times of flood for ordinary and emergency vehicles;
 - (10) The expected heights, velocity, duration, rate of rise and sediment transport of the floodwaters, and the effects of wave action expected at the site; and
 - (11) The costs of providing governmental services during and after flood conditions, including maintenance and repair of public utilities and facilities, such as sewer, gas, electricity and water systems, streets, and bridges.
- (D) Variances may be issued for new construction and substantial improvements to be erected on a lot of one-half acre or less in size contiguous to and surrounded by lots with existing structures constructed below the base flood level, providing the provisions of subsection C of this section have been fully considered.
- (E) Upon consideration of the factors in subsection C of this section, the Board may condition the grant of variance as it deems necessary to further the purposes of this chapter.
- (F) The Floodplain Administrator shall report any variances to the Federal Insurance Administration upon request by that body. (Ord. 267 I § I, 1988)

18-52.140 Further conditions for variances.

- (A) Variances may be issued for the reconstruction, rehabilitation or restoration of structures listed in the National Register of Historic Places or the State Inventory of Historic Places, upon a determination that the proposed repair, improvement, or rehabilitation will not preclude the structure's continued designation as a historic structure, and the variance is the minimum necessary to preserve the historic character and design of the structure.
- (B) Variances shall not be issued within any designated floodway if any increase in flood levels during the base flood discharge would result.
- (C) Variances shall only be issued upon a determination that the variance is the minimum necessary, considering the flood hazard, to afford relief.
- (D) Variances shall only be issued upon:
- (1) A showing of good and sufficient cause;

(2) A determination that failure to grant the variance would result in exceptional hardship to the applicant; and

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

(E) Variances may be issued for new construction and substantial improvements and for other development necessary for the conduct of a functionally dependent use provided that the provisions of this section are satisfied and that the structure or other development is protected by methods that minimize flood damages during the base flood and create no additional threats to public safety.

(F) Any applicant to whom a variance is granted shall be given written notice that the structure will be permitted to be built with a lowest floor elevation below the regulatory flood elevation, and that the cost of flood insurance will be commensurate with the increased risk resulting from the reduced lowest floor elevation. A copy of the notice may be recorded by the Floodplain Administrator in the Office of the County Recorder. (Ord. 2671 § 1, 1988)