

Chapter 27

FLOODPLAIN MANAGEMENT

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Chapter 27**FLOODPLAIN MANAGEMENT****Article 1. Authorization.****Section 27-1. Statutory authority.**

This chapter is enacted pursuant to the U.S. National Flood Insurance Act of 1968 (Public Laws 90-418 and 91-152), as amended, and the U.S. Flood Disaster Protection Act of 1973 (Public Law 93-234), as amended. In addition, the Legislature of the State of Hawai'i has in Hawai'i Revised Statutes 46-1.5(5), 46-1.5(14), 46-11, 46-11.5, and 46-12 conferred upon the various counties the authority to adopt regulations designed to promote the public health, safety, and general welfare of its citizenry (1993, Ord. No. 93-78, sec. 3; Am. 2007, Ord. No. 07-169, sec. 3.)

Section 27-2. Findings of fact.

- (a) The flood hazard areas of the County of Hawai'i are subject to periodic inundation which results 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 the cumulative effect of obstructions in areas of special flood hazards which increase flood heights and velocities and, when inadequately anchored, cause damage to uses in other areas. Uses that are inadequately floodproofed, elevated, or otherwise protected from flood damage also contribute to the flood loss.

(1993, Ord. No. 93-78, sec. 3.)

Section 27-3. Purpose.

It is the purpose of this chapter to promote the public health, safety, and general welfare, and to minimize public and private losses due to flood conditions in specific areas by provisions designed:

- (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 assist in notifying potential buyers that property is in an area of special flood hazard; and
- (h) To ensure that those who occupy areas of special flood hazard assume responsibility for their actions.

(1993, Ord. No. 93-78, sec. 3.)

Section 27-4. Scope and methods.

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 flood waters;
 - (d) Controlling fill, grading, dredging, and other development which may increase flood damage; and
 - (e) Preventing or regulating the construction of flood barriers which will unnaturally divert flood waters or which may increase flood hazards in other areas.
- (1993, Ord. No. 93-78, sec. 3.)

Article 2. General Provisions.

Section 27-5. Applicability.

- (a) This chapter shall apply to all areas of special flood hazards identified by the Federal Emergency Management Agency in a scientific and engineering report entitled “Flood Insurance Study,” dated April 2, 2004, with accompanying Flood Insurance Rate Maps and all future changes, revisions and amendments to these documents, and shall apply to all areas bordering identified special flood hazard areas, and all other areas outside the identified special flood hazard areas encompassing and adjacent to a river, stream, stormwater channel, outfall area, or other inland water or drainage facility determined by the director of public works to be subject to flood hazards. The special flood hazard areas are as follows:
 - (1) Floodway fringe - Zones AE, AH, and AO.
 - (2) Floodway.
 - (3) Coastal high hazard (tsunami) - Zones V and VE.
 - (4) General floodplain - Zone A.
 - (5) Land adjacent to drainage facilities, and Zone A99.
- (b) This chapter shall not apply to:
 - (1) Any building permit lawfully issued prior to May 5, 1982 or building permit application properly filed and accepted for review prior to May 5, 1982, provided that approval was obtained without any significant changes in plans or specifications made after May 5, 1982.
 - (2) Roadway and site improvements for subdivisions for which tentative approval had been granted prior to May 5, 1982 and where roadway and site improvement construction and grading plans had received all necessary agency approvals by May 5, 1982.
 - (3) Carnivals, lū‘aus, fairs, and camping tents of a temporary nature which are not in a floodway.
 - (4) Nonfenced, at grade outdoor swimming pools.
 - (5) Signs which are not in a floodway.
 - (6) Demolition.

(1993, Ord. No. 93-78, sec. 3; Am. 2001, Ord. No. 01-108, sec. 1; Am. 2007, Ord. No. 07-169, sec. 4.)

Section 27-6. Basis.

The areas of special flood hazard identified by the Federal Emergency Management Agency in the Flood Insurance Study dated April 2, 2004, along with all subsequent revisions and amendments, and the Flood Insurance Rate Maps, dated April 2, 2004, May 16, 1994, July 16, 1990, and September 16, 1988, and all future changes, revisions, and amendments to these documents, are hereby adopted and declared to be a part of this chapter. The Flood Insurance Study and Flood Insurance Rate Maps, and all future changes, revisions, and amendments to these documents, are on file at the Aupuni Center, Department of Public Works, 101 Pauahi Street, Suite 7, Hilo, Hawai‘i 96720.

(1993, Ord. No. 93-78, sec. 3; Am. 1994, Ord. No. 94-74, sec. 3; Am. 1995, Ord. No. 95-86, sec. 3; Am. 2007, Ord. No. 07-169, sec. 5.)

Section 27-7. Compliance.

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. The terms of this chapter shall be enforced by the standards set forth in article 6.

(1993, Ord. No. 93-78, sec. 3.)

Section 27-8. Other laws and regulations.

All construction and improvements subject to this chapter shall comply with other applicable laws and regulations including, but not limited to, the zoning, building, electricity, plumbing, subdivision, erosion and sedimentation control chapters of the Hawai'i County Code, and the storm drainage standards, October 1970 edition, or later revisions, of the County of Hawai'i. This chapter, designed to reduce flood losses, shall take precedence over any less restrictive, conflicting laws, ordinances, and regulations. 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.

In the event of a conflict between this chapter and the National Flood Insurance Program and Related Regulations (NFIP), as amended, the more restrictive provision will govern.

(1993, Ord. No. 93-78, sec. 3; Am. 2007, Ord. No. 07-169, sec. 6.)

Section 27-9. 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 County of Hawai'i; and
- (c) Deemed neither to limit nor repeal any other powers granted to the County of Hawai'i under State of Hawai'i statutes.

(1993, Ord. No. 93-78, sec. 3.)

Section 27-10. 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 and areas of flood-related erosion 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 County of Hawai'i, any officer or employee thereof, or the Federal Insurance Administration, Federal Emergency Management Agency, for any flood damages that result from reliance on this chapter or any administrative decision lawfully made thereunder.

(1993, Ord. No. 93-78, sec. 3.)

Section 27-11. 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.

(1993, Ord. No. 93-78, sec. 3.)

Section 27-12. 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.

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

“Appeal” means a request for a review of the floodplain administrator’s interpretation of any provision of this chapter or denial of a request for a variance.

“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.

“Backfill” means the placement of fill material within a specified depression, hole or excavation pit below the surrounding adjacent ground level as a means of improving floodwater conveyance or to restore the land to the natural contours existing prior to excavation.

“Base flood” means the flood having a one percent chance of being equaled or exceeded in any given year (also called the “one-hundred-year flood”).

“Base flood elevation” means the water surface elevation of the base flood.

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

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

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

“Buffer zones” are areas bordering and within 50 feet of special flood hazard areas with base flood elevations, depth numbers specified in feet on the FIRM or other areas that have been studied and identified with base flood elevations or depth numbers.

“Coastal high hazard area” - See “Zone V” and “Zone VE.”

“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.

“Drainage facility” - See “Watercourse.”

“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) is completed before May 5, 1982.

“Fill” is the placement of fill material at a specified location to bring the ground surface up to a desired elevation.

“Fill material” can be natural sand, dirt, soil or rock. For the purposes of floodplain management, fill material may include concrete, cement, soil cement, brick, or similar material as approved on a case-by-case basis.

“Flood elevation determination” means a determination by the Federal Emergency Management Agency of the water surface elevations of the base flood, that is, the flood level that has a one percent or greater chance of occurrence in any given year.

“Flood elevation study” or “flood study” means an examination, evaluation, and determination of flood hazards and, if appropriate, corresponding water surface elevations, or an examination, evaluation, and determination of flood-related erosion hazards.

“Flood, flooding, or floodwater” means:

- (1) A general and temporary condition of partial or complete inundation of normally dry land areas from:
 - (A) The overflow of inland or tidal waters;
 - (B) The unusual and rapid accumulation of runoff or surface waters from any source which are approximately caused by flooding as defined in paragraph (A)(ii) of this definition and are akin to a river of water on the surfaces of normally dry land areas, as when earth is carried by a current of water and deposited along the path of the current; and
- (2) 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 flash flood or an abnormal tidal surge, or by some similarly unusual and unforeseeable event which results in flooding as defined in paragraph (1)(A) of this definition.

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

“Flood Insurance Study” means the official report provided by the Federal Emergency Management Agency that includes flood profiles, the Flood Insurance Rate Map, and the water surface elevation of the base flood.

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

“Floodplain administrator” is the individual appointed to administer and enforce the floodplain management regulations. This person shall be the director of public works of the County of Hawai‘i or the director’s duly authorized representative who shall be a currently licensed professional engineer in the State of Hawai‘i.

“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.

“Floodplain management regulations” means zoning ordinances, subdivision regulations, building codes, health regulations, and special purpose ordinances (such as a floodplain ordinance or an erosion and sedimentation control ordinance) 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.

“Floodplain or flood-prone area” means any land area susceptible to being inundated by water from any source (see definition of “flooding”).

“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.

“Floodway fringe” is the areas of a floodplain on either side of the designated floodway where encroachment may be permitted.

“Floodway” or “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.

“Fraud and victimization” related to article 5, variances, of this chapter means that the variance granted must not cause fraud on or victimization of the public. In examining this requirement, the director of public works will consider the fact that every newly constructed structure adds to government responsibilities and remains a part of the community for fifty to one hundred years. Structures 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 structure(s) 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 structure(s), unaware that it is subject to potential flood damage, and the structure(s) can be insured only at very high flood insurance rates.

“Freeboard” means a factor of safety usually expressed in feet above a flood level for purposes of floodplain management. “Freeboard” tends to compensate for the many unknown factors that could contribute to flood heights greater than the height calculated for a selected size flood and floodway conditions, such as wave action, bridge openings, and the hydrological effect of urbanization of the watershed.

“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, but does not include long-term storage or related manufacturing facilities.

“General floodplain” - See “Zone A.”

“Hardship” as related to article 5, variances, of this chapter means the hardship that would result from a failure to grant the requested variance. The director of public works requires that the variance be exceptional, unusual, and peculiar to the property involved. Mere economic or financial hardship alone is not exceptional. Inconvenience, aesthetic considerations, physical disabilities, personal preferences, or the disapproval of one’s neighbors likewise cannot, as a rule, qualify as exceptional hardships. All of these problems can be resolved through other means, without granting a variance. This is so even if the alternative means are more expensive or complicated than building with a variance, or if they require the property owner to put the parcel to a different use than originally intended, or to build elsewhere.

“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 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;

- (2) 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 of the Interior to qualify as a registered historic district;
- (3) Individually listed on a State of Hawai'i inventory of historic places where the historic preservation program has been approved by the Secretary of the Interior; or
- (4) Individually listed on a local inventory of historic places in communities with historic preservation programs that have been certified either:
 - (A) By an approved State program as determined by the Secretary of the Interior, or
 - (B) 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). 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.

“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” includes a “mobile home” but 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.” For the purposes of determining substantial improvement, market value pertains only to the structure in question. It does not pertain to the land, landscaping, or detached accessory structures on the property. For determining substantial improvement, the value of the land must always be subtracted. Acceptable estimates of market value can be obtained from the following sources:

- (1) Independent appraisals by a professional appraiser licensed by the State.
- (2) Property appraisals used for tax assessment purposes by the County department of finance, real property tax office.
- (3) The value of buildings taken from National Flood Insurance Program claims data. This value shall be used as a screening tool to identify those structures where the substantial improvement ratio is less than forty percent or greater than sixty percent.

“Mean sea level” means, for purposes of the National Flood Insurance Program, the National Geodetic Vertical Datum of 1929 or other datum, to which base flood elevations shown on a community's Flood Insurance Rate Map are referenced.

“Minimum necessary” related to article 5, variances, of this chapter means the minimum necessary to afford relief to the applicant of a variance with a minimum deviation from the requirements of this chapter. In the case of variances to an elevation requirement, this means the director of public works need not grant permission for the applicant to build at grade, for example, or even to whatever elevation the applicant proposes, but only that level that the director of public works believes will both provide relief and preserve the integrity of this chapter.

“New construction” for floodplain management purposes, means structures for which the “start of construction” commenced on or after May 5, 1982, 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 May 5, 1982.

“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” means a flood which has a one percent annual probability of being equaled or exceeded. It is identical to the “base flood.”

“One-hundred-year floodplain” means any area of land susceptible to being inundated by water from any source generated by the one-hundred-year flood.

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

“Principal structure” means a structure used for the principal use of the property as distinguished from an accessory use.

“Recreational vehicle” means a vehicle which is:

- (1) Built on a single chassis;
- (2) Four hundred 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.

“Repetitive loss structure” means home or business that was damaged by flood two times in the past ten years, where the cost of fully repairing the flood damage to the building, on the average, equaled or exceeded twenty-five percent of its market value at the time of each flood.

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

“Sand dunes” means naturally occurring accumulations of sand in ridges or mounds landward of the beach.

“Sheet flow area” - See “area of shallow flooding.”

“Special flood hazard area” means an area having special flood or flood-related erosion hazards, and shown on the Flood Insurance Rate Maps as Zones A, AO, AE, A99, AH, VE or V.

“Start of construction” includes substantial improvement and other proposed new development and means the date the building permit was issued, provided the actual start of construction, repair, reconstruction, rehabilitation, addition, placement, or other improvement was within one hundred-eighty 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

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. 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.

“State” means the State of Hawai‘i.

“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.

“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 fifty percent of the market value of the structure before the damage occurred.

“Substantial improvement.” For the purposes of this chapter, the determination of whether any improvements constitute substantial improvements is applicable only to structures built prior to May 5, 1982 or buildings constructed after May 5, 1982 which were not within a special flood hazard area at the time of issuing the building permit. “Substantial improvement” means any repair, reconstruction, rehabilitation, addition, or other proposed new development of a structure, the cost of which equals or exceeds fifty percent of the market value of the structure before the “start of construction” of the improvement which shall be the sum of all costs of all such work performed in the previous ten years including the cost of the current work being considered. The value of the structure including previous ten year improvements, shall be certified by a contractor, engineer, or architect licensed by the State and the property owner as may be required on a form provided by the County. This term includes structures which have incurred “substantial damage,” regardless of the actual repair work performed. The term does not, however, include either:

- (1) Any project for improvement of a structure to correct existing violations of 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.”

“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.

“Violation” means the failure of a structure or other development to be fully compliant with the community’s floodplain management regulations. A structure or other development without the elevation certificate, other certifications, or other evidence of compliance with 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 of 1929, (or other datum, where specified) of floods of various magnitudes and frequencies in the floodplains of coastal or riverine areas.

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

“Zone A” is the special flood hazard area that corresponds to the one hundred-year floodplains that are determined in the Flood Insurance Study by approximate methods. Because detailed hydraulic analyses are not performed for such areas, base flood elevations or depths have not been determined within this zone.

“Zone A99” is the special flood hazard area where enough progress has been made on a protective system, such as dikes, dams, and levees, to consider it complete for insurance rating purposes. Base flood elevations have not been determined for areas designated as Zone A99.

“Zone AE” is the special flood hazard area that corresponds to the one hundred-year floodplains that are determined in the Flood Insurance Study by detailed methods. Whole-foot base flood elevations

derived from the detailed hydraulic analyses have been determined at selected intervals within this zone.

“Zone AH” is the special flood hazard area that corresponds to the areas of one-hundred-year shallow flooding (usually areas of ponding) where average depths are between one and three feet. Whole-foot base flood elevations derived from the detailed hydraulic analyses have been determined at selected intervals within this zone.

“Zone AO” is the special flood hazard area that corresponds to the areas of one-hundred-year shallow flooding (usually sheet flow on sloping terrain) where average depths are between one and three feet. Average whole-foot depths derived from the detailed hydraulic analyses have been determined within this zone.

“Zone D” corresponds to unstudied areas where flood hazards are undetermined, but possible.

“Zone V” is the special flood hazard area that corresponds to the one hundred-year coastal floodplains extending from offshore to the inland limit of a primary frontal dune along an open coast and any other area subject to high velocity wave action from storms or seismic sources. It is an area subject to high velocity waters, including coastal and tidal inundation or tsunamis. Base flood elevations have not been determined for areas designated as Zone V.

“Zone VE” is the special flood hazard area that corresponds to the one hundred-year coastal floodplains extending from offshore to the inland limit of a primary frontal dune along an open coast and any other area subject to high velocity wave action from storms or seismic sources. It is an area subject to high velocity waters, including coastal and tidal inundation or tsunamis. Whole-foot base flood elevations derived from the detailed hydraulic analyses have been determined at selected intervals within this zone.

“Zone X (shaded)” are areas of moderate flood hazard corresponding to areas of the five-hundred-year floodplain, areas of one-hundred-year flooding where average depths are less than one foot, areas of one-hundred-year flooding where the contributing drainage area is less than one square mile, and areas protected from the one-hundred-year flood by levees.

“Zone X (unshaded)” are areas of minimal flood hazard corresponding to areas outside of the five-hundred-year floodplain. Base flood elevations or depths have not been determined for Zone X.

(1993, Ord. No. 93-78, sec. 3; Am. 1997, Ord. No. 97-116, sec 1; Am. 2001, Ord. No. 01-108, secs. 1 and 9; Am. 2007, Ord. No. 07-169, sec. 7.)

Section 27-13. Nonconforming structures.

Any nonconforming structure existing on May 5, 1982 or made nonconforming by a change in the special flood hazard area may continue, subject to the following conditions:

- (a) Any repair, reconstruction, improvement, or addition to a nonconforming structure, if it is considered to be substantial improvement, shall comply with the applicable standards of this chapter.
- (b) All relocated structures shall comply with the applicable standards of this chapter.
- (c) Substantial improvement of a damaged, destroyed, or demolished structure located in a floodway shall not be allowed unless a variance from the flood requirements is obtained.

(1993, Ord. No. 93-78, sec. 3; Am. 1997, Ord. No. 97-116, sec. 2.)

Article 3. Administration.

Section 27-14. Director of public works approval.

No building permit, certificate of occupancy, or grading permit shall be issued, no structure shall be occupied, and no development or subdivision shall be approved without the approval of the director of public works with respect to compliance with the provisions of this chapter.

(1993, Ord. No. 93-78, sec. 3; Am. 2001, Ord. No. 01-108, sec. 1; Am. 2007, Ord. No. 07-169, sec. 8.)

Section 27-15. Designation of the floodplain administrator.

The director of public works of the County of Hawai'i is hereby appointed to administer, implement, and enforce this chapter in accord with the provisions of this chapter.
(1993, Ord. No. 93-78, sec. 3; Am. 2001, Ord. No. 01-108, sec. 1.)

Section 27-16. Duties and responsibilities of the floodplain administrator.

The floodplain administrator, with the cooperation and assistance of other County departments, shall administer this chapter. The duties and responsibilities of the floodplain administrator shall include, but not be limited to:

- (a) Permit review.
 - (1) All building permits, certificates of occupancy, grading permits, and development or subdivision proposals shall be reviewed to determine whether the requirements of this chapter have been satisfied;
 - (2) All other development permits referred by other governmental departments and agencies shall be reviewed for consistency with the requirements of this chapter;
 - (3) All permits and proposals shall be reviewed to determine that the proposed building site is reasonably safe from flooding;
 - (4) For proposed building sites in flood-prone areas where special flood hazard areas have not been defined, water surface elevations have not been provided, and there is insufficient data to identify the floodway or coastal high hazard areas but the flood plain administrator has determined that there are verifiable physical indications that such hazards are present, all new construction, improvements to repetitive loss structures and substantial improvements (including the placement of manufactured homes) shall be:
 - (A) Designed and adequately anchored to prevent flotation, collapse, or lateral movement;
 - (B) Constructed of flood-resistant materials;
 - (C) Constructed by methods and practices that minimize flood damage; and
 - (D) 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;
 - (E) Be reviewed to assure that all necessary permits have been received from those governmental agencies from which approval is required by Federal or State law, including section 404 of the Federal Water Pollution Control Act Amendments of 1972, 33 U.S.C. 1334;
 - (F) New and replacement utilities shall comply with the requirements of section 27-19; and
 - (5) All permits shall be reviewed to determine that the proposed development when combined with all other existing and anticipated development will not increase the water surface elevation of the base flood at any point.
- (b) Information to be maintained.
 - (1) The Flood Insurance Study and Flood Insurance Rate Maps for the County of Hawai'i;
 - (2) The certification of lowest floor elevation;
 - (3) The certification of floodproofing for spaces below the base flood elevation;
 - (4) The certification of final pad elevation where a site is filled above the base flood elevation;
 - (5) The certification that an encroachment in the floodway will not result in any increase in flood levels during base flood discharge; and
 - (6) The certification of elevation and structural support for structures in the coastal high hazard area.
- (c) Interpretation of maps.

The director of public works shall make interpretations where needed, as to the exact location of the boundaries of the areas of special flood hazards (for example, where there appears to be a conflict between a mapped boundary and actual field conditions). A person contesting the location of the boundary shall be given a reasonable opportunity to appeal the interpretation as provided in article 5.

- (d) Change in base flood elevations. Whenever base flood elevations increase or decrease or result in a mappable alteration of the boundaries of any special flood hazard area, as a result of physical changes affecting flooding conditions, as soon as practical, but no later than six months after the date such information becomes available, the floodplain administrator shall notify the Federal Emergency Management Agency of the changes by submitting technical or scientific data through the Letter of Map Revision process. Such a submission is necessary so that upon confirmation of those physical changes affecting flooding conditions, risk premium rates and floodplain management requirements will be based upon current data.
- (e) Use of other base flood data. When base flood elevation data has not been provided in accordance with section 27-6, 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 article 4. Any such information shall be submitted to the County of Hawai'i for adoption.
- (f) Whenever a watercourse is to be altered or relocated:
 - (1) Require that the flood carrying capacity of the altered or relocated portion of said watercourse is maintained;
 - (2) For riverine situations, notify the State of Hawai'i department of land and natural resources (commission on water resource management) and all adjacent property owners, prior to such alteration or relocation of a watercourse, and submit evidence of such notification to the Federal Emergency Management Agency.
 - (3) Whenever a proposed alteration or relocation occurs that would significantly change the base flood elevation or result in a mappable alteration of the boundaries of any special flood hazard area, technical and scientific data through the Conditional Letter of Map Revision (CLOMR) shall be submitted to and approved by the Federal Emergency Management Agency. Such a submission is necessary so that upon completion of those physical changes affecting flooding conditions, risk premium rates and floodplain management requirements will be based upon current data. Work to be performed under an approved Conditional Letter of Map Revision (CLOMR) shall be subject to the following:
 - (A) Work shall not begin any on-site development affecting or impacting the floodplain until an approved Conditional Letter of Map Revision is received from the Federal Emergency Management Agency;
 - (B) Within sixty days of receiving final approval from director of public works for the completion of the alteration or relocation of a watercourse, the request for a Letter of Map Revision (LOMR), and all other information required by the Letter of Map Revision (LOMR) process shall be submitted to the flood plain administrator.
- (g) Take action to remedy violations of this chapter as specified in article 6.
(1993, Ord. No. 93-78, sec. 3; Am. 2001, Ord. No. 01-108, sec. 1; Am 2007, Ord. No. 07-169, sec. 9.)

Article 4. Standards.

Section 27-17. Certification standards.

Pre-construction and post-construction certification of elevation and floodproofing of new construction, improvements to repetitive loss structures, development, and substantial improvements within areas of special flood hazards and buffer zones shall be submitted to the director of public works and shall be maintained as a matter of public record.

- (a) Pre-construction certification. Requirements for approval of the building permit shall include the following items, as applicable, and any additional items as required by the director of public works to promote public welfare and safety:
 - (1) Certification of building plans. Each set of building plans shall be certified by a structural engineer or architect, currently licensed in the State of Hawai'i, to be in compliance with the requirements of this chapter.

- (2) Elevation certification on building plans. The elevation of the lowest floor shall be certified on each set of the building plans by a civil engineer or land surveyor currently licensed in the State of Hawai‘i.
 - (3) Special flood hazards area certification. The County of Hawai‘i “Special Flood Hazard Area Certification” form, as amended, shall be completed and certified by a structural engineer or architect currently licensed in the State of Hawai‘i. The completed “Special Flood Hazard Certification” shall be submitted for approval with the building plans.
 - (4) Floodproofing certification. For all new nonresidential construction and substantial improvement with enclosed areas below the base flood elevation, the Federal Emergency Management Agency “Floodproofing Certificate” form, as amended, shall be completed and certified by an engineer or architect currently licensed in the State of Hawai‘i and shall be submitted for approval with the building plans. The director of public works may require additional information regarding the floodproofing design from the permit applicant and the applicant shall provide it. The information required may include the design data and calculations used in the floodproofing design, a detailed flood elevation study, a drainage report, and other information as determined necessary by the director of public works to establish compliance with the provisions of this chapter and to promote public welfare and safety.
- (b) Post-construction certification. Requirements for approval of the certificate of occupancy shall include the following items, as applicable, and any additional items as required by the director of public works to promote public welfare and safety:
- (1) Elevation certification. The Federal Emergency Management Agency “Elevation Certificate,” as amended, shall be completed and certified by a land surveyor, civil engineer, or architect currently licensed in the State of Hawai‘i and submitted for approval with the application for the certificate of occupancy. The information certified within the “Elevation Certificate” shall be based on actual construction.
 - (2) Compliance with other requirements of this chapter.
- (1993, Ord. No. 93-78, sec. 3; Am. 2001, Ord. No. 01-108, sec. 1; Am. 2007, Ord. No. 07-169, sec. 10.)

Section 27-18. Standards for construction.

Standards for construction within areas of special flood hazards and buffer zones are established as follows:

- (a) Anchoring.
 - (1) New construction, improvements to repetitive loss structures, and substantial improvements shall be adequately anchored to resist flotation, collapse or lateral movement of the structure resulting from hydrodynamic and hydrostatic loads, including the effects of buoyancy.
 - (2) All manufactured homes, including mobile homes, shall meet all standards for structures.
- (b) Construction materials and methods.
 - (1) New construction, improvements to repetitive loss structures, and substantial improvement shall be constructed with materials and utility equipment resistant to flood damage.
 - (2) New construction, improvements to repetitive loss structures, and substantial improvement shall be constructed using methods and practices that minimize flood damage.
 - (3) New construction, improvements to repetitive loss structures, and substantial improvement shall be designed and constructed with electrical, heating, ventilation, plumbing, air-conditioning equipment, and other service facilities including, but not limited to, furnaces, heat pumps, water heaters, washers, dryers, elevator lift equipment, electrical junction boxes, circuit breaker boxes, and food freezers located above the base flood elevation plus any required freeboard.
 - (4) Within Zones V and VE, new construction, improvements to repetitive loss structures, and substantial improvements shall comply with the standards of section 27-23.

- (5) Recreational vehicles placed on sites within Zones AH and AE on the FIRM shall be elevated and anchored or be on the site for less than one hundred eighty consecutive days or be fully licensed and highway ready.
- (c) Encroachments.
- (1) Within a floodway, encroachments (including fill), new construction, improvements to repetitive loss structures, substantial improvements, and other developments, shall be prohibited unless certified by a professional civil engineer licensed in the State of Hawai‘i, with supporting data, that the encroachment will not cause any increase in base flood elevations during the occurrence of the base flood discharge.
 - (2) Require, until a regulatory floodway is designated, that no new construction, improvements to repetitive loss structures, substantial improvements, or other development (including fill), shall be permitted within Zones AE on the FIRM, unless demonstrated 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 at any point.
 - (3) Within all zones of special flood hazards, but not including floodways, filling which would result in the blockage or impediment of flow and/or induce or aggravate flooding shall be prohibited unless certified by a professional civil engineer licensed in the State of Hawai‘i, with supporting data, that the encroachment will not cause any increase in base flood elevations during the occurrence of the base flood discharge.
 - (4) Within floodway fringe areas, filling to elevate the lowest floor of a nonresidential structure may only be permitted where the structure:
 - (A) Is floodproofed so that below the base flood elevation plus any required freeboard the structure is watertight with walls substantially impermeable to the passage of water, and
 - (B) Has structural components capable of resisting hydrostatic and hydrodynamic loads and the effects of buoyancy.
 - (5) In Zones V and VE, filling shall be prohibited.
- (d) Elevation and floodproofing.
- (1) Within Zones AE and AH:
 - (A) For residential new construction, improvements to repetitive loss structures, and substantial improvements, the lowest floor shall be elevated to or above the base flood elevation plus a freeboard of at least one foot.
 - (B) For nonresidential new construction, improvements to repetitive loss structures, and substantial improvements, the lowest floor shall be elevated or floodproofed to or above the base flood elevation plus a freeboard of at least one foot. If the lowest floor is below the base flood elevation plus the required freeboard, then the structure together with attendant utility and sanitary facilities shall be designed, constructed, and certified by a currently licensed professional engineer or architect in the State of Hawai‘i such that:
 - (i) The structure is watertight below the base flood elevation plus the required freeboard.
 - (ii) The walls are substantially impermeable to the passage of water.
 - (iii) The structural components are capable of resisting hydrostatic and hydrodynamic loads and the effects of buoyancy.
 - (C) Within Zone AH, new construction, improvements to repetitive loss structures, and substantial improvement shall be required to provide adequate drainage paths around structures on slopes to guide floodwaters around and away from proposed structures.
 - (D) Fully enclosed areas below the lowest floor that are useable solely for parking of vehicles, building access, or storage in an area other than a basement 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 floodwaters. Designs for meeting this requirement must either be certified by a currently licensed professional engineer or architect or meet or exceed the following criteria: 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. Each opening must be on different sides of the enclosed area. The bottom of all openings shall be no higher than one foot above grade. Openings may be equipped with screens, louvers, valves, or other coverings or devices provided that they permit the automatic entry and exit of floodwaters.

- (2) Within Zone AO:
 - (A) For residential new construction, improvements to repetitive loss structures, and substantial improvements, the lowest floor shall be elevated above the highest adjacent grade at least one foot above the depth number specified in feet on the FIRM, or at least three feet if no depth number is specified.
 - (B) For nonresidential new construction, improvements to repetitive loss structures, and substantial improvements, the lowest floor shall be elevated or completely floodproofed above the highest adjacent grade at least one foot above the depth number specified in feet on the FIRM, or at least three feet if no depth number is specified. If the lowest floor is to be completely floodproofed, then a currently licensed professional engineer or architect in the State of Hawai'i shall develop and/or review structural design, specifications and plans for construction and shall certify that the design and methods of construction are in accordance with accepted standards of practice for the structure together with attendant utility and sanitary facilities such that:
 - (i) The structure is watertight below the referenced flood elevation.
 - (ii) The walls are substantially impermeable to the passage of water.
 - (iii) The structural components are capable of resisting hydrostatic and hydrodynamic loads and the effects of buoyancy.
 - (C) New construction, improvements to repetitive loss structures, and substantial improvement shall be required to provide adequate drainage paths around structures on slopes to guide floodwaters around and away from proposed structures.
- (3) Within Zones V and VE: New construction, improvements to repetitive loss structures, and substantial improvement shall comply with the standards of section 27-23.
- (4) Within Zone A: New construction, improvements to repetitive loss structures, and substantial improvement shall comply with the standards of section 27-24.
- (5) Buffer zones: Areas bordering and within fifty feet of a special flood hazard areas with base flood elevations, depth numbers specified in feet on the FIRM or other areas that have been studied and identified with base flood elevations or depth numbers.
 - (A) For residential new construction, improvements to repetitive loss structures, and substantial improvements, the lowest floor shall be elevated to the bordering base flood elevation or depth number plus a freeboard of at least one foot.
 - (B) For nonresidential new construction, improvements to repetitive loss structures, and substantial improvements, the lowest floor shall be elevated or floodproofed to the bordering base flood elevation or depth number plus a freeboard of at least one foot. If the lowest floor is below the bordering base flood elevation or depth number plus the required freeboard, then a currently licensed professional engineer or architect in the State of Hawai'i shall develop and/or review structural design, specifications and plans for construction and shall certify that the design and methods of construction are in accordance with accepted standards of practice for the structure together with attendant utility and sanitary facilities such that:
 - (i) The structure is watertight below the bordering base flood elevation or depth number plus the required freeboard.

- (ii) The walls are substantially impermeable to the passage of water.
 - (iii) The structural components are capable of resisting hydrostatic and hydrodynamic loads and the effects of buoyancy.
 - (C) New construction, improvements to repetitive loss structures, and substantial improvements, shall be required to provide a drainage path around and away from proposed structures.
 - (D) When topographical or ground elevation data, submitted by a civil engineer or land surveyor currently licensed in the State of Hawai'i, shows that the proposed building site is higher than the elevation requirements of paragraph 27-18(d)(5)(A) and 27-18(d)(5)(B), the flood plain regulations of this chapter shall not be applicable.
 - (e) Certification requirements. All new construction, improvements to repetitive loss structures, and substantial improvement within areas of special flood hazard and buffer zones shall be certified as required by the standards of section 27-17.
- (1993, Ord. No. 93-78, sec. 3; Am. 1997, Ord. No. 97-116, sec. 3; Am. 2007, Ord. No. 07-169, sec. 11.)

Section 27-19. Standards for utilities.

- (a) New and replacement water supply and sanitary sewage systems shall be designed to minimize or eliminate infiltration of flood waters into the system and discharge from systems into flood waters.
 - (b) On-site cesspools and septic systems shall be located to avoid impairment to them or contamination from them during flooding.
- (1993, Ord. No. 93-78, sec. 3.)

Section 27-20. Standards for subdivisions and other developments.

- (a) All subdivisions and other developments within areas of special flood hazards and flood prone areas where special flood hazard areas have not been defined, water surface elevations have not been provided, and there is insufficient data to identify the floodway or coastal high hazard areas but there are verifiable physical indications that such hazards are present as determined by the flood plain administrator, shall:
 - (1) Be consistent with the need to minimize flood damage;
 - (2) Have public utilities and facilities, such as sewer, gas, electrical, and water systems, located and constructed to minimize flood damage; and
 - (3) Have adequate drainage provided to reduce exposure to flood damage.
- (b) All subdivision and other development applications shall identify the areas of special flood hazards and base flood elevations on the proposed site. If such information is not provided by the Flood Insurance Rate Maps, the director of public works may request and the applicant shall provide such information.
- (c) Finally approved subdivision plats for subdivisions within areas of special flood hazards shall provide base flood elevations within the lots.
- (d) All new subdivision proposals and other proposed developments within areas designated as Zone A or a flood prone area where special flood hazard areas have not been defined, water surface elevations have not been provided, and there is insufficient data to identify the floodway or coastal high hazard areas but the flood plain administrator has determined that there are verifiable physical indications that such hazards are present shall comply with the following:
 - (1) Be reviewed to assure that all necessary permits have been received from those governmental agencies from which approval is required by Federal or State law, including section 404 of the Federal Water Pollution Control Act Amendments of 1972, 33 U.S.C. 1334;
 - (2) For all proposed developments and/or subdivisions greater than either fifty lots or five acres, the developer and/or subdivider shall include base flood elevation data within their proposal.
 - (3) Comply with the requirements of section 27-24.

- (e) All developments requiring a site drainage plan under section 25-2-72(3) shall submit such a plan for review and approval by the director of public works. The site drainage plan shall comply with sections 27-20(a) and (b) and section 27-24, and shall include a storm water disposal system to contain run-off caused by the proposed development, within the site boundaries, up to the expected one-hour, ten year storm event, as shown in the department of public works "Storm Drainage Standards," dated October 1970, or any approved revision, unless those standards specify a greater recurrence interval. The amount of expected runoff shall be calculated according to the department of public works "Storm Drainage Standards," dated October 1970, or any approved revision, or by any nationally-recognized method meeting with the approval of the director of public works. Runoff calculations shall include the effects of all improvements.
- (f) Storm water shall be disposed into drywells, infiltration basins, or other approved infiltration methods. The development shall not alter the general drainage pattern above or below the development.
(1993, Ord. No. 93-78, sec. 3; Am. 2001, Ord. No. 01-108, sec. 1; Am. 2007, Ord. No. 07-169, sec. 12.)

Section 27-21. Standards for manufactured homes.

Manufactured homes that are placed or substantially improved on sites outside of a manufactured home park or subdivision, in a new manufactured home park or subdivision, in an expansion to an existing manufactured home park or subdivision, or in an existing manufactured home park or subdivision on which a manufactured home has incurred "substantial damage" as the result of a flood shall:

- (a) Within Zones AE or AH, be elevated so that either:
 - (1) The lowest floor of the manufactured home is at or above the base flood elevation, or
 - (2) The manufactured home chassis is supported by reinforced piers or other foundation elements of at least equivalent strength that are no less than thirty-six inches in height above grade and be securely anchored to an adequately anchored foundation system to resist flotation, collapse, and lateral movement.
- (b) Within Zone AO, be elevated such that the lowest floor of the manufactured home is elevated 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 and be securely anchored to an adequately anchored foundation system to resist flotation, collapse, and lateral movement.
- (c) Within Zone A, comply with the standards of section 27-24.
- (d) Within Zones V or VE, comply with the standards of section 27-23.
(1993, Ord. No. 93-78, sec. 3.)

Section 27-22. Standards for floodways.

The floodway identified on the Flood Insurance Rate Maps and located within areas of special flood hazard is the watercourse reserved to discharge the base flood. Since the floodway is an extremely hazardous area due to the velocity of floodwaters which carry debris, potential projectiles, and erosion potential, the following provisions apply:

- (a) Encroachments, including fill, new construction, improvements to repetitive loss structures, substantial improvement, and other new development shall be prohibited unless certification and supporting data is provided by a licensed professional engineer or architect demonstrating that the encroachment will not cause any increase in base flood elevations during the occurrence of the base flood discharge.
- (b) If an encroachment within a floodway is allowed under the conditions of paragraph 27-22(a), all new construction, improvements to repetitive loss structures, substantial improvement and other proposed new development shall comply with all applicable flood hazard reduction provisions established in this chapter.

- (c) The following uses, not involving fill, shall be evaluated on a case-by-case basis to establish that the use does not cause any increase in base flood elevations:
- (1) Public and private outdoor nonstructural recreational facilities, lawn, garden, and play areas;
 - (2) Agricultural uses, including farm, grazing, pasture, and outdoor plant nurseries; and
 - (3) Drainage improvements, such as channels and stream crossings.
- (1993, Ord. No. 93-78, sec. 3; Am. 2007, Ord. No. 07-169, sec. 13.)

Section 27-23. Standards for coastal high hazard areas.

Coastal high hazard areas, more commonly known as tsunami inundation areas, are identified as Zone V or Zone VE on the Flood Insurance Rate Maps. Within coastal high hazard areas, the following standards shall apply:

- (a) All new construction, improvements to repetitive loss structures, and substantial improvements in a coastal high hazard area shall be constructed with materials and utility equipment resistant to flood damage and using methods and practices that minimize flood damage.
- (b) New construction, improvements to repetitive loss structures, and substantial improvement shall be elevated on adequately anchored pilings or columns and securely anchored to such pilings or columns so that the lowest horizontal portion of the structural members of the lowest floor, excluding the pilings and columns, is elevated to or above the base flood level. The pile or column foundation and structure attached thereto shall be anchored to resist flotation, collapse, and lateral movement due to the effects of wind and water loads acting simultaneously on all building components. The wind and water loading values shall each have a one percent chance of being equaled or exceeded in any given year.
- (c) New construction, improvements to repetitive loss structures, and other development shall be located on the landward side of the reach of mean high tide.
- (d) New construction, improvements to repetitive loss structures, and substantial improvement shall have the enclosed space, if any, below the lowest floor free of obstructions and constructed with breakaway walls as defined in section 27-12. Such enclosed space shall not be used for human habitation and will be useable solely for parking of vehicles, building access, or storage. Machinery and equipment which service the building, such as furnaces, air conditioners, heat pumps, hot water heaters, washers, dryers, elevator lift equipment, electrical junction and circuit boxes, and food freezers are not permitted in such enclosed spaces. The enclosed space must only be achieved with breakaway walls, open wood latticework, or insect screening intended to collapse under wind and water loads without causing collapse, displacement, or other structural damage to the elevated portion of the building or supporting foundation system. A breakaway wall shall have a design safe loading resistance of not less than ten and no more than twenty pounds per square foot. Use of breakaway walls which exceed a design safe loading resistance of twenty pounds per square foot may be permitted only if a licensed professional structural engineer certifies that the design proposed meets the following conditions:
 - (1) Breakaway wall collapse shall result from a water load less than that which would occur during the base flood; and
 - (2) The elevated portion of the building and supporting foundation system shall not be subject to collapse, displacement, or other structural damage due to the effects of wind and water loads acting simultaneously on all building components (structural and nonstructural). Maximum wind and water loading values to be used in this determination shall each have a one percent chance of being equaled or exceeded in any given year (one-hundred-year mean recurrence interval).
- (e) Fill shall not be used.
- (f) Man-made alteration of sand dunes which would increase potential flood damage is prohibited.
- (g) All new construction, improvements to repetitive loss structures, development, and substantial improvement within coastal high hazard areas shall be certified as required by section 27-17.

- (h) Recreational vehicles placed on sites within Zones V and VE on the FIRM shall be elevated and anchored or be on the site for less than one hundred eighty consecutive days or be fully licensed and highway ready.
(1993, Ord. No. 93-78, sec. 3; Am. 2007, Ord. No. 07-169, sec. 14.)

Section 27-24. Standards for general floodplain.

The general floodplain, identified as Zone A on the Flood Insurance Rate Maps, are areas of special flood hazards for which detailed engineering studies are not performed by the Federal Emergency Management Agency to determine the base flood elevations and to identify the floodways.

- (a) To determine base flood elevations and the locations of floodways within the general floodplain, the director of public works may obtain, review, and reasonably utilize any base flood elevation and floodway data available from a Federal, State, or other source, including information requested of a permit applicant.
- (b) Development or subdivision proposals shall conform with the requirements of section 27-20.
- (c) The following information shall be provided by a permit applicant to the director of public works to evaluate the proposed construction or improvement site within a general floodplain area:
- (1) Project location and site plan showing dimensions.
 - (2) Relationship to floodway and floodway fringes as determined by flood elevation study.
 - (3) Contour map showing the topography of existing ground based on elevation reference marks on flood maps. The scale and contours are to be appropriate to the work in question.
 - (4) Existing and proposed base flood elevations.
 - (5) Existing and proposed floodproofing and flood control measures.

The director of public works may waive informational requirements if the director of public works has sufficient information to make an evaluation and determination regarding flood elevation or may request further information, including a detailed flood elevation study and a drainage report, to evaluate flood risks and determine the applicability of flood construction and development standards.

- (d) New construction, improvements to repetitive loss structures, and substantial improvements within the general floodplain shall satisfy the requirements set forth for Zones AE, AH, AO, or VE as is determined to be applicable by the director of public works based on base flood information and floodway data obtained through subsections 27-24(a) and 27-24(b).
- (e) All new construction, improvements to repetitive loss structures, development, and substantial improvement within the general floodplain shall be certified as required by section 27-17.
- (f) All manufactured homes shall be elevated and anchored to resist flotation, collapse, or lateral movement.
(1993, Ord. No. 93-78, sec. 3; Am. 2001, Ord. No. 01-108, sec. 1; Am. 2007, Ord. No. 07-169, sec. 15.)

Section 27-25. Standards for improvements adjacent to drainage facilities.

New construction, improvements to repetitive loss structures, and substantial improvements proposed adjacent to drainage facilities outside of the special flood hazard areas identified on the Flood Insurance Rate Maps shall be subject to review and approval of the director of public works.

- (a) Upon request by the director of public works, further information concerning base flood elevation, floodways, surface water runoff, existing and proposed drainage patterns, and other information, including a detailed flood elevation study, drainage report, and findings and opinions by a licensed professional civil engineer, shall be provided to evaluate potential flooding.
- (b) The director of public works shall determine the applicability of the various development and construction standards provided in this chapter based upon information available from a Federal, State, or other source, including information provided by the permit applicant.
- (c) A drainage facility shall not be modified, constructed, lined, or altered in any way to accommodate the improvement without the approval of the director of public works.

(1993, Ord. No. 93-78, sec. 3; Am. 2001, Ord. No. 01-108, sec. 1; Am. 2007, Ord. No. 07-169, sec. 16.)

Section 27-26. Storm drainage standards.

The department of public works, County of Hawai'i's "Storm Drainage Standard," October 1970 edition, or latest revision, is incorporated into and made a part of this chapter. These standards have been prepared to guide County engineers and personnel, engineers for subdivision and other developers, consultants employed by the department of public works, and other interested parties in the general features required for the design of storm drainage facilities, preparation of flood hazard studies, and other related work in the County of Hawai'i.

(1993, Ord. No. 93-78, sec. 3; Am. 2007, Ord. No. 07-169, sec. 17.)

Article 5. Variances and Appeals.**Section 27-27. Criteria for variances.**

A variance from this chapter may be issued by the director of public works only upon the applicant meeting the variance criteria of this section. The variance criterion set forth in this section are based on the general principle of zoning law that variances pertain to a piece of property and are not personal in nature. A properly issued variance is granted for a parcel of property with 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. The characteristics must be unique to the property and not be shared by adjacent parcels. The unique characteristic must pertain to the land itself, not to the structure, its inhabitants, or the property owners.

It is the duty of the County of Hawai'i to help protect its citizens from flooding. This need is so compelling and the implications of the cost of insuring a structure built below flood level are so serious that variances from the flood elevation or from other requirements of this chapter are quite rare. The variance guidelines are detailed and contain multiple provisions that must be met before a variance can be properly granted. The following criterion are designed to screen out those situations in which alternatives other than a variance are more appropriate:

- (a) Generally, variances may be issued for new construction, improvements to repetitive loss structures, 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 articles 3 and 4 of this chapter have been fully considered. As the lot size increases beyond one-half acre, the technical justification required for issuing the variance increases.
- (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:
 - (1) A showing of good and sufficient cause. Under this criterion, the applicant must demonstrate that the variance request is for land which has physical characteristics so unusual that complying to flood requirements will create exceptional hardship to the applicant or surrounding landowners. The unique characteristic must pertain to the land itself and not the structure, its inhabitants, or the property owner.

Under this criterion, only exceptional instances should arise where the physical characteristics of properties create a hardship sufficient to justify granting a variance. Even in a fairly common situation where an undeveloped lot is surrounded by properties with structures built at grade and/or below flood levels, a variance cannot be justified since an applicant can erect the concerned structure on pilings, etc.;

- (2) A determination that failure to grant the variance would result in exceptional "hardship" (as defined in section 27-12) to the applicant. Under this criterion, the hardship that would result from failure to grant a requested variance must be exceptional, unusual, and peculiar to the property involved. Economic or financial hardship alone is not exceptional. Inconvenience, aesthetic considerations, physical disabilities, personal preferences, or the disapproval of one's neighbors cannot, generally, qualify as exceptional hardship. Under this criterion, for example,

a member of a household has a physical disability and wants a variance to build the dwelling at grade or at a lower level for access purposes. A variance should not be issued because the owner can construct a ramp or elevator to meet flood requirements. Elevation will allow the infirm or persons with disabilities to be evacuated in the early stage of flooding, and, if there is insufficient warning or help in evacuating that person, then, in all likelihood, he can survive the flood by simply remaining in the home safely above the levels of floodwaters;

- (3) A determination that the variance is the “minimum necessary” (as defined in section 27-12), considering the flood hazard, to afford relief. Under this criterion, the variance that is granted should be for the minimum deviation from the flood requirements that will still alleviate the hardship. In the case of variance to an elevation requirement, this does not mean approval to build at grade level or to whatever elevation an applicant proposes, but rather to a level that the director of public works determines will provide relief and preserve the integrity of the flood ordinance; and
 - (4) 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 or victimization” (as defined in section 27-12) of the public, or conflict with existing local laws or ordinances. Under this criterion, an applicant must demonstrate that flood levels will not be raised above the base flood elevations.
- (d) Variances may be issued for new construction, improvements to repetitive loss structures, substantial improvement, and other proposed new development necessary for the conduct of a “functionally dependent use” (as defined in section 27-12) provided that the provisions of paragraphs 27-27(a) through 27-27(c) 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.
 - (e) 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 a historic structure and the variance is the minimum necessary to preserve the historic character and design of the structure.
 - (f) Variances may be issued for improvement of a structure to correct existing violations of 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.
 - (g) Variances may be approved with conditions. Such conditions may include:
 - (1) Modification of the construction or substantial improvement, including the sewer and water facilities.
 - (2) Limitations on periods of use and operation.
 - (3) Imposition of operational controls, sureties, and deed restrictions.
 - (4) Requirements for construction of channels, dikes, ditches, swales, levees, and other flood-protective measures.
 - (5) Floodproofing measures designed consistent with the regulatory flood elevation, flood velocities, hydrostatic and hydrodynamic forces, and other factors associated with the base flood.
 - (6) Other conditions as may be required by the director of public works to promote public welfare and safety.

(1993, Ord. No. 93-78, sec. 3; Am. 2001, Ord. No. 01-108, sec. 1; Am. 2007, Ord. No. 07-169, sec. 18.)

Section 27-28. Application for variance.

An application for a variance shall be submitted to the director of public works, signed and stamped by a licensed professional engineer or architect, and shall include three sets of documents with the following information as may be applicable:

- (a) Plans and specifications showing the site and location; dimensions of all property lines and topographic elevation of the lot; existing and proposed structures and improvements, fill, storage area; locations and elevations of existing and proposed streets and utilities; floodproofing measures; relationship of the site to the location of the flood boundary; floodway; and the existing and proposed flood control measures and improvements.
 - (b) Cross-sections and profile of the area and the regulatory flood elevations and profile based on elevation reference marks on flood maps.
 - (c) Flood study and drainage report in areas where a study and report have not been reviewed and accepted by the County of Hawai'i.
 - (d) Description of surrounding properties and existing structures and uses and the effect of the regulatory flood on them caused by the variance.
 - (e) Evaluation and supporting information for the variance with respect to the factors to be considered by the director of public works as listed in paragraphs 27-27(a) through 27-27(f).
 - (f) An agreement that a covenant will be inserted in the deed and other conveyance documents of the property and recorded with the bureau of conveyances of the State of Hawai'i, stating that the property is located in a flood hazard area subject to flooding and flood damage; that a flood hazard variance to construct a structure below the base flood elevation will result in increased flood insurance rates and increases flood risks to life and property; that the property owners will not file any lawsuit or action against the County of Hawai'i for costs or damages or any claim; that the property owners will indemnify and hold harmless the County of Hawai'i from liability when such loss, damage, injury, or death results due to any flood hazard variance and flooding of the property; and that upon approval of the variance, the covenants shall be fully executed and proof of recording with the bureau of conveyances shall be submitted to the director of public works prior to the issuance of a building permit.
 - (g) Such other information as may be relevant and requested by the director of public works.
- (1993, Ord. No. 93-78, sec. 3; Am. 2001, Ord. No. 01-108, sec. 1; Am. 2007, Ord. No. 07-169, sec. 19.)

Section 27-29. Review of variance applications.

The director of public works shall review variance applications and shall consider all technical evaluations, relevant factors, standards specified in other sections of this chapter, and:

- (a) The danger that materials may be swept onto other lands to the injury of others;
 - (b) The danger of life and property due to flooding or erosion damage;
 - (c) The 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;
 - (d) The importance of the services provided by the proposed facility to the community;
 - (e) The necessity to the facility of a waterfront location, where applicable;
 - (f) The availability of alternative locations for the proposed use which are not subject to flooding or erosion damage;
 - (g) The compatibility of the proposed use with existing and anticipated development;
 - (h) The relationship of the proposed use to the comprehensive plan and floodplain management program, if any, for that area;
 - (i) The safety of access to the property in time of flood for ordinary and emergency vehicles;
 - (j) The expected heights, velocity, duration, rate of rise, and sediment transport of the flood waters expected at the site; and
 - (k) The 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.
- (l) Upon consideration of the factors of paragraphs 27-29(a) through 27-29(k) and the purposes of this chapter, the director of public works may attach such conditions to the granting of variances as it deems necessary to further the purposes of this chapter.

(1993, Ord. No. 93-78, sec. 3; Am. 2001, Ord. No. 01-108, sec. 1.)

Section 27-30. Recording and reporting of variances.

- (a) Any applicant to whom a variance is granted shall be given written notice over the signature of the director of public works that:
- (1) The issuance of a variance to construct a structure at elevations 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;
 - (2) Such construction below the base flood level increases risks to life and property; and
 - (3) A copy of the notice shall be recorded with the State of Hawai'i bureau of conveyances and shall be recorded in a manner so that it appears in the chain of title of the affected parcel of land.
- (b) A record of all variance actions, including justifications for issuance of any variance and written notices, shall be maintained by the director of public works. A report of the variances issued shall be included in the biennial report submitted to the Federal Emergency Management Agency.
- (1993, Ord. No. 93-78, sec. 3; Am. 2001, Ord. No. 01-108, sec. 1; Am. 2007, Ord. No. 07-169, sec. 20.)

Section 27-31. Appeals.

The circuit court of the third circuit, County of Hawai'i, State of Hawai'i 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 administration or enforcement of this chapter.

(1993, Ord. No. 93-78, sec. 3.)

Article 6. Enforcement.**Section 27-32. Right to enter.**

Authorized representatives of the County of Hawai'i are empowered to enter and inspect properties, both public and private, for the purposes of investigating compliance with the provisions of this chapter. The representatives shall, upon request, provide proper identification and state the purpose of the investigation.

(1993, Ord. No. 93-78, sec. 3.)

Section 27-33. Notice of violation.

Whenever any person, firm, or corporation violates any provision of this chapter, the director of public works shall serve, either through certified mail or by hand delivery, a notice of violation to the parties responsible for the violation.

- (a) The notice of violation shall identify the violation and require the responsible party to correct the violation and comply with applicable requirements of this chapter.
- (b) The notice of violation shall include at least the following information:
- (1) The date of the notice;
 - (2) The name and address of the person served with the notice;
 - (3) The tax key number of the property where the violation has been identified;
 - (4) The section number of the chapter or other law which has been violated;
 - (5) The nature of the violation;
 - (6) The corrective measures required to comply with this chapter;
 - (7) The deadline date for compliance with the notice.

(1993, Ord. No. 93-78, sec. 3; Am. 2001, Ord. No. 01-108, sec. 1.)

Section 27-34. Administrative order.

- (a) In lieu of or in addition to section 27-33, if the director of public works determines that any person, firm, or corporation is not complying with the requirements of this chapter or a notice of violation for a violation of this chapter, the director of public works may have the party responsible for the violation served, by certified mail or delivery, with an order pursuant to this section.

- (b) The order may require the party responsible for the violation to do any or all of the following:
- (1) Correct the violation within the time specified in the order;
 - (2) Pay a civil fine of not less than \$500 and not more than \$1,000 in the manner, at the place, and before the date specified in the order;
 - (3) Pay a civil fine of not less than \$500 per day and not more than \$1,000 per day for each day that the violation persists, in the manner and at the time and place specified in the order.
- (c) The order shall become final thirty days from the date of service unless the party served requests a hearing under chapter 91, Hawai‘i Revised Statutes. If a hearing is requested, no fine shall be imposed except upon completion of the hearing. In determining the amount of the fine, the director of public works shall consider the seriousness of the violations, any history of such violations, any good-faith efforts to comply with the applicable requirements, the economic impact of the fine on the violator, and such other considerations that have a bearing on the amount of the fine.
- (d) The director of public works may institute a civil action in any court of competent jurisdiction for the enforcement of any order issued pursuant to this section. Where the civil action has been instituted to enforce the civil fine imposed by said order, the director of public works need only show that the notice of violation and order were served, that a civil fine was imposed, the amount of the civil fine imposed, and that the fine has not been paid.
- (1993, Ord. No. 93-78, sec. 3; Am. 2001, Ord. No. 01-108, sec. 1; Am. 2007, Ord. No. 07-169, sec. 21.)

Section 27-35. Injunctive relief.

Whenever a person, firm, or corporation has violated or continues to violate the provisions of this chapter, notice of violation, or administrative order issued relevant to this article, the County of Hawai‘i may petition the circuit court of the third district, State of Hawai‘i, or the United States District Court, State of Hawai‘i, through the County of Hawai‘i’s corporation counsel, for the issuance of a temporary or permanent injunction, as appropriate, which restrains or compels the specific performance of the provisions of this chapter, notice of violation, or administrative order. Such other action as appropriate for legal and/or equitable relief may also be sought by the County of Hawai‘i. A petition for injunctive relief need not be filed as a prerequisite to taking any other action against a user.

(1993, Ord. No. 93-78, sec. 3.)

Section 27-36. Criminal enforcement.

A violation of the requirements of this chapter shall constitute a misdemeanor. Any person violating the provisions of this chapter shall upon conviction be punished by a fine of \$1,000 or by imprisonment not exceeding one year, or both, except that in cases where such offense shall continue after due notice, each day’s continuance of the same shall constitute a separate offense.

(1993, Ord. No. 93-78, sec. 3.)

Section 27-37. Removal of encroachment and/or obstruction notices.

In addition to any other section, if any encroachment and/or obstruction exists, under, over or through any portion of a drainageway, floodway, levee system or watercourse within the County and the encroachment and/or obstruction is observed, or a complaint made to the department of public works of the County of Hawai‘i, then the department of public works shall investigate and forthwith, give notice to the owner to remove the encroachment and/or obstruction in the manner provided in this article.

(1997, Ord. 97-128, sec. 1; Am. 2007, Ord. No. 07-169, sec. 22.)

Section 27-38. Removal by County; costs.

If the encroachment and/or obstruction is not removed or its removal is not commenced and diligently prosecuted prior to the expiration of thirty days after mailing of notice, the department of public works may proceed to remove the encroachment and/or obstruction by itself or contract for its removal. All costs incurred in the course of removing the encroachment and/or obstruction shall be paid by owner and the County may institute an action to recover costs and expenses for removal of the encroachment and/or obstruction. The County may also place a lien against the encroaching and/or obstructing parcel for any uncollected costs. (1997, Ord. 97-128, sec. 1.)