CHAPTER 21A: FLOOD HAZARD AREAS

Article

1. General Provisions

ARTICLE 1: GENERAL PROVISIONS

Sections

§ 21A-1.1 Purpose.

(a) Within the City and County of Honolulu, certain areas are subject to periodic inundation by flooding or tsunami or both, resulting in loss of life and property, creation of health and safety hazards, disruption of commerce and governmental services as well as extraordinary public expenditures for flood and tsunami protection and relief, and impairment of the tax base, all of which adversely affect the public health, safety, and general welfare.

(b) These flood losses are caused by uses that are inadequately elevated, floodproofed, or protected from flood damage. The cumulative effect of obstructions in areas of special flood hazards, which increase flood heights and velocities also contribute to flood losses.

(c) Congress has determined that regulation of construction in areas subject to flood hazards is necessary for the protection of life and property and reduction of public costs for flood control, rescue and relief efforts, thereby promoting the safety, health, convenience, and general welfare of the community. To achieve these purposes, this chapter establishes flood hazard areas and imposes restrictions upon man-made changes to improved and unimproved real estate within the areas. These restrictions are necessary to qualify the city for participation in the federal flood insurance program.

(d) Failure to participate in the program would result in the denial of federal financial assistance for acquisition and construction purposes, and would jeopardize the making,

securing, extension, and renewal of loans secured by improved real estate by lending institutions regulated by the federal government.

(e) This chapter is designed to:

(1) Protect human life and health and promote the general welfare;

(2) Minimize expenditure of public money for costly flood control projects;

(3) Minimize the need for rescue and relief efforts associated with flooding and generally undertaken at the expense of the general public;

(4) Minimize prolonged business interruptions;

(5) 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;

(6) 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 blighted areas caused by flood damage;

(7) Ensure that potential buyers are notified that property is in an area of special flood hazard; and

(8) Ensure that those who occupy or develop, or both, the areas of special flood hazard assume responsibility for their actions.

(1990 Code, Ch. 21A, Art. 1, § 21A-1.1) (Added by Ord. 14-9)

§ 21A-1.2 Statutory authority.

This chapter is enacted pursuant to the U.S. National Flood Insurance Act of 1968 (Public Laws 90-448 and 91-152), as amended, and the U.S. Flood Disaster Protection Act of 1973 (Public Law 93-234), as amended, and HRS Chapter 46.

(1990 Code, Ch. 21A, Art. 1, § 21A-1.2) (Added by Ord. 14-9)

§ 21A-1.3 Administration.

(a) *Designation of floodplain administrator.* The director of planning and permitting is appointed to administer, implement, and enforce this chapter by granting or denying development permits in accordance with its provisions.

(b) Duties and responsibilities shall include but not be limited to the following:

(1) Review all development permits to determine that the requirements of this chapter have been satisfied, the project site is reasonably safe from flooding, and other required federal or State approvals are obtained;

(2) Where base flood elevation data have not been provided on the federal flood insurance rate maps, the director shall obtain, review, and reasonably use any base flood elevation and floodway data available from a federal or State agency, or other source, to administer this chapter;

(3) Whenever a watercourse is proposed to be altered or relocated, require that the flood carrying capacity within the altered or relocated watercourse be maintained;

(4) Obtain and maintain for public inspection, certifications and documentation required by this chapter, including a record of all variance actions;

(5) Make interpretations where needed, as to the exact location of the boundaries of the areas of special flood hazard, where there appears to be a conflict between a mapped boundary and actual field conditions; and

(6) Take action to remedy violations of this chapter.

(c) *Appeals.* This chapter is a zoning ordinance and appeals from the actions of the director in the administration of this chapter shall be to the zoning board of appeals as provided by Charter § 6-1516. Appeals shall be filed within 30 days of the date of mailing or personal service of the director's written decision.

(d) *Enforcement.* If the director determines that there is a violation of this chapter or any permit issued pursuant thereto, the violator shall be subject to the code enforcement rules of the department.

(e) *Warning and disclaimer of liability.*

(1) The degree of flood and tsunami protection required by this chapter is considered reasonable for regulatory purposes and is based on standard engineering methods of study. Larger floods or tsunamis than the base flood as designated on the flood maps, may occur on occasions, or flood or tsunami elevations may be increased by man-made or natural causes. This chapter does not imply that areas outside the flood hazard area will be free from flooding or damage.

(2) This chapter shall not create liability on the part of the city or any officer, official, or employee for any flood or tsunami damages that result from reliance on this chapter or any administrative decision lawfully made under this section.

(f) *Other laws and regulations.* All construction and improvements subject to this chapter shall comply with federal, State, and other applicable city laws and regulations including but not limited to the zoning, building, housing, plumbing, and electrical codes, and grading ordinances. This chapter, designed to reduce flood losses shall take precedence over any less restrictive, conflicting laws, ordinances, or regulations.

(g) *No exemptions.* Neither the city nor any agency, department, or division under its control shall be exempted from compliance with this chapter.

(h) *Severability.* This chapter and the various parts thereof are 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.

(i) *Fees.*

Type of Permit	**Fee**
(1) Floodway permit	$600
(2) Flood variance	$600
(3) Letter of map amendment (LOMA), and revision based on fill (LOMR-F)	$300
(4) Letter of map revision (LOMR), and physical map revision (PMR)	$600
(5) Flood hazard area interpretation	$150

(1990 Code, Ch. 21A, Art. 1, § 21A-1.3) (Added by Ord. 14-9; Am. Ord. 16-30)

§ 21A-1.4 Definitions.

Definitions contained in regulations governing the National Flood Insurance Program, 44 CFR Parts 59 through 77, as amended, are incorporated by reference and made a part of this chapter as though set forth fully herein. Where terms are not defined in this chapter, they shall have their ordinary accepted meanings within the context in which they are used. For the purposes of this chapter, the following definitions apply unless the context clearly indicates or requires a different meaning.

Architect. A person who has a license to practice architecture in the State of Hawaii.

Base Flood. The flood having a 1 percent chance of being equaled or exceeded in any given year (also called the "100-year flood").

Base Flood Elevation. The water surface elevation of the base flood.

Basement. Any area of a building having its floor below ground level on all sides.

Breakaway Wall. Any type of wall, 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 a building and which is designed to break away without damaging the structural integrity of the building or other buildings to which it might be carried by floodwaters.

Coastal High Hazard Area. A special flood hazard area subject to high velocity wave action from storms or seismic sources and designated on the flood insurance rate map as zone VE or V.

Development. 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.

Director. The director of planning and permitting of the City and County of Honolulu or the director's authorized representative.

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

Engineer. A person who is licensed to practice civil or structural engineering in the State of Hawaii.

FEMA. The Federal Emergency Management Agency.

Flood or ***Flooding.*** A general and temporary condition of partial or complete inundation of normally dry land areas from the overflow of inland or tidal waters, resulting from any source, such as tsunamis, or the unusual and rapid accumulation of runoff of surface waters or mud from any source.

Flood Fringe Area. A special flood hazard area consisting of the area of the flood fringe designated on the flood insurance rate map as zone AE, AO, and AH.

Flood Insurance Rate Map or ***FIRM.*** The map on which the Federal Emergency Management Agency has delineated both the special flood hazard areas and the risk premium zones applicable to the community.

Flood Insurance Study. The report provided by the Federal Emergency Management Agency that includes flood profiles, the flood insurance rate map, the flood hazard boundary map, and the water surface elevation of the base flood.

Floodproofing. Any combination of structural and nonstructural additions, changes, or adjustments to structures and properties that reduce or eliminate flood damage to real estate or improved real property, water and sanitary facilities, structures, and their contents.

Floodway. The channel or watercourse and the adjacent land areas that must be reserved to discharge the base flood without cumulatively increasing the water surface elevation more than 1 foot.

Floodway Area or ***AEF.*** A special flood hazard area consisting of the portion of zone AE designated on the flood insurance rate map as a floodway.

Floodway Permit. A permit required under this chapter for a structure within the floodway area.

Fraud and Victimization. As related to § 21A-1.12, means that the variance granted must not cause fraud on or victimization of the public. In examining this requirement, the city will consider the fact that every newly constructed building adds to government responsibilities and remains a part of the community for 50 to 100 years. Buildings that are permitted to be constructed below the base flood elevation are subject during all those years to increased risk of damage from floods, while future owners of the property and the community as a whole are subject to all the costs, inconvenience, danger, and suffering that those increased flood damages bring. In addition, future owners may purchase the property, unaware that it is subject to potential flood damage, and can be insured only at very high flood insurance rates.

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

General Floodplain. A special flood hazard area for which detailed engineering studies were not performed by FEMA to determine the base flood elevations or to identify the floodway, and is identified as zone A on the flood insurance rate map.

Hardship. As related to § 21A-1.12, means the exceptional hardship that would result from a failure to grant the requested variance. The city 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 handicaps, personal preferences, or the disapproval of one's neighbors likewise cannot, as a rule, qualify as an exceptional "hardship". All of these problems can be resolved through other means without granting a variance, even if the alternative is more expensive, or requires the property owner to build elsewhere or put the parcel to a different use than originally intended.

Highest Adjacent Grade. The highest natural elevation of the ground surface before construction next to the proposed walls of a structure.

Historic Structure. A structure that is:

(1) Listed individually in the National Register of Historic Places 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 to qualify as a registered historic district;

(3) Individually listed on a State inventory of historic places pursuant to a historic preservation program approved by the Secretary of Interior; or

(4) Individually listed on a local inventory of historic places pursuant to a historic preservation program certified either:

(A) By an approved State program as determined by the Secretary of the Interior; or

(B) Directly by the Secretary.

Lowest Floor. 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 modified so as to render the use in violation of the elevation design requirement of this chapter.

Manufactured Home. A structure (other than a recreational vehicle), 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.

Mean Sea Level. The national geodetic vertical datum (NGVD) of 1929 or other datum, to which base flood elevations shown on a community's flood insurance rate map are referenced.

New Construction. Structures for which the "start of construction" commenced on or after May 22, 2014* and includes any subsequent improvements to such structures.

Public Safety and Nuisance. As related to § 21A-1.12, means that the granting of a variance must not result in anything which is injurious to safety or health of an entire community or neighborhood, or any considerable number of persons, or unlawfully obstructs the free passage or use, in the customary manner, of any navigable lake, or river, bay, stream, canal, or basin.

Recreational Vehicle. 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.

Repetitive Loss Structure. A structure that was damaged by flood two or more times within any 10-year period, where the cost of fully repairing the flood damage to the structure, on average, equaled or exceeded 25 percent of its market value at the time of each flood.

Special Flood Hazard Area or ***SFHA.*** An area having special flood or flood-related erosion hazards, and shown on a FIRM as zone A, AO, AE, AEF, 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 180 days from the date of the permit. The "actual start" means either the first placement of permanent construction of a structure on a site, such as the pouring of slab or footing, 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 or walkways; nor does it include excavation for a basement, footings, piers, or foundations or the erections 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, start of construction means the first alteration of any wall, ceiling, floor, or other structural part of a building, whether or not that alteration affects the external dimensions of the building.

Structure. For floodplain management purposes, a walled and roofed building, including a gas or liquid storage tank that is principally above ground, and a manufactured home.

Substantial Damage. Damage of any origin sustained by a structure whereby the cost of restoring the structure to its pre-damaged condition would equal or exceed 50 percent of the market value of the structure (excluding land) before the damage occurred.

Substantial Improvement. Any reconstruction, rehabilitation, addition, or series of reconstruction, rehabilitation, or additions, or other proposed new development of a structure or repetitive loss structure, in any five-year period, the cumulative cost of which equals or exceeds 50 percent of the market value of the structure (excluding land) before the "start of construction" of the first improvement during that five-year period. This term includes structures that have incurred substantial damage, regardless of the actual repair work performed. The term also includes the relocation of a structure even if the cost of improvements associated with the relocation does not equal or exceed 50 percent of the market value of the structure. An improvement shall constitute a substantial improvement only if:

(1) The structure was constructed on or before September 3, 1980;

(2) The structure was constructed after September 3, 1980, and was not within a special flood hazard area at the time of the issuance of the building permit;

(3) The structure was constructed after September 3, 1980, and was the subject of a map change that resulted in higher base flood elevations; or

(4) The structure was constructed after September 3, 1980, and was the subject of a map change that resulted in a FIRM zone change.

The term does not, however, include either:

(5) Any project for improvement of a structure to correct existing violations of State or county health, sanitary, or safety specifications; or

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

Surveyor. A person who is licensed to practice surveying in the State of Hawaii.

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

Watercourse. A stream, wash, channel, or other topographic feature on or over which waters flow at least periodically.

Water Surface Elevation. The height, in relation to the national geodetic vertical datum (NGVD) of 1929 (or other datum, where specific), of floods of various magnitudes and frequencies in the floodplains of coastal or riverine areas.

Zoning Lot. A zoning lot as defined by the land use ordinance, Chapter 21, as amended.

(1990 Code, Ch. 21A, Art. 1, § 21A-1.4) (Added by Ord. 14-9)

Editor's note:

** "May 22, 2014" is substituted for "the effective date of this ordinance, as amended."*

§ 21A-1.5 Special flood hazard areas.

(a) *Applicability.* This chapter shall apply to all lands within the special flood hazard areas as determined by the director or as delineated on the flood insurance rate maps (FIRM) prepared by the FEMA, or both. The following special flood hazard areas are established:

(1) Floodway area (floodway in zone AE);

(2) Flood fringe area (zones AE, AO, AH);

(3) Coastal high hazard area (zone VE, V); and

(4) General floodplain area (zone A).

(b) *Adoption of federal flood maps and reports.* The special flood hazard areas identified by the FEMA in the flood insurance rate maps and flood insurance study dated January 19, 2011, and any subsequent revisions and amendments (hereinafter called “flood maps”) are adopted and declared to be part of this chapter. The flood maps are on file at the City and County of Honolulu Department of Planning and Permitting, 650 S. King Street, Honolulu, Hawaii 96813.

(c) The flood hazard areas and base flood elevations shall be determined by the flood maps. Where interpretation is needed as to whether or not a project lies within a certain flood hazard area, or interpretation is needed on the base flood elevation in the floodway, flood fringe, or coastal high hazard areas, a request for interpretation of the flood maps shall be submitted to the director for determination. The request shall include the project site and location plan, property lines, and dimensions and tax map key.

(d) Where flood hazard areas and base flood elevations have not been determined on the flood maps, the director shall obtain and review the information needed to make this determination. A request for interpretation under this section shall be submitted to the director and include three sets of documents, stamped and signed by a licensed professional engineer, containing adequate information and substantiating data consistent with this part, such as flood study, flood data, project site and location plan, property lines and dimension, tax map key, and topographic data, contours, or spot elevations based on reference marks on flood maps. Upon initial review by the director, other related information may be subsequently required to evaluate the request.

(e) *Flood map revisions.* Whenever base flood elevations may change due to a proposed development, the applicant shall obtain a conditional letter of map revision from the FEMA before the approval or issuance of any development permit. A letter of map revision shall be obtained from the FEMA whenever a development has changed the base flood elevation within any special flood hazard area. An application for a letter of map revision shall be submitted to the FEMA no later than six months after the completion of a development.

(1990 Code, Ch. 21A, Art. 1, § 21A-1.5) (Added by Ord. 14-9)

§ 21A-1.6 General development standards.

Structures within the special flood hazard areas shall conform to the following:

(1) Be designed and adequately anchored to prevent flotation, collapse, or lateral movement resulting from hydrodynamic and hydrostatic loads, including effects from buoyancy caused by the base flood;

(2) Constructed of flood-resistant materials;

(3) Constructed by methods and practices that minimize flood damage;

(4) Constructed with electrical, heating, ventilation, plumbing, air conditioning, and other service facilities that are designed or located, or both, so as to prevent water from entering or accumulating within the components during conditions of flooding;

(5) Provided with adequate drainage to minimize damage in accordance with the storm drainage standards of the department;

(6) For new or replacement potable water system and facilities, be designed to minimize or eliminate infiltration of flood waters into the systems;

(7) For new or replacement sanitary sewer system and waste disposal system, be designed, located, and constructed so as to minimize impairment to them or contamination from them during and after flooding by the base flood;

(8) *Manufactured homes.* Manufactured homes that are placed or substantially improved within special flood hazard areas that are not coastal high hazard areas shall be elevated on a permanent foundation such that the lowest floor of the manufactured home is elevated to, or above, the base flood elevation and be securely anchored to an adequately anchored foundation system to resist flotation, collapse, and lateral movement. Manufactured homes that are placed or substantially improved within coastal high hazard areas shall meet the requirements of § 21A-1.9;

(9) *Recreational vehicles.* Recreational vehicles placed within a special flood hazard area shall either:

(A) Be on site for fewer than 30 consecutive days;

(B) Be fully licensed and ready for highway use (a recreational vehicle is ready for highway use if it is on wheels or a jacking system, is attached to the site only by a quick disconnect type utilities and security device, and has no permanently attached additions); or

(C) Meet the requirements for manufactured homes under subsection (8).

(10) A structure that straddles two or more special flood hazard areas shall comply with the standards of the flood hazard area that is considered to have the most stringent or restrictive standards.

(1990 Code, Ch. 21A, Art. 1, § 21A-1.6) (Added by Ord. 14-9)

§ 21A-1.7 Floodway area.

The floodway identified on the flood 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 could carry debris, and erosion potential, the following apply.

(a) A floodway permit must be obtained from the director before approval or issuance of any other permits for all new construction of or substantial improvements to structures within the floodway area.

(b) A restrictive covenant shall be inserted in the deeds and other conveyance documents of the property and recorded or filed with the bureau of conveyances or the land court of the State of Hawaii, or both, as appropriate, providing that a permit has been granted to a property located in a floodway area that is subject to flooding and flood damage, increases risks to life and property, and the property owners shall not file any lawsuit, action, or claim against the city for costs or damages, and shall indemnify and save harmless the city from any liability when such loss, damage, injury, or death results due to the permit and the flooding of the property. Upon approval of the floodway permit, such covenant shall be fully executed and recorded. Proof of recordation shall be submitted to the director before issuance of any building permits.

(c) Any temporary or permanent encroachment, including fill, structures, storage of material or equipment, or other development within the floodway, shall not be approved, unless certification and supporting data, including hydrologic and hydraulic analyses performed in accordance with standard engineering practice, are provided by a licensed engineer demonstrating that the proposed encroachment will not cause any increase in base flood elevations during the occurrence of the base flood.

(d) Proposed structures in the floodway area shall additionally comply with the general development standards and flood fringe area provisions of this chapter.

(e) No more than two dwelling units shall be permitted on a single zoning lot whose only buildable area is in the floodway.

(f) Within an area designated AE without a floodway on the flood maps, until a floodway is designated, no new construction, substantial improvement, or other development (including fill) shall be permitted, unless it is 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 more than 1 foot at any point.

(1990 Code, Ch. 21A, Art. 1, § 21A-1.7) (Added by Ord. 14-9; Am. Ord. 16-30)

§ 21A-1.8 Flood fringe area.

In addition to the general development standards, the following standards shall be applicable in the flood fringe area.

(a) *In areas designated on the flood maps as zone AE or AH.*

(1) All new construction or substantial improvements of residential structures shall have the lowest floor, including basements, elevated to or above the base flood elevation.

(2) All new construction or substantial improvements of nonresidential structures shall have the lowest floor elevated to or above the base flood elevation; or together with attendant utility and sanitary facilities, be designed and constructed so that below the base flood elevation, the structure is watertight with walls substantially impermeable to the passage of water and with structural components having the capability of resisting hydrostatic and hydrodynamic loads and effects of buoyancy due to the base flood.

(3) Within zone AH, adequate drainage paths shall be provided around structures on slopes to guide floodwaters around and away from proposed structures.

(b) *In areas of shallow flooding designated on the flood maps as zone AO.*

(1) All new construction or substantial improvements of residential structures shall have the lowest floor, including basements, elevated above the highest adjacent grade at least as high as the depth number specified on the flood maps.

(2) All new construction or substantial improvements of nonresidential structures shall have the lowest floor elevated above the highest adjacent grade at least as high as the depth number specified on the flood maps; or together with attendant utility and sanitary facilities, be designed and constructed so that below that level, the structure is watertight with walls substantially impermeable to the passage of water and with structural components having the capability of resisting hydrostatic and hydrodynamic loads and effects of buoyancy.

(3) Adequate drainage paths shall be provided around structures on slopes to guide floodwaters around and away from proposed structures.

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

(1) For nonengineered openings:

(A) Have a minimum of two openings on different sides having a total net area of not less than 1 square inch for every square foot of enclosed area subject to flooding;

(B) The bottom of all openings shall be no higher than 1 foot above internal or external grade whichever is highest;

(C) Openings may be equipped with screens, louvers, valves, or other coverings or devices; provided that they permit the automatic entry and exit of floodwaters; and

(D) Buildings with more than one enclosed area must have openings on exterior walls for each area to allow floodwater directly enter.

(2) Be certified by a licensed engineer or architect.

(d) A licensed professional architect or engineer shall develop or review the design, specifications, and plans and certify that the design and methods of construction are in accordance with accepted standards of practice for meeting the provisions of this chapter, and include the elevation to which such structures are floodproofed.

(e) New construction and substantial improvements of below-grade crawlspaces must be constructed in accordance with the requirements of FEMA Technical Bulletin 11-01 and amendments thereto. A licensed engineer or architect must certify that designs for below-grade crawlspaces meet these requirements.

(f) Accessory residential structures of less than 600 square feet that are used solely for parking or limited storage or both, and are constructed with the lowest floor below the base flood elevation, must be designed to meet the following minimum criteria.

(1) The structure must be anchored to resist flotation, collapse, and lateral movement;

(2) Any portion of the structure located below the base flood elevation must be constructed of flood-resistant materials;

(3) The structure must be designed to automatically equalize hydrostatic flood forces on exterior walls by allowing for the entry and exit of floodwaters in accordance with preceding subsection (c);

(4) All mechanical and utility equipment housed inside the structure must be elevated to or above the base flood elevation; and

(5) The use of the structure must be limited to parking or limited storage or both.

A licensed engineer or architect shall certify that designs for accessory residential structures subject to this subsection meet these minimum criteria.

(1990 Code, Ch. 21A, Art. 1, § 21A-1.8) (Added by Ord. 14-9; Am. Ord. 16-30)

§ 21A-1.9 Coastal high hazard area.

In addition to the general development standards, the following standards shall be applicable in the coastal high hazard area.

(a) (1) All new construction or substantial improvements of residential and nonresidential structures shall be elevated on pilings or columns so that the bottom of the lowest horizontal structural member of the lowest floor (excluding the pilings or columns) is elevated to or above the base flood elevation.

(2) Piles or column foundations and structures 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. Wind and water loading values shall each have a 1 percent chance of being equaled or exceeded in any given year.

(b) (1) All new construction or substantial improvements shall have the space below the lowest floor free of obstructions or constructed 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 structure or supporting foundation.

(2) Such enclosed space shall not be used for human habitation and shall be used solely for parking of vehicles, building access, or storage.

(3) A breakaway wall shall have a design-safe loading resistance of not less than 10 and not more than 20 pounds per square foot, or a licensed architect or engineer shall certify that the breakaway wall shall collapse from a water load less than that which would occur during the base flood.

(c) The use of fill for structural support of buildings shall be prohibited.

(d) All new development shall be constructed landward of the reach of the mean high tide.

(e) Human alterations of sand dunes and native mangrove stands which would increase potential flood damage shall be prohibited.

(f) A licensed architect or engineer shall develop or review the design, specifications, and plans and certify that the design and methods of construction are in accordance with accepted standards of practice for meeting the provisions of this chapter, and that any development in the coastal high hazard area, including structures and improvements, would not affect the base flood nor aggravate existing flood-related erosion hazards.

(1990 Code, Ch. 21A, Art. 1, § 21A-1.9) (Added by Ord. 14-9)

§ 21A-1.10 General floodplain.

(a) All proposed development within the general floodplain (unnumbered zone A) shall be subject to review and approval of the director. The developer shall provide information signed and stamped by a licensed engineer, to evaluate the flooding and to determine the base flood elevation, and whether the project site is located within a floodway or flood fringe area, under § 21A-1.5(d).

(b) The director in reviewing the application may consult with other city, State, and federal agencies for their comments and recommendations, and shall review the related flood data such as flood elevation, riverine flood velocities, boundaries, etc., and evaluate and determine whether the proposed project is located within a floodway or flood fringe area.

(c) If it is determined that the proposed project is within a floodway area, the project shall comply with § 21A-1.7. If it is determined that the proposed project is within a flood fringe area, it shall comply with § 21A-1.8. Until a floodway or flood fringe area is designated, no development shall be allowed that would increase the water surface elevation of the base flood more than 1 foot at any point.

(1990 Code, Ch. 21A, Art. 1, § 21A-1.10) (Added by Ord. 14-9)

§ 21A-1.11 Developments adjacent to watercourse outside the flood hazard area.

(a) Applications for building permits for development projects located on property encompassing or adjacent to a property with a watercourse outside of the special flood hazard areas identified on the federal flood maps, shall be subject to review and approval of the director. The application shall include information signed and stamped by a licensed engineer, to evaluate the potential flooding of the area.

(b) The director in reviewing the application may consult with other city, State, and federal agencies for their comments and recommendations. If it is determined that the proposed project is within a floodway area, the project shall comply with § 21A-1.7. If it is determined that the proposed project is within a flood fringe area, the project shall comply with § 21A-1.8.

(c) No watercourse shall be modified, constructed, lined, or altered in any way unless approved by the director.

(1990 Code, Ch. 21A, Art. 1, § 21A-1.11) (Added by Ord. 14-9)

§ 21A-1.12 Flood variance.

(a) The issuance of a variance is for floodplain management purposes only. Insurance premium rates are determined by statute according to actuarial risk and will not be modified by the granting of a variance.

The variance criteria 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 variance may be granted for a parcel of property with physical characteristics so unusual that complying with the requirements of this ordinance 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.

This chapter is designed to help protect the community from flood loss and damage. 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 in the flood ordinance are quite rare. The long term goal of preventing and reducing flood loss and damage can only be met if variances are strictly limited. Therefore, the variance guidelines provided in this article are more detailed and contain multiple provisions that must be met before a variance can be properly granted. The criteria are designed to screen out those situations in which alternatives other than a variance are more appropriate.

(b) The following may be permitted as a variance from this chapter subject to review and approval of the director:

(1) New construction or substantial improvement of structures, and other proposed new development to be erected on a lot of 0.5 acre or less in area, contiguous to and surrounded by lots with existing structures constructed below the base flood elevation;

(2) Repair or rehabilitation of historic structures upon a determination that the proposed reconstruction 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;

(3) Improvement of a structure to correct existing violations of State or local health, sanitary, or safety code specifications, which have been identified by a code enforcement official and which are the minimum necessary to assure safe living conditions;

(4) New construction or substantial improvement of structures, and other proposed new development necessary for the conduct of a functionally dependent use; and

(5) New construction or substantial improvement of public beach park facilities.

(c) The application shall be submitted to the director and signed and stamped by a licensed architect and engineer, and shall include three sets of documents with the following information as may be applicable:

(1) Plans and specifications showing the site and location; dimensions of all property lines and topographic survey of the zoning lot; existing and proposed structures and improvements, fill, and storage areas; location and elevations of existing and proposed streets and utilities; floodproofing measures; relationship of the site to the location of the

flood boundary; and the existing and proposed flood control measures and improvements;

(2) Cross-sections and profiles of the area and the base flood elevations and profile referenced to the national geodetic vertical datum (NGVD) of 1929;

(3) Flood study and drainage report data;

(4) Description of surrounding properties and existing structures and uses, and the effect the variance may have on them and the base flood;

(5) Justification and reasons for the variance in relationship to the intent and provisions of this section, with information as may be applicable on the following:

(A) The danger to life and property, including surrounding properties due to increased flood elevations or velocities caused by the variance;

(B) The danger that materials may be swept onto other lands or downstream to the injury of others;

(C) The proposed water supply and sanitation systems and the ability of these systems to prevent disease, contamination, and unsanitary conditions;

(D) The susceptibility of the proposed facility and its contents to flood damage and the effect of such damage on the individual owners;

(E) The importance of the services provided by the proposed facility to the community;

(F) The availability of alternative locations not subject to flooding for the proposed use;

(G) The compatibility of the proposed use with existing and anticipated development;

(H) The relationship of the proposed use to the floodplain management program for the area;

(I) The safety of access to the property in times of flood for ordinary and emergency vehicles;

(J) The expected elevations and velocity of the base flood at the site due to the variance;

(K) That failure to grant the variance would result in exceptional hardship to the applicant; and

(L) That the variance will not result in increased base flood elevations, additional threat to surrounding properties and to public safety, extraordinary public expense, create a nuisance, cause fraud and victimization of the public, or conflict with other laws or regulations.

(6) A restrictive covenant which shall be inserted in the deeds and other conveyance documents of the property and recorded or filed with the bureau of conveyances or the land court of the State of Hawaii, or both, as appropriate, providing that a flood variance has been granted to a property located in a special flood hazard area that is subject to flooding and flood damage, that a variance for a structure with its lowest floor below the base flood elevation increases risks to life and property, and that the property owners shall not file any lawsuit, action, or claim against the city for costs or damages, and shall indemnify and save harmless the city from any liability when such loss, damage, injury,

or death results due to the flood variance and the flooding of the property. Upon approval of the flood variance, such covenant shall be fully executed and recorded. Proof of recordation shall be submitted to the director before issuance of any building permits; and

(7) Such other factors which are relevant to the purposes of this section.

(d) The director in reviewing the variance may consult with other city, State, and federal agencies for their comments and recommendations. A flood variance may be granted only upon a:

(1) Showing of good and sufficient cause;

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

(3) Determination that the granting of a variance will not result in increased flood elevations, additional threat to public safety, extraordinary public expense, create a nuisance, cause fraud and victimization of the public, or conflict with other laws or regulations; and

(4) Determination that a variance granted within a floodway area would not result in any increase of the base flood elevation.

(e) The director may approve, approve with conditions, or deny the variance. Such conditions may include but not be limited to:

(1) Modification of the project, including the sewer and water supply 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, levees, and other flood protective measures;

(5) Floodproofing measures designed consistent with the base flood elevation, flood velocities, hydrostatic and hydrodynamic forces, and other factors associated with the base flood; and

(6) Other conditions as may be deemed necessary by the director to further the purposes of this chapter.

(1990 Code, Ch. 21A, Art. 1, § 21A-1.12) (Added by Ord. 14-9)

§ 21A-1.13 Substantial improvements.

(a) All structures proposed to be substantially improved must be brought into compliance with this chapter. For the purpose of determining substantial improvement, the applicant shall provide the market value of a structure and the cost of the proposed improvements to the structure from the following sources:

(1) Itemized estimates made by an independent professional construction estimator;

(2) Appraisals prepared by an independent licensed appraiser, including appraisals of market value; and

(3) Calculations based on square foot cost factors published in building cost estimating guides recognized by the building construction industry, and signed and stamped by an independent licensed engineer or architect.

(b) The director may require additional or revised documentation should the estimated market value or cost of improvements appear to be inconsistent with the specific characteristics of the building.

(1990 Code, Ch. 21A, Art. 1, § 21A-1.13) (Added by Ord. 14-9; Am. Ord. 16-30)

§ 21A-1.14 Certification standards.

Pre-construction, during-construction, and post-construction certification of elevation and floodproofing of new construction, development, and improvements within the special flood hazard areas must be submitted to the director and must be maintained as a matter of public record, in accordance with the following.

(a) *Pre-construction certification.* Requirements for approval of the building permit must include the following items, as applicable, and any additional items as required by the director to promote public welfare and safety.

(1) *Certification of building plans.* Each set of building plans must include a current topographic survey map prepared by a licensed surveyor, and must be signed and stamped by a licensed engineer or architect certifying the accuracy of the flood boundary and elevation information.

(2) *Flood hazard certification.* The city's applicable flood hazard certification form must be completed and signed and stamped by a licensed engineer or architect.

(3) *Floodproofing certification.* The Federal Emergency Management Agency "Floodproofing Certificate" form must be completed and signed and stamped by a licensed engineer or architect.

(4) *Certification of no-rise determination.* For all construction and improvements in the floodway, the Federal Emergency Management Agency "No-Rise Certification" form must be completed and signed and stamped by a licensed engineer.

(b) *During-construction certification.* Upon placement of the lowest floor, including the basement, and before further vertical construction of a new or substantially improved structure in the special flood hazard area, the Federal Emergency Management Agency "Elevation Certificate" must be completed and signed and stamped by a licensed surveyor.

(c) *Post-construction certification.* As a condition to the closing of the building permit or issuance of a certificate of occupancy for a new or substantially improved structure in the special flood hazard area, the Federal Emergency Management Agency "Elevation Certificate" must be completed and signed and stamped by a licensed surveyor, engineer, or architect.

(1990 Code, Ch. 21A, Art. 1, § 21A-1.14) (Added by Ord. 14-9; Am. Ord. 16-30)