



**Town of Kiawah Island**

**Flood Damage  
Prevention Ordinance**

**2013-11**

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## GENERAL STANDARDS

### Sec. 14.101 Statutory Authorization

The Legislature of the State of South Carolina has in SC Code of Laws, Title 5 and Title 6, and amendments thereto, delegated the responsibility to local governmental units to adopt regulations designed to promote the public health, safety, and general welfare of its citizenry. Therefore, the Town of Kiawah Island, South Carolina does ordain as follows:

### Sec. 14.102 Findings of Fact

(a) The flood hazard areas of the Town of Kiawah Island 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 floodplains causing increases in flood heights and velocities, and by the occupancy in flood hazard areas by uses vulnerable to floods or hazardous to other lands which are inadequately elevated, flood proofed or otherwise unprotected from the flood damages.

### **Sec. 14.103 Statement of 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 to:

- (1) Restrict or prohibit uses which are dangerous to health, safety and property due to water or erosion hazards or which result in damaging increases in erosion or in flood heights or velocities;
- (2) Require that uses vulnerable to floods, including facilities which serve such uses, be protected against flood damage at the time of initial construction;
- (3) Control the alteration of natural floodplains, stream channels and natural protective barriers which are involved in the accommodation of flood waters;
- (4) Control filling, grading, dredging and other development which may increase erosion or flood damage; and
- (5) Prevent or regulate the construction of flood barriers which will unnaturally divert flood waters or which may increase flood hazards to other lands.

When there is found a conflict with regulations and provisions provided by the Town of Kiawah Island Flood Damage Prevention Ordinance and incorporated documents governed by the Kiawah Island Community Association the most restrictive shall apply.

### **Sec. 14.104 Objectives**

The objectives of this chapter are:

- (1) To protect human life and health;
- (2) To minimize expenditure of public money for costly flood control projects;
- (3) To minimize the need for rescue and relief efforts associated with flooding, which are generally undertaken at the expense of the general public;
- (4) To minimize prolonged business interruptions;
- (5) To minimize damage to public facilities and utilities located in floodplains, such as water and gas mains, electric, telephone and sewer lines, as well as streets and bridges;
- (6) To help maintain a stable tax base by providing for the sound use and development of flood prone areas in such a manner as to minimize flood blight areas;
- (7) To ensure that potential home buyers are notified that property is in a flood area; and
- (8) To prohibit the alteration of sand dunes that would increase the potential for flood damage.

### **Sec. 14.105 Penalties for Violation**

Violation of the provisions of this chapter or failure to comply with any of its requirements, including violation of conditions and safeguards established in connection with grants of variances or special exceptions, shall constitute an offense. Any person who violates any provision of this chapter or who fails to comply with any of its requirements shall, upon conviction thereof, be fined not more than five hundred dollars (\$500.00) or imprisoned for not more than one hundred eighty (180) days, or both, and in addition, shall pay all costs and expenses involved in the case. Each day any violation continues shall be considered a separate offense. Nothing contained in this section shall prevent the town from taking such other lawful action as is necessary to prevent or remedy any violation.

**Sec. 14.106 Territorial Applicability**

This chapter shall apply to all areas of special flood hazard within the jurisdiction of the Town of Kiawah Island.

**Sec. 14.107 Compliance**

No structure or land shall be located, extended, converted or structurally altered without full compliance with the terms of this chapter and other applicable regulations.

**Sec. 14.108 Abrogation and Greater Restrictions**

This chapter is not intended to repeal, abrogate or impair any existing easements, covenants or deed restrictions. However, if any provisions of this chapter conflict or overlap, the provision which imposes the more stringent restrictions shall prevail.

**Sec. 14.109 Interpretation**

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

- (1) Considered as minimum requirements;
- (2) Liberally construed in favor of the Town of Kiawah Island; and
- (3) Deemed neither to limit nor repeal any other powers granted under state statutes.

**Sec. 14.110 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 hazard 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 town or on the part of any officer or employee of the town for any flood damages that result from reliance on this chapter or that are attributable to any administrative decision lawfully made under this chapter.

**Sec. 14.111 Floodplains**

Floodplains are an important asset to the community. They perform vital natural functions such as temporary storage of floodwaters, moderation of peak flood flows, maintenance of water quality, groundwater recharge, prevention of erosion, and habitat for diverse natural wildlife populations, recreational opportunities, and aesthetic quality. These functions are best served if floodplains are kept in their natural state. Wherever possible, the natural characteristics of floodplains and their associated wetlands and water bodies should be preserved and enhanced. Decisions to alter floodplains, especially floodways and stream channels, should be the result of careful planning processes that evaluate resource conditions and human needs.

**Sec. 14.112 Establishment of Development Permit**

A Development Permit shall be required in conformance with the provisions of this ordinance prior to the commencement of any development activities.

**Sec. 14.113 Partial Invalidity and Severability**

If any part of this Ordinance is declared invalid, the remainder of the Ordinance shall not be affected and shall remain in force.

## **Sec. 14.114 Basis for Establishing the Areas of Special Flood Hazard**

The areas of special flood hazard identified by the federal emergency management agency in its flood insurance rate map (FIRM), dated November 17, 2004, with accompanying maps and other supporting data that are adopted by reference and declared to be a part of this chapter.

## **Sec. 14.115 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 it's most reasonable application:

Addition (to an existing building) means any walled and roofed expansion to the perimeter of a building in which the addition is connected by a common load-bearing wall.

Appeal means a request for a review of the interpretation by the Construction Board of Appeals of any provision of this chapter.

Area of shallow flooding means a designated AO or VO Zone on a community's flood insurance rate map (FIRM) with base flood depths from one (1) to three (3) feet where a clearly defined channel does not exist, where the path of flooding is unpredictable and indeterminate, and where velocity flow may be evident.

Area of special flood hazard means the land in the floodplain within a community subject to a one (1) percent or greater chance of flooding in any given year.

Base flood means the flood having a one (1) percent chance of being equaled or exceeded in any given year.

Breakaway wall means a wall that is not part of the structural support of the building and is intended through its design and construction to collapse under specific lateral loading forces without causing damage to the elevated portion of the building or the supporting foundation system.

Building means any structure built for support, shelter, or as an enclosure for any occupancy or storage.

Coastal high hazard area means an area of special flood hazard extending from off shore 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.

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, excavating, drilling operations, or permanent storage of materials.

Elevated building means a non-basement building built to have the lowest floor elevated above the ground level by means of fill, solid foundation perimeter walls, pilings, columns (posts and piers), shear walls or breakaway walls.

Flood or flooding means a general and temporary condition of partial or complete inundation of normally dry land areas from:

- (1) The overflow of inland or tidal waters; or
- (2) The unusual and rapid accumulation or runoff of surface waters from any source.

Flood hazard boundary map (FHBM) means an official map of a community, issued by the federal emergency management agency, where the boundaries of the areas of special flood hazard have been defined as Zone A.

Flood insurance rate map (FIRM) means an official map of a community on which the federal emergency management agency has delineated both the areas of special flood hazard and the risk premium zones applicable to the community.

Flood insurance study means the official report provided by the federal emergency management agency. The report contains flood profiles, as well as the flood boundary floodway map and the water surface elevation of the base flood.

Floodway means the channel of a river or other watercourse and the adjacent land areas that must be reserved in order to discharge the base flood without cumulatively increasing the water surface elevation more than one (1) foot.

Floor means the top surface of an enclosed habitable area in a building i.e., top of slab in concrete slab construction or top of wood flooring in wood frame construction. The term does not include the floor of a garage used solely for parking vehicles.

Free-board means a height determined by the jurisdiction above the base flood elevation.

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: this definition can be found in the towns building code ordinance.

Lowest Adjacent Grade (LAG) - is an elevation of the lowest ground surface that touches any deck support, exterior walls of a building or proposed building walls.

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 built so as to render the structure in violation of the applicable non-elevation design requirements of this ordinance.

Mean sea level means the average height of the sea for all stages of the tide. It is used as a reference for establishing various elevations within the floodplain. For purposes of this chapter, the term is synonymous with National Geodetic Vertical Datum (NGVD).

National geodetic vertical datum (NGVD), as corrected in 1929, means a vertical control used as a reference for establishing varying elevations within the floodplain.

New construction - structure for which the start of construction commenced on or after (initial ordinance date). The term also includes any subsequent improvements to such structure.

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 steep slope to a relatively mild slope.

Recreational vehicle - a vehicle which is: (a) built on a single chassis; (b) 400 square feet or less when measured at the largest horizontal projection; (c) designed to be self-propelled or permanently towable by a light duty truck; and, (d) designed primarily not for use as a permanent dwelling, but as temporary living quarters for recreational, camping, travel, or seasonal use.

Reference feature means the edge of a bluff or eroding frontal dune, or if such a feature is not present, the normal high water line or the seaward line of permanent vegetation if a high-water line cannot be identified.

Sand dunes mean naturally occurring accumulations of sand in ridges or mounds landward of the beach.

Start of construction (for other than new construction or substantial improvements under the Coastal Barrier Resources Act (P.L. 97-348)), includes substantial improvement, and means the date the building permit was issued, provided the actual start of construction, repair, reconstruction, or improvement was within one hundred eighty (180) days of the permit date. The actual start means the first placement of permanent

construction of a structure on a site, such as the pouring of slabs or footings, installation of piles, construction of columns, or any work beyond the state of excavation. Permanent construction does not include land preparation, such as clearing, grading and filling; nor does it include the installation of streets, walkways or both; nor does it include, footings, piers or foundations or the erection of temporary forms; nor does it include the installation on the property of accessory buildings, such as garages or sheds not occupied as dwelling units or not part of the main structure. For a substantial improvement, the actual start of construction means the first alteration of any wall, ceiling floor, or other structural part of a building, whether or not that alteration affects the external dimensions of the building.

Structure means a walled and roofed building that is principally aboveground, a gas or liquid storage tank, or other man-made facilities or infrastructures.

Substantial damage means damage of any origin sustained by a structure whereby the cost of restoring the structure to it's before damage condition would equal or exceed fifty (50) percent of the market value of the structure before the damage occurred.

Substantial improvement means any combination of repairs, reconstruction, alteration or improvements to a building within a five year period, taking place in which the cumulative cost equals or exceeds fifty (50) percent of the market value of the structure. The market value of the building should be (1) the appraised value of the building prior to the start of the initial repair or improvement, or (2) in the case of damage, the value of the building prior to the damage occurring. This term includes structures which have incurred substantial damage, regardless of the actual repair work performed. For the purposes of this definition, substantial improvement is considered to occur when the first alteration of any wall, ceiling, floor or other structural part of the building commences, whether or not that alteration affects the external dimensions of the building. The term does not, however, include either (1) any project for improvement of a building required to comply with existing health, sanitary or safety code specifications which have been identified by the code enforcement official and which are solely 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 an "historic structure."

Zone of imminent collapse means an area subject to erosion adjacent to the shoreline of an ocean, bay, or lake and within a distance equal to ten (10) feet plus five (5) times the average annual long-term erosion rate for the site, measured from the reference feature.

**Sec. 14.112 – 14.130      Reserved**

## **Article II                      ADMINISTRATION AND ENFORCEMENT**

**Sec. 14.131              Floodplain Manager and Building Department Designated; Duties**

**Sec. 14-132              Development permit**

**Sec. 14.133              Appeals**

**Sec. 14-134 – 14.150      Reserved**

**Sec. 14.131              Floodplain Manager and Building Department Designated; Duties**

- (a)      The floodplain manager and building department of the town is hereby appointed as the official to administer and implement the provisions of this chapter.
- (b)      Duties of the floodplain manager and building department shall include, but are not limited to:

- (1) Reviewing all development permits to assure that the permit requirements of this chapter have been satisfied.
- (2) Advising a permittee that additional federal or state permits may be required, and if specific federal or state permits requirements are known, requiring that copies of such permits be provided and maintained on file with the development permit.
- (3) Notifying adjacent communities and the state department of community affairs prior to any alteration or relocation of a watercourse and submitting evidence of such notification to the federal emergency management agency.
- (4) Assuring that maintenance is provided within the altered or relocated portion of such watercourse so that the flood carrying capacity is not diminished.
- (5) Verifying and recording the actual elevation, in relation to mean sea level, of the lowest floor, of all new or substantially improved structures, in accordance with section 14-32(b)(2).
- (6) Verifying and recording the actual elevation, in relation to mean sea level, to which the new or substantially improved structures have been flood proofed, in accordance with section 14-32(b)(2).
- (7) In coastal hazard areas, certification shall be obtained from a registered professional engineer or architect that the structure is designed to be securely anchored to adequately anchored pilings or columns in order to withstand velocity waters and hurricane wave wash.
- (8) In coastal high hazard areas, the building official shall review plans for adequacy of breakaway walls in accordance with section 14-73 (7)
- (9) When flood proofing is utilized for a particular structure, the official shall obtain certification from a registered professional engineer or architect, in accordance with section 14-32(d)(2).
- (10) Where interpretation is needed as to the exact location of boundaries of the areas of special flood hazard (for example, where there appears to be a conflict between a mapped boundary and actual field conditions), the official shall make the necessary interpretation. The person contesting the location of the boundary shall be given a reasonable opportunity to appeal the interpretation as provided in this chapter.
- (11) When base flood elevation data or floodway data have not been provided in accordance with section 14-14, the official shall obtain, review and reasonably utilize any base flood elevation and floodway data available from a federal, state or other source, in order to administer the provisions of article III, division 2 of this chapter.
- (12) All records pertaining to the provisions of this chapter shall be maintained in the office of the official and shall be open for public inspection.

**Sec. 14.132 Development Permit**

- (a) Required. A development permit shall be required in conformance with the provisions of this chapter prior to the commencement of any development activities.
- (b) Procedures. Application for a development permit shall be made to the building official on forms furnished by him prior to any development activities, and such application may include, but not be limited to, the requirement that the following plans be submitted in triplicate and drawn to scale, showing the nature, location, dimensions and elevations of the area in question; existing or proposed structures, fill, storage of materials, drainage facilities and the location of the foregoing. Specifically, the following information is required:

- (1) Application stage. The following shall be included in the application for a permit:
  - a. Elevation in relation to mean sea level of the proposed lowest floor of all structures;
  - b. Elevation in relation to mean sea level to which any nonresidential structure will be flood proofed;
  - c. Certificate from a registered professional engineer or architect that the nonresidential flood proofed structure will meet all applicable flood proofing criteria in article III, division 2 of this chapter; and
  - d. Description of the extent to which any watercourse will be altered or relocated as a result of proposed development.
  
- (2) Construction stage. The applicant must provide a flood elevation or flood proofing certification after the lowest floor is completed, or in instances where the structure is subject to the regulations applicable to coastal high hazard areas, after placement of the horizontal structural members of the lowest floor. Upon placement of the lowest floor, or flood proofing by whatever construction means, or upon placement of the horizontal structural members of the lowest floor, whichever is applicable, it shall be the duty of the permit holder to submit to the building official a certification of the elevation of the lowest floor, flood proofed elevation, or the elevation of the lowest portion of the horizontal structural members of the lowest floor, whichever is applicable, as built, in relation to mean sea level. The certification shall be prepared by or under the direct supervision of a registered land surveyor or professional engineer and certified by same. When flood proofing is utilized for a particular building, the certification shall be prepared by or under the direct supervision of a professional engineer or architect and certified by same. Any work undertaken prior to submission of the certification shall be at the permit holder's risk. The building official shall review the flood elevation survey data submitted. Deficiencies detected by such review shall be corrected by the permit holder immediately and in any case, prior to further progressive work being permitted to proceed. Failure to submit the survey or failure to make the required corrections shall be cause for the building official or his designee to issue a stop-work order for the project.

**Sec. 14.133 Appeals**

- (a) Upon the submission of a written application, with a filing fee of seventy-five dollars (\$75.00), to the office of the floodplain manager, an appeal may be requested from the requirements of this chapter.
  
- (b) The Construction Board of Appeals, shall hear and decide appeals from the requirements of this ordinance provided that:
  - (1) The property on which the structure is to be erected is an isolated lot of one-half acre or less, a structure listed on the national register of historic places or a state inventory of historic places is to be restored or reconstructed;
  - (2) It is alleged that there is an error in any requirement, decision or determination made by the floodplain manager and building department in the enforcement or administration of this chapter;
  - (3) The appeal is requested for the repair or rehabilitation of historic structures upon determination that repair or rehabilitation will not preclude the structure's continued designation as a historic structure and the repair or rehabilitation is the minimum necessary to preserve the historic character and design of the structure; and
  - (4) The appeal is not for property located within any designated floodway if any increase in flood levels during the base flood discharge would result.

- (c) The Construction Board of Appeals, in passing upon such applications shall consider all technical evaluations, all relevant factors, all standards specified in other sections of this ordinance, and:
- (1) The danger that materials may be swept onto other lands to the injury of others;
  - (2) The danger to life and property due to flooding or erosion damage;
  - (3) The susceptibility of the proposed facility and its contents to flood damage and the effect of such damage on the individual owner;
  - (4) The importance of the services provided by the proposed facility to the community;
  - (5) The necessity of the facility to a waterfront location in the case of a functionally dependent facility;
  - (6) The availability of alternate locations, not subject to flooding or erosion damage, for the proposed use;
  - (7) The compatibility of the proposed use with existing and anticipated development;
  - (8) The relationship of the proposed use to the comprehensive plan and floodplain management program for that area;
  - (9) The safety of access to the property in times of flood for ordinary emergency vehicles;
  - (10) The expected height, velocity duration, rate of rise and sediment transport of the flood waters and the effects of wave action, if applicable, expected at the site; and
  - (11) The cost 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 systems, and streets and bridges.
- (d) The Construction Board of Appeals may, upon consideration of the factors listed [in] subsection (c), attach such conditions to the granting of the appeal as deemed necessary to further the purpose of this chapter.
- (1) A determination that the appeal is the minimum necessary, considering that flood hazard, to afford relief, and in the instance of an historical building, a determination that the appeal is the minimum necessary so as not to destroy the historic character and design of the building;
  - (2) A showing of good and sufficient cause;
  - (3) A determination that failure to grant the appeal would result in exceptional hardship, and
  - (4) A determination that the granting of the appeal will not result in increased flood heights, additional threats to public safety, extraordinary public expense, create a nuisance, cause fraud on or victimization of the public, or conflict with existing local laws or ordinances.
- (e) Any applicant to whom an appeal is granted shall be given written notice specifying the difference between the base flood elevation and the elevation to which the building is to be built and stating that the cost of flood insurance will be increased.
- (f) The floodplain manager and building department shall maintain the records of all appeal actions and report the same to the Federal Emergency Management Agency upon request.
- (g) Such appeal shall be freely transferable with the land and shall not be personal to the applicant.
- (h) Unless otherwise provided therein, an appeal shall be valid for a period of one (1) year after the date of its issuance. If construction has not commenced pursuant thereto within such time, such appeal

shall become void. Lapse of an appeal by the passage of time shall not preclude subsequent application for an appeal.

- (i) No appeal except herein specifically permitted may be granted from the provisions of this section. The appeal procedures provided in this section shall be the exclusive method for obtaining appeals under the provisions herein.

**Sec. 14.134 Recreational Vehicles**

Recreational vehicles are prohibited on the properties of the Town of Kiawah Island.

Exception: Exception: The building official may grant an exception for special circumstances providing the recreation vehicle meets the following criteria:

- Does not exceed 400 square feet.
- Built of a single chassis
- Designed to be self-propelled or permanently towable by a light duty truck
- Used as temporary living quarters only

**Sec. 14.135 – 14.165 Reserved**

**Article III PROVISIONS FOR FLOOD HAZARD REDUCTION**

**Sec. 14.166 Elevation Requirements**

**Sec. 14.167 Fill**

**Sec. 14.168 Anchoring**

**Sec. 14.169 Floors, Walls and Ceilings**

**Sec. 14.170 Electrical and Gas Utility Systems**

**Sec. 14.171 Plumbing**

**Sec. 14.172 Paints and Adhesives**

**Sec. 14.173 Special Standards**

**Sec. 14.174 Reserved.**

**Sec. 14.175 Streams without Established Base Flood Elevations, Floodways or Both**

**Sec. 14.176 Subdivision Proposals**

**Sec. 14.177 Areas of Shallow Flooding (AO Zones)**

**Sec. 14.178 Elevated Buildings**

**Sec. 14.166 Elevation Requirements**

- (a) Residential structures must be constructed so that the lowest floor, is located no lower than the base flood elevation (i.e., the 100-year flood elevation) plus 1 foot of freeboard.
- (b) Nonresidential structures shall be constructed so that the lowest floor is located no lower than 12” above base flood elevation, or shall be flood proofed based on FEMA current requirements.

**Sec. 14.167 Fill**

If fill is used to raise the lowest floor to the base flood elevation:

- (1) Fill shall consist of compacted soil (95%) or small rock materials only. Sanitary landfills shall not be permitted.
- (2) Fill slopes shall be no steeper than one (1) vertical on two (2) horizontal, unless substantiating data justifying steeper slopes are submitted to and approved by the floodplain manager of the building services department.
- (3) Fill shall be used only to the extent to which it does not adversely affect adjacent properties.

**Sec. 14.168 Anchoring**

- (a) All structures shall be firmly anchored to prevent flotation, collapse or lateral movement.
- (b) All ducts, pipes, storage tanks and septic tanks shall be firmly anchored to prevent flotation, collapse or lateral movement.

**Sec. 14.169 Floors, Walls and Ceilings**

- (a) Wood flooring used at or below the base flood elevation level shall be installed to accommodate a lateral expansion of the flooring, perpendicular to the flooring grain, without incurring structural damage to the building.
- (b) All finished flooring used at or below the base flood elevation level shall be made of materials which are dimensionally stable and resistant to water damage resulting from submersion for, at least, a forty-eight-hour period.
- (c) Plywood used at or below the base flood elevation level shall be of the exterior or marine grade and of a water-resistant or waterproof variety.
- (d) All building materials used at or below base flood elevation at minimum shall be class 4 or 5 material.

**Sec. 14.170 Electrical and Gas Utility Systems**

- (a) All electrical and gas water heaters, furnaces and other critical electrical and gas installations shall be permitted only at elevations at a minimum of one-foot above the base flood elevation level.

**Exception:**

- Electric service meters and associated service disconnects shall be located and mounted utilizing electric company’s requirements.  
Pool pumps and associated pool equipment shall be exempt from meeting the requirements of Section 14-70 (a).
- (b) No electrical distribution panel shall be allowed at an elevation less than three (3) feet above the base flood elevation.

- (c) Separate electrical circuits shall serve levels below the base flood elevation level and shall be dropped from above. This circuitry shall be GFCI protected and branch circuits shall be in PVC conduit or type UF cable shall be used.

**Sec. 14.171 Plumbing**

- (a) The location, construction and installation of all potable water supply systems shall be in such a manner as to prevent contamination from flood waters.
- (b) Approved backflow preventers or devices shall be installed on main water service lines, at water wells, and at all building entry locations to protect the system from backflow siphonage of flood waters or other contaminants.
- (c) Sanitary sewers and storm draining systems that have openings below the base flood elevation shall be equipped with automatic back water valves or other automatic backflow devices that are installed in each discharge line passing through a building exterior wall.

**Sec. 14.172 Paints and Adhesives**

- (a) Adhesives used at or below the base flood elevation level shall have a bonding strength that is unaffected by inundation.
- (b) Doors and all wood trim at or below the base flood elevation level shall be sealed with a waterproof paint or similar product.
- (c) Paints or other finishes used at or below the base flood elevation level shall be capable of surviving inundation.

**Sec. 14.173 Special Standards**

Special standards for construction in coastal high hazard areas located within the special flood hazard areas identified by the map and report referred to in 14-14 are areas known as coastal high hazard areas (V-zones). These coastal high hazard areas have special flood hazards associated with high velocity waters from tidal surge and hurricane wave wash and therefore the following special construction standards shall apply in the coastal high hazard areas as determined by the floodplain manager and the building official.

- (1) All buildings in a coastal high hazard area shall meet the following provisions:
  - (a) All buildings shall be located landward of the reach of the mean high tide.
  - (b) All buildings shall be elevated so that the lowest supporting horizontal member (excluding pilings or columns) is located no lower than one-foot above base flood elevation level, with all space below the lowest supporting member open so as not to impede the flow of water. Open lattice work or decorative screening may be permitted for aesthetic purposes only and must be designed to wash away in the event of abnormal wave action. Certification of the elevation of the bottom of the lowest supporting member must be verified and recorded.
  - (c) All buildings or structures shall be securely anchored on pilings or columns.
  - (d) All pile and column foundations and structures attached thereto shall be anchored to resist flotation, collapse and lateral movement due to the effect of wind and water loads acting on all building components. Water loading values shall equal or exceed base flood. Wind loading values shall be in accordance with The International Building Code Section 1609 and shall correlate to the risk factor specified for the building construction type to be constructed.

- (e) A registered professional engineer shall certify that the design, specifications and plans for construction are in compliance with the provisions of this chapter related to construction in coastal high hazard areas.
- (f) There shall be no fill used as structural support. Non-compacted fill may be used around the perimeter of a building for landscaping/aesthetic purposes provided the fill will wash out from storm surge prior to generating excessive loading forces, ramping effects or wave deflection. The building official shall approve design plans for landscaping/aesthetic fill only after the applicant has provided an analysis by an engineer which demonstrates that the following factors have been fully considered:
  - a. Particle composition of fill material does not have a lending for excessive natural compaction.
  - b. Volume and distribution of fill will not cause wave defection to adjacent properties; and
  - c. Slope of fill will not cause wave run-up or ramping.
- (g) There shall be no alternation of sand dunes which would increase potential flood damage.
- (h) Breakaway walls shall be allowed below the base flood elevation to enclose the perimeter foot print of the structure and to provide no more than 300 square feet of storage, and 800 square feet of garage area; provided they are not part of the structural support of the building and are designed so as to break away, under abnormally high tides or wave action, without damage to the structural integrity of the building on which they are to be used. Specifications for breakaway walls should be determined in consultation with local engineers and architects and based on local conditions. Standard practice is to use a loading of twenty (20) pounds per square foot (psf) as wind load on a vertical panel facing directly into the wind. This load would correspond to a wind speed of about one hundred (100) miles per hour and should be the minimum load which would cause the panels to break away. Designation of this limit should be based on such factors as material, cross-section and spacing of pilings or columns upon which the structure sits the elevation above the ground and other assumed loadings on the structure. Breakaway walls shall not have any devices or equipment attached to them. Any type of enclosure that does not meet this design criterion is prohibited. "V" zone certification documentation that includes amount of scouring, elevation of the bottom of the lowest horizontal structural member, elevation of the lowest adjacent grade, base flood elevation, embedment depth of pilings or foundations, shall be completed by the design engineer or architect and his/her seal placed on the document.
- (i) Lattice work or decorative screening shall be allowed below the base flood elevation provided they are not part of the structural support of the building and are designed so as to break away under high tides or wave action without damage to the structural integrity of the building and provided that:
  - a. No solid wall shall be allowed; and
  - b. Material is lattice or mesh screening only.
  - c. Only class 4 and 5 materials shall be used below base flood elevation
- (j) Such enclosed space (lattice or screening) shall not be designed to be used for human habitation, but may be designed to be used only for the parking of vehicles, building access, or limited storage of maintenance equipment used on the premises.

- (k) Prior to construction, plans for lattice work or screening must be approved by the building official.
- (l) Any alteration, repair, reconstruction or improvement to a structure shall not enclose the space below the lowest floor except with lattice work or decorative screening.

**Sec. 14.174 Reserved**

**Sec. 14.175 Streams without Established Base Flood Elevations, Floodways or Both**

Located within the areas of special flood hazard established in section 14-14, where small streams exist but where no base flood data have been provided or where no floodways have been provided, the following provisions apply:

- (1) No encroachments, including fill material or structures, shall be located within a distance of the stream bank equal to two (2) times the width of the stream at the top of bank or twenty (20) feet each side from top of bank, whichever is greater, unless certification by a registered professional engineer is provided, demonstrating that such encroachments shall not result in any increase in flood levels during the occurrence of the base flood discharge.
- (2) New construction or substantial improvements of structures shall be elevated or flood proofed to elevations established in accordance with section 14-31(b) (11).

**Sec. 14.176 Subdivision Proposals**

- (a) All subdivision proposals shall be consistent with the need to minimize flood damage.
- (b) All subdivision proposals shall have public utilities and facilities such as sewer, gas, electrical and water systems located and constructed to minimize flood damage.
- (c) All subdivision proposals shall have adequate drainage provided to reduce exposure to flood hazards.
- (d) Base flood elevation data shall be provided for subdivision proposals and any other proposed development which is greater than the lesser of fifty (50) lots or five (5) acres.

**Sec. 14.177 Areas of Shallow Flooding (AO Zones)**

Located within the areas of special flood hazard, as established in section 14-14, are areas designated as shallow flooding areas. These areas have special flood hazards associated with base flood depths of one (1) to three (3) feet where a clearly defined channel does not exist and where the path of flooding is unpredictable and indeterminate; therefore, the following provisions apply:

- (1) All new construction and substantial improvements of residential structures shall have the lowest floor, elevated to the depth number specified on the flood insurance rate map, in feet, above the highest adjacent grade. If no depth number is specified, the lowest floor shall be elevated at least three (3) feet above the highest adjacent grade.
- (2) All new construction and substantial improvements of non-residential structures shall:
  - a. Have the lowest floor, elevated to the depth number specified on the flood insurance rate map, in feet, above the highest adjacent grade. If no depth number is specified, the lowest floor, shall be elevated at least three (3) feet above the highest adjacent grade; or,
  - b. Together with attendant utility and sanitary facilities be completely flood proofed to or above that level so that any space below that level is watertight with walls substantially

impermeable to the passage of water and with structural components having the capability of resisting hydrostatic and hydrodynamic loads and effects of buoyancy.

### **Sec. 14.178 Elevated Buildings**

New construction or substantial improvements of elevated buildings that include fully enclosed areas formed by foundation and other exterior walls below the base flood elevation shall be designed to preclude finished living space and designed to allow for the entry and exit of floodwaters to automatically equalize hydrostatic flood forces on exterior walls.

- (1) Designs for complying with this requirement must either be certified by a professional engineer or architect or meet the following minimum criteria:
  - a. Provide a minimum of two (2) openings having a total net area of not less than one (1) square inch for every square foot of enclosed area subject to flooding;
  - b. The bottom of all openings shall be no higher than one (1) foot above grade; and
  - c. Openings may be equipped with screens, louvers, valves or other coverings or devices provided they permit the automatic flow of floodwaters in both directions.
- (2) Electrical, plumbing, and other utility connections are prohibited below the base flood elevation.

Exception: one (1) single-gang light switch and (1) receptacle with a weather proof cover. Branch circuit wiring shall be run in PVC conduit, or branch circuit wiring shall be UF grade. Electric main service meters and associated main service disconnects are also exempt from being required to be installed above base flood elevation. Pool pumps and associated pool equipment shall also be exempt.

- (3) Access to the enclosed area shall be the minimum necessary to allow for parking of vehicles (garage door) or limited storage of maintenance equipment used in connection with the premises (standard exterior door) or entry to the living area (stairway or elevator).
- (4) Exception: Non-structural partitioning is acceptable provided these areas are engineered to diminish the effects of hydrostatic forces by the use of hydrostatic flood vents. This exception shall not apply to properties designated on a FEMA FIRM map as “V” zones. Properties designated as V-zones shall be permitted to have a maximum of 300 square feet of an enclosure with an engineered designed breakaway wall system to be utilized for storage, any other enclosures are prohibited.

Exception: Elevator shafts are excluded from this requirement.

- (5) Properties that are located in areas that are designated as an “A” zone, shall be permitted to utilize the structures perimeter foot print and an additional 300 square feet of enclosed space within the defined footprint to be used as storage. Garages shall not exceed an overall dimension of 800 square feet.
- (6) Heating and cooling below base flood is prohibited for all structures; however, access stairwells and anterooms leading from the garage area beneath the home may be heated and cooled provided the total combined square footage shall not exceed 200 square feet.

## **ARTICLE IV SEVERABILITY**

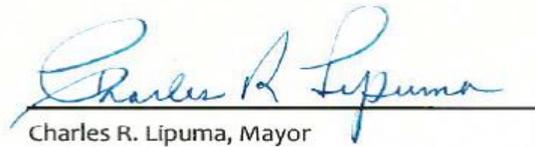
If any part of this Ordinance is held to be unconstitutional, it shall be construed to have been the legislative intent to pass said Ordinance without such unconstitutional provision, and the remainder

of said Ordinance shall be deemed to be valid as if such portion had not been included. If said Ordinance, or any provisions thereof, is held to be inapplicable to any person, group of persons, property, kind of property, circumstances or set of circumstances, such holding shall not affect the applicability thereof to any other persons, property or circumstances

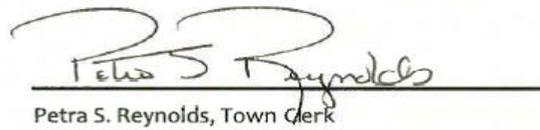
## **ARTICLE V            EFFECTIVE DATE AND DURATION**

This Ordinance shall be effective upon its enactment by the Town Council for the Town of Kiawah Island.

**PASSED, APPROVED, AND ADOPTED BY COUNCIL FOR THE TOWN OF KIAWAH ISLAND ON THIS 3<sup>rd</sup> DAY OF SEPTEMBER, 2013**



Charles R. Lipuma, Mayor  
Town of Kiawah Island



Petra S. Reynolds, Town Clerk

First Reading Approval: August 6, 2013

Second Reading Approval: September 3, 2013