

## **Title 16**

### **DEVELOPMENT REGULATIONS**

#### **Chapter: - 16.45 Flood Damage Prevention**

*(16.40 Repealed)*

#### **Coupeville Town Code**

#### **New Chapter 16.45**

### **FLOOD DAMAGE PREVENTION**

#### **16.45.010 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:

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

I. Historically, the most common vertical datum used by FEMA has been National Geodetic Vertical Datum of 1929 (NGVD29). However, the NAVD88 datum is more compatible with modern surveying and mapping technologies like Global Positioning Systems and Light Detection and Ranging (LIDAR), more accurate than NGVD29, and it is the only official vertical datum for the continental United States.

#### **16.45.020 Methods of Reducing Flood Losses**

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

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

### **16.45.030 – Definitions**

Unless specifically defined below, words or phrases used in this Chapter shall be interpreted so as to give them the meaning they have in common usage and to give this Chapter its most reasonable application.

**APPEAL:** a request for a review of the interpretation of any provision of this Chapter or a request for a variance.

**AREA OF SHALLOW FLOODING:** designated as AO, or AH Zone on the Flood Insurance Rate Map (FIRM). AO zones have base flood depths that range from one to three feet above the natural ground; a clearly defined channel does not exist; the path of flooding is unpredictable and indeterminate; and, velocity flow may be evident. AO is characterized as sheet flow; AH indicates ponding, and is shown with standard base flood elevations.

**AREA OF SPECIAL FLOOD HAZARD:** is the land in the flood plain within a community subject to a one percent or greater chance of flooding in any given year. Designation on maps always includes the letters A or V.

**BASE FLOOD:** the flood having a one percent chance of being equaled or exceeded in any given year. Also referred to as the “100-year flood.” Designation on maps always includes the letters A or V.

**BASE FLOOD ELEVATION (BFE):** the height of the base flood, usually in feet, in relation to the North American Vertical Datum of 1988 usually in feet, above the ground surface.

**BASEMENT:** means any area of the building having its floor sub-grade (below ground level) on all sides.

**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 supporting foundation system.

**COASTAL HIGH HAZARD AREA:** means an area of special flood hazard extending from offshore to the inland limit of a primary frontal dune along an open coast and any other

area subject to high velocity wave action from storms or seismic sources. The area is designated on the FIRM as Zone V1-30, VE or V.

**CRITICAL FACILITY:** means a facility for which even a slight chance of flooding might be too great. Critical facilities include (but are not limited to) schools, nursing homes, hospitals, police, fire and emergency response installations, and installations which produce, use, or store hazardous materials or hazardous waste.

**DEVELOPMENT:** means any man-made change to improved or unimproved real estate, including but not limited to buildings or other structures, mining, dredging, filling, grading, paving, excavation or drilling operations or storage of equipment or materials located within the area of special flood hazard.

**ELEVATION CERTIFICATE:** means the official form (FEMA Form 81-31) used to track development provide elevation information necessary to ensure compliance with community floodplain management ordinances, and determine the proper insurance premium rate.

**ELEVATED BUILDING:** means for insurance purposes, a non-basement building that has its lowest elevated floor raised above ground level by foundation walls, shear walls, post, piers, pilings, or columns.

**EXISTING MANUFACTURED HOME PARK OR SUBDIVISION:** means a manufactured home park or subdivision for which the construction of facilities for servicing the lots on which the manufactured homes are to be affixed (including, at a minimum, the installation of utilities, the construction of streets, and either final site grading or the pouring of concrete pads) is completed before the effective date of the adopted floodplain management regulations.

**EXPANSION TO AN EXISTING MANUFACTURED HOME PARK OR SUBDIVISION:** means the preparation of additional sites by the construction of facilities for servicing the lots on which the manufactured homes are to be affixed (including the installation of utilities, the construction of streets, and either final site grading or the pouring of concrete pads).

**FLOOD 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 and/or
- 2) The unusual and rapid accumulation of runoff of surface waters from any source.

**FLOOD INSURANCE RATE MAP (FIRM):** means the official map on which the Federal Insurance Administration has delineated both the areas of special flood hazards and the risk premium zones applicable to the community.

**FLOOD INSURANCE STUDY (FIS):** means the official report provided by the Federal Insurance Administration that includes flood profiles, 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 foot.

**HISTORIC STRUCTURE:** means a structure that is:

- (a) Listed individually in the National Register of Historic Places or preliminarily determined as meeting the requirements for individual listing on the National Register;
- (b) Certified or preliminarily determined as contributing to the historical significance of a registered historic district;
- (c) Individually listed on a state inventory of historic places; or
- (d) Individually listed on a local inventory of historic places.

**LOWEST FLOOR:** means the lowest floor of the lowest enclosed area (including basement). An unfinished or flood resistant enclosure, usable solely for parking of vehicles, building access, or storage in an area other than a basement area, is not considered a building's lowest floor, provided that such enclosure is not built so as to render the structure in violation of the applicable non-elevation design requirements of this Chapter, (i.e. provided there are adequate flood ventilation openings).

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

**MANUFACTURED HOME PARK OR SUBDIVISION:** means a parcel (or contiguous parcels) of land divided into two or more manufactured home lots for rent or sale.

**NEW CONSTRUCTION:** means structures for which the "start of construction" commenced on or after the effective date of this Chapter.

**NEW MANUFACTURED HOME PARK OR SUBDIVISION:** means a manufactured home park or subdivision for which the construction of facilities for servicing the lots on which the manufactured homes are to be affixed (including at a minimum, the installation of utilities, the construction of streets, and either final site grading or the pouring of concrete pads) is completed on or after the effective date of adopted floodplain management regulations.

**NATIONAL GEODETIC VERTICAL DATUM (NGVD):** means the elevation datum plane previously used by FEMA for the determination of flood elevations.

**NORTH AMERICAN VERTICAL DATUM PLANE:** means the elevation datum currently used by FEMA for the determination of flood elevations.

**RECREATIONAL VEHICLE:** means a vehicle,

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

**START OF CONSTRUCTION:** includes substantial improvement, and means the date the building permit was issued, provided the actual start of construction, repair,

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

**STRUCTURE:** a walled and roofed building, including a gas or liquid storage tank that is principally above ground.

**SUBSTANTIAL DAMAGE:** means damage of any origin sustained by a structure whereby the cost of restoring the structure to its before damaged condition would equal or exceed 50 percent of the market value of the structure before the damage occurred.

**SUBSTANTIAL IMPROVEMENT:** means any repair, reconstruction, or improvement of a structure, the cost of which equals or exceeds 50 percent of the market value of the structure either:

- 1) Before the improvement or repair is started; or
- 2) If the structure has been damaged and is being restored, before the damage occurred. For the purposes of this definition “substantial improvement” is considered to occur when the first alteration of any wall, ceiling, floor, or other structural part of the building commences, whether or not that alteration affects the external dimensions of the structure.

The term can exclude:

- 1) Any project for improvement of a structure to correct pre-cited existing violations of state or local health, sanitary, or safety code specifications which have been previously identified by the local code enforcement official and which are the minimum necessary to assure safe living conditions, or
- 2) Any alteration of a structure listed on the National Register of Historic Places, under Town Code, or a State Inventory of Historic Places.

**VARIANCE:** means a grant of relief from the requirements of this Chapter that permits construction in a manner that would otherwise be prohibited by this Chapter.

**WATER DEPENDENT:** means a use or portion of a use which cannot exist in a location that is not adjacent to the water but is dependent on the water by reason of the intrinsic nature of its operations. Examples of water-dependent uses include ship cargo terminal loading areas, fishing, ferry and passenger terminals, barge loading facilities, ship building and dry docking, marinas, aquaculture, float plane facilities, hydroelectric dams, surface water intake, and sewer outfalls. Activities and development that include as a purpose the restoration ecological functions and values, and/or the enhancement shoreline habitat are also considered water-dependent under the Shoreline Master Program

**WATER-ENJOYMENT USE** means a recreational use or other use that facilitates public access to the shoreline as a primary characteristic of the use; or a use that provides for recreational use or aesthetic enjoyment of the shoreline for a substantial number of people as a general characteristic of the use and which through location, design, and operation ensures the public's ability to enjoy the physical and aesthetic qualities of the shoreline. In order to qualify as a water-enjoyment use, the use must be open to the general public and the shoreline-oriented space within the project must be devoted to the specific aspects of the use that fosters shoreline enjoyment. Primary water-enjoyment uses may include, but are not limited to:

1. Parks with activities enhanced by proximity to the water;
2. Piers and other improvements that facilitate public access to shorelines of the state;
3. Restaurants with water views and public access improvements that are open to the general public;
4. Museums with an orientation to shoreline topics;
5. Aquariums;
6. Scientific/ecological reserves;
7. Transient accommodations with uses open to the public and public access to the shoreline; and any combination of those uses listed above; and
8. Mixed Use development

**WATER-ORIENTED USE** means any one or a combination of water-dependent, water-related or water-enjoyment uses.

**WATER-RELATED USE** means a use or portion of a use which is not intrinsically dependent on a waterfront location but whose economic viability is dependent upon a waterfront location because:

1. The use has a functional requirement for a waterfront location such as the arrival or shipment of materials by water or the need for large quantities of water; or
2. The use provides a necessary service supportive of the water-dependent uses and the proximity of the use to its customers makes its services less expensive and/or more convenient.

#### **16.45.040 – General Provisions**

##### **A. Lands to Which This Chapter Applies and Penalties For Noncompliance**

1. This Chapter shall apply to all areas of special flood hazards within the jurisdiction of the Town of Coupeville.
2. No structure or land shall hereafter be constructed, located, extended, converted, or altered without full compliance with the terms of this Chapter and other applicable regulations. Violations of the provisions of this Chapter by failure to comply with any of its requirements (including violations of conditions and safeguards established in connection with conditions), shall be subject to enforcement pursuant CTC 16.06.080.

3. Historic buildings are exempt from NFIP substantial improvement and substantial damage requirements both through the definition of substantial improvement and second, by application of the variances provisions for historic structures.

B. Basis For Establishing The Areas of Special Flood Hazard

The areas of special flood hazard identified by the Federal Insurance Administration in a scientific and engineering report entitled “The Flood Insurance Study for Island County “ dated February 2, 2007, and any revisions thereto, with an accompanying Flood Insurance Rate Map (FIRM), and any revisions thereto, are hereby adopted by reference and declared to be a part of this Chapter. The Flood Insurance Study and the FIRM are on file at Coupeville Town Hall. The best available information for flood hazard area identification as outlined in Section 16.45.050.C.2 shall be the basis for regulation until a new FIRM is issued that incorporates data utilized under Section 16.45.050.C.2.

C. Abrogation and Greater Restrictions

This Chapter is not intended to repeal, abrogate, or impair any existing easements, covenants, or deed restrictions. However, where this Chapter and another Chapter, easement, covenant, or deed restriction conflict or overlap, whichever imposes the more stringent restrictions shall prevail.

D. 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 governing body; and,
3. Deemed neither to limit nor repeal any other powers granted under State statutes.

E. Warning And Disclaimer of Liability

The degree of flood protection required by this Chapter is considered reasonable for regulatory purposes and is based on scientific and engineering considerations. Larger floods can and will occur on rare occasions. Flood heights may be increased by man-made or natural causes. This Chapter does not imply that land outside the areas of special flood hazards or uses permitted within such areas will be free from flooding or flood damages. This Chapter shall not create liability on the part of Town of Coupeville, any officer or employee thereof, or the Federal Insurance Administration, for any flood damages that result from reliance on this Chapter or any administrative decision lawfully made hereunder.

F. Flood Insurance for Pre-Firm Overwater Structures

If the building is entirely over water, it is eligible for normal Pre-FIRM rates If it was built before October 1, 1982. If it was built after that date and is entirely over water, it is ineligible for coverage. If it is built PARTIALLY over water and is Pre-FIRM (Pre-8/16/95), it is eligible for normal Pre-FIRM rates; if partially over water and built after 8/16/95, it must be submitted for special rating.

**16.45.050 Establishment of Development Permit**

A. Development Permit Required

1. A development permit shall be obtained before construction or development begins within any area of special flood hazard established in Section 16.45.040.B. The permit shall be for all structures including manufactured homes, as set forth in the “Definitions,” and for all development including fill and other activities, also as set forth in the “Definitions.”

2. Application for Development Permit

Application for a development permit shall be made on forms furnished by the Town of Coupeville and may include, but not be limited to, plans in duplicate drawn to scale showing the nature, location, dimensions, and elevations of the area in question; existing or proposed structures, fill, storage of materials, drainage facilities, and the location of the foregoing. Specifically, the following information is required:

- a. Elevation in relation to mean sea level, of the lowest floor (including basement) of all structures;
- b. Elevation in relation to mean sea level to which any structure has been floodproofed;
- c. Certification by a registered professional engineer or architect that the floodproofing methods for any nonresidential structure meet floodproofing criteria in Section 16.45.070.B;
- d. Description of the extent to which a watercourse will be altered or relocated as a result of proposed development.

B. Designation of the Local Administrator

The Planning Official is hereby appointed to administer and implement this Chapter by granting or denying development permit applications in accordance with its provisions.

C. Duties & Responsibilities of the Local Administrator

Duties of the Planning Official shall include, but not be limited to:

1. Permit Review

- a. Review all development permits to determine that the permit requirements of this Chapter have been satisfied.
- b. Review all development permits to determine that all necessary permits have been obtained from those Federal, State, or local governmental agencies from which prior approval is required.
- c. Review all development permits to determine if the proposed development is located in the floodway. If located in the floodway, assure that the encroachment provisions of Section 16.45.070.D) are met.

2. Use of Other Base Flood Data (In A and V Zones)

When base flood elevation data has not been provided (in A or V Zones) in accordance with 16.45.040.B, Basis for Establishing the Areas of Special Flood Hazard, the Planning 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 Sections 16.45.070.B, Specific Standards, and 16.45.070.D Floodways.

3. Information to be Obtained and Maintained

a. Where base flood elevation data is provided through the Flood Insurance Study, FIRM, or required as in Section 16.45.050.C.2, obtain and record the actual (as-built) elevation (in relation to mean sea level) of the lowest floor (including basement) of all new or substantially improved structures, and whether or not the structure contains a basement.

b. For all new or substantially improved floodproofed nonresidential structures where base flood elevation data is provided through the FIS, FIRM, or as required in Section 16.45.050.C.2:

(i) Obtain and record the elevation (in relation to mean sea level) to which the structure was floodproofed

(ii) Maintain the floodproofing certifications required in Section 16.45.050.A.2.c.

c. Maintain for public inspection all records pertaining to the provisions of this Chapter.

4. Alteration of Watercourses

a. Notify adjacent communities and the Department of Ecology prior to any alteration or relocation of a watercourse, and submit evidence of such notification to the Federal Insurance Administration.

b. Require that maintenance is provided within the altered or relocated portion of said watercourse so that the flood carrying capacity is not diminished.

5. Interpretation of FIRM Boundaries )

Make interpretations where needed, as to exact location of the boundaries of the areas of special flood hazards (e.g. where there appears to be a conflict between a mapped boundary and actual field conditions). The person contesting the location of the boundary shall be given a reasonable opportunity to appeal the interpretation as provided in Section 16.45.060.

**16.45.060 Variance Procedure**

A. Appeal Board

1. The Town Council shall hear and decide appeals and requests for variances from the requirements of this Chapter.

2. The Town Council shall hear and decide appeals when it is alleged there is an error in any requirement, decision, or determination made by Planning Official in the enforcement or administration of this Chapter.

3. Those aggrieved by the decision of the Town Planner, or any taxpayer, may appeal such decision to the Town Council, as provided in CTC 16.06.060.

4. In passing upon such applications, the Town Council shall consider all technical evaluations, all relevant factors, standards specified in other sections of this Chapter, and:

- a. The danger that materials may be swept onto other lands to the injury of others;
  - b. The danger to life and property due to flooding or erosion damage;
  - c. The susceptibility of the proposed facility and its contents to flood damage and the effect of such damage on the individual owner;
  - d. The importance of the services provided by the proposed facility to the community;
  - e. The necessity to the facility of a waterfront location, where applicable;
  - f. The availability of alternative locations for the proposed use which are not subject to flooding or erosion damage;
  - g. The compatibility of the proposed use with existing and anticipated development;
  - h. The relationship of the proposed use to the comprehensive plan and flood plain management program for that area;
  - i. The safety of access to the property in times of flood for ordinary and emergency vehicles;
  - j. The expected heights, velocity, duration, rate of rise, and sediment transport of the floodwaters and the effects of wave action, if applicable, expected at the site;
  - k. The costs of providing governmental services during and after flood conditions, including maintenance and repair of public utilities and facilities such as sewer, gas, electrical, and water systems, and streets and bridges.
5. Upon consideration of the factors of Section 16.45.060.A.4 and the purposes of this Chapter, the Town Council may attach such conditions to the granting of variances as it deems necessary to further the purposes of this Chapter.
6. The Town Council shall maintain the records of all appeal actions and report any variances to the Federal Insurance Administration upon request.

#### B. Conditions for Variances

1. Generally, the only condition under which a variance from the elevation standard may be issued is for new construction and substantial improvements to be erected on a small or irregularly shaped lot contiguous to and surrounded by lots with existing structures constructed below the base flood level, providing items (i-xi) in Section 16.45.060.A.4 have been fully considered. As the lot size increases the technical justification required for issuing the variance increases.
2. Variances may be issued for the reconstruction, rehabilitation, or restoration of structures listed on the National Register of Historic Places, listed in Town Code, or the State Inventory of Historic Places, including overwater structures, without regard to the procedures set forth in this section.
3. Variances shall not be issued within a designated floodway if any increase in flood levels during the base flood discharge would result.

4. Variances shall only be issued upon a determination that the variance is the minimum necessary, considering the flood hazard, to afford relief.
5. Variances shall only be issued upon:
  - a. A showing of good and sufficient cause;
  - b. A determination that failure to grant the variance would result in exceptional hardship to the applicant;
  - c. A determination that the granting of a variance will not result in increased flood heights, additional threats to public safety, extraordinary public expense, create nuisances, cause fraud on or victimization of the public, or conflict with existing local laws or ordinances.
6. Variances as interpreted in the National Flood Insurance Program are based on the general zoning law principle that they pertain to a physical piece of property; they are not personal in nature and do not pertain to the structure, its inhabitants, economic or financial circumstances. They primarily address small lots in densely populated residential neighborhoods. As such, variances from flood elevations should be quite rare.
7. Variances may be issued for nonresidential buildings in very limited circumstances to allow a lesser degree of floodproofing than watertight or dry-floodproofing, where it can be determined that such action will have low damage potential, complies with all other variance criteria except Section 16.45.060.B.1. and otherwise complies with Sections 16.45.070.A.1, 16.45.070.A.3, and 16.45.070.A.4 of the General Standards.
8. Any applicant to whom a variance is granted shall be given written notice that the permitted structure will be built with its lowest floor below the base flood elevation and that the cost of flood insurance will be commensurate with the increased risk.

### **16.45.070 Provisions for Flood Hazard Reduction**

#### **A. General Standards**

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

1. Anchoring
  - a. All new construction and substantial improvements shall be anchored to prevent flotation, collapse, or lateral movement of the structure.
  - b. All manufactured homes shall be anchored to prevent flotation, collapse, or lateral movement, and shall be installed using methods and practices that minimize flood damage. Anchoring methods may include, but are not limited to, use of over-the-top or frame ties to ground anchors.
2. Construction Materials and Methods
  - a. All new construction and substantial improvements shall be constructed with materials and utility equipment resistant to flood damage.
  - b. All new construction and substantial improvements shall be constructed using methods and practices that minimize flood damage.

c. Electrical, heating, ventilation, plumbing, and air-conditioning equipment and other service facilities shall be designed and/or otherwise elevated or located so as to prevent water from entering or accumulating within the components during conditions of flooding.

### 3. Utilities

a. All new and replacement water supply systems shall be designed to minimize or eliminate infiltration of flood waters into the systems;

b. Water wells shall be located on high ground that is not in the floodway

c. New and replacement sanitary sewage systems shall be designed to minimize or eliminate infiltration of flood waters into the systems and discharges from the systems into flood waters;

d. Onsite waste disposal systems shall be located to avoid impairment to them or contamination from them during flooding.

### 4. 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 or eliminate flood damage;

c. All subdivision proposals shall have adequate drainage provided to reduce exposure to flood damage;

d. Where base flood elevation data has not been provided or is not available from another authoritative source, it shall be generated for subdivision proposals and other proposed developments which contain at least 50 lots or 5 acres (whichever is less).

### 5. Review of Building Permits

a. Where elevation data is not available either through the Flood Insurance Study, FIRM, or from another authoritative source, applications for building permits shall be reviewed to assure that proposed construction will be reasonably safe from flooding. The test of reasonableness is a local judgment and includes use of historical data, high water marks, photographs of past flooding, etc., where available. Failure to elevate at least two feet above the highest adjacent grade in these zones may result in higher insurance rates.

## B. Specific Standards

In all areas of special flood hazards where base flood elevation data has been provided as set forth in 16.45.040.B, Basis for Establishing the Areas of Special Flood Hazard, or Section 16.45.050.C.2, Use of Other Base Flood Data, the following provisions are required:

### 1. Residential Construction

a. New construction and substantial improvement of any residential structure shall have the lowest floor, including basement, elevated to or above the base flood elevation (BFE).

b. Fully enclosed areas below the lowest floor that are subject to flooding are prohibited, or shall be designed to automatically equalize hydrostatic flood forces on exterior walls by allowing for the entry and exit of floodwaters. Designs for meeting this requirement must either be certified by a registered professional engineer or architect or must meet or exceed the following minimum criteria:

(i) A minimum of two openings having a total net area of not less than one square inch for every square foot of enclosed area subject to flooding shall be provided.

(ii) The bottom of all openings shall be no higher than one foot above grade.

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

## 2. Nonresidential Construction

New construction and substantial improvement of any commercial, industrial or other nonresidential structure shall either have the lowest floor, including basement, elevated one foot or more\* above the base flood elevation; or, together with attendant utility and sanitary facilities, shall:

a. Be floodproofed so that below one foot or more above the base flood level the structure is watertight with walls substantially impermeable to the passage of water;

b. Have structural components capable of resisting hydrostatic and hydrodynamic loads and effects of buoyancy;

c. Be certified by a registered professional engineer or architect that the design and methods of construction are in accordance with accepted standards of practice for meeting provisions of this subsection based on their development and/or review of the structural design, specifications and plans. Such certifications shall be provided to the official as set forth in Section 16.45.050.C.3.b;

d. Nonresidential structures that are elevated, not floodproofed, must meet the same standards for space below the lowest floor as described in 16.45.070.B.1.b;

e. Applicants who are floodproofing nonresidential buildings shall be notified that flood insurance premiums will be based on rates that are one foot below the floodproofed level (e.g. a building floodproofed to the base flood level will be rated as one foot below).

## 3. Manufactured Homes

All manufactured homes to be placed or substantially improved on sites shall be elevated on a permanent foundation such that the lowest floor of the manufactured home is elevated one foot or more above the base flood elevation and be securely anchored to an adequately anchored foundation system to resist flotation, collapse and lateral movement.

## 4. Recreational Vehicles

Recreational vehicles placed on sites are required to either:

- a. Be on the site for fewer than 180 consecutive days, (or)
- b. Be fully licensed and ready for highway use, on wheels or jacking system, attached to the site only by quick disconnect type utilities and security devices, and have no permanently attached additions; or
- c. Meet the requirements of Section 16.45.070B.3 above and the elevation and anchoring requirements for manufactured homes.

C. AE and A1-30 Zones with Base Flood Elevations but No Floodways

In areas with base flood elevations (but a regulatory floodway has not been designated), no new construction, substantial improvements, or other development (including fill) shall be permitted within Zones A1-30 and AE on the community's FIRM, 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 one foot at any point within the community.

D. Floodways

Located within areas of special flood hazard established in 16.45.040.B are areas designated as floodways. Since the floodway is an extremely hazardous area due to the velocity of floodwaters that can carry debris, and increase erosion potential, the following provisions apply:

1. Prohibit encroachments, including fill, new construction, substantial improvements, and other development unless certification by a registered professional engineer is provided demonstrating through hydrologic and hydraulic analyses performed in accordance with standard engineering practice that the proposed encroachment would not result in any increase in flood levels during the occurrence of the base flood discharge.

2. Construction or reconstruction of residential structures is prohibited within designated floodways, except for (i) repairs, reconstruction, or improvements to a structure which do not increase the ground floor area; and (ii) repairs, reconstruction or improvements to a structure, the cost of which does not exceed 50 percent of the market value of the structure either, (A) before the repair, or reconstruction is started, or (B) if the structure has been damaged, and is being restored, before the damage occurred. Any project for improvement of a structure to correct existing violations of state or local health, sanitary, or safety code specifications which have been identified by the local code enforcement official and which are the minimum necessary to assure safe living conditions, or to structures identified as historic places, may be excluded in the 50 percent.

3. If Section 16.45.070.D.1 is satisfied, all new construction and substantial improvements shall comply with all applicable flood hazard reduction provisions of Section 16.45.070, Provisions for Flood Hazard Reduction.

E. Standards for Shallow Flooding Areas (AO Zones)

Shallow flooding areas appear on FIRMs as AO zones with depth designations. The base

flood depths in these zones range from 1 to 3 feet above ground where a clearly defined channel does not exist, or where the path of flooding is unpredictable and where velocity flow may be evident. Such flooding is usually characterized as sheet flow. In these areas, the following provisions apply:

1. New construction and substantial improvements of residential structures and manufactured homes within AO zones shall have the lowest floor (including basement) elevated above the highest adjacent grade to the structure, one foot or more above\* the depth number specified in feet on the community's FIRM (at least two feet above the highest adjacent grade to the structure if no depth number is specified).

2. New construction and substantial improvements of nonresidential structures within AO zones shall either:

a. Have the lowest floor (including basement) elevated above the highest adjacent grade of the building site, one foot or more above the depth number specified on the FIRM (at least two feet if no depth number is specified); 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. If this method is used, compliance shall be certified by a registered professional engineer or architect as in Section 16.45.070.B.2.c.

3. Require adequate drainage paths around structures on slopes to guide floodwaters around and away from proposed structures.

4. Recreational vehicles placed on sites within AO Zones on the community's FIRM are required to either:

a. Be on the site for fewer than 180 consecutive days, or

b. Be fully licensed and ready for highway use, on its wheels or jacking system, is attached to the site only by quick disconnect type utilities and security devices, and has no permanently attached additions; or

c. Meet the requirements of 16.45.070.E.1 and 3 above and the anchoring requirements for manufactured homes (Section 16.45.070.A.1.b).

#### F. Critical Facility

Construction of new critical facilities shall be, to the extent possible, located outside the limits of the Special Flood Hazard Area (SFHA) (100-year floodplain). Construction of new critical facilities shall be permissible within the SFHA if no feasible alternative site is available. Critical facilities constructed within the SFHA shall have the lowest floor elevated three feet above BFE or to the height of the 500-year flood, whichever is higher. Access to and from the critical facility should also be protected to the height utilized above. Floodproofing and sealing measures must be taken to ensure that toxic substances will not be displaced by or released into floodwaters. Access routes elevated to or above the level of the base flood elevation shall be provided to all critical facilities to the extent possible.

## G. Coastal High Hazard Areas

Located within areas of special flood hazard established in 16.45.040.B are Coastal High Hazard Areas, designated as Zones V1-30, VE and/or V. These areas have special flood hazards associated with high velocity waters from surges and, therefore, in addition to meeting all provisions in this Chapter, the following provisions shall also apply:

1. All new construction and substantial improvements in Zones V1-30 and VE (V if base flood elevation data is available) on the community's FIRM shall be elevated on pilings and columns so that:

a. The bottom of the lowest horizontal structural member of the lowest floor (excluding the pilings or columns) is elevated one foot or more above the base flood level. The base flood elevation is 12 feet NAVD. All elevation certificates should specify that the source of the BFE data is "community determined", i.e. it was extrapolated from the Rhodena Beach BFE.

b. The pile or column foundation and structure attached thereto is 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 one percent chance of being equaled or exceeded in any given year (100-year mean recurrence interval).

A registered professional engineer or architect shall develop or review the structural design, specifications and plans for the construction, and shall certify that the design and methods of construction to be used are in accordance with accepted standards of practice for meeting the provisions of Section 16.45.070.G.1.a. and b.

2. Obtain the elevation (in relation to mean sea level) of the bottom of the lowest structural member of the lowest floor (excluding pilings and columns) of all new and substantially improved structures in Zones V1-30, VE, and V on the community's FIRM and whether or not such structures contain a basement. The Town Planner shall maintain a record of all such information.

3. Except for Water Oriented uses, all new construction within Zones V1-30, VE, and V on the community's FIRM shall be located landward of the reach of mean high tide.

4. Provide that all new construction and substantial improvements within Zones V1-30, VE, and V on the community's FIRM have the space below the lowest floor either free of obstruction or constructed with non-supporting breakaway walls, open wood lattice-work, or insect screening intended to collapse under wind and water loads without causing collapse, displacement, or other structural damage to the elevated portion of the building or supporting foundation system. For the purposes of this section, a breakaway wall shall have a design safe loading resistance of not less than 10 and no more than 20 pounds per square foot. Use of breakaway walls which exceed a design safe loading resistance of 20 pounds per square foot (either by design or when so required by local or State codes) may be permitted only if a registered professional engineer or architect certifies that the design proposed meets the following conditions:

a. Breakaway wall collapse shall result from water load less than that which would occur during the base flood; and

b. The elevated portion of the building and supporting foundation system shall not be subject to collapse, displacement, or other structural damage due to the effects of wind and water loads acting simultaneously on all building components (structural and non-structural). Maximum wind and water loading values to be used in this determination shall each have a one percent chance of being equaled or exceeded in any given year (100-year mean recurrence interval).

If breakaway walls are utilized, such enclosed space shall be useable solely for parking of vehicles, building access, or storage. Such space shall not be used for human habitation.

5. Prohibit the use of fill for structural support of buildings within Zones V1-30, VE, and V on the community's FIRM.

6. Prohibit man-made alteration of sand dunes within Zones V1-30, VE, and V on the community's FIRM which would increase potential flood damage.

7. All manufactured homes to be placed or substantially improved within Zones V1-30, V, and VE on the community's FIRM on sites:

- a. Outside of a manufactured home park or subdivision,
- b. In a new manufactured home park or subdivision,
- c. In an expansion to an existing manufactured home park or subdivision, or
- d. In an existing manufactured home park or subdivision on which a

manufactured home has incurred "substantial damage" as the result of a flood; shall meet the standards of paragraphs 5.6(1) through (6) of this section and manufactured homes placed or substantially improved on other sites in an existing manufactured home park or subdivision within Zones V1-30, V, and VE on the FIRM shall meet the requirements of Section 16.45.070.B.3

8. Recreational vehicles placed on sites within Zones V1-30, V, and VE on the community's FIRM either:

- a. Be on the site for fewer than 180 consecutive days, or
- b. Be fully licensed and ready for highway use, on its wheels or jacking system, attached to the site only by quick disconnect type utilities and security devices, and have no permanently attached additions; or
- c. Meet the requirements of Section 16.45.050.A (development permit required) and paragraphs 16.45.070.G.1. through 6 of this section.