

ARTICLE 8.

Floodplain Areas

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Floodplain Areas

Sec. 8.1. Statutory authorization.

The State Legislature has, in Section 31-23-301, C.R.S., delegated the responsibility to local governmental units to adopt regulations designed to promote the public health, safety and general welfare of its citizenry.

Sec. 8.2. Findings of fact.

1. The flood hazard areas of the Town 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.
2. These flood losses are caused by the cumulative effect of obstructions in areas of special flood hazards which increase flood heights and velocities and, when inadequately anchored, damage uses in other areas. Uses that are inadequately floodproofed, elevated, or otherwise protected from flood damage also contribute to the flood loss.

Sec. 8.3. Statement of purpose.

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

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 and generally undertaken at the expense of the general public;
4. To minimize prolonged business interruptions;
5. 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;
6. 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;
7. To ensure that potential buyers are notified that property is in an area of special flood hazard; and
8. To ensure that those who occupy the areas of special flood hazards assume responsibility for their actions.

Sec. 8.4. Methods of reducing flood losses.

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

1. 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;

2. Requiring that uses vulnerable to floods, including facilities which serve such uses, be protected against flood damage at the time of initial construction;
3. Controlling the alteration of natural floodplains, stream channels, and natural protective barriers, which help accommodate or channel flood waters;
4. Controlling filling, grading, dredging, and other development which may increase flood damage; and
5. Preventing or regulating the construction of flood barriers which will unnaturally divert flood waters or which may increase flood hazards in other areas.

Sec. 8.5. Definitions.

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

Alluvial fan flooding means flooding occurring on the surface of an alluvial fan or similar landform which originates at the apex and is characterized by high-velocity flows; active processes of erosion, sediment transport, and deposition; and unpredictable flow paths.

Apex means a point on an alluvial fan or similar landform below which the flow path of the major stream that formed the fan becomes unpredictable and alluvial fan flooding can occur.

Area of shallow flooding means a designated AO, AH, or VO zone on the Flood Insurance Rate Map (FIRM) for the Town of Frederick, Colorado, with a one percent (1) chance or greater annual chance of flooding to an average depth of one to three feet (1-3') where a clearly defined channel does not exist, where the path of flooding is unpredictable and where velocity flow may be evident. Such flooding is characterized by ponding or sheet flow.

Area of special flood hazard is the land in the floodplain within a community subject to a one percent (1%) or greater chance of flooding in any given year. The area may be designated as Zone A on the flood Hazard Boundary Map (FHBM). After detailed ratemaking has been completed in preparation for publication of the FIRM, Zone A usually is refined into Zones A, AE, AH, AO, A1-99, VO, V1-30, VE or V.

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

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

Critical feature means an integral and readily identifiable part of a flood protection system, without which the flood protection provided by the entire system would be compromised.

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.

Elevated building means a non-basement building (i) built, in the case of a building in Zones A1-30, AE, A, A99, AO, AH, B,C, X, and D, to have the top of the elevated floor, or in the case of a

building in Zones V1-30, VE, or V, to have the bottom of the lowest horizontal structure member of the elevated floor elevated above the ground level by means of pilings, columns (posts and piers), or shear walls parallel to the floor of the water and (ii) adequately anchored so as not to impair the structural integrity of the building during a flood of up to the magnitude of the base flood. In the case of Zones A1-30, AE, A, A99, AO, AH, B, C, X, and D, “elevated building” also includes a building elevated by means of fill or solid foundation perimeter walls with openings sufficient to facilitate the unimpeded movement of flood waters.

In the case of Zones V1-30, VE, or V, “elevated building” also includes a building otherwise meeting the definition of “elevated building,” even though the lower area is enclosed by means of breakaway walls if the breakaway walls met the standards of Section 60.3(e)(5) of the National Flood Insurance Program regulations.

Existing construction means for the purposes of determining rates, structures for which the “start of construction” commenced before the effective date of the FIRM or before January 1, 1975, for FIRMs effective before that date. “Existing construction” may also be referred to as “existing structures.”

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 floodplain management regulations adopted by a community.

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:

- a. The overflow of inland or tidal waters; and/or
- b. The unusual and rapid accumulation or runoff of surface waters from any source.

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 hazards and the risk premium zones applicable to the community.

Flood Insurance Study is the official report provided by the Federal Emergency Management Agency (FEMA). The report contains flood profiles, water surface elevation of the base flood, as well as the Flood Boundary-Floodway Map.

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

Floodplain management means the operation of an overall program of corrective and preventive measures for reducing flood damage, including but not limited to emergency preparedness plans, flood control works and floodplain management regulations.

Floodplain management regulations means zoning ordinances, subdivision regulations, building codes, health regulations, special purpose ordinances (such as a floodplain ordinance, grading ordinance and erosion control ordinance) and other applications of police power. The term describes such state or local regulations, in any combination thereof, which provide standards for the purpose of flood damage prevention and reduction.

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

Flood proofing means any combination of structural and non-structural additions, changes, or adjustments to structures which reduce or eliminate flood damage to real estate or improved real property, water and sanitary facilities, structures and their contents.

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

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

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:

- a. Listed individually in the National Register of Historic Places (a listing maintained by the Department of Interior) or preliminarily determined by the Secretary of the Interior as meeting the requirements for individual listing on the National Register;
- b. Certified or preliminarily determined by the Secretary of the Interior as contributing to the historical significance of a registered historic district or a district preliminarily determined by the Secretary to qualify as a registered historic district;
- c. Individually listed on a state inventory of historic places in states with historic preservation programs which have been approved by the Secretary of Interior; or
- d. Individually listed on a local inventory or historic places in communities with historic preservation programs that have been certified either:
 1. by an approved state program as determined by the Secretary of the Interior or;

2. directly by the Secretary of the Interior in states without approved programs.

Levee means a man-made structure, usually an earthen embankment, designed and constructed in accordance with sound engineering practices to contain, control, or divert the flow of water so as to provide protection from temporary flooding.

Levee system means a flood protection system which consists of a levee or levees and associated structures, such as closure and drainage devices, which are constructed and operated in accordance with sound engineering practices.

Lowest floor means the lowest floor of the lowest enclosed area (including basement). An unfinished or flood-resistant enclosure, usable solely for parking of vehicles, building access or storage, in an area other than a basement area, is not considered a building's lowest floor; **provided** that such enclosure is not built so as to render the structure in violation of the applicable non-elevation design requirements of Section 60.3 of the National Flood Insurance Program regulations.

Manufactured home means a structure, transportable in one (1) or more sections, which is built on a permanent chassis and is designed for use with or without a permanent foundation when connected to the required utilities. 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 (2) or more manufactured home lots for rent or sale.

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

New construction means, for the purpose of determining insurance rates, structures for which the "start of construction" commenced on or after the effective date of an initial FIRM or after December 31, 1974, whichever is later, and includes any subsequent improvements to such structures. For floodplain management purposes, "new construction" means structures for which the "start of construction" commenced on or after the effective date of a floodplain management regulation adopted by a community and includes any subsequent improvements to such structures.

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

Recreational vehicle means a vehicle which is:

- a. built on a single chassis;
- b. 400 square feet or less when measured at the largest horizontal projections;
- 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

Start of construction includes substantial improvement and means the date the building permit was issued, provided that the actual start of construction, repair, reconstruction, rehabilitation, addition, placement or other improvement was within one hundred eighty (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 means a walled and roofed building, including a gas or liquid storage tank, that is principally above ground, as well as a manufactured home.

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

Substantial improvement means any reconstruction, rehabilitation, addition, or other improvement of a structure, the cost of which equals or exceeds fifty percent (50%) of the market value of the structure before “start of construction” of the improvement. This includes structures which have incurred “substantial damage;”, regardless of the actual repair work performed. The term does not, however, include either:

- a. Any project for improvement of a structure to correct existing violation 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 conditions; or
- b. Any alteration of a “historic structure”, provided that the alteration will not preclude the structure’s continued designation as a “historic structure.”

Variance is a grant of relief to a person from the requirement of this Article when specific enforcement would result in unnecessary hardship. A variance, therefore, permits construction or development in a manner otherwise prohibited by this Article. (For full requirements, see Section 60.6 of the National Flood Insurance Program regulations.)

Violation means the failure of a structure or other development to be fully compliant with the community's floodplain management regulations. A structure or other development without the elevation certificate, other certifications, or other evidence of compliance required in Section 60.3(b)(5), (c)(4), (c)(10), (d)(3), (e)(2), (e)(4), or (e)(5) is presumed to be in violation until such time as that documentation is provided.

Water surface elevation means the height, in relation to the National Geodetic Vertical Datum (NGVD) of 1929 (or other datum, where specified) of floods of various magnitudes and frequencies in the floodplains of coastal or riverine areas.

Sec. 8.6. Lands to which Article applies.

This Article shall apply to all areas of special flood hazards within the jurisdiction of the Town.

Sec. 8.7. Basis for establishing areas of special flood hazard within the jurisdiction of the Town.

The areas of special flood hazard identified by the Federal Emergency Management Agency is a specific engineering report entitled "The Flood Insurance Study for the Town of Frederick, Colorado," dated July 13, 1982, with an accompanying Flood Insurance Rate Map, Flood Boundary-Floodway Maps (FIRM and FBFM) and any revisions thereto are hereby adopted by reference and declared to be a part of this Article. The Flood Insurance Study is on file at the Town offices.

Sec. 8.8. Compliance.

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

Sec. 8.9. Abrogation and greater restrictions.

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

Sec. 8.10. Interpretation.

In the interpretation and application of this Article, 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.

Sec. 8.11. Warning and disclaimer of liability.

The degree of flood protection required by this Article 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 Article 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 Article shall not create liability on the part of the Town or any officer or employee thereof, or the Federal Emergency Management Agency, for any flood damages that result from reliance on this Article or any administrative decision lawfully made thereunder.

Sec. 8.12. Establishment of development permit.

1. A development permit shall be obtained before construction or development begins within any area of special flood hazard established in Section 8.7 of this Code. Application for a development permit shall be made on forms furnished by the Town Engineer, 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 and 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. Certificate by a registered professional engineer or architect that the floodproofing methods for any nonresidential structure meets the floodproofing criteria in Section 8.17.1.b.; and
 - d. Description of the extent to which any watercourse will be altered or relocated as a result of proposed development.
2. Approval or denial of a Development Permit by the Town Engineer shall be based on all of the provisions of this Article and the following relevant factors:
- a. The danger to life and property due to flooding or erosion damage;
 - b. The susceptibility of the proposed facility and its contents to flood damage and the effect of such damage on the individual owner;
 - c. The danger that materials may be swept onto other lands to the injury of others;
 - d. The compatibility of the proposed use with existing and anticipated development;
 - e. The safety of access to the property in times of flood for ordinary and emergency vehicles;
 - f. The costs of providing governmental services during and after flood conditions including maintenance and repair of streets and bridges, and public utilities and facilities such as sewer, gas, electrical and water systems;
 - g. The expected heights, velocity, duration, rate of rise and sediment transport of the flood waters and the effects of wave action, if applicable, expected at the site;
 - h. The necessity to the facility of a waterfront location, where applicable;
 - i. The availability of alternative locations, not subject to flooding or erosion damage, for the proposed use; and
 - j. The relationship of the proposed use to the Comprehensive Plan for that area.

Sec. 8.13. Designation of Local Administrator.

The Town Engineer is hereby appointed to administer and implement this Article by granting or denying development permit applications in accordance with its provisions.

Sec. 8.14. Duties and responsibilities of Local Administrator.

Duties of the Town Engineer, shall include but not be limited to:

- 1. Permit review:

- a. Review all development permits to determine that the permit requirements of this Article have been satisfied;
 - b. Review all development permits to determine that all necessary permits have been obtained from federal, state, or local governmental agencies from which prior approval is required; and
 - c. Review all development permits to determine if the proposed development adversely affects the flood-carrying capacity of the area of special flood hazard. For purposes of this Article, *adversely affects* means that the cumulative affect 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 (1') at any point. Prior to approval of any permit for development with such adverse effects in areas of special flood hazard, coordinate application for conditional FIRM revision through FEMA (Conditional letter of Map Revision), pursuant to the National Flood Insurance Program regulations. All costs of such application are to be incorporated into the permit fees paid by the applicant.
2. Use of other base flood data. When base flood elevation data has not been provided in accordance with Section 8.7, the Town Engineer, as may be reasonable, shall obtain, review and reasonably utilize any base flood elevation and floodway data available from a federal, state, or other source, as criteria for requiring new construction, substantial improvements, or other development in Zone A as delineated on a Flood Insurance Rate Map, in order to administer Subsections 8.17.1.a. and b.
3. Information to be obtained and maintained:
- a. Obtain and record the actual elevation (in relation to mean sea level) of the lowest floor (including basement) of all new or substantially improved structures.
 - b. For all new or substantially improved floodproofed structures:
 - (1) Verify and record the actual elevation (in relation to mean sea level) to which the structure has been floodproofed.
 - (2) Maintain the floodproofing certifications required in Section 8.12.1.c.
 - (3) Maintain for public inspection all records pertaining to the provisions of this Article.
 - c. Alteration of watercourse:
 - (1) Notify adjacent communities and the Colorado Water Conservation Board prior to any alteration or relocation of a watercourse, and submit evidence of such notification to the Federal Emergency Management Agency.
 - (2) Require that maintenance is provided within the altered or relocated portion of said watercourse so that the flood-carrying capacity is not diminished.
 - d. Interpretation of FIRM boundaries. Make interpretations where needed as to the exact location of the boundaries of the areas of special flood hazards (for example, where there appears to be a conflict between a mapped boundary and actual field conditions). The person contesting the location of the boundary shall be given a reasonable opportunity to appeal the interpretation as provided in Section 8.15.

Sec. 8.15. Variance procedure.

1. Appeal Board.
 - a. The Board of Trustees shall hear and decide appeals and requests for variances from the requirements of this Article as the Board of Adjustment.
 - b. The Board of Adjustment shall hear and decide appeals when it is alleged there is an error in any requirement, decision or determination made by the Town Engineer in the enforcement or administration of this Article.
 - c. Those aggrieved by the decision of the Board of Adjustment may appeal such decisions to the Weld County District Court, as approved in Section 31-23-307, C.R.S.
 - d. In passing upon such application, the Board of Adjustment shall consider all technical evaluations, all relevant factors, standards specified in other sections of this Article, including but not limited to those enumerated in Section 8.12, as well as to the following:
 - (1) The importance of the services provided by the proposed facility to the community; and
 - (2) No structure or other development may qualify for a variance unless it is protected by methods that minimize flood damages during the base flood and creates no additional threats to public safety.
 - e. Upon consideration of the factors of Subsection d. above and the purposes of this Article, the Board of Adjustment may attach such conditions to the granting of variances as it deems necessary to further the purposes of this Article.
 - f. The Town Engineer, through his or her department, shall maintain the records of all appeal actions, including technical information, and report any variances to the Federal Emergency Management Agency.
2. Conditions for variances.
 - a. Generally, variances may be issued for new construction and substantial improvements to be erected on a lot of one-half (1/2) acre or less in size contiguous to and surrounded by lots with existing structures constructed below the base level, provided that items (1) and (2) in Subsection 1.d. above have been fully considered. As the lot size increases beyond one-half (1/2) acre, the technical justifications required for issuing the variance increase.
 - b. Variances may be issued for the repair or rehabilitation of historic structures upon a determination that the proposed repair or rehabilitation will not preclude the structure's continued designation as a historic structure and the variance is the minimum necessary to preserve the historic character and design of the structure. Variances for structures listed on the National Register of Historic Places or the State Inventory of Historic Places may be issued without regard to the procedures set forth in the remainder of this Section.
 - c. Variances shall not be issued within any designated floodway if any increase in flood levels during the base flood discharge would result.
 - d. Variances shall only be issued upon a determination that the variance is the minimum necessary, considering the flood hazard, to afford relief.

- e. Variances shall only be issued upon:
 - (1) A showing of good and sufficient cause;
 - (2) A determination that failure to grant the variance would result in exceptional hardship to the applicant; and
 - (3) A determination that the granting of a variance will not result in increased flood heights, additional threats to public safety or extraordinary public expense, create nuisances or cause fraud on or victimization of the public as identified in Subsection 1.d. above or conflict with existing local laws or ordinances.
- f. Any applicant to whom a variance is granted shall be given written notice that the structure will be permitted to be built with a lowest floor elevation below the base flood elevation and that the cost of flood insurance will be commensurate with the increased risk resulting from the reduced lowest floor elevation.

Sec. 8.16. General standards for flood hazard reduction.

- 1. Anchoring.
 - a. All new construction and substantial improvements shall be anchored to prevent flotation, collapse or lateral movement of the structure and to withstand hydrodynamic loads.
 - b. All manufactured homes must be elevated and anchored to resist flotation, collapse or lateral movement. Methods of anchoring may include, but are not limited to, use of over-the-top or frame ties to ground anchors. This requirement is in addition to applicable state and local anchoring requirements for resisting wind forces. Specific requirements may be:
 - (1) Over-the-top ties shall be provided at each of the four (4) corners of the manufactured home, with two (2) additional ties per side at intermediate locations, with manufactured homes less than fifty (50) feet long requiring one (1) additional tie per side;
 - (2) Frame ties shall be provided at each corner of the home with five (5) additional ties per side at intermediate points, with manufactured homes less than fifty (50) feet long requiring four (4) additional ties per side;
 - (3) All components of the anchoring system shall be capable of carrying a force of four thousand eight hundred (4,800) pounds; and
 - (4) Any additions to the manufactured home shall be similarly anchored.
 - (5) The chassis is supported by reinforced piers or other foundation elements of at least equivalent strength that are no less than thirty six inches (36”) in height above grade and be securely anchored to an adequately anchored foundation system to resist flotation, collapse, and lateral movement.
- 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. For all new construction and substantial improvements, fully enclosed areas below the lowest floor 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 exceed the following minimum criteria: 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 shall be provided. The bottom of all openings shall be no higher than one (1) foot above grade. Openings may be equipped with screens, louvers or other coverings or devices, provided that they permit the automatic entry and exit of floodwaters.
3. Utilities.
 - a. All new and replacement water supply systems shall be designed to minimize or eliminate infiltration of floodwaters into the system.
 - b. New and replacement sanitary sewage systems shall be designed to minimize or eliminate infiltration of floodwaters into the systems and discharge from the systems into floodwaters.
 - c. On-site waste disposal systems shall be located to avoid impairment to them or contamination from them during flooding.
 - d. Electrical, heating, ventilation, plumbing and air conditioning equipment and other service facilities shall be designed and/or located so as to prevent water from entering or accumulating within the components during conditions of flooding.
4. Subdivision proposals.
 - a. All proposals for the development of subdivisions including the placement of manufactured home parks and subdivisions shall meet Development Permit requirements of Section 8.12 and be consistent with the need to minimize flood damage.
 - b. Base flood elevation data shall be generated for subdivision proposals and other proposed development including the placement of manufactured home parks and subdivisions which is greater than 50 lots or 5 acres, whichever is lesser, if not otherwise provided pursuant to this Article.
 - c. All subdivision proposals shall have public utilities and facilities such as electrical and water systems located and constructed to minimize flood damage.
 - d. All subdivision proposals shall have adequate drainage provided to reduce exposure to flood damage.
5. Areas of Shallow Flooding (AO/AH Zones).
 - a. Located within the areas of special flood hazard established in this Article, are areas designated as *shallow flooding*. These areas have special flood hazards associated with base flood depths of 1 to 3 feet where a clearly defined channel does not exist and where the path of flooding is unpredictable and where velocity flow may be evident. Such flooding is characterized by ponding or sheet flow; therefore, the following provisions shall apply:

- (1) All new construction and substantial improvements of residential structures have the lowest floor (including basement) elevated above the highest adjacent grade at least as high as the depth number specified in feet on the Town's FIRM (at least two feet if no depth number is specified).
- (2) All new construction and substantial improvements of non-residential structures;
 - (a) Have the lowest floor (including basement) elevated above the highest adjacent grade at least as high as the depth number specified in feet on the Town's FIRM (at least two feet if no depth number is specified), or;
 - (b) Together with attendant utility and sanitary facilities be designed so that below the base flood level the structure is watertight with walls substantially impermeable to the passage of water and with structural components having the capability of resisting hydrostatic and hydrodynamic loads of effects of buoyancy.
- (3) A registered professional engineer or architect shall submit a certification to the Town Engineer, that the standards of this subsection 5. are satisfied.
- (4) Adequate drainage paths shall be provided around structures on slopes, to guide flood waters around and away from all proposed structures.

6. Floodways.

- a. Floodways - located within areas of special flood hazard established in this Article, are areas designated as floodways. Since the floodway is an extremely hazardous area due to the velocity of flood waters which carry debris, potential projectiles and erosion potential, the following provisions shall apply:
 - (1) Encroachments are prohibited, including fill, new construction, substantial improvements and other development within the adopted regulatory floodway *unless* it has been demonstrated 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 within the community during the occurrence of the base flood discharge.
 - (2) If subsection 6.a.(1) above is satisfied, all new construction and substantial improvements shall comply with all applicable flood hazard reduction provisions of this Section 8.16 and Section 8.17, as applicable.
 - (3) Under the provisions of 44 CFR Chapter 1, Section 65.12, of the National Flood Insurance Regulations, the Town may permit encroachments within the adopted regulatory floodway that would result in an increase in base flood elevations, provided that the Town Engineer for purposes of this Article, first applies for a conditional FIRM and floodway revision through FEMA.

Sec. 8.17. Specific standards.

1. Requirements. In all areas of special flood hazards where base flood elevation data has been provided as set forth in Section 8.7 or Section 8.14.2, the following provisions are required:
 - a. Residential construction. New construction and substantial improvement of any residential structure shall have the lowest floor, including basement, elevated to or above base flood elevation.
 - b. Nonresidential construction. New construction and substantial improvement of any commercial, industrial or other nonresidential structure shall either have the lowest floor, including basement; or, together with attendant utility and sanitary facilities, shall:

- (1) Be floodproofed so that, below the base flood level, the structure is watertight with walls substantially impermeable to the passage of water;
- (2) Have structural components capable of resisting hydrostatic and hydrodynamic loads and effects of buoyancy; and
- (3) Provide that where a nonresidential structure is intended to be made watertight below the base flood level:
 - (a) A registered professional engineer or architect shall develop and/or review structural design, specifications and plans for the construction, and shall certify that the design and methods of construction are in accordance with accepted standards of practice for meeting the application provisions of Section 8.14.3.b.(2) above; and
 - (b) A record of such certificates which includes the specific elevation (in relation to mean sea level) to which such structures are floodproofed shall be maintained with the official designated by the community under Section 8.13 above.

2. Manufactured homes.

- a. Manufactured homes shall be anchored in accordance with Section 8.16.1.b.
- b. All manufactured homes or those to be substantially improved shall be elevated on a permanent foundation such that the lowest floor of the manufactured home is at or above the base flood elevation and is securely anchored to an adequately anchored foundation system.

3. Enclosures.

- a. New construction and substantial improvements, with fully enclosed areas below the lowest floor that are usable solely for parking of vehicles, building access or storage in an area other than a basement and which are subject to flooding shall be designed to automatically equalize hydrostatic flood forces on exterior walls by allowing for the entry and exit of floodwaters. Designs for meeting this requirement must either be certified by a registered professional engineer or architect or meet or exceed the following minimum criteria:
 - (1) 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;
 - (2) The bottom of all openings shall be no higher than one foot above grade; and
 - (3) Openings may be equipped with screens, louvers, valves, or other coverings or devices provided that they permit the automatic entry and exit of floodwaters.

4. Recreational Vehicles. Recreational vehicles placed on sites within special flood areas must either:

- a. Be on the site for fewer than 180 consecutive days;
- b. Be fully licensed and ready for highway use, which for purposes of this Subsection 4. shall mean that it is on its wheels or jacking system, is attached to the site only by quick disconnect type utilities and security devices, and has no permanently attached additions; or

- c. Meet the permit requirements of Section 8.12, and the elevation and anchoring requirements for "manufactured homes" in Subsection 2. of this Section 8.17.