

Sec. 6-139.1 FLOOD HAZARD OVERLAY ZONE.

Application for review and certification of projects in regards to the FHO zone standards shall be initiated through the office of the Building Inspector/Zoning Enforcement Officer. Permits are required for all proposed development in any area of special flood hazard. Applications may also be reviewed by Planning and Zoning simultaneously with the ZEO review if a Coastal Site Plan application is involved. (4/7/99)

(a) Purpose

The FHO zone is intended to add additional safeguards to those areas of Greenwich subject to riverine and coastal flooding as shown on the Flood Insurance Rate Maps and Flood Insurance Study of the Town of Greenwich effective August 19, 1986, and revised ~~February 22, 1999~~ **June 18, 2010**, and as amended from time to time. The zone is not intended to remove existing permitted uses as stated in these Regulations. It is the purpose of this section to:

- (1) Promote the public health, safety and general welfare and to minimize public and private losses due to flood conditions in specific areas.
- (2) 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.
- (3) Require that uses and structures vulnerable to floods, including facilities which serve such uses, be protected against flood damage at the time of initial construction.
- (4) Control the alteration of natural flood plains, stream channels, and natural protective barriers which are involved in the accommodation of flood waters.
- (5) Control filling, grading, dredging and other development which may increase erosion or flood damage.
- (6) Prevent or regulate the construction of flood barriers which will unnaturally divert flood waters or which may increase flood hazards to other lands.

(b) Objectives

The objectives of this section are to:

- (1) Protect human life and health.
- (2) Minimize the expenditures of public money for costly flood control projects.
- (3) Minimize the need for rescue and relief efforts associated with flooding which are generally undertaken at the expense of the general public.
- (4) Minimize prolonged business interruptions.
- (5) Minimize damage to public facilities and utilities such as water and gas mains, electric, telephone and sewer lines, streets and bridges located in flood plains.
- (6) 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) Insure that potential home buyers are notified that property is in a flood hazard area.

(c) Definitions

The following definitions are for use in this section only, except as they may apply to Section 6-111 and Section 6-119.

- (1) 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 other than a fire wall. Any walled and roofed addition which is connected by a fire wall or is separated by independent perimeter load-bearing walls is considered new construction.

- (2) Administrator - means the Federal Insurance Administrator, to whom the Federal Emergency Management Agency has delegated the administration of the National Flood Insurance Program, (NFIP).
- (3) Appeal - means a request for a review of the Zoning Enforcement Officer's interpretation of any provision of this section or a request for a variance.
- (4) 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. **After detailed rate-making has been completed in preparation for publication of the FIRM, Zone A is usually refined into Zones A, AE, AO, A1-99, VE, VO and VI-30. On the Flood Insurance Rate Map (FIRM), the flood zones are delineated as zones A, AE and VE.** The determination of flood hazard areas shall be based on the flood elevation shown on the FIRM map in conjunction with an up-to-date and accurate topographical survey of the site prepared by a Connecticut Licensed Professional Land Surveyor. Special Flood Hazard areas shall also include areas where the land surface elevation is lower than the base flood elevations as shown in the Flood Insurance Study, and the area is not protected from flooding by a natural or man-made feature. In no case shall the regulated area be closer to the source of flooding than that shown on the FEMA maps without revising or amending the maps in accordance with FEMA procedures.
- (5) Base Flood - means the flood having a one percent chance of being equaled or exceeded in any given year.
- (6) Base Flood Elevation (BFE) - means the elevation of the crest of the base flood or 100- year flood. The height in relation to mean sea level expected to be reached by the waters of the base flood at pertinent points in the floodplains of coastal and riverine areas.**
- (6 7) Basement - means that portion of a building having its floor subgrade (below ground level) on all sides.
- (7 8) 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.
- (8 9) Building - means any structure build for support, shelter or enclosure for any occupancy or storage.
- (9 10) Coastal High Hazard Area - means the area **of special flood hazard** subject to high velocity waters caused by, but not limited to, **storms and** hurricane wave wash. The area is designated on a FIRM as Zone ~~VI-30, VE or V.~~
- ~~(10 11)~~ **(11) Development** - means any man-made change to improved or unimproved real estate, including, but not limited to **the construction of buildings or structures; the construction of additions, alterations or substantial improvements to buildings or structures; the placement of buildings or structures; mining, dredging, filling, grading, paving, excavation or drilling operations or storage of equipment; the storage, deposition, or extraction of materials; and the installation, repair or removal of public or private sewage disposal systems or water supply facilities.** ~~buildings or other structures, mining, dredging, filling, grading, paving, excavating, drilling operations, or permanent storage of equipment or materials.~~
- (11 12) Elevated Building - means a building without a basement built to have the lowest floor elevated the above ground level by means of fill, solid foundation perimeter walls, pilings, columns (posts and piers), shearwalls, or breakaway walls, as allowed under applicable standards.
- (13) **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 home are to be affixed (including, as 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, August 19, 1986, of the floodplain management ordinance adopted by the community.

- (14) **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 manufacturing 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).
- (15) **Federal Emergency Management Agency (FEMA)** - is the federal agency that administers the National Flood Insurance Program (NFIP).
- (16) **Flood or Flooding** - means a general and temporary condition of partial or complete inundation of normally dry land areas due to the overflow of inland or tidal water and/or the unusual and rapid accumulation or runoff of surface waters from any source.
- (17) **Flood Insurance Rate Map** - 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 applicable risk premium zones.
- (18) **Flood Insurance Study (FIS)** - is the official report (dated February 22, 1999 June 18, 2010) by the Federal Emergency Management Agency. The report contains flood profiles as well as the Flood Insurance Rate Map (FIRM) and the water surface elevation of the base flood.
- (19) **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.
- (20) **Floor** - means the top surface of an enclosed area in a building (including basement) 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 of vehicles.
- (21) **Functionally Dependent Facility** - means a facility which cannot be used for its intended purpose unless it is located 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. The term does not include seafood processing facilities, long-term storage, manufacturing, sales or service facilities.** ~~such as a docking or port facility necessary for the loading and unloading of cargo or passengers, shipbuilding, ship repair, or seafood processing facilities. The term does not include long term storage, manufacture, sales or service facilities.~~
- (22) **Free Board** - the distance from the water surface to the top of the facility. It provides a factor of safety usually expressed in feet above a flood level for purposes of flood plain management. Freeboard tends to compensate for the many unknown factors that could contribute to flood heights greater than the height calculated for a selected size flood and floodway conditions, such as wave action, bridge openings and the hydrological effect of urbanization of the watershed.
- (23) **Historic Structure** - means any structure that is: (a) Listed individually in the National Register of Historic Places (a listing maintained by the Department of the Interior) or preliminarily determined by the Secretary of the Interior as meeting the requirements for individual listing on the National Register; (b) Is part of a Local Historic District or Historic Overlay Zone; (c) Certified or preliminarily determined by the Secretary of the Interior as contributing to the historic 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 the Interior; or (d) Individually listed on a local inventory of 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.

- (19 24) 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. In Special Flood Hazard areas, these areas must be designed in accordance with Section 6-139.19 (f) (11) (D) of these regulations and with the definition of elevated Buildings and Section 31 of these regulations.
- (20 25) Manufactured Home - means a structure, transportable in one or more sections, which is built on a permanent chassis and designed to be used with or without a permanent foundation when connected to the required utilities. The term also includes recreational vehicles, park trailers, travel and recreational trailers, and similar transportable structures placed on a site for 180 consecutive days or longer and intended to be improved property.
- (24 26) 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.
- (27) Market Value - means the market value of the structure shall be determined by the appraised value of the structure using the cost approach to value method prior to the start of the initial repair or improvement, or in the case of damage, the value of the structure prior to the damage occurring.
- (22 28) Mean Sea Level - means, for purposes of the National Flood Insurance Program, the National Geodetic Vertical Datum, (NGVD 1929) North American Vertical Datum (NAVD) of 1988 or other datum, to which base flood elevations shown on the community's Flood Insurance Rate Map are referenced.
- (23 29) National Geodetic Vertical Datum (NGVD) - as corrected in 1929 is a vertical control used as a reference for establishing varying elevations within the flood plain.
- (24 30) New Construction - means structure for which the "start of construction" commenced on or after the effective date of this section. (8/19/986)
- (31) 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, August 19, 1986, of the floodplain management regulation adopted by the community.
- (25 32) 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 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.
- (26 33) 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 one (1) foot.
- (27 34) Riverine - means relating to, formed by, or resembling a river (including tributaries), stream, brook, etc.
- (28 35) Sand Dunes - means naturally occurring accumulations of sand ridges or mounds landward of the beach.
- (29 36) Special Flood Hazard Areas - the determination of flood hazard areas shall be based on the flood elevation shown on the FIRM map in conjunction with an up-to-date and accurate topographical survey of the site prepared by a Connecticut Licensed Professional Land Surveyor. Special Flood Hazard areas shall also include areas

where the land surface elevation is lower than the base flood elevations as shown in the Flood Insurance Study, and the area is not protected from flooding by a natural or man made feature. In no case shall the regulated area be closer to the source of flooding than that shown on the FEMA maps without revising or amending the maps in accordance with FEMA procedures.

- (37) 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 180 days of the permit date. The actual start means the first placement or permanent construction of a structure (including a manufactured home) on a site such as the pouring of slabs or footings, installation of piles, construction of columns, or any work beyond the stage of excavation or placement of a manufactured home on a foundation. Permanent construction does not include land preparations, 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 of streets and/or walkways; nor does it include excavation for a basement, footings, piers or foundation or the erection of temporary forms; nor does it include the installation on the property or 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.**
- (38) Structure - means a walled and roofed building that is principally above ground, a manufactured home, a gas or liquid storage tank, or other man-made facilities or infrastructures.
- (39) 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% of the market value of the structure before the damage occurred.
- (40) Substantial Improvement - means any combination of repairs, reconstruction, alteration, or improvements to a structure taking place during the life of a structure, in which the cumulative costs equal or exceeds fifty percent of the market value of the structure. The market value of the structure should be (1) the appraised value of the structure (using the cost approach to value) prior to the start of the initial repair or improvement, or (2) in the case of damage, the value of the structure prior to the damage occurring. For purposes of this definition, "Substantial Improvement" is considered to occur when the first alteration (after 8/19/86) of any wall, ceiling, floor, or other structural part of the building commences, whether or not that alteration affects the extended dimensions of the structure. The term does not however, include any improvement project required to comply with existing health, sanitary, or safety code specifications which are solely necessary to assure safe living conditions. Separate conditions govern any alteration of a structure listed on the National Register of Historical Places of the State Inventory of Historical Places.
- (41) Variance - is a grant of relief from the requirements of this ordinance which permits construction in a manner otherwise prohibited by this ordinance where specific enforcement would result in unnecessary hardship.
- (42) Violation – **means a failure of a structure or other development to be fully compliant with the community's floodplain management regulations. A structure or other development without required permits, lowest floor elevation documentation, flood-proofing certificates or required floodway encroachment calculations is presumed to be in violation until such time as that documentation is provided.**

(35 43) Water Surface Elevation - means the height, in relation to the **North American Vertical Datum (NAVD) of 1988** ~~National Geodetic Vertical Datum (NGVD) of 1929,~~ (or other datum, where specified) of floods of various magnitudes and frequencies in the flood plains of coastal or riverine areas.

(d) General Provisions

- (1) This section shall apply to all areas of special flood hazard within the jurisdiction or the Town of Greenwich.
- ~~(2) The areas of special flood hazard identified by the Federal Emergency Management Agency in its Flood Insurance Study, dated February 22, 1999, with accompanying floodway and flood insurance rate maps, other special flood hazard areas as defined in Sections c.4 and c.29, and other supporting data, and revision thereto, are adopted by reference and declared to be a part of this regulation.~~
- (2) The areas of special flood hazard identified by the Federal Emergency Management Agency (FEMA) in its Flood Insurance Study (FIS) for Fairfield County, Connecticut, dated June 18, 2010, and accompanying Flood Insurance Rate Maps (FIRM), dated June 18, 2010, other special flood hazard areas as defined in Sections c.4 and c. 29, and other supporting data applicable to the Town of Greenwich, and any subsequent revisions thereto, are adopted by reference and declared to be a part of this regulation. Since mapping is legally adopted by reference into this regulation it must take precedence when more restrictive until such time as a map amendment or map revision is obtained from FEMA. The area of special flood hazard includes any area shown on the FIRM as Zones A, AE, and VE, including areas designated as a floodway on a FIRM. Zone VE is also identified as a Coastal High Hazard Area. Areas of special flood hazard are determined utilizing the base flood elevations (BFE) provided on the flood profiles in the Flood Insurance Study (FIS) for a community. BFEs provided on a Flood Insurance Rate Map (FIRM) are only approximate (rounded up or down) and should be verified with the BFEs published in the FIS for a specific location. The determination of areas of special flood hazard shall be based on the flood elevations shown on the FIRM and published in the FIS in conjunction with an up-to-date and accurate topographical survey of the site prepared by a Connecticut Licensed Professional Land Surveyor. Areas of special flood hazard shall also include areas where the land surface elevation is lower than the base flood elevations as shown in the FIS, and the area is not protected from flooding by a natural or man-made feature. In no case shall the regulated area be closer to the source of flooding than that shown on the FEMA maps without revising or amending the maps in accordance with FEMA procedures.**
- (3) Establishment of a floodplain development permit. A development permit shall be required by the ZEO and/or Planning and Zoning in conformance with the provisions of this section prior to the commencement of any development activities.
- (4) No structure or land shall hereafter be located, extended, converted, or structurally altered without full compliance with the terms of this regulation and other applicable regulations.
- (5) This regulation is not intended to repeal, abrogate, or impair any existing easements, covenants, or deed restrictions. However, where this regulation and another conflict or overlap, which imposes the more stringent restrictions shall prevail.
- (6) In the interpretation and application of this regulation all provisions shall be:
 - a) Considered as minimum requirements,
 - b) Liberally construed in favor of the governing body, and
 - c) Deemed neither to limit nor repeal any powers granted to the Town.

- (7) The degree of flood protection required by this ordinance is considered reasonable for regulatory purposes and is based on scientific and engineering consideration. Longer floods can and will occur on rare occasions. Flood heights may be increased by man-made or natural causes. This regulation 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 ordinance shall not create liability on the part of the Town of Greenwich or any officer or employee thereof for any flood damages that result from reliance on this ordinance or any administrative decision lawfully made thereunder.
- (8) Portion of Structure in Flood Zone - If any portion of a structure lies within the Special Flood Hazard Area (SFHA), the entire structure is considered to be in the SFHA. The entire structure must meet the construction requirements of the flood zone. The structure includes any attached additions, garages, sunrooms, or any other structure attached to the main structure.**
- (9) Structures in Two Flood Zones - If a structure lies within two or more flood zones, the construction standards of the most restrictive zone apply to the entire structure (i.e., V zone is more restrictive than A zone; structure must be built to the highest BFE). The structure includes any attached additions, garages, sunrooms, or any other structure attached to the main structure.**
- (10) Severability - If any section, subsection, paragraph, sentence, clause, or phrase of this regulation should be declared invalid for any reason whatsoever, such decision shall not affect the remaining portions of this regulation], which shall remain in full force and effect; and to this end the provisions of this regulation are hereby declared to be severable.**

(e) Administration

- (1) The Zoning Enforcement Officer is hereby appointed to administer and implement the provisions of this regulation.
- (2) Where required under this regulation, a registered professional engineer or architect shall certify that design and methods of construction are in accordance with accepted standards of practice for meeting the provisions of this regulation. Such certification must be provided to the Zoning Enforcement Officer.
- (3) Prior to any development activities, application for any development and/or Zoning and/or Building Permit shall be made to Planning & Zoning and to the Zoning Enforcement Officer on forms furnished by him or her. Such application shall be accompanied by four sets of plans, done by a Connecticut Licensed Professional in accordance with State Statutes, drawn to scale showing, at a minimum, the property lines and location of the parcel; existing and proposed contours; existing or proposed structures, fill, storage of materials or equipment, drainage facilities and the location of the foregoing. This following information shall also be submitted to the Planning & Zoning Office and to the Zoning Enforcement Officer.
- A) Application Stage: Elevation in relation to mean sea level of the proposed lowest floor (including basement) of all structures, [Sec. (f) (11) and (f) (12) (B)].
- B) Elevation in relation to mean sea level to which any non-residential structure will be flood proofed. [Sec. (f) (11) (c)].
- C) Description of the extent to which any watercourse will be altered or relocated as a result of proposed development.
- D) A statement as to whether or not the proposed alterations to an existing structure meet the criteria of the substantial improvement definition, [Sec. (c) (34)].
- E) A statement as to whether there will be dry access to the structure during the 100-year storm event.
- F) Certification as to flood proofing, as required by [Sec. (f) (11) (C)].

- G) Certification as to the provisions of [Sec. (f) (11) (d)] governing fully enclosed areas below base flood elevation, if the minimum design criteria in [Sec. (f) (11) (d) - (f) (11) (d) (i- v)] is not used.
- H) Certification as to floodway heights, as required by [Sec. (f) (10) (A) and (f) (11) (E) and (f) (11) (F)].
- I) Certification as to breakaway walls. If the design criteria stated in [Sec. (f) (12) (H)] is not utilized then the design and construction methods must be certified as explained in [Sec. (f) (12) (H) (I) and (f) (12) (H) (ii)].
- J) Certification as to the structural anchoring provisions of [Sec. (f) (12) (c) and (f) (12) (D)].
- K) Construction Stage: Upon completion of the applicable portion of construction, the applicant shall provide the Zoning Enforcement Officer with verification by a Connecticut Licensed Land Surveyor of the as-built lowest floor elevation, defined as follows:
 - i) In the A zone: The top of the lowest floor (including basement) [Sec. (f) (11) (A) and Sec. (f) (11) (B)];
 - ii) In the ~~V~~-VE zone: The lowest point of the lowest supporting horizontal member (excluding pilings or columns) [Sec. (f) (12) (B)]; and
 - iii) Floodproofed structures: The elevation to which the flood proofing is effective [Sec. (f) (11) (c)].
 - iv) Compliance: Deficiencies in the lowest floor elevations shall be corrected by the permit holder immediately and prior to further progressive work being permitted to proceed. Failure to submit an acceptable survey or failure to make corrections required hereby shall be caused for issuance of a stop-work order. Final as-built plans of the finished project will be certified by a Connecticut Licensed Engineer or Architect of Record as appropriate in addition to the confirmation of lowest floor elevation by a Connecticut Licensed Land Surveyor.
- L) The Zoning Enforcement Officer, in the Administration of this regulation shall perform the following duties, among others:
 - i) Review all permit applications to determine whether proposed building sites will be reasonably safe from flooding.
 - ii) Review all development permits to assure that the requirements of this regulation have been satisfied.
 - iii) Advise permittee that additional Federal or State permits may be required, and if specific Federal or State permit requirements are known, require that copies of such permits be provided and maintained on file with the Zoning Permit. Such additional permit requirements may include, but not be limited to: Stream Channel Encroachment Line Permit, Coastal Area Management Permit, Water Diversion Permit, Dam Safety Permit, Corps of Engineers 404 Permit.
 - iv) Notify the regional planning agency and the affected municipality at least 35 days prior to the public hearing if any change of regulation or use of a flood zone will affect an area within 500 feet of another municipality.
 - v) Notify adjacent communities and the Department of Environmental Protection, Inland Water Resources Management Division prior to any alteration or relocation of a watercourse, and submit evidence of such notification to the Federal Emergency Management Agency.
 - vi) Assure that maintenance is provided within the altered or relocated portion of said watercourse so that the flood carrying capacity is not diminished.
 - vii) Record the elevation (in relation to mean sea level) of the lowest floor (including basement) of all new or substantially improved structures, in accordance with [Sec. (f) (11) (A), (f) (11) (B) and (f) (12) (B)].

- viii) Record the elevation (in relation to mean sea level) to which the new or substantially improved structures have been flood-proofed, in accordance with [Sec. (f) (11) (C)].
 - ix) Obtain and maintain all certificates required under this regulation and assure that they meet the standards of [Sec. (e) (2)].
 - x) Make the necessary interpretation, where 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 person contesting the location of the boundary shall be given a reasonable opportunity to appeal the interpretation as provided in this article.
 - xi) 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 [Sec. (f) (11)], when base flood elevation data or floodway data have not been provided in accordance with Article 3, Section B.
 - xii) Maintain all records pertaining to the provisions of this section.
 - xiii) Review plans for adequacy of breakaway walls in Coastal High Hazard Areas in accordance with [Sec. (f) (12)].
- (4) Upon completion of the permitted development and prior to issuance of a Certificate of Occupancy, necessary as-built surveys (prepared by a Connecticut Licensed Professional per Connecticut State Statutes) and engineering or architectural certifications shall be provided to ZEO and Planning & Zoning demonstrating compliance with the approved plans and standards set forth by [Sec. (e)(3)].

(f) Provisions for Flood Hazard Reduction:

General Standards: In all areas of special flood hazard the following provisions shall apply:

- (1) New construction and substantial improvements shall be anchored to prevent floatation, collapse or lateral movement of the structure resulting from hydrodynamic and hydrostatic loads, including the effects of buoyancy;
- (2) New construction and substantial improvements shall be constructed with materials resistant to flood damage.
- (3) New construction or substantial improvements shall be constructed using methods and practices that minimize flood damage.
- (4) Electrical, heating, ventilation, plumbing, 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.
- (5) New and replacement water supply systems shall be designed to minimize or eliminate infiltration of flood waters into the systems and discharges from the system into flood waters;
- (6) New and replacement sanitary sewage system shall be designed to minimize or eliminate infiltration of flood waters into the systems and discharges from the system into flood waters;
- (7) On-site waste disposal systems shall be located and constructed to avoid impairment to them or contamination from them during flooding of a frequency determined by the State and Local Department of Health.
- (8) In any portion of a watercourse which is altered or relocated the flood carrying capacity shall be maintained;
- (9) Manufactured Homes: All manufactured homes **including those located outside of a manufactured home park or subdivision, in a new manufactured home park or subdivision, in an existing manufactured home park or subdivision, in an expansion to an existing manufactured home park or subdivision, or in an existing manufactured home park or subdivision on which a manufactured home**

has incurred substantial damage as a result of a flood, (including recreational **vehicles homes** placed on a site for 180 consecutive days or longer) to be placed or substantially improved shall be:

- (A) Elevated so that the lowest floor is **one foot** above the base flood elevation, in accordance with this regulation.
- (B) Placed on a permanent foundation which itself is securely anchored and to which the structure is securely anchored so that it will resist floatation, lateral movement, and hydrostatic and hydrodynamic pressures. Anchoring may include, but is not limited to, the use of over-the-top or frame ties to ground anchors.
- (C) Installed using methods and practices which minimize flood damage. Elevation construction standards include piling foundations placed no more than 10 feet apart, and the provision of reinforcement for piers more than six feet above ground level. Work within a Special Flood Hazard Area, but outside the Floodway must not result in an increase in the Base Flood Elevation of more than 0.1 foot.
- (D) Adequate access and drainage should be provided.
- (E) Meet all the construction standards for Zones A and AE as per Section 6-139.1 (f) (11).**
- (F) Recreational vehicles shall either be on the site for fewer than 180 consecutive days, and be fully licensed and ready for highway use, or meet all the general standard of Sec. 6-139.1 (f) (1)-(8) and the elevation and anchoring requirement of Sec. 6-139.1 (f) (9) (A)-(D). A recreational vehicle is ready for highway use if 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.**

(10) Standards for Streams without Established Base Flood Elevations and/or Flooding: The Zoning Enforcement Officer shall obtain, review and reasonably utilize any base flood elevation and floodway data available from a Federal, State or other source, including data developed pursuant to [Sec. (g) (4)] of this regulation, as criteria for requiring that new construction, substantial improvements, or other development in Zone A on Greenwich's FIRM meet the standards in [Sec. (f) (11)].

- (A) In A Zones where base flood elevations have been determined, but before a floodway is designated, no new construction, substantial improvement, or other development (including fill) shall be permitted which will increase base flood elevations more than one (1) foot at any point along the watercourse when all anticipated development is considered cumulatively with the proposed development.
- (B) Should data be requested and/or provided, the Town shall adopt a regulatory floodway based on the principle that the floodway must be able to convey the waters of the base flood without increasing the water surface elevation more than one (1) foot at any point along the watercourse.

(11) Specific Standards: In all areas of special flood hazard **A and AE A1-30, AE, AH** where base flood elevation data has been provided the following provision shall apply:

- (A) Residential Construction. New construction or substantial improvement of any residential structure shall have the lowest floor, including basement, elevated at least to one (1) foot above the base flood elevation.
- (B) Non-Residential Construction. New construction or substantial improvement of any commercial, industrial, or non-residential structure located in **A and AE Zones A1-30, AE and AH** shall have the lowest floor including basement, elevated at least to one (1) foot above the level of the base flood elevation, or

- (C) Non-Residential Structures located in all **A and AE Zones A-Zones** may be flood-proofed in lieu of being elevated provided that together with all attendant utilities and sanitary facilities the areas of the structure below the required elevation are water tight with walls substantially impermeable to the passage of water, and use structural components having the capability or resisting hydrostatic and hydrodynamic loads and the effects of buoyancy. A registered professional engineer or architect shall review and/or development structural design specifications and plans for the construction, and shall certify that the design and methods or construction are in accordance with acceptable standards of practice for meeting the provisions of this sub-section. Such certification shall be provided to the Zoning Enforcement Officer as set forth in [Sec. (e) (3) (F)].
- (D) Fully Enclosed Areas Below Base Flood Elevation. New construction or substantial improvements of Non-Residential buildings not flood proofed per Section (f) (11) (c) and all Residential 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 automatic entry and exit of flood waters to equalize hydrostatic flood forces on exterior walls. Designs for complying with this requirement must either be certified by a professional engineer or architect and meet the following minimum criteria: (2/9/2000)
- (i) Provide 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;
 - (ii) The bottom of all openings shall be no higher than one foot above grade; and
 - (iii) Openings may be equipped with screens, louvers, valves or other coverings or devices provided they permit the automatic flow of floodwaters in both directions. Non-supporting breakaway wall, lattice work on mesh screening may be allowed below the base flood elevation provided it is not part of the structural support of the building and is designed so as to breakaway, under abnormally high tides or wave action, without damage to the structural integrity of the building on which it is to be used and provided the following design specifications are met:
 - Design safe loading resistance of each wall shall not be less than 10 nor more than 20 pounds per square foot; or
 - If more than 20 pounds per square foot, a registered professional engineer or architect shall certify that the design wall collapse would result from water load less than that which would occur during the base flood event, and 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 during the base flood event. Maximum wind and water loading values to be used in this determination shall each have one percent (1%) chance of being equaled or exceeded in any given year (100-year mean recurrence interval).
 - (iv) **Mechanical equipment**, electrical, plumbing, and other utility connections ~~are prohibited below~~ **must be placed one foot above** the base flood elevation; and
 - (v) Access to the enclosed area shall be the minimum necessary to allow for the 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).

- (E) Floodways: Located within areas of special flood hazard established in Sec. (d) (2) are areas designated as floodways. Since the floodway is an extremely hazardous area due to the velocity of flood waters which carry debris and potential projectiles and have erosion potential, no encroachments including fill, new construction, substantial improvements and other developments shall be permitted unless certification (with supporting technical data), by a registered professional engineer is provided demonstrating, **through hydrologic and hydraulic analyses performed in accordance with standard engineering practice**, that encroachments shall not result in any (0.00 feet) increase in flood levels during occurrence of the base flood discharge.
- (F) Work within a Special Flood Hazard Area, but outside the floodway must not result in an increase in the Base Flood Elevation of more than 0.1 foot.
- (12) Coastal High Hazard Areas (~~V-1-30~~, **VE Zones**). Located within the areas of special flood hazard established in Sec. (d) (2) are areas designated as Coastal High Hazard Areas (Zones ~~V-1-30~~ and **VE**). Since these areas have special flood hazards associated with high velocity waters, including hurricane wave wash, the following provisions shall apply:
 - (A) All new construction or substantial improvement shall be located landward of the reach of the mean high tide;
 - (B) All new construction, ~~or~~ substantial improvement **or mechanical equipment, electrical, plumbing, and other utility connections** shall be elevated so that the bottom of the lowest supporting horizontal member (excluding pilings or columns) is located no lower than one (1) foot above the base flood elevation level, with all space below the lowest supporting member so as not to impede the flow of water;

| NEW | FLOOD | ZONE | REGULATIONS |
|--------------------------|-------|--------|-------------|
| I | | | hope |
| everyone | | | has |
| had | | a | chance |
| to | look | | the |
| new | | at | maps. |
| They | | are | still |
| in | | in | Casey's |
| office | | | the |
| Building | | | |
| Department | | | if |
| you | | would | like |
| to | | take | look. |
| The | | | attached |
| flood | | | zone |
| regulations | | | |
| are | | | scheduled |
| for | | a | special |
| meeting | | to | be |
| held | | on | June |
| 1, | | 2010. | If |
| there | | are | any |
| questions, | | | or |
| issues | | | |
| concerns | | let | me |
| please | | ahead | of |
| know | so | | can |
| time | | to | have |
| work | | | answer |
| an | | | the |
| before | | | |
| meeting. | | | changes |
| | | | be |
| The | | | in |
| will | | | usual |
| indicated | | in | the |
| our | | ad | where |
| fashion | | | |
| legal | | | and |
| Strikethrough | | | indicates |
| indicates | | | be |
| deletion | | to | |
| Bold | | | since |
| words | | | included |
| added. | | of | the |
| However, | | | |
| I | | needed | to |
| more | | | |
| regulation | | | |
| than | | | |

provide with in attachment, highlighted the change the that bold confused areas change. regulations were the SWRPA, neighboring municipalities at days the meeting required pursuant Section of General Statutes.

Purpose Proposed Change: On 22, Federal Emergency Management Agency presented Greenwich new preliminary Flood Insurance Maps. These currently scheduled become effective June by order Greenwich remain eligible the Flood Insurance Program (NFIP). Greenwich adopt regulations for development designated FEMA floodplains that exceed minimum federal standards 44 and requirements prior effective of community's new

The Connecticut Department Environmental Protection (CTDEP) reviewed existing floodplain management regulations for with 60.3

areas so are are

sent and least prior

the

2008,

maps

18, FEMA.

meet

CFR new

to

44 and

you context the I

of that headers in not with of These

to DEP, all

35 to 6/1/10 as

to 8-3b CT

of

September the

(FEMA)

with

Rate (FIRM). are

to

on 2010 In for to

in National

must revised

in

or the

of 60.3 state

the date the

FIRM.

of

our

compliance CFR new

state requirements. The indicated the revisions needed order maintain minimum compliance with minimum standards recently enacted floodplain management requirements.

Summary Changes:

Changes reference revision of maps: Section 6-139.1 Purpose Section 6-139.1 (c)(14) Insurance Study Section 6-139.1 General Provisions

Changes reflect new North Vertical (NAVD) Section 6-139.1(c)(22) Mean Section 6-139.1(c)(35) Water Elevation

New Definitions Section 6-139.1 Base Elevation (BFE) Existing Manufactured Home Subdivision Expansion an Manufactured Home Subdivision Federal Emergency Management Agency Historic Structure Market New Manufactured Home Subdivision Violation

Revisions Existing Definitions Section 6-139.1(c). Section 6-139.1(c)(9) Coastal Hazard Section 6-139.1(c)(10) Development Section 6-139.1(c)(17)

the

the

datum

of

Sea

Park

Park

Park

review that attached were in to

NFIP

and

state

of

to the date FIRM

(a)

Flood (FIS)

(d)(2)

to the of American Datum 1988

Level

Surface

in

(c): Flood

or

to Existing

or

(FEMA)

Value

or

to

in

High Area

| | | |
|--|---------------------------|--|
| Functionally Dependent Facility Section 6-139.1(c)(30) Start Construction | | of |
| Revisions reflect designation special hazard as AE, opposed AE, VE, VO, VI): Section 6-139.1 Area Special Hazard Section 6-139.1 General Provisions Section 6-139.1 (f)(11)(A, C) Standards | simply VE to AO, | to the of flood areas A, (as A, AI, and |
| Revisions Sections 6-139.1 (9), (12) the for Hazard Reduction: Section 6-139.1 (f)(9)(A) Manufactured Homes Sections F manufactured homes) Section 6-139.1 (f)(11)(E) Floodways Section 6-139.1 12) High Areas Zones) | (11) | to (f) and regarding Provision Flood |
| Additions Section 6-139.1(d) General Provisions Section (d)(8) of in Section (d)(9) Structures Two Zones Section (d)(10) Severability (See file: Flood Regulations June Mtg.doc) | E relating | (add and to |
| | Flood | (f) Coastal Hazard (VE |
| | 1 | to |
| NEW MAPS: | FLOOD | 139.1 Portion Structure Zone 139.1 |
| E-mail 1/25/10 regarding flood | FLOOD | in Flood 139.1 |
| | FLOOD | attached Proposed Zone 2010 |
| | FLOOD | sent new maps: |

I attached letter FEMA addresses new Insurance Maps. read letter carefully. anybody like the are in O'Donnell's office. Planning Zoning Commission will adopt maps June in remain eligible participate the Flood Insurance Program.

Attached the a titled Summary Actions. states several of (LOMCs) not reflected the FIRM however will revalidated free 1 the FIRM effective through single revalidation letter reaffirms validity the LOMCs. inquired FEMA the process and something needed the owner, received response:

"It happen automatically. When revalidation

to maps

have prior 18, order

letter

of

Map

of day

When

as

to

will

have a from that the Flood Rate Please this

If would see they currently Casey

The and

to these to 2010 to

to in National

to is document Final Map #2 that Letter Changes will be on revised panels they be

charge after revised becomes

a

that the of previous

I with how validation works whether was from property I this

all

the