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Chapter 155. FLOOD HAZARD AREAS

[HISTORY: Adopted by the Common Council of the City of Linwood 5-8-2013 by Ord. No. 9-2013. *Editor's Note: This ordinance also repealed former Ch. 155, Flood Hazard Areas, adopted 8-11-1982 by Ord. No. 12-1982, as amended. Amendments noted where applicable.*]

GENERAL REFERENCES

Land use procedures – See Ch. 41.

Uniform construction codes — See Ch. 119.

Article I. General Provisions

§ 155-1. Statutory authority.

The legislature of the State of New Jersey has delegated the responsibility to local governmental units to adopt regulations designed to promote the public health, safety, and general welfare of its citizenry. Therefore, the City Council of the City of Linwood, New Jersey, ordains as follows.

§ 155-2. Findings of fact.

- A. The flood hazard areas of the City of Linwood are subject to periodic inundation which results in loss of life and property, health and safety hazards, disruption of commerce and governmental services, extraordinary public expenditures for flood protection and relief and impairment of the tax base, all of which adversely affect the public health, safety and general welfare.
- B. These flood losses are caused by the cumulative effect of obstructions in floodplains causing increases in flood heights and velocities and by the occupancy in flood hazard areas by uses vulnerable to floods or hazardous to other lands which are inadequately elevated, floodproofed or otherwise protected from flood damages.

§ 155-3. Statement of purpose.

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

- A. Protect human life and health.
- B. Minimize expenditure of public money for costly flood-control projects.
- C. Minimize the need for rescue and relief efforts associated with flooding and generally undertaken at the expense of the general public.
- D. Minimize prolonged business interruptions.
- E. Minimize damage to public facilities and utilities, such as water and gas mains, electric, telephone and sewer lines and streets and bridges, located in floodplains.
- F. 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 future flood-blight areas.
- G. Ensure that potential home buyers are notified that property is in a flood area.
- H. Ensure that those who occupy the areas of special flood hazard assume responsibility for their actions.

§ 155-4. Methods of reducing flood losses.

In order to accomplish its purposes, this chapter uses the following methods:

- A. Restrict or prohibit uses which are dangerous to health, safety and property due to water or erosion or in flood heights or velocities.
- B. Require that uses vulnerable to floods, including facilities which serve such uses, be protected against flood damage at the time of initial construction.
- C. Control the alteration of natural floodplains, stream channels and natural protective barriers, which are involved in the accommodation of floodwaters.
- D. Control filling, grading, dredging and other development which may increase flood damage.
- E. Prevent or regulate the construction of flood barriers which will unnaturally divert floodwaters or which may increase flood hazards to other lands.

Article II. Definitions

§ 155-5. Words and terms defined.

- A. Unless specifically defined below, words or phrases used in this chapter shall be interpreted so as to give them the meanings they have in common usage and to give this chapter its most reasonable application.
- B. As used in this chapter, the following terms shall have the meanings indicated:

ADVISORY BASE FLOOD ELEVATION (ABFE)

The elevation shown on a community's Advisory Flood Hazard Map that indicates the advisory stillwater elevation plus wave effect ($ABFE = SWEL + \text{wave effect}$) resulting from a flood that has a one-percent-or-greater chance of being equaled or exceeded in any given year.

ADVISORY FLOOD HAZARD AREA (AFHA)

The land in the floodplain within a community subject to flooding from the one-percent annual chance event depicted on the Advisory Flood Hazard Map.

ADVISORY FLOOD HAZARD MAP

The official map on which the Federal Emergency Management Administration has delineated the areas of advisory flood hazards applicable to the community.

APPEAL

A request for a review of the Construction Official's interpretation of any provision of this chapter or a request for a variance.

AREA OF SHALLOW FLOODING

A designated AO, AH or VO Zone on a community's Digital Flood Insurance Rate Map (DFIRM), with base flood depths from one to three feet, where a clearly defined channel does not exist, where the path of flooding is unpredictable and indeterminate and where velocity flow may be evident. Such flooding is characterized by ponding or sheet flow.

AREA OF SPECIAL FLOOD HAZARD

The land in the floodplain within a community subject to a one-percent-or-greater chance of flooding in any given year.

BASE FLOOD

The flood having a one-percent chance of being equaled or exceeded in any given year (also known as a "one-hundred-year flood").

BASEMENT

The lowest level or story which has its floor subgrade on all sides.

BREAKAWAY WALLS

A wall that is 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

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.

DEVELOPMENT

Any man-made change to improved or unimproved real estate, including but not limited to buildings or

other structures, mining, dredging, filling, grading, paving, excavation or drilling operations or storage of equipment or materials located within the area of special flood hazard.

DIGITAL FLOOD INSURANCE RATE MAP (DFIRM)

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.

ELEVATED BUILDING

A non basement building built, in the case of a building in an area of special flood hazard, to have the top of the elevated floor or, in the case of a building in a coastal high-hazard area, to have the bottom of the lowest horizontal structural member of the elevated floor elevated above the ground level by means of pilings, columns (posts and piers) or shear walls parallel to the flow of the water, and adequately anchored so as to not impair the structural integrity of the building during a flood up to the magnitude of the base flood. In an area of special flood hazard, "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 floodwaters. In areas of coastal high-hazard, "elevated buildings" also includes a building otherwise meeting the definition of "elevated building" even though the lower area is enclosed by means of breakaway walls.

EROSION

The process of the gradual wearing away of land masses.

FLOOD INSURANCE RATE MAP (FIRM)

The official map on which the Federal Insurance Administration has delineated both the areas of special flood hazard and the risk premium zones applicable to the community.

FLOOD INSURANCE STUDY

The official report in which the Federal Insurance Administration has provided flood profiles, as well as the Flood Hazard Boundary-Floodway Map and the water surface elevation of the base flood.

FLOOD or CONDITION OF FLOODING

A general and temporary condition of partial or complete inundation of normally dry land areas from the overflow of inland or tidal waters and/or the unusual and rapid accumulation or runoff of surface waters from any source.

FLOOD or FLOODING

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 or runoff of surface waters from any source.

FLOODPLAIN MANAGEMENT REGULATIONS

Zoning ordinances, subdivision regulations, building codes, health regulations, special purposes 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.

FLOODWAY

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 0.2 foot.

HIGHEST ADJACENT GRADE

The highest natural elevation of the ground surface prior to construction next to the proposed walls of a structure.

HISTORIC STRUCTURE

Any structure that is:

- (1) 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.
- (2) Certified or preliminarily determined by the Secretary of the Interior as contributing to the historical significance of a Registered Historic District preliminarily determined by the Secretary to qualify as a Registered Historic District.
- (3) 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.
- (4) Individually listed on a local inventory of historic places in communities with historic preservation programs that have been certified either by an approved state program as determined by the Secretary of the Interior or directly by the Secretary of the Interior in states without approved programs.

INCREASE COST OF COMPLIANCE (ICC)

The coverage by a standard flood insurance policy under the NFIP that provides for the payment of a claim for the cost to comply with the State of New Jersey and the City of Linwood flood management laws and ordinances after a direct physical loss by flood, the City of Linwood declares the structure to be

“substantially” or “repetitively” flood damaged. ICC coverage is provided for in every standard NFIP flood policy, and will help pay for the cost to floodproof, relocate, elevate, or demolish the structure.

LATERAL ADDITION

Improvements that increase the square footage of a structure. Commonly, this includes the structural attachment of a bedroom, den, recreational room, enclosed porch, or other type of addition to an existing structure. If the addition is a “substantial improvement,” then the existing home and addition needs to be elevated to the higher regulatory standard pursuant to the advisory base flood elevations (ABFEs). If the addition is being constructed in conjunction with improvements to the existing structure and the sum of the renovations are equal to a “substantial improvement,” then the addition and existing home need to be elevated to the advisory base flood elevations (ABFEs). If the common wall is demolished as part of the project, then the entire structure must be elevated. If only a doorway is knocked through it and only minimal finishing is done, then only the addition has to be elevated.

LOWEST FLOOR

The lowest floor of the lowest enclosed area, including the basement. An unfinished or flood-resistant enclosure, usable solely for the parking of vehicles, building access or storage in an area other than a basement, is not considered a building's lowest floor, provided that such enclosure is not built so to render the structure in violation of other applicable nonelevation design requirements.

MANUFACTURED HOME

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 MANUFACTURED HOME SUBDIVISION

A parcel (or contiguous parcels) of land divided into two or more manufactured home lots for rent or sale.

MEAN SEA LEVEL

For the purpose of the NFIP, the North America Vertical Datum (NAVD) 1988, to which base flood elevations shown on a community's Flood Insurance Rate Map are referenced in regards to the average height of the sea for all stages of the tide.

NEW CONSTRUCTION

Structures for which the start of construction commenced on or after the effective date of the floodplain regulation adopted by a community and include any subsequent improvements to such structures.

NEW MANUFACTURED HOME PARK OR SUBDIVISION

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 the floodplain management regulations adopted by the municipality.

RECREATIONAL VEHICLE

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

REPETITIVE LOSS

- (1) Four or more paid flood losses of more than \$1,000 each; or
- (2) Two paid flood losses within a ten-year period that, in the aggregate, equal or exceed the current value of the insured property; or
- (3) Three or more paid losses that, in the aggregate, equal or exceed the current value of the insured property.

SEVERE REPETITIVE LOSS

- (1) Any residential property that is covered under an NFIP flood insurance policy, and:
 - (a) That has at least four NFIP claim payments (building payments and contents) over \$5,000 each, and the cumulative amount of such claims payments exceeds \$20,000; or
 - (b) For which at least two separate payments (building payments only) have been made with the cumulative amount of the building portion of such claims exceeding the market value of the building.
- (2) For both Subsection (1)(a) and (b) above, at least two of the referenced claims have occurred within any ten-year period, and must be greater than 10 days apart.

START OF CONSTRUCTION

For other than new construction or substantial improvements under the Coastal Barrier Resources Act (P.L. 97-348), includes substantial improvements 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 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 a 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 or 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 that is principally above the ground, as well as a gas or liquid storage tank.

SUBSTANTIAL DAMAGE

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.

SUBSTANTIAL IMPROVEMENT

Any reconstruction, any rehabilitation, addition or other improvement of a structure during a five-year period, the cost of which equals or exceeds 50% of the market value of the structure before the start of construction of the improvement. This term includes structures which have incurred substantial damage, regardless of the actual repair work performed or repetitive loss. The term does not, however, include either:

- (1) 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 officer and which are the minimum necessary to assure safe living conditions.
- (2) Any alteration of an "historic structure," provided that the alteration will not preclude the structure's continued designation as an "historic structure."

VARIANCE

A grant of relief to a person from the requirements of this chapter which permits construction in a manner otherwise prohibited by this chapter, where specific enforcement would result in unnecessary hardship.

Article III. General Requirements

§ 155-6. Territorial applicability.

This chapter shall apply to all areas of special flood hazard within the jurisdiction of the City of Linwood.

§ 155-7. Basis for establishing areas of special flood hazard.

A. The areas of special flood hazard for the City of Linwood, Community No. 340011, are identified and defined on the following documents prepared by the Federal Emergency Management Agency:

- (1) A scientific and engineering report "Flood Insurance Study, City of Linwood, New Jersey, Atlantic County," dated July 19, 1982.
- (2) Flood Insurance Rate Map, City of Linwood, New Jersey, Atlantic County, as shown on Map Index and Panels 0001B and 0002B, whose effective date is January 19, 1983; and "Floodway, Flood Boundary and Floodway Map, City of Linwood, New Jersey, Atlantic County," as shown on Map Index and Panel 0001 dated January 19, 1983.
- (3) Advisory Base Flood Elevations and Advisory Flood Hazard Maps, Ocean City NE and Ocean City NW dated December 14, 2012. These documents shall take precedence over previous panels and FIS in construction and development regulations only. Where the Special Flood Hazard Area (SFHA) and the Advisory Flood Hazard Area (AFHA) Maps conflict or overlap, whichever imposes the more stringent requirement shall prevail

B. The above documents are hereby adopted and declared to be a part of this chapter. The flood insurance study, maps and advisory documents are on file at 400 Poplar Avenue, Linwood City, New Jersey, and www.region2coastal.com/sandy/abfe.

§ 155-8. Compliance required; violations and penalties.

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

- B.** Violation 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 constitute a misdemeanor. Any person who violates this chapter or who fails to comply with any of its requirements shall, upon conviction thereof, be fined not more than \$2,000 or be imprisoned for not more than 30 days, or both, for each violation and, in addition, shall pay all costs and expenses involved in the case. Nothing herein contained shall prevent the City of Linwood from taking such other lawful action as is necessary to prevent or remedy any violation.

§ 155-9. 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 ordinance, easement, covenant or deed restriction conflict or overlap, whichever imposes the more stringent restrictions shall prevail.

§ 155-10. Interpretation.

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

- A.** Considered as minimum requirements.
- B.** Liberally construed in favor of the governing body.
- C.** Deemed neither to limit nor repeal any other powers granted under state statutes.

§ 155-11. Warning and disclaimer of liability.

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

Article IV. Administration

§ 155-12. Development permits.

A development permit shall be obtained before construction or development begins within any area of special flood hazard established in § 155-7. Application for a development permit shall be made to the Construction Official on forms furnished by him and may include but not be limited to the following 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.** The elevation in relation to mean sea level of the lowest floor, including basement, of all structures.
- B.** The elevation in relation to mean sea level to which any nonresidential structure has been floodproofed.
- C.** Plans showing any nonresidential floodproofed structure will meet the floodproofing criteria of § 155-17B before and after the structure is built and a certification by a registered professional engineer or architect that the structure as built meets the criteria of § 155-17B.
- D.** Existing and proposed infrastructure.
- E.** A description of the extent to which any watercourse will be altered or relocated as a result of proposed development.
- F.** Plans for any walls to be used to enclose space below the base flood level.
- G.** A soil analysis.

§ 155-13. Enforcement officer designated.

The Construction Official is hereby appointed to administer and implement this chapter by granting or denying development

permit applications in accordance with its provisions.

§ 155-14. Duties of Construction Official.

The duties of the Construction Official shall include but not be limited to:

A. Permit review.

- (1) Review all development permits to determine that the permit requirements of this chapter have been satisfied.
- (2) 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
- (3) Review all development permits in the area of special flood hazard to determine if the proposed development adversely affects the flood-carrying capacity of the area of special flood hazard. For the purposes of this chapter, "adversely affects" means 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.
- (4) Review all development permits. Review plans for walls to be used to enclose space below the base flood level in accordance with § 155-19B.

B. Use of other base flood data. When the base flood elevation and floodway data has not been provided in accordance with § 155-7, Basis for establishing areas of special flood hazard, the Construction 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 § 155-17A, Residential construction, and § 155-17B, Nonresidential construction.

C. Information to be obtained and maintained.

- (1) Obtain and record the actual elevation in relation to mean sea level of the lowest floor, including the basement, of all new or substantially improved structures and whether or not the structure contains a basement.
- (2) For all new or substantially improved floodproofed structures:
 - (a) Verify and record the actual elevation in relation to mean sea level.
 - (b) Maintain the floodproofing certifications required in § 155-12C.
- (3) Maintain for public inspection all records pertaining to the provisions of this chapter.
- (4) Require all new water and sewer systems, including on-site systems, to be located and designed to avoid impairment.

D. Alteration of watercourses.

- (1) Notify adjacent communities and the New Jersey Department of Environmental Protection prior to any alteration or relocation of a watercourse and submit evidence of such notification to the Federal Insurance Administration
- (2) Require that maintenance is provided within the altered or relocated portion of said watercourse so that the flood-carrying capacity is not diminished.

E. Interpretation of FIRM boundaries. Make interpretations, where needed, as to the exact location of the 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.

§ 155-15. Variance procedure.

A. Appeals board.

- (1) The Linwood Planning Board shall hear and decide appeals and requests for variances from the requirements of this chapter.

- (2) The Linwood Planning Board shall hear and decide appeals when it is alleged that there is an error in any requirement, decision or determination made by the Construction Official in the enforcement or administration of this chapter.
- (3) Those aggrieved by the decision of the Linwood Planning Board, or any taxpayer, may appeal such decision to the Atlantic County District Court or Superior Court of the State of New Jersey.
- (4) In passing upon such applications, the Linwood Planning Board 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, not subject to flooding or erosion damage, for the proposed use.
 - (g) The compatibility of the proposed use with existing and anticipated development.
 - (h) The relationship of the proposed use to the Comprehensive Plan and floodplain 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.
 - (l) The request for a variance shall be made prior to the start of construction.
- (5) Upon consideration of the factors listed above and the purposes of this chapter, the Planning Board may attach such conditions to the granting of variances as it deems necessary to further the purposes of this chapter.
- (6) The Construction Official 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, variances may be issued for new construction and substantial improvements to be erected on a lot of 1/2 acre or less in size contiguous to and surrounded by lots with existing structures constructed below the base flood level, provided that the items in Subsection A(4)(a) through (k) have been fully considered. As the lot size increases beyond the 1/2 acre, the technical justification required for issuing the variance increases.
- (2) Variances may be issued for the repair or rehabilitation of historic structures upon the determination that the proposed repair or rehabilitation will not preclude the structure's continued designation as an historic structure and the variance is the minimum necessary to preserve the historic character and design of the structure.
- (3) Variances shall not be issued within any 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; and
 - (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, as identified in § 155-15A(4), or conflict with existing local laws or ordinances.
- (6) 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 one foot 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.

Article V. Provisions for Flood Hazard Reduction

§ 155-16. General standards.

In all areas of special flood hazard, compliance with the applicable requirements of the Uniform Construction Code (N.J.A.C. 5:23) and the following standards, whichever is more restrictive, is required. All improvements, modifications, additions and reconstruction projects to an existing building shall be counted cumulatively over a period of five years.

A. Anchoring.

- (1) All new construction and substantial improvements shall be anchored to prevent flotation, collapse or lateral movement of the structure.
- (2) All manufactured homes to be replaced or substantially improved shall be 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 an addition to both applicable state and local anchoring requirements for resisting wind forces.

B. Construction materials and methods.

- (1) All new construction and substantial improvements shall be constructed with materials and utility equipment resistant to flood damage.
- (2) All new construction or substantial improvements shall be constructed by methods and practices that minimize flood damage.

C. Utilities.

- (1) All new and replacement water supply systems shall be designed to minimize or eliminate infiltration of floodwaters into the system.
- (2) 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 by the installation of a backflow valve (check valve).
- (3) On-site waste disposal systems shall be located to avoid impairment to them or contamination from them during flooding.
- (4) For all new construction and substantial improvements, the 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.

D. Subdivision proposals and other proposed new development.

- (1) All subdivision proposals and other proposed new development shall be consistent with the need to minimize flood damage.
- (2) All subdivision proposals and other proposed new development shall have public utilities and facilities, such as sewer, gas, electrical and water systems, located and constructed to minimize flood damage.

- (3) All subdivision proposals and other proposed new development shall have adequate drainage provided to reduce exposure to flood damage.
 - (4) Base flood elevation data shall be provided for subdivision proposals and other proposed development.
- E. Encroachments. The cumulative effect of any proposed development, when combined with all other existing and anticipated development, shall not increase the water surface elevation of the base flood more than one foot at any point.
- F. Enclosure openings. For all new construction and substantial improvements that fully enclose 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 is 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 must 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.
 - (3) Openings may be equipped with screens, louvers or other covering or devices, provided that they permit the automatic entry and exit of floodwaters.

§ 155-17. Specific standards.

In all areas of special flood hazard where base flood elevation data has been provided as set forth in § 155-7, Basis for establishing areas of special flood hazard, or § 155-14B, Use of other base flood data, the following provisions are required:

A. Residential construction.

- (1) New construction or substantial improvement of any residential structure shall have the lowest floor, including basement, together with the attendant utilities and sanitary facilities, elevated at or above the base flood elevation or advisory base flood elevation whichever is more restrictive, plus one foot of freeboard.
- (2) Require within any AO Zone on the municipality's FIRM that all new construction and substantial improvement of any residential structure shall have the lowest floor, including basement, elevated above the highest adjacent grade one foot above the depth number specified in feet (at least three feet if no depth number is specified) or at or above the advisory base flood elevation plus one foot, whichever is more restrictive. And, require adequate drainage paths around structures on slopes to guide floodwaters around and away from proposed structures.

B. Nonresidential construction. In an area of special flood hazard, all new construction and substantial improvement of any commercial, industrial or other nonresidential structure shall have the lowest floor, including basement, together with the attendant utilities and sanitary facilities either:

- (1) Elevated to or above the base flood elevation or advisory base flood elevation whichever is more restrictive, plus one foot; and
- (2) Require within any AO Zone on the municipality's DFIRM that all new construction and substantial improvement of any commercial, industrial or other nonresidential structure shall have the lowest floor, including basement, elevated above the highest adjacent grade one foot above the depth number specified in feet (at least three feet if no depth number is specified) or at or above the advisory base flood elevation plus one foot, whichever is more restrictive. And, require adequate drainage paths around structures on slopes to guide floodwaters around and away from proposed structures; or
- (3) Be floodproofed so that below the base flood level plus one foot, or advisory base flood elevation plus one foot (whichever is more restrictive), the structure is watertight with walls substantially impermeable to the passage of water;
- (4) Have structural components capable of resisting hydrostatic and hydrodynamic loads and effects of buoyancy; and
- (5) 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 the applicable provisions of this subsection. Such certification shall be provided to the official as set forth in § 155-14C(2).

C. Manufactured homes.

- (1) Manufactured homes shall be anchored in accordance with § 155-16A.
- (2) All manufactured homes to be placed or substantially improved within an area of special flood hazard shall be elevated on a permanent foundation such that the top of the lowest floor is at or above the base flood elevation or advisory base flood elevation, plus one foot (whichever is more restrictive).

§ 155-18. Floodways.

Located within areas of special flood hazard established in § 155-7 are areas designated as floodways. Since the floodway is an extremely hazardous area due to the velocity of floodwaters which carry debris, potential projectiles and erosion potential, the following provisions apply:

- A. Encroachments, including fill, new construction, substantial improvements and other development are prohibited, unless a technical evaluation demonstrates that encroachments shall not result in any increase in flood levels during the occurrence of the base flood discharge.
- B. If Subsection A is satisfied, all new construction and substantial improvements shall comply with all applicable flood hazard reduction provisions of Article V, Provisions for Flood Hazard Reduction.
- C. In all areas of special flood hazard in which base flood elevation data has been provided and no floodway has been designated, the cumulative effect of any proposed development, when combined with all other existing and anticipated development, shall not increase the water surface elevation of the base flood more than 0.2 of a foot at any point.

§ 155-19. Coastal high-hazard areas.

Coastal high-hazard areas (V or VE Zones) are located within the areas of special flood hazard established in § 155-7. These areas have special flood hazards associated with high-velocity waters from tidal surges and hurricane wave wash; therefore, the following provisions shall apply:

A. Location of structures.

- (1) All buildings or structures shall be located landward of the reach of the mean high tide.
- (2) The placement of manufactured homes shall be prohibited, except in an existing manufactured home park or manufactured home subdivision.

B. Construction methods.

- (1) Elevation. All new construction and substantial improvements shall be elevated on piling or columns so that:
 - (a) The bottom of the lowest horizontal structural member of the lowest floor (excluding the piling or columns) is elevated to or above the base flood elevation, advisory base flood elevation or as required by the Uniform Construction Code (N.J.A.C. 5:23), whichever is more restrictive, and
 - (b) With all space below the lowest floor's supporting member open so as not to impede the flow of water, except for breakaway walls as provided or in § 155-19B(4).
- (2) Structural support.
 - (a) All new construction and substantial improvements shall be securely anchored on piling or columns.
 - (b) The pile or column foundation and structure attached thereto shall be anchored to resist flotation, collapse or lateral movement due to the effects of wind and water loading values each of which shall have a one-percent chance of being equaled or exceeded in any given year (one-hundred-year mean recurrence interval).
 - (c) There shall be no fill used for structural support.

- (3)** Certification. 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 compliance with the provisions of § **155-19B(1)** and **(2)(a)** and **(b)**.
- (4)** Space below the lowest floor.
- (a)** Any alteration, repair, reconstruction or improvement to a structure started after the enactment of this chapter shall not enclose the space below the lowest floor unless breakaway walls, open wood latticework or insect screening are used as provided for in this section.
- (b)** Breakaway walls, open wood latticework or insect screening shall be allowed below the base flood elevation, provided that they are 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. Breakaway walls shall be designed for a 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 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 designs proposed meet the following conditions.
- [1]** Breakaway wall collapse shall result from a water load less than that which would occur during the base flood; and
- [2]** 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 load acting simultaneously on all building components (structural and nonstructural). Water loading values used shall be those associated with the base flood. Wind loading values used shall be those required by applicable state or local building standards.
- [3]** If breakaway walls are utilized, such enclosed space shall be used solely for parking of vehicles, building access, or storage and not for human habitation.
- [4]** Prior to construction, plans for any breakaway wall must be submitted to the Building Sub-Code Official for approval.