

**BOROUGH OF MANASQUAN
REVISED GENERAL ORDINANCES**

CHAPTER 29 FLOOD DAMAGE PREVENTION*

***Editor's Note:** Prior ordinance history includes portions of 1972 Code §§ 67-1–67-19 and Ordinance Nos. 1066, 1289, 1404 and 1577-92.

29-1 STATUTORY AUTHORIZATION, FINDINGS OF FACT, PURPOSE AND OBJECTIVES.

29-1.1 Statutory Authorization.

The Legislature of the State of New Jersey has in N.J.S.A. 40:48-1 et seq., delegated the responsibility to local governmental units to adopt regulations designed to promote public health, safety, and general welfare of its citizenry. Therefore, the governing body of the Borough of Manasquan, of Monmouth County, New Jersey does ordain as follows. (Ord. No. 2054-09 § 2)

29-1.2 Findings of Fact.

- a. The flood hazard areas of the Borough of Manasquan 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 areas of special flood hazard which increase flood heights and velocities, and when inadequately anchored, causes damage in other areas.

Uses that are inadequately floodproofed, elevated or otherwise protected from flood damage also contribute to the flood loss.

(Ord. No. 2054-09 § 2)

29-1.3 Statement of Purpose.

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

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

(Ord. No. 2054-09 § 1)

29-2 METHODS OF REDUCING FLOOD LOSSES.

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

- a. Restricting or prohibiting uses which are dangerous to health, safety, and property due to water or erosion hazards, or which result in damaging increases in erosion or in flood heights or velocities;
 - b. Requiring that uses vulnerable to floods including facilities which serve such uses, be protected against flood damage at the time of initial construction;
 - c. Controlling the alteration of natural flood plains, stream channels, and natural protective barriers, which help accommodate or channel floodwaters;
 - d. Controlling filling, grading, dredging, and other development which may increase flood damage; and,
 - e. Preventing or regulating the construction of flood barriers which will unnaturally divert floodwaters or which may increase flood hazards in other areas.
- (Ord. No. 2054-09 § 2)

29-3 DEFINITIONS.

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

Appeal shall mean 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 shall mean a designated AO, AH, or VO zone on a community's Digital Flood Insurance Rate Map (DFIRM) with a one (1%) percent annual or greater chance of flooding to an average depth of one (1) to three (3) feet 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 shall mean the land in the flood plain within a community subject to a one (1%) percent or greater chance of flooding in any given year.

Areas of special flood related erosion hazard shall mean the land within a community which is most likely to be subject to severe flood related erosion losses. After a detailed evaluation of the special flood related erosion hazard area will be designated a Zone E on the Flood Insurance Rate Map.

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

Basement shall mean any area of the building having its floor subgrade (below ground level) on all sides.

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

Coastal high hazard area shall mean 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.

Critical facilities shall mean facilities that are designed as facilities that are vital to flood response activities or critical to the health and safety of the public before, during, and after a flood or facilities that, if flooded, would make the flood problem and its impacts much worse.

Cumulative substantial improvement shall mean any reconstruction, rehabilitation, addition or other improvement of a structure that equals or exceeds forty (40%) percent of the market value of the structure at the time of the improvement or repair when counted cumulatively for ten (10) years.

Development shall mean any manmade 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) shall mean 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 shall mean a non-basement building (i) built 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 piling, columns (posts and piers), or shear walls parallel to the flow of the water, and (ii) adequately anchored so as not to 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 flood waters. 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 shall mean the process of the gradual wearing away of landmasses.

Flood or flooding shall mean 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 Study (FIS) shall mean the official report in which the Federal Insurance Administration has provided flood profiles, as well as the Flood Insurance Rate Map(s) and the water surface elevation of the base flood.

Flood plain management regulations shall mean zoning ordinances, subdivision regulations, building codes, health regulations, special purpose ordinances (such as a flood plain 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.

Highest adjacent grade shall mean the highest natural elevation of the ground surface prior to construction next to the proposed walls of structure.

Historic structure shall mean 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 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.

Lowest floor shall mean the lowest floor of the lowest enclosed area (including 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 shall mean 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 attached to the required utilities. The term "manufactured home" does not include a "recreational vehicle."

Manufactured home park or manufactured home subdivision shall mean a parcel (or contiguous parcels) of land divided into two (2) or more manufactured home lots for rent or sale.

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

New manufactured home park or subdivision shall mean 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 flood plain management regulations adopted by the municipality.

Primary frontal dune shall mean a continuous or nearly continuous mound or ridge of sand with relatively steep seaward and landward slopes immediately landward and adjacent to the beach and subject to erosion and overtopping from high tides and waves from coastal storms. The inland limit of the primary frontal dune occurs at the point where there is a distinct change from the relatively steep slope to a relatively mild slope.

Recreational vehicle shall mean a vehicle which is [i] built on a single chassis; [ii] four hundred (400) square feet or less when measured at the longest horizontal projections; [iii] designed to be self-propelled or permanently towable by a light duty truck; and [iv] designed primarily not for use as a permanent dwelling but as temporary living quarters for recreational, camping, travel, or seasonal use.

Start of construction for other than new construction or substantial improvements under the Coastal Barrier Resources Act, (P.L. No. 97-348) includes substantial improvements and means the date the building permit was issued, provided 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 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 shall mean a walled and roofed building, a manufactured home, or a gas or liquid storage tank, that is principally above ground.

Substantial damage shall mean damage of any origin sustained by a structure whereby the cost of restoring the structure to its before damaged condition would equal or exceed forty (40%) percent of the market value of the structure before the damage occurred. Substantial damage also means flood-related damages sustained by a structure on two (2) or more separate occasions during a ten (10) year period for which the cost of repairs at the time of each such flood event, on the average, equals or exceeds twenty-five (25%) percent of the market value of the structure before the damages occurred.

Substantial improvement shall mean any reconstruction, rehabilitation, modification, addition, or other improvement of a structure during a ten (10) year period the cost which exceeds forty (40%) percent of the market value of the structure before the "start of construction" of the improvement. Substantial improvement also means "cumulative substantial improvement" for the last ten (10) years prior to the issuance of a building permit for such 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:

- a. 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;

- b. Any alteration of a "historic structure," provided that the alteration will not preclude the structure's continued designation as a "historic structure."

Variance shall mean a grant of relief from the requirements of this chapter that permits construction in a manner that would otherwise be prohibited by this chapter.

(Ord. No. 2054-09 § 2; Ord. No. 2141-13; Ord. No. 2159-14 § 1)

29-4 GENERAL PROVISIONS.

29-4.1 Lands to Which This Chapter Applies.

This chapter shall apply to all areas of special flood hazards within the jurisdiction of the Borough of Manasquan, Monmouth County, New Jersey. (Ord. No. 2054-09 § 2)

29-5 BASIS FOR ESTABLISHING THE AREAS OF SPECIAL FLOOD HAZARD.

The areas of special flood hazard for the Borough of Manasquan, Community No. 345303, are identified and defined on the following documents prepared by the Federal Emergency Management Agency:

- a. A scientific and engineering report "Flood Insurance Study, Monmouth County, New Jersey (All Jurisdictions)" dated September 25, 2009.
 - 1. A scientific and engineering report "Flood Insurance Study, Monmouth County, New Jersey (All Jurisdictions)" dated September 25, 2009.
 - 2. Flood Insurance Rate Map for Monmouth County, New Jersey (All Jurisdictions) as shown on Index and panel numbers 34025CO343F, 34025C0456F; whose effective date is September 25, 2009.

The above documents are hereby adopted and declared to be a part of this chapter. The Flood Insurance Study and maps are on file at 201 East Main Street, Manasquan, New Jersey 08736.
(Ord. No. 2054-09 § 2)

29-6 PENALTIES FOR NONCOMPLIANCE.

No structure or land shall hereafter be constructed, located, extended, converted, or altered without full compliance with the terms of this chapter and other applicable regulations. 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 fails to comply with any of its requirements shall upon conviction thereof be fined not more than two thousand five hundred (\$2,500.00) dollars or imprisoned for not more than ten (10) 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 Borough of Manasquan from taking such other lawful action as is necessary to prevent or remedy any violation. involved in the case. Nothing herein contained shall prevent the Borough of Manasquan from taking such other lawful action as is necessary to prevent or remedy any violation.
(Ord. No. 2054-09 § 2)

29-7 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 other ordinance, easement, covenant, or deed restriction conflict or overlap, whichever imposes the more stringent restrictions shall prevail. (Ord. No. 2054-09 § 2)

29-8 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; and,
- c. Deemed neither to limit nor repeal any other powers granted under State statutes.
(Ord. No. 2054-09 § 2)

29-9 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 manmade or natural causes. This chapter does not imply that land outside the area of special flood hazards or uses permitted within such areas will be free from flooding or flood damages.

This chapter shall not create liability on the part of the Borough of Manasquan, any officer or employee thereof or the Federal Insurance Administration, for any flood damages that result from reliance on this chapter or any administrative decision lawfully made thereunder. (Ord. No. 2054-09 § 2)

29-10 ADMINISTRATION.

29-10.1 Establishment of Development Permit.

A development permit shall be obtained before construction or development begins within any area of special flood hazard established in Section 29-5. Application for a development permit shall be made on forms furnished by the Construction Official and may include, but not be limited to: plans in duplicate drawn to scale showing the nature, location, dimensions, and elevations of the area in question; existing or proposed structures, fill, storage of materials, drainage facilities; and the location of the foregoing.

Specifically, the following information is required:

- a. Elevation in relation to mean sea level, of the lowest floor (including basement) of all structures;
- b. Elevation in relation to mean sea level to which any structure has been floodproofed.
- c. Certification by a registered professional engineer or architect that the floodproofing methods for any nonresidential structure meet the floodproofing criteria in subsection 29-12.2b; and,
- d. Description of the extent to which any watercourse will be altered or relocated as a result of proposed development.
(Ord. No. 2054-09 § 2)

29-10.2 Designation of the Local Administrator.

The Construction Official is hereby appointed to administer and implement this chapter by granting or denying development permit applications in accordance with its provisions. (Ord. No. 2054-09 § 2)

29-10.3 Duties and Responsibilities of the Administrator.

Duties of the Construction Official shall include, but not be limited to the following. (Ord. No. 2054-09 § 2)

29-10.4 Permit Review.

- a. Review all development permits to determine that the permit requirements of this chapter have been satisfied.
- b. Review all development permits to determine that all necessary permits have been obtained from those Federal, State or local governmental agencies from which prior approval is required.

- c. Review all development permits to determine if the proposed development is located in the floodway.
- d. Review all development permits in the coastal high hazard area of the area of special flood hazard to determine if the proposed development alters sand dunes so as to increase potential flood damage.
- e. Review plans for walls to be used to enclose space below the base flood level in accordance with subsection 29-12.3b,4.
(Ord. No. 2054-09 § 2)

29-10.5 Use of Other Base Flood and Floodway Data.

When base flood elevation and floodway data has not been provided in accordance with Section 29-5, Basis for Establishing the 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 subsections 29-12.2a, Specific Standards, Residential Construction, and 29-12.2b, Specific Standards, Nonresidential Construction. (Ord. No. 2054-09 § 2)

29-10.6 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, and whether or not the structure contains a basement.
- b. For all new or substantially improved floodproofed structures:
 - 1. Verify and record the actual elevation (in relation to mean sea level); and
 - 2. Maintain the floodproofing certifications required in subsection 29-10.1c.
- c. In coastal high hazard areas, certification shall be obtained from a registered professional engineer or architect that the provisions of subsection 29-12.3b. and subsection 29-12.3b,2(a) and (b) are met.
- d. Maintain for public inspection all records pertaining to the provisions of this chapter.
(Ord. No. 2054-09 § 2)

29-10.7 Alterations of Watercourses.

- a. Notify adjacent communities and the New Jersey Department of Environmental Protection , Dam Safety and Flood Control section and the Land Use Regulation Program prior to any alteration or relocation of a watercourse, and submit evidence of such notification to the Federal Insurance Administration.
- b. Require that maintenance is provided within the altered or relocated portion of said watercourse so the flood carrying capacity is not diminished.
(Ord. No. 2054-09 § 2)

29-10.8 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 29-11. (Ord. No. 2054-09 § 2)

29-11 VARIANCE PROCEDURE.

29-11.1 Appeal Board.

- a. The Planning Board as established by the Borough of Manasquan shall hear and decide appeals and requests for variances from the requirements of this chapter.

- b. The Planning Board shall hear and decide appeals when it is alleged there is an error in any requirement, decision, or determination made by the Construction Official in the enforcement or administration of this chapter.
- c. Those aggrieved by the decision of the Planning Board, or any taxpayer, may appeal such decision to the Superior Court, as provided in by law.
- d. In passing upon such applications, the Planning Board shall consider all technical evaluations, all relevant factors, standards specified in other sections of this chapter, and:
 - 1. The danger that materials may be swept onto other lands to the injury of others;
 - 2. The danger to life and property due to flooding or erosion damage;
 - 3. The susceptibility of the proposed facility and its contents to flood damage and the effect of such damage on the individual owner;
 - 4. The importance of the services provided by the proposed facility to the community;
 - 5. The necessity to the facility of a waterfront location, where applicable;
 - 6. The availability of alternative locations for the proposed use which are not subject to flooding or erosion damage;
 - 7. The compatibility of the proposed use with existing and anticipated development;
 - 8. The relationship of the proposed use to the comprehensive plan and flood plain management program of that area;
 - 9. The safety of access to the property in times of flood for ordinary and emergency vehicles;
 - 10. 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; and,
 - 11. 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.
- e. Upon consideration of the factors of subsection 29-11.1d. 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.
- f. The Construction Official shall maintain the records of all appeal actions, including technical information, and report any variances to the Federal Insurance Administration upon request.
(Ord. No. 2054-09 § 2)

29-11.2 Conditions for Variances.

- a. Generally, variances may be issued for new construction and substantial improvements to be erected on a lot of one-half acre or less in size contiguous to and surrounded by lots with existing structures constructed below the base flood level, providing items (1-11) in subsection 29-11.1d. have been fully considered. As the lot size increases beyond the one-half (1/2) acre, the technical justification required for issuing the variance increases.
- 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.
- 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. 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, extraordinary public expense, create nuisances, cause fraud on or victimization of the public as identified in subsection 29-11.1d, 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.
(Ord. No. 2054-09 § 2)

29-12 PROVISIONS FOR FLOOD HAZARD REDUCTION.

29-12.1 General Standards.

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

- 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 shall be anchored to resist flotation, collapse or lateral movement. Methods of anchoring may include, but are not to be 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.
- 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 and substantial improvements shall be constructed using 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;
 - 3. On-site waste disposal systems shall be located to avoid impairment to them or contamination from them during flooding; and
 - 4. 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.*
 - 1. All subdivision proposals shall be consistent with the need to minimize flood damage;
 - 2. All subdivision proposals 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 shall have adequate drainage provided to reduce exposure to flood damage; and,
 4. Base flood elevation data shall be provided for subdivision proposals and other proposed development which contain at least fifty (50) lots or five (5) acres (whichever is less).
- e. *Enclosure Openings.* All new construction and substantial improvements having 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 must meet 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 covering or devices provided that they permit the automatic entry and exit of floodwaters.
- f. *Fill.* All new buildings constructed on fill in the regulatory flood plain must be constructed on properly designed and compacted fill that meets the criteria of Section 1803.58 and Section 1804.4 of the International Building Code and must be on fill that has appropriate protection from erosion and scour.
- g. *Drainage.* All new construction must provide positive drainage away from the building site in accordance with Section 1803.3 and Section 1805 of the International Building Code.
- (Ord. No. 2054-09 § 2; Ord. No. 2159 § 2)

29-12.2 Specific Standards.

In all areas of special flood hazards where base flood elevation data have been provided as set forth in Section 29-5, Basis for Establishing the Areas of Special Flood Hazard or in subsection 29-10.5, Use of Other Base Flood Data, the following standards are required:

- a. *Residential Construction.*
 1. New construction and substantial improvement of any residential structure shall have the lowest floor, including basement together with the attendant utilities and sanitary facilities, elevated to one foot above the NJ Flood Hazard Area Design Flood elevation, as defined in N.J.A.C. 7:13;
 2. 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 at least as high as the depth number specified in feet (at least two (2) feet if no depth number is specified). 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:
 1. Either have the lowest floor, including basement together with the attendant utilities and sanitary facilities, elevated to the level of the base flood elevation; and
 2. Within any AO zone on the municipality's FIRM that all new construction and substantial improvement of any commercial, industrial or other nonresidential structure shall either have the lowest floor, including basement, elevated above the highest adjacent grade at least as high as the depth number specified in feet (at least two (2) feet if no depth number is specified). And, require adequate drainage paths around structures on slopes to guide floodwaters around and away from proposed structures; or
 - (a) Be floodproofed so that below the base flood level the structure is watertight with walls substantially impermeable to the passage of water;
 - (b) Have structural components capable of resisting hydrostatic and hydrodynamic loads and effects of buoyancy; and,

- (c) Be certified by a registered professional engineer or architect that the design and methods of construction are in accordance with accepted standards of practice for meeting the applicable provisions of this subsection. Such certification shall be provided to the official as set forth in subsection 29-10.6b,2.
- c. *Manufactured Homes.*
 - 1. Manufactured homes shall be anchored in accordance with subsection 29-12.1a,2.
 - 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.
- d. *Critical Facilities.* New critical facilities shall not be permitted within the 500-year floodplain.
(Ord. No. 2054-09 § 2; Ord. No. 2159 § 3)

29-12.3 Coastal High Hazard Area.

Coastal high hazard areas (V or VE Zones) are located within the areas of special flood hazard established in Section 29-5. 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 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 level, 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 subsection 29-12.3b,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 (1%) percent chance of being equaled or exceeded in any given year (100-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 subsection 29-12.3b,1 and 29-12.3b,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 lattice-work or insect screening are used as provided for in this section.
 - (b) Breakaway walls, open wood lattice-work 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 ten (10) and no more than twenty (20) pounds per square foot. Use of breakaway walls which exceed a design safe loading of twenty (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 construction official for approval.
(Ord. No. 2054-09 § 2)

29-12.4 Sand Dunes.

Prohibit manmade alteration of sand dunes within Zones VE and V on the community's DFIRM which would increase potential flood damage. (Ord. No. 2054-09 § 2)