

INTRODUCED BY: Eric L. Buckson
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Ordinance 14-03
Floodplain Requirements

An Ordinance to amend Kent County Code, Chapter 205 Zoning, effective June 10, 2003, as amended, by repealing in its entirety Article XXIV Floodplain District Regulations and adding a new Chapter 188 Floodplain Requirements establishing the minimum standards for development within the floodplain including a requirement to provide 18 inches of freeboard and an incentive to construct to the V zone standard in the Coastal A zone.

WHEREAS, the Kent County Levy Court has the authority to adopt regulations designed to promote the public health, safety, and general welfare of its citizenry; and

WHEREAS, the Federal Emergency Management Agency has identified special flood hazard areas within the boundaries of Kent County and such areas may be subject to periodic inundation which may result 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, and

WHEREAS, Kent County was accepted for participation in the National Flood Insurance Program on March 15, 1978 and the Kent County Levy Court desires to continue to meet the requirements of Title 44 Code of Federal Regulations, Sections 59 and 60, necessary for such participation.

NOW, THEREFORE, THE LEVY COURT OF KENT COUNTY, DELAWARE, HEREBY ORDAINS:

Section 1: That the Kent County Code, Chapter 205 Zoning, Article XXIV Floodplain District Regulations is hereby amended by deleting the following bracketed language:

[Article XXIV. Floodplain District Regulations

§ 205-369. General provisions:

A. Intent. The intent of these regulations is to:

- (1) Promote the general health, welfare and safety of the County.*
- (2) Encourage the utilization of appropriate construction practices in order to prevent or minimize flood damage in the future.*
- (3) Minimize danger to public health and safety by protecting the water supply, sanitary sewage disposal and natural drainage.*

- (4) ~~Reduce financial burdens imposed on the County, its governmental units and its residents by preventing the unwise design and construction of development in areas subject to flooding.~~
- ~~B. Abrogation and greater restrictions. These regulations supersede any codes, ordinances or regulations currently in effect in flood-prone areas. However, any underlying ordinance shall remain in full force and effect to the extent that those provisions are more restrictive.~~
- ~~C. Applicability. The provisions of all other codes, ordinances and regulations shall be applicable insofar as they are consistent with the provisions of these regulations and the County's need to minimize the hazards and damage resulting from flooding.~~

~~§ 205-370. Definitions.~~

~~As used in this chapter, the following terms shall have the meanings indicated:~~

~~**BASE FLOOD**~~

~~The flood which has been selected to serve as the basis upon which the floodplain management provisions of this and other ordinances have been prepared; for purposes of this chapter, the one hundred year flood.~~

~~**BASE FLOOD ELEVATIONS**~~

~~The one hundred year flood elevation. Within the approximated floodplain, the base flood elevation shall be established as a point on the boundary of the approximated floodplain which is nearest to the construction site in question.~~

~~**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.~~

~~**FLOOD**~~

~~A general and temporary inundation of normally dry land areas.~~

~~**FLOODPLAIN**~~

~~A. A relatively flat or lowland area adjoining a river, stream or watercourse which is subject to partial or complete inundation.~~

~~B. An area subject to the unusual and rapid accumulation or runoff of surface waters from any source.~~

~~**FLOODPROOFING**~~

~~Any combination of structural and nonstructural additions, changes or adjustments to properties and structures which reduce or eliminate flood damage to lands, water and sanitary facilities, structures and contents of buildings.~~

~~**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 connected to the required utilities. The term also includes park trailers, travel trailers and other similar vehicles placed on a site for greater than 180 consecutive days.~~

~~**MANUFACTURED HOME PARK OR SUBDIVISION**~~

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

~~**NEW CONSTRUCTION**~~

~~Structures (as alluded to in the definition of "start of construction") which commenced on or after the effective date of this amendment.~~

~~**ONE-HUNDRED-YEAR FLOOD**~~

~~A flood that has one chance in 100 or a one-percent chance of being equaled or exceeded in any given year.~~

~~**PERSON**~~

~~Any individual or group of individuals, corporation, partnership, association or other entity, including state and local governments and agencies.~~

~~**START OF CONSTRUCTION**~~

~~(For other than new construction or substantial improvements under the Coastal Barrier Resources Act) includes substantial improvements and means the date the building permit was issued, provided that the actual start of construction, repair, reconstruction, replacement or other improvements was within 180 days of the permit date. The "actual start" means either the first placement of permanent construction of a structure on a site, such as the pouring of slab or footings, the installation of piles, the construction of columns, or any work beyond the stage of excavation; or 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, footing, 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.~~

~~**STRUCTURE**~~

~~That which is built or constructed.~~

~~**SUBSTANTIAL IMPROVEMENT**~~

~~A. Any repair, reconstruction or improvement of a structure, the cost of which equals or exceeds 50% of the market value of the structure, either:~~

~~(1) Before the improvement or repair is started; or~~

~~(2) If the structure has been damaged and is being restored, before the damage occurred.~~

~~B. For the purposes of this definition "substantial improvement" is considered to occur when the first alteration of any wall, ceiling, floor or other structural part of the building commences, whether or not that alteration affects the external dimensions of the structure. The term does not, however, include either:~~

~~(1) Any project for improvement of a structure to comply with existing state or local health, sanitary or safety code specifications which are solely necessary to assure safe living conditions; or~~

~~(2) Any alteration of a structure listed on the National Register of Historic Places or a State Inventory of Historic Places.~~

~~§ 205-371. Establishment of floodplain district.~~

~~A. The Floodplain District shall include all areas subject to inundation by the waters of the one hundred-year flood. The source of this delineation shall be the current Flood Insurance Study for Kent County, Delaware, or the Flood Insurance Rate Map(s) (FIRM), as prepared by the Federal Emergency Management Agency, available for inspection in the Department of Planning Services, Division of Planning, or the Engineer's office.~~

~~B. The Floodplain District shall be comprised of five subdistricts, as follows:~~

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- (1) Floodway (F1). That portion of the Floodplain District required to carry and discharge the waters of the one hundred year flood without increasing the water surface elevation at any point more than one foot as demonstrated in the Flood Insurance Study referenced above.
 - (2) Floodway Fringe (F2). Those portions of land within the Floodplain District subject to inundation by the one hundred year flood, lying beyond the floodway in areas where detailed study data and profiles are available.
 - (3) Approximated Floodplain (F3). Those portions of land within the Floodplain District subject to inundation by the one hundred year flood, where a detailed study has not been performed, but where a one hundred year floodplain boundary has been approximated.
 - (4) Coastal High Hazard Area (F4). Those portions of land within the Floodplain District subject to wave action as indicated by the above referenced Flood Insurance Study.
 - (5) Coastal Floodplain (F5). Those portions of land within the Floodplain District subject to inundation by tidal flooding, but not subject to wave action as determined by the Flood Insurance Study.

C. Revision of the delineation of the Floodplain District.

- (1) The delineation of the Floodplain District may be revised, amended and modified by the Levy Court in compliance with the National Flood Insurance Program when:
 - (a) There are changes through natural or other causes.
 - (b) Changes are indicated by future detailed hydrologic and hydraulic studies.
- (2) All such changes shall be subject to the review and approval of the Federal Insurance Administrator.

§ 205-372. Utilization of floodplain district.

A. Floodway (F1).

- (1) In the Floodway, no encroachment, including fill, new construction, substantial improvements and other developments shall be permitted unless it has been demonstrated through hydrologic and hydraulic analyses performed in accordance with standard engineering practices that the proposed encroachment would not result in any increase in the base flood elevation during the occurrence of the base flood discharge.
- (2) Whenever a developer intends to alter or relocate a watercourse within the Floodway, the developer shall notify in writing by certified mail all adjacent communities and the State Department of Natural Resources and Environmental Control, Division of Soil and Water Conservation, of all such intended activities prior to any alteration or relocation of the watercourse and shall submit copies of such notification to the Federal Insurance Administrator. The developer also shall assure the County in writing that the flood-carrying capacity within the altered or relocated portion of the watercourse in question will be maintained.
- (3) All uses, activities and other developments shall be undertaken in strict compliance with the floodproofing and related provisions contained herein, and in all other applicable codes, ordinances and regulations.

B. Floodway Fringe (F2) and Approximated Floodplain (F3).

- (1) In the Floodway Fringe and Approximated Floodplain, any development and/or use of land shall be permitted, provided that all such uses, activities and/or development shall be undertaken in strict compliance with the floodproofing and related provisions contained herein and in all other applicable codes, ordinances and regulations.

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- (2) ~~In the areas identified on the FIRM as A zones, and for which no one hundred year flood elevations have been provided, elevation and floodway information from other federal, state or other acceptable source shall be used when available. Where other acceptable information is not available, the elevation shall be determined by using the elevation of a point on the boundary of the identified floodplain area which is nearest the construction site. The department may require the applicant to determine the elevation with hydrologic and hydraulic engineering techniques. Hydrologic and hydraulic analyses shall be undertaken only by professional engineers or others of demonstrated qualifications, who shall certify that the technical methods used correctly reflect currently accepted technical concepts. Studies, analyses, computations, etc., shall be submitted in sufficient detail to allow thorough technical review by the Department of Planning Services, Division of Planning.~~
- (3) ~~In addition, whenever a developer intends to alter or relocate a watercourse within the floodway fringe or approximated floodplain, the developer shall notify in writing by certified mail all adjacent communities and the State Department of Natural Resources and Environmental Control, Division of Soil and Water Conservation, of all such intended activities prior to any alteration or relocation of the watercourse, and shall submit copies of such notification to the Federal Insurance Administrator. The developer shall also assure the County, in writing, that the flood carrying capacity within the altered or relocated portion of the watercourse in question will be maintained.~~
- C. ~~Coastal High Hazard Area (F4) and Coastal Floodplain (F5). In the Coastal High Hazard Area and the Coastal Floodplain, any development and/or use of land shall be permitted, provided that all such uses, activities and/or development shall be undertaken in strict compliance with the floodproofing and related provisions contained herein and in all other applicable codes, ordinances and regulations.~~

§ 205-373. Criteria for construction or placement of structures; plan approval.

A. ~~Building permits.~~

- (1) ~~No building permits will be issued by the Division of Inspections and Enforcement until it has been determined that any new construction or substantial improvements in the Floodplain District are:~~
- ~~(a) Designed (or modified) and adequately anchored to prevent flotation, collapse or lateral movement of the structure resulting from the hydrodynamic and hydrostatic loads, including the effects of buoyancy.~~
 - ~~(b) Constructed with materials and utility equipment resistant to flood damage.~~
 - ~~(c) Constructed by methods and practices that minimize flood damage.~~
 - ~~(d) Constructed with electrical, heating, ventilation, plumbing and air conditioning equipment and other service facilities that are designed and/or located so as to prevent water from entering or accumulating within the components during construction.~~
- (2) ~~Depending on the type of structure involved, the following information shall be included in the building permit for work within the Floodplain District:~~
- ~~(a) For structures to be elevated to one foot above the base flood elevation:
 - ~~[1] A plan showing the size of the proposed structure and its relation to the lot where it is to be constructed.~~
 - ~~[2] A determination of elevations of the existing ground, proposed finished ground and lowest floors, certified by a registered professional engineer, surveyor or architect.~~~~

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- ~~[3] Plans showing the method of elevating the proposed structures, including details of proposed fills, pile structures, retaining walls, foundations, erosion protection measures, etc. These plans shall be prepared by a registered professional engineer or architect.~~
- ~~[4] Plans showing the methods used to prevent water from entering or accumulating within components of electrical, heating, ventilation, plumbing and air conditioning equipment and other service facilities during conditions of flooding.~~
- ~~(b) For structures to be floodproofed to one foot above the base flood elevation (nonresidential structures only):~~
- ~~[1] Plans showing details of all floodproofing measures, prepared by a registered professional engineer or architect and showing the size of the proposed structure and its relation to the lot where it is to be constructed.~~
- ~~[2] A determination of elevations of existing ground, proposed finished ground, lowest floors and floodproofing limits certified by a registered professional engineer, surveyor or architect.~~
- ~~[3] A certificate prepared by the registered professional engineer or architect who prepared the plans in Subsection A(2)(b)[1] above, that the structure in question, together with attendant utility and sanitary facilities, is designed so that:~~
- ~~[a] The structure will withstand the hydrostatic, hydrodynamic, buoyant, impact and other forces resulting from the flood depths, velocities, pressures and other factors associated with the base flood.~~
- ~~[b] The structure is designed and constructed with accepted standards of practice for meeting the provisions of Subsection B(1) of this section. This certificate shall include the specific elevation (in relation to mean sea level) to which the structure is floodproofed.~~
- ~~**B. Minimum floodproofing standards.** In order to prevent excessive damage to buildings and structures, the following restrictions shall apply to all new construction and to construction of substantial improvements to existing structures occurring in the Floodplain District:~~
- ~~(1) Basements and lowest floors.~~
- ~~(a) All new construction and substantial improvements of residential structures must have the lowest floor (including basement) elevated to one foot above the base flood elevation.~~
- ~~(b) All new construction and substantial improvements of nonresidential structures must have the lowest floor (including basement) elevated to one foot above base flood elevation; or together with attendant utility and sanitary facilities, be designed so that below the base flood elevation the structure is watertight with walls substantially impermeable to the passage of water and with structural components having the capability of resisting hydrostatic and hydrodynamic loads and effects of buoyancy.~~
- ~~(c) For all new construction and substantial improvements, those fully enclosed areas below the lowest floor that are subject to flooding shall be designed to automatically equalize the hydrostatic flood forces on exterior walls by allowing for entry and exit of floodwaters. Designs for meeting this requirement must either be certified by a registered professional engineer or architect or meet or exceed the following 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.~~
- ~~[2] The bottom of all openings shall be no higher than one foot above grade.~~
- ~~[3] Openings may be equipped with screens, louvers, valves or other coverings or devices, provided that they permit the automatic entry and exit of floodwaters.~~

- (2) ~~Fill. If fill is used to raise the finished surface of the lowest floor on one foot above the base flood elevation:~~
- ~~(a) Fill shall extend beyond a structure for a sufficient distance to provide acceptable access. For residential structures, fill shall extend laterally 15 feet beyond the building line from all points. For nonresidential structures, fill shall be placed to provide access acceptable for intended use. At grade access, with fill extending laterally 15 feet beyond the building line, shall be provided to a minimum of 25% of the perimeter of a nonresidential structure.~~
 - ~~(b) Fill shall consist of soil or rock materials only. Sanitary landfills shall not be permitted.~~
 - ~~(c) Fill material shall be compacted to provide the necessary stability and resistance to erosion, scouring or settling.~~
 - ~~(d) Fill slopes shall be no steeper than one vertical on two horizontal, unless substantiating data justifying steeper slopes are submitted to and approved by the Department of Planning Services, Division of Planning.~~
 - ~~(e) Fill shall be used only to the extent to which it does not adversely affect adjacent properties.~~
- (3) ~~Placement of buildings, structures and manufactured homes.~~
- ~~(a) All buildings and structures shall be constructed and placed on the lot so as to offer the minimum obstruction to the flow of water and shall be designed to have a minimum obstruction effect upon the flow and height of floodwater.~~
 - ~~(b) The following shall not be placed or caused to be placed in the designated floodway: fences, except two wire fences, or other matter which may impede, retard or change the direction of the flow of water or that will catch or collect debris which is carried by such water, or that is placed where the natural flow of the stream of floodwaters would carry the same downstream to the damage or detriment of either public or private property adjacent to the floodplain.~~
 - ~~(c) Manufactured homes shall be placed on a permanent foundation and elevated so that the lowest floor of the manufactured home will be one foot above the base flood elevation.~~
- (4) ~~Anchoring.~~
- ~~(a) All buildings and structures shall be firmly anchored in accordance with accepted engineering practices to prevent flotation, collapse and lateral movement, thus reducing the threat to life and property and decreasing the possibility of the blockage of bridge openings and other restricted sections of the watercourses.~~
 - ~~(b) All air ducts, large pipes and storage tanks located at or below the base flood elevation shall be firmly anchored to resist flotation.~~
 - ~~(c) All manufactured homes shall be anchored to resist flotation, collapse or lateral movement in addition to applicable state or County anchoring requirements for wind forces.~~
- [1] ~~Over the top ties shall be provided at each of the four corners of the manufactured home with two additional ties per side at intermediate locations. Manufactured homes less than 50 feet long require one additional tie per side.~~
- [2] ~~Frame ties shall be provided at each corner of the home with five additional ties per side at intermediate points, with manufactured homes less than 50 feet long requiring four additional ties per side.~~
- [3] ~~All components of the anchoring system shall be capable of carrying a force of 4,800 pounds.~~
- [4] ~~Any additions to a manufactured home shall be similarly anchored.~~

~~(5) Storage. No new construction which stores materials that are buoyant, flammable, explosive or in times of flooding could be injurious to human, animal or plant life shall be stored below base flood elevation.~~

~~C. Plan approval. The owner or developer of a proposed use requiring site plan review (see Article XXIX, § 205-423) shall include on the plan the following information:~~

~~(1) A map showing the location of the proposed development with respect to the County's flood prone areas, fills, flood or erosion protective facilities and areas subject to special deed restriction. In addition, all residential subdivisions and planned unit developments or other proposed new developments greater than 50 lots or five acres in area, whichever is less, shall include base flood elevation data.~~

~~(2) Where the development lies partially or completely in the flood prone areas, the plan shall include detailed information giving the location and elevation of all proposed roads, public utilities and building sites.~~

~~D. Manufactured home parks. For all new manufactured home parks or expansions to existing manufactured home parks and for existing manufactured home parks where the repair, construction or improvement of streets, utilities and pads equals or exceeds 50% of the value of the streets, utilities and pads before the repair, reconstruction or improvement has commenced, the following requirements shall be met for any construction within the floodway fringe or approximated floodplain:~~

~~(1) Manufactured home berthing spaces or lots shall be elevated on compacted fill or on pilings so that the lowest floor of each manufactured home will be one foot above the base flood elevation.~~

~~(2) Adequate surface drainage and access for a manufactured home hauler shall be provided.~~

~~(3) When manufactured homes are to be elevated on pilings, lots shall be large enough to permit steps, piles shall be placed in stable soil no more than 10 feet apart, and reinforcement shall be provided for pilings more than six feet above ground level.~~

~~E. Utility and facility requirements.~~

~~(1) All new or replacement water systems located on the Floodplain District, whether public or private, shall be floodproofed to one foot above the base flood elevation.~~

~~(2) All new or replacement sanitary disposal systems located within the Floodplain District, whether public or private, shall be floodproofed to one foot above the base flood elevation.~~

~~(3) All other new or replacement public and/or private utilities and facilities shall be elevated or floodproofed to one foot above the base flood elevation.~~

~~(4) On site waste disposal systems shall be located to avoid impairment to them or contamination from them during flooding.~~

~~F. Drainage. Adequate drainage shall be provided to reduce exposure of flood hazards.~~

~~G. Additional requirements for construction or placement of structures within the coastal high hazard area.~~

~~(1) All new construction, substantial improvement or placement of structures within the coastal high hazard area shall be elevated on pilings and columns so that the bottom of the lowest horizontal structural member of the lowest floor (excluding the pilings and columns) is elevated to one foot above the base flood level; and the pile or column foundations and structure attached thereto are anchored to resist flotation, collapse and lateral movement due to the effects of wind and water loads acting simultaneously on all building components. Wind and water loading values shall each have a one percent~~

~~chance of being equaled or exceeded in any given year (one hundred year mean recurrence interval). A registered professional engineer or architect shall develop or review the structural design specifications and plans for the construction and shall certify that the design and methods of construction to be used are in accordance with accepted standards of practice for meeting the provisions.~~

~~(2) Breakaway walls.~~

~~(a) All new construction and substantial improvements or placement of structures within the coastal high hazard area shall have the space below the lowest floor either free of obstruction or constructed with nonsupporting breakaway walls, open lattice work or insect screening intended to collapse under wind and water loads without causing collapse, displacement or other structural damage to the elevated portion of the building or supporting foundation system. Such enclosed space shall be usable solely for parking of vehicles, building access or storage.~~

~~(b) A breakaway wall shall have a design safe loading resistance of not less than 10 and no more than 20 pounds per square foot. Use of breakaway walls which exceed a design safe loading resistance of 20 pounds per square foot 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.~~

~~[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 effect of wind and water loads acting simultaneously on all building components (structural and nonstructural). Maximum wind and water loading values to be used in this determination shall each have a one percent chance of being equaled or exceeded in any given year (one hundred year mean recurrence interval).~~

~~(3) All new construction shall be located landward of the reach of mean high tide.~~

~~(4) Any land disturbing activity, including the alteration of sand dunes, which may increase the potential of flood damage is prohibited.~~

~~(5) No fill shall be used for structural support.~~

~~(6) All new construction and substantial improvements to existing structures must be constructed with a pile or column foundation which extends below the potential scour zone. The use of slab or other at-grade foundations is prohibited.~~

~~(7) Basements are not permitted. Any floor level constructed below grade on all four sides is a basement regardless of use or construction technique.~~

~~§ 205-374. Administration.~~

~~A. The Department of Planning Services, Division of Planning, shall obtain, review and reasonably utilize any base flood elevation and floodway data available from a federal, state or other source as criteria for requiring that new construction, substantial improvements or other development in Zone A comply with the provisions of this chapter.~~

~~B. It shall be unlawful for any person, partnership, business or corporation to undertake, or cause to be undertaken, any development (as defined herein) in the Floodplain District without first obtaining a permit from the Department of Planning Services, Division of Planning.~~

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- ~~C. All permits and plans shall be approved only after it has been determined that the proposed work to be undertaken will be in conformance with the requirements of these regulations and all other applicable codes and ordinances.~~
- ~~D. The Department of Planning Services, Division of Planning, shall require copies of all necessary permits from those governmental agencies from which approval is required by federal or state law.~~
- ~~E. No manufactured home shall be placed at any location within the floodplain district without the owner or owners having first obtained a building permit from the Division of Inspections and Enforcement.~~

~~§ 205-375. Appeals.~~

- ~~A. Whenever any person is aggrieved by an administrative decision with respect to the provisions of these regulations, it is the right of that person to appeal to the Board of Adjustment. Such appeals must be filed in accordance with the procedures of the Board as stated in Article **XXVII**.~~
- ~~B. All decisions on appeals to the provisions of these regulations shall adhere to the following criteria:~~
- ~~(1) An affirmative decision shall not be issued by the Board within the designated floodway if any increase in flood levels during the base flood discharge would result.~~
 - ~~(2) A decision may be issued by the Board for construction and substantial improvements to be erected on a legally established lot of 1/2 acre or less in size contiguous to and surrounded by lots with existing structures constructed with the procedures of Subsection **B(3), (4), (5) and (6)** of this section.~~
 - ~~(3) Affirmative decisions shall only be issued by the Board upon:~~
 - ~~(a) A showing of good and sufficient cause.~~
 - ~~(b) A determination that failure to grant the appeal would result in exceptional hardship to the applicant.~~
 - ~~(c) A determination that the granting of an appeal will not result in increased flood heights, additional threats to public safety, extraordinary public expense, create nuisances, cause fraud on or victimization of the public, or conflict with existing County laws or ordinances.~~
 - ~~(4) Affirmative decisions shall only be issued upon determination that it is the minimum necessary, considering the flood hazard, to afford relief.~~
 - ~~(5) The Board shall notify the applicant in writing that the issuance of a decision to allow construction of a structure below the base flood elevation will result in increased premium rates for flood insurance, and that such construction below the base flood elevation increases risks to life and property. Such notification shall be maintained with a record of all decisions as required in Subsection **B(6)** of this section.~~
 - ~~(6) The County shall maintain a record of all decisions, including justification for their issuance, and report such decisions issued in its annual report submitted to the Federal Insurance Administration.~~

~~§ 205-376. Liability.~~

~~The granting of a permit or approval of a site plan in an identified flood-prone area shall not constitute a representation, guaranty or warranty of any kind by the County or by any official or employee thereof of the practicability or safety of the proposed use, and shall create no liability upon the County, its officials or employees.]~~

Section 2. That the Kent County Code is hereby amended by adding the following underlined language:

Chapter 188, Floodplain Requirements

§188-1. General Provisions

A. Findings

The Federal Emergency Management Agency (FEMA) has identified special flood hazard areas within the boundaries of Kent County. Special flood hazard areas are subject to periodic inundation which may result 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. Structures that are inadequately elevated, improperly floodproofed, or otherwise unprotected from flood damage also contribute to the flood loss.

Kent County, by resolution, agreed to meet the requirements of the National Flood Insurance Program and was accepted for participation in the program on March 15, 1978. As of that date or the initial effective date of the Kent County Flood Insurance Rate Map, all development and new construction as defined herein, are to be compliant with these regulations.

B. Statement of Purpose

It is the purpose of these regulations to promote the public health, safety and general welfare, and to:

1. Protect human life, health and welfare;
2. Encourage the utilization of appropriate construction practices in order to prevent or minimize flood damage in the future;
3. Minimize flooding of water supply and sanitary sewage disposal systems;
4. Maintain natural drainage;
5. Reduce financial burdens imposed on the community, its governmental units and its residents, by discouraging unwise design and construction of development in areas subject to flooding;
6. Minimize the need for rescue and relief efforts associated with flooding and generally undertaken at the expense of the general public;
7. Minimize prolonged business interruptions;
8. Minimize damage to public facilities and other utilities such as water and gas mains, electric, telephone and sewer lines, streets and bridges;
9. Reinforce that those who build in and occupy special flood hazard areas should assume responsibility for their actions;

10. Minimize the impact of development on adjacent properties within and near flood prone areas;
11. Provide that the flood storage and conveyance functions of the floodplain are maintained;
12. Minimize the impact of development on the natural and beneficial functions of the floodplain;
13. Prevent floodplain uses that are either hazardous or environmentally incompatible; and
14. Meet community participation requirements of the National Flood Insurance Program as set forth in the Code of Federal Regulations at 44 C.F.R. Section 59.22.

C. Areas to Which These Regulations Apply

These regulations shall apply to all special flood hazard areas within the jurisdiction of Kent County, as identified in Item D below.

D. Basis for Establishing Special Flood Hazard Areas

For the purposes of these regulations, the following are adopted by reference as a part of these regulations and serve as the basis for establishing special flood hazard areas:

The FEMA Flood Insurance Study for Kent County, Delaware and Incorporated Areas dated July 7, 2014 and all subsequent amendments and/or the most recent revision thereof.

The FEMA Flood Insurance Rate Map for Kent County, Delaware and Incorporated Areas dated July 7, 2014, and all subsequent amendments and/or the most recent revision thereof.

Other hydrologic and hydraulic engineering studies and/or maps prepared pursuant to these regulations or for other purposes, and which establish base flood elevations, delineate 100-year floodplains, floodways or other areas of special flood hazard.

Maps and studies that establish special flood hazard areas are on file at the Kent County Department of Planning Services in the Kent County Administrative Complex.

E. Abrogation and Greater Restrictions

These regulations are not intended to repeal or abrogate any existing ordinances including subdivision regulations, zoning ordinances or building codes. In the event of a conflict between these regulations and any other ordinance, the more restrictive shall govern. These regulations shall not

impair any deed restriction, covenant or easement, but the land subject to such interests shall also be governed by these regulations.

F. Interpretation

In the interpretation and application of these regulations, all provisions shall be:

Considered as minimum requirements;

Liberal construed in favor of the governing body;

Deemed neither to limit nor repeal any other powers granted under state statutes; and

Where a provision of these regulations may be in conflict with a state or Federal law, such state or Federal law shall take precedence.

G. Warning and Disclaimer of Liability

The degree of flood protection required by these regulations 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. These regulations do not imply that land outside of the special flood hazard areas or uses that are permitted within such areas will be free from flooding or flood damage. These regulations shall not create liability on the part of Kent County, any officer or employee thereof, or the Federal Emergency Management Agency, for any flood damage that results from reliance on these regulations or any administrative decision lawfully made thereunder.

§188-2. Definitions

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

Accessory Structure: A structure on the same lot with, and of a nature customarily incidental and subordinate to, the principal structure.

Area of Shallow Flooding: A designated Zone AO on a community's Flood Insurance Rate Map with a one percent annual chance or greater of flooding to an average depth of one to three 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.

Base Flood: The flood having a one percent chance of being equaled or exceeded in any given year; the base flood also is referred to as the 100-year flood (or the 1%-annual-chance flood).

Base Flood Discharge: The volume of water resulting from a Base Flood as it passes a given location within a given time, usually expressed in cubic feet per second (cfs).

Base Flood Elevation: The water surface elevation of the base flood in relation to the datum specified on the community's Flood Insurance Rate Map. In areas of shallow flooding, the base flood elevation is the natural grade elevation plus the depth number specified in feet on the Flood Insurance Rate Map, or at least 2 feet if the depth number is not specified.

Basement: Any area of the building having its floor subgrade (below ground level) on all sides.

Breakaway Wall: A wall that is designed and certified by a Delaware registered design professional 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 A Zone: Flood hazard areas that have been delineated as subject to wave heights between 1 ½ feet and 3 feet. Such areas are seaward of the Limit of Moderate Wave Action shown on the Flood Insurance Rate Map.

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. Coastal high hazard areas also are referred to as "Zone V" or "V Zones" and are designated on FIRMs as flood insurance risk Zone VE.

Development: Any manmade change to improved or unimproved real estate, including but not limited to buildings or other structures, placement of manufactured homes, mining, dredging, filling, grading, paving, excavation or drilling operations or storage of equipment or materials.

Elevation Certificate: The *National Flood Insurance Program, Elevation Certificate* (FEMA Form 086-0-33), used to document building elevations and other information about buildings. When required to be certified, the form shall be completed by a Delaware licensed professional land surveyor.

Enclosure Below the Lowest Floor: An unfinished or flood resistant enclosure usable solely for parking of vehicles, building access, or storage, in an area other than a basement.

Federal Emergency Management Agency (FEMA): The federal agency with the overall responsibility for administering the National Flood Insurance Program.

FEMA Technical Bulletin: A series of guidance documents published by FEMA to provide guidance concerning building performance standards of the National Flood Insurance Program and should not be considered regulatory. See sections where specific Technical Bulletins are identified. The most recent revision to all Bulletins shall be used.

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.

Flood Damage-Resistant Materials: Any construction material capable of withstanding direct and prolonged contact with floodwaters without sustaining any damage that requires more than cosmetic repair. See FEMA Technical Bulletin #2 – *Flood Damage-Resistant Materials Requirements* and FEMA Technical Bulletin #8 – *Corrosion Protection for Metal Connectors in Coastal Areas*.

Flood Insurance Rate Map (FIRM): An official map on which the Federal Emergency Management Agency has delineated special flood hazard areas to indicate the magnitude and nature of flood hazards, and to designate applicable flood zones.

Zone A: Special flood hazard areas inundated by the 1% annual chance flood; base flood elevations are not determined.

Zone AE: Special flood hazard areas subject to inundation by the 1% annual chance flood; base flood elevations are determined; floodways may or may not be determined.

Zone AO: Areas of shallow flooding, with or without a designated average flood depth.

Zone X (shaded): Areas subject to inundation by the 500-year flood (0.2% annual chance); areas subject to the 1% annual chance flood with average depths of less than 1 foot or with contributing drainage area less than 1 square mile; and areas protected by levees from the base flood.

Zone X (unshaded): Areas determined to be outside the 1% annual chance flood and outside the 500-year floodplain.

Zone VE: Special flood hazard areas subject to inundation by the 1% annual chance flood and subject to high velocity wave action (also referred to as coastal high hazard areas).

Limit of Moderate Wave Action (LiMWA): The inland limit of the area affected by waves greater than 1.5 feet during the base flood. Base flood conditions between the Zone VE and the LiMWA will be similar to, but less severe than, those in the Zone VE.

Flood Insurance Study: The official report in which the Federal Emergency Management Agency has provided flood profiles, floodway information, and the water surface elevations.

Floodplain: Any land area susceptible to being inundated by water from any source (see “Flood” or “Flooding”).

Dry Floodproofing: Any combination of structural and nonstructural additions, changes, or adjustments to structures which reduce or eliminate flood damage to real estate or improved real property, water and sanitary facilities, structures and their contents.

Floodproofing Certificate: The *National Flood Insurance Program, Floodproofing Certificate for Non-Residential Structures* (FEMA Form 86-0-34), used by registered professional engineers and architects to certify dry floodproofing designs.

Floodway: The channel of a river or other watercourse and the adjacent land areas that must be reserved in order to pass the base flood discharge such that the cumulative increase in the water surface elevation of the base flood discharge is no more than a designated height.

Floodway Fringe Area: Portion of the special flood hazard area that is adjacent to and landward of a designated floodway shown on a Flood Insurance Rate Map.

Freeboard: A factor of safety usually expressed in feet above a flood elevation for the purposes of floodplain 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, obstructed bridge openings, debris and ice jams, and the hydrologic effect of urbanization in a watershed.

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

Highest Adjacent Grade: 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) Individually listed in the National Register of Historic Places (a listing maintained by the U.S. 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 or a district preliminarily determined by the Secretary to qualify as a registered historic district;
 - (3) Determined eligible for listing on the National Register of Historic Places by the Delaware State Historic Preservation Officer; or
 - (4) Determined to contribute to the historic significance of a district that has been determined by the Delaware State Historic Preservation Officer, to be eligible for listing on the National Register of Historic Places.

Hydrologic and Hydraulic Engineering Analysis: An analysis performed by a professional engineer, licensed in the State of Delaware, in accordance with standard engineering practices as accepted by FEMA, used to determine the base flood, other frequency floods, flood elevations, floodway information and boundaries, and flood profiles.

Letter of Map Change: A Letter of Map Change is an official FEMA determination, by letter, to amend or revise an effective Flood Insurance Rate Map, Flood Boundary and Floodway Map, and Flood Insurance Study. Letters of Map Change include:

Letter of Map Amendment (LOMA): An amendment based on technical data showing that a property was inadvertently included in a designated special flood hazard area. A LOMA amends the current effective Flood Insurance Rate Map and establishes that a specific property is not located in a special flood hazard area.

Letter of Map Revision (LOMR): A revision based on technical data that may show changes to flood zones, flood elevations, floodplain and floodway delineations, and planimetric features. One common type of LOMR, a Letter of Map Revision Based on Fill (LOMR-F), is a determination that a structure or parcel of land has been elevated by fill above the base flood elevation and is, therefore, no longer exposed to flooding associated with the base flood; in order to qualify for this determination, the fill must have been permitted and placed in accordance with these regulations.

Conditional Letter of Map Revision (CLOMR): A formal review and comment as to whether a proposed flood protection project complies with the minimum National Flood Insurance Program requirements for such projects with respect to delineation of special flood hazard areas. A CLOMR does not amend or revise effective Flood Insurance Rate Maps, Flood Boundary and Floodway Maps, or Flood Insurance Studies; upon submission to and approval of certified as-built documentation, a Letter of Map Revision may be issued.

Lowest Floor: The lowest floor of the lowest enclosed area (including basement) of a structure. This definition excludes an “enclosure below the lowest floor”

which is an unfinished or flood resistant enclosure usable solely for parking of vehicles, building access or storage, in an area other than a basement area, provided that such enclosure is built in accordance with the applicable design requirements specified in these regulations for enclosures below the lowest floor.

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 connected to the required utilities. The term "manufactured home" does not include a "recreational vehicle".

New Construction: Buildings and structures for which the "start of construction" commenced on or after March 15, 1978, including any subsequent improvements to such structures

Person: An individual or group of individuals, corporation, partnership, association, or any other entity, including state and local governments and agencies.

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

Special Flood Hazard Area: The land in the floodplain subject to a one percent or greater chance of flooding in any given year. Special flood hazard areas are designated by the Federal Emergency Management Agency in Flood Insurance Studies and on Flood Insurance Rate Maps as Zones A, AE, AO, and Zone VE. The term includes areas shown on other flood hazard maps that are specifically listed or otherwise described in this Chapter.

Start of Construction: The date of issuance of permits for new construction and substantial improvements, provided 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 slab or footings, the installation of piles, the construction of columns, or any work beyond the stage of excavation; or the placement of a manufactured home on a foundation. Permanent construction does not include land preparation, such as clearing, grading and filling; nor does it include the installation of streets and/or walkways; nor does it include excavation for a basement, footings, piers, or foundations or the erection of temporary forms; nor does it include the installation on the property of accessory structures, 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 (or Building): For floodplain management purposes, a walled and roofed building, including a gas or liquid storage tank, that is principally above ground, as well as a manufactured home.

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

Substantial Improvement: Any reconstruction, rehabilitation, addition, or other improvement of a structure, the cost of which equals or exceeds 50 percent 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. The term does not, however, include 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 prior to the application for a development permit by the local code enforcement official and which are the minimum necessary to assure safe living conditions.

Violation: The failure of a structure or other development to be fully compliant with the community's flood plain management regulations. A structure or other development without the Elevation Certificate, other certifications, or other evidence of compliance required in these regulations is presumed to be in violation until such time that documentation is provided.

§188-3. Administration

A. Designation of the Floodplain Administrator

The Director of Planning Services is hereby appointed to administer and implement these regulations and is referred to herein as the Floodplain Administrator. The Floodplain Administrator is authorized to: (A) Fulfill the duties and responsibilities set forth in these regulations, (B) Delegate duties and responsibilities set forth in these regulations to qualified technical personnel, plan examiners, inspectors, and other employees, or (C) Enter into a written agreement or written contract with another jurisdiction or agency, or private sector entity to administer specific provisions of these regulations. Administration of any part of these regulations by another entity shall not relieve the community of its responsibilities pursuant to the participation requirements of the National Flood Insurance Program as set forth in the Code of Federal Regulations at 44 C.F.R. Section 59.22.

- B. Duties and Responsibilities of the Floodplain Administrator
The duties and responsibilities of the Floodplain Administrator shall include but are not limited to:
1. Review applications for permits to determine whether proposed activities will be located in special flood hazard areas.
 2. Interpret floodplain boundaries and provide flood elevation and flood hazard information.
 3. Advise applicants for new construction or substantial improvement of structures that are located on any coastal barrier within the Coastal Barrier Resources System established by the Coastal Barrier Resources Act that federal flood insurance is not available on such structures; areas subject to this limitation are shown on Flood Insurance Rate Maps as identified undeveloped coastal barriers or Otherwise Protected Areas.
 4. Review applications to determine whether proposed activities will be reasonably safe from flooding.
 5. Review applications to determine whether all necessary permits have been obtained from those Federal, state or local agencies from which prior or concurrent approval is required.
 6. Verify that applicants proposing to alter or relocate a watercourse have notified adjacent communities and the Delaware Department of Natural Resources and Environmental Control (Division of Watershed Stewardship), and have submitted copies of such notifications to the Federal Emergency Management Agency.
 7. Issue permits to develop in special flood hazard areas when the provisions of these regulations have been met, or disapprove the same in the event of noncompliance.
 8. Inspect buildings and lands to determine compliance with these regulations or to determine if noncompliance has occurred or violations have been committed.
 9. Review submitted Elevation Certificates for completeness.
 10. Submit to FEMA data and information necessary to maintain flood hazard maps, including hydrologic and hydraulic engineering analyses prepared by or for Kent County, corrections to labeling or planimetric details, etc.
 11. Maintain and permanently keep all records for public inspection that are necessary for the administration of these regulations including Flood Insurance Rate Maps, Letters of Map Amendment and Revision, records of issuance and denial of permits, determinations of whether development is in or out of special flood hazard areas for the purpose of issuing permits, elevation certificates, other required certifications, variances, and records of enforcement actions taken for violations of these regulations.
 12. Enforce the provisions of these regulations.

13. Assist with and coordinate flood hazard map maintenance activities.
14. Conduct determinations as to whether existing buildings and structures damaged by any cause and located in special flood hazard areas, have been substantially damaged.
15. Make reasonable efforts to notify owners of substantially damaged buildings and structures of the need to obtain a permit prior to repair, rehabilitation, or reconstruction, and to prohibit the non-compliant repair of substantially-damaged buildings except for temporary emergency protective measures necessary to secure a property or stabilize a structure to prevent additional damage.
16. Undertake, as determined appropriate by the Floodplain Administrator due to the circumstances, other actions which may include but are not limited to: issuing press releases, public service announcements, and other public information materials related to permit requests and repair of damaged structures; coordinating with other Federal, state, and local agencies to assist with substantial damage determinations; providing owners of damaged structures materials and other information related to the proper repair of damaged structures in special flood hazard areas; and assisting owners with National Flood Insurance Program claims for Increased Cost of Compliance payments.
17. Notify the Federal Emergency Management Agency when the corporate boundaries of Kent County have been modified.

C. Permits Required

It shall be unlawful for any person or entity to begin construction or other development which is wholly within, partially within, or in contact with any identified special flood hazard area, as established in §188-1.D, including but not limited to: subdivision of land, filling, grading, or other site improvements and utility installations; construction, alteration, remodeling, improvement, replacement, reconstruction, repair, relocation, or expansion of any building or structure; placement or replacement of a manufactured home; recreational vehicles; installation or replacement of storage tanks; or alteration of any watercourse, until a permit is obtained from Kent County. No such permit shall be issued until the requirements of these regulations have been met.

D. Application Required

Application for a permit shall be made by the owner of the property or his/her authorized agent, herein referred to as the applicant, prior to the actual start of construction. The application shall be on a form furnished for that purpose.

1. Application Contents

At a minimum, applications shall include:

- (a) Site plans drawn to scale showing the nature, location, dimensions, existing and proposed topography of the area in question, and the location of existing and proposed structures, excavation, filling, storage of materials, drainage facilities, and other proposed activities.
- (b) Elevation of the existing natural ground where structures are proposed referenced to the datum on the Flood Insurance Rate Map, and an Elevation Certificate that shows the ground elevation and proposed building elevations (identified in Section C of the Elevation Certificate as “Construction Drawings”).
- (c) Delineation of special flood hazard areas, floodway boundaries, flood zones, and base flood elevations. Where surveyed natural ground elevations are lower than the base flood elevations, base flood elevations shall be used to delineate the boundary of special flood hazard areas. If proposed, changes in the delineation of special flood hazard areas shall be submitted to and approved by FEMA in accordance with §188-3.D.2. Where special flood hazard areas are not delineated or base flood elevations are not shown on the flood hazard maps, the Floodplain Administrator has the authority to require the applicant to use information provided by the Floodplain Administrator, information that is available from other sources, or to determine such information using accepted engineering practices. Analyses and studies shall be submitted to and approved by FEMA prior to recordation.
- (d) For subdivision proposals and development proposals containing at least 50 lots or at least 5 acres, whichever is the lesser, and where base flood elevations are not shown on Flood Insurance Rate Maps, hydrologic and hydraulic engineering analyses and studies as required by §188-4.B.4.
- (e) Where other acceptable information is not available, the Floodplain Administrator may permit the use of any of the methods described in FEMA Technical Bulletin 265: *Managing Floodplain Development in Approximate A Areas* or may permit the elevation to be determined by using the elevation of a point on the boundary of the identified floodplain area which is nearest the construction site. The Floodplain Administrator may require the applicant to determine the elevation with hydrologic and hydraulic engineering techniques. Hydrologic and hydraulic analyses shall be undertaken only by professional engineers or

others of demonstrated qualifications, who shall certify that the technical methods used correctly reflect currently accepted technical concepts. Studies, analyses, computations, etc., shall be submitted in sufficient detail to allow thorough technical review by the Department of Planning Services.

- (f) Elevation of the lowest floor, including basement, or elevation of the bottom of the lowest horizontal structural member, as applicable to the flood zone, of all proposed structures, referenced to the datum on the Flood Insurance Rate Maps.
- (g) Drawings, diagrams, or descriptions of the proposed foundation in sufficient detail to demonstrate compliance with the requirements of this ordinance.
- (h) Drawings, diagrams, or descriptions of the proposed location of service equipment and utilities in sufficient detail to demonstrate compliance with the requirements of §188-4.D.4 or D.5.
- (i) Such other material and information as may be requested by the Floodplain Administrator necessary to determine conformance with these regulations.
- (j) For work on an existing structure, including any improvement, addition, repairs, alterations, rehabilitation, or reconstruction, sufficient information to determine if the work constitutes substantial improvement, including:
 - (1) Documentation of the market value of the structure before the improvement is started or before the damage occurred.
 - (2) Documentation of the actual cash value of all proposed improvement work, or the actual cash value of all work necessary to repair and restore damage to the before damaged condition, regardless of the amount of work that will be performed.
- (k) Certifications and/or technical analyses prepared or conducted by an appropriate design professional licensed in the State of Delaware, as appropriate to the type of development activity proposed and required by these regulations:
 - (1) Floodproofing Certificate for dry floodproofed non-residential structures, as required §188-5.C.

- (2) Certification that flood openings that do not meet the minimum requirements of §188-5.B.2(c)(2) are designed to automatically equalize hydrostatic flood forces.
- (3) Certification that the structural design, specifications and plans, and the methods of construction to be used, are in accordance with accepted standards of practice and meet the requirements of §188-6.C.5.
- (4) Technical analyses to document that the flood carrying capacity of any watercourse alteration or relocation will not be diminished and documentation of maintenance assurances as required in §188-5.E.1.
- (5) Hydrologic and hydraulic engineering analyses demonstrating that the cumulative effect of proposed development, when combined with all other existing and anticipated development will not increase the water surface elevation of the base flood by more than one foot in special flood hazard areas where the Federal Emergency Management Agency has provided base flood elevations but has not delineated a floodway, as required by §188-5.E.2.
- (6) Hydrologic and hydraulic engineering analyses of any development proposed to be located in an identified floodway, as required by §188-5.E.1.
- (7) Hydrologic and hydraulic engineering analyses to develop base flood elevations for subdivisions and large-lot developments, as required by §188-4.B or otherwise required by the Floodplain Administrator.

2. Right to Submit New Technical Data

The applicant has the right to seek a Letter of Map Change and to submit new technical data to FEMA regarding base maps, topography, special flood hazard area boundaries, floodway boundaries, and base flood elevations. Such submissions shall be prepared in a format acceptable by FEMA and the Floodplain Administrator shall be notified of such submittal.

3. Requirement to Submit New Technical Data

The Floodplain Administrator shall notify FEMA of physical changes affecting flood hazard areas and flooding conditions by

submitting technical or scientific data as soon as practicable, but not later than six (6) months after the date such information becomes available. The Floodplain Administrator has the authority to require applicants to submit technical data to FEMA for Letters of Map Change.

E. Review, Approval or Disapproval

1. Review

The Floodplain Administrator shall:

- (a) Review applications for development in special flood hazard areas to determine the completeness of information submitted. The applicant shall be notified of incompleteness or additional information required to support the application.
- (b) Review applications for compliance with these regulations after all information required in §188-3.D or identified and required by the Floodplain Administrator has been received.
- (c) Review all permit applications to assure that all necessary permits have been received from those federal, state or local governmental agencies from which prior approval is required. The applicant shall be responsible for obtaining such permits, including but not limited to:
 - (1) Permits issued by the U.S. Army Corps of Engineers under Section 10 of the Rivers and Harbors Act and Section 404 of the Clean Water Act, and the Delaware Environmental Protection Agency under Section 401 of the Clean Water Act.
 - (2) Permits required by the State of Delaware.

2. Expiration of Permit

A permit is valid provided the actual start of construction occurs within 180 days of the date of permit issuance. If the actual start of construction is not within 180 days of the date of permit issuance, requests for extensions shall be submitted in writing. Upon reviewing the request and the permit for continued compliance with these regulations, the Floodplain Administrator may grant, in writing, one or more extensions of time, for periods not more than 180 days each.

F. Inspections

The Floodplain Administrator shall make periodic inspections of development permitted in special flood hazard areas, at appropriate times throughout the period of construction in order to monitor compliance. Such inspections may include:

1. Stake-out inspection, to determine location on the site relative to the special flood hazard area and floodway.
2. Foundation inspection, upon placement of the lowest floor and prior to further vertical construction, to collect information or certification of the elevation of the lowest floor.
3. Enclosure inspection, including crawlspaces, to determine compliance with applicable provisions.
4. Utility inspection, upon installation of specified equipment and appliances, to determine appropriate location with respect to the base flood elevation.

G. Submission Required Prior to Foundation Inspections and Prior to Issuance of a Certificate of Occupancy

The following certifications are required to be submitted by the permittee for development that is permitted in special flood hazard areas prior to the foundation inspection and prior to issuance of a Certificate of Occupancy:

1. For new or substantially improved residential structures or nonresidential structures that have been elevated, the applicant shall:
 - (a) As part of the foundation inspection and placement of the lowest floor, and prior to further vertical construction, submit an Elevation Certificate that shows the ground elevation and floor elevation (identified in Section C of the Elevation Certificate as “Building Under Construction”).
 - (b) Prior to Issuance of the Certificate of Occupancy, submit an Elevation Certificate (identified in Section C of the Elevation Certificate as “Finished Construction”).
2. For nonresidential structures that have been dry floodproofed, a Floodproofing Certificate based on “Finished Construction” (identified in Section II of the Elevation Certificate form).
3. For all development activities subject to the requirements of §188-3 a Letter of Map Revision shall be provided.

H. Flood Insurance Rate Map Use and Interpretation

The Floodplain Administrator shall make interpretations, where needed, as to the exact location of special flood hazard areas, floodplain boundaries, and floodway boundaries. The following shall apply to the use and interpretation of special flood hazard maps and data:

1. In FEMA-identified special flood hazard areas where base flood elevation and floodway data have not been identified and in areas where FEMA has not identified special flood hazard areas, any other flood hazard data available from a federal, state, or other source shall be reviewed and reasonably used with the approval of the Floodplain Administrator.
2. Special flood hazard area delineations, base flood elevations, and floodway boundaries on FEMA maps and in FEMA studies shall take precedence over delineations, base flood elevations, and floodway boundaries by any other source that reflect a reduced special flood hazard area, reduced floodway width and/or lower base flood elevations, unless, with the approval of the Floodplain Administrator, such data are submitted to and approved by FEMA.
3. Other sources of data shall be reasonably used, with the approval of the Floodplain Administrator, if they show increased base flood elevations and/or larger floodway areas than are shown on FEMA flood maps and studies and if such data are submitted to and approved by FEMA.
4. When Preliminary Flood Insurance Rate Maps and/or Flood Insurance Study have been provided by FEMA:
 - (a) Upon the issuance of a Letter of Final Determination by FEMA, the preliminary flood hazard data shall be used and shall replace all flood hazard data previously provided from FEMA for the purposes of administering these regulations.
 - (b) Prior to the issuance of a Letter of Final Determination by FEMA, the use of preliminary flood hazard data shall be required only where no base flood elevations and/or floodway areas were determined or where the preliminary base flood elevations or floodway areas exceed the base flood elevations and/or floodway widths in existing flood hazard data provided by FEMA. Such preliminary data may be subject to change and/or appeal to FEMA.

§188-4. Requirements in All Special Flood Hazard Areas

A. Application of Requirements

The general requirements of this section apply to all development proposed within special flood hazard areas identified in §188-1.D.

B. Subdivision and Developments

1. All subdivision and development proposals shall be consistent with the need to minimize flood damage and are subject to all applicable standards in these regulations. Subdivision within the floodplain is prohibited in accordance with Chapter 187 Subdivision and Land Development.
2. All subdivision and development proposals shall have utilities and facilities such as sewer, gas, electrical, and water systems located and constructed to minimize flood damage.
3. All subdivision and developments proposals shall have adequate drainage provided to reduce exposure to flood damage.
4. All subdivision proposals and development proposals containing at least 50 lots or at least 5 acres, whichever is the lesser, in FEMA-delineated special flood hazard areas where base flood elevation data are not available, shall be supported by hydrologic and hydraulic engineering analyses that determine base flood elevations and floodway delineations. The analyses shall be prepared by a Delaware licensed professional engineer in a format required by FEMA for a Conditional Letter of Map Revision or Letter of Map Revision. Submittal requirements and processing fees shall be the responsibility of the applicant. In subdivisions in which the proposed lots are located outside of the floodplain, completion of the Study may be waived provided the subject area is designated and restricted as open space or conservation area.

C. Protection of Water Supply and Sanitary Sewage Systems

1. New and replacement water supply systems shall be designed to minimize or eliminate infiltration of flood waters into the systems.
2. New and replacement sanitary sewage systems shall be designed to minimize or eliminate infiltration of floodwaters into systems and discharges from systems into floodwaters.
3. On-site waste disposal systems shall be located to avoid impairment to or contamination from them during conditions of flooding.

D. Buildings and Structures

All new construction of buildings and structures, including placement of manufactured homes and substantial improvements to existing buildings and

structures, that are to be located, in whole or in part, in special flood hazard areas shall meet the following requirements

1. Be designed (or modified) and constructed to safely resist flood loads. The construction shall provide a complete load path capable of transferring all loads from their point of origin through the load-resisting elements to the foundation. Buildings and structures shall be designed, connected and anchored to resist flotation, collapse or permanent lateral movement due to structural loads and stresses from flooding equal to the design flood elevation, including hydrodynamic and hydrostatic loads and the effects of buoyancy.
2. Be constructed by methods and practices that minimize flood damage.
3. Use flood damage-resistant materials below the elevation of the lowest floor. See FEMA Technical Bulletin #2 – *Flood Damage-Resistant Materials Requirements* and FEMA Technical Bulletin #8 – *Corrosion Protection for Metal Connectors in Coastal Areas*.
4. Have electrical systems, equipment and components, and heating, ventilating, air conditioning, and plumbing appliances, plumbing fixtures, duct systems, and other service equipment located at or above the elevation of the lowest floor. Electrical wiring systems are permitted to be located below the elevation of the lowest floor provided they conform to the provisions of the electrical part of this code for wet locations. If replaced as part of a substantial improvement, electrical systems, equipment and components, and heating, ventilation, air conditioning, and plumbing appliances, plumbing fixtures, duct systems, and other service equipment shall meet the requirements of this section. See FEMA Technical Bulletin #4 – *Elevator Installation*.
5. As an alternative to Item D.4 above, electrical systems, equipment and components, and heating, ventilating, air conditioning, and plumbing appliances, plumbing fixtures, duct systems, and other service equipment are permitted to be located below the elevation of the lowest floor provided that they are designed and installed to prevent water from entering or accumulating within the components and to resist hydrostatic and hydrodynamic loads and stresses, including the effects of buoyancy, during the occurrence of the base flood.
6. In special flood hazard areas other than coastal high hazard areas (Zones A, AE, and AO), meet the specific requirements of §188-5.
7. In all coastal high hazard areas (Zone VE), meet the specific requirements of §188-6.

8. In a special flood hazard area with more than one designation (Zones A, AE, and AO, floodway, Zones VE), meet the requirements of the most restrictive designation.

E. Fill

1. Disposal of fill, including but not limited to rubble, construction debris, woody debris, and trash, shall not be permitted in special flood hazard areas.
2. Where permitted by §188-5 (Zones A, AE, and AO), fill placed for the purpose of raising the ground level and to support a building or structure shall meet the following requirements:
 - (a) Extend laterally from the building footprint to provide for adequate access, as a function of use; the Floodplain Administrator may seek advice from the State Fire Marshal's Office and/or the local fire services agency.
 - (b) Placed and compacted to provide for stability under conditions of rising and falling floodwaters and resistance to erosion, scour, and settling.
 - (c) Consist of soil or rock materials only.
 - (d) Sloped no steeper than one (1) vertical on two (2) horizontal, unless approved by the Floodplain Administrator.
 - (e) Designed with provisions for adequate drainage and no adverse effect on adjacent properties.
3. Fill placed for a purpose other than to support a building or structure shall meet the requirements of §188-4.E.2 (b) through (e).

F. Historic Structures

Repair, alteration, or rehabilitation of historic structures shall be subject to the requirements of these regulations unless a determination is made that compliance with these regulations will preclude the structure's continued designation as a historic structure and a variance is granted in accordance with §188-8 and such variance is the minimum necessary to preserve the historic character and design of the structure.

G. Recreational Vehicles

1. Recreational vehicles in special flood hazard areas shall be fully licensed and ready for highway use, and shall be placed on a site for less than 180 consecutive days.

2. Recreational vehicles that are not fully licensed and ready for highway use, or that are to be placed on a site for more than 180 consecutive days, shall meet the requirements of §188-5.B.3 for manufactured homes or §188-6.C.4, as applicable.

H. Gas or Liquid Storage Tanks

1. Underground tanks in special flood hazard areas shall be anchored to prevent flotation, collapse or lateral movement resulting from hydrostatic loads, including the effects of buoyancy, during conditions of the base flood.
2. Above-ground tanks in special flood hazard areas shall be elevated and anchored a minimum of 18 inches above the base flood elevation or shall be anchored at-grade and designed and constructed to prevent flotation, collapse, or lateral movement resulting from hydrodynamic and hydrostatic loads, including the effects of buoyancy, during conditions of the base flood.
3. In special flood hazard areas, tank inlets, fill openings, outlets and vents shall be:
 - (a) At or above the base flood elevation or fitted with covers designed to prevent the inflow of floodwater or outflow of the contents of the tanks during conditions of the base flood.
 - (b) Anchored to prevent lateral movement resulting from hydrodynamic and hydrostatic loads, including the effects of buoyancy, during conditions of the base flood.

I. Storage.

No new construction which stores materials that are buoyant, flammable, explosive, or in times of flooding could be injurious to human, animal or plant life shall be stored below the base flood elevation.

J. Manufactured Home Parks.

1. For all new manufactured home parks or expansions to existing manufactured home parks and for existing manufactured home parks where the repair, construction, or improvement of streets, utilities, and pads equals or exceeds 50% of the value of the streets, utilities, and pads before the repair, reconstruction, or improvement have commenced, the following requirements shall be met for any construction within the floodway fringe or approximated floodplain:

- (a) Manufactured home berthing spaces or lots shall be elevated on compacted fill or on pilings so that the lowest floor of each manufactured home will be at least 18 inches above the base flood elevation.
- (b) Adequate surface drainage and access for a manufactured home hauler shall be provided.
- (c) When manufactured homes are to be elevated on pilings, lots shall be large enough to permit steps, piles shall be placed in stable soil no more than 10 feet apart, and the reinforcement shall be provided for pilings more than six feet above ground level.

§188-5. Requirements in Special Flood Hazard Areas Other Than Coastal High Hazard Areas

A. General Requirements

In addition to the general requirements of §188-4, the requirements of this section apply to all development proposed in special flood hazard areas other than coastal high hazard areas. These areas include Zones A, AE, and AO.

B. Residential Structures and Residential Portions of Mixed Use Structures

1. Elevation Requirements

- (a) The lowest floor (including basement) shall be elevated to 18 inches above the base flood elevation.
- (b) In areas of shallow flooding (Zone AO), the lowest floor (including basement) shall be elevated at least to 18 inches above the highest adjacent grade as the depth number specified in feet on the Flood Insurance Rate Map; or at least 2 feet plus 18 inches if a depth number is not specified; adequate drainage paths shall be provided to guide floodwaters around and away from the structure.
- (c) Enclosures below the lowest floor shall meet the requirements of §188-5.B.2.

2. Enclosures Below the Lowest Floor

- (a) Enclosures below the lowest floor shall be used solely for parking of vehicles, building access, crawlspaces, or limited storage.
- (b) Enclosures below the lowest floor shall be constructed using flood damage-resistant materials. See FEMA Technical Bulletin #2 – *Flood Damage-Resistant Materials Requirements*.
- (c) Enclosures below the lowest floor (including crawlspaces) shall be provided with flood openings which shall meet the following

criteria (see FEMA Technical Bulletin #1 – *Openings in Foundation Walls and Walls of Enclosures*):

- (1) There shall be a minimum of two openings on different sides of each enclosed area; if a building has more than one enclosed area below the design flood elevation, each area shall have openings on exterior walls.
 - (2) The total net area of all openings shall be at least 1 square inch for each square foot of enclosed area, or the openings shall be designed and certified by a registered engineer or architect to provide for equalization of hydrostatic flood forces on exterior walls by allowing for the automatic entry and exit of floodwaters.
 - (3) The bottom of each opening shall be 1 foot or less above the adjacent ground level.
 - (4) Any louvers, screens or other opening covers shall allow the automatic flow of floodwaters into and out of the enclosed area.
 - (5) Where installed in doors and windows, openings that meet requirements of §188-5.B.2(c)(1) through (4) above, are acceptable; however, doors and windows without installed openings do not meet the requirements of this section.
- (d) Crawlspaces shall have the finished interior ground level equal to or higher than the outside finished ground level on at least one entire side of the foundation wall.

3. Manufactured Homes

New or replacement manufactured homes, including substantial improvement of existing manufactured homes, shall:

- (a) Be elevated on a permanent, reinforced foundation that raises the lowest floor to 18 inches above the base flood elevation and is otherwise in accordance with §188-5.B.1.
- (b) Be installed in accordance with the anchor and tie-down requirements of the building code or the manufacturer's written installation instructions and specifications.
- (c) Have enclosures below the elevated manufactured home, if any, meet the requirements of §188-5.B.2.
- (d) All Manufactured homes shall be anchored to resist flotation, collapse, or lateral movement in addition to applicable state or County anchoring requirements for wind forces.
 - (1) Over-the-top ties shall be provided at each of the four corners of the manufactured home with two additional ties

per side of intermediate locations. Manufactured homes less than 50 feet long require one additional tie per side.

- (2) Frame ties shall be provided at each corner of the home with five additional ties per side at intermediate points, with manufactured homes less than 50 feet long requiring four additional ties per side.
- (3) All components of the anchoring system shall be capable of carrying a force of 4,800 pounds
- (4) Any additions to a manufactured home shall be similarly anchored.

For the purpose of this requirement, the lowest floor of a manufactured home is the bottom of the lowest horizontal supporting member of the lowest floor.

C. Nonresidential Structures and Nonresidential Portions of Mixed Use Structures

1. Elevation Requirements

- (a) The lowest floor (including basement) shall be elevated to at least 18 inches above the base flood elevation or the structure shall be dry floodproofed in accordance with §188-5.C.2.
- (b) In areas of shallow flooding (Zone AO), if not dry floodproofed, the lowest floor (including basement) shall be elevated at least 18 inches above the highest adjacent grade as the depth number specified in feet on the Flood Insurance Rate Map; or at least 2 feet plus 18 inches if a depth number is not specified; adequate drainage paths shall be provided to guide floodwaters around and away from the structure.
- (c) Enclosures below the lowest floor, if not dry floodproofed, shall meet the requirements of §188-5.B.2.

2. Dry Floodproofing Requirements

Dry floodproofed structures, together with attendant utility and sanitary facilities, shall:

- (a) Be designed to be dry floodproofed such that the structure is watertight with walls and floors substantially impermeable to the passage of water to the level of the base flood elevation plus 18 inches. In areas of shallow flooding (Zone AO), the structure shall be dry floodproofed at least as high above the highest adjacent grade as the depth number specified in feet on the Flood Insurance Rate Map plus 18 inches, or at least 2 feet plus 18 inches if a depth number is not specified.

- (b) Have structural components capable of resisting hydrostatic and hydrodynamic loads and effects of buoyancy.
- (c) Be certified by a Delaware licensed professional engineer or licensed professional architect with a Floodproofing Certificate, that the design and methods of construction meet the requirements of this section. Refer to FEMA Technical Bulletin #3 - *Non-Residential Floodproofing – Requirements and Certification for guidance.*

D. Accessory Structures

Accessory structures shall meet the requirements of these regulations. Accessory structures that have a footprint of no more than 200 square feet may be allowed without requiring elevation or floodproofing provided such structures meet all of the following requirements:

- 1. Useable only for parking or limited storage;
- 2. Constructed with flood damage-resistant materials below the base flood elevation;
- 3. Constructed and placed to offer the minimum resistance to the flow of flood waters;
- 4. Firmly anchored to prevent flotation, collapse, and lateral movement;
- 5. Electrical service and mechanical equipment elevated to or above the level of the base flood elevation plus 18 inches; and
- 6. Equipped with flood openings that meet the requirements of Section §188-5.B.2.
- 7. For guidance, see FEMA Technical Bulletin #7 - *Wet Floodproofing Requirements.*

E. Protection of Flood Carrying Capacity

- 1. Development in Floodways.
 - (a) Within any floodway area designated on the Flood Insurance Rate Map, no encroachments, including fill, new construction, substantial improvements, or other development shall be permitted unless it has been demonstrated through hydrologic and hydraulic engineering analysis that the proposed encroachment would not result in any increase in flood levels within the community during the occurrence of the base flood discharge. Such technical data shall be submitted to the Floodplain Administrator and to FEMA. The analyses shall be prepared by a Delaware licensed professional engineer in a format required by FEMA for a Conditional Letter of Map Revision or Letter of Map Revision. Submittal requirements and processing fees shall be the responsibility of the applicant.

- (b) The proposed development activity may be permitted if the analyses demonstrate that the activity:
- (1) Will not result in any increase in the base flood elevation;
or
 - (2) Will result in an increase in the base flood elevation, provided a Conditional Letter of Map Revision has been issued by FEMA and the applicant completes all of the following:
 - [a] Submits technical data required in §188-3.D.1(k)(5);
 - [b] Evaluates alternatives which would not result in increased base flood elevations and an explanation why these alternatives are not feasible;
 - [c] Certifies that no structures are located in areas which would be impacted by the increased base flood elevation;
 - [d] Documents that individual legal notices have been delivered to all impacted property owners to explain the impact of the proposed action on their properties;
 - [e] Requests and receives concurrence of the County Administrator of Kent County and the Chief Executive Officer of any other community impacted by the proposed actions; and
 - [f] Notifies the Delaware Department of Natural Resources and Environmental Control (Division of Watershed Stewardship).
- (c) Fences, except two-wire fences, or other matter which may impede, retard or change the direction of the flow of water or that will catch or collect debris which is carried by such water, or that is placed where the natural flow of the stream of floodwaters would carry the same downstream to the damage or detriment of wither public or private property adjacent to the floodplain.

2. Development in Areas with Base Flood Elevations but No Floodways

For development activities in a special flood hazard area with base flood elevations but no designated floodways, the applicant shall develop hydrologic and hydraulic engineering analyses and technical data reflecting the proposed activity and shall submit such analyses and data to the Floodplain Administrator and to FEMA. The analyses shall be prepared by a Delaware licensed professional engineer in a format

required by FEMA for a Conditional Letter of Map Revision or Letter of Map Revision. Submittal requirements and processing fees shall be the responsibility of the applicant.

The proposed development activity may be permitted if the analyses demonstrate that the cumulative effect of the proposed development activity, when combined with all other existing and potential special flood hazard area encroachments will not increase the base flood elevation more than 0.1 (one-tenth) foot at any point.

3. Deliberate Alterations of a Watercourse

For the purpose of these regulations, a watercourse is deliberately altered when a person causes a change to occur within its banks. Deliberate changes to a watercourse include, but are not limited to: widening, deepening or relocating of the channel; installation of culverts; construction of bridges, and excavation or filling of the channel or watercourse banks.

For any proposed deliberate alteration of a watercourse, the applicant shall develop hydrologic and hydraulic engineering analyses and technical data reflecting such changes and submit such technical data to the Floodplain Administrator and to FEMA. The analyses shall be prepared by a Delaware licensed professional engineer in a format required by FEMA for a Conditional Letter of Map Revision or Letter of Map Revision. Submittal requirements and processing fees shall be the responsibility of the applicant.

The proposed alteration of a watercourse may be permitted upon submission, by the applicant, of the following:

- (a) Documentation of compliance with §188-5.E.1 if the alteration is in a floodway or §188-5.E.2 if the alteration is in a watercourse with base flood elevations but no floodway.
- (b) A description of the extent to which the watercourse will be altered or relocated as a result of the proposed development.
- (c) A certification by a Delaware licensed professional engineer that the bankful flood-carrying capacity of the watercourse will not be diminished.
- (d) Evidence that adjacent communities, the U.S. Army Corps of Engineers, and the Delaware Department of Natural Resources and Environmental Control (Division of Watershed Stewardship) have been notified of the proposal and evidence that such notifications have been submitted to the Federal Emergency Management Agency.
- (e) Evidence that the applicant shall be responsible for providing the necessary maintenance for the altered or relocated portion of the

watercourse so that the flood carrying capacity will not be diminished. The Floodplain Administrator may require the permit holder to enter into an agreement with Kent County specifying the maintenance responsibilities; if an agreement is required, the permit shall be conditioned to require that the agreement be recorded on the deed of the property which shall be binding on future owners.

§188-6. Requirements in Coastal High Hazard Areas

A. General Requirements

In addition to the general requirements of Section D, the requirements of this section apply to all development proposed in coastal high hazard areas, also referred to collectively as “Zone V.”

B. Location and Site Preparation

1. The placement of structural fill for the purpose of elevating buildings is prohibited.
2. All new construction shall be located landward of the reach of mean high tide.
3. Generally, any reduction in the dimensions of dunes increases the potential for flood damage. Site preparations shall not alter sand dunes unless an engineering analysis demonstrates that the potential for flood damage is not increased.

C. Residential and Nonresidential Structures

1. Foundations

- (a) Buildings and structures shall be supported on pilings or columns and shall be adequately anchored to such pilings or columns. Piling shall have adequate soil penetrations to resist the combined wave and wind loads (lateral and uplift). Water loading values used shall be those associated with the base flood. Wind loading values shall be those required by applicable building standards. Pile embedment shall include consideration of decreased resistance capacity caused by scour of soil strata surrounding the piling.
- (b) Slabs, pools, pool decks and walkways shall be located and constructed to be structurally independent of buildings and structures and their foundations to prevent transfer of flood loads to the buildings and structures during conditions of flooding, scour or erosion from wave-velocity flow conditions, and shall be designed to minimize debris impacts to adjacent properties and public infrastructure.

2. Elevation Requirements

- (a) The bottom of the lowest horizontal structural member supporting

the lowest floor (excluding the pilings, pile caps, columns, grade beams, and bracing), shall be located at least 18 inches above the base flood elevation.

- (b) Basement floors that are below grade on all sides are prohibited.
- (c) The space below the lowest floor shall either be free of obstruction or, if enclosed by walls, shall meet the requirements of §188-6.C.3. See FEMA Technical Bulletin #5 – Free of Obstruction Requirements.

3. Enclosures Below the Lowest Floor

- (a) Enclosures below the lowest floor shall be used solely for parking of vehicles, building access or storage.
- (b) Walls and partitions are permitted below the elevated floor, provided that such walls and partitions are designed to break away under flood loads and are not part of the structural support of the building or structure. See FEMA Technical Bulletin #9 – Design and Construction Guidance for Breakaway Walls.
- (c) Electrical, mechanical, and plumbing system components shall not be mounted on or penetrate through walls that are designed to break away under flood loads.
- (d) Walls intended to break away under flood loads shall be constructed with insect screening or open lattice, or shall be designed to break away or collapse without causing collapse, displacement or other structural damage to the elevated portion of the building or supporting foundation system. Such walls, framing and connections shall have a design safe loading resistance of not less than 10 pounds per square foot and no more than 20 pounds per square foot; or
- (e) Where wind loading values of the local building requirements exceed 20 pounds per square foot, the applicant shall submit a certification prepared and sealed by a Delaware licensed professional engineer or licensed professional architect that:
 - (1) The walls and partitions below the lowest floor have been designed to collapse from a water load less than that which would occur during the base flood.
 - (2) The elevated portion of the building and supporting foundation system have been designed to withstand the effects of wind and flood loads 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 the local building requirements.

4. Manufactured Homes

New or replacement manufactured homes, including substantial improvement of existing manufactured homes, shall:

- (a) Meet the foundation requirements of §188-6.C.1.
- (b) Meet the elevation requirements of §188-6.C.2, provided the bottom of the lowest horizontal structural member is at least 18 inches above the base flood elevation.
- (c) Meet the enclosure requirements of §188-6.C.3.
- (d) Meet the anchoring requirements of §188-5.B.3.d.
- (e) Be installed in accordance with the anchor and tie-down requirements of the building code or the manufacturer's written installation instructions and specifications.

5. Certification of Design

The applicant shall include in the application a certification prepared by a Delaware licensed professional engineer or a licensed professional architect that the design and methods of construction to be used meet the applicable criteria of these regulations.

§188-7. Areas Within the Limit of Moderate Wave Action/Coastal A Zones

- A. Where a Limit of Moderate Wave Action is delineated on the FIRM, special flood hazard areas that are subject to wave heights between 1 ½ feet and 3 feet shall be designated as Coastal A Zones.
- B. Property owners in Coastal A Zones are encouraged, but not required, to utilize the construction standards in §188-6 for Coastal High Hazard Areas (Zone V).
- C. If property owners in Coastal A Zones elect to utilize the construction standards in §188-6:
 1. In addition to the requirements for enclosures below the lowest floors in §188-6.C.3, enclosures shall be equipped with flood openings that meet the requirements of §188-5.B.2(c).
 2. The additional cost to use the construction standards in §188-6 instead of the construction standards in §188-5 will not be used in the calculation of the building permit fee.

§188-8. Variances

Kent County's Board of Adjustment shall have the power to authorize, in specific cases, such variances from the requirements of these regulations, not inconsistent with Federal regulations, as will not be contrary to the public interest where, owing to special conditions of the lot or parcel, a literal enforcement of the

provisions of these regulations would result in unnecessary hardship or exceptional practical difficulty.

A. Application for a Variance

1. Any owner, or agent thereof, of property for which a variance is sought shall submit an application for a variance to the Floodplain Administrator.
2. At a minimum, such application shall contain the following information: Name, address, and telephone number of the applicant; legal description of the property; parcel map; description of the existing use; description of the proposed use; location of the floodplain; description of the variance sought; and reason for the variance request. Each variance application shall specifically address each of the considerations in §188-8.B and the limitations and conditions of §188-8.C

B. Considerations for Variances

In considering variance applications, the Board of Adjustment shall consider and make findings of fact on all evaluations, all relevant factors, requirements specified in other sections of these regulations, and the following factors:

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 development and its contents (if applicable) to flood damage and the effect of such damage on the individual owner.
4. The importance of the services provided by the proposed development to the community.
5. The availability of alternative locations for the proposed use which are not subject to, or are subject to less, flooding or erosion damage.
6. The necessity to the facility of a waterfront location, where applicable, or if the facility is a functionally dependent use.
7. The compatibility of the proposed use with existing and anticipated development.
8. The relationship of the proposed use to the comprehensive plan for 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.
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.

C. Limitations for Variances

1. An affirmative decision on a variance request shall only be issued upon:
 - (a) A showing of good and sufficient cause. A “good and sufficient” cause is one that deals solely with the physical characteristics of the property and cannot be based on the character of the planned construction or substantial improvement, the personal characteristics of the owner or inhabitants, or local provisions that regulate standards other than health and public safety standards.
 - (b) A determination that failure to grant the variance would result in exceptional hardship due to the physical characteristics of the property.
 - (c) Increased cost or inconvenience of meeting the requirements of these regulations does not constitute an exceptional hardship to the applicant.
 - (d) A determination that the granting of a variance for development within any designated floodway, or special flood hazard area with base flood elevations but no floodway, will not result in increased flood heights beyond that which is allowed in these regulations.
 - (e) A determination that the granting of a variance will not result in additional threats to public safety; extraordinary public expense, nuisances, fraud on or victimization of the public, or conflict with existing local laws.
 - (f) A determination that the structure or other development is protected by methods to minimize flood damages.
 - (g) A determination that the variance is the minimum necessary, considering the flood hazard, to afford relief.
2. Upon consideration of the individual circumstances, the limitations and conditions, and the purposes of these regulations, the Board of Adjustment may attach such conditions to variances as it deems necessary to further the purposes of these regulations.
3. The Board of Adjustment shall notify any applicant to whom a variance is granted for a building or structure with a lowest floor elevation below the base flood elevation that the variance is to the floodplain management requirements of these regulations only, and that the cost of federal flood insurance will be commensurate with the increased risk.

§188-9. Enforcement

A. Compliance Required

1. No structure or land development shall hereafter be located, erected, constructed, reconstructed, repaired, extended, converted, enlarged or altered without full compliance with these regulations and all other applicable regulations which apply to uses within the jurisdiction of these regulations.
2. Failure to obtain a permit shall be a violation of these regulations and shall be punishable in accordance with Item C below.
3. Permits issued on the basis of plans and applications approved by the Floodplain Administrator authorize only the specific activities set forth in such approved plans and applications or amendments thereto. Use, arrangement, or construction of such specific activities that is contrary to that authorized shall be deemed a violation of these regulations.

B. Notice of Violation

Violations of the provisions of this Chapter shall be subject to the procedures outlined in Kent County Code, Chapter 90, Violations and Complaints and subject to a 30 day compliance order unless a shorter compliance term is justified by risk to life and safety.

C. Violations and Penalties

1. In case any building is erected, constructed, reconstructed, altered, repaired or converted or any building or land is improved or used in whole or part in violation of this chapter, the Division Head of Inspections and Enforcement, any other Code Enforcement Official or attorney hired by or retained by the County is authorized and directed to institute, prosecute and take all reasonably necessary actions to conclude any appropriate civil or criminal action to put an end to such violation.
2. In case any building or structure is or is proposed to be erected, constructed, reconstructed, altered, maintained or used or any land is or is proposed to be used in violation of this article or of any regulation or provision of any regulation or change thereof enacted or adopted by the County government, the attorney thereof, or any owner of real estate within the district in which such building, structure or land is situated, may, in addition to other remedies provided by law, institute injunction, mandamus, abatement or any other appropriate action or actions, proceeding or proceedings to prevent, enjoin, abate or remove such unlawful erection, construction, reconstruction, alteration, maintenance or use.
3. Any person or corporation who shall violate any of the provisions of this chapter or fail to comply therewith, or with any of the requirements thereof, or who shall build or alter any building in violation of any detailed statement or plan submitted and approved hereunder, shall be guilty of a misdemeanor or of a civil offense, and shall be liable to a fine of not less than \$100 nor more than \$1,000 or be imprisoned not more than 10 days,

or both, and each and every day such violation shall continue shall be deemed a separate offense. The Division Head of Inspections and Enforcement or his designee, any other Code Enforcement Official or attorney hired by or retained by the County shall bring charges of any violation(s) pursuant to this provision in a court of competent jurisdiction of the State of Delaware in and for Kent County, which court shall have original jurisdiction for such matters. The minimum fine of \$100 is mandatory and is not subject to suspension or reduction.

4. The owner or owners of any building or premises, or part thereof, where anything in violation of this chapter shall be placed or shall exist, and any architect, builder, contractor, agent, person or corporation employed in connection therewith who have assisted in the commission of any such violation shall be guilty of a separate offense and upon conviction thereof shall be fined and/or imprisoned as hereinbefore provided.

§188-10. Liability

The granting of a permit or approval of a site plan in an identified flood-prone area shall not constitute a representation, guaranty, or warranty of any kind by the County or by any official or employee thereof of the practicability or safety of the proposed use, and shall create no liability upon the County, its officials, or employees.

Section 3. Severability.

The provisions of this Ordinance are severable and if any of its provisions or any sentence, clause, or paragraph or the application thereof to any person or circumstance shall be held unconstitutional or violative of the Laws of the State of Delaware by any court of competent jurisdiction, the decision of such court shall not affect or impair any of the remaining provisions which can be given effect without the invalid provision or application.

Section 4. Effective Date.


This ordinance shall become effective upon the effective day of the updated Flood Insurance Rate Maps – July 7, 2014.

ADOPTED BY THE LEVY COURT OF KENT
COUNTY, DELAWARE



President, Kent County Levy Court

This 25th day of March, 2014

ATTEST: 

Clerk of the Peace

Synopsis: This ordinance removes the Floodplain Regulations from Chapter 205, Zoning; creates a new Code Chapter 188, Floodplain Requirements; increases the required freeboard from 12 inches to 18 inches; and creates an incentive program for constructing to the V Zone standard in the Limit of Moderate Wave Action.