FLOOD DAMAGE REDUCTION ORDINANCE
CITY OF NEW CASTLE, DELAWARE

ORDINANCE NO. 2014-499

AN ORDINANCE BY THE CITY COUNCIL OF THE CITY OF NEW CASTLE AMENDING THE NEW CASTLE CITY CODE OF ORDINANCES TO REPEAL CHAPTER 130 AND TO ADOPT A NEW CHAPTER 130; TO ADOPT FLOOD HAZARD MAPS, TO DESIGNATE A FLOODPLAIN ADMINISTRATOR, TO ADOPT ADMINISTRATIVE PROCEDURES, AND TO ADOPT CRITERIA FOR DEVELOPMENT IN FLOOD HAZARD AREAS, AND FOR OTHER PURPOSES; TO PROVIDE FOR APPLICABILITY; REPEALER; AND AN EFFECTIVE DATE.

WHEREAS, the City Council of the City of New Castle 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 the City of New Castle 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, the the City of New Castle was accepted for participation in the National Flood Insurance Program on December 7, 1973and the City Council desires to continue to meet the requirements of Title 44 Code of Federal Regulations, Sections 59 and 60, necessary for such participation; and

WHEREAS, in 2011 the General Assembly passed and the Governor signed Senate Bill 64 into law in response to concerns about Delaware's vulnerability to flooding and drainage challenges, and the City Council proposes to adopt selected standards recommended by the Floodplain and Drainage Advisory Committee, including the following:

Standard 1 - Flood Studies Required in unmapped floodplains
Standard 2 – Fllod Study Required in Zone A (no BFE) FEMA mapped floodplains
Standard 3 – Only FEMA approved floodplain and BFE data shall be shown on record plans and development documents
Standard 4 – Use accepted base flood elevation in building permit application documents
Standard 5 - Fllodplain information included on permitting documentation
Standard 6 – Require use of elevation aand flood proofing certificates
Standard 7 – Require 18 inches of Freeboard
Standard 8 – Require 18 inches of free board for manufactured homes

Standard 9 – Shallow fill above BFE will not exempt a structure from floodplain fregulations
Standard 10 – Hydrostatic Venting required
Standard 11- Prohibit below-grade crawl spaces or enclosures
Standard 13 – Prohibit new non-water dependent structures in fllodplains in newly subdivided lands;

NOW, THEREFORE, BE IT ORDAINED by the City Council of the City of New Castle that the following floodplain management regulations are hereby adopted.

SECTION 1. This ordinance specifically repeals and replaces the following ordinance(s) and regulation(s): Chapter 130 of the City Code.

SECTION 1.0 GENERAL PROVISIONS

1.1 Findings

The Federal Emergency Management Agency (FEMA) has identified special flood hazard areas within the boundaries of the City of New Castle. 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. Development that is inadequately elevated, improperly floodproofed, or otherwise unprotected from flood damage also contributes to the flood loss.

The City Council, by resolution, agreed to meet the requirements of the National Flood Insurance Program and was accepted for participation in the program on December 7, 1973. As of that date or the initial effective date of the New Castle Flood Insurance Rate Map, all development and new construction as defined herein, are to be compliant with these regulations.

1.2 Statement of Purpose

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

(A) Protect human life, health and welfare;

(B) Encourage the utilization of appropriate construction practices in order to prevent or minimize flood damage in the future;

(C) Minimize flooding of water supply and sanitary sewage disposal systems;

(D) Maintain natural drainage;

(E) 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;

(F) Minimize the need for rescue and relief efforts associated with flooding and generally undertaken at the expense of the general public;

(G) Minimize prolonged business interruptions;

(H) Minimize damage to public facilities and other utilities such as water and gas mains, electric, telephone and sewer lines, streets and bridges;

(I) Reinforce that those who build in and occupy special flood hazard areas should assume responsibility for their actions;

(J) Minimize the impact of development on adjacent properties within and near flood prone areas;

(K) Provide that the flood storage and conveyance functions of the floodplain are maintained;

(L) Minimize the impact of development on the natural and beneficial functions of the floodplain;

(M) Prevent floodplain uses that are either hazardous or environmentally incompatible; and

(N) 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.

1.3 Areas to Which These Regulations Apply

These regulations shall apply to all special flood hazard areas within the jurisdiction of the City of New Castle, as identified in Section 1.4.

1.4 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:

(A) The FEMA Flood Insurance Study for the New Castle County, Delaware and Incorporated Areas dated January 17, 2007 and all subsequent amendments and/or the most recent revision thereof.

(B) The FEMA Flood Insurance Rate Map for New Castle County, Delaware and Incorporated Areas dated January 17, 2007 and all subsequent amendments and/or the most recent revision thereof.

(C) 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.

(D) The City of New Castle may identify and regulate new local flood hazard or ponding areas. These areas should be delineated and adopted on a “Local Flood Hazard Map” using best available topographic data and locally derived information such as flood of record, historic high water marks or approximate study methodologies.

(E) Where field surveyed topography indicates that ground elevations are below the closest applicable base flood elevation, even in areas not delineated as a special

flood hazard area on a flood hazard map, the area shall be considered as special flood hazard area.

Maps and studies that establish special flood hazard areas are on file at the City offices, 220 Delaware Street, New Castle, DE 19720.

1.5 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.

1.6 Interpretation

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

(A) Considered as minimum requirements;

(B) Liberally construed in favor of the governing body;

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

(D) Where a provision of these regulations may be in conflict with a state or Federal law, such state or Federal law shall take precedence, where more restrictive.

1.7 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 the City of New Castle, 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.

1.8 Severability

Should any section or provision of these regulations be declared by the courts to be unconstitutional or invalid, such decision shall not affect the validity of the regulations as a whole, or any part thereof other than the part so declared to be unconstitutional or invalid.

SECTION 2.0 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 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 AE Zone – The portion of the Coastal High Hazard Area with wave heights between 1.5 feet and 3.0 feet and bounded by a line labeled the "Limit of Moderate Wave Action (LiMWA) on a Flood Insurance Rate Map (FIRM). VE Zone floodplain construction standards are applied to development, new construction and substantial improvements in the Coastal AE Zone.

Coastal High Hazard Area: An area of special flood hazard extending from offshore to the inland limit of a primary frontal dune along an open coast and any other area subject to high velocity wave action from storms or seismic sources. Coastal High Hazard Areas also are referred to as "Zone V" or "V Zones" and are designated on Flood Insurance Rate Maps (FIRMs) as flood insurance risk Zone VE and coastal Zone AE bounded by a line labeled "Limit of Moderate Wave Action (LiMWA)".

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.

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.

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 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. See sections where specific TBs are identified.

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").

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; or
(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.

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.

Limit of Moderate Wave Action (LiMWA) – The landward limit of the 1.5 foot breaking wave that define the Coastal AE Zone. These areas are bounded by a line labeled “Limit of Moderate Wave Action” (LiMWA) on a Flood Insurance Rate Map (FIRM). The LiMWA line delineates that portion of the Special Flood Hazard Area (SFHA) landward of a VE zone in which the principal sources of flooding are astronomical high tides, storm surges, or tsunamis, not riverine sources. These areas may be subject to wave effects, velocity flows, erosion, scour, or combinations of these forces. The floodplain development and construction standards for VE Zones will be applied in the Coastal AE Zone.

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 _____, 20___, 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 Section 1.4.

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.

SECTION 3.0 ADMINISTRATION

3.1 Designation of the Floodplain Administrator

The City Administrator 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.

3.2 Duties and Responsibilities of the Floodplain Administrator

The duties and responsibilities of the Floodplain Administrator shall include but are not limited to:

(A) Review applications for permits to determine whether proposed activities will be located in special flood hazard areas.

(B) Interpret floodplain boundaries and provide flood elevation and flood hazard information.

(C) 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.

(D) Review applications to determine whether proposed activities will be reasonably safe from flooding.

(E) 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.

(F) 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.

(G) 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.

(H) Inspect buildings and lands to determine compliance with these regulations or to determine if noncompliance has occurred or violations have been committed

(I) Review submitted Elevation Certificates for completeness. Submit to FEMA data and information necessary to maintain flood hazard maps, including hydrologic and hydraulic engineering analyses prepared by or for the City of New Castle, corrections to labeling or planimetric details, etc.

(J) 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.

(K) Enforce the provisions of these regulations.

(L) Assist with and coordinate flood hazard map maintenance activities.

(M) Conduct determinations as to whether existing buildings and structures damaged by any cause and located in special flood hazard areas, have been substantially damaged.

(N) 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.

(O) 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.

(P) Notify the Federal Emergency Management Agency when the corporate boundaries of the City of New Castle have been modified.

3.3 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 Section 1.4, 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 the City of New Castle. No such permit shall be issued until the requirements of these regulations have been met.

3.4 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.

(A) Application Contents.

At a minimum, applications shall include:

(1) Site plans drawn to scale showing the nature, location, dimensions, existing and proposed topography of the area in question, the limits of any portion of the site that was previously filled, and the location of existing and proposed structures, excavation, filling, storage of materials, drainage facilities, and other proposed activities.

(2) 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").

(3) 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 Section 3.4(B). 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. The applicant may submit analyses and studies that determine base flood elevations and delineate flood hazard areas. Analyses and studies shall be submitted to and approved by FEMA prior to recordation.

(4) 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 Section 4.2(D). Analyses and studies shall be submitted to and approved by FEMA prior to recordation.

(5) For subdivision proposals and development proposals containing at least 50 lots or at least 5 acres, whichever is the lesser, and that are contiguous to streams with upstream watershed areas greater than 1 square mile and without FEMA-delineated special flood hazard areas, hydrologic and hydraulic engineering analyses as required by Section 4.2(E).

(6) 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.

(7) Drawings, diagrams, or descriptions of the proposed foundation in sufficient detail to demonstrate compliance with the requirements of this ordinance.

(8) Drawings, diagrams, or descriptions of the proposed location of service equipment and utilities in sufficient detail to demonstrate compliance with the requirements of Section 4.4(D) or (E).

(9) Where the placement of fill is proposed, the amount, type, and source of fill material; compaction specifications; a description of the intended purpose of the area to be filled; and evidence that the proposed fill is the minimum necessary to achieve the intended purpose.

(10) Such other material and information as may be requested by the Floodplain Administrator necessary to determine conformance with these regulations.

(11) 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:

(a) Documentation of the market value of the structure before the improvement is started or before the damage occurred.

(b) 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.

(12) 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:

(a) Floodproofing Certificate for dry floodproofed non-residential

structures, as required in Section 5.3.

(b) Certification that flood openings that do not meet the minimum requirements of Section 5.2(B)(3)(b) are designed to automatically equalize hydrostatic flood forces.

(c) 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 Section 6.3(E).

(d) 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 Section 5.5(C).

(e) 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 Section 5.5(B).

(f) Hydrologic and hydraulic engineering analyses of any development proposed to be located in an identified floodway, as required by Section 5.5(A).

(g) Hydrologic and hydraulic engineering analyses to develop base flood elevations for subdivisions and large-lot developments, as required by Section 4.2(D) or otherwise required by the Floodplain Administrator.

(B) Right to Submit New Technical Data

(1) 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. Submittal requirements and processing fees shall be the responsibility of the applicant.

New technical data, including topography based on previous placement of fill or proposed placement of fill to raise the ground level, shall not be deemed to remove from the special flood hazard area any portion of the filled area that is less than 18 inches above the base flood elevation.

(C) 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.

3.5 Review, Approval or Disapproval

(A) Review

The Floodplain Administrator shall:

(1) 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.

(2) Review applications for compliance with these regulations after all information required in Section 3.4 or identified and required by the Floodplain Administrator has been received.

(3) 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:

(a) 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.

(b) Permits required by the State of Delaware.

(B) Approval or Disapproval

The Floodplain Administrator shall approve applications that comply with the applicable requirements of these regulations. The Floodplain Administrator shall disapprove applications for proposed development that does not comply with the applicable provisions of these regulations and shall notify the applicant of such disapproval, in writing, stating the reasons for disapproval.

(C) 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.

3.6 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:

(A) Stake-out inspection, to determine location on the site relative to the special flood hazard area and floodway.

(B) 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.

(C) Enclosure inspection, including crawlspaces, to determine compliance with applicable provisions.

(D) Utility inspection, upon installation of specified equipment and appliances, to determine appropriate location with respect to the base flood elevation.

(E) Storage of materials.

3.7 Submissions Required Prior to Foundation Inspection 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 issuance of a Certificate of Occupancy:

(A) For new or substantially improved residential structures or nonresidential structures that have been elevated, the applicant shall:

(1) As part of the foundation inspection and placement 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”).

(2) Prior to Issuance of the Certificate of Occupancy, submit an Elevation Certificated (identified in Section C of the Elevation Certificate as “Finished Construction”).

(B) For nonresidential structures that have been dry floodproofed, a Floodproofing Certificate based on “Finished Construction” (identified in Section II).

(C) For all development activities subject to the requirements of Section 3.4(B), a Letter of Map Revision shall be provided.

3.8 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:

(A) 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. When a Preliminary Flood Insurance Rate Map has been provided by FEMA to identify base flood elevation where such elevations were not previously shown, the base flood elevations on the Preliminary Flood Insurance Rate Map shall be used.

(B) 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.

(C) 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.

(D) Where field surveyed topography indicates that ground elevations are below the base flood elevation, even in areas not delineated as a special flood hazard on a flood hazard map, the area shall be considered as special flood hazard area.

SECTION 4.0 REQUIREMENTS IN ALL SPECIAL FLOOD HAZARD AREAS

4.1 Application of Requirements

The general requirements of this section apply to all development proposed within special flood hazard areas identified in Section 1.4.

4.2 Subdivisions and Developments

(A) 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.

(B) 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.

(C) All subdivision and developments proposals shall have adequate drainage provided to reduce exposure to flood damage.

(D) 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 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.

(E) All subdivisions proposals and development proposals containing at least 50 lots or at least 5 acres, whichever is the lesser, that are contiguous to streams with upstream watershed areas greater than 1 square mile and without FEMA-delineated special flood hazard areas, shall be supported by hydrologic and hydraulic engineering analyses that determine base flood elevations. The analyses shall be prepared by a licensed professional engineer in accordance with FEMA flood study criteria.

(F) Except in special flood hazards areas prone to flooding from coastal sources, each lot in major subdivisions, as defined by the community, shall have sufficient buildable area for planned buildings to be located outside of the special flood hazard area. Portions of lots not identified for planned buildings may be located in special flood hazard areas. In such major subdivisions, only water-dependent structures such as docks, boat launches, boat ramps, and boat storage buildings shall be permitted in special flood hazard areas.

4.3 Protection of Water Supply and Sanitary Sewage Systems

(A) New and replacement water supply systems shall be designed to minimize or eliminate infiltration of flood waters into the systems.

(B) New and replacement sanitary sewage systems shall be designed to minimize or eliminate infiltration of floodwaters into systems and discharges from systems into floodwaters.

(C) On-site waste disposal systems shall be located to avoid impairment to or contamination from them during conditions of flooding.

4.4 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, and buildings and structures to be located on previously filled areas where the filled ground surface is less than 18 inches above the base flood elevation, shall meet the following requirements.

(A) 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.

(B) Be constructed by methods and practices that minimize flood damage.

(C) 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*.

(D) 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*.

(E) As an alternative to Section 4.4(D), 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.

(F) In special flood hazard areas other than coastal high hazard areas (Zones A, AE, and AO) and previously-filled areas where the filled ground surface is less than 18 inches above the base flood elevation, meet the specific requirements of Section 5.0.

(G) In all coastal high hazard areas (Zone VE), meet the specific requirements of Section 6.0.

(H) 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.

4.5 Fill

(A) Disposal of fill, including but not limited to rubble, construction debris, woody debris, and trash, shall not be permitted in special flood hazard areas.

(B) Where permitted by Section 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:

(1) 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.

(2) Placed and compacted to provide for stability under conditions of rising and falling floodwaters and resistance to erosion, scour, and settling.

(3) Consist of soil or rock materials only.

(4) Sloped no steeper than one (1) vertical on two (2) horizontal, unless approved by the Floodplain Administrator.

(5) Designed with provisions for adequate drainage and no adverse effect on adjacent properties.

(C) Fill placed for a purpose other than to support a building or structure shall meet the requirements of Sections 4.5(B)(2) through (B)(5).

4.6 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 Section 7 and such variance is the minimum necessary to preserve the historic character and design of the structure.

4.7 Recreational Vehicles

(A) 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.

(B) 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 Section 5.2(C) for manufactured homes or Section 6.3(D), as applicable.

4.8 Gas or Liquid Storage Tanks

(A) 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.

(B) Above-ground tanks in special flood hazard areas shall be elevated and anchored to or above the base flood elevation, plus 18 inches, 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.

(C) In special flood hazard areas, tank inlets, fill openings, outlets and vents shall be:

(1) 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.

(2) Anchored to prevent lateral movement resulting from hydrodynamic and hydrostatic loads, including the effects of buoyancy, during conditions of the base flood.

SECTION 5.0 REQUIREMENTS IN SPECIAL FLOOD HAZARD AREAS OTHER THAN COASTAL HIGH HAZARD AREAS

5.1 General Requirements

In addition to the general requirements of Section 4.0, 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.

5.2 Residential Structures and Residential Portions of Mixed Use Structures

(A) Elevation Requirements

(1) The lowest floor (including basement) shall be elevated to or above the base flood elevation plus 18 inches.

(2) In areas of shallow flooding (Zone AO), the lowest floor (including basement) shall be elevated 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; adequate drainage paths shall be provided to guide floodwaters around and away from the structure.

(3) Enclosures below the lowest floor shall meet the requirements of Section 5.2(B).

(B) Enclosures Below the Lowest Floor

(1) Enclosures below the lowest floor shall be used solely for parking of vehicles, building access, crawlspaces, or limited storage.

(2) Enclosures below the lowest floor shall be constructed using flood damage-resistant materials. See FEMA Technical Bulletin #2 – *Flood Damage-Resistant Materials Requirements*.

(3) 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*):

(a) 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.

(b) 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.

(c) The bottom of each opening shall be 1 foot or less above the adjacent ground level.

(d) Any louvers, screens or other opening covers shall allow the automatic flow of floodwaters into and out of the enclosed area.

(e) Where installed in doors and windows, openings that meet requirements of Section 5.2(B)(3)(a) through (d), are acceptable; however, doors and windows without installed openings do not meet the requirements of this section.

(4) 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.

(C) Manufactured Homes

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

(1) Be elevated on a permanent, reinforced foundation that raises the lowest floor to or above the base flood elevation plus 18 inches and is otherwise in accordance with Section 5.2(A).

(2) Be installed in accordance with the anchor and tie-down requirements of the building code or the manufacturer's written installation instructions and specifications.

(3) Have enclosures below the elevated manufactured home, if any, meet the requirements of Section 5.2(B).

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.

5.3 Nonresidential Structures and Nonresidential Portions of Mixed Use Structures

(A) Elevation Requirements

(1) The lowest floor (including basement) shall be elevated to or above the base flood elevation plus 18 inches or the structure shall be dry floodproofed in accordance with Section 5.3(B).

(2) In areas of shallow flooding (Zone AO), if not dry floodproofed, the lowest floor (including basement) shall be elevated 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; adequate drainage paths shall be provided to guide floodwaters around and away from the structure.

(3) Enclosures below the lowest floor, if not dry floodproofed, shall meet the requirements of Section 5.2(B).

(B) Dry Floodproofing Requirements

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

(1) 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.

(2) Have structural components capable of resisting hydrostatic and hydrodynamic loads and effects of buoyancy.

(3) Be certified by a 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.

5.4 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:

(A) Useable only for parking or limited storage;

(B) Constructed with flood damage-resistant materials below the base flood elevation;

(C) Constructed and placed to offer the minimum resistance to the flow of flood waters;

(D) Firmly anchored to prevent flotation, collapse, and lateral movement;

(E) Electrical service and mechanical equipment elevated to or above the level of the base flood elevation plus 18 inches; and

(F) Equipped with flood openings that meet the requirements of Section 5.2(B).

(G) For guidance, see FEMA Technical Bulletin #7 - *Wet Floodproofing Requirements*.

5.5 Protection of Flood-Carrying Capacity

(A) Development in Floodways

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 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 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 and the compensatory storage requirements of Section 5.5(D) are met and a Conditional Letter of Map Revision has been issued by FEMA; or

(3) 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 Section 3.4(A)(12)(e);

(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 City Administrator of the City of New Castle 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).

(B) Filling in Floodway Fringe Areas

For development activities that involve the placement of fill in floodway fringe areas, the applicant shall develop hydrologic and hydraulic engineering analyses and technical data reflecting the proposed activity and shall submit the analyses and data to the Floodplain Administrator. The analyses shall be prepared by a licensed professional engineer.

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 flood hazard area encroachments will not increase the base flood elevation more than 0.1 (one-tenth) foot at any point; compensatory storage in compliance with Section 5.5(D) may be provided to meet this requirement.

(C) 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 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; compensatory storage in compliance with Section 5.5(D) may be provided to meet this requirement.

D. Compensatory Storage

If the compensatory storage alternative in Section 5.5(A)(2) or Section 5.5(B) is selected to compensate for the loss of storage volume due to development, the following requirements shall apply:

(1) Compensatory storage shall be hydraulically equivalent and such equivalency shall be demonstrated through hydrologic and hydraulic engineering analyses;

(2) Compensatory storage areas shall be designed to drain freely to the watercourse; and

(3) A restriction against modification of the compensatory storage area shall be recorded on the deed of the property where it is located and the restriction shall be binding on future owners.

E. 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 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:

(1) Documentation of compliance with Section 5.5(A) if the alteration is in a floodway or Section 5.5(C) if the alteration is in a watercourse with base flood elevations but no floodway.

(2) A description of the extent to which the watercourse will be altered or relocated as a result of the proposed development.

(3) A certification by a licensed professional engineer that the bankful flood-carrying capacity of the watercourse will not be diminished.

(4) 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.

(5) 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 the City of New Castle 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.

SECTION 6.0 REQUIREMENTS IN COASTAL HIGH HAZARD AREAS (ZONE VE)

6.1 General Requirements

In addition to the general requirements of Section 4.0, the requirements of this section apply to all development proposed in coastal high hazard areas, also referred to collectively as "Zone V."

6.2 Location and Site Preparation

(A) The placement of structural fill for the purpose of elevating buildings is prohibited.

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

(C) 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.

6.3 Residential and Nonresidential Structures

(A) Foundations

(1) 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.

(2) 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.

(B) Elevation Requirements

(1) 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 or above the base flood elevation plus 18 inches.

(2) Basement floors that are below grade on all sides are prohibited.

(3) The space below the lowest floor shall either be free of obstruction or, if enclosed by walls, shall meet the requirements of Section 6.3(C). See FEMA Technical Bulletin #5 – *Free of Obstruction Requirements*.

(C) Enclosures Below the Lowest Floor

(1) Enclosures below the lowest floor shall be used solely for parking of vehicles, building access or storage.

(2) 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.*

(3) Electrical, mechanical, and plumbing system components shall not be mounted on or penetrate through walls that are designed to break away under flood loads.

(4) 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 than10 pounds per square foot and no more than 20 pounds per square foot; or

(5) 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 licensed professional engineer or licensed professional architect that:

(a) 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.

(b) 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.

(D) Manufactured Homes

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

(1) Meet the foundation requirements of Section 6.3(A).

(2) Meet the elevation requirements of Section 6.3(B), provided the bottom of the lowest horizontal structural member is at or above the base flood elevation plus 18 inches.

(3) Meet the enclosure requirements of Section 6.3(C).

(4) Be installed in accordance with the anchor and tie-down requirements of the building code or the manufacturer's written installation instructions and specifications.

E. Certification of Design

The applicant shall include in the application a certification prepared by a 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.

SECTION 7.0 VARIANCES

7.1 Variances

The City of New Castle'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.

(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 Section 7.1(B) and the limitations and conditions of Section 7.1(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, in writing, 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.

SECTION 8.0 ENFORCEMENT

8.1 Compliance Required

(A) 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.

(B) Failure to obtain a permit shall be a violation of these regulations and shall be punishable in accordance with Section 8.3.

(C) 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.

8.2 Violations and Penalties

Any person who fails to comply with any or all of the requirements or provisions of this Chapter or the direction of the City Administrator, the Building Official or any other authorized employee of the City shall be guilty of an offense and, upon conviction, shall pay a fine to the City of New Castle of not less than $100 or more than $1,000 plus cost of prosecution. In default of such payment such person shall be imprisoned in for a period not to exceed 10 days.

Each day during which any violation of this Chapter continues shall constitute a separate offense. In addition to the above penalties, all other actions are hereby reserved, including an action in equity for the proper enforcement of this Chapter. In any such action, the City, as prevailing party, shall be entitled to an award of its legal fees and expenses as part of the final order of relief. The imposition of a fine or penalty for any violation of, or noncompliance with, this chapter shall not excuse the violation or noncompliance with this chapter or permit it to continue; and all such persons shall be required to correct or remedy such violations or noncompliances within a reasonable time not to exceed one hundred eighty days. Any structure construed, reconstructed, enlarged, altered, or relocated in noncompliance with this Chapter may be declared by the City of New Castle to be a public nuisance and abatable as such.

SECTION 2. APPLICABILITY.
For the purposes of jurisdictional applicability, this ordinance shall apply in the City of New Castle. This ordinance shall apply to all applications for development, including building permit applications and subdivision proposals, submitted on or after _____, 201__.

SECTION 3. REPEALER.
Any and all ordinances and regulations in conflict herewith are hereby repealed to the extent of any conflict. This ordinance specifically repeals and replaces the following ordinance(s) and regulation(s): Chapter 130, Floodplain Management.

SECTION 4. INCLUSION INTO THE CODE OF ORDINANCES.
It is the intent of the City Council of the City of New Castle that the provisions of this ordinance shall become and be made a part of the City of New Castle's Code of Ordinances, and that the sections of this ordinance may be renumbered or relettered and the word "ordinance" may be changed to "section," "article," "regulation," or such other appropriate word or phrase in order to accomplish such intentions.

SECTION 5. EFFECTIVE DATE.
This ordinance shall take effect on _____

PASSED on first reading _____.

PASSED and ADOPTED in regular session, with a quorum present and voting, by the City Council of the City of New Castle , upon second and final reading this _____ , 2014.

_____
Linda Ratchford
President of Council