

# Article 11. Erosion Control and Stormwater Management

Effective January 1, 2009, as Amended through December 12, 2017

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## Article 11. Erosion Control and Stormwater Management

Effective January 1, 2009, as Amended through December 12, 2017

This Article contains the requirements that relate to the impact of rainfall events on the natural and manmade environment, including the erosion and siltation effects of site grading and land disturbance activities, the control of stormwater flows and the potentially damaging effects of flooding.

### DIVISION 1. SOIL EROSION, SEDIMENTATION AND POLLUTION CONTROL.

#### Sec. 1101. Definitions.

The following definitions shall apply in the interpretation and enforcement of this Division, unless otherwise specifically stated:

*Best Management Practices (BMP's)*: These include sound conservation and engineering practices to prevent and minimize erosion and resultant sedimentation, which are consistent with, and no less stringent than, those practices contained in the "Manual for Erosion and Sediment Control in Georgia" published by the Commission as of January 1 of the year in which the land-disturbing activity was permitted.

*Board*: The Board of Natural Resources, [Amended September 20, 2016]

*Buffer, Stream* The area of land immediately adjacent to the banks of State waters in its natural state of vegetation, which facilitates the protection of water quality and aquatic habitat. [Amended September 20, 2016]

*Certified Personnel*: A person who has successfully completed the appropriate certification course approved by the Georgia Soil and Water Conservation Commission.

*Coastal marshlands or marshlands* means any marshland intertidal area, mud flat, tidal water bottom, or salt marsh in the State of Georgia within the estuarine area of the state, whether or not the tidewaters reach the littoral areas through natural or artificial watercourses. "Vegetated marshland" shall include those areas upon which grow one, but not necessarily all, of the following: salt marsh grass (*Spartina alterniflora*), black needlerush (*Juncus roemerianus*), saltmeadow cordgrass (*Spartina patens*), big cordgrass (*Spartina cynosuroides*), saltgrass (*Distichlis spicata*), coast dropseed (*Sporobolus virginicus*), bigelow glasswort (*Salicornia bigelovii*), woody glasswort (*Salicornia virginica*), saltwort (*Batis maritima*), sea lavender (*Limonium nashii*), sea oxeye (*Borrchia frutescens*), silverling (*Baccharis halimifolia*), false willow (*Baccharis angustifolia*), and high-tide bush (*Iva frutescens*). The occurrence and extent of salt marsh peat at the undisturbed surface shall be deemed to be conclusive evidence of the extent of a salt marsh or a part thereof.

*Commission* means the State Soil and Water Conservation Commission (GSWCC).

*CPESC*: Certified Professional in Erosion and Sediment Control with current certification by Certified Professional in Erosion and Sediment Control Inc., a corporation registered in North Carolina, which is also referred to as CPESC or CPESC, Inc.

*Cut*: A portion of land surface or area from which earth has been removed or will be removed by excavation; the depth below original ground surface to excavated surface. Also known as excavation.

*Department (DNR)*: The Department of Natural Resources. [Amended September 20 2016]

*DNR Director*: The Director of the Environmental Protection Division of the Department of Natural Resources.

*Design Professional:* A professional licensed by the State of Georgia in the field of; engineering, architecture, landscape architecture forestry, geology, or land surveying; or a person that is Certified Professional in Erosion and Sediment Control (CPESC) with a current certification by EnviroCert, Inc. Design Professionals shall practice in a manner that complies with applicable Georgia law governing professional licensure. [Amended September 20, 2016]

*Drainage structure* means a device composed of virtually non-erodible material such as concrete, steel, plastic, or other such material that conveys water from one place to another by intercepting the flow and carrying it to a release point for stormwater management, drainage control or flood control purposes.

*District:* The Satilla River Soil and Water Conservation District.

*Division (EPD):* The Environmental Protection Division of the Department of Natural Resources. [Amended September 20, 2016]

*Erosion:* The process by which land surface is worn away by the action of wind, water, ice or gravity.

*Erosion, sedimentation and pollution control plan:* A plan required by the Erosion and Sedimentation Act, O.C.G.A Chapter 12-7, that includes, as a minimum protections at least as stringent as the State General Permit, best management practices, and requirements in Article 12 of this Development Code.

*Fill:* A portion of land surface to which soil or other solid material has been added; the depth above the original ground surface or excavation.

*Final stabilization:* That all soil disturbing activities at the site have been completed, and that for unpaved areas and areas not covered by permanent structures and areas located outside the waste disposal limits of a landfill cell that has been certified by EPD for waste disposal, at least 100% of the soil surface is uniformly covered in permanent vegetation with a density of 70% or greater, or equivalent permanent stabilization measures (such rip rap, gabions, permanent mulches or geotextiles) have been used. Permanent vegetation shall consist of: planted trees, shrubs, perennial vines; a crop of perennial vegetation appropriate for the time of year and region; or a crop of annual vegetation and seeding target crop perennials appropriate for the region. Final stabilization applies to each phase of construction.

*Finished grade:* The final elevation and contour of the ground after cutting or filling and conforming to the proposed design.

*Grading:* Altering the shape of ground surfaces to a predetermined condition slopes; this includes stripping, cutting, filling, stockpiling and shaping or any combination thereof and shall include the land in its cut or filled conditions.

*Ground elevation:* The original elevation of the ground surface prior to cutting or filling.

*Land-disturbing activity* means any activity that may result in soil erosion from water or wind and the movement of sediments into state waters or onto lands within the state, including, but not limited to, clearing, dredging, grading, excavating, transporting, and filling of land but not including agricultural practices that are otherwise exempt under Sec. 1102(4).

*Larger common plan of development or sale:* A contiguous area where multiple separate and distinct construction activities are occurring under one plan of development or sale. For the purposes of this paragraph, "plan" means an announcement; piece of documentation such as a sign, public notice or hearing, sales pitch, advertisement, drawing, permit application, zoning request, or computer design; or physical demarcation such as boundary signs, lot stakes, or surveyor markings, indicating that construction activities may occur on a specific plot.

*Local Issuing Authority:* The governing authority of any county or municipality that is certified pursuant to subsection (a) of O.C.G.A 12-7-8.

*Metropolitan River Protection Act (MRPA):* A state law referenced as O.C.G.A. § 12-5-440 et seq., which addresses environmental and developmental matters in certain metropolitan river corridors and their drainage basins.

*Natural ground surface:* The ground surface in its original state before any grading, excavation or filling.

*Nephelometric turbidity units (NTU):* Numerical units of measure based upon photometric analytical techniques for measuring the light scattered by finely divided particles of a substance in suspension. This technique is used to estimate the extent of turbidity in water in which colloiddally dispersed particles are present.

*NOI:* A Notice of Intent form provided by EPD for coverage under the State General Permit.

*NOT:* A Notice of Termination form provided by EPD to terminate coverage under the State General Permit.

*Operator:* The party or parties that have: (A) operational control of construction project plans and specifications, including the ability to make modifications to those plans and specifications; or (B) day-to-day operational control of those activities that are necessary to ensure compliance with an erosion, sedimentation and pollution control plan for the site or other permit conditions, such as a person authorized to direct workers at a site to carry out activities required by the erosion, sedimentation and pollution control plan or to comply with other permit conditions.

*Outfall:* The location where storm water in a discernible, confined and discrete conveyance, leaves a facility or site or, if there is a receiving water on site, becomes a point source discharging into that receiving water.

*Permit:* (As it relates to soil erosion and sedimentation control.) The authorization necessary to conduct a land-disturbing activity under the provisions of this Development Code Ordinance. *[Amended September 20, 2016]*

*Person:* Any individual, partnership, firm, association, joint venture, public or private corporation, trust, estate, commission, board, public or private institution, utility, cooperative, state agency, municipality or other political subdivision of the State of Georgia, any interstate body or any other legal entity.

*Phase or Phased:* Sub-parts or segments of construction projects where the sub-part or segment is constructed and stabilized prior to completing construction activities on the entire construction site.

*Project:* The entire proposed development project regardless of the size of the area of land to be disturbed.

*Properly Designed:* Designed in accordance with the design requirements and specifications contained in the "Manual for Erosion and Sediment Control in Georgia" (Manual) published by the Georgia Soil and Water Conservation Commission as of January 1 of the year in which the land-disturbing activity was permitted and amendments to the Manual as approved by the Commission up until the date of NOI submittal.

*Roadway drainage structure:* A device such as a bridge, culvert, or ditch, composed of a virtually non-erodible material such as concrete, steel, plastic, or other such material that conveys water under a roadway by intercepting the flow on one side of a traveled way consisting of one or more defined lanes, with or without shoulder areas, and carrying water to a release point on the other side.

*Sediment:* Solid material, both organic and inorganic, that is in suspension, is being transported or has been moved from its site of origin by air, water, ice or gravity as a product of erosion.

*Sedimentation:* The process by which eroded material is transported and deposited by the action of water, wind, ice or gravity.

*Soil and Water Conservation District approved plan:* An erosion and sedimentation control plan approved in writing by the Satilla River Soil and Water Conservation District.

*Stabilization:* The process of establishing an enduring soil cover of vegetation and/or mulch or other ground cover and/or in combination with installing temporary or permanent structures for the purpose of reducing to a minimum the erosion process and the resultant transport of sediment by wind, water, ice or gravity.

*State General Permit:* The National Pollution Discharge Elimination System (NPDES) general permit or permits for storm water runoff from construction activities as is now in effect or as may be amended or reissued in the future pursuant to the state's authority to implement the same through federal delegation under the Federal Water Pollution Control Act, as amended, 33 U.S.C. Section 1251, et seq., and subsection (f) of Code Section 12-5-30.

*State waters:* Any and all rivers, streams, creeks, branches, lakes, reservoirs, ponds, drainage systems, springs, wells, and other bodies of surface or subsurface water, natural or artificial, lying within or forming a part of the boundaries of Georgia, which are not entirely confined and retained completely upon the property of a single individual, partnership or corporation.

*Structural erosion and sediment control practices:* Practices for the stabilization of erodible or sediment-producing areas by utilizing the mechanical properties of matter for the purpose of either changing the surface of the land or storing, regulating, or disposing of runoff to prevent excessive sediment loss. Examples of structural erosion and sediment control practices are riprap, sediment basins, dikes, level spreaders waterways or outlets, diversions, grade stabilization structures, sediment traps, land grading, etc. Such practices can be found in the publication "Manual for Erosion and Sediment Control in Georgia."

*Trout streams:* All streams or portions of streams within the watershed as designated by the game and fish division of the Georgia Department of Natural Resources under the provisions of the Georgia Water Quality Control Act, O.C.G.A. § 12-5-20, in the rules and regulations for Water Quality Control, Chapter 391-3-6 [www.epd.georgia.gov](http://www.epd.georgia.gov). Streams designated as primary trout waters are defined as water supporting a self-sustaining population of rainbow, brown, or brook trout. Streams designated as secondary trout waters are those in which there is no evidence of natural trout reproduction, but are capable of supporting trout throughout the year. First order trout waters are streams into which no other streams flow except springs. [Amended September 20, 2016]

*Vegetative erosion and sediment control measures:* Measures for the stabilization of erodible or sediment-producing areas by covering the soil with:

- a. Permanent seeding, sprigging or planting, producing long-term vegetative cover; or
- b. Temporary seeding, producing short-term vegetative cover; or
- c. Sodding, covering areas with a turf of perennial sod-forming grass. Such measures can be found in the publication "Manual for Erosion and Sediment Control in Georgia."

*Watercourse* means any natural or artificial watercourse, stream, river, creek, channel, ditch, canal, conduit, culvert, drain, waterway, gully, ravine or wash in which water flows either continuously or intermittently and which has a definite channel, bed and banks, and including any area adjacent thereto subject to inundation by reason of overflow or floodwater.

*Wetlands* means those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs and similar areas.

## **Sec. 1102. Exemptions.**

This Division shall apply to any land-disturbing activity undertaken by any person on any land except for the following:

- (1) Surface mining, as the same is defined in O.C.G.A. 12-4-72, "The Georgia Surface Mining Act of 1968;"



- (2) Granite quarrying and land clearing for such quarrying;
- (3) Such minor land-disturbing activities as home gardens and individual home landscaping, repairs, maintenance work, fences, and other related activities, which result in minor soil erosion;
- (4) The construction of single-family residences, when such construction disturbs less than one (1) acre and is not a part of a larger common plan of development or sale with a planned disturbance of equal to or greater than one (1) acre and not otherwise exempted under this paragraph; provided, however, that construction of any such residence shall conform to the minimum requirements as set forth in O.C.G.A. 12-7-6 and this paragraph. For single-family residence construction covered by the provisions of this paragraph, there shall be a buffer zone between the residence and any state waters classified as trout streams pursuant to Article 2 of Chapter 5 of the Georgia Water Quality Control Act. In any such buffer zone, no land-disturbing activity shall be constructed between the residence and the point where vegetation has been wrested by normal stream flow for wave action from the banks of the trout waters. For primary trout waters, the buffer zone shall be at least 50 horizontal feet, and no variance to a smaller buffer shall be granted. For secondary trout waters, the buffer zone shall be at least 50 horizontal feet, but the Director may grant variances to no less than 25 feet. Regardless of whether a trout stream is primary or secondary, for first order trout waters, which are streams into which no other streams flow except for springs, the buffer variance to a smaller buffer shall be granted. The minimum requirements of subsection (b) of O.C.G.A. 12-7-6 and the buffer zones provided by this paragraph shall be enforced by the local Issuing Authority. [Amended September 20, 2016]
- (5) Agricultural operations as defined in O.C.G.A. 1-3-3, "Definitions," to include raising, harvesting or storing of products of the field or orchard; feeding, breeding or managing livestock or poultry; producing or storing feed for use in the production of livestock, including but not limited to cattle, calves, swine, hogs, goats, sheep, and rabbits or for use in the production of poultry, including but not limited to chicken, hens and turkeys; producing plants, trees, fowl, or animals; the production of aqua culture, horticultural, dairy, livestock, poultry, eggs and apiarian products; farms buildings and farm ponds;
- (6) Forestry land management practices, including harvesting; provided, however, that when such exempt forestry practices cause or result in land-disturbing or other activities otherwise prohibited in a buffer, as established in Sec. 1103(c)(15) of this Division, no other land-disturbing activities, except for normal forest management practices, shall be allowed on the entire property upon which the forestry practices were conducted for a period of three years after completion of such forestry practices; [Amended September 20, 2016]
- (7) Any project carried out under the technical supervision of the Natural Resources Conservation Service of the United States Department of Agriculture;
- (8) Any project involving less than one acre of disturbed area; provided, however, that this exemption shall not apply to any land-disturbing activity within a larger common plan of development or sale with a planned disturbance of equal to or greater than one acre or within 200 feet of the bank of any State waters, and for purposes of this paragraph, "State Waters" excludes channels and drainage-ways which have water in them only during and immediately after rainfall events and intermittent streams which do not have water in them year round; provided, however, that any person responsible for a project which involves less than one acre, which involves land-disturbing activity, and which is within 200 feet of any such excluded channel or drainage-way, must prevent sediment from moving beyond the boundaries of the property on which such project is located and provided, further, that nothing contained herein shall prevent the County from regulating any such project which is not specifically exempted by paragraphs (1), (2), (3), (4), (5), (6), (7), (9) or (10) of this Section;
- (9) Construction or maintenance projects, or both, undertaken or financed in whole or in part, or both, by the Department of Transportation, the Georgia Highway Authority, or the Georgia Tollway Authority; or any road construction or maintenance project, or both, undertaken by any county or municipality; provided, however, that construction or maintenance projects of the Department of

Transportation or State Tollway Authority which disturb one or more contiguous acres of land shall be subject to provisions of O.C.G.A. 12-7-7.1; except where the Department of Transportation, the Georgia Highway Authority, or the State Road and Tollway Authority is a secondary permittee for a project located within a larger common plan or development or sale under the state general permit, in which case a copy of a notice of intent under the state general permit shall be submitted to the County, the County shall enforce compliance with the minimum requirements set forth in O.C.G.A. 12-7-6 as if a permit had been issued, and violations shall be subject to the same penalties as violations by permit holders;

- (10) Any land-disturbing activities conducted by any electric membership corporation or municipal electrical system or any public utility under the regulatory jurisdiction of the Public Service Commission, any utility under the regulatory jurisdiction of the Federal Energy Regulatory Commission, any cable television system as defined in O.C.G.A. 36-18-1, or any agency or instrumentality of the United States engaged in the generation, transmission, or distribution of power; except where an electric membership corporation or municipal electrical system or any public utility under the regulatory jurisdiction of the Public Service Commission, any utility under the regulatory jurisdiction of the Federal Energy Regulatory Commission, any cable television system as defined in O.C.G.A. 36-18-1, or any agency or instrumentality of the United States engaged in the generation, transmission or distribution of power is a secondary permittee for a project located within a larger common plan of development or sale under the state general permit, in which case the shall enforce compliance with the minimum requirements set forth in O.C.G.A. 12-7-6 as if a permit had been issued, and violations shall be subject to the same penalties as violations by permit holders; and
- (11) Any public water system reservoir.

### **Sec. 1103. Minimum requirements using best management practices.**

#### **(a) General provisions.**

Excessive soil erosion and resulting sedimentation can take place during land-disturbing activities if requirements of ordinance and the NPDES General Permit are not met. Therefore, plans for those land-disturbing activities, which are not exempted by this Division, shall contain provisions for application of soil erosion and sedimentation control measures and practices. The provisions shall be incorporated into the erosion and sedimentation control plans. Soil erosion and sedimentation control measures and practices shall conform to the minimum requirements of Sec. 1103(b) and Sec. 1103(c) of this Division. The application of measures and practices shall apply to all features of the site, including street and utility installations, drainage facilities and other temporary and permanent improvements. Measures shall be installed to prevent or control erosion and sedimentation pollution during all stages of any land-disturbing activity in accordance with requirements of this ordinance and the NPDES General Permit. *[Amended September 20, 2016]*

#### **(b) Minimum Requirements/BMP's.**

- (1) Best Management practices as set forth in Sec. 1103(b) and Sec. 1103(c) of this Division shall be required for all land-disturbing activities if requirements of ordinance and the NPDES General Permit are not met. Proper design, installation, and maintenance of best management practices shall constitute a complete defense to any action by the DNR Director or to any other allegation of noncompliance with paragraph (2) of this subsection or any substantially similar terms contained in a permit for the discharge of storm water issued pursuant to subsection (f) of O.C.G.A. 12-5-30, the "Georgia Water Quality Control Act." As used in this subsection, the terms "proper design" and "properly designed" mean designed in accordance with the hydraulic design specifications contained in the "Manual for Erosion and Sediment Control in Georgia" specified in O.C.G.A. 12-7-6 subsection (b).
- (2) A discharge of storm water runoff from disturbed areas where best management practices have not been properly designed, installed, and maintained shall constitute a separate violation of any land-disturbing permit issued by a Local Issuing Authority or of any State general permit issued by the Division pursuant to subsection (f) of O.C.G.A. 12-5-30, the "Georgia Water Quality Control Act," for each day on which such discharge results in the turbidity of receiving waters being increased by more

than twenty-five (25) nephelometric turbidity units for waters supporting warm water fisheries or by more than ten (10) nephelometric turbidity units for waters classified as trout waters. The turbidity of the receiving waters shall be measured in accordance with guidelines to be issued by the DNR Director. This paragraph shall not apply to any land disturbance associated with the construction of single-family homes, which are not part of a larger common plan of development or sale unless the planned disturbance for such construction is equal to or greater than five acres. *[Amended September 20, 2016]*

- (3) Failure to properly design, install, or maintain best management practices shall constitute a violation of any land-disturbing permit issued by a or of any state general permit issued by the division pursuant to subsection (f) O.C.G.A. 12-5-30, the "Georgia Water Quality Control Act", for each day on which such failure occurs.
- (4) The DNR Director may require, in accordance with regulations adopted by the Board, reasonable and prudent monitoring of the turbidity level of receiving waters into which discharges from land-disturbing activities occur.

(c) **Conservation and engineering practices.**

The rules and regulations, ordinances, or resolutions adopted pursuant to O.C.G.A. 12-7-1 et. Seq. for the purpose of governing land-disturbing activities shall require, as a minimum, protections at least as stringent as the state general permit; and best management practices, including sound conservation and engineering practices to prevent and minimize erosion and resultant sedimentation, which are consistent with, and no less stringent than, those practices contained in the "Manual for Erosion and Sediment Control in Georgia" published by the Georgia Soil and Water Conservation Commission as of January 1 of the year in which the land-disturbing activity was permitted, as well as the following: *[Amended September 20, 2016]*

- (1) Stripping of vegetation, re-grading, and other development activities shall be conducted in a manner so as to minimize erosion;
- (2) Cut-fill operations must be kept to a minimum;
- (3) Development plans must conform to topography and soil type so as to create the lowest practical erosion potential;
- (4) Whenever feasible, natural vegetation shall be retained, protected, and supplemented;
- (5) The disturbed area and the duration of exposure to erosive elements shall be kept to a practicable minimum;
- (6) Disturbed soil shall be stabilized as quickly as practicable;
- (7) Temporary vegetation or mulching shall be employed to protect exposed critical areas during development;
- (8) Permanent vegetation and structural erosion control measures shall be installed as soon as practicable. All permanent vegetation and structural erosion control practices must be installed before the Camden County Board of Commissioners will accept the improvements and or "sign-off" on the project;
- (9) To the extent necessary, sediment in run-off water must be trapped by the use of debris basins, sediment basins, silt traps or similar measures until the disturbed area is stabilized. As used in this paragraph, a disturbed area is stabilized when it is brought to a condition of continuous compliance with the requirements of O.C.G.A. 12-7-1 et seq.;
- (10) Adequate provisions must be provided to minimize damage from surface water to the cut face of excavations or the sloping of fills;
- (11) Cuts and fills may not endanger adjoining property;
- (12) Fills may not encroach upon natural watercourses or constructed channels in a manner so as to adversely affect other property owners;

- (13) Grading equipment must cross flowing streams by means of bridges or culverts except when such methods are not feasible, provided, in any such case, that such crossings are kept to a minimum;
- (14) Land-disturbing activity plans for erosion and sedimentation control shall include provisions for treatment or control of any source of sediments and adequate sedimentation control facilities to retain sediments on-site or preclude sedimentation of adjacent waters beyond the levels specified in Sec. 1103(b)(2) of this Division;
- (15) Except as provided in paragraph (16) and (17) of this subsection, there is established a 25 foot buffer along the banks of all state waters, as measured horizontally from the point where vegetation has been wrested by normal stream flow or wave action, except where the DNR Director determines to allow a variance that is at least as protective of natural resources and the environment, where otherwise allowed by the DNR Director pursuant to O.C.G.A. 12-2-8, or where a drainage structure or a roadway drainage structure must be constructed, provided that adequate erosion control measures are incorporated in the project plans and specifications, and are implemented; or along any ephemeral stream. As used in this provision, the term "ephemeral stream" means a stream that under normal circumstances has water flowing only during and for a short duration after precipitation events; that has the channel located above the ground-water table year round; for which ground water is not a source of water; and for which runoff from precipitation is the primary source of water flow. Unless exempted as along an ephemeral stream, the buffers of at least 25 feet established pursuant to part 6 of Article 5, Chapter 5 of Title 12, the "Georgia Water Quality Control Act," shall remain in force unless a variance is granted by the DNR Director as provided in this paragraph. The following requirements shall apply to any such buffer: *[Amended September 20, 2016]*
  - a. No land-disturbing activities shall be conducted within a buffer and a buffer shall remain in its natural, undisturbed state of vegetation until all land-disturbing activities on the construction site are completed. Once the final stabilization of the site is achieved, a buffer may be thinned or trimmed of vegetation as long as a protective vegetation cover remains to protect water quality and aquatic habitat and a natural canopy is left in sufficient quantity to keep shade on the stream bed; provided however, that any person constructing a single-family residence, when such residence is constructed by or under contract with the owner for his or her own occupancy, may thin or trim vegetation in a buffer at any time as long as protective vegetation cover remains to protect water quality and aquatic habitat and a natural canopy is left in sufficient quantity to keep shade on the stream bed; and
  - b. The buffer shall not apply to the following land-disturbing activities, provided that they occur at an angle, as measured from the point of crossing, within 25 degrees of perpendicular to the stream; cause a width of disturbance of not more than 50 feet within the buffer; and adequate erosion control measures are incorporated into the project plans and specifications and are implemented: (i) Stream crossings for water lines; or (ii) Stream crossings for sewer lines.
- (16) There is established a twenty-five (25) foot buffer along coastal marshlands, as measured horizontally from the coastal marshland-upland interface, as determined in accordance with Chapter 5 of Title 12 of this title, the "Coastal Marshlands Protection Act of 1970." And the rules and regulations promulgated thereunder, except where the director determines to allow a variance that is at least as protective of natural resources and the environment, where otherwise allowed by the director pursuant to Code Section 12-2-8, where an alteration within the buffer area has been authorized pursuant to Code Section 12-5-286, for maintenance of any currently serviceable structure, landscaping, or hardscaping, including bridges, roads, parking lots, golf courses, golf cart paths, retaining walls, bulkheads, and patios; provided, however, that if such maintenance requires any land-disturbing activity, adequate erosion control measures are incorporated into the project plans and specifications and such measures are fully implemented, where a drainage structure or roadway drain-age structure is constructed or maintained; provided, however, that if such maintenance requires any land-disturbing activity, adequate erosion control measures are incorporated into the project plans and specifications and such measures are fully implemented, on the landward side of any currently serviceable shoreline

stabilization structure, or for the maintenance of any manmade storm-water detention basin, golf course pond, or impoundment that is located entirely within the property of a single individual, partnership, or corporation; provided, however, that adequate erosion control measures are incorporated into the project plans and specification and such measures are fully implemented. For the purpose of this paragraph maintenance shall be defined as actions necessary or appropriate for retaining or restoring a currently serviceable improvement to the specified operable condition to achieve its maximum useful life. Maintenance includes emergency reconstruction of recently damaged parts of a currently serviceable structure so long as it occurs within a reasonable period of time after damage occurs. Maintenance does not include any modification that changes the character, scope or size of the original design and serviceable shall be defined as useable in its current state or with minor maintenance but not so degraded as to essentially require reconstruction.

- a. No land-disturbing activities shall be conducted within a buffer and a buffer shall remain in its natural undisturbed, state of vegetation until all land-disturbing activities on the construction site are completed. Once the final stabilization of the site is achieved, a buffer may be thinned or trimmed of vegetation as long as a protective vegetative cover remains to protect water quality and aquatic habitat; provided, however, that any person construction a single-family residence, when such residence is constructed by or under contract with the owner for his or her own occupancy, may thin or trim vegetation in a buffer at any time as long as protective vegetative cover remains to protect water quality and aquatic habitat; and
  - b. The buffer shall not apply to crossings for utility lines that cause a width of disturbance of not more than fifty (50) feet within the buffer, provided, however, that adequate erosion control measures are incorporated into the project plans and specifications and such measures are fully implemented.
  - c. The buffer shall not apply to any land-disturbing activity conducting pursuant to and in compliance with a valid and effective land-disturbing permit issued subsequent to April 22, 2014, and prior to December 31, 2015; provided, however, that adequate erosion control measures are incorporated into the project plans and specification and such measures are fully implemented or any lot for which the preliminary plat has been approved prior to December 31, 2015 if roadways, bridges, or water and sewer lines have been extended to such lot prior to the effective date for this Act and if the requirement to maintain a twenty-five (25) foot buffer would consume at least eighteen (18) percent of the high ground of the platted lot otherwise available for development; provided, however, that adequate erosion control measures are incorporated into project plans and specifications and such measures are fully implemented.
  - d. Activities where the area within the buffer is not more than five-hundred (500) square feet or that a "Minor Buffer Impact" as defined in 391-3-7-.01(r), provided that the total area of buffer impacts less than five-thousand (5,000) square feet are deemed to have an approved buffer variance by rule. Bank stabilization structures are not eligible for coverage under the variance by rule and notification shall be made to the Division at least fourteen (14) days prior to the commencement of land disturbing activities.
- (17) The buffer shall not apply to the following land-disturbing activities, provided that occur at an angle, as measured from the point of crossing, within twenty-five (25) degrees of perpendicular to the stream; cause a width of disturbance of not more than fifty (50) feet within the buffer; and adequate erosion control measures are incorporated into the project plans and specifications and are implemented: (i) Stream crossings for water lines; (ii) Stream crossing for sewer lines (i) Stream crossings for water lines; (ii) Stream crossing for sewer lines;
- a. No land-disturbing activities shall be conducted within a buffer and a buffer shall remain in its natural undisturbed, state of vegetation until all land-disturbing activities on the construction site are completed. Once the final stabilization of the site is achieved, a buffer may be thinned or trimmed of vegetation as long as a protective vegetative cover remains to protect water quality and aquatic habitat; provided, however, that any person construction a single-family residence, when such residence is constructed by or under contract with the owner for his or her own occupancy, may

thin or trim vegetation in a buffer at any time as long as protective vegetative cover remains to protect water quality and aquatic habitat; and

- b. The buffer shall not apply to crossings for utility lines that cause a width of disturbance of not more than fifty (50) feet within the buffer, provided, however, that adequate erosion control measures are incorporated into the project plans and specifications and such measures are fully implemented.
- c. The buffer shall not apply to any land-disturbing activity conducted pursuant to and in compliance with a valid and effective land-disturbing permit issued subsequent to April 22, 2014, and prior to December 31, 2015; provided, however, that adequate erosion control measures are incorporated into the project plans and specifications and such measures are fully implemented or any lot for which the preliminary plat has been approved prior to December 31, 2015 if roadways, bridges, or water and sewer lines have been extended to such lot prior to the effective date for this Act and if the requirement to maintain a twenty-five (25) foot buffer would consume at least eighteen (18) percent of the high ground of the platted lot otherwise available for development; provided, however, that adequate erosion control measures are incorporated into project plans and specifications and such measures are fully implemented. d. Activities where the area within the buffer is not more than five-hundred (500) square feet or that a "Minor Buffer Impact" as defined in 391-3-7-.01(r), provided that the total area of buffer impacts less than five-thousand (5,000) square feet are deemed to have an approved buffer variance by rule. Bank stabilization structures are not eligible for coverage under the variance by rule and notification shall be made to the Division at least fourteen (14) days prior to the commencement of land disturbing activities.

(d) **Section represents minimum standards.**

Nothing contained in this Division and O.C.G.A. 12-7-1 et. seq. shall prevent any Local Issuing Authority from adopting rules and regulations, ordinances, or resolutions that contain stream buffer requirements that exceed the minimum requirements in Sec. 1103(b) and Sec. 1103(c) of this Division. *[Amended September 20, 2016]*

(e) **Injury by permit holder to property of another.**

The fact that land-disturbing activity for which a permit has been issued result in injury to the property of another shall neither constitute proof of nor create a presumption of a violation of the standards provided for in this Division or the terms of the permit.

## **Sec. 1104. Application/permit process.**

(a) **General.**

The property owner, developer, and designated planners and engineers shall review the general development plans and detailed plans of the Local Issuing authority that affect the tract to be developed and the area surrounding it. They shall review the zoning Division, storm water management Division, subdivision regulations, flood damage prevention Division, fire hydrant Division, this Division, and other Divisions, which regulate the development of land within the jurisdictional boundaries of the County. However, the operator is the only party who may obtain a permit.

(b) **Application requirements.**

- (1) No person shall conduct any land-disturbing activity within the jurisdictional boundaries of the County without first obtaining a permit from the CRS, E & S Coordinator to perform such activity. *[Amended September 20, 2016]*
- (2) The application for a permit shall be submitted to the CRS, E & S Coordinator and must include the applicant's soil erosion and sedimentation control plan with supporting data, as necessary. Said plans shall include, as a minimum, the data specified in Sec. 1104(c) of this Division. Soil erosion and sedimentation control plans shall

conform to the provisions of Sec. 1103(b) and Sec. 1103(c) of this Division. Applications for a permit will not be accepted unless accompanied by two (2) copies of the applicant's soil erosion, sedimentation and pollution control plans. All applications shall contain a certification stating that the plan preparer or the designee thereof visited the site prior to creation of the plan in accordance with EPD Rule 391-3-7-10. *[Amended September 20, 2016]*

- (3) A fee shall be charged for each application, and no application shall be deemed complete unless the requisite fee is paid at the time of filing. The amount of required fee shall be set forth in a Fee Schedule, maintained in the office of the County Clerk, as from time to time revised by resolution of the Board of Commissioners.
- (4) In addition to the local permitting fees, fees will also be assessed pursuant to paragraph 5 subsection (a) of O.C.G.A. 12-5-23, provided that such fees shall not exceed \$80.00 per acre of land-disturbing activity, and these fees shall be calculated and paid by the primary permittee as defined in the state general permit for each acre of land-disturbing activity included in the planned development or each phase of development. All applicable fees shall be paid prior to issuance of the land disturbance permit. In a jurisdiction that is certified pursuant to subsection (a) of O.C.G.A. 12-7-8 half of such fees levied shall be submitted to the division; except that any and all fees due from an entity which is required to give notice pursuant to paragraph (9) or (10) of O.C.G.A. 12-7-17 shall be submitted in full to the division, regardless of the existence of a local issuing authority in the jurisdiction.
- (5) Immediately upon receipt of an application and plan for a permit, the County shall refer the application and plan to the District for its review and approval or disapproval concerning the adequacy of the erosion and sedimentation control plan. A District shall approve or disapprove a plan within 35 days of receipt. Failure of a District to act within 35 day shall be considered an approval of the pending plan. The results of the district review shall be forwarded to the County. No permit will be issued unless the District has approved the plan, and any variances required by Sec. 1103(c)(15)(16)(17), and bonding, if required as per Sec. 1104(b)(7), have been obtained. Such review will not be required if the County and the District have entered into an agreement which allows the County to conduct such review and approval of the plan without referring the application and plan to the District. *[Amended September 20, 2016]*
- (6) If a permit applicant has had two or more violations of previous permits, this Division Section, or the Erosion and Sedimentation Act, as amended, within three years prior to the date of filing of the application under consideration, the County may deny the permit application.
- (7) The County may require the permit applicant to post a bond in the form of government security, cash, irrevocable letter of credit, or any combination thereof up to, but not exceeding \$3,000.00 per acre or fraction thereof of the proposed land-disturbing activity, prior to issuing the permit. If the applicant does not comply with this Division or with the conditions of the permit after issuance, the County may call the bond or any part thereof to be forfeited and may use the proceeds to hire a contractor to stabilize the site of the land-disturbing activity and bring it into compliance. These provisions shall not apply unless there is in effect a Division or statute specifically providing for hearing and judicial review of any determination or order of the County with respect to alleged permit violations.

(c) **Plan requirements.**

- (1) Plans must be prepared to meet the minimum requirements as contained in Sec. 1103(b) and Sec. 1103(c) of this Division. Conformance with the minimum requirements may be attained through the use of design criteria in the current issue of the "Manual for Erosion and Sediment Control in Georgia" published by the State Soil and Water Conservation Commission as a guide; or through the use of more stringent, alternate design criteria which conform to sound conservation and engineering practices. The "Manual for Erosion and Sediment Control in Georgia" is hereby incorporated by reference into this Division. The plan for the land-disturbing activity shall consider the interrelationship of the soil types, geological and hydrological characteristics, topography, watershed, vegetation, proposed permanent structures including roadways, constructed waterways, sediment control and

storm water management facilities, local Divisions, and State laws. Maps, drawings and supportive computations shall bear the signature and seal of the certified design professional. Persons involved in land development design, review, permitting, construction, monitoring, inspections or any land disturbing activity shall meet the education and training certification requirements, dependent on his or her level of involvement with the process, as developed by the Commission and in consultation with the Division and the Stakeholder Advisory Board created pursuant to O.C.G.A. 12-7-20.

- (2) Data required for site plans shall include all the information required from the appropriate Erosion, Sedimentation and Pollution Control Plan Review Checklist established by the Commission as of January 1 of the year in which the land-disturbing activity was permitted.

(d) **Permits**

- (1) Permits shall be issued or denied as soon as practicable but in any event not later than 45 days after receipt by the County of a completed application, providing variances and bonding are obtained, where necessary, and all applicable fees have been paid prior to permit issuance. The permit shall include conditions under which the activity may be undertaken.
- (2) No permit shall be issued by the County unless the District has approved the erosion and sedimentation control plan and the County has affirmatively determined that the plan is in compliance with this Division, any variances required by Sec. 1103(c)(15) are obtained, bonding requirements, if necessary, as per Sec. 1104(b)(7) are met and all Divisions and rules and regulations in effect within the jurisdictional boundaries of the County are met. If the permit is denied, the reason for denial shall be furnished to the applicant.
- (3) Any land-disturbance activities by the County shall be subject to the same requirements of this Development Code, and any other ordinances relating to land development, as are applied to private persons and the EPD shall enforce such requirements upon the County.
- (4) If the tract is to be developed in phases, then a separate permit shall be required for each phase.
- (5) The permit may be suspended, revoked, or modified by the County, as to all or any portion of the land affected by the plan, upon finding that the holder or his successor in the title is not in compliance with the approved erosion and sedimentation control plan or that the holder or his successor in title is in violation of this Division. A holder of a permit shall notify any successor in title to him as to all or any portion of the land affected by the approved plan of the conditions contained in the permit.
- (6) The County may reject a permit application if the applicant has had two (2) or more violations of previous permits of the Erosion and Sedimentation Act permit requirements within three (3) years prior to the date of the application, in light of O.C.G.A. 12-7-7 (f) (1).

**Sec. 1105. Inspection and enforcement.**

(a) **Inspection of permitted sites; notice to comply; failure.**

The County authorized agent, will periodically inspect the sites of land-disturbing activities for which permits have been issued to determine if the activities are being conducted in accordance with the plan and if the measures required in the plan are effective in controlling erosion and sedimentation. Also, the County shall regulate primary, secondary and tertiary permittees as such terms are defined in the state general permit. Primary permittees shall be responsible for installation and maintenance of best management practices where the primary permittee is conducting land-disturbing activities. Secondary permittees shall be responsible for installation and maintenance of best management practices where the secondary permittee is conducting land-disturbing activities. Tertiary permittees shall be responsible for installation and maintenance of best management practices where the tertiary permittee is conducting land-disturbing activities. If, through inspection, it is deemed that a person engaged in land-disturbing activities as defined herein has failed to comply with the approved plan, with permit conditions, or with the provisions of this Division, a written notice to comply shall be served upon that person. The notice shall set forth the measures necessary to achieve compliance and shall state the time within which such



measures must be completed. If the person engaged in the land-disturbing activity fails to comply within the time specified, he shall be deemed in violation of this Division.

(b) **Ordinance amendment adoption.**

The County must amend its ordinances to the extent appropriate within twelve (12) months of any amendments to the Erosion and Sedimentation Act of 1975

(c) **Right of entry by code enforcement officer.**

The authorized County agent shall have the power to conduct such investigations as it may reasonably deem necessary to carry out duties as prescribed in this Division, and for this purpose to enter at reasonable times upon any property, public or private, for the purpose of investigation and inspecting the sites of land-disturbing activities.

(d) **Refusal of entry or access.**

No person shall refuse entry or access to any authorized representative or agent of the Local Issuing Authority, the Commission, the District or Division who requests entry for the purposes of inspection, and who presents appropriate credentials, nor shall any person obstruct, hamper or interfere with any such representative while in the process of carrying out his official duties.

(e) **Review of issuing authority's actions; deadline for corrective action.**

- (1) The District or the Commission, or both, shall semi-annually review the actions of counties and municipalities that have been certified as Local Issuing Authorities pursuant to O.C.G.A. 12-7-8 (a). The District or the Commission, or both, may provide technical assistance to any county or municipality for the purpose of improving the effectiveness of the county's or municipality's erosion and sedimentation control program. The Districts or the Commission shall notify the Division and request investigation by the Division if any deficient or ineffective local program is found.
- (2) The Environmental Protection Division (EPD) may periodically review the actions of counties and municipalities that have been certified as Local Issuing Authorities pursuant to O.C.G.A. 12-7-8 (a). Such review may include, but shall not be limited to, review of the administration and enforcement of a governing authority's ordinances and review of conformance with an agreement, if any, between the District and the governing authority. If such review indicates that the governing authority of any county or municipality certified pursuant to O.C.G.A. 12-7-8 (a) has not administered or enforced its ordinances or has not conducted the program in accordance with any agreement entered into pursuant to O.C.G.A. 12-7-7 (e), EPD shall notify the governing authority of the county or municipality in writing. The governing authority of any county or municipality so notified shall have 90 days within which to take the necessary corrective action to retain certification as a local issuing authority. If the county or municipality does not take necessary corrective action within 90 days after notification by the EPD, EPD may revoke the certification of the county or municipality as a local issuing authority.

## **Sec. 1106. Penalties and incentives.**

(a) **Failure to obtain a permit for land-disturbing activity.**

If any person commences any land-disturbing activity requiring a land-disturbing permit as prescribed in this Division without first obtaining said permit, the person shall be subject to revocation of his business license, work permit, or other authorization for the conduct of a business and associated work activities within the jurisdictional boundaries of these Soil Erosion and Sedimentation Control regulations.

(b) **Stop work orders.**

- (1) For the first and second violations of the provisions of this Division, the DNR Director or the Local Issuing Authority shall issue a written warning to the violator. The violator shall have five days to correct the violation. If the violation is not corrected within five days, the DNR Director or the Local

Issuing Authority shall issue a stop-work order requiring that land-disturbing activities be stopped until necessary corrective action or mitigation has occurred; provided, however, that, if the violation presents an imminent threat to public health or waters of the state or if the land-disturbing activities are conducted without obtaining the necessary permit, the DNR Director or the Local Issuing Authority shall issue an immediate stop-work order in lieu a warning;

- (2) For a third and each subsequent violation, the DNR Director or Local Issuing Authority shall issue an immediate stop work order; and;
- (3) All Stop work orders shall be effective immediately upon issuance and shall be in effect until the necessary corrective action or mitigation has occurred.
- (4) When a violation in the form of taking action without a permit, failure to maintain a stream buffer, or significant amounts of sediment, as determined by the County or by the director or his or her designee, have been or are being discharged into state waters and where best management practices have not been properly designed, installed, and maintained, a stop work order shall be issued by the County or by the director or his or her designee. All such stop work orders shall be effective immediately upon issuance and shall be in effect until the necessary corrective action or mitigation has occurred. Such stop work orders shall apply to all land disturbing activity on the site with the exception of the installation and maintenance of temporary or permanent erosion and sediment controls.
- (5) When a violation in the form of soil erosion and sedimentation leaving the property of any person, firm or corporation onto a County road causing concern for protection of public health, safety and general welfare may result in an immediate stop work order and/or citation.

(c) **Bond forfeiture.**

If, through inspection, it is determined that a person engaged in land-disturbing activities has failed to comply with the approved plan, a written notice to comply shall be served upon that person. The notice shall set forth the measures necessary to achieve compliance with the plan and shall state the time within which such measures must be completed. If the person engaged in the land-disturbing activity fails to comply within the time specified, he shall be deemed in violation of this Division and, in addition to other penalties, shall be deemed to have forfeited his performance bond, if required to post one under the provisions of Sec. 1104(b)(7). The County may call the bond or any part thereof to be forfeited and may use the proceeds to hire a contractor to stabilize the site of the land-disturbing activity and bring it into compliance.

(d) **Monetary penalties.**

Any person who violates any provisions of this Division, or any permit condition or limitation established pursuant to this Division, or who negligently or intentionally fails or refuses to comply with any final or emergency order of the DNR Director issued as provided in this Division shall be liable for a civil penalty not to exceed \$2,500.00 per day. For the purpose of enforcing the provisions of this ordinance, notwithstanding any limitation of law as to penalties that can be assessed for violations of county Divisions, any magistrate court or any other court of competent jurisdiction trying cases brought as violations of this Division under county Divisions approved under this Division shall be authorized to impose penalties for such violations not to exceed \$2,500.00 for each violation. Each day during which violation or failure or refusal to comply continues, shall be a separate violation. *[Amended September 20, 2016]*

**Sec. 1107. Education and certification.**

- (1) Persons involved in land development, design, review, permitting, construction, monitoring, inspections or any land-disturbing activity shall meet the education and training certification requirements, dependent on their level of involvement with the process, as developed by the Commission in consultation with the Environmental Protection Division and the Stakeholders Advisory Board created pursuant to O.C.G.A. 12-7-20. *[Amended September 20, 2016]*

- (2) For each site on which land-disturbing activities occurs, each entity or person acting as either a primary, secondary or tertiary permittee, as defined in the state general permit, shall have as a minimum one (1) person who is in responsible charge of erosion and sedimentation control activities on behalf of said entity or person and meets the applicable education or training certification requirements developed by the Commission present on the site whenever land-disturbing activities are conducted on that site. A project site shall herein be defined as any land-disturbance site or multiple sites within a larger common plan of development or sale permitted by an owner or operator for compliance with the state general permit.
- (3) Persons or entities involved in projects not requiring a state general permit but otherwise requiring certified personnel on site may contract with certified persons to meet the requirements of this Division.
- (4) If a state general permittee who has operational control of land-disturbing activities for a site has met the certification requirements of paragraph (1) of subsection (b) of O.C.G.A. 12-7-19, then any person or entity involved in land-disturbing activity at that site and operating in a subcontractor capacity for such permittee specified in paragraph (4) of subsection (b) of O.C.G.A. 12-7-19 and shall not be required to meet any educational requirements that exceed those specified in said paragraph

### **Sec. 1108. Administrative appeal, judicial review.**

(a) **Administrative remedies.**

The suspension, revocation, modification or grant with condition of a permit by the issuing authority upon finding that the holder is not in compliance with the approved erosion and sediment control plan; or that the holder is in violation of permit conditions; or that the holder is in violation of any Division; shall entitle the person submitting the plan or holding the permit to a hearing before the County Manager/Administrator within 10 days of the date of notice. The person must file with the County Manager/Administrator the grounds for appeal within ten days of the date of the notice of the suspension, revocation, modification, or conditional permit or a stop-work order.

(b) **Judicial review.**

Any person, aggrieved by a decision or order of the issuing authority, after exhausting his administrative remedies, shall have the right to appeal to the Superior Court of Camden County.

(c) **Effectivity.**

This ordinance, as amended, shall become effective on the 20<sup>th</sup> day of September 2016. *[Amended September 20, 2016]*

(d) **Validity.**

If any section, paragraph, clause, phrase, or provision of this ordinance shall be adjusted invalid or held unconstitutional, such decisions shall not affect the remaining portions of this ordinance. *[Amended September 20, 2016]*

(e) **Liability.**

(1) Neither the approval of a plan under the provisions of this ordinance, nor the compliance with provisions of this ordinance shall relieve any person from the responsibility for damage to any person or property otherwise imposed by law nor impose any liability upon the Local Issuing Authority or District for damage to any person or property.

(2) The fact that a land-disturbing activity for which a permit has been issued results in injury to the property of another shall neither constitute proof of nor create a presumption of a violation of the standards provided for this ordinance or the terms of the permit.

(3) No provision of this ordinance shall permit any person to violate the Georgia Erosion and Sedimentation Act of 1975, the Georgia Water Quality Control Act, or the rules and regulations promulgated and approved thereunder, or to pollute any Waters of the State as defined thereby. *[Amended September 20, 2016]*

## **DIVISION 2. STORM DRAINAGE & STORMWATER MANAGEMENT.**

### **Sec. 1109. Purpose and intent.**

#### **(a) Purpose and objectives.**

The purpose of this Division is to protect, maintain, and enhance the public health, safety, environment, and general welfare of the citizens of Camden County, Georgia by: the regulation of non-stormwater discharges to the storm drainage system to the maximum extent practicable as required by federal and state law; establishing minimum requirements and procedures to control the adverse effects of increased post-development stormwater runoff and nonpoint source pollution associated with new development and redevelopment; and establishing inspection and maintenance requirements for existing privately owned detention facilities in the County as regulated under the National Pollutant Discharge Elimination System (NPDES) Stormwater Phase II Permit. It has been determined that proper management of stormwater runoff will minimize damage to public and private property and infrastructure, safeguard the public health, safety, environment and general welfare of the public, and protect water and aquatic resources. The objectives of this Division are to:

- (1) Regulate the contribution of pollutants to the Camden County separate storm sewer system by stormwater discharges by any user;
- (2) Prohibit illicit connections and discharges to the Camden County separate storm sewer system;
- (3) Require that drainage easements are maintained in a proper manner;
- (4) Establish design and application criteria for the construction and use of structural stormwater control facilities that can be used to meet the minimum post-development stormwater management standards;
- (5) Establish legal authority to carry out all inspection procedures necessary to ensure compliance with this Division;
- (6) Establish provisions for the long-term responsibility for and maintenance of structural stormwater control facilities and nonstructural stormwater management practices to ensure that they continue to function as designed, are maintained, and pose no threat to public safety;
- (7) Establish decision-making processes surrounding land development activities that protect the integrity of the watershed and preserve the health of water resources;
- (8) Require that new development and redevelopment maintain the pre-development hydrologic response in their post-development state as nearly as practicable in order to reduce flooding, stream bank erosion, nonpoint source pollution and increases in stream temperature, and maintain the integrity of stream channels and aquatic habitats;
- (9) Establish minimum post-development stormwater management standards and design criteria for the regulation and control of stormwater runoff quantity and quality;
- (10) Encourage the use of nonstructural stormwater management and stormwater better site design practices, such as the preservation of greenspace and other conservation; and
- (11) Promote the natural beauty and aesthetic qualities of Camden County.

#### **(b) Intent.**

It is the intent of this Development Code that this Division be consistent with the *Georgia Stormwater Management Manual* and any supplement adopted to said manual regarding stormwater management in the Coastal area. All references herein to the *Georgia Stormwater Management Manual* shall be interpreted to include any such supplement for the Coastal area.

## **Sec. 1110. Definitions related to storm drainage and stormwater management.**

For the purposes of this Division, the following shall mean:

*Beneficial Owner(s)*: All property owners in a subdivision that derive benefit from a stormwater management facility, detention facility, retention facility, or drainage easement may be considered owners of that facility or easement.

*Best Management Practices (BMPs)—Stormwater Management*: Schedules of activities, prohibitions of practices, general good housekeeping practices, pollution prevention and educational practices, maintenance procedures, and other management practices to prevent or reduce the discharge of pollutants directly or indirectly to stormwater, receiving waters, or stormwater conveyance systems. Such BMPs also include treatment practices, operating procedures, and practices to control site runoff, spillage or leaks, sludge or water disposal, or drainage from raw materials storage.

*Camden County Separate Storm Sewer System*: Any facility, owned or maintained by the county, designed or used for collecting and/or conveying stormwater, including but not limited to roads with drainage systems, Camden County streets, curbs, gutters, inlets, catch basins, piped storm drains, pumping facilities, retention and detention basins, natural and man-made or altered drainage channels, reservoirs, and other drainage structures.

*Channel*: A natural or artificial watercourse with a definite bed and banks that conducts continuously or periodically flowing water.

*Clean Water Act*: The federal Water Pollution Control Act (33 U.S.C § 1251 et seq.), and any subsequent amendments thereto.

*Construction Activity*: Activities subject to the Georgia Erosion and Sedimentation Control Act or NPDES Construction Permits. Such activities include but are not limited to clearing and grubbing, grading, excavating, and demolition.

*Detention*: The temporary storage of stormwater runoff in a stormwater management facility for the purpose of controlling the peak discharge.

*Detention Facility*: A basin or structure used for the temporary storage of stormwater runoff for the purpose of controlling the peak discharge and which is designed to completely drain after a specified period of time.

*Developer*: A person who undertakes land development activities.

*Drainage Easement*: An easement appurtenant or attached to a tract or parcel of land allowing the owner of adjacent tracts or other persons to discharge stormwater runoff onto the tract or parcel of land subject to the drainage easement.

*Georgia D.O.T. Standards/Specifications: State of Georgia Standard Specifications – Construction of Transportation Systems*, latest edition.

*Georgia Stormwater Management Manual, Volume 2: Technical Handbook*, produced as a result of a collaborative effort between the Atlanta Regional Commission (ARC), the Georgia Department of Natural Resources-Environmental Protection Division (EPD), and 35 cities and counties from across Georgia that provides guidance on the techniques and measures that can be implemented to meet a set of stormwater management minimum standards for new development and redevelopment, as amended from time to time.

*Greenspace*: Permanently protected areas of the site that are preserved in a natural state. See also under "Open Space."

*Hazardous Materials:* Any material, including any substance, waste, or combination thereof, which because of its quantity, concentration, or physical, chemical, or infectious characteristics may cause, or significantly contribute to, a substantial present or potential hazard to human health, safety, property, or the environment when improperly treated, stored, transported, disposed of, or otherwise managed.

*Hotspot:* A land use or activity on a site that produces higher concentrations of trace materials, hydrocarbons or other pollutants than are normally found in urban stormwater runoff. Examples of hotspots include, but are not limited to: gas stations, vehicle service and maintenance areas, salvage yards, material storage sites, garbage transfer facilities, and commercial parking lots with high-intensity use.

*Illegal Connection:* An illegal connection is defined as either of the following:

- a. Any pipe, open channel, drain or conveyance, whether on the surface or subsurface, which allows an illicit discharge to enter the storm drain system including but not limited to any conveyances which allow any non-stormwater discharge including sewage, process wastewater, and wash water, regardless of whether said drain or connection has been previously allowed, permitted, or approved by an authorized enforcement agency; or
- b. Any pipe, open channel, drain or conveyance connected to the Camden County separate storm sewer system that has not been documented in plans, maps or equivalent records and approved by an authorized enforcement agency.

*Illicit Discharge:* Any direct or indirect non-stormwater discharge to the Camden County storm drain system, except as exempted in the Storm Drainage and Stormwater Management Division of the Erosion Control and Stormwater Management Article of this Development Code.

*Impervious Cover:* A surface composed of any material that significantly impedes or prevents the natural infiltration of water into soil. Impervious surfaces include, but are not limited to, rooftops, buildings, paved streets and roads, and any concrete or asphalt surface.

*Industrial Activity:* Activities subject to NPDES Industrial Permits as defined in 40CFR, Section 122.26 (b) (14).

*Inspection and Maintenance Agreement:* A written agreement providing for the long-term inspection and maintenance of stormwater management facilities and practices on a site or with respect to a land development project, which when properly recorded in the deed records, constitutes a restriction on the title to a site or other land involved in a land development project.

*Land Development:* Any land change, including, but not limited to, clearing, digging, grubbing, stripping, removal of vegetation, dredging, grading, excavating, transporting and filling of land, construction, paving, and any other installation of impervious cover.

*Land Development Activities:* Those actions or activities that comprise, facilitate, or result in land development.

*Land Development Project:* A discrete land development undertaking.

*National Pollutant Discharge Elimination System (NPDES) Stormwater Discharge Permit:* A permit issued by Georgia EPD under authority delegated pursuant to 33 USC § 1342 (b) that authorizes the discharge of pollutants to waters of the United States, whether the permit is applicable on an individual, group, or general area-wide basis.

*New Development:* A land development activity on a previously undeveloped site.

*Nonpoint Source Pollution:* A form of water pollution that does not originate from a discrete point such as a sewage treatment plant or industrial discharge, but involves the transport of pollutants such as sediment, fertilizers, pesticides, heavy metals, oil, grease, bacteria, organic materials and other con-

taminants from land to surface water and groundwater via mechanisms such as precipitation, stormwater runoff, and leaching. Nonpoint source pollution is a by-product of land use practices such as agricultural, silvicultural, mining, construction, subsurface disposal and urban runoff sources.

*Non-Stormwater Discharge:* Any discharge to the storm drain system that is not composed entirely of stormwater.

*Nonstructural Stormwater Management Practice or Nonstructural Practice:* Any natural or planted vegetation or any other nonstructural component of the stormwater management plan that provides for or enhances stormwater quantity and/or quality control or other stormwater management benefits, and includes, but is not limited to, riparian buffers, open and greenspace areas, overland flow filtration areas, natural depressions, and vegetated channels.

*Pollutant:* Anything that causes or contributes to pollution. Pollutants may include, but are not limited to: paints, varnishes, and solvents; petroleum hydrocarbons; automotive fluids; cooking grease; detergents (biodegradable or otherwise); degreasers; cleaning chemicals; non-hazardous liquid and solid wastes; refuse, rubbish, garbage, litter, or other discarded or abandoned objects and accumulations, so that same may cause or contribute to pollution; floatables; pesticides, herbicides, and fertilizers; liquid and solid wastes; sewage, fecal coliform and pathogens; dissolved and particulate metals; animal wastes; wastes and residues that result from constructing a building or structure; concrete and cement; and noxious or offensive matter of any kind.

*Pollution:* Contamination or other alteration of any water's physical, chemical, or biological properties by addition of any constituent including but not limited to a change in temperature, taste, color, turbidity, or odor of such waters, or the discharge of any liquid, gaseous, solid, radioactive, or other substance into any such waters as will or is likely to create a nuisance or render such waters harmful, detrimental, or injurious to the public health, safety, welfare, or environment, or to domestic, commercial, industrial, agricultural, recreational, or other legitimate beneficial uses, or to livestock, wild animals, birds, fish or other aquatic life.

*Post-development:* The time period, or the conditions that may reasonably be expected or anticipated to exist, after completion of the land development activity on a site as the context may require.

*Pre-development:* The time period, or the conditions that exist, on a site prior to the commencement of a land development project and at the time that plans for the land development of a site are approved by Camden County. Where phased development or plan approval occurs (preliminary grading, roads and utilities, etc.), the existing conditions at the time prior to the first element of construction and/or phase being approved or permitted shall establish pre-development conditions.

*Premises:* Any building, lot, parcel of land, or portion of land whether improved or unimproved including adjacent sidewalks and parking strips.

*Redevelopment:* A land development project on a previously developed site, but excludes ordinary maintenance activities, remodeling of existing buildings, resurfacing of paved areas, and exterior changes or improvements that do not materially increase or concentrate stormwater runoff, or cause additional nonpoint source pollution.

*Retention Facility:* A basin or structure designed to contain a permanent pool of water with sufficient freeboard to provide for temporary storage and water quality treatment of stormwater runoff.

*Site:* The parcel of land being developed, or the portion thereof on which the land development project is located.

*Stormwater:* Any surface flow, runoff and drainage consisting entirely of water from any form of natural precipitation, and resulting from such precipitation.

*Stormwater Better Site Design:* Nonstructural site design approaches and techniques that can reduce a site's impact on the watershed and can provide for nonstructural stormwater management. Stormwater better site design includes conserving and protecting natural areas and greenspace, reducing impervious cover and using natural features for stormwater management.

*Stormwater Discharge:* The flow rate of surface water resulting from precipitation.

*Stormwater Management:* The collection, conveyance, storage, treatment and disposal of stormwater runoff in a manner intended to prevent increased flood damage, stream bank channel erosion, habitat degradation and water quality degradation, and to enhance and promote the public health, safety and general welfare.

*Stormwater Management Facility:* Any infrastructure that controls or conveys stormwater runoff.

*Stormwater Management Measure:* Any stormwater management facility, structure or nonstructural stormwater management practice.

*Stormwater Management Plan:* A document describing how existing runoff characteristics will be affected by a land development project and containing measures for complying with the provisions of this Division.

*Stormwater Management System:* The entire set of structural and nonstructural stormwater management facilities and practices that are used to capture, convey, and control the quantity and quality of the stormwater runoff from a site.

*Stormwater Management Retrofit:* A stormwater management practice designed for a currently developed site that previously had either no stormwater management practice in place or a practice inadequate to meet the stormwater management requirements of the site.

*Stormwater Runoff:* The quantity of surface water resulting from precipitation.

*Structural Stormwater Control:* A structural stormwater management facility or device that controls stormwater runoff and changes the characteristics of that runoff including, but not limited to, the quantity and quality, the period of release, the velocity of flow, or the rate of discharge of such runoff.

*Wastewater:* Any water or other liquid discharged from a facility, that has been used, as for washing, flushing, or in a manufacturing process, and so contains waste products.

## **Sec. 1111. Applicability.**

- (1) Sec. 1112 of this Division shall be applicable to all unincorporated portions of the County.
- (2) Sec. 1113 of this Division shall be applicable to owners of all stormwater structures or facilities existing at the date of adoption of this Development Code, regardless of their previous practices, in the area of the County, and for the activities, regulated under the NPDES Stormwater Phase II Permit.
- (3) Stormwater management in the urbanized area:
  - a. Sec. 1114 of this Division shall be applicable to all land development in the unincorporated area of the County as regulated under the NPDES Stormwater Phase II Permit, including, but not limited to, site plan development applications, subdivision development applications, and grading permit applications, unless exempted pursuant to Sec. 1111(3)b below. These standards apply to any new development or redevelopment site that meets one or more of the following criteria:
    1. New development that involves the creation of 5,000 square feet or more of impervious cover, or that involves other land development activities that result in the disturbance of land of one acre or more;
    2. Redevelopment that includes the creation, addition or replacement of 5,000 square feet or more of impervious cover, or that involves other land development activity that results in the disturbance of land of one acre or more;
    3. Any new development or redevelopment, regardless of size, that is defined by the County to be a hotspot land use; or,



4. Land development activities that are smaller than the minimum applicability criteria set forth in Sec. 1111(3)a.1 and Sec. 1111(3)a.2 above if such activities are part of a larger common plan of development, even though multiple, separate and distinct land development activities may take place at different times on different schedules.
- b. The following activities are exempt from Sec. 1114 of this Division:
  1. Individual single-family or duplex residential lots that are not part of a subdivision or phased development project;
  2. Additions or modifications to existing single-family or duplex residential structures;
  3. Agricultural or silvicultural land management activities within areas zoned for these activities; and,
  4. Repairs to any stormwater management facility or maintenance practice deemed necessary by the Public Works Director.

## **Sec. 1112. Illicit non-stormwater discharges and illegal connections.**

### **(a) Prohibitions.**

#### **(1) Prohibition of illicit discharges.**

No person shall throw, drain, or otherwise discharge, cause or allow others under its control to throw, drain, or otherwise discharge into the Camden County separate storm sewer system or watercourses any materials, including but not limited to any pollutants or waters containing any pollutants, other than stormwater.

The commencement, conduct or continuance of any illicit discharge to the storm drain system is prohibited except as described as follows:

- a. Water line flushing performed by a government agency, other potable water sources, landscape irrigation or lawn watering, diverted stream flows, rising ground water, ground water infiltration to storm drains, uncontaminated pumped ground water, foundation or footing drains (not including active groundwater dewatering systems), crawl space pumps, air conditioning condensation, springs, natural riparian habitat or wetland flows, and any other water source not containing pollutants;
- b. Discharges or flows from firefighting, and other discharges specified in writing by the Camden County Board of Commissioners as being necessary to protect public health and safety;
- c. Dye testing is an allowable discharge, but requires a verbal notification to the Camden County Code Enforcement Department prior to the time of the test;
- d. Any non-stormwater discharge permitted under an NPDES permit, waiver, or waste discharge order issued to the discharger and administered under the authority of the Federal Environmental Protection Agency, provided that the discharger is in full compliance with all requirements of the permit, waiver, or order and other applicable laws and regulations, and provided that written approval has been granted for an discharge to the Camden County separate storm sewer system.

#### **(2) Control of construction site debris and wastes.**

All owners, applicants, contractors and developers shall control wastes such as discarded building materials, concrete truck washout, chemicals, litter, and sanitary waste on construction sites and shall keep streets, gutters, ditches, and storm drains clear of all sediment and debris from the site.

#### **(3) Prohibition of illegal connections.**

The construction, connection, use, maintenance or continued existence of any illegal connection to the Camden County separate storm sewer system is prohibited.

- a. This prohibition expressly includes, without limitation, illegal connections made in the past, regardless of whether the connection was permissible under law or practices applicable or prevailing at the time of connection.
- b. A person violates this Division if the person connects a line conveying sewage to the Camden County separate storm sewer system, or allows such a connection to continue.
- c. Improper connections in violation of this Division must be disconnected and redirected, if necessary, to an approved onsite wastewater management system or the sanitary sewer system upon approval of the County.
- d. Any drain or conveyance that has not been documented in plans, maps or equivalent, and which may be connected to the storm sewer system, shall be located by the owner or occupant of that property upon receipt of written notice of violation from the County requiring that such locating be completed. Such notice will specify a reasonable time period within which the location of the drain or conveyance is to be completed, that the drain or conveyance be identified as storm sewer, sanitary sewer or other, and that the outfall location or point of connection to the storm sewer system, sanitary sewer system or other discharge point be identified. Results of these investigations are to be documented and provided to the Camden County Public Works Department.

**(b) Industrial or construction activity discharges.**

Any person subject to an industrial or construction activity NPDES stormwater discharge permit shall comply with all provisions of such permit. Proof of compliance with said permit may be required in a form acceptable to the Camden County Public Works Department prior to allowing discharges to the Camden County separate storm sewer system.

**(c) Access and inspection of properties and facilities.**

The County, or its agent, shall be permitted to enter and inspect properties and facilities subject to regulation under this Division as often as may be necessary to determine compliance.

- (1) If a property or facility has security measures in force that require proper identification and clearance before entry into its premises, the owner or operator shall make the necessary arrangement to allow access to the County, or its agent.
- (2) The owner or operator shall allow the County, or its agent, ready access to all parts of the premises for the purposes of inspection, sampling, photography, videotaping, examination and copying of any records that are required under the conditions of an NPDES permit to discharge stormwater, and the performance of any additional duties as defined by state and federal law.
- (3) The County, or its agent, shall have the right to set up on any property or facility such devices as are necessary in the opinion of the County to conduct monitoring and/or sampling of the facility's stormwater discharge.
- (4) The County may require the owner or operator to install monitoring equipment and perform monitoring as necessary, and make the monitoring data available to the County. This sampling and monitoring equipment shall be maintained at all times in a safe and proper operating condition by the owner or operator at his/her own expense. All devices used to measure flow and quality shall be calibrated to ensure their accuracy.
- (5) Any temporary or permanent obstruction that inhibits access to the property or facility to be inspected and/or sampled shall be promptly removed by the owner or operator at the written or oral request of the County and shall not be replaced. The costs of clearing such access shall be borne by the owner or operator.
- (6) If the County, or its agent, has been refused access to any part of the premises from which stormwater is discharged, and the County is able to demonstrate probable cause to believe that there may be a violation of this Division, or that there is a need to inspect and/or sample as part of a routine

inspection and sampling program designed to verify compliance with this Division or any order issued hereunder, or to protect the overall public health, safety, environment and welfare of the community, then the County may seek issuance of a search warrant from any court of competent jurisdiction.

- (7) In the event a discharge constitutes an immediate danger to public health or public safety, the County, or its agent, is authorized to enter upon the subject private property, without giving prior notice, to take any and all measures necessary to abate the violation and/or restore the property. The County is authorized to seek costs of the abatement as outlined in "Costs of Abatement of the Violation" section below.

(d) **Notification of spills and accidental discharges.**

- (1) Notwithstanding other requirements of law, as soon as any person responsible for a facility, activity or operation, or responsible for emergency response for a facility, activity or operation has information of any known or suspected release of pollutants or non-stormwater discharges from that facility, activity, or operation which are resulting or may result in illicit discharges or pollutants discharging into stormwater, the Camden County separate storm sewer system, State Waters, or Waters of the U.S., said person shall take all necessary steps to ensure the discovery, containment, and cleanup of such release so as to minimize the effects of the discharge.
- (2) In the event of such a release of hazardous materials, said person shall immediately notify emergency response agencies of the occurrence via emergency dispatch services.
- (3) In the event of a release of non-hazardous materials, said person shall notify the Camden County Public Works Department in person or by phone no later than the next business day, including the nature, quantity and time of occurrence of the discharge. Notifications in person or by phone shall be confirmed by written notice, via certified mail return receipt requested addressed to the Camden County Public Works Department within 3 business days of the initial notice. If the discharge of prohibited materials emanates from a commercial or industrial establishment, the owner or operator of such establishment shall also retain an on-site written record of the discharge and the actions taken to prevent its recurrence. Such records shall be retained for at least three years.

**Sec. 1113. Maintenance of existing stormwater facilities.**

(a) **Responsibility for maintenance.**

The owners of private stormwater management facilities, detention facilities, and/or retention facilities shall be responsible for maintenance of those facilities. The owners shall be required to:

- (1) Maintain the proper operational characteristics of the facility; and,
- (2) Maintain the facility free of obstruction, silt or debris.

(b) **Maintenance requirement.**

- (1) When the County determines that deficiencies exist in a private stormwater management system, the County shall notify the owner and the beneficial owners in writing of the deficiencies, describe the required corrective action, and the time period to have the deficiencies corrected.
- (2) If the owners fail to correct the deficiencies within the specified time frame, the County, or its agent, may enter the property and make, at the owners' expense, the necessary repairs or corrections to the system.
- (3) In the event deficiencies constitute an immediate danger to public health or public safety, the County, or its agent, is authorized to enter upon the subject private property, without giving prior notice, to take any and all measures necessary to abate the violation and/or restore the function of the stormwater system at the owners' expense.

(c) **Easements.**

The owner of property containing a drainage easement shall not allow or cause to be deposited any material which causes a physical obstruction, including, but not limited to: structures; landscaping; fences; yard waste such as grass clippings, tree trimmings, and leaves; impervious cover; or any other material that may block the flow of water or otherwise disrupt proper function of the stormwater management system. All drainage easements shall be kept clear of obstructions along the entire length of the easement whether it be a buried pipe, ditch, or other facility contained within the easement. The property owner shall remove any such materials existing prior to, or installed after, the effective date of this Division.

(d) **Access and inspection of properties and facilities.**

- (1) The owners of property containing private stormwater management facilities, detention facilities, or retention facilities shall allow unimpeded access for the County to conduct inspections of the facilities. Inspections may be conducted by the Camden County Public Works Department at any time for any reasonable basis, including, but not limited to: routine inspections, random inspections, inspections based upon complaints or other notice of possible violations, and joint inspections with other agencies inspecting under environmental or safety laws.
- (2) Any temporary or permanent obstruction that inhibits access to the property or facility to be inspected shall be promptly removed at the written or oral request of the County and shall not be replaced. The costs of clearing such access shall be borne by the owner or operator.

**Sec. 1114. Stormwater management.**

(a) **General.**

Whenever and wherever conditions, as are caused or aggravated by reason of the subdivision of land hereunder, adversely affect the proper use or drainage of streets, highways, pedestrian ways, slopes or natural watercourses, or adversely affect the public health, safety, or welfare, the following improvements may be required to be provided and installed by the sub divider:

- (1) On-tract and/or off-tract drainage or drainage structures necessary for the proper use and drainage of slopes, streets, highways and pedestrian ways, or for public safety.
- (2) Erosion control planting and/or structural controls.

(b) **Stormwater application and permit.**

- (1) All persons proposing development and/or construction in Camden County shall submit a stormwater management plan to the county for approval. This plan shall comply with the requirements set forth in Sec. 1114(c) below.
- (2) To ensure compliance with all regulations, the plan shall be prepared by a Georgia Registered Professional Engineer qualified in the field of stormwater management, or, to the extent allowed by State law, by a Georgia Registered Landscape Architect or Land Surveyor.
- (3) A stormwater management plan incorporated into the approved construction plans shall constitute a permit that will satisfy the requirements of this Section.

(c) **Standards for stormwater management.**

- (1) All development and/or construction within Camden County shall meet requirements of the *Georgia Stormwater Management Manual, Vol. 2*, unless otherwise specified in this Division.
- (2) Any required retention and/or detention area shall not be developed. Facilities for the management of stormwater discharges shall be designed and constructed in a manner that enhances and protects the natural beauty and aesthetic qualities of Camden County. Appropriate vegetation shall be planted in all retention and/or detention areas. Any required retention and/or detention areas shall

be incorporated into the common areas of the residential development or incorporated into individual lots. The local government maintains the right, but not the responsibility, to access retention and/or detention areas for purposes of maintenance and inspection.

- (3) If a stormwater detention or retention facility is fenced at the option of the owner, it shall be provided with a minimum 8-foot wide gate to allow access by maintenance equipment.
- (4) Drainage easement requirements.
  - a. The minimum easement width for open ditch where pipe is feeding into the ditch will be determined as follows:

<b>Pipe Size Feeding Into Ditch</b>	<b>Minimum Easement Width</b>
15 to 30 inches	20 feet
36 to 66 inches	30 feet
72 inches and greater	40 feet

- b. Where a subdivision is traversed by a watercourse, drainage way or stream, there shall be a drainage and access easement conforming substantially with the lines of such watercourse, and such further width as will be adequate for the purpose of drainage and maintenance, taking into account possible future development of higher land in the same drainage area, in accordance with Table 11.1 above, or bank plus 20 feet. Such drainage way shall be piped when the Public Works Director shall find that it is a hazard or that a continual maintenance problem might exist.
    - c. If the drainage way is totally piped, the easement width shall be based on the associated pipe size above.
- (5) If any stormwater management system proposes to utilize the roadway embankment for the temporary impoundment (detention) of stormwater then additional engineering analysis and approved mitigation measures as determined on a case-by-case basis by the Public Works Director will be required to ensure the protection of the roadway system during all storm events in order to qualify for the exemption contained in the Private Bridges and Dams on Roadways Section of the Project Design and Construction Standards Article of this Development Code.

Said analysis and mitigation measures shall include but are not limited to;

- a. No impounded surface water elevation shall encroach into any portion of the public right-of-way, any utility easement/corridor, or any utility easement/corridor on private street easements
    - b. The 100-year water surface elevation must maintain a minimum of 3 vertical feet of freeboard from the lowest roadway elevation traversing the embankment.
    - c. The roadway embankment must be protected from seepage, erosion, and under-mining from any impoundment of water. Examples of protection measures may include but are not limited to anti-seep collars, special engineered embankment construction, and embankment armoring. At a minimum, embankment armoring protection measures shall be incorporated beginning at the highest water surface elevation calculated at 4.0 hours after the beginning of the storm event for all analyzed return frequencies including the 100 year event. The embankment armoring shall extend to the bottom of the impoundment facility. The Public Works Director may require additional protection measures based on maintenance needs or critical infrastructure protection needs.

(d) **Stormwater collection and transport system design considerations.**

An adequate system based upon at least a 25-year storm event shall be provided for the proper drainage of all surface water originating in or affecting the subdivision.

- (1) Stormwater inlets shall be designed and located so as not to exceed the maximum gutter spread allowed by Georgia DOT. This requirement applies only to U.S. and State numbered highways.
- (2) The drainage system shall conform to any county storm drainage master plan that may be adopted and shall include necessary curbing, pipes, culverts, headwalls, drop inlets, bridges, swale ditches or any other type of drainage facility needed to control the flow of water in, around or through the subdivision.
- (3) Pipe size will be determined by utilizing the Rational Method or the Soil Conservation Service Method (TR-55) to compute peak runoff. A 25-year storm event will be used to determine all pipe sizes.
- (4) Manning's equation shall be used to evaluate hydraulic capacity and velocity of flow within the storm drainage system. Required storm pipes shall be designed to maintain a water flow velocity greater than or equal to 3 feet per second. The hydraulic analysis of culverts shall be based on Federal Highway Administration engineering practice and take into account the inlet geometry, slope, size, roughness, and approach or tail water conditions. Stormwater inlets shall be designed in accordance with Federal Highway Administration engineering practice and constructed in compliance with Georgia D.O.T. construction standards and shall be Georgia D.O.T. Standard 1033, 1034, and 1019. Drainage calculation and design data are required for all stormwater conveyance systems and structures. All drainage structures shall be constructed of reinforced precast concrete, four 4 diameter or larger. All 1033D and 1034D drainage structures shall require a reinforced precast "Round to Square" adapter for additional throat support. All junction boxes shall include precast adapters and heavy duty traffic rated ring and covers. All manholes shall include approved steps, spaced 12 inches on center vertically, to allow safe access by maintenance personnel. All structures shall have paved inverts.
- (5) Energy dissipation devices, such as splash pads, rip rap, stilling basins, etc., shall be provided at the outlet of every culvert and piped discharge system. The size and type of energy dissipation device to be used shall be designed in accordance with sound engineering practices and this Division.
- (6) All drainage ditches that are between building lots shall be piped a minimum of 100 feet from the front building line. This shall be done at the expense of the developer.
- (7) Any routed stormwater shall attain sheet flow by the property line.
- (8) Discharge structures that are within close proximity to adjoining properties or the public right-of-way shall be screened from view.

(e) **Natural drainage.**

- (1) Natural drainage channels, ditches, swales and drainage patterns existing within a subdivision shall be retained and improved by the subdivider unless otherwise approved by the Public Works Director.
- (2) Off-site drainage shall be adequately transported through the proposed development.

(f) **Drainage system construction.**

All pipe sizes shall be approved by the Public Works Director to meet the drainage conditions of the watershed and area of the potential runoff, per current design standards and requirements.

- (1) The minimum cross drain diameter shall be 18 inches.
- (2) Minimum cover shall be 24 inches.
- (3) In all instances, depth requirements shall meet or exceed manufacturer's guidelines.

(g) **Materials and installation.**

(1) Pipes.

- a. Pipe material shall be determined based on type of installation, as set forth in Table 11.2 (below). All pipes shall be new and unused.
- b. The gauge or class of pipe used shall be determined by acceptable methods using H-20 highway loading, and shall meet Georgia D.O.T. Specifications. The Public Works Director, or his/her duly appointed representative, shall inspect the pipe before installation to assure that it is free of cracks or damage. All damaged, used, or “second” quality pipe shall be refused and immediately removed from the job site.

<b>Table 11.2: Selection Guidelines for Storm Sewer Piping</b>			
<b>Type of Pipe Installation</b>	<b>Reinforced Concrete Pipe (RCP)</b>	<b>Plastic AASHTO M-294</b>	<b>Reinforced Concrete Box Culvert</b>
		<b>Corrugated HDPE Smooth Lined</b>	<b>Per GDOT Standards</b>
Longitudinal Grade Less Than 10%	Yes	Yes (1)	---
Longitudinal Grade Over 10%	No	Yes (1)	---
Cross Drain Less Than 250 ADT	Yes	Yes (1)	---
Cross Drain Greater Than 250 ADT	Yes	No	---
Cross Drain Flowing Stream Application	Yes	Yes (1) (3)	---
Cross Drain  25 Yr Flow > 200 CFS <i>or</i> Fill Depth > 18 ft	(2)	No	Yes
<p>Conditional Uses:</p> <p>(1) Corrugated high-density polyethylene pipe smooth lined type “S” must be manufactured and installed in strict compliance with the manufacturer’s recommendation. Special backfill and bedding are required per the direction of the Public Works Director. Prior approval of the Public Works Director is required. HDPE applications shall not exceed 36” diameter.</p> <p>(2) Reinforced concrete box culverts are required under excessive flow and/or fill depth conditions. Approved pipe materials may be utilized in some instances based on the Public Works Director’s assessment of existing conditions and future maintenance requirements.</p> <p>(3) Requires approval of Public Works Director based on assessment of existing conditions and future maintenance requirements.</p>			

- (2) Joints and installation.
  - a. Reinforced concrete pipe joints must be properly constructed to prevent exfiltration.
  - b. The use of O-rings or sealants may be required, depending on pipe design.
  - c. All storm sewer piping shall be constructed in a linear approach with no vertical or horizontal variance from the approved design.
  - d. High-density polyethylene (HDPE) and corrugated metal pipe (CMP) shall be joined by manufacturer's recommended pipe banding materials. All trench lines shall be thoroughly compacted prior to pipe installation. HDPE pipe will require special bedding and installation in strict accordance with manufacturer's specifications and as directed by the Public Works Director.
- (3) Only reinforced concrete pipe shall be used within street right-of-way on arterial roads. Reinforced concrete pipe shall be used on all cross drains crossing under the roadway for major and minor collectors. Concrete pipe shall not be used on grades exceeding 10%. Metal pipe may be used within the rights-of-way of local streets and for driveway culverts. Metal pipe shall either be corrugated steel (AASHTO M-36) with aluminized Type II or bituminous coating or corrugated aluminum alloy pipe (AASHTO M-196).
- (4) Corrugated high density polyethylene pipe smooth lines type "S" can only be used for residential driveway applications and shall not exceed 36 inches in diameter.
- (5) Pipe installation shall conform to Georgia D.O.T. Standard Specifications for construction of roads and bridges. Before any traffic over a storm drain is allowed, the developer shall provide an adequate depth and width of compacted backfill to protect the structure from damage or displacement. The developer shall remove any debris or silt that constricts the flow through a pipe as of as necessary to maintain drainage. All pipe structures shall be cleaned before the work is accepted. Any damage or displacement that may occur due to traffic or erosion shall be repaired or corrected at the developer's expense.
- (6) Trench construction for storm drainage pipe shall be in accordance with State Highway Standard 1030D (or most current) or as directed by the road and bridge inspector.
- (7) Storm drainage pipe shall be bedded in Type 57 gravel where wet conditions are encountered.
- (8) Backfilling of trenches shall be accomplished immediately after the pipe is laid. The fill around the pipe shall be placed in layers not to exceed 6 inches with each layer being thoroughly compacted. All material shall have an in place density of 98% modified proctor to a depth of 6 inches below the finished grade, and 95% modified proctor at depth greater than 6 inches below the finished grade. Compaction requirements shall be attained by the use of mechanical methods. Each layer of backfill shall be placed loosely and thoroughly compacted in place.
- (9) All backfill shall be non-plastic in nature, free from roots, vegetative matter, waste, construction material or other objectionable material. Said material shall be capable of being compacted by mechanical means and shall have no tendency to flow or behave in a plastic manner under the tamping blows.
- (10) Material deemed by the Public Works Director as unsuitable for backfill purposes shall be removed and replaced with selected backfill material.
- (11) Water shall not be permitted to rise in trenches that are not backfilled after the pipe has been placed.

(h) **Field changes.**

Minor changes to approved construction plans because of field conditions shall be documented as revisions to the approved development plans and correctly shown on the as-built drawings. Discrepancies between the as-built drawings and the approved development plans may result in delays in approving final plans or certificates of



occupancy until the discrepancies are resolved. See the Field Changes Division of the Procedures and Permits Article of this Development Code.

(i) **Endwalls.**

All culverts shall have endwalls or flared end sections constructed in accordance with Georgia D.O.T. Specifications and Georgia D.O.T. Manual on Drainage Design for Highways. All flared end sections under or adjacent to roadways with a posted speed in excess of 25 mph shall be safety end sections per Georgia D.O.T. standards.

(j) **Catch basins and storm sewer structures.**

- (1) All catch basins and storm sewer structures shall be designed and constructed in compliance with Georgia D.O.T. Specifications and shall be Georgia D.O.T. Standard 1033D, 1034D, or 1019.
- (2) The use of a Standard 1019 shall be excluded from turnarounds and the low point of sag vertical curves draining more than 300 feet of gutter. Drainage calculations and design data are required for the use of a Standard 1019.
- (3) All drainage structures shall be constructed of reinforced precast concrete, 4 foot diameter or larger.
- (4) All 1033D and 1034D drainage structures shall require a reinforced precast "Round to Square" adapter for additional throat support.
- (5) All junction boxes shall include precast adapters and heavy duty traffic rated ring and covers. All junction boxes shall include approved steps, spaced 12 inches on center vertically, to allow safe access by maintenance personnel.
- (6) All storm sewer structures shall be reinforced precast or poured in place reinforced concrete. Masonry structures are not allowed unless authorized in writing by the Public Works Director.
- (7) No length of pipe shall exceed 300 feet without intermediate structures.
- (8) In certain instances where rolled or "hollywood" curb is utilized, the Public Works Director may require the use of 1033F and 1034F catch basins or an alternate structure acceptable to the Public Works Director.
- (9) All structures shall have recessed bottoms to minimize accumulation of water and sediment in the structure.
- (10) All structure covers shall be cast to read "Camden County Storm Sewer, Dump No Waste – Drains to Stream."

(k) **Timing of installation.**

Construction of the stormwater system shall be initiated as part of the grading of the site. Stormwater detention facilities shall be constructed prior to the installation of any other site improvements, and may be utilized under proper design as sedimentation basins during development. Installation of all other storm drainage pipes, culverts, headwalls and ditches shall be coordinated with the construction of streets and other site improvements, as appropriate, in accordance with an approved Stormwater Management Plan.

(l) **Maintenance responsibilities.**

- (1) The developer shall be responsible for removing temporary structures or facilities at the completion of the construction.
- (2) It shall be the responsibility of the developer to maintain all facilities required by the Stormwater Management Plan during construction and for a maintenance period following approval of the final subdivision plat or issuance of a certificate of occupancy, as applicable. The maintenance period shall

coincide with the continuing maintenance period required under the Required Improvements Section of the Project Design and Construction Standards Article of this Development Code regarding streets and drainage.

- (3) Should an owner or developer, whichever is the responsible party, fail to maintain the stormwater management facilities in a state of service intended by the Stormwater Management Plan, then the County shall notify the responsible party in writing of the deficiencies and specific minimum maintenance requirements to remedy such deficiencies.

(m) **Stormwater discharge management.**

- (1) Stormwater design manual.

The Camden County Public Works Department will utilize the policy, criteria and information including technical specifications and standards in the latest edition of the *Georgia Stormwater Management Manual, Volume 2*, and any relevant local addenda, for the proper implementation of the requirements of this Division, except that structural stormwater controls shall require prior approval of the Camden County Public Works Department as described below. The manual may be updated and expanded periodically, based on improvements in science, engineering, monitoring and local maintenance experience.

- (2) Minimum Stormwater Management Standards.

The Minimum Stormwater Management Standards identified in the *Georgia Stormwater Management Manual, Volume 2* shall be the required minimum stormwater management performance criteria for new development or redevelopment sites unless otherwise provided for in this Division. In addition, the Overbank Flood Protection standard shall include control of the post development discharge rates to the predevelopment rates for the 2, 5, 10, 25 and 50-year storm events. If hydrologic or topographic conditions, or land use activities warrant greater control than that provided by the minimum control requirements, the Camden County Public Works Department may impose additional requirements deemed necessary to protect upstream and downstream properties and aquatic resources from damage due to increased volume, frequency, rate of stormwater runoff, the nature of the post development discharge, or increased nonpoint source pollution loads created on the site in question

- a. Structural stormwater controls.

1. All structural stormwater controls shall be submitted to the Camden County Public Works Department for review and approval before being included in the design of a stormwater management system. The intent of the approval process is to review independent third-party scientific verification of the structural controls performance and ability to meet water quality treatment objectives, verify the proven record of longevity in the field, verify the ability to function in Georgia conditions, and evaluate the operation and maintenance costs as compared to other alternatives.
2. Applicants shall consult the *Georgia Stormwater Management Manual, Volume 2* for guidance on the factors that determine site design feasibility when selecting and locating a structural stormwater control.

- b. Stormwater Credits for Nonstructural Measures.

The use of one or more site design measures by the applicant may allow for a reduction in the water quality treatment volume required under Water Quality section above. The applicant may, if approved by the Camden County Public Works Department, take credit for the use of stormwater better site design practices and reduce the water quality volume requirement. For each potential credit, there is a minimum set of criteria and requirements which identify the conditions or circumstances under which the credit may be applied. The site design practices that qualify for this credit and the criteria and procedures for applying and calculating the credits are included in the *Georgia Stormwater Management Manual, Volume 2*.

- (3) Stormwater Management Inspection and Maintenance Agreements.

The applicant or owner of the site must execute an inspection and maintenance agreement, which shall be binding on all subsequent owners of the site, for any land development activity requiring a stormwater management facility or practice hereunder and for which the County requires ongoing maintenance.

- a. A draft copy of the inspection and maintenance agreement shall be contained within the construction plans submitted for a land development permit. Approval of the construction plans shall constitute preliminary approval of the inspection and maintenance agreement. Prior to the submission of the final plat for approval, or request for a Certificate of Occupancy where a final plat is not required, the owner shall record the inspection and maintenance agreement in the deed records of Camden County. The owner shall provide a copy of the recorded agreement to the Camden County Public Works Department with the final plat, or request for Certificate of Occupancy where a final plat is not required. The final plat shall have a notation referencing the deed book number and page of the recorded inspection and maintenance agreement indicating that individual lot owners are subject to the terms and conditions of said agreement.
  - b. The inspection and maintenance agreement be binding on all affected property, shall run with the land, and shall identify by name or official title the person(s) responsible for carrying out the inspection and maintenance. Responsibility for the operation and maintenance of the stormwater management facility or practice shall remain with the property owner and shall pass to any successor owner. If portions of the land are sold or otherwise transferred, legally binding arrangements shall be made to pass the inspection and maintenance responsibility to the appropriate successors in title. These arrangements shall designate, for each portion of the site, the person to be permanently responsible for its inspection and maintenance.
  - c. As part of the inspection and maintenance agreement, a schedule shall be developed for when and how often routine inspection and maintenance will occur to ensure proper function of the stormwater management facility or practice. The agreement shall also include plans for annual inspections to ensure proper performance of the facility between scheduled maintenance activities and shall also include remedies for the default thereof.
- (4) Long-Term Inspection and Maintenance of Stormwater Facilities and Practices.
- a. Stormwater management facilities and practices which are subject to an inspection and maintenance agreement shall be inspected and maintained on a routine basis by the responsible person in accordance with the approved inspection and maintenance agreement. Parties responsible for the operation and maintenance of a stormwater management facility shall maintain records of all maintenance and repairs, and provide copies of said records to the Camden County Public Works Department.
  - b. In the event that the stormwater management facility has not been maintained, the County shall notify the responsible person in writing of the deficiencies, describe the required corrective action, and the time period to have the deficiencies corrected.
  - c. If the responsible person fails to correct the deficiencies within the specified time frame, the County, or its agent, may enter upon the property and make, at the owners' expense, the necessary repairs or corrections to the system.
  - d. In the event deficiencies constitute an imminent danger to public health or public safety, or threatens downstream water resources, the County, or its agent, is authorized to enter upon the subject private property, without giving prior notice, to take any and all measures necessary to abate the violation and/or restore the function of the stormwater facilities at the owners' expense.
- (5) Access and Inspection of Properties and Facilities.
- a. The owners of property containing stormwater management facilities, detention facilities, or retention facilities shall allow unimpeded access for the County to conduct inspections of the facilities. Inspections may be conducted by the Camden County Public Works Department at

any time for any reasonable basis, including, but not limited to: routine inspections, random inspections, inspections based upon complaints or other notice of possible violations, and joint inspections with other agencies inspecting under environmental or safety laws. Inspections may include, but are not limited to: reviewing maintenance and repair records; measurement of discharges, location measurements, surveying, sampling of surface and ground waters; and evaluations of the condition of stormwater management facilities and practices.

- b. Any temporary or permanent obstruction that inhibits access to the property or facility to be inspected shall be promptly removed at the written or oral request of the County and shall not be replaced. The costs of clearing such access shall be borne by the owner or operator.

(6) **Easements.**

The owner of property containing a drainage easement shall not allow or cause to be deposited any material which causes a physical obstruction in the easement, including, tree trimmings, and leaves; impervious cover; or any other material that may block the flow of water or otherwise disrupt proper function of the stormwater management system. All drainage easements shall be kept clear of obstructions along the entire length of the easement whether it be a buried pipe, ditch or other facility contained within the easement. The property owner shall remove any such materials existing prior to, or installed after, the effective date of this Division.

**Sec. 1115. Violations, enforcement and penalties.**

(a) **Violations.**

It shall be unlawful for any person to violate any provision or fail to comply with any of the requirements of this Division. Any person who has violated or continues to violate the provisions of this Division, may be subject to the enforcement actions outlined in this section or may be restrained by injunction or otherwise abated in a manner provided by law. Each act of violation and each day during which violation or failure or refusal to comply continues shall be a separate violation. Unreasonable delays in allowing the County, or its agent, access to the property is a violation of this Division.

(b) **Notice of violation.**

Whenever the County finds that a violation of this Division has occurred, the County may order compliance by written notice of violation.

(1) The notice of violation shall contain:

- a. The name and address of the alleged violator;
- b. The address when available or a description of the building, structure or land upon which the violation is occurring, or has occurred;
- c. A statement specifying the nature of the violation;
- d. A description of the remedial measures necessary to restore compliance with this Division and a time schedule for the completion of such remedial action;
- e. A statement advising that if the violator fails to remediate or restore the affected property within the established deadline, the work will be done by the County or a contractor and the expense thereof shall be charged to the violator; and
- f. A statement of the penalty or penalties that shall or may be assessed against the person to whom the notice of violation is directed.

(2) Such notice may require without limitation:

- a. The performance of monitoring, analyses, and reporting;
- b. The elimination of illicit discharges and illegal connections;

- c. That violating discharges, practices, or operations shall cease and desist;
  - d. The abatement or remediation of stormwater pollution or contamination hazards and the restoration of any affected property;
  - e. Payment of costs to cover administrative and abatement costs; and,
  - f. The implementation of pollution prevention practices.
- (c) **Costs of abatement of the violation.**
- (1) If the violator fails to correct the violation within the specified time frame, the County, or its agent, may enter the property and take, at the violator's expense, any and all measures necessary to abate the violation and/or restore the property.
  - (2) Following completion of corrective action, the County shall send to the violator an invoice for the costs incurred to correct the violation and/or restore the property. If the amount due is not paid within 30 days, the charges shall become a special assessment against the property, and shall constitute a lien on the property for the amount of the assessment.

(d) **Civil penalties.**

A person who has violated, or continues to violate, any provisions of this Division shall be liable to the County for a maximum penalty of \$1,000 per violation, per day.

(e) **Remedies not exclusive.**

- (1) The remedies listed in this Division are not exclusive of any other remedies available under any applicable Federal, State or local law and the County may seek cumulative remedies.
- (2) The County may recover all attorneys' fees, court costs and other expenses associate with enforcement of this Division, including sampling and monitoring expenses.

**Sec. 1116. Appeals.**

- (1) The Camden County Board of Commissioners shall hear and decide appeals when it is alleged an error in any requirement, decision, or determination in made in the enforcement or administration of this Division.
- (2) Any person aggrieved by the decision of the Board of Commissioners may appeal such decision to a court of competent jurisdiction, as provided by law.

**DIVISION 3. GRADING AND DRAINING OF INDIVIDUAL BUILDING SITES.**

**Sec. 1117. Authority and responsibility.**

The Camden County Board of Commissioners hereby sets forth the minimum standards for establishing proper drainage during the development of property situated within the unincorporated areas of Camden County, Georgia. Matters set forth herein shall be considered supplementary of the existing building codes adopted in Camden County, Georgia, and to the extent there is any conflict with the provisions hereof and the provisions of any such building code, the stricter standards shall apply.

**Sec. 1118. Definitions relating to grading and draining of individual building sites.**

Unless specifically defined below, a word or phrase used in this Division 3 shall be interpreted so as to give it the meaning in common usage and to give this Division 3 its most reasonable application.

*Driveway Grade:* The grade of the centerline of driveway measured at its steepest point.

*Easement:* A grant by a property owner of the use of land for a specific purpose or purposes by the general public, or a corporation or a certain person or persons.

*Gradient:* Slope.

*Gradient Formula:*  $d = g \cdot l / 100$  where  $d$  is vertical difference in elevation in feet;  $l$  is horizontal distance in feet; and  $g$  is slope or gradient expressed as a percent.

*Infiltration:* 1) The use of pervious surfaces to allow rainfall to soak into the ground on site. 2) The process of percolating stormwater runoff into the subsoil.

*Intensity of Rainfall Event:* The rate at which rain is falling at any given instant during the life of a rainfall event expressed in inches per hour.

*Parcel:* See "Lot of Record."

*Private Walkway:* That portion of "on-site" development that provides pedestrian access through the site to a building or other destination.

*Public Utilities:* Water, gas, sanitary and storm sewer, electrical and communications lines and facilities, and improved drainage facilities.

*Return Frequency Storm:* The statistically expected time interval between recurrences of a storm of an equal or greater intensity for a given duration.

*Surface Water:* The surface drainage of water, its management, control, transportation, storage, and disposal.

*Swale:* A shallow lineal depression with a parabolic cross-section and gently sloped sides.

## **Sec. 1119. Objective.**

- (1) Drainage of surface water should be provided away from all sides of all buildings and off the lot in a manner that will:
  - a. Minimize the possibility of dampness in basements and crawl spaces;
  - b. Prevent adverse supporting soil behavior;
  - c. Prevent soil erosion; and
  - d. Prevent standing (or ponding) of water on site.
- (2) Walks, driveways, retaining walls and other improvements should be constructed so as not to interfere with drainage. Required walks should not be used as drainage channels.

Site grading and drainage should:

- a. Provide suitable access from the abutting street to the dwelling and any accessory buildings;
- b. Provide immediate diversion of water away from buildings and off the site;
- c. Avoid concentrating runoff onto neighboring properties where erosion or other damage may be caused;
- d. Provide usable outdoor space for occupants; and
- e. Minimize erosion.

The Georgia Erosion and Sedimentation Act of 1975, (O.C.G.A. 12-7-1 *et seq.*, as amended, where applicable, applies.

## **Sec. 1120. Finished grading.**

- (1) All unpaved lot areas, except those preserved in an appropriate natural condition, should be fine graded to provide smooth even surfaces conforming to the elevations specified below. All debris should be removed prior to fine grading.

- (2) Minimum protective slope. All walls and foundations of buildings and any water-supply well should be provided with protective slopes to assure immediate drainage and diversion of surface water away from these structures and off the site.
- (3) The finish grading should:
  - a. Provide a minimum fall of 6 inches away from the structure in 10 feet, except as restricted by side lot lines or other major considerations, without regard to soil type or ground frost conditions. The horizontal length of such slopes may be reduced as necessary at building corners and side yards.
  - b. Provide at least 6 inches in 25 feet (2% gradient) in all other unpaved areas, subject to ground frost, expansive soils, or collapsible soils, or at least 3 inches in 25 feet (1% gradient) in unpaved areas not subject to such conditions.
  - c. If minimum slopes cannot be attained, paved gutters or other drainage structures may be installed as required by the inspection office.
  - d. All unpaved areas should slope continuously at the above gradients to lower elevations off site, or to a drainage structure on the lot.
  - e. Drainage swales or valleys formed by intersecting slopes should have adequate depth, width and longitudinal gradient to carry away the maximum predictable volume of storm water runoff based on a one hundred year return frequency. In no instance shall swales be positioned over sewage infiltration fields.
    1. Gradients of unpaved swales should not be less than required above for other unpaved areas.
    2. Surface erosion protection should be in place to prevent accumulation of water in critical drainage swales.
  - f. Where catch basins or inlets are installed, other than at required basements areaways, finish grade elevations of adjoining areas should provide for emergency surface overflow so that, in event of failure of catch basins or inlets, buildings and window wells (or areaways) will be protected against flooding.
  - g. Areaways for basement windows, entrances and garage entrances should be provided with effective drainage facilities. Catchment areas should be as small as possible and must be protected from overflow of stormwater from adjacent areas.
  - h. Roof drainage should discharge at least 5 feet away from building walls when expansive, collapsible or erodible soils are present.
- (4) Height and steepness of slopes and maximum gradients of unpaved drainage channels should be such as can be satisfactorily maintained without erosion or land slippage and should provide reasonable access to and around the structure.
  - a. For access around buildings and for maintenance of building and lot improvements, an area generally at least 4 feet wide with a gradient away from the building no steeper than 1 in 10 (10% gradient), should be provided.
  - b. Where considered necessary by the inspection office, precautionary measures should be taken to stabilize the soil (e.g., retaining walls, sodding or planting).
- (5) Suitable drainage structures, such as paved gutters, drain inlets and subsurface drain lines, should be installed, where necessary, to protect against dampness, flooding, erosion or other damage by surface water or ground water.
  - a. Drainage structures should be properly connected to adequate outlets that are protected by recorded permanent easements, if required.

- b. Perimeter foundation drains are necessary on all houses with basements or potentially habitable living space below finish exterior earth grade or in other situations where water and/or soil conditions warrant their use. Outlets must not permit backflow into subsurface drains.

### **Sec. 1121. Walks, steps and driveways.**

- (1) A walk and any necessary step(s) should provide safe and convenient use from a dwelling directly to the street or to a driveway connected to street. Walk and step construction should be of durable and appropriate material, on stable adequately-drained subgrade or bed.
- (2) Walk design.
  - a. The gradient should not be steeper than 1 in 20 (5%) in areas subject to frequent freezing or 1 in 10 (10%) in other areas.
  - b. Cross-slope should be adequate for immediate drainage of surface water off the walk; required walk must not be used as a drainage channel.
  - c. Walk surfaces should be at or below adjacent ground elevations. .
- (3) Step design.
  - a. Width of steps should not be less than the width of the walk that is served.
  - b. A single step in a walk and any flight of steps of more than 5 feet total rise should be avoided wherever practicable; a substantial handrail of durable construction must be provided if there is more than a 30-inch rise in a single flight.
- (4) Driveways.

Driveways should be provided from the street to the garage or carport, if any; if no garage or carport, a. Driveway will generally extend to the rear line of the dwelling. In case of unusual difficulty or hardship, other parking space acceptable to the inspection .office may be provided. Construction should be with suitable subgrade, base, drainage and surfacing so as to be durable under the use and maintenance contemplated.

- a. The longitudinal gradient of the driveway should not be less than 1 percent, nor steeper than permitted for walks if the driveway is also used as a required walk and, if used only as a driveway, no less than 1 percent and no steeper than 14 percent. Maximum gradient shall be determined at the steepest point. Crown, or cross slope, should not be greater than 5 percent.
- b. Grade transitions should be provided at top and bottom of steep driveways to prevent dragging of vehicle undercarriages or bumper guards.
- c. The gradient of a required parking space should not be steeper than 5 percent nor less than 1 percent.
- d. Driveway culvert piping shall be a minimum of 15 inches in diameter installed with an absolute minimum of 1¼ feet of cover. The minimum slope shall be 1 percent. Said pipe shall extend a minimum distance of 4 feet to each side of the area serviced. Rip-rap of number one stone shall be installed at the out invert of said pipe for a distance of 3 linear feet, where required.

### **Sec. 1122. Access to buildings and non-dwelling facilities.**

- (1) Each dwelling shall have safe and convenient pedestrian access from street to the dwelling.
- (2) Each dwelling shall have convenient access for service and the provision of utilities.

### **Sec. 1123. Ground water.**

Buildings, structures, paved areas, driveways, and utilities shall be located on the site in such a way as to reasonably minimize ground water hazards.



**Sec. 1124. Drainage and flood hazard exposure.**

- (1) The minimum grades at buildings and at openings into basements shall be at elevations which prevent adverse effects by water or water entering basements from flood levels.
- (2) Protection shall be equivalent to a 50-year return frequency after full development. The floor elevations of all habitable space shall be above runoff and flood levels equivalent to a 100-year return frequency after full development and as specified in the Flood Damage Prevention regulations of this Article.

**Sec. 1125. Special conditions.**

When special conditions exist or arise during construction that were unforeseen and that necessitate precautionary or hazard mitigating measures, the inspection office shall require corrective work to mitigate potential adverse effects from the special conditions as may be necessary. Special conditions include rock formations, unstable soils or slopes, high ground water levels, springs, or other conditions that may adversely affect a property. It shall be the property owner's responsibility to assure proper design, construction and satisfactory performance where such are present.

**Sec. 1126. Variances.**

Variances from the requirements of this Division 3 may be granted as a special exception variance under the provisions of the Appeals Article of this development Code.

**DIVISION 4. FLOOD DAMAGE PREVENTION.****Sec. 1127. Generally.****(a) Definitions.**

Unless specifically defined in this section, words or phrases used in this article shall be interpreted so as to give them the meaning they have in common usage and to give this article its most reasonable application. The following words, terms and phrases, when used in this article, shall have the meanings ascribed to them in this section, except where the context clearly indicates a different meaning:

*Accessory structure* means a structure having minimal value and used for parking, storage and other non-habitable uses, such as garages, carports, storage sheds, pole barns, hay sheds and the like. See also the definition of "Structure."

*Addition (to an existing building)* means any walled and roofed expansion to the perimeter of a building in which the addition is connected by a common load-bearing wall other than a firewall. Any walled and roofed addition, which is connected by a firewall or is separated by an independent perimeter load-bearing wall, is considered "new construction."

*Appeal* means a request for a review of the interpretation by the Planning Director or any other administrative official of the County of any provision of the Development Code.

*Area of shallow flooding* means a designated AO or AH Zone on a community's Flood Insurance Rate Map (FIRM) with base flood depths from one to three feet, and/or where a clearly defined channel does not exist, where the path of flooding is unpredictable and indeterminate, and where velocity flow may be evident.

*Area of special flood hazard* means the land in the floodplain within the county subject to a one percent or greater chance of flooding in any given year. In the absence of official designation by the Federal Emergency Management Agency, Areas of Special Flood Hazard shall be those designated by Camden County.

*Base flood* means the flood having a one percent chance of being equaled or exceeded in any given year.

*Base Flood Elevation (BFE)* the elevation shown on the Flood Insurance Rate Map for Zones AE, AH, A1-A30, AR/A, AR/AE, AR/A1-A30, AR/AH, AR/A0, V1-V30, and VE that indicates the water surface elevation resulting from a flood that has a one percent chance of equaling or exceeding that level in any given year.

*Basement* means that portion of a building having its floor subgrade (below ground level) on all sides.

*Building* See definition for structure.

*Critical Facility* means any public or private facility, which, if flooded, would create an added dimension to the disaster or would increase the hazard to life and health. Critical facilities include:

- a. Structures or facilities that produce, use, or store highly volatile, flammable, explosive, toxic, or water-reactive materials;
- b. Hospitals and nursing homes, and housing for the elderly, which are likely to contain occupants who may not be sufficiently mobile to avoid the loss of life or injury during flood and storm events;
- c. Emergency operation centers or data storage centers which contain records or services that may become lost or inoperative during flood and storm events; and generating plants, and other principal points of utility lines.
- d. Generating plants, and other principal points of utility lines.

*Development* means any manmade change to improved or unimproved real estate, including but not limited to, buildings or other structures, mining, dredging, filling, grading, paving, excavating, drilling operations, and storage of materials or equipment.

*Elevated building* means a non-basement building built to have the lowest floor elevated above ground level by means of fill, solid foundation perimeter walls, pilings, columns, piers or shear walls adequately anchored so as not to impair the structural integrity of the building during a base flood event.

*Existing Construction.* For the purposes of flood damage prevention, any structure for which the "start of construction" commenced before June 1, 1984.

*Existing manufactured home park or subdivision* means a manufactured home park or subdivision for which the construction of facilities for servicing the lots on which the manufactured homes are to be affixed (including at a minimum the installation of utilities, the construction of streets, and final site grading or the pouring of concrete pads), is completed before June 1, 1984.

*Expansion to an existing manufactured home park or subdivision* means the preparation of additional sites by the construction of facilities for servicing the lots on which the manufactured homes are to be affixed, including the installation of utilities, the construction of streets, and either final site grading or pouring of concrete pads.

*Flood or flooding* means a general and temporary condition of partial or complete inundation of normally dry land areas from the overflow of inland or tidal waters, or from the unusual and rapid accumulation or runoff of surface waters from any source.

*Flood Hazard Boundary Map (FHBM)* means an official map of Camden County, issued by the Federal Insurance Administration, where the boundaries of areas of special flood hazard have been defined as Zone A.

*Flood Insurance Rate Map (FIRM)* means the official map of the county, issued by the Federal Emergency Management Agency, delineating the areas of special flood hazard and/or the risk premium zones applicable to the county.

*Flood insurance study* means the official report by the Federal Insurance Administration evaluating flood hazards and containing flood profiles and water surface elevations of the base flood.

*Floodplain* means any land area susceptible to flooding.

*Flood proofing* means any combination of structural and non-structural 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.

*Floodway* means the channel of a river or other watercourse and the adjacent land areas that must be reserved in order to discharge the base flood without cumulatively increasing the water surface elevation more than one foot.

*Floor* means the top surface of an enclosed area in a building, including basement, i.e., top of slab in concrete slab construction or top of wood flooring in wood frame construction. The term does not include the floor of a garage used solely for parking vehicles.

*Freeboard* means a factor of safety usually expressed in feet above a flood level for 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, blockage of bridge and culvert openings, and the hydrological effect of urbanization of the watershed.

*Highest adjacent grade* means the highest natural elevation of the ground surface, prior to construction, next to the proposed walls of a building or structure.

*Historic Structure* means any structure that is:

- a. Listed individually 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;
- b. Certified or preliminarily determined by the Secretary of the Interior as contributing to the historical significance of a registered historic district or a district preliminarily determined by the Secretary to qualify as a registered historic district;
- c. Individually listed on a state inventory of historic places and determined as eligible by states with historic preservation programs which have been approved by the Secretary of the Interior; or
- d. Individually listed on a local inventory of historic places and determined as eligible by communities with historic preservation programs that have been certified either: (1) by an approved state program as determined by the Secretary of the Interior, or (2) directly by the Secretary of the Interior in states without approved programs.

*Lowest floor* means the lowest floor of the lowest enclosed area, including basement. An unfinished or flood resistant enclosure, usable solely for parking of vehicles, building access or storage, in an area other than a basement area is not considered a building's lowest floor; provided that such enclosure is not built so as to render the structure in violation of other provisions of this Development Code.

*LiMWA is the* Limit of Moderate Wave Action of Landward Limit of waves 1.5 to 3.0 feet in height within the AE flood zone. The LiMWA determines the landward limit of Coastal A Zone (CAZ).

*Manufactured home* means a building, transportable in one or more sections, built on a permanent chassis and designed to be used with or without a permanent foundation when connected to the required utilities. Such Buildings shall be constructed in accordance with the Federal Manufactured Home Construction and Safety Standard, which came into effect June 15, 1976, and shall bear an insignia issued by the U. S. Department of Housing and Urban Development (HUD). The term also includes park trailers, travel trailers, and similar transportable structures placed on a site for 180 consecutive days or longer and intended to be improved property.

*Manufactured home park or subdivision* means a parcel, or contiguous parcels, of land divided into two or more manufactured home lots for rent or sale.

*Market value* means (1) the appraised value of the structure prior to the start of the initial repair or improvement, or (2) in the case of damage, the appraised value of the structure prior to the damage occurring. The appraised value of property or structures shall be determined by the tax assessor, either from the County's tax records or based on a professional appraisal acceptable to the tax assessor.

*Mean sea level* means the average height of the sea for all stages of the tide. It is used as a reference for establishing various elevations within the floodplain. For purposes of the National Flood Insurance Program, the National Geodetic Vertical Datum (NGVD) of 1988 or other datum, to which base flood elevations shown on a communities' Flood Insurance Rate Map are referenced. *National Geodetic Vertical Datum (NGVD)*, as corrected in 1929, is a vertical control used as a reference for establishing varying elevations within the floodplain.

*New construction* means, for the purpose of determining insurance rates, structures for which the "start of construction" commenced on or after June 1, 1984 and includes any subsequent improvements to such structures. For floodplain management purposes, "new construction" means structures for which the "start of construction" commenced on or after June 1, 1984 and includes any subsequent improvements to such structures.

*New manufactured home park or subdivision* means a manufactured home park or subdivision for which the construction of facilities for servicing the lots on which the manufactured homes are to be affixed (including at a minimum, the installation of utilities, the construction of streets, and either final site grading or the pouring of concrete pads) is completed on or after June 1, 1984.

*North American Vertical Datum (NAVD)* has replaced the National Geodetic Vertical Datum of 1929 in existing and future FEMA Flood Modernization Maps.

*Recreational vehicle* means a vehicle, which is:

- a. Built on a single chassis;
- b. 400 square feet or less when measured at the largest horizontal projection;
- c. Designed to be self-propelled or permanently towable by a light duty truck; and
- d. Designed primarily not for use as a permanent dwelling but as temporary living quarters for recreational, camping, travel, or seasonal use.

*Repetitive Loss* means flood-related damages sustained by a structure on two separate occasions during a 10-year period for which the cost of repairs at the time of each such flood event, on the average, equals or exceeds 25 percent of the market value of the structure before the damaged occurred.

*Start of construction* means the date the development permit was issued, provided the actual start of construction, repair, reconstruction or improvement was within 180 days of the permit date. The actual start means the first placement of permanent construction of a structure such as the pouring of slabs or footings, installation of piles, construction of columns or any work beyond the stage of excavation, and includes the placement of a manufactured home on a foundation. Permanent construction does not include initial 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 buildings, such as garages or sheds not occupied as dwelling units or part of the main structure. (NOTE: accessory structures are NOT exempt from any Development Code requirements) 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* means, for the purpose of flood damage prevention, a walled and roofed building that is principally above ground, a manufactured home, a gas or liquid storage tank, or other manmade facilities or infrastructures.

*Subdivision* the division of a single lot into two or more lots for the purpose of sale or development.

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

*Substantial improvement* any combination of repairs, reconstruction, alteration, or improvements to a structure, in which the cost equals or exceeds fifty (50) percent of the market value of the structure before the “start of construction” of the improvement. NOTE: *The market value of the structure should be (1) the appraised value of the structure prior to the start of the initial repair or improvement, or (2) in the case of damage, the value of the structure prior to the damage occurring.* This term includes structures, which have incurred “substantial damage”, regardless of the actual amount of repair work performed. The term does not, however, include either:

- (1) Any project for improvement of a structure to correct existing violations of state or local health, sanitary, or safety code specifications which have been identified by the local code enforcement official and which are the minimum necessary to assure safe living conditions, or
- (2) Any alteration of a “historic structure” provided that the alteration will not preclude the structure’s continued designation as a “historic structure”.

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 structure commences, whether or not that alteration affects the external dimensions of the structure.

*Substantially improved existing manufactured home parks or subdivisions* is where the repair, reconstruction, rehabilitation or improvement of the streets, utilities and pads equals or exceeds 50 percent of the value of the streets, utilities and pads before the repair, reconstruction or improvement commenced.

*V Zone Certificate* the National Flood Insurance Program (NFIP) regulations require coastal communities to ensure that buildings built in V Zones are anchored to resist wind and water loads acting simultaneously. Buildings in V Zones are subject to a greater hazard than buildings in other types of floodplains. Not only do they have to be elevated above the Base Flood Elevation (BFE), they must be protected from the impact of waves, hurricane-force winds, and erosion. A registered professional engineer or architect must certify that the design and planned methods of construction meet NFIP requirements. The community must maintain a copy of this certification in the permit file for all structures built or substantially improved in the V Zone. If breakaway walls are used to enclose areas below the building that exceed a design safe loading resistance of 20 pounds per square feet, those walls must also be certified by the registered professional engineer or architect.

*Variance* means a grant of relief from the requirements of this Development Code that permits construction in a manner otherwise prohibited by this Code.

*Violation* means, for the purpose of flood damage prevention, the failure of a structure or other development to be fully compliant with the County’s floodplain management regulations. A structure or other development without the elevation certificate, or other certifications, or other evidence of compliance required by this Development Code is presumed to be in violation until such time as that documentation is provided.

(b) **Basis for area of special flood hazard.**

The areas of special flood hazard identified by the Federal Emergency Management Agency in its flood insurance study (FIS), dated December 21, 2017, with accompanying maps, and any other more recent amendments and revisions, and other supporting data, and any revisions to such study, are adopted by reference and

declared to be a part of this Development Code. December 21, 2017] Areas of Special Flood Hazard may also include those areas known to have flooded historically or defined through standard engineering analysis by government agencies or private parties but not yet incorporated in the FIS dated December 21, 2017. Flood hazard areas identified on the Flood Insurance Rate Map are identified as a Special Flood Hazard Area (SFHA). SFHA are defined as the area that will be inundated by the flood event having a 1-percent chance of being equaled or exceeded in any given year. The 1-percent annual chance flood is also referred to as the base flood or 100-year flood. SFHA's are labeled as Zone A, Zone AO, Zone AH, Zones A1-A30, Zone AE, A99, Zone AR, Zone AR/AE, Zone AR/AO, Zone AR/A1-A30,, Zone AR/A Zone V, Zone VE, and Zones V1-V30. Moderate flood hazard areas, labeled Zone B or Zone X (shaded) are also shown on the FIRM, and are the areas between the limits of the base flood and the 0.2-percent-annual-chance (or 500-year) flood. The areas of minimal flood hazard, which are the areas outside the SFHA are higher than the elevation of the 0.2-percent-annual-chance flood, are labeled Zone C or Zone X (unshaded).

- (1) For those land areas acquired by a municipality through annexation, the current effective FIS, supporting data and any revision thereto, for Camden County, dated December 21, 2017, are hereby adopted by reference.
- (2) The supporting data (FIS) is located at the Camden County Planning Department.

(c) **Establishment of development permit.**

A development permit shall be required in conformance with the provisions of Article 12 of this Development Code prior to the commencement of any development activities.

(d) **Compliance.**

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

(e) **Abrogation and greater restrictions.**

This Article is not intended to repeal, abrogate or impair any existing easements, covenants or deed restrictions. However, where this Article and another provision of this Development Code or any other County ordinance conflict or overlap, whichever imposes the more stringent restrictions, shall prevail.

(f) **Interpretation.**

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

- (1) Considered as minimum requirements;
- (2) Liberally construed in favor of the board of commissioners; and
- (3) Deemed neither to limit nor repeal any other powers granted under state statutes.

(g) **Warning and disclaimer of liability.**

The degree of flood protection required by this article is considered reasonable for regulatory purposes and is based on scientific and engineering considerations. Larger floods can and will occur on rare occasions. Flood heights may be increased by manmade or natural causes. This article does not imply that land outside the areas of special flood hazard or uses permitted within such areas will be free from flooding or flood damages. This article shall not create liability on the part of the county or by any of its officers or employees for any flood damages that result from reliance on this Division or any administrative decision lawfully made under this Division.

(h) **Penalty for violation of this division.**

Failure to comply with the provisions of this Division or failure to comply with any of its requirements, including conditions and safeguards established in connection with grants of variance, shall constitute a violation. Any person who violates this division or fails to comply with any of its requirements shall, upon conviction thereof, be fined or imprisoned, or both, not more than the maximum fine or for the maximum number of days provided by state law, and in addition shall pay all costs and expenses involved in the case. Each day such violation continues

shall be considered a separate offense. Nothing herein contained shall prevent the Board of Commissioners from taking such other lawful actions as necessary to prevent or remedy any violation.

**Sec. 1128. Statutory authorization; findings of fact; purpose; objectives.**

(a) **Statutory authorization.**

Article IX, Section II of the Constitution of the State of Georgia and O.C.G.A. § 36-1-20(a) have delegated the responsibility to local government units to adopt regulations designed to promote the public health, safety and general welfare of its citizenry.

(b) **Findings of fact.**

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

(c) **Statement of purpose.**

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

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

(d) **Objectives.**

The objectives of this Division are to:

- (1) Protect human life and health;
- (2) Minimize damage to public facilities and utilities such as water and gas mains, electric, telephone and sewer lines, streets and bridges located in floodplains;
- (3) Help maintain a stable tax base by providing for the sound use and development of flood prone areas in such a manner as to minimize flood blight areas; and
- (4) Minimize expenditures of public money for costly flood control projects;
- (5) Minimize the need for rescue and relief efforts associated with flooding and generally undertaken at the expense of the general public;
- (6) Minimize prolonged business interruptions;
- (7) Ensure that potential home buyers are notified that property is in a flood area.

**Sec. 1129. Administration.****(a) Local administrator; designated.**

The Floodplain Administrator is appointed to administer and implement the provisions of this Division.

**(b) Local administrator; duties and responsibilities.****(1) Duties of the Floodplain Administrator under this Division shall include but not be limited to:**

- a. Review all development permits to assure that the permit requirements of this Division have been satisfied.
- b. Review proposed development to assure that all necessary permits have been received from governmental agencies from which approval is required by Federal or State law, including section 404 of the Federal Water Pollution Control Act Amendments of 1972, 33 U.S.C. 1334. Require that copies of such permits be provided and maintained on file.
- c. Review all permit applications to determine whether proposed building sites will be reasonably safe from flooding.
- d. Notify adjacent communities and the Georgia department of natural Resources prior to any alteration or relocation of a watercourse, and submit evidence of such notification to the Federal Emergency Management Agency.
- e. For any altered or relocated watercourse, submit engineering data/analysis within 6 months to FEMA to ensure accuracy of community flood maps through the Letter of Map Revision process. Assure flood carrying capacity of any altered or relocated watercourse is maintained.
- f. Review and record the actual elevation, in relation to mean sea level (or highest adjacent grade), of the lowest floor, including basement, of all new or substantially improved structures, in accordance with Sec. 1129(c)(1)b.1.
- g. Review and record the actual elevation, in relation to mean sea level, to which the new or substantially improved structures have been flood-proofed, in accordance with Sec. 1129(c)(1)b.1.
- h. When flood-proofing is utilized for a particular structure, obtain certification of design criteria from a registered professional engineer or architect, in accordance with Sec. 1129(c)(1)a.4.
- i. Obtain design certification and a V-Zone Certificate from a registered professional engineer or architect regarding any new construction or substantial improvement placed in a Coastal High Hazard Area will meet the criteria of Sec. 1129(c)(1)a.5.
- j. Make substantial damage determinations following a flood event or any other event that causes damage to structures in flood hazard areas.
- k. Where interpretation is needed as to the exact location of boundaries of the areas of special flood hazard (for example, where there appears to be a conflict between a mapped boundary and actual field conditions), make the necessary interpretation. Any person contesting the location of the boundary shall be given a reasonable opportunity to appeal the interpretation as provided in this Division.
  1. If a portion of the structure is located in a SFHA, the entire structure shall comply with the requirements of this ordinance.
  2. If a structure is located in multiple flood zones and/or BFE's, the entire structure shall comply with the most restrictive requirements of this ordinance.



- i. When base flood elevation data or floodway data have not been provided in accordance with Sec. 1127(b), obtain, review and reasonably utilize any base flood elevation and floodway data available from a federal, state or other source, in order to administer the provisions of this Division.
    - m. The duties of the Floodplain Administrator under this Division shall include but not be limited to: render decisions regarding on-site construction activities involving fill placement and other floodplain management related activities.
    - n. The Non-conversion agreement provides the right to the Floodplain Administrator to inspect the enclosed area any time. The Non-conversion document will be recorded at the Courthouse with the property deed, signed by each subsequent owner, and kept with the building file. This agreement will apply to all floor levels below the BFE that are protected by vents.
- (2) All records pertaining to the provision of this division shall be maintained in the office of the Planning Department and shall be open for public inspection.

(c) **Permit procedures.**

- (1) Application for a development permit for a project within which a flood hazard area is located and construction or land disturbance is proposed within said flood hazard area shall include but not be limited to the following: plans in duplicate drawn to scale showing the elevations of the area in question and the nature, location and dimensions of existing or proposed structures, earthen fill placement, storage of materials or equipment, and drainage facilities. Specifically, the following information is required:
  - a. Application stage.
    1. Submit an Elevation Certificate on Form OMB No. 1660-0008 (as said form has been most recently amended) based on the construction plans.
    2. Elevation in relation to mean sea level (or highest adjacent grade) of the proposed lowest floor, including basement, of all proposed structures;
    3. Elevation in relation to mean sea level to which any nonresidential structure will be flood-proofed;
    4. Design certification from a registered professional engineer or architect that any proposed non-residential flood-proofed structure will meet the flood-proofing criteria in Sec. 1130(b)(2) or Sec. 1130(d)(2), as applicable;
    5. Design certification from a registered professional engineer or architect, in accordance with Sec. 1130(e)(6), that any new construction or substantial improvement placed in a Coastal High Hazard Area will meet the stated criteria; and
    6. Description of the extent to which any watercourse will be altered or relocated as a result of proposed development.
  - b. Construction stage.
    1. For all new construction and substantial improvements, the permit holder shall provide to the Planning Director an “as-built” Elevation Certificate on Form OMB No. 1660-0008 (as said form has been most recently amended) of the regulatory floor elevation or flood-proofing level immediately after the lowest floor or flood proofing is completed, or, where a structure is subject to the provisions applicable to Coastal High Hazards Areas, after placement of the lowest horizontal structural members. Any regulatory floor certification made relative to mean sea level shall be prepared by or under the direct supervision of a registered land surveyor or professional engineer and certified by same. When flood proofing is utilized for non-residential structures, said certification shall be prepared by or under the direct supervision of a professional engineer or architect and certified by same.
    2. Any work undertaken prior to submission of the certification shall be at the permit holder's risk.

3. The Floodplain Administrator shall review the above referenced certification data submitted. Deficiencies detected by such review shall be corrected by the permit holder immediately and prior to further progressive work being allowed to proceed. Failure to submit certification or failure to make said corrections required hereby, shall be cause to issue a stop work order for the project.
4. Once construction or substantial improvements have been completed, the permit holder shall provide to the Planning Director a final Elevation Certificate on Form OMB No. 1660-0008 (as said form has been most recently amended) with photographs of the completed work. This is required to obtain a certificate of occupancy and flood insurance.

(d) **Variance procedures.**

See Article 13, Appeals, regarding the provisions for flood damage prevention variances and the process for granting a variance.

**Sec. 1130. Provisions for flood hazard reduction.**

(a) **General standards.**

In all areas of special flood hazard, the following provisions are required:

- (1) New construction and substantial improvements of existing structures shall be anchored to prevent flotation, collapse or lateral movement of the structure.
- (2) New construction and substantial improvements shall be constructed with materials and utility equipment resistant to flood damage.
- (3) New construction or substantial improvements shall be constructed by methods and practices that minimize flood damage.
- (4) Elevated Buildings.

All new construction or substantial improvements of existing structures that include ANY fully enclosed area located below the lowest floor formed by foundation and other exterior walls shall be designed so as to be an unfinished or flood resistant enclosure. The enclosure shall be designed to equalize hydrostatic flood forces on exterior walls by allowing for the automatic entry and exit of floodwater. (NOT APPLICABLE IN COASTAL HIGH HAZARD AREAS).

- a. Designs for complying with this requirement must either be certified by a professional engineer or architect or meet the following minimum criteria:
    1. Provide a minimum of two openings having a total net area of not less than one square inch for every square foot of enclosed area subject to flooding;
    2. The bottom of all openings shall be no higher than one foot above adjacent grade; and,
    3. Openings may be equipped with screens, louvers, valves or other coverings or devices provided they permit the automatic flow of floodwater in both directions.
  - b. So as not to violate the "Lowest Floor" criteria of this Division, the unfinished or flood resistant enclosure shall only be used for parking of vehicles, limited storage of maintenance equipment used in connection with the premises, or entry to the elevated area, and
  - c. The interior portion of such enclosed area shall not be partitioned or finished into separate rooms.
- (5) All heating and air conditioning equipment and components (including ductwork), all electrical, ventilation, plumbing, and other service facilities shall be designed and/or located so as to prevent water from entering or accumulating within the components during conditions of flooding.
  - (6) Manufactured homes shall be anchored to prevent flotation, collapse or lateral movement; methods of anchoring may include, but are not limited to, use of over-the-top or frame ties to ground anchors;

this standard shall be in addition to and consistent with applicable State requirements for resisting wind forces.

- (7) New and replacement water supply systems shall be designed to minimize or eliminate infiltration of flood waters into the system;
- (8) New and replacement sanitary sewage systems shall be designed to minimize or eliminate infiltration of floodwaters into the system and discharges from the system into flood waters;
- (9) On-site waste disposal systems shall be located and constructed to avoid impairment to them or contamination from them during flooding; and
- (10) Any alteration, repair, reconstruction or improvements to a structure that is not in compliance with the provisions of this Division shall be undertaken only if the nonconformity is not furthered, extended or replaced.

(b) **Specific standards.**

In all areas of special flood hazard designated A1-30, AE, AH or A (with estimated base flood elevation), the following provisions are required:

- (1) New construction and/or substantial improvements.

Where base flood elevation data are available, new construction and/or substantial improvement of any structure or manufactured home shall have the lowest floor, including basement, elevated no lower than **3 feet** above the base flood elevation. Should solid foundation perimeter walls be used to elevate a structure, openings sufficient to facilitate the unimpeded movements of flood waters shall be provided in accordance with standards of Sec. 1130(a)(4), "Elevated Buildings."

- a. All heating and air conditioning equipment and components (including ductwork), all electrical, ventilation, plumbing and other service facilities shall be elevated at or above 3 feet above the base flood elevation.

- (2) Nonresidential construction.

New construction or the substantial improvement of any nonresidential structure located in A1-30, AE, or AH zones, may be flood-proofed in lieu of elevation. The structure, together with attendant utility and sanitary facilities, must be designed to be water tight to **3 feet** above the base flood elevation, with walls substantially impermeable to the passage of water, and structural components having the capability of resisting hydrostatic and hydrodynamic loads and the effect of buoyancy. A registered professional engineer or architect shall certify that the design and methods of construction are in accordance with accepted standards of practice for meeting the provisions above, and shall provide such certification to the official as set forth above and in Sec. 1129(c).

- (3) Standards for Manufactured Homes and Recreational Vehicles.

Where base flood elevation data are available:

- a. All manufactured homes placed and/or substantially improved on: (1) individual lots or parcels, (2) in new and/or substantially improved manufactured home parks or subdivisions, (3) in expansions to existing manufactured home parks or subdivisions, or (4) on a site in an existing manufactured home park or subdivision where a manufactured home has incurred "substantial damage" as the result of a flood, must have the lowest floor including basement, elevated no lower than three foot above the base flood elevation.
- b. Manufactured homes placed and/or substantially improved in an existing manufactured home park or subdivision may be elevated so that:
  1. The lowest floor of the manufactured home is elevated no lower than three foot above the level of the base flood elevation; or

2. The manufactured home chassis is elevated and supported by reinforced piers (or other foundation elements of at least an equivalent strength) of no less than 36 inches in height above grade.
- c. All manufactured homes must be securely anchored to an adequately anchored foundation system to resist flotation, collapse and lateral movement (see Sec. 1130(a)(6) above).
- d. All recreational vehicles placed on sites must either:
  1. Be on the site for fewer than 180 consecutive days;
  2. Be fully licensed and ready for highway use (a recreational vehicle is ready for highway use if it is licensed, on its wheels or jacking system, attached to the site only by quick disconnect type utilities and security devices, and has no permanently attached structures or additions); or
  3. The recreational vehicle must meet all the requirements for "New Construction," including the anchoring and elevation requirements of Sec. 1130(b)(3)c, above.

(4) Floodways.

Located within areas of special flood hazard established in Sec. 1130(b) are areas designated as floodways. A floodway may be an extremely hazardous area due to velocity floodwaters, debris or erosion potential. In addition, the area must remain free of encroachment in order to allow for the discharge of the base flood without increased flood heights. Therefore, the following provisions shall apply:

- a. Encroachments are prohibited, including earthen fill, new construction, substantial improvements and other developments within the regulatory floodway. Development may be permitted however, provided it is demonstrated through hydrologic and hydraulic analyses performed in accordance with standard engineering practice that the encroachment shall not result in ANY increase in flood levels or floodway widths during a base flood discharge. A registered professional engineer must provide supporting technical data and certification thereof.
- b. Only if subsection (4)a of this section is satisfied, then any new construction or substantial improvement shall comply with all other applicable flood hazard reduction provisions of Sec. 1130.

(5) Standards for Areas of Special Flood Hazard (Zones AE) with Established Base Flood Elevations and Without Designated Floodways

Located within the Areas of Special Flood Hazard established in Sec. 1130(b), where streams with base flood elevations are provided but no floodways have been designated, (Zones AE) the following provisions apply:

- b. No encroachments, including fill material, new structures or substantial improvements shall be located within areas of special flood hazard, unless certification by a registered professional engineer is provided demonstration that the cumulative effect of the proposed development, when combined with all other existing and anticipated development, will not increase the water surface elevation of the base flood more than one foot at any point within the community. The engineering certification should be supported by technical data that conforms to standard hydraulic engineering principals.
- c. New construction and substantial improvements shall be elevated or flood-proofed to elevations established in accordance with Sec. 1130(b)(1).

(c) **Building standards for streams without established base flood elevations and/or floodways (A-Zones).**

Located within the areas of special flood hazard established in Sec. 1130(b), where streams exist but no base flood data have been provided (A-Zones), or where base flood data have been provided but a Floodway has not been delineated, the following provisions shall apply:

- (1) When base flood elevation data or floodway data have not been established, the Floodplain Administrator shall obtain, review, and reasonably utilize any scientific or historic base flood elevation and floodway data available from a Federal, State, or other source, in order to administer the provisions of Sec. 1130. Only if data are not available from these sources, then the following provisions of paragraphs (2) and (3) of this Subsection shall apply.
  - (2) No encroachments, including structures or fill material, shall be located within an area equal to the width of the stream or twenty-five feet, whichever is greater, measured from the top of the stream bank, unless certification by a registered professional engineer is provided demonstrating that such encroachment shall not result in more than 1 foot increase in flood levels during the occurrence of the base flood discharge.
  - (3) In special flood hazard areas without base flood elevation data, new construction and substantial improvements of existing structures shall have the lowest floor of the lowest enclosed area (including basement) elevated no less than 3 feet above the highest adjacent grade at the building site. (NOTE: Require the lowest floor to be elevated 3 feet above the estimated base flood elevation in A-Zone areas where a Limited Detail Study has been completed). Openings sufficient to facilitate the unimpeded movements of floodwaters shall be provided in accordance with standards of Sec. 1130(a)(4) "Elevated Buildings."
    - a. All heating and air conditioning equipment and components (including ductwork), all electrical, ventilation, plumbing, and other service facilities shall be elevated no less than 3 feet above the highest adjacent grade at the building site.
  - (4) The Floodplain Administrator shall certify the lowest floor elevation level and the record shall become a permanent part of the permit file.
- (d) **Standards for areas of shallow flooding (AO zones).**

Areas of special flood hazard established in 0, may include designated "AO" shallow flooding areas. These areas have base flood depths of 1 to 3 feet above ground, with no clearly defined channel. The following provisions apply:

- (1) All new construction and substantial improvements of residential and non-residential structures shall have the lowest floor, including basement, elevated to the flood depth number specified on the Flood Insurance Rate Map (FIRM), above the highest adjacent grade. If no flood depth number is specified, the lowest floor, including basement, shall be elevated at least 3 feet above the highest adjacent grade. Openings sufficient to facilitate the unimpeded movements of flood waters shall be provided in accordance with standards of Sec. 1130(a)(4), "Elevated Buildings."
 

The Planning Director shall certify the lowest floor elevation level and the record shall become a permanent part of the permit file.
  - (2) New construction or the substantial improvement of a nonresidential structure may be flood-proofed in lieu of elevation. The structure, together with attendant utility and sanitary facilities, must be designed to be water tight to the specified FIRM flood level plus 1 foot, above highest adjacent grade, with walls substantially impermeable to the passage of water, and structural components having the capability of resisting hydrostatic and hydrodynamic loads and the effect of buoyancy. A registered professional engineer or architect shall certify that the design and methods of construction are in accordance with accepted standards of practice for meeting the provisions above, and shall provide such certification to the official as set forth above and as required in Sec. 1129(c)(1)a.4 and Sec. 1129(c)(1)b.1.
  - (3) Drainage paths shall be provided to guide floodwater around and away from any proposed structure.
- (e) **Coastal High Hazard Areas (V-Zones and Coastal A (LiMWA)).**

Located within the areas of special flood hazard established in Sec. 1130(b) are areas designated as Coastal High Hazard Areas (V-Zones). These areas have special flood hazards associated with wave action and storm surge; therefore, the following provisions shall apply:

- (1) All new construction and substantial improvements of existing structures shall be located landward of the reach of mean high tide.
- (2) All new construction and substantial improvements of existing structures shall be elevated on piles, columns, or shear walls parallel to the flow of water so that the bottom of the lowest supporting horizontal structural member (excluding pilings or columns) is located no lower than **3 feet** above the base flood elevation level. All space below the lowest supporting member shall remain free of obstruction. Open lattice work or decorative screening may be permitted for aesthetic purposes only and must be designed to wash away in the event of abnormal wave action and in accordance with Sec. 1130(e)(7) below.
- (3) All new construction and substantial improvements of existing structures shall be securely anchored on pilings, columns, or shear walls.
- (4) Wood framed construction shall not be allowed as a structure's foundation system below the BFE, plus 3 foot.
- (5) All pile and column foundations and the structures attached thereto shall be anchored to resist flotation, collapse, and lateral movement due to the combined effects of wind and water loads acting simultaneously on all building components, both (non-structural and structural). Water loading values shall equal or exceed those of the base flood. Wind loading values shall be in accordance with the most current edition of the Standard Building Code.
- (6) A registered professional engineer or architect shall certify that the design, specifications and plans for construction are in compliance with the provisions contained in the above paragraphs (2), (3) and Of this Subsection.
- (7) All space below the lowest horizontal supporting member must remain free of obstruction. Open lattice work or decorative screening may be permitted for aesthetic purposes only and must be designed to wash away in the event of abnormal wave action without causing structural damage to the supporting foundation or elevated portion of the structure. The following design specifications are allowed:
  - a. No solid walls shall be allowed.
  - b. Material shall consist of lattice or mesh screening only.
  - c. If aesthetic lattice work or screening is utilized, any enclosed space shall not be used for human habitation, but shall be designed to be used only for parking of vehicles, building access, or limited storage of maintenance equipment used in connection with the premises.
  - d. The enclosure must not exceed 299 square feet.
- (8) Prior to construction, plans for any structures having latticework or decorative screening must be submitted to the Floodplain Administrator or it's designee or it's designee or it's designee for approval;
- (9) Any alteration, repair, reconstruction or improvement to any structure shall not enclose the space below the lowest floor except with latticework or decorative screening, as provided in this Section.
- (10) There shall be no fill used as structural support. Non-compacted fill may be used around the perimeter of a building for landscaping/aesthetic purposes provided the fill will wash out from storm surge, (thereby rendering the building free of obstruction) prior to generating excessive loading forces, ramping effects, or wave deflection. The Planning Director shall approve design plans for landscaping/aesthetic fill only after the applicant has provided an analysis by an engineer, architect, and/or soil scientist, which demonstrates that the following factors have been fully considered:

- a. Particle composition of fill material does not have a tendency for excessive natural compaction.
  - b. Volume and distribution of fill will not cause wave deflection to adjacent properties.
  - c. Slope of fill will not cause wave run-up or ramping.
- (11) There shall be no alteration of sand dunes or mangrove stands, which would increase potential flood damage;
  - (12) Prohibit the placement of manufactured homes (mobile homes), except in an existing manufactured homes park or subdivision. A replacement manufactured home may be placed on a lot in an existing manufactured home park or subdivision provided the anchoring standards of Sec. 1130(a)(6) are met.
- (f) **Standards for subdivisions.**
- (1) All subdivision and/or development proposals shall be consistent with the need to minimize flood damage.
  - (2) All subdivision and/or development proposals shall have public utilities and facilities such as sewer, gas, electrical and water systems located and constructed to minimize flood damage.
  - (3) All subdivision and/or development proposals shall have adequate drainage provided to reduce exposure to flood hazards.
  - (4) For subdivisions and/or developments greater than 50 lots or 5 acres, whichever is less, base flood elevation data shall be provided for subdivision and all other proposed development, including manufactured home parks and subdivisions. Any changes or revisions to the flood data adopted herein and shown on the FIRM shall be submitted to FEMA for review as a Conditional Letter of Map Revision (CLOMR) or Conditional Letter of Map Amendment (CLOMA), whichever is applicable. Upon completion of the project, the developer is responsible for submitting the "as-built" data to FEMA in order to obtain the final LOMR.
- (g) **Standards for critical facilities.**
- (1) All newly constructed critical facilities and substantially improved critical facilities shall only be located in the "X" flood zone as shown on the most current National Flood Insurance Program (NFIP) Flood Insurance Rate Map (FIRM) for Camden County.
  - (2) All ingress and egress from any critical facility must be protected to the 500-year flood elevation.
  - (3) Hazardous materials shall not be stored in the SFHA. The following materials are prohibited in the SFHA. Acetone, ammonia, benzene, calcium carbide, carbon disulfide, celluloid, chlorine, hydrochloric acid, prussic acid, magnesium, nitric acid, oxides of nitrogen, phosphorus, potassium, sodium and sulfur.

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