



City of Hampton, Virginia
Ordinance - Coded

22 Lincoln Street
Hampton, VA 23669
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**AN ORDINANCE TO AMEND CHAPTER 33.1, OF THE CODE OF THE CITY OF
HAMPTON, VIRGINIA, ENTITLED "STORMWATER MANAGEMENT" SECTIONS
33.1-4, 33.1-7, 33.1-8.1 AND 33.1-9.**

Chapter 33.1

STORMWATER MANAGEMENT*

* **Cross References:** Building and development regulations, Ch. 9; excavating, filling and similar operations, Ch. 13; sewers and sewage disposal, Ch. 30; water supply, Ch. 39.

ARTICLE I.

IN GENERAL

Sec. 33.1-4. Definitions.

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

- (1) *Adverse impacts* are any modifications, alterations or effects on a feature or characteristic of community waters or wetlands, including their quality, quantity, hydrodynamics, surface area, species composition, living resources, aesthetics or usefulness for human or natural uses which are or may potentially be harmful or injurious to human health, welfare, safety or property, to biological productivity, diversity or stability or which unreasonably interfere with the enjoyment of life or property, including outdoor recreation. The term includes secondary and cumulative as well as direct impacts.

- (2) *Best management practices (BMPs)* means a practice, or a combination of practices, that is determined by a state, city or designated area-wide planning agency to be the most effective, practical means of preventing or reducing the amount of pollution generated by nonpoint sources to a level compatible with water quality goals.
- (3) *Chesapeake Bay Preservation District (SPI-CBPD)* means any land so designated by the Hampton City Council pursuant to Part III of the Chesapeake Bay Preservation Area Designation and Management Regulations, VAC 10-20-70 et seq., and Section 10.1-2109 of the Code of Virginia and pursuant to Chapter 17.3, Article X, of the Hampton City zoning ordinance. A Chesapeake Bay Preservation District shall consist of a resource protection area and a resource management area.
- (4) *Clearing* means the removal of vegetative ground cover, including, but not limited to the removal of root mat or topsoil. Clearing does not include the ordinary mowing of grass.
- (5) *Coastal Barrier Resources System* means an area comprised of undeveloped barrier islands and associated wetlands as designated under the Coastal Barrier Resources Act, 16 U.S.C.A. § 3505.
- (6) *Detention* means the collection and storage of surface water for subsequent gradual discharge.
- (7) *Developable area* means area that is not constrained by wetlands, or other site limitations. However, the lack of availability of water or other utilities shall not be considered a site limitation, for purposes of assessing a stormwater utility charge.
- (8) *Developed nonresidential property* means developed property which does not serve a primary purpose of providing permanent dwelling units. Such property shall include, but not be limited to commercial, industrial, educational, civic, religious, cultural and recreational properties, parking lots, hotels and offices. For the purposes of this article, this definition shall also include developed property on which is located apartments or mobile home facilities containing more than four (4) residential or dwelling units.
- (9) *Developed property* means a parcel of real property that has been altered in whole or in part from its natural state by the addition of improvements, such as buildings, structures, paving and/or other impervious surfaces, if the total square footage of such impervious surface exceeds five hundred (500) square feet.

- (10) *Developed residential property* means a developed lot or parcel containing at least one but no more than four (4) residences or dwelling units, and accessory uses related to, but subordinate to, the purpose of providing permanent dwelling facilities. Such property shall include houses, duplexes, triplexes, quadriplexes and mobile homes. For the purposes of this article, each townhouse located on a separate lot shall be considered as a developed residential property and each condominium, although it is not on a separate lot, will also be considered as a developed residential property.
- (11) *Developer* means any person who engages in development either as the owner or as the agent of an owner of property.
- (12) *Development activity* means:
- a. The construction, installation, alteration, demolition or removal of a structure, impervious surface or drainage facility, best management practices facilities, buffer areas, etc.;
 - b. Clearing, scraping, grubbing or otherwise removing or killing the vegetation of a site; or
 - c. Adding, removing, exposing, excavating, leveling, grading, digging, burrowing, dumping, piling, dredging or otherwise significantly disturbing the soil, mud or sand of a site.
- (13) *Director* means the Director of the Department of Public Works or his designee.
- (14) *Drainage facility* means any man-made or man-altered component of the drainage system.
- (15) *Drainage system* means the system through which water flows from the land. It includes all watercourses (both intermittent and perennial), water bodies and wetlands.
- (16) *Dwelling unit* means a single housing unit, mobile home, townhouse, or condominium providing complete, independent living facilities for one or more persons, including provisions for living, sleeping, eating, cooking and sanitation.
- (17) *Equivalent residential unit (ERU)* means the equivalent impervious area of the developed residential property class per dwelling unit located within the city based on the statistical average horizontal impervious area of developed residential property in the city. One ERU shall equal two

thousand four hundred twenty-nine (2,429) square feet of impervious surface area.

- (18) *Erosion* means the wearing or washing away of soil by the action of wind or water.
- (19) *Erosion and sediment control plan* means a document providing for the conservation of soil and water resources, as required by the erosion and sediment control ordinance.
- (20) *ERU rate* means the service charge fee charged for one ERU, as established in this article.
- (21) *Filling* means any depositing or stockpiling of earth materials.
- (22) *Flood* means ~~is~~ a temporary rise in the level of any water body, watercourse or wetlands which results in the inundation of areas not ordinarily covered by water.
- (23) *Grading* means any excavating, filling, leveling or sloping of earth materials, or any combination thereof, including the land in its excavated, filled, leveled or sloped condition.
- (24) *Impervious surface* means a surface compacted or covered with a layer of material so that it is highly resistant to infiltration by water. It includes semi-impervious surfaces such as compacted clay, as well as most conventionally surfaced streets, roads, sidewalks, parking lots, and other similar surfaces. Other surfaces such as gravel, dirt, or a mixture thereof, that are regularly used for vehicular access, parking or storage shall also be considered impervious, if there is inadequate vegetative cover to affect the rate of stormwater infiltration.
- (25) *Manual of stormwater management practices* means the guidance, specifications and techniques made available to the public as required by section 33.1-10 of this chapter.
- (26) *Natural systems* means systems which predominantly consist of or use those communities of plants, animals, bacteria and other flora and fauna which occur indigenously on the land, in the soil, or in the water.
- (27) *Non-point source pollution* means pollution whose sources cannot be pinpointed but rather is washed from the land surface in a diffuse manner by stormwater runoff.
- (28) *Nontidal wetlands* means those wetlands other than tidal wetlands that are inundated or saturated by surface or groundwater 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, as defined by the U.S. Environmental Protection Agency and the U.S. Army Corps of Engineers, pursuant to enforcement of Section 404 of the Federal Clean Water Act in 33 CFR 328.3b.

- (29) *Owner* means the person in whom is vested the fee ownership, dominion or title of property, i.e., the proprietor. This term may also include a tenant, if chargeable under his lease for the maintenance of the property, and any agent of the owner or tenant including a developer.
- (30) *Person* means any individual, partnership, firm, association, joint venture, public or private corporation, trust, estate, commission, board, public or private institution, utility, cooperative, county, city, town or other political subdivision of the state, any interstate body or any other legal entity.
- (31) *Predevelopment conditions* means the conditions that exist at the time that plans for the land development of a tract of land are approved by the plan approval authority. Where phased development or plan approval occurs (preliminary grading, roads and utilities, etc.), the existing conditions at the time prior to the first item being approved or permitted shall establish predevelopment conditions.
- (32) *Receiving bodies of water* means any water bodies, watercourses or wetlands into which surface waters flow either naturally in man-made ditches or in a closed conduit system.
- (33) *Resource management area (RMA)* means that component of the Chesapeake Bay Preservation District that is not classified as resource protection areas. The RMA is comprised of land that is contiguous to the variable width RPA buffer for a distance of one hundred (100) feet in the landward direction.
- (34) *Resource protection area (RPA)* means that component of the Chesapeake Bay Preservation District comprised of lands adjacent to water bodies with perennial flow that have an intrinsic water quality value due to the ecological and biological processes they perform or that are sensitive to impacts which may result in significant degradation to the quality of state waters. Resource protection areas include: (i) tidal wetlands; (ii) nontidal wetlands connected by surface flow and contiguous to tidal wetlands or water bodies with perennial flow; (iii) tidal shores; and, (iv) a variable width buffer area not less than one hundred (100) feet in width. The variable width buffer area shall be located adjacent to and landward of the components listed in (i) through (iii) above, and along both sides of any water body with perennial flow. The variable width buffer shall also include lands designated as part of the Coastal Barrier Resources System

not otherwise listed as a Resource Protection Area Feature where present. The buffer area shall be designated as the landward component of the RPA not withstanding the presence of permitted uses, encroachments, and permitted vegetation clearing in compliance with Chapter 17.3, Article X, of the Hampton City Zoning Ordinance.

- (35) *Review committee* means that group of persons, as defined in the zoning ordinance, which convenes to hear requests for relief from the Chesapeake Bay Preservation District regulations and to arbitrate Chesapeake Bay Preservation District boundary disputes.
- (36) *Retention* means the collection and storage of runoff without subsequent discharge to surface waters.
- (37) *Sediment* means fine particulate material, whether mineral or organic, that is in suspension or has settled in a water body.
- (38) *Sedimentation facility* means any structure or area designed to hold runoff water until suspended sediments have settled.
- (39) *Service charge* means the user fee based upon the ERU rate applied to the developed residential property and developed nonresidential property.
- (40) *Site* means any tract, lot or parcel of land or combination of tracts, lots or parcels of land which are in one (1) ownership or are contiguous and in diverse ownership where development is to be performed as part of a unit, subdivision or project.
- (41) *Storm Sewer System or Stormwater system* means all facilities, structures and natural watercourses used for collecting and conveying stormwater to, through and from drainage areas to the point of final outlet, including, but not limited to, the following: streets, curbs and gutters, inlets, conduits and appurtenant features, canals, creeks, channels, catch basins, ditches, drains, sewers, streams, gulches, gullies, flumes, culverts, siphons, retention or detention basins, dams, floodwalls, levees, pumping stations and wetlands.
- (42) *Stormwater* means precipitation that is discharged across the land surface or through conveyances to one or more waterways and that may include storm water runoff, snow melt runoff, and surface runoff and drainage.
- (43) *Stormwater management revenues* or revenues means all rates, service charges, fees, assessments, rentals, other charges or other income received, including amounts received from the investment or deposits of money in any fund or account and any amounts distributed by the city council from general revenues of the city.

- (44) *Stormwater management system* or system means the stormwater management infrastructure and equipment of the city and all improvements thereto. Infrastructure and equipment shall include structural and natural stormwater control facilities of all types, including, without limitation, retention and detention basins, open ditches, canals, creeks, conduits, pumping stations, and other plants, structures, and real and personal property used for support of the system.
- (45) *Structure* means an edifice or building of any kind or any piece of work artificially built up or composed of parts joined together in some definite manner.
- (46) *Subdivide* means to divide a parcel of land into three (3) or more lots or parcels of less than five (5) acres each for the purpose, whether immediate or future, or both, of transfer of ownership or building development, or if a new street is involved in such division, any division of a parcel of land.
- (47) *Tidal wetlands* means vegetated land which lies between and contiguous to mean low water and an elevation above mean low water equal to the factor of one and one-half (1 1/2) times the mean tide range, or nonvegetated land which lies contiguous to mean low water and is between mean low water and mean high water.
- (48) *Undeveloped property* means any parcel that has not been altered from its natural state in such a manner that the topography or soils on the property have been disturbed or altered to the extent that the rate of surface infiltrating or stormwater has been affected.
- (49) *Watershed* means a drainage area or drainage basin contributing to the flow of water in a receiving body of water.
- (Ord. No. 994, 12-12-90; Ord. No. 1098, 8-11-93; Ord. No. 1185, 5-28-97; Ord. No. 1373, 5-12-04)

Sec. 33.1-7. Water quality impact assessment.

- (a) *Purpose and intent.* The purpose of the water quality impact assessment is to:
- (1) Identify the impacts of proposed development on water quality and other environmentally-sensitive lands;
 - (2) Ensure that, where development does take place within sensitive lands, it will be located on those portions of a site in a manner that will be least disruptive to the natural functions of sensitive lands;

(3) To protect individuals from investing funds for improvements proposed for location on lands unsuited for such development because of high ground water, erosion, or vulnerability to flood and storm damage; and

(4) Specify mitigation which will address water quality protection.

(b) *Water quality impact assessment required.* A water quality impact assessment is required for any proposed development disturbing over twenty-five hundred (2,500) square feet, except those uses exempt from the stormwater management requirements. A water quality impact assessment is required for any land disturbance in the RPA. There shall be two (2) levels of water quality impact assessments: a minor assessment and a major assessment.

(c) *Minor water quality impact assessment.* A minor water quality impact assessment will be required for development which causes from twenty-five hundred (2,500) to ten thousand (10,000) square feet of land disturbance, or for any development within RPAs which causes up to twenty-five hundred (2,500) square feet of land disturbance. A minor assessment must demonstrate through acceptable calculations that the best management practices will result in meeting a "no net increase" in pollution loading goal for new development, or a ten (10) percent reduction in pollution loadings for redevelopment within SPI-CBPD. A minor assessment shall include a site drawing to scale, and other documentation which shows the following:

- (1) Location of the RMA as well as the location of the components of the RPA, including the variable width buffer area, if applicable;
- (2) Pre- and post-development pollutant loads in runoff; and
- (3) Type and location of proposed best management practices to mitigate the pollution loading impact, and attain the pollutant removal requirements.

(d) *Major water quality impact assessment.*

- (1) A major water quality impact assessment shall be required for any development which exceeds ten thousand (10,000) square feet of land disturbance, or any development which exceeds twenty-five hundred (2,500) square feet of land disturbance within the RPA.
- (2) The information required in this section shall be considered a minimum, unless the Director determines that some of the elements are unnecessary due to the scope and nature of the proposed uses and development of land.
- (3) The following elements shall be included in the preparation and submission of a major water quality assessment:

- a. All of the information required in a minor water quality impact assessment, as specified in subsection (c) above;
- b. A hydrogeological element, to include, as required by the Director:
 1. Existing topography, and hydrology of the site and adjacent lands;
 2. All existing watercourses, water bodies, and wetlands on or adjacent to the site;
 3. Direction, flow rate and volume of stormwater runoff under existing conditions;
 4. Location of areas on site where stormwater collects or percolates into the ground;
 5. Groundwater levels, including seasonal fluctuations;
 6. Location of floodplain and vegetation;
 7. Impacts of the proposed development on topography and hydrology on the site and adjacent lands;
 8. Disturbances or destruction of wetlands and RPA features and justification for such action;
 9. Disruptions or reductions in the supply of water to wetlands, streams, lakes, rivers or other water bodies. This may include, but is not limited to changes in the incidence or duration of flooding on the site and upstream and downstream from it;
 10. Disruptions to existing hydrology including wetland and stream circulation patterns;
 11. Source location and description of proposed fill material;

12. Location of dredge material and location of dumping area for such material;
13. Location of and impacts on shellfish beds, submerged aquatic vegetation, and fish spawning areas;
14. Estimation of pre- and post-development pollutant loads in runoff and supporting documentation of all utilized coefficients and calculations;
15. Estimation of percent increase in impervious surface on site and type(s) of surfacing materials used;
16. Changes in topography;
17. Percent of site to be cleared for project and areas where vegetation will be cleared or otherwise killed;
18. Channel, direction, flow rate, volume, and quality of stormwater that will be conveyed from the site, with a comparison to the predevelopment conditions;
19. Detention and retention areas, including plans for the discharge of contained waters, maintenance plans and prediction of water quality in those areas;
20. Detailed anticipated duration and phasing schedule of construction project;
21. Plan for the control of erosion and sedimentation which describes in detail the type and location of control measures, the stage of development at which they will be put into place or used, and provisions for their maintenance. Such a plan shall be filed in accordance with the provisions of the erosion and sediment control ordinance.
22. Verification of structural soundness of stormwater management facilities, including professional engineer or class III B surveyor certification;
23. Plan to establish a long term schedule for inspection and maintenance of stormwater management facilities that include all maintenance requirements and persons responsible for performing maintenance. If the designated maintenance responsibility is with a party other than the

City of Hampton, then a maintenance agreement shall be executed between the responsible party and the city;

24. Any other information which the developer or the Director believe is reasonably necessary for an evaluation of the proposed development;

25. Listing of all requisite permits from all applicable agencies necessary to develop project.

26. Proposed mitigation measures for the potential hydrogeological impacts. Potential mitigation measures include:

- i. Proposed erosion and sediment control concepts, which may include minimizing the extent of the cleared area, perimeter controls, reduction of runoff velocities, and measures to stabilize disturbed areas;
- ii. Proposed stormwater management system;
- iii. Creation of wetlands to replace those lost;
- iv. Minimizing cut and fill.

- (e) *Submission and review requirements; water quality impact assessment.*
- (1) Copies of all site drawings and other applicable information as required by subsections (c) and (d) above shall be submitted to the Director for review.
 - (2) All information required in this section shall be certified as complete and accurate by a professional engineer or a certified land surveyor.
 - (3) A water quality impact assessment shall be prepared and submitted to, and reviewed by, the Director in conjunction with the preliminary site plan or subdivision improvement plan, or in conjunction with a request for building permit or zoning permit if no site plan or subdivision plan is required.
 - (4) Any request for encroachment within the RPA shall be accompanied by a water quality impact assessment.
 - (5) As part of any major water quality impact assessment submittal for property within SPI-CBPD, the Director may require review by the Department of Conservation and Recreation, Chesapeake Bay Local

Assistance Division (CBLAD). Upon receipt of such a major water quality impact assessment, the Director may request CBLAD to review the assessment and respond with written comments. Any comments by CBLAD may be incorporated into the final review by the Director provided that such comments are provided by CBLAD within sixty (60) days of the request.

(f) *Evaluation procedure.* The evaluation procedure sets forth the criteria the Director will use in evaluating the water quality impacts of proposed development. This evaluation will allow the Director to determine the consistency of the proposed development project with the stormwater management provisions of the Chesapeake Bay Preservation Act (Code of Virginia, § 10.1-2100 et seq.). Inconsistent proposals can be modified so that the impacts are minimized or the mitigation measures are enhanced.

- (1) Upon the completed review of a minor water quality impact assessment, the review committee will determine if any proposed modification of or encroachment into the buffer area is consistent with the provisions of all applicable city ordinances and make a finding based upon the following criteria:
 - a. The necessity of the proposed encroachment and the ability to place improvements elsewhere on the site to avoid disturbance of the buffer area;
 - b. Impervious surface is minimized;
 - c. Proposed best management practices, where required, achieve the requisite reductions in pollutant loadings;
 - d. The development, as proposed, meets the purpose and intent of this chapter; and
 - e. The cumulative impact of the proposed development, when considered in relation to other development in the vicinity, both existing and proposed, will not result in a significant degradation of water quality.

- (2) Upon the completed review of a major water quality impact assessment, the Director will determine if the proposed development is consistent with the purpose and intent of this chapter and make a finding based upon the following criteria in conjunction with the preliminary site plan review, subdivision improvement plan review or construction plan review:
 - a. Within any RPA, the proposed development is a permitted use pursuant to Section 17.3-64 Part 2b of the Hampton City Zoning Ordinance;

- b. The disturbance of the components of the RPA will be minimized;
- c. The development will not result in significant disruption of the hydrology of the site;
- d. The development will not result in significant degradation to aquatic vegetation or life;
- e. The development will not result in unnecessary destruction of plant materials on site;
- f. Proposed erosion and sediment control concepts are adequate to achieve the reductions in runoff and prevent off-site sedimentation;
- g. Proposed stormwater management concepts are adequate to control the stormwater runoff to achieve the required standard for pollutant control;
- h. Proposed revegetation of disturbed areas will provide optimum erosion and sediment control benefits;
- i. The design and location of any proposed drainfield will be in accordance with the performance standards of this chapter;
- j. The development, as proposed, is consistent with the purpose and intent of the Chesapeake Bay Preservation Act (Code of Virginia, § 10.1-2100 et seq.); the Virginia Stormwater Management Act (Code of Virginia, § 10.1-603.2 et seq.) and the Federal Clean Water Act; and
- k. The cumulative impact of the proposed development, when considered in relation to other development in the vicinity, both existing and proposed, will not result in a significant degradation of water quality.

- (3) The Director shall require additional mitigation where potential impacts have not been adequately addressed. Evaluation of mitigation measures will be made by the Director based on the criteria listed above in subsections (1) and (2).
- (4) The Director shall find the proposal to be inconsistent with the purpose and intent of this article when the impacts created by the proposal cannot

be mitigated. Evaluation of the impacts will be made by the Director based on the criteria listed in subsections (1) and (2).

(Ord. No. 994, 12-12-90; Ord. No. 1098, 8-11-93; Ord. No. 1373, 5-12-04)

Sec. 33.1-9. Stormwater management performance standards.

(a) *Purpose and intent.* The following performance standards establish the means to minimize erosion and sedimentation potential, reduce land application of nutrients and toxics, and maximize rainwater infiltration. Natural ground cover, especially woody vegetation, is most effective in holding soil in place and preventing erosion. Indigenous vegetation, with its adaptability to local conditions without the use of harmful fertilizers or pesticides, filters stormwater runoff. Minimizing impervious cover enhances rainwater infiltration and effectively reduces stormwater runoff potential. The purpose and intent of these requirements are also to implement the following objectives: prevent a net increase in non-point source pollution from new development; achieve a ten (10) percent reduction in non-point source pollution from redevelopment within the SPI-CBPD; and achieve a forty (40) percent reduction in non-point source pollution from agricultural uses. These criteria are for use by the City of Hampton in granting, denying, or modifying requests to rezone, subdivide, or to use and develop land.

(b) *General performance standards for development and redevelopment.*

(1) Land disturbance shall be limited to the area necessary to provide for the proposed use or development.

a. The limits of land disturbance, including clearing or grading, shall be clearly shown on submitted plans and physically marked on the development site. No construction activity shall occur outside those limits.

b. During construction, ingress and egress to the site shall be the minimum necessary. For construction in the RPA, ingress and egress shall be limited to one (1) access point, unless otherwise approved by the Director.

(2) Indigenous vegetation shall be preserved to the maximum extent practicable consistent with the proposed use or development and in accordance with the "Virginia Erosion and Sediment Control Handbook."

a. Existing healthy trees exhibiting a minimum trunk diameter of six (6) inches, measured four and one-half (4 1/2) feet from the ground, shall be preserved outside the limits of clearing.

b. Clearing outside the construction footprint shall be allowed only to provide necessary access, positive site drainage, water

quality BMPs, and the installation of utilities, as approved by the Director.

c. Prior to clearing or grading, suitable tree protective measures, as outlined in the site plan and subdivision ordinances, shall be followed.

(3) Land development shall minimize impervious cover to promote infiltration of stormwater into the ground consistent with the proposed use or development. Grid and modular pavements which promote infiltration are encouraged for any required parking area, alley, or other low traffic driveway.

(4) For any development or redevelopment, stormwater management criteria consistent with the water quality protection provision (4 VAC 3-20-71 et seq.) of the Virginia Stormwater Management Regulations (4 VAC 3-20) shall be satisfied. Stormwater runoff shall be controlled by the use of best management practices (BMPs) that achieve the following:

a. For new development, the post-development nonpoint source pollution runoff load shall not exceed the pre-development load. Pre-development load shall be the average phosphorus loading of Hampton's Chesapeake Bay Watershed, eighty-five one hundredths (0.85) pounds per acre per year, based upon an average impervious cover of thirty-four (34) percent.

b. For sites within IDAs or other redevelopment sites, the predevelopment nonpoint source pollution load shall be reduced by at least ten (10) percent. The Director may waive or modify this requirement for redevelopment sites that originally incorporated best management practices for stormwater runoff quality control, provided the following provisions are satisfied:

1. In no case may the post-development nonpoint source pollution runoff load exceed the pre-development load;

2. Runoff pollution loads must have been calculated and the BMPs selected for the expressed purpose of controlling nonpoint source pollution; and

3. If best management practices are structural, evidence shall be provided that facilities are currently in good working order and performing at the design levels of service. The Director may require a review of both the original structural design and maintenance plans to verify

this provision. A new maintenance agreement may be required to ensure compliance with this chapter.

c. BMPs that are implemented to control stormwater runoff shall be maintained in accordance with the maintenance requirements and procedures outlined in the Manual of Stormwater Management Practice, City of Hampton (June 1991), and the standards pursuant to the Virginia Stormwater Management Handbook. BMP maintenance agreements shall be required for all BMPs implemented to control stormwater runoff.

- (5) Ensure that after development, runoff from the site approximates the rate of flow and timing that would have occurred following the same rainfall had this development not occurred;
- (6) Incorporate measures which ensure compliance with the criteria for a ten-year design storm event;
- (7) Maintain the existing natural hydrodynamic characteristics of the watershed;
- (8) Maintain the existing groundwater levels;
- (9) Retain the beneficial functioning of wetlands as areas for the natural storage of surface waters and the chemical reduction and assimilation of pollutants. Care should be taken not to overload their capacity, thereby harming the wetlands and transitional vegetation. Wetlands shall not be damaged by the construction of detention ponds.
- (10) Prevent increased flooding and damage that results from improper location, construction and design of structures in areas which are presently subject to an unacceptable danger of flooding;
- (11) Channeling runoff directly into water bodies shall be prohibited. Instead, runoff shall be routed through systems designed to increase time of concentration, decrease velocity, increase infiltration, allow suspended solids to settle and remove pollutants.
- (12) Streambank erosion control shall be designed to meet or exceed the minimum state stormwater management criteria (sections 10.1-603.2 et seq., Code of Virginia), which require runoff to be discharged into a channel which can convey runoff from a two-year storm event without flooding or erosion.
- (13) Wetlands, resource protection areas and water bodies shall not be used as sediment traps during development.

- (14) Erosion and sedimentation facilities shall receive regular maintenance to ensure that they continue to function properly.
- (15) Artificial watercourses shall be designed with consideration given to soil type(s), so that the velocity of flow is low enough to prevent erosion.
- (16) Vegetated filter strips shall be created or, where practicable, retained in their natural state along the banks of all watercourses, water bodies, or other RPA features. The width of the filter, used in conjunction with other stormwater management devices, shall be sufficient to prevent erosion, filter pollutants, trap the sediment in runoff, provide access to the water body and allow for periodic flooding without damage to structures.
- (17) Detention and retention ponds shall be used to detain and retain the increased and accelerated runoff which the development generates. Water shall be released from detention ponds into watercourses or wetlands at a rate and in a manner approximating the natural flow which would have occurred before development.
- (18) Detention and retention areas shall be designed so that shorelines are winding rather than straight and so that the length of shoreline is maximized, thus offering more space for growth of littoral vegetation.
- (19) The banks of detention and retention areas shall slope at a maximum grade of three to one (3:1) to a minimum depth of six (6) feet, as a safeguard against drowning, personal injury or other accidents, to encourage the growth of vegetation and to allow the alternate flooding and exposure of areas along the shore as water levels periodically rise and fall.
- (20) The use of the natural drainage system and vegetated buffer zones as open space and conservation areas shall be encouraged.
- (21) All site specific stormwater management facilities shall be designed for the ultimate development of contributing watersheds based on zoning, the comprehensive plan, the erosion and sediment control plan, capital improvement plan, and other similar documents.
- (22) All engineering calculations must be performed in accordance with procedures outlined in the Virginia Stormwater Management Handbook, Virginia Erosion and Sediment Control Handbook, Virginia Department of Transportation Drainage Manual and/or any other engineering methods deemed appropriate by the Director.

(23) A one hundred-foot buffer area within the RPA shall be deemed to achieve a seventy-five (75) percent reduction of sediments and a forty (40) percent reduction of nutrients.

(24) Otherwise further the objectives of this chapter.
(Ord. No. 994, 12-12-90; Ord. No. 1098, 8-11-93; Ord. No. 1373, 5-12-04)

Adopted at the regular meeting of the City Council of the City of Hampton, Virginia held on _____.

Signed by _____ **Date** _____
Ross A. Kearney, II, Mayor

Attested by _____ **Date** _____
Katherine K. Glass
Clerk of the Council