CITY COUNCIL OF THE CITY OF ANNAPOLIS

ORDINANCE NO. O-59-09Amended

Introduced by Mayor Moyer

Co-sponsored by Alderman Arnett
Alderman Cordle
Alderman Shropshire

LEGISLATIVE HISTORY			
First Reading:	Public Hearing:	Fiscal Impact Note:	120 Day Rule:
10/05/09	10/26/09; 12/14/09	10/26/09	02/09/10
Referred To:	Meeting Date:	Action Taken:	
Environmental Mtrs.	11/08/09	Favorable w/ Amd	

AN ORDINANCE concerning

Stormwater Management

FOR the purpose of revising stormwater management standards in conformity with Maryland State law.

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BY repealing and reenacting with amendments the following portion of the Code of the City of Annapolis, 2009 Edition:
Chapter 17.10

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SECTION I: BE IT ESTABLISHED AND ORDAINED BY THE ANNAPOLIS CITY COUNCIL that the Code of the City of Annapolis shall be amended to read as follows:

Chapter 17.10 STORMWATER MANAGEMENT

17.10.010 Purpose, application and authority.

A. The purpose of stormwater management is to protect and promote the public health, safety and general welfare through the management of stormwater, to protect public and private property from damage, to reduce the effects of land use changes on stream channel erosion, to maintain and assist in the improvement of water quality, and to preserve and enhance the environmental quality of streams and stream valleys. It is the expressed intent of this chapter to

require that stormwater management, as it addresses water quality, be provided for all developed land within the City. The provisions of this chapter are adopted pursuant to Annotated Code of Maryland, Environment Article, Title 4, Subtitle 2, (or its successors) and the Charter of the City of Annapolis and shall apply to all development occurring within the corporate limits of the City of Annapolis.

B. The application of this chapter and the requirements set forth herein shall be the minimum stormwater management requirements applicable in the City and shall not be deemed a limitation or repeal of any other powers granted by State statute.

C. The City of Annapolis, Department of Neighborhood and Environmental Programs shall be responsible for the administration and enforcement of the provisions of this chapter.

D. This chapter applies to all new and redevelopment projects that have not received final approval for erosion and sediment control and stormwater management plans by May 4, 2010.

17.10.040 Guide for stormwater management.

The 2000 Maryland Stormwater Design Manual, Volumes I & II (Maryland Department of the Environment, April 2000) and all subsequent revisions, and the USDA Natural Resources Conservation Service Maryland Conservation Practice Standard Pond Code 378 (January 2000) shall serve as the guide for stormwater management principles, methods, and practices in the City of Annapolis.

17.10.050 Definitions.

For the purpose of this chapter, the following terms shall have the definitions indicated:

A. "Administration" means the Maryland Department of the Environment (MDE) Water Management Administration (WMA).

B. “Adverse impact” means any deleterious effect on waters or wetlands, including their quality, quantity, surface area, species composition, 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.

~~B.~~ C. "Agricultural land management practices" means those methods and procedures used in the cultivation of land in order to further crop and livestock production and conservation of related soil and water resources.

~~C.~~ D. "Applicant" means any person, firm, or governmental agency that executes the necessary forms to procure official approval of a project or of a permit to carry out construction of a project.

E. “Approving agency” means the entity responsible for the review and approval of stormwater management plans.

F. “Aquifer” means a porous water bearing geologic formation generally restricted to materials capable of yielding an appreciable supply of water.

~~D.~~ G. "Best management practices" (BMP) means a structural or nonstructural practice designed to temporarily store or treat stormwater runoff in order to mitigate flooding, reduce pollution, and provide other amenities.

~~E~~. H. "Channel protection storage volume (Cpv)" means the volume used to design structural management practices to control stream channel erosion. Methods for calculating the channel protection storage volume are specified in the 2000 Maryland Stormwater Design Manual, Volumes I & II.

~~F.~~ I. "Clearing" means the removal of trees and brush from the land but shall not include the ordinary mowing of grass.

~~G.~~ J. "Design manual" means the 2000 Maryland Stormwater Design Manual Volumes I & II (Maryland Department of the Environment, April 2000), and all subsequent revisions, that serves as the official guide for stormwater management principles, methods, and practices.

K. “Detention structure” means a permanent structure for the temporary storage of runoff, which is designed so as not to create a permanent pool of water.

L. “Develop land” means to change the runoff characteristics of a parcel of land in conjunction with residential, commercial, industrial, or institutional construction or alteration.

M. “Direct discharge” means the concentrated release of stormwater to tidal waters or vegetated tidal wetlands from new development or redevelopment projects in the Critical Area.

~~H.~~ N. "Drainage area" means that area contributing runoff to a single point measured in a horizontal plane, which is enclosed by a ridgeline.

~~I. "Detention structure" means a permanent structure for the temporary storage of runoff, which is designed so as not to create a permanent pool of water.~~

~~J. "Direct discharge" means the concentrated release of stormwater to tidal waters or vegetated tidal wetlands from new development or redevelopment projects in the critical areas.~~

~~K.~~ O. "Easement" means a grant or reservation by the owner of land for the use of such land by others for a specific purpose or purposes, and which must be included in the conveyance of land affected by such easement.

P. “Environmental site design (ESD)” means using small-scale stormwater management practices, nonstructural techniques, and better site planning to mimic natural hydrologic runoff characteristics and minimize the impact of land development on water resources. Methods for designing ESD practices are specified in the Design Manual.

~~L.~~ Q. "Exemption" means those land development activities that are not subject to the stormwater management requirements contained in this chapter.

R. “Extended detention” means a stormwater design feature that provides gradual release of a volume of water in order to increase settling of pollutants and protect downstream channels from frequent storm events. Methods for designing extended detention BMP’s are specified in the Design Manual.

~~M.~~ S. "Extreme flood volume (Qf)" means the storage volume required controlling those infrequent but large storm events in which overbank flows reach or exceed the boundaries of the one hundred-year floodplain.

T. “Final stormwater management plan” means the last of three required plan approvals that includes ~~the information necessary~~ all required information to allow all approvals and permits to be issued by the approving agency.

U. “Flow attenuation” means prolonging the flow time of runoff to reduce the peak discharge.

~~N.~~ V. "Grading," means any act by which soil is cleared, stripped, stockpiled, excavated, scarified, filled or any combination thereof.

W. “Impervious area” means any surface that does not allow stormwater to infiltrate into the ground.

~~O.~~ X. "Infiltration" means the passage or movement of water into the soil surface.

Y. “Maximum extent practicable (MEP)” means designing stormwater management systems so that all reasonable opportunities for using ESD planning techniques and treatment practices are exhausted and only where absolutely necessary, a structural BMP is implemented.

~~P.~~ Z. "Modification" means the change to the minimum stormwater management requirements for specific circumstances granted by the Director of ~~Public Works~~ Neighborhood and Environmental Programs based upon a showing by the applicant that strict adherence to the requirements would result in an unreasonable necessary hardship and not fulfill the intent of this chapter.

~~Q.~~ AA. "New development" means any construction, alteration, or improvement exceeding five thousand square feet of land disturbance performed on sites where existing land use is rural, agricultural or single family residential ~~on lots larger than fifteen thousand square feet~~ or any site with impervious coverage of less than 40 percent imperviousness.

~~R.~~ BB. "Off-site stormwater management" means the design and construction of a stormwater management facility necessary to control stormwater from more than one development.

~~S.~~ CC. "On-site stormwater water management" means the design and construction of facilities necessary to control stormwater within a site.

~~T.~~ DD. "Overbank flood protection volume (Qp)" means the volume controlled by structural practices to prevent an increase in the frequency of out of bank flooding generated by development. Methods for calculating the overbank flood protection volume are specified in the design manual.

EE. “Person” means the federal government, the State, any county, municipal corporation, or other political subdivision of the State, or any of their units, or an individual receiver, trustee, guardian, executor, administrator, fiduciary, or representative of any kind, or any partnership, firm, association, public or private corporation, or any other entity.

FF. “Planning techniques” means a combination of strategies employed early in project design to reduce the impact from development and to incorporate nature features into a stormwater management plan.

~~U.~~ GG. "Recharge volume (Rev)" means that portion of the water quality volume used to maintain groundwater recharge rates at development sites. Methods for calculating the recharge volume are specified in the Design Manual.

~~V.~~ HH. "Redevelopment" means any construction, alteration, or improvement exceeding five thousand square feet of land disturbance performed on sites

where existing land use is commercial, industrial, institutional, multifamily residential ~~or single family on lots smaller than fifteen thousand square feet~~ ~~with impervious coverage of 40 percent or more~~ and existing site impervious area exceeds 40 percent.

~~W.~~ II. "Regional stormwater management facility" means a stormwater management facility intended to control stormwater runoff from several separately owned parcels or developments within a watershed. "Regional stormwater management facility" does not include multi-lot stormwater management facilities, subdivision facilities or other stormwater management facilities constructed in connection with development or redevelopment, whether concurrently or in phases, of a site, or contiguous sites, by a single owner or a single owner's successor in title.

~~X.~~ JJ. "Retention structure" means a permanent structure that provides for the storage of runoff by means of a permanent pool of water.

~~Y.~~ KK. "Retrofitting" means the implementation of ESD practices, the construction of a structural BMP in a previously developed area, the modification of an existing structural BMP, or the implementation of a nonstructural practice to improve water quality over current conditions.

LL. “Sediment” means soils or other surficial materials transported or deposited by the action of wind, water, ice, or gravity as a product of erosion.

~~Z.~~ MM. "Site" means~~:~~

~~1. For "new development" any tract, lot, or parcel of land or combination of tracts, lots or parcels of land, which are in one ownership, or are contiguous and in diverse ownership where development is to be performed as part of a unit, subdivision, or project.~~

~~2. For "redevelopment" the area of new construction as shown on an approved site plan or the original parcel. Final determination of the applicable area shall be made by the Department of Public Works Neighborhood and Environmental Programs~~ any tract, lot, or parcel of land, or combination of tracts, lots, parcels of land that are in one ownership, or are contiguous and in diverse ownership, where development is to be performed as part of a unity, subdivision, or project.

NN. “Site development plan” means the second of three required plan approvals that includes the information necessary to allow a detailed evaluation of a proposed project.

OO. “Stabilization” means the prevention of soil movement by any of various vegetative and/or structural means.

PP. “Stormwater” means water that originates from a precipitation event.

~~AA. "Stormwater management" means:~~

~~1. For quantitative control, a system of vegetative and structural measures that control the increased volume and rate of surface runoff caused by man-made changes to the land; and~~

~~2. For qualitative control, a system of vegetative, structural, and other measures that reduce or eliminate pollutants that might otherwise be carried by surface runoff.~~

~~BB. "Stormwater management plan" means a set of drawings or other documents submitted by a person as a prerequisite to obtaining a stormwater~~

~~management approval, which contain all of the information and specifications pertaining to stormwater management.~~

QQ. "Stormwater management system" means natural areas, ESD practices, stormwater management measures, and any other structure through which stormwater flows, infiltrates, or discharges from a site.

~~CC~~. RR. "Stripping" means any activity that removes the vegetative surface cover including tree removal, clearing, grubbing and storage or removal of topsoil.

~~SS. "Variance" means the modification of the minimum stormwater management requirements for specific circumstances such that strict adherence to the requirements would result in unnecessary hardship and not fulfill the intent of this Chapter.~~

~~DD.~~ ~~TT.~~ SS. "Waiver" means the relinquishment from stormwater management requirements by the Director of ~~Public Works~~ Neighborhood and Environmental Programs for a specific development on a case-by-case review basis.

1. "Qualitative stormwater management waiver" means a ~~relinquishment~~ reduction of water quality volume and recharge volume parameters.

2. "Quantitative stormwater management waiver" means a ~~relinquishment~~ reduction of channel protection storage volume, overbank flood protection volume, and extreme flood volume design parameter.

~~UU.~~ TT. "Watercourse" means any natural or artificial stream, river, creek, ditch, channel, canal, conduit, culvert, drain, waterway, gully, ravine or wash, in and including any adjacent area that is subject to inundation from overflow or flood water.

~~EE.~~ ~~VV.~~ UU. "Watershed" means the total drainage area contributing runoff to a single point.

~~FF.~~ ~~WW.~~ VV. "Water quality volume (WQv)" means the volume needed to capture and treat the runoff from ninety percent of the average annual rainfall at a development site. Methods for calculating the water quality volume are specified in the design manual.

17.10.080 Stormwater management criteria.

~~A. Except in the case of redevelopment, every stormwater management plan shall satisfy the following requirements:~~

~~1. Recharge volume, water quality volume and channel protection storage volume sizing criteria shall be used to design best management practices according to the design manual~~.

A. The minimum control requirements established in this section and the Design Manual are as follows:

1. The Department of Neighborhood and Environmental Programs requires that the planning techniques, nonstructural practices, and design methods specified in the Design Manual are to be used to implement ESD to the MEP. The use of ESD planning techniques and treatment practices must be exhausted before any structural BMP is implemented. Stormwater management plans for development projects subject to this Ordinance shall be designed using ESD sizing criteria, recharge volume, water quality volume, and channel protection storage volume

criteria according to the Design Manual. The MEP standard is met when channel stability is maintained, predevelopment groundwater recharge is replicated, nonpoint source pollution is minimized, and structural stormwater management practices are used only if determined to be absolutely necessary.

2. Control of the two and ten-year frequency storm event shall be required according to the design manual if the Department of Neighborhood and Environmental Programs determines that historical flooding problems exist and impact existing downstream floodplain development.

3. The Director of the Department of Neighborhood and Environmental Programs may require more than the minimum control requirements specified in this section if hydrologic or topographic conditions warrant or if flooding, stream channel erosion, or water quality problems exist downstream from a proposed project.

4. Alternative minimum control requirements may be adopted subject to Administration approval. The Administration shall require a demonstration that alternative requirements will implement ESD to the MEP and control flood damages, accelerated stream erosion, water quality, and sedimentation. Comprehensive watershed studies may also be required.

5. Stormwater management and development plans where applicable, shall be consistent with adopted and approved watershed management plans or flood management plans as approved by the Maryland Department of the Environment in accordance with the Flood Hazard Management Act of 1976.

B. In the case of redevelopment, every stormwater management plan shall satisfy the following requirements.

1. The stormwater management plan shall be consistent with the ~~design manual~~ Design Manual.

2. The stormwater management plan shall reduce existing site impervious areas by at least fifty percent. Where site conditions prevent the reduction of impervious area by fifty percent, the stormwater management plan shall provide qualitative control for at least fifty percent of the site's existing impervious area ~~(or proposed impervious area whichever is greater)~~. When a combination of impervious area reduction and stormwater practice implementation is used, the combined area shall equal or exceed fifty percent of the site's impervious area ~~(existing or proposed whichever is greater)~~. Any permit application legally submitted prior to April 9, 2007, shall meet the requirements of the unamended regulation.

3. Upon application by the owner or his or her agent, the Director of Neighborhood and Environmental Programs may waive the requirements of the preceding paragraph if hydrologic and hydraulic design conditions prevent impervious area reduction or on-site stormwater management. Waivers shall be consistent with section 17.10.120 of this Code. In granting such a waiver, the director shall direct the applicant to the following practical alternatives:

a. Off-site BMP implementation for a drainage area at least one and one-half times the size and percent imperviousness to that of the project;

b. Watershed or stream restoration;

c. Retrofitting; and/or

d. Other practices to reduce impervious surfaces or the impact of stormwater runoff not inconsistent with the purposes of this chapter.

~~C.~~ **17.10.085 Stormwater Management Measures.** The ESD planning techniques and practices and structural and nonstructural stormwater management measures established in this section shall be used, either alone or in a combination, in developing a stormwater management plan.

1. ESD Planning Techniques and Practices.

a. The following planning techniques shall be applied according to the Design Manual to satisfy the applicable minimum control requirements established in 17.10.080 of this Ordinance:

i. Preserving and protecting natural resources;
ii. Conserving natural drainage patterns;
iii. Minimizing impervious area;
iv. Reducing runoff volume;
v. Using ESD practices to maintain 100 percent of the annual predevelopment groundwater recharge volume;
vi. Using green roofs, permeable pavement, reinforced turf, and other alternative surfaces;
vii. Limiting soil disturbance, mass grading, and compaction;
viii. Clustering development; and
viv. Any practices approved by the Administration.

b. The following ESD treatment practices shall be designed according to the Design Manual to satisfy the applicable minimum control requirements established in section 17.10.080 of this Ordinance:

i. Disconnection of rooftop runoff;
ii. Disconnection of non-rooftop runoff;
iii. Sheetflow to conservation areas;
iv. Rainwater harvesting;
v. Submerged gravel wetlands;
vi. Landscape infiltration;
vii. Infiltration berms;
viii. Dry wells
viv. Micro-bioretention;
x. Rain gardens;
xi. Swales;
xii. Enhanced filters; and
xiii. Any practices approved by the administration.

c. The use of ESD planning techniques and treatment practices specified in this section shall not conflict with existing State law or local ordinances, regulations, or policies. The City shall modify Departments of Neighborhood and Environment, Planning and Zoning ordinances and Public Works codes to eliminate any impediments to implementing ESD to the MEP according to the Design Manual.

~~1.~~ 2. Structural Stormwater Management Measures.

a. The following structural stormwater management practices shall be designed according to the design manual to satisfy the applicable minimum control requirements established in Section 17.10.080(A) of this Code.
i. Stormwater management ponds;
ii. Stormwater management wetlands;
iii. Stormwater management infiltration;
iv. Stormwater management filtering systems; and
v. Stormwater management open channel systems.
b. The performance criteria specified in the design manual with regard to general feasibility, conveyance, pretreatment, treatment and geometry, environment and landscaping, and maintenance shall be considered when selecting structural stormwater management practices.
c. Structural stormwater management practices shall be selected to accommodate the unique hydrologic or geologic regions of the State.
3. ESD planning techniques and treatment practices and structural stormwater management measures used to satisfy the minimum requirements in section 17.10.080 of this Ordinance must be recorded in the land records of Anne Arundel County and remain unaltered by subsequent property owners~~.~~ , unless ~~Prior~~ prior approval from the Department of Neighborhood and Environmental Programs shall be obtained before any stormwater management practice is altered or removed.
4. Alternative ESD planning techniques and treatment practices and structural stormwater measures may be used for new development runoff control if they meet the performance criteria established in the Design Manual and all subsequent revisions and are approved by the Administration. Practices used for redevelopment projects shall be approved by the Department of Neighborhood and Environmental Programs.
5. For the purposes of modifying the minimum control requirements or design criteria, the owner/developer shall submit to the Department of Neighborhood and Environmental Programs an analysis of the impacts of stormwater flows downstream in the watershed. The analysis shall include hydrologic and hydraulic calculations necessary to determine the impact of hydrograph timing modifications of the proposed development upon a dam, highway, structure, or natural point of restricted streamflow. The point of investigation is to be established with the concurrence of the Department of Neighborhood and Environmental Programs, downstream of the first downstream tributary whose drainage area equals or exceeds the contributing area to the project or stormwater management facility.
~~2. Nonstructural Stormwater Management Measures.~~
~~a. The following nonstructural stormwater management practices shall be applied according to the design manual to minimize increases in new development runoff:~~
~~i. Natural area conservation;~~
~~ii. Disconnection of rooftop runoff;~~
~~iii. Disconnection of non-rooftop runoff;~~
~~iv. Sheet flow to buffers;~~
~~v. Grass channels; and~~

~~vi. Environmentally sensitive development.~~
~~b. Nonstructural stormwater management practices shall be used to the maximum extent possible to minimize the reliance on structural BMP's.~~
~~c. The minimum control requirements listed in Section 17.10.080(A) may be reduced, according to the design manual, when nonstructural stormwater management practices are incorporated into site designs.~~
~~d. The use of nonstructural stormwater management practices may not conflict with existing State or local laws, ordinances, regulations, or policies.~~
~~e. Nonstructural stormwater management practices used to reduce the minimum control requirements shall be identified in the stormwater management maintenance agreement and shall be maintained in a fashion consistent with their intent by all (current and future) property owners and assigns. Prior approval from the Department of Neighborhood and Environmental Programs shall be obtained before nonstructural stormwater practices are altered.~~
~~F.~~ 6. Incorporation of green roofs as part of the site design is encouraged. Applicant must show the quantity of storage for the design proposed which will be considered as an offset for the overall stormwater management requirement.
~~3.~~ 7. Alternative structural and nonstructural stormwater management practices may be used for new development water quality control if they meet the performance criteria established in the design manual and approved by the administration. Practices used for redevelopment projects shall be approved by the Department of Neighborhood and Environmental Programs.
~~4.~~ 8. For the purposes of modifying the minimum control requirements or design criteria, the owner/developer shall submit to the Department of Neighborhood and Environmental Programs an analysis of the impacts of stormwater flows downstream in the watershed. The analysis shall include hydrologic and hydraulic calculations necessary to determine the impact of hydrograph timing modifications of the proposed development upon any downstream area and any downstream appurtenances, structure, obstructions and hydraulically significant natural features. The points of investigation are to be established with the concurrence of the Department of Neighborhood and Environmental Programs.
~~5.~~ 9. Stormwater management and development plans where applicable, shall be consistent with adopted and approved watershed management plans, flood management or floodplain management plans as approved by the Maryland Department of the Environment in accordance with the Flood Hazard Management Act of 1976 and any subsequent revisions.

17.10.100 Stormwater management plans.

A. Review and Approval of Stormwater Management Plans.
1. Unless otherwise exempted, for any proposed development, the owner or his/her agent shall submit to the Department of Neighborhood and Environmental Programs for review and approval, ~~a~~ phased stormwater management plans or waiver application as part of the grading permit application. At a minimum, plans shall be submitted for the concept, site development, and final stormwater management construct phases of project design. The stormwater management plan shall contain supporting computations, drawings, and sufficient information

describing the manner, location, and type of measures in which stormwater runoff from the entire development will be managed, and shall be consistent with the requirement of the Design Manual. The Department of Neighborhood and Environmental Programs shall review the plans to determine compliance with the requirements of this chapter prior to approval. The plans shall serve as the basis for all subsequent construction.

2. The Department of Neighborhood and Environmental Programs shall perform a comprehensive review of the stormwater management plans for each phase of site design. Coordinated comments will be provided for each plan phase that reflects input from all appropriate agencies including, but not limited to, the Anne Arundel County Soil Conservation District (SCD) and the Departments of Planning and Zoning and Public Works. All comments from Department of Neighborhood and Environmental Programs and other appropriate agencies shall be addressed and approval received at each phase of project design before subsequent submissions.

~~2.~~ 3. Issuance of the grading permit shall constitute approval of the Stormwater Management Plan for construction.

B. Contents and Submission of the Stormwater Management Plan.

~~1. A stormwater management plan that satisfies the design requirements of this chapter shall be submitted in accordance with the format established by the Department of Neighborhood and Environmental Programs.~~

1. The owner/developer shall submit a concept plan that provides sufficient information for an initial assessment of the proposed project and whether stormwater management can be provided according to section 17.10.080 of this Ordinance and the Design Manual. Plans submitted for concept approval shall include, but are not limited to:

a. A map at a scale specified by the Department of Neighborhood and Environmental Programs showing site location, existing natural features, water and other sensitive resources, topography, and natural drainage patterns at a scale of 1:10, 1:20 or 1:50;

b. The anticipated location of all proposed impervious areas, buildings, roadways parking, sidewalks, utilities, and other site improvements;

c. The location of the proposed limit of disturbance, erodible soils, steep slopes, and areas to be protected during construction;

d. Preliminary estimates of stormwater management requirements, the selection and location of ESD practices to be used, and the location of all points of discharge from the site;

e. A narrative that supports the concept design and describes how ESD will be implemented to the MEP; and

f. Any other information required by the Department of Neighborhood and Environmental Programs.

2. Following concept plan approval by the Department of Neighborhood and Environmental Programs, the owner/developer shall submit site development plans that reflect comments received during the previous review phase. Plans submitted for site development approval shall be of sufficient detail to allow site development to be reviewed and include but not be limited to:

a. All information provided during the concept plan review phase;

b. Final site layout, exact impervious area locations and acreages, proposed topography, delineated drainage areas at all points of discharge from the site, and stormwater volume computations for ESD practices and quantity control structures;
c. A proposed erosion and sediment control plan that contains the construction sequence, any phasing necessary to limit earth disturbances and impacts to natural resources and an overlay plan showing the types and locations of ESD and erosion and sediment control practices to be used;
d. A narrative that supports the site development design, describes how ESD will be used to meet the minimum control requirements, and justifies any proposed structural stormwater management measure; and
e. Any other information required by the approving agency.
3. Following site development approval by the Department of Neighborhood and Environmental Programs, the owner/developer shall submit final erosion and sediment control and stormwater management plans that reflect the comments received during the previous review phase. Plans submitted for final approval shall be of sufficient detail to allow all approvals and permits to be issued according to the following:
a. Final erosion and sediment control plans shall be submitted according to COMAR 26.17.01.05; and
b. Final stormwater management plans shall be submitted for approval in the form of construction drawings and be accompanied by a report that includes sufficient information to evaluate the effectiveness of the proposed runoff control design.
4. Reports submitted for final stormwater management plan approval shall include, but are not limited to:
a. Geotechnical investigations including soil maps, borings, site specific recommendations, and any additional information necessary for the final stormwater management design;
b. Drainage area maps depicting predevelopment and post development runoff flow path segmentation and land use;
c. Hydrologic computations of the applicable ESD and unified sizing criteria according to the Design Manual for all points of discharge from the site;
d. Hydraulic and structural computations for all ESD practices and structural stormwater management measures to be used;
e. A narrative that supports the final stormwater management design; and
f. Any other information required by the Department of Neighborhood and Environmental ~~Design~~ Programs.
5. Construction drawings submitted for final stormwater management plan approval shall include, but are not limited to:
a. A vicinity map;
b. Existing and proposed topography and proposed drainage areas, including areas necessary to determine downstream analysis for proposed stormwater management facilities;
c. Any proposed improvements including location of buildings or other structures, impervious surfaces, storm drainage facilities, and all grading;
d. The location of existing and proposed structures and utilities;

e. Any easements and rights-of-way;
f. The delineation, if applicable, of the 100 year floodplain, on-site wetlands or Critical Area designation and 100 foot buffer;
g. Structural and construction details including representative cross sections for all components of the proposed drainage system or systems, and stormwater management facilities;
h. All necessary construction specifications;
i. A sequence of construction;
j. Data for total site area, disturbed area, new impervious area, and total impervious area;
k. A table showing ESD and unified sizing criteria volumes required in the Design Manual;
l. A table of materials to be used for stormwater management facility planting;
m. All soil borings logs and locations;
n. An inspection and maintenance schedule;
o. Certification by the owner/developer that all stormwater management construction will be done according to this plan;
p. An as-built certification signature block to be executed after project completion; and
q. Any other information required by the Department of Neighborhood and Environmental Programs.

C. Preparation of the Stormwater Management Plan.

1. The stormwater management plan shall be prepared under the general supervision of a professional engineer registered to practice in the State of Maryland. The professional engineer and any other design professional involved in the preparation of any stormwater management plan submitted to the ~~Maryland Department of Environment~~ Department of Neighborhood and Environmental Programs, shall sign and seal the plan.

2. If a stormwater management plan requires either a dam safety permit from the Maryland Department of Environment or a small pond approval from the Anne Arundel Soil Conservation District, then the dam and/or pond design shall be prepared, signed and sealed by a professional engineer registered to practice in the State of Maryland.

D. Design Requirements.

1. Stormwater management facilities shall be designed to minimize the need of maintenance, to provide access for maintenance purposes and to be structurally sound. Additionally, a stormwater management facility shall be designed in accordance with standard construction specifications and details established and promulgated by the Department of Neighborhood and Environmental Programs.

2. Prior to approval of a stormwater management design, the applicant shall submit a proposed staged inspection and construction control schedule. The schedule shall provide for regular inspections by a registered professional engineer to be conducted during construction of stormwater management systems in accordance with accepted engineering practices.

3. The permittee shall notify the Department of Neighborhood and Environmental Programs before commencing any work to implement the stormwater management plan and upon completion of the work.

4. No stage of work involving the installation of stormwater management facilities shall proceed until the work previously completed is inspected and approved by the Department of Neighborhood and Environmental Programs.
5. Any portion of the work that does not comply with the stormwater management plan shall be corrected promptly by the permittee.
6. A final inspection shall be conducted by the Department of Neighborhood and Environmental Programs upon completion of the stormwater management facility to determine if the completed work is constructed in accordance with the approved stormwater management plan. The final inspection by the Department of Neighborhood and Environmental Programs does not relieve the permittee of any of requirement imposed on the permittee by this chapter.

E. Construction Compliance. Archive able and reproducible as-built plans of the stormwater management facility shall be forwarded to the Department of Neighborhood and Environmental Programs upon completion of the stormwater management facility and final inspection by the Department of Neighborhood and Environmental Programs. The permittee's professional engineer shall certify that the stormwater management facility has been constructed as shown on the as-built plans and that the stormwater management facility meets the approved stormwater management plan's design and specifications.

F. Electronic Documentation. The Director of Neighborhood and Environmental Programs may require the permittee and his/her engineer to submit all of the documents associated with the grading permit in an electronic format for archiving purposes. The documents shall be submitted in the format required by the Director of Neighborhood and Environmental Programs.

G. Release of Security. The performance bond shall not be reduced nor released until all aspects of the stormwater management plan are completed, including, but not limited to:

1. The submission and acceptance of "as built drawings" in accordance with subsection E of this section,
2. The completion of all forms required by the administration, and
3. The stormwater management facility has been in operation for a minimum of one year without failure.

17.10.120 Waivers.

~~A. Upon the written application of the property owner or his/her agent and subject to the provisions of subsections B and C of this section, the Director of Neighborhood and Environmental Programs may waive stormwater management requirement set forth in this chapter provided the applicant demonstrates the waiver:~~

~~1. Does not present an unacceptable risk of flooding, water quality degradation or other stormwater damage to the subject drainage area resulting from the land disturbing and development activity; and~~

~~2. The waiver is in the best interest of the City based upon a consideration of the effectiveness and safety of the proposed alternative to the requirement.~~

~~In reviewing a request for a waiver, the Director of Neighborhood and Environmental Programs shall:~~

~~a. Consider each requested waiver on a case-by-case basis,~~

~~b. Consider the cumulative effects of the Department of Neighborhood and Environmental Programs' waiver policy, and~~

~~c. Ensure that the development will not have an unreasonable adverse impact on stream quality.~~

~~B. The Director of Neighborhood and Environmental Programs may waive any on-site stormwater quantity management requirement set forth in this chapter if, in addition to the determinations set forth in subsection A of this section, the director determines that:~~

~~1. The applicant has submitted an acceptable alternative to on-site stormwater quantity management, such as an off-site stormwater management facility, that fulfills the intent and the provisions of this chapter; or~~

~~2. The site is immediately adjacent to tidewaters and water quantity management would not serve the intent of this chapter; or~~

~~3. Circumstances exist that prevent the reasonable implementation of quantity control practices.~~

~~C. The Director of Neighborhood and Environmental Programs may waive any on-site stormwater quality management requirement set forth in this chapter if, in addition to the determinations set forth in subsection A of this section, the Director of Neighborhood and Environmental Programs determines that:~~

~~1. On site water quality management is infeasible and the applicant has submitted an acceptable alternative to onsite stormwater quality, such as an off-site stormwater management facility, that fulfills the intent and the provisions of this chapter; or~~

~~2. In the case of a redevelopment project, the requirements of Section 17.010.110(B) have been satisfied.~~

A. The Department of Neighborhood and Environmental Programs shall grant stormwater management quantitative control waivers only to those projects within areas where watershed management plans have been developed consistent with section ~~17.10.120F~~ 17.10.075F of this Ordinance. Written requests for quantitative stormwater management waivers shall be submitted that contain sufficient descriptions, drawings, and any other information that is necessary to demonstrate that ESD has been implemented to the MEP. A separate written waiver request shall be required in accordance with the provisions of this section if there are subsequent additions, extensions, or modifications to a development receiving a waiver.

B. If watershed management plans consistent with section 17.10.075F of this Ordinance have not been developed, stormwater management quantitative control waivers may be granted to the following projects provided that it has been demonstrated that ESD has been implements to the MEP:

(1) That have direct discharges to tidally influenced receiving waters; or

(2) When the approving agency determines that circumstances exist that prevent the reasonable implementation of quantity control practices.

C. Stormwater management qualitative control waivers apply only to:

(1) In-fill development projects where ESD has been implemented to the MEP and it has been demonstrated that other BMPs are not feasible;

(2) Redevelopment projects if the requirements of section 17.10.085 of this Ordinance are satisfied; or

(3) Sites where the approving agency determines that circumstances exist that prevent the reasonable implementation of ESD to the MEP.

D. Waivers shall only be granted when it has been demonstrated that ESD has been implemented to the MEP and must:

(1) Be on a case-by-case basis;

(2) Consider the cumulative effects the Department of Neighborhood and Environmental Programs waiver policy; and

(3) Reasonable ensure the developement will not adversely impact stream quality.

E. If the Department of Neighborhood and Environmental Programs has established an overall watershed management plan for a specific watershed, the Department of Neighborhood and Environmental Programs may develop quantitative waiver and redevelopment provisions that differ from section~~s~~ ~~17.10.078 and~~ 17.10.120 of this Ordinance.

F. A watershed management plan developed for the purpose of implementing different stormwater management policies for waivers and redevelopment shall:

(1) Include detailed hydrologic and hydraulic analyses to determine hydrograph timing;

(2) Evaluate both quantity and quality management and opportunities for ESD implementation;

(3) Include a cumulative impact assessment of current and proposed watershed development;

(4) Identify existing flooding and receiving stream channel conditions;

(5) Be conducted at a reasonable scale;

(6) Specify where on-site or off-site quantitative and qualitative stormwater management practices are to be implemented;

(7) Be consistent with the General Performance Standards for Stormwater Management in Maryland found in the Design Manual; and

(8) Be approved by the Administration.

~~D.~~ G. If the Director of Neighborhood and Environmental Programs determines that a waiver is appropriate under this section but that the construction of the proposed alternative to on-site stormwater quantity or quality management is not in the City's interest, the Director of Neighborhood and Environmental Programs may require the applicant to make a monetary contribution to the stormwater utility or to an identified city capital project intended to provide water quantity and/or quality improvements to the drainage basin in which the proposed development site is located. The amount of the contribution shall not exceed the cost of constructing an effective on-site stormwater management facility, including the value of the land that would be required to construct the stormwater management facility, as well as the cost of constructing, landscaping and perpetually maintaining the facility. The cost of perpetually maintaining the stormwater management facility is presumed to equal to the cost of constructing the stormwater management facility.

17.10.160 Performance bond.

A. Prior to the issuance of a grading permit for any construction ~~requiring a stormwater management facility~~, the applicant shall provide the City of Annapolis with a surety or cash bond, irrevocable letter of credit, or other means of security acceptable to the City Attorney in a format acceptable to the City Attorney. The amount of the security shall not be less than the total estimated construction cost ~~of the stormwater management facility~~ per the estimate form.

B. The security shall not be fully released until all aspects of the ~~stormwater management plan~~ grading permit are completed, including, but not limited to:

1. The submission and acceptance of "as built drawings" in accordance with subsection G of Section 17.10.100~~,~~ ;

2. Compliance with all landscaping plans;

3. Absence of erosion or other site problems;

~~2.~~ 4. The completion of all forms required by the administration~~,~~ ; and,

~~3.~~ 5.The storm water management facility has been in operation for a minimum of one year without failure.

17.10.210 Inspection program.

A. All privately owned stormwater management facilities shall be inspected during construction, during the first year of operation, and annually thereafter by the Department of Neighborhood and Environmental Programs.

B. Regular inspections shall be made and documented for each ESD ~~planning technique and practice~~ system at the stages of construction specified in the Design Manual and certified by a professional engineer licensed in the State of Maryland. At a minimum, all ESD system and other nonstructural practices shall be inspected upon completion of final grading, the establishment of permanent stabilization, and before issuance of use and occupancy approval.

~~B.~~ C. All privately owned stormwater management facilities shall be inspected and maintained in accordance with the stormwater management facility inspection and maintenance agreement. Not later than August first of each year, the owner and/or beneficial users shall provide the Department of Neighborhood and Environmental Programs with an inspection and maintenance report, in such format as may be specified by the Director of Neighborhood and Environmental Programs.

~~C.~~ D. The Department of Neighborhood and Environmental Programs shall maintain copies of inspection and maintenance reports for privately owned stormwater management facilities among their departmental records for a period of seven years from the date of the inspection.

SECTION II: AND BE IT FURTHER ESTABLISHED AND ORDAINED BY THE ANNAPOLIS CITY COUNCIL that this Ordinance shall take effect upon date of final passage.

ADOPTED this 21st day of December, 2009.

ATTEST: **THE ANNAPOLIS CITY COUNCIL**

_____ **BY:** _____

Regina C. Watkins-Eldrige, MMC **JOSHUA J. COHEN, MAYOR**
CITY CLERK

EXPLANATION:

Highlighting indicates matter added to exiting law.
~~Strikeout indicates matter deleted from existing law~~.
Underlining indicates amendments.

Staff Report

O-59-09, Stormwater Management

In the 2007 Legislative Session, the State passed the Stormwater Management Act of 2007 which required the rewrite of the Stormwater Management Design Manual and further required that all local jurisdictions in the state must adopt the new standards into their local ordinances no later than May 4, 2010. The new Design Manual has been recently completed and local jurisdictions may now adopt the required new legislation. Using the model ordinance supplied by the Maryland Department of the Environment, Ordinance O-59-09 amends existing City Code Chapter 17.10 Stormwater Management to be consistent with the new State regulations. All amendments must be reviewed and approved by MDE prior to final adoption by the City.

In addition, a small number of amendments are proposed to correct grammatical errors and to clarify existing procedures.

Prepared by Frank Biba, Annapolis Department of Neighborhood and Environmental Programs, (410) 263-7946.