

Chapter 191, STORMWATER MANAGEMENT

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ARTICLE I, General Provisions

§ 191-1. Purpose; authority; ~~and~~ disclaimer of liability.

[Amended 05/03/07 by Ord. No. 07-08]

- A. The purpose of this chapter is to protect, maintain, and enhance the public health, safety, and general welfare by establishing minimum requirements and procedures to control the adverse impacts associated with increased stormwater runoff. ~~Proper management of stormwater runoff will minimize damage to public and private property, reduce the effects of development on land, control stream channel erosion, reduce local flooding and maintain after development, as nearly as possible, the pre-development runoff characteristics.~~ The goal is to manage stormwater by using environmental site design (ESD) to the maximum extent practicable (MEP) to maintain after development as nearly as possible, the predevelopment runoff characteristics, and to reduce stream channel erosion, pollution, siltation and sedimentation, and local flooding, and use appropriate structural best management practices (BMPs) only when necessary. This will help restore, enhance, and maintain the chemical, physical, and biological integrity of streams, minimize damage to public and private property, and reduce impacts of land development.
- B. This chapter is adopted pursuant to the Environment Article, Title 4, Subtitle 2, of the Annotated Code of Maryland, and shall apply to all development occurring within the unincorporated areas of Carroll County. The application of this chapter shall be the minimum stormwater management requirements and shall not be deemed a limitation or repeal of any other powers granted by State statute. Carroll County shall be responsible for the coordination and enforcement of this chapter.
- C. The degree of stormwater management necessary to satisfy the requirements of this chapter is considered reasonable to regulate the effects of stormwater runoff on the receiving land and water: [Added 05/03/07 by Ord. No. 07-08]

- (1) quantity - overbank flood control (Qp₁₀);
 - (2) bank erosion - stream capacity (Cp_v);
 - (3) quality - waterborne pollutants (WQ_v); and
 - (4) local groundwater table - groundwater recharge (Re_v).
- D. The amount of protection required is based upon state law, scientific study, and local engineering experience. *[Added 05/03/07 by Ord. No. 07-08]*
- E. Rainfall events beyond the capacity of management measures provided to satisfy this chapter have occurred in the past and may occur in the future. The severity of these events and their effects may be increased by man-made or natural causes. *[Added 05/03/07 by Ord. No. 07-08]*
- F. Implementation of the provisions of this chapter does not create liability on the part of the County or any officer or employee thereof for any damage that may result from reliance on this chapter. *[Added 05/03/07 by Ord. No. 07-08]*

§ 191-2. Incorporation by reference.

[Amended 05/03/07 by Ord. No. 07-08]

For the purpose of this chapter, the following documents are incorporated by reference:

- A. The 2000 Maryland Stormwater Design Manual, Volumes I and II (Maryland Department of the Environment, April 2000) and all subsequent revisions shall serve as the official guide for stormwater principles, methods, and practices.
- B. USDA Natural Resources Conservation Service Maryland Conservation Practice Standard Pond Code 378 (January 2000).
- C. The Carroll County Supplement to the 2000 Maryland Stormwater Design Manual Volumes I and II, Carroll County Bureau of Resource Management, May ~~2007~~ 2010, as amended. *[Added 05/03/07 by Ord. No. 07-08]*

§ 191-3. Definitions.

[Amended 05/03/07 by Ord. No. 07-08]

In this chapter the following terms have the meanings indicated. Any term not defined in this chapter shall have the meaning as defined in any chapter of the Code. Any term not defined in the Code in any chapter shall have its generally accepted meaning.

ADMINISTRATION - The Maryland Department of the Environment ("MDE"), Water Management Administration ("WMA").

ADVERSE IMPACT - Any deleterious effect on waters or wetlands, including the 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.

AGRICULTURAL LAND MANAGEMENT PRACTICES - 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.

~~**AGRICULTURAL REMAINDER** - The land remaining from a tract of ground which has been subdivided in the Agricultural District in accordance with Chapter 223 and Chapter 103 of the Code.~~

~~**APPLICANT** - Any person, firm, or governmental agency that executes the necessary forms to procure official approval of a project or a permit to carry out construction of a project. An individual, partnership, firm, corporation, or other entity that undertakes or participates in the activities covered by this chapter.~~

~~**APPROVING AGENCY** - The entity responsible for the review and approval of stormwater management plans (the Bureau of Resource Management or its successor agency).~~

AQUIFER - A porous water bearing geologic formation generally restricted to materials capable of yielding an appreciable supply of water.

BASE FLOOD - The runoff that results from the 100-year storm event.

BEST MANAGEMENT PRACTICES ~~or~~ (BMP) - A structural device or non-structural practice designed to temporarily store or treat stormwater runoff in order to mitigate flooding, reduce pollution, and provide other amenities.

CFR - Code of Federal Regulations.

CHANNEL PROTECTION STORAGE VOLUME (C_p) - The volume used to design structural management practices to control stream channel erosion. Methods for calculating the C_p are specified in the ~~2000 Maryland Stormwater Design Manual, Volumes I and H.~~

CLEARING - The removal of trees and brush from the land for development purposes, but not including the mowing of grass or agricultural land management ~~activities practices.~~

CHECKLIST – The specific design requirements, organized by project phase, for implementing this chapter.

COMAR - Code of Maryland Regulations.

CONCEPT PLAN – The first of three required plans that includes the information necessary to allow an initial evaluation and approval of a proposed project.

COUNTY - The Board of Commissioners of Carroll County or its designee.

DAM BREACH INUNDATION AREA - The area potentially inundated by a sudden dam failure.
[Amended 05/03/07 by Ord. No. 07-08]

DESIGN MANUAL ~~or~~ MANUAL - The 2000 Maryland Stormwater Design Manual, ~~Volumes I and H~~ and all subsequent revisions that serves as the official guide for stormwater management principles, methods, and practices.

DETENTION STRUCTURE - A permanent structure for the temporary storage of runoff, which is designed so as not to create a permanent pool of water.

DEVELOP LAND – To change the runoff characteristics of a parcel of land in conjunction with residential, commercial, industrial, or institutional construction or alteration. The development of real estate.

DEVELOPER - A person who engages in development or who owns property upon which a development is proposed or accomplished.

DEVELOPMENT – Any change to improved or unimproved real estate, including, but not limited to, buildings and other structures, grading, dredging, filling, paving, clearing, excavation, dumping, extraction or storage of soil or minerals, the storage of equipment or material; and the subdivision of land including off-conveyances. The subdivision of land and those divisions of land referred to as off-conveyances, and/or any change to improved or unimproved real estate; including but not limited to: construction; reconstruction; structural alterations; relocation or enlargement of any structure, road, driveway or appurtenance; grading; dredging; filling; paving; clearing; excavation; dumping; extraction or storage of soil or minerals; the storage of equipment or material.

DRAINAGE AREA - That area contributing runoff to a single point measured in a horizontal plane, which is enclosed by a ~~ridgeline~~ ridge line.

EASEMENT - 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 is included in the conveyance of land affected by such easement.

ENGINEER - A professional engineer licensed in the State of Maryland, proficient in stormwater management design.

ENVIRONMENTAL SITE DESIGN (ESD) – Using small-scale stormwater management practices, non-structural 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.

EXEMPTION – Those land development activities that are not subject to the stormwater management requirements contained in this chapter.

EXTENDED DETENTION - 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 BMPs are specified in the Design Manual and the Supplement.

EXTREME FLOOD VOLUME (Q_{fv}) - The storage volume required to control those infrequent but large storm events in which overbank flows reach or exceed the boundaries of the 100-year ~~flood plain~~-floodplain.

FEMA - Federal Emergency Management Agency.

FINAL STORMWATER MANAGEMENT PLAN – The last of the three required plan submittals that includes the information necessary to allow all reviews, approvals, and permits to be issued by the County.

FLOODPLAIN - That land adjacent to a body of water or stream inundated by the base flood.

FLOW ATTENUATION - Prolonging the flow time of runoff to reduce the peak discharge.

GRADING - Any act by which soil is cleared, stripped, stockpiled, excavated, scarified, filled or any combination thereof. Any disturbance of the earth, including, but not limited to clearing, stripping, stockpiling, excavating, scarifying, filling, or any combination thereof.

GRADING PERMIT - Written authorization from the County to proceed in accordance with the provisions of Chapter 121.

IMPERVIOUS AREA – Any surface that effectively prevents stormwater from infiltrating into the ground.

INFILTRATION - The passage or movement of water into the soil surface.

LAND SURVEYOR - A professional land surveyor registered in the State of Maryland, proficient in drainage design.

MAXIMUM EXTENT PRACTICABLE (MEP) – 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.

OFF-SITE STORMWATER MANAGEMENT - The design and construction of a facility necessary to control stormwater from more than one development.

ON-SITE STORMWATER MANAGEMENT - The design and construction of systems necessary to control stormwater within an immediate development.

~~ONE HUNDRED (100) YEAR STORM EVENT~~ – ~~A storm that has a 1% chance of being equaled or exceeded in any given year, as determined by the National Oceanic and Atmospheric Administration and the National Weather Service.~~

OUTFALL - The point where a storm sewer system discharges.

OVERBANK FLOOD PROTECTION VOLUME (Q_{pv}) - 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 and the Supplement.

PERSON - Includes 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.

PLANNING TECHNIQUES – A combination of strategies employed early in project design to reduce the impact from development and to incorporate natural features into a stormwater management plan.

POLLUTION or POLLUTANT - Any contamination, or alteration of the physical, chemical, or biological properties of groundwater or surface water, including any change in temperature, taste, color, turbidity, or odor of the waters or the discharge or deposit of any organic matter, harmful organism, or liquid, gaseous, solid, radioactive, or other substance into groundwater or surface water that will render the waters harmful, or detrimental, to: public health, safety, or welfare; domestic, commercial, industrial, agricultural, recreational, or other legitimate beneficial uses; livestock, wild animals, birds, ~~or~~, fish or other aquatic life.

RECHARGE VOLUME (Re_v) - 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 and the Supplement.

REDEVELOPMENT - Any construction, alteration, or improvement ~~exceeding 5,000 square feet of land disturbance~~ performed on sites where existing land use is commercial, industrial, institutional, or multifamily residential and existing site imperviousness exceeds 40%.

RETENTION STRUCTURE - A permanent structure that provides for the storage of runoff by means of a permanent pool of water.

RETROFITTING – 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 non-structural practice in a previously developed area to improve water quality over current conditions.

SCD - Soil Conservation District.

SEDIMENT - Soils or other surface-surficial materials transported or deposited by the action of wind, water, ice or gravity as a product of erosion.

SITE:-

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

~~B. For redevelopment, the area of new construction as shown on an approved site plan or the original parcel. Final determination of the applicable areas shall be made by the County.~~

SITE DEVELOPMENT PLAN – The second of three required plan submittals that includes the information necessary to allow a detailed evaluation and subsequent approval of a proposed project.

STABILIZATION - The prevention of soil movement by any of various vegetative or structural means.

~~**START OF CONSTRUCTION** – The actual start of construction is defined as the beginning of grading operations after the issuance of a valid grading permit for any development. The actual start of construction or improvement shall be within 365 days of issuance of the grading permit.~~

STORM SEWER SYSTEM - A conveyance or system of conveyances including, but not limited to, drainage systems, public streets, catch basins, curbs, gutters, ditches, constructed channels, storm drains, associated underground piping and any on-site stormwater management facilities, that are:

- A. Designed or used for the collection and conveyance of stormwater runoff (either immediate or delayed) from any form of precipitation event;
- B. Not part of a combined sewer system; and
- C. Not part of or discharging into any publicly owned treatment works (POTW) as defined in 40 CFR 122.2.

STORMWATER – Water that originates from a precipitation event.

STORMWATER MANAGEMENT (SWM):

- A. 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; or

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

STORMWATER MANAGEMENT PLAN - A set of drawings or other documents submitted as a prerequisite to obtaining stormwater management approval, which contain all of the information and specifications pertaining to stormwater management.

STORMWATER MANAGEMENT SYSTEM – Natural areas, ESD practices, stormwater management measures, and any other structure through which stormwater flows, infiltrates, or discharges from a site.

STREAM - A part of a watercourse either naturally or artificially created that contains intermittent or perennial base flow of groundwater origin, but not including a ditch that conveys surface runoff exclusively from storm events.

STRIPPING - Any activity that removes the vegetative surface cover including tree removal, clearing, grubbing, and storage or removal of topsoil.

SUBDIVISION - Any division of a parcel of land into 2 or more lots or parcels for the purpose, whether immediate or future, of transfer of ownership, sale, lease, or development.

SUPPLEMENT – The Carroll County Supplement to the 2000 Maryland Design Manual (as amended) that contains administrative procedures, policies, standard designs and checklists used in the implementation of this chapter.

TOTAL FARM RESOURCE MANAGEMENT SYSTEM (RMS) PLAN - A combination of conservation practices that when applied will meet or exceed the minimum quality criteria for all identified resource concerns on the entire farm. The Carroll Soil Conservation District identifies the resource concerns and approves and/or writes the plans.

ULTIMATE STUDY - A hydrologic analysis prepared by a professional engineer or land surveyor and performed to determine the base flood after full development of the contributing watershed, based on existing zoning (ultimate development), and a corresponding hydraulic analysis performed to delineate the ultimate development floodplain (ultimate floodplain).

VARIANCE – The modification of the minimum stormwater management requirements by the County for specific circumstances where strict adherence to the requirements would result in unnecessary hardship and not fulfill the intent of this chapter.

WAIVER - The ~~relinquishment from technical reduction of~~ stormwater management requirements by the County for a specific development on a case-by-case basis:

- A. Qualitative stormwater management waiver includes water quality volume and recharge volume design parameters.
- B. Quantitative stormwater management waiver includes channel protection storage volume, overbank flood protection volume, and extreme flood volume design parameters.

WATERCOURSE - 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.

WATERSHED - The total drainage area contributing runoff to a single point.

WATER QUALITY VOLUME (WQ_v) - The volume needed to capture and treat the runoff from 90% of the average annual rainfall at a development site. Methods for calculating the Water Quality Volume are specified in the Design Manual and the Supplement. [Amended 05/03/07 by Ord. No. 07-08]

WETLAND - An area that is inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support, and that under normal circumstances does support, a prevalence of vegetation typically adapted for life in saturated soil conditions, commonly known as hydrophytic vegetation. A wetland area is delineated according to the Federal Manual for Identifying and Delineating Jurisdictional Wetlands, 1987 Corps of Engineers Manual.

YEAR (DESIGN) STORM EVENT – A storm that has a specified chance of being equaled or exceeded in any given year. The effective 24 hour rainfall amount to be used for the following design

storms (based on National Oceanic and Atmospheric Administration data) will be published in the Supplement and updated annually.

<u>(Design Storm)</u> <u>Year Storm Event</u>	<u>Percent (%) chance of being equaled or exceeded in any given year</u>
<u>1 Year</u>	<u>99%</u>
<u>2 Year</u>	<u>50%</u>
<u>5 Year</u>	<u>20%</u>
<u>10 Year</u>	<u>10%</u>
<u>25 Year</u>	<u>4%</u>
<u>50 Year</u>	<u>2%</u>
<u>100 Year</u>	<u>1%</u>

ARTICLE II, Applicability

§ 191-4. Scope.

- A. No person shall develop any land for residential, commercial, industrial, or institutional uses without ~~having provided~~ providing for stormwater management measures that control or manage runoff, from such development except as otherwise provided in this chapter. The stormwater management measures shall be designed in accordance with this chapter, ~~and~~ the Design Manual and the Supplement and constructed in accordance with the approved plan.
- B. This chapter does not apply to development projects approved by the Planning and Zoning Commission where actual start of construction occurs before July 1, 2004 with valid final stormwater management and sediment control approvals prior to May 4, 2010. Where phased developments are approved, each phase is a separate project. Phases where actual start of construction valid individual final stormwater management and sediment control approvals have not ~~occurred~~ been obtained by May 4, 2010 are subject to the process and requirements of this chapter.
- C. The County may determine that this chapter applies to any development project if downstream flooding problems or danger to health and safety, or damage to property or the environment exist or may be created by runoff from the development.

§ 191-5. Exemptions.

Except as provided in § 191-4C, The following development activities are exempt from the provisions of this chapter and the requirements of providing stormwater management:

- A. Agricultural land management activities-practices, included in a Total Farm Resource Management System (RMS) Plan with the required BMPs implemented concurrent with the specific agricultural practice;
- B. Additions or modifications to existing single family detached residential structures provided disturbance is less than 5,000 square feet of land area provided they comply with subsection C.
- C. Developments that cumulatively disturb less than 5,000 square feet of land area;

- D. Land development activities that the Administration determines will be regulated under specific State laws, which provide for managing stormwater runoff.

§ 191-6. Application for exemption.

A person may apply to the County for a stormwater management exemption by providing a written explanation, with adequate supporting documentation, which describes how the proposed development qualifies for an exemption.

§ 191-7. Waivers; watershed management plans.

The County may grant a waiver of the technical stormwater management requirements for individual developments based upon a written request submitted by the developer, which contains descriptions, drawings, and any other information that the County deems necessary to evaluate the proposed development 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. A waiver shall be limited to the matters contained in the request and by the waiver granted. Waivers of the review and approval process may not be granted. Waivers may be granted if the following criteria are met:

- A. Stormwater management quantitative control waivers shall be granted only to those projects within areas where watershed management plans have been developed consistent with subsection F.
- B. If watershed management plans consistent with subsection F have not been developed, then stormwater management quantitative control waivers may be granted to projects when provided that it has been demonstrated that ESD has been implemented to the MEP and the County 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 stormwater management implementation is not feasible 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 § 191-8 are satisfied; or
 - (3) Sites where the County determines that circumstances exist that prevent the reasonable implementation of quality control practices ESD to the MEP.
- D. Waivers granted shall only be granted when it has been demonstrated that ESD has been implemented to the MEP and shall:
 - (1) Be on a case-by-case basis;
 - (2) Consider the cumulative effects of the County waiver policy; and
 - (3) Reasonably ensure that the development will not adversely impact stream quality.
- E. If the County has established an overall watershed management plan for a specific watershed, then the County may develop quantitative waiver and redevelopment provisions that differ from Subsection B and § 191-8.
- 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, on-site and downstream;
 - (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 found in the Design Manual and the Supplement; and
 - (8) Be approved by the Administration.
- G. The County may grant a waiver of quantitative stormwater management requirements for individual developments in areas where watershed management plans have been developed provided that a written request is submitted by the applicant containing descriptions, drawings, and other information that is necessary to evaluate the proposed development. 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.

§ 191-8. Redevelopment.

- A. Stormwater management plans for redevelopment shall ~~be provide ESD to the MEP~~ consistent with the Design Manual and the Supplement ~~except that the recharge, channel protection storage volume, and o~~Overbank flood protection volume requirements do not apply unless required by the County in uncommon situations such as historic flooding, or extreme erosion where more stormwater control than the minimum required may be necessary.
- B. All redevelopment projects designs shall reduce those existing site impervious areas within the limit of disturbance (LOD) built in accordance with an approved site plan by at least 50% below conditions existing on ~~July 1, 2001~~ the date of the most recent Carroll County geographic information system orthophotography or as depicted on the original approved site plan. Where site conditions prevent the reduction of impervious area, then stormwater management practices shall ~~be implemented to provide qualitative control~~ implement ESD to the MEP for at least 50% of the site's impervious area. When a combination of impervious area reduction and ~~stormwater practice implementation~~ ESD is used, the combined reduced and treated area shall equal no less than 50% of the site's impervious area ~~within the LOD~~. Where existing site impervious areas were constructed after July 1, 1984, without an approved ~~site plan~~ stormwater management plan, ~~all of the requirements of the Design Manual shall be met~~ stormwater management shall be provided in accordance with § 191-10 for all impervious surfaces on the parcel.
- C. ~~Where conditions prevent impervious area reduction or on-site stormwater management, practical alternatives may be considered, including, but not limited to:~~
 - (1) ~~Off-site BMP implementation for a drainage area comparable in size and percentage imperviousness to that of the project;~~
 - (2) ~~Watershed or stream restoration;~~
 - (3) ~~Retrofitting; or~~
 - (4) ~~Other practices approved by the County.~~

Alternative stormwater management measures may be used to meet the requirements in subsection B if the owner or developer satisfactorily demonstrates to the County that impervious area reduction has been maximized and ESD has been implemented to the MEP. Alternative stormwater management measures include, but are not limited to:

 - (1) An on-site structural BMP;
 - (2) An off-site structural BMP to provide water quality treatment for an impervious area equal to or greater than 70 percent of the existing impervious area; or
 - (3) A combination of impervious area reduction, ESD implementation, and an on-site structural BMP for an area equal to or greater than 50 percent of the existing site impervious area within the LOD; or

(4) A combination of impervious area reduction, ESD implementation and an off-site structural BMP for an area equal to or greater than 70 percent of the existing site impervious area within the LOD.

D. The County policies for providing stormwater runoff treatment for redevelopment projects if it is proven to the County's satisfaction that the requirements of subsections A, B, and C, cannot be met are as follows:

(1) Retrofitting of existing on-site or off-site BMPs that provide inadequate stormwater treatment for the impervious areas draining to them, identified by the County within the eight digit drainage basin of the project, to bring them up to current standards in accordance with the Design Manual and the Supplement. The retrofitted facilities must treat drainage from impervious areas that require additional treatment greater than that required for all site imperviousness within the LOD, or

(2) Fees paid into the Stormwater Management Fund established in § 191-17.1 for the exclusive purpose of providing management of stormwater. The fees shall be listed in the Supplement and updated annually based upon cost history and the square footage of site imperviousness within the LOD.

§ 191-9. Variances.

The County may grant a written variance from any technical requirement of Article III, Stormwater Management Criteria, if there are exceptional circumstances applicable to the site such that strict adherence will result in unnecessary hardship and not fulfill the purpose of this chapter. A written request for a variance shall be provided to the County and shall state the specific variance requested and with specific reasons and supporting documentation. The County shall not grant a variance unless sufficient justification is provided by the applicant. A variance from the review and approval process may not be granted.

A. The County may grant a variance from any technical requirements of Article III (Stormwater Management Criteria) provided the variance is consistent with sound stormwater management.

B. The County may not grant a variance if downstream flooding problems or danger to health and safety or damage to property or the environment exist or may be created by runoff from the project.

C. A variance may be granted upon:

(1) A written request submitted by the developer which contains descriptions, drawings, and any other information that the County deems necessary to demonstrate that ESD has been investigated thoroughly.

(2) A determination that failure to grant a variance would result in exceptional hardship or environmental degradation.

(3) A determination that adherence to the technical requirement is not necessary to fulfill the purpose of this chapter.

(4) A determination that granting a variance will not result in increased flooding, dangers to health and safety, or damage to property or the environment.

(5) Provision of compensatory stormwater management in accordance with § 191-8D for all impervious areas within the LOD not completely treated in accordance with the requirements of this chapter.

D. For any development located within an incorporated municipality, a notice of a request for a variance to the technical requirements of this chapter shall be forwarded by the applicant to the Mayor of that municipality. Proof of submittal to the municipality shall be provided to the County.

E. If granting a variance to a technical requirement of this chapter, the County shall issue written findings of fact that the applicant has met the requirements of this section and that granting the variance is consistent with the intent of this chapter.

F. Process.

- (1) Submittal with all supporting documentation;
- (2) Review by the County stormwater management staff with written recommendation;
- (3) A written decision by the Board of County Commissioners or its designee. All written recommendations and decisions are to be maintained in the project file.

G. A variance may not be granted for the review and approval process.

ARTICLE III, Stormwater Management Criteria

§ 191-10. Minimum control requirements.

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

~~(1) The County shall require that the recharge volume, water quality volume, and channel — protection storage volume sizing criteria be used to design BMPs according to the Design — Manual. Control of the ten (10) year frequency storm event is required according to the — Design Manual if the County determines that either:~~

- ~~— (a) Historic downstream flooding problems exist;~~
- ~~(b) Neither a FEMA floodplain nor adequate continuous recorded floodplain easements exist;~~
- ~~— or~~
- ~~(c) Floodplain development or conveyance systems are uncontrolled.~~

~~(2) The County may require more than the minimum control requirements specified in this chapter where danger to health and safety or damage to property or the environment may reasonably be expected.~~

(1) The County shall require that the planning techniques, non-structural practices, and design methods specified in the Design Manual be used to implement ESD to the MEP. The use of ESD planning techniques and treatment practices shall be exhausted before any structural BMP is implemented. Stormwater management plans for development projects subject to this chapter shall be designed using ESD sizing criteria, recharge volume, water quality volume, and channel protection storage volume criteria according to the Design Manual and the Supplement. 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 requires adequate stormwater facilities and drainage systems to capture, convey, and manage the design storm peak. Control of 2 and 10 year frequency storm events is required according to the Design Manual and the Supplement if the County determines that either:

- (a) Historic downstream flooding problems exist;
- (b) Neither a FEMA floodplain nor adequate continuous recorded floodplain easements exist; or
- (c) Floodplain development or conveyance systems are uncontrolled.

(3) The County may require more than the minimum control requirements specified in this chapter if downstream flooding problems or danger to health and safety or damage to property or the environment exist or may be created by runoff from the development. When the County determines that there are existing buildings within the floodplain or undersized hydraulic structures immediately downstream of a project, management of the runoff from the 25, 50, 100 year design storm events or greater will be required as appropriate.

B. Alternate minimum control requirements may be adopted subject to Administration approval. Prior to 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. The Administration may also require comprehensive watershed studies.

~~BC.~~ 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 Administration in accordance with the Environment Article, Title 5, Subtitle 8, of the Annotated Code of Maryland Maryland Department of the Environment in accordance with the Flood Hazard Management Act of 1976.

~~C.~~ Development of existing single residential lots shall comply with the standard plan, approved by the Administration on August 19, 2003, to address stormwater management on single lots or otherwise comply with this chapter.

§ 191-11. Stormwater management measures.

~~Nonstructural and structural stormwater management measures shall be used, either alone or in a combination, in developing a stormwater management plan. The ESD planning techniques and practices and structural stormwater management measures established in this chapter and the Design Manual shall be used, either alone or in combination in a stormwater management plan. A developer shall demonstrate that ESD and non-structural practices have been implemented to the MEP before the use of a structural BMP is considered in developing the stormwater management plan. ESD planning techniques and~~ Non-structural stormwater management measures must be implemented to the maximum extent possible MEP to minimize the reliance on structural BMPs.

A. Nonstructural Stormwater Management Measures. ESD Planning Techniques and Practices.

~~(1) The following nonstructural stormwater management practices shall be applied according to the Design Manual to minimize increases in new development runoff:~~

- ~~(a) Disconnection of rooftop runoff;~~
- ~~(b) Disconnection of non-rooftop runoff;~~
- ~~(c) Grass channels;~~
- ~~(d) Sheet flow to buffers;~~
- ~~(e) Natural area conservation; and~~
- ~~(f) Environmentally sensitive development.~~

(1) The following planning techniques shall be applied, in order of priority, according to the Design Manual and the Supplement, to satisfy the applicable minimum control requirements established in § 191-10 of this chapter:

- (a) Preserving and protecting natural resources;
- (b) Conserving natural drainage patterns;
- (c) Minimizing impervious area;
- (d) Reducing runoff volume;
- (e) Limiting soil disturbance, mass grading, and compaction;
- (f) Clustering development;
- (g) Using ESD practices to maintain 100 percent of the annual predevelopment groundwater recharge volume;
- (h) Permeable pavement, reinforced turf, and other alternative surfaces;
- (i) Using green roofs; and
- (j) Any other planning techniques subsequently adopted by the County with the Administration's approval.

- (2) ~~The minimum control requirements listed in § 191-10 may be reduced when nonstructural stormwater management practices are incorporated into site designs according to the Design Manual. The following ESD treatment practices and non-structural stormwater management measures shall be applied, in order of priority and designed according to the Design Manual and the Supplement, to satisfy the applicable minimum control requirements established in § 191-10 of this chapter:~~

(a) ESD treatment practices.

- [1] Disconnection of rooftop runoff
 - [a] Through grading;
 - [b] Drywells.
- [2] Disconnection of non-rooftop runoff
 - [a] Through grading;
 - [b] Sheet flow to conservation areas.

(b) Microscale (non-structural). Microscale practices may only be applied to manage the drainage from limited amounts of impervious surfaces. The Manual and Supplement list the restrictions on their use in the County.

- [1] Swales;
- [2] Landscape infiltration;
- [3] Micro-bioretenion;
- [4] Rain gardens;
- [5] Enhanced filters for [3] and [4];
- [6] Rainwater harvesting;
- [7] Submerged gravel wetlands; and
- [8] Infiltration berms.

- (3) ~~The use of nonstructural stormwater management practices may not conflict with existing state or local laws, ordinances, regulations or policies. Any other ESD or microscale (non-structural) practices subsequently adopted by the County with the Administration's approval.~~
- (3.1) The use of ESD planning techniques and treatment practices as well as microscale (non-structural) practices specified in this section shall not conflict with existing State law or local ordinances, regulations, or policies.
- (4) ~~Nonstructural ESD treatment and microscale (non-structural) stormwater management practices used to reduce satisfy the minimum control requirements shall be recorded in the Land Records of Carroll County and remain unaltered by subsequent property owners. Prior approval from the County shall be obtained before ESD treatment and microscale (non-structural) stormwater practices are altered.~~

B. Structural Stormwater Management Measures.

- (1) After all feasible ESD planning techniques and ESD and microscale (non-structural) stormwater management practices have been applied, as determined by the County, the following structural practices shall be employed in order of priority to satisfy the remaining applicable minimum control requirements established in § 191-10. All structural stormwater management practices shall be designed according to the Design Manual and the Supplement.
- (a) Stormwater management infiltration;
 - (b) Stormwater management filtering systems;
 - (c) Stormwater management open channel systems;
 - (d) Stormwater management ponds; and

(e) Stormwater management wetlands.

- (2) 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.
- (3) Structural stormwater management practices shall be selected to accommodate the unique hydrologic or geologic regions of the County.
- (4) All barrel pipe in ponds shall be concrete pipe with a minimum 15 inch diameter. Inlet and outlet structures shall be made of concrete with a metal ~~inlet or~~ grate.
- (5) A non-erosive 10 year storm flow velocity of 2 feet per second or less shall be provided at the principal spillway outlet.
- (6) All low flow pipes into risers shall have a minimum 12 inch diameter. Orifices shall be located inside the ~~outlet riser~~ structure.
- (6.1) Risers shall be set back in the embankments to the maximum extent possible. Risers shall be designed to allow for inspection from top to bottom.
- (7) All publicly maintained surface stormwater management facilities shall be designed with slopes no steeper than four to one (4:1).
- (8) All publicly maintained facilities shall have an in-fee access from the bottom of the facility to a public right-of-way, unless an alternative access is approved by the County. This access shall be a minimum 20 feet in width containing a 12 feet wide paved access road constructed to minimum use-in-common drive standards. The access road shall have a maximum slope of 17% with a maximum cross slope of three percent and a maximum side slope of four to one (4:1).
- (8.1) Any retaining walls associated with a publicly maintained facility shall have railings constructed per the Supplement and shall be located at least 15 feet inside the parcel. Anchors associated with the retaining walls shall be entirely inside the parcel.
- (9) In areas of public maintenance, no loose riprap may be left permanently exposed.
- (10) Concentrated flows shall enter surface stormwater management facilities at grade through drop structures and level, rigid watertight pipes. Riprap inflow ditches down internal or external facility slopes ~~may are~~ not be allowed.
- (11) Pipes shall outfall at or below the facility bottom. End treatment shall be headwalls.
- (12) All pipe outfalls shall have underdrained plunge pools or forebays with underdrains.
- ~~(13) Structural stormwater management practices for multi-lot residential developments shall be deeded to the County in fee simple. For all other developments containing structural measures, the measures shall be protected by easement recorded in the Land Records of Carroll County and remain unaltered by subsequent property owners. Prior approval shall be obtained from the County before structural stormwater measures are altered.~~
Surface stormwater management filters and infiltration facilities shall have underdrains to prevent water from ponding on the surface for extended periods.

C. Structural stormwater management practices for multi-lot residential developments shall be deeded to the County in fee simple. Structural stormwater management practices for multi-lot commercial, industrial or institutional developments shall be maintained by the lot owners. The ownership and maintenance agreement shall be recorded in the Land Records of Carroll County. For all other developments containing structural measures, the measures shall be protected by easement recorded in the Land Records of Carroll County. Stormwater capture and conveyance systems feeding the structural facilities shall be protected by easement. Prior approval shall be obtained from the County before structural stormwater measures or stormwater capture and conveyance systems are altered.

~~CD.~~ Alternative ESD planning techniques and treatment practices and structural and non-structural stormwater management measures may be used for new development ~~water quality runoff control if they meet the performance criteria established in the Design Manual and are approved by the Administration and the Supplement and are adopted by the County with the Administration's approval.~~ Practices used for redevelopment projects shall be approved by the County.

~~DE.~~ For the purposes of modifying the minimum control requirements or design criteria, the owner or developer shall submit to the County 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 ~~changes to~~ hydrograph timing, modifications caused by 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 County, downstream of the first downstream tributary whose drainage area equals or exceeds the contributing area to the project or stormwater management facility.

ARTICLE IV, Stormwater Management Plans

§ 191-12. Specific design criteria.

The basic design criteria, methodologies, and construction specifications ~~shall be in accordance with the Design Manual subject to the approval of the County and the Administration shall be the Design Manual and the Supplement along with all subsequent revisions to both.~~

§ 191-13. Review and approval of stormwater management plans.

- A. For any proposed development, the developer shall submit a stormwater management plans ~~unless an exemption is approved in accordance with §§ 191-5 and 191-6. The SWM plans shall be submitted or waiver application to the County for review and approval., unless otherwise exempted.~~ The stormwater management plans shall contain supporting computations, drawings, and sufficient information describing the manner, location, and type of measures by which stormwater management will be provided for the entire development or supporting the exemption request. The County shall review the plan to determine compliance with the requirements of this chapter. The plan shall serve as the basis for all subsequent construction.
- B. Notification of approval or reasons for disapproval or modification of any exemption request shall be given to the applicant.
- C. ~~Preliminary and final plan approvals shall expire two years after the approval date unless the project has been issued an active grading permit.~~ **Process (except exemption requests).**
- (1) Plans for any development project shall be submitted by the developer in three distinct levels of completeness for review and approval by the County and Carroll Soil Conservation District. Plans shall be submitted for concept, site development (preliminary) and final plan approval in accordance with the requirements of this chapter. Each plan submitted shall meet the minimum requirements of this and all other applicable chapters, the Design Manual, and the Carroll County Supplement.
 - (2) The County shall perform a comprehensive review of the environmental site delineation and stormwater management plans submitted at each level. All comments shall be addressed and approvals granted by all agencies involved in plan review, prior to the developer proceeding to the next level of plan development.

§ 191-14. Contents and submission of ~~the~~ stormwater management plans.

- A. **Contents.**
- (1) The developer shall submit a-phased stormwater management plans that meets the design requirements of this chapter. The plans shall be accompanied by a-reports that includes

sufficient information to evaluate the environmental characteristics of affected areas, the potential impacts of the proposed development on water resources, and the effectiveness and acceptability of measures proposed for managing stormwater runoff. The developer or builder shall certify on the drawings that all clearing, grading, drainage, construction, and development shall be conducted in strict compliance with the plans. The developer shall obtain from adjacent property owners any easements or necessary property interests concerning flow of water. Approval of a stormwater management plan does not create or affect any right to direct runoff or create dam breach inundation areas that extend onto adjacent properties. Whenever easements are required for water flow directed onto a downstream property, they shall be obtained by the developer and recorded in the Land Records of Carroll County. Easements for water flow onto properties below publicly-owned facilities shall be conveyed to the County. Easements for water flow below privately-owned facilities shall be conveyed to the stormwater management facility owner. New residential, industrial, institutional, or commercial buildings may not be built within any dam breach inundation area on or off site. Any proposed roadway that crosses a dam breach inundation area shall meet the requirements of MD 378 for hazard Class "A" dams unless the dam was approved as a high-hazard dam. The applicant shall acquire protective easements on areas delineated outside of the property limits unless the dam was approved as a high hazard dam. The easements shall protect the inundation area from future development. Easements protecting dam breach inundation areas below publicly-owned facilities shall be conveyed to the County. Easements protecting dam breach inundation areas below privately-owned facilities shall be conveyed to the stormwater management facility owner. Dam breach inundation easements shall be recorded in the Land Records of Carroll County.

~~B.~~ (2) The information required shall be submitted in accordance with the ~~stormwater management~~ checklist found in the Supplement.

B. Submission.

- (1) The developer shall submit an environmental site delineation in accordance with Chapter 103, Article IV of the Code, and the environmental site delineation portion of the checklist.
- (2) Once the environmental site delineation is approved in accordance with Chapter 103, Article IV, the developer shall submit a concept plan in accordance with this section. The plans submitted for concept approval shall include:
 - (a) The approved environmental site delineation;
 - (b) The anticipated location of all proposed impervious areas (buildings, roadways, parking, sidewalks, etc.), utilities, and other site improvements;
 - (c) The proposed limits of disturbance, erodible soils, steep slopes and areas to be protected during construction;
 - (d) Preliminary estimates of stormwater management requirements, the selection and location and preliminary sizing of ESD planning techniques, treatment and microscale (non-structural) practices, and the location of all points of discharge into buffers or from the site;
 - (e) A separate written narrative, not on the plan sheets, that supports the concept design and describes how ESD will be implemented to the MEP;
 - (f) The location, description, and evaluation of infiltratable areas using the soils testing procedures in the Supplement;
 - (g) All other items described in Section 5.1 of the Manual and in the concept plan portion of the checklist.
- (3) Once the concept plan is approved in accordance with this section, the developer shall submit a preliminary plan in accordance with this section. The plan submitted for preliminary approval shall include:

- (a) All information provided during concept plan review and approval phases;
- (b) Final site layout, exact impervious areas, locations and acreages, proposed topography (contours), delineated drainage areas at all points of discharge from the site, and stormwater volume computations for ESD planning techniques, treatment and microscale (non-structural) and structural practices;
- (c) A phased erosion and sediment control plan that contains:
 - [1] An overlay plan showing the types and locations of and coordinating all temporary erosion and sediment control and permanent ESD and structural stormwater management measures;
 - [2] The location and delineated drainage area to each sediment control practice during each phase;
 - [3] Evaluation of the need to provide interim quantity control of stormwater runoff during each phase;
 - [4] An overall sequence of construction phased to match the plan. If stormwater management facilities are being used for sediment control, the sequence must reference but not duplicate the specific sequence of construction for that facility.
- (d) Limitations on earth disturbance and impacts to natural resources.
- (e) A separate written narrative, not on the plan sheets, that supports the preliminary design, describes how ESD has been used to meet the minimum control requirements to the MEP and justifies any proposed interim or permanent structural stormwater management measures;
- (f) All other items described in Section 5.1 of the Manual or in the preliminary plan portion of the checklist.
- (g) Any other information required by the County where downstream flooding problems, danger to public health and safety, damage to property or the environment exist or may be created by runoff from the development.
- (4) Once the preliminary plan is approved in accordance with this section, the developer shall submit a final plan in accordance with this section. The plans submitted for final approval shall include:
 - (a) All information provided during preliminary review and approval.
 - (b) A separate written narrative, not on the plan sheets, that supports the final integrated stormwater management and sediment control designs with sufficient information to evaluate the effectiveness of the proposed runoff control.
 - (c) Final erosion and sediment control plans shall be submitted according to COMAR 26.17.01.05.
 - (d) Geotechnical investigations including soil maps, borings, site-specific recommendations, and any additional information necessary for the proposed stormwater management design;
 - (e) Descriptions of all watercourses, impoundments, and wetlands on or adjacent to the site or into which stormwater directly flows;
 - (f) Drainage area maps depicting pre-development and post-development runoff flow path segmentation and land use;
 - (g) Hydraulic computations of the applicable ESD and the unified sizing criteria according to the Design Manual for all points of discharge from the site.
 - (h) Hydraulic and structural computations for all ESD practices and conveyance systems and structural stormwater management measures to be used.
 - (i) Unified sizing criteria volume computations according to the Design Manual.

(j) Dam breach inundation areas that may extend onto the property shall be shown. The dam breach inundation area shall be delineated downslope from existing or proposed dams until the dam breach floodwave enters an adequate ultimate floodplain, is captured by a closed storm drain system, or is reduced to a depth less than 6 inches. Any off-site area potentially inundated by the breach of a dam, constructed as part of the development, shall be delineated.

(k) All other items described in Section 5.1 of the Manual or in the Final Plan portion of the checklist.

(l) The County may require any other information where downstream flooding problems, danger to public health and safety or damage to property or the environment exist or may be created by runoff from the development.

~~C. The minimum information submitted for support of a stormwater management plan or application for a waiver shall include:~~

- ~~(1) A brief narrative description of the project, which explains the stormwater concept;~~
- ~~(2) Geotechnical investigations including soil maps, borings, site specific recommendations and any additional information necessary for the proposed stormwater management design;~~
- ~~(3) Descriptions of all watercourses, impoundments, and wetlands on or adjacent to the site or into which stormwater directly flows;~~
- ~~(4) Hydrologic computations, including drainage area maps depicting pre-development and postdevelopment runoff flow path segmentation and land use;~~
- ~~(5) Hydraulic computations;~~
- ~~(6) Structural computations;~~
- ~~(7) Unified sizing criteria volume computations according to the Design Manual;~~
- ~~(8) Dam breach inundation areas that may extend onto the property shall be shown. The dam breach inundation area shall be delineated downslope from existing or proposed dams until the dam breach floodwave enters an adequate ultimate floodplain, is captured by a closed storm drain system, or is reduced to a depth less than 6 inches. Any off-site area potentially inundated by the breach of a dam, constructed as part of the development, shall be delineated. The applicant shall acquire protective easements on areas delineated outside of the property limits unless the dam was approved as a high hazard dam. The easements shall protect the inundation area from future development. Easements protecting dam breach inundation areas below publicly owned facilities shall be conveyed to the County. Easements protecting dam breach inundation areas below privately owned facilities shall be conveyed to the stormwater management facility owner. Dam breach inundation easements shall be recorded in the Land Records of Carroll County.~~
- ~~(9) The County may require any other information where danger to public health and safety or damage to property or the environment may exist.~~

~~DC. Construction drawings submitted for final stormwater management plan approval shall include the following:~~

- ~~(1) A vicinity map;~~
- ~~(2) Topography survey showing existing and proposed contours, including the area necessary to perform the downstream analysis for proposed stormwater management facilities;~~
- ~~(3) Any proposed improvements including location of buildings or other structures, impervious surfaces, storm drainage facilities, and all grading;~~
- ~~(4) The location of existing and proposed structures and utilities;~~
- ~~(5) Any easements and rights-of-way;~~
- ~~(6) The delineation, if applicable, of streams, watercourses, 100 year floodplains (FEMA and ultimate study), impoundments, dam breach inundation areas, and any onsite wetlands;~~

- (7) Structural and construction details including representative cross-sections for all components of the proposed drainage system or systems, and stormwater management facilities;
- (8) All necessary construction specifications;
- (9) A sequence of construction, including an overall sediment control sequence of construction and detailed individual sequence for each interim or permanent stormwater management structure.
- (10) Data for total site area, disturbed area, new impervious area, and total impervious area;
- (11) ~~A table showing the unified sizing criteria volumes required in the Design Manual~~ Tables and drainage area maps on the as-built certification sheet for each ESD and structural practice with the coordinates, drainage area, impervious area, and unified sizing criteria volumes for each practice listed;
- (12) A table of materials to be used for stormwater management facility planting;
- (13) All soil boring logs and locations;
- (14) ~~A~~ An inspection and maintenance schedule;
- (15) Certification by the owner or developer that all stormwater management construction will be done according to this plan;
- (16) An as-built certification signature block to be executed after project completion;
- (17) An inspection certification chart indicating the stages of construction, when inspection is to occur, the date of inspection, and inspector's signature; ~~and~~
- (17.1) All other items described in Section 5.1 of the Manual or in the final plan portion of the checklist; and
- (18) ~~Any other information required by the County where danger to public health and safety, damage to property or the environment may exist.~~ Any other information required by the County where downstream flooding problems, danger to public health and safety, damage to property or the environment exist or may be created by runoff from the development.

§ 191-15. Preparation of the stormwater management plan.

- A. The design of stormwater management plans shall be prepared by a professional land surveyor or engineer.
- B. If a stormwater BMP requires a dam safety permit or small pond approval, the design shall be prepared by a professional engineer.

ARTICLE V, Permits

§ 191-16. Permit requirements.

- A. A grading ~~or building~~ permit may not be issued for any parcel or lot unless a stormwater management plan has been approved as meeting all the requirements of this chapter or exempted by the County. Where appropriate, a ~~building grading~~ permit may not be issued without:
 - (1) A recorded parcel or easement as appropriate for the stormwater management facility and recorded easements to provide adequate access for inspection and maintenance from a public right-of-way;
 - (2) A recorded stormwater management maintenance agreement as described in § 191-24; and
 - (3) A guaranty as described in § 191-20.
- B. If applicable, a ~~building grading~~ permit may not be issued without permission from adjacent property owners to discharge outside of existing drainage courses. These discharge ways shall be protected by easement, and recorded in the Land Records of Carroll County.

C. If applicable, a building-grading permit may not be issued without a dam breach inundation area protection easement which covers on and off-site areas and is recorded in the Land Records of Carroll County.

D. Proof of recordation of easements shall be presented to the County prior to permit issuance.

E. When grading permits are not necessary, the requirements of this section apply to building permits.

§ 191-17. Fees.

A nonrefundable review fee will be collected at the time the concept-stormwater-management plan or application for waiver or exemption is submitted. The fee will provide for the cost of plan review, administration, and management of the approval process, for all projects subject to this chapter and inspection and maintenance of County-owned facilities. A fee schedule shall be established by the County based upon the relative complexity of the project and long term maintenance obligations and may be amended from time to time.

§ 191-17.1. Stormwater management fund.

- A. There is hereby established a Stormwater Management Fund to be administered by the Department of the Comptroller.
- B. All penalties, fines, retrofit, variance, or other fees paid pursuant to this chapter shall be deposited to the Stormwater Management Fund. Interest shall be deposited to the Fund. All money deposited to the Fund shall be used for program management and compliance with this chapter.

§ 191-18. Permit suspension and revocation.

Any grading or building permit issued by the County may be suspended or revoked after written notice is given to the permittee for any of the following reasons:

- A. Any violation of the conditions of the stormwater management plan approval;
- B. Changes in site runoff characteristics upon which an approval or waiver was granted;
- C. Construction not in accordance with the approved plan;
- D. Noncompliance with a correction notice or stop work order issued for the construction of ~~the-any~~ stormwater management facility ESD non-structural or structural practices; or
- E. Immediate danger exists in a downstream area as determined by the County.

§ 191-19. Approval conditions.

In granting the plan approval, the County may impose conditions to ensure compliance with the provisions of this chapter and the preservation of the public health and safety.

ARTICLE VI, Security

§ 191-20. Security.

The County shall require the developer to provide a surety or cash bond, irrevocable letter of credit, or other means of security acceptable to the County prior to the issuance of any building or grading permit for the construction of a development requiring a stormwater management facility ESD, non-structural or structural practices. The amount of the security shall not be less than the total estimated construction cost, inspection and as-built certification of the stormwater management facility ESD, non-structural or structural practices. The security required shall include provisions relative to forfeiture for failure to complete work specified in the approved stormwater management plan, compliance with this chapter, and other applicable laws and regulations and time limitations. The

security shall not be released without a final inspection and submission of "as-built" plans and engineer's certification.

ARTICLE VII, Inspections

§ 191-21. Inspection schedule and reports.

- A. The developer shall notify the inspecting professional engineer or professional land surveyor listed on the plans at least 48 hours before commencing any work in conjunction with site development, the stormwater management plan, and upon completion of the project.
- B. Regular inspections shall be made and documented for each ESD planning technique and practice at the stages of construction specified in the Design Manual. At a minimum, all ESD and other non-structural practices shall be inspected upon completion of final grading, the establishment of permanent stabilization, and before issuance of a Grading Completion Certificate.
- AC. All inspections shall be the responsibility of the professional engineer or the professional land surveyor listed on the plan. With the County's prior written permission, an equally qualified professional engineer or land surveyor may be substituted. Written inspection reports shall be prepared and the inspection checklist completed to ensure compliance with the approved plans. Inspection reports shall include:
- (1) The date and location of the inspection;
 - (2) Whether construction was in compliance with the approved stormwater management plan;
 - (3) Any variations from the approved construction specifications; and
 - (4) Any existing violations.
- BD. The owner or developer and onsite personnel shall be notified in writing when violations are observed. Written notification shall describe the nature of the violation and the required corrective action.
- CE. No work shall proceed until the professional engineer or land surveyor inspects, approves the work, and signs the inspection certification chart on the plan.

§ 191-22. Inspection requirements during construction.

- A. At a minimum, regular inspections shall be made and documented at the following stages of construction:
- (1) **Ponds.**
 - (a) Upon completion of excavation to sub-foundation and when required, installation of structural supports or reinforcement for structures, including but not limited to:
 - [1] Core trenches for structural embankments;
 - [2] Inlet and outlet structures, anti-seep collars or diaphragms, and watertight connectors on pipes; and
 - [3] Trenches for enclosed storm drainage facilities.
 - (b) During placement of structural fill, concrete, and installation of piping and catch basins;
 - (c) During backfill of foundations and trenches;
 - (d) During embankment construction; and
 - (e) Upon completion of final grading and establishment of permanent stabilization.
 - (2) **Wetlands.**
 - (a) At the stages specified for pond construction in Subsection A(1);
 - (b) During and after wetland reservoir area planting; and

- (c) ~~18-12~~ months after reservoir area planting to verify a vegetation survival rate of at least ~~5075~~%.

(3) Infiltration trenches.

- (a) During excavation to subgrade;
- (b) During placement and backfill of underdrain systems and observation wells;
- (c) During placement of geotextiles and all filter media;
- (d) During construction of appurtenant conveyance systems such as diversion structures, pre-filters and filters, inlets, outlets, and flow distribution structures; and
- (e) Upon completion of final grading and establishment of permanent stabilization.

(4) Infiltration basins.

- (a) At the stages specified for pond construction in Subsection A(1); and
- (b) During placement and backfill of underdrain systems.

(5) Filtering systems.

- (a) During excavation to subgrade;
- (b) During placement and backfill of underdrain systems;
- (c) During placement of geotextiles and all filter media;
- (d) During construction of appurtenant conveyance systems such as flow diversion structures, pre-filters and filters, inlets, outlets, orifices, and flow distribution structures; and
- (e) Upon completion of final grading and establishment of permanent stabilization.

(6) Open channel systems.

- (a) During excavation to subgrade;
- (b) During placement and backfill of underdrain systems for dry swales;
- (c) During installation of diaphragms, check dams, or weirs; and
- (d) Upon completion of final grading and establishment of permanent stabilization.

(7) Non-structural practices.

- (a) Upon completion of final grading, and
- (b) The establishment of permanent stabilization.

B. Once construction is complete, an as-built plan certification shall be submitted by a professional engineer or professional land surveyor as appropriate to ensure that ~~constructed stormwater management practices~~ ESD planning techniques, non-structural and structural stormwater management practices and conveyance systems comply with the specifications contained in the approved plans. The as-built plan shall be submitted within 60 days of completion of construction. At a minimum, as-built plan certification shall include a set of drawings comparing the approved stormwater management plan with the completed construction. Both the as-built block and inspection chart shall be completed, signed, and certified on the as-built. The County may require additional information.

C. ~~The County shall submit notification of construction to the Administration for each structural stormwater management practice. If BMPs requiring SCD approval are constructed, notice of construction completion shall also be submitted to the SCD. The County shall submit notice of construction completion to the Administration on a form supplied by the Administration for each structural stormwater management practice. The type, number, total drainage area, and total impervious area treated by all ESD techniques and practices shall be reported to the Administration on a site by site basis. If BMPs requiring SCD approval are constructed, notice of construction completion shall also be submitted to the appropriate SCD.~~

ARTICLE VIII, Maintenance

§ 191-23. Maintenance inspections.

- A. The County shall ensure that preventative maintenance is performed by inspecting all ~~stormwater management facilities~~ ESD, non-structural treatment systems and structural stormwater treatment measures. Inspection ~~of all structural stormwater management facilities~~ shall occur during the first year of operation and at least once every 3 years thereafter. In addition, a maintenance agreement between the owner and the County shall be executed for privately-owned ~~stormwater management facilities~~ ESD, non-structural treatment systems and structural stormwater treatment measures as required by this chapter.
- B. Inspection reports shall be maintained by the County for ~~structural stormwater management facilities~~ ESD, non-structural treatment systems and structural stormwater treatment measures.
- C. Inspection reports for ~~stormwater management systems~~ ESD, non-structural treatment systems and structural stormwater treatment measures shall include the following:
- (1) The date of inspection;
 - (2) Name of inspector;
 - (2.1) An assessment of the quality of the stormwater management system related to ESD treatment practice efficiency and the control of runoff to the MEP;
 - (3) The condition of:
 - (a) Vegetation or filter media;
 - (b) Fences or other safety devices;
 - (c) Spillways, valves, or other control structures;
 - (d) Embankments, slopes, and safety benches;
 - (e) Reservoir or treatment areas;
 - (f) Inlet and outlet channels or structures;
 - (g) Underground drainage;
 - (h) Sediment and debris accumulation in storage and forebay areas;
 - (i) Any non-structural practices to the extent practicable; and
 - (j) Any other item that could affect the proper function of the stormwater management system.
 - (4) Description of needed maintenance.
- D. After notification of any deficiencies discovered from an inspection of a structural stormwater management facility, the owner shall have 30 days or other time frame as determined by the County to correct the deficiencies. The County shall conduct a subsequent inspection to ensure completion of the repairs.
- E. If repairs are not properly completed, the County may initiate enforcement proceedings.
- F. If, after an inspection by the County, the condition of a structural stormwater management facility presents an immediate danger to the public health or safety, the County may take action as may be necessary to protect the public and make the facility safe. Any cost incurred by the County shall be assessed against the owner pursuant to this chapter.

§ 191-24. Maintenance and easement agreement.

- A. Prior to the issuance of any building or grading permit for which stormwater management is required, the County shall require the ~~applicant or~~ owner to execute an inspection and maintenance agreement binding all subsequent owners of land served by a private stormwater management facility. The agreement shall provide for access to the facility at reasonable times

for regular inspections by the County to ensure that the facility is maintained in proper working condition to meet design standards.

- B. The agreement shall be recorded in the Land Records of Carroll County.
- C. The agreement shall authorize the County to perform all necessary corrective action if satisfactory corrections of a violation are not made by the owner within a reasonable period of time as determined by the County, not exceeding 30 days after issuance of the notice of violation. The owner of the facility shall be assessed the cost of the work and any penalties which may be collected by placing a lien on the property or by including the cost on the property tax bill and collecting the cost as ordinary taxes.

§ 191-25. Maintenance responsibility.

- A. The owner of any property ~~on which work has been completed pursuant to this chapter shall perpetually maintain the constructed management practices in good condition to provide stormwater quantity control and water quality improvement that contains ESD non-structural or structural stormwater management practices installed pursuant to this chapter, or any other person or agent in control of such property, shall maintain in good condition and promptly repair and restore all ESD non-structural or structural stormwater management measures, grade surfaces, walls, drains, dams and structures, vegetation, erosion and sediment control measures, and other protective devices in perpetuity. Such repairs or restoration and maintenance shall be in accordance with previously approved plans.~~
- B. The person responsible for facility maintenance shall institute a maintenance program that addresses every component of the stormwater management system. The program must include elements of routine maintenance including but not limited to the following:
 - (1) Regular visual inspection;
 - (2) Litter and debris removal;
 - (3) Vegetation management including regular mowing and control of woody vegetation on dam structures;
 - (4) Maintenance of undisturbed areas around infiltration facilities;
 - (5) Cleaning of oil/grit separators;
 - (6) Repair of erosion and settlement areas;
 - (7) Removal of collected sediments;
 - (8) Re-seeding or replanting of vegetation when needed; and
 - (9) Any maintenance required to maintain the stability and function of the system.
- C. The following routine maintenance may be required by the County:
 - (1) Bank and slope stabilization;
 - (2) Repair of severe erosion and heavy sedimentation after intense rainfall events;
 - (3) Repair of structural components;
 - (4) Maintenance and replacement of mechanical components;
 - (5) The replacement of filter medium and reconstruction of non-functioning infiltration facilities;
 - (6) The clean-out of underground storage structures and storm sewer systems; and
 - (7) The reconstruction of dams and other components.
- D. During visual inspections evidence of the following shall be noted:
 - (1) Obstruction of inlet or outlet devices with trash or any debris;
 - (2) Any erosion or the collection of sediments in basins;
 - (3) Any surface cracking or settlement of the dam or associated structures;
 - (4) Low spots or depressions that collect water;

- (5) The deterioration of pipes;
 - (6) The stability and general condition of emergency spillways;
 - (7) The stability of slopes;
 - (8) Upstream and downstream channel conditions; and
 - (9) Any vandalism.
- E. Stormwater management facilities shall be maintained to protect the general health and welfare of the community. Facilities shall be kept in a condition that does not allow for the unintended ponding of water such that mosquito breeding conditions occur. The facilities shall be maintained so that they are easily inspected and do not harbor pests or disease vectors.
- F. Wet pond maintenance shall include regular maintenance to control mosquito populations through the use of integrated pest management including water management and biological control. Mosquito control larvicides shall be used to inhibit population growth. If larviciding is not possible or the mosquito population at a specific facility is large enough to constitute a public health threat, mosquito adulticides shall be used.
- G. **Vegetation Management.** Woody vegetation shall be prevented from becoming established on dam structures. Grass cover shall be regularly maintained by mowing at 6 to 8 inches in height. Grass around facilities shall not be over-fertilized.
- H. The prompt repair of ground surfaces, walls, drains, dams and structures, erosion and sediment control measures, and other protective devices and the re-establishment of vegetation is required. Any repair or restoration and maintenance shall be accomplished in accordance with plans approved by the County.
- I. A perpetual maintenance schedule shall be developed for ~~a-any ESD, non-structural or structural stormwater management facility-practice~~ and shall state the maintenance to be completed, the time period for completion, and ~~who shall identify the party responsible to~~ perform the maintenance. This maintenance schedule shall be printed on the approved stormwater management plan.

ARTICLE IX, Enforcement

§ 191-26. Enforcement.

[Amended 05/03/07 by Ord. No. 07-08]

Any step in the enforcement process may be taken at any time, depending on the severity of the violation. The County may, for enforcement purposes, use any one or a combination of the following actions:

- A. When the County determines that a violation of the approved stormwater management plan, ~~has occurred, the County shall issue a written notice of violation to the owner describing the required corrective action and specifying the time period to correct the violation~~ any provisions of this chapter, or any regulations has occurred, on-site personnel and the property owner shall be notified in writing of the violation with a stop work order posted on the site. The notice shall describe the required corrective action, and specify the time period in which the violation shall be corrected.
- B. ~~If the owner fails to correct the violation in compliance with the notice of violation, the County shall issue a stop work order for the site. The County shall determine the extent to which work shall be stopped, which may include all work on the site except that work necessary to correct the violation. Bonds or securities shall be withheld or the case may be referred for legal action if reasonable efforts to correct the violation have not been undertaken.~~
- C. In addition to other sanctions, a civil action or criminal prosecution may be brought against any person in violation of the State law, the Design Manual, or this chapter.

~~CD.~~ If a person is working without stormwater management approval, the County shall post a stop work on the site, except activity necessary to provide erosion and sediment control. The stop work order shall remain in effect until ~~the stormwater management~~ approval is obtained.

~~DE.~~ The County may deny the issuance of any permit or stormwater management approval on any project to an applicant when the County determines that the applicant has failed to comply with the provisions of any stormwater management plan or this chapter. *[Added 05/03/07 by Ord. No. 07-08]*

ARTICLE X, Appeals

§ 191-27. Appeals.

- A. Any person aggrieved by issuance of a written notice of violation or denial of a variance of the technical requirements of this chapter may appeal the action to the Board of County Commissioners or a Board of Appeals appointed by the Board of County Commissioners, which shall hold a hearing on the appeal.
- B. The appeal shall:
- (1) Be filed in writing within 30 days of the date of written transmittal of the final decision or determination to the applicant, or notice of violation; and
 - (2) State clearly the grounds on which the appeal is based.
- C. **Appeal fees.**
- (1) The appellant shall pay a non-refundable filing fee as determined by the County.
 - (2) The appellant shall pay all costs of the appeal as assessed by the Board of County Commissioners or Board of Appeals.

ARTICLE XI, Severability

§ 191-28. (Reserved)

[Deleted 04/01/04 by Ord. No. 04-07. See § 1-8.]

ARTICLE XII, Penalties

§ 191-29. Penalties.

- A. Any person convicted of violating the provisions of this chapter shall be guilty of a misdemeanor, and upon conviction thereof, shall be subject to a fine of not more than ~~\$5,000.00~~\$50,000.00 or imprisonment not exceeding 1 year or both for each violation with costs imposed in the discretion of the court. Each day that a violation continues shall be a separate offense.
- B. The County may institute injunctive or other appropriate action or proceedings of law to correct violations of this chapter. Any court of competent jurisdiction shall have the right to issue temporary or permanent restraining orders, injunctions, or other appropriate forms of relief.
- C. The County may take civil action and seek a civil penalty of not more than \$10,000.00 per day. Each day that a violation continues shall be a separate offense.