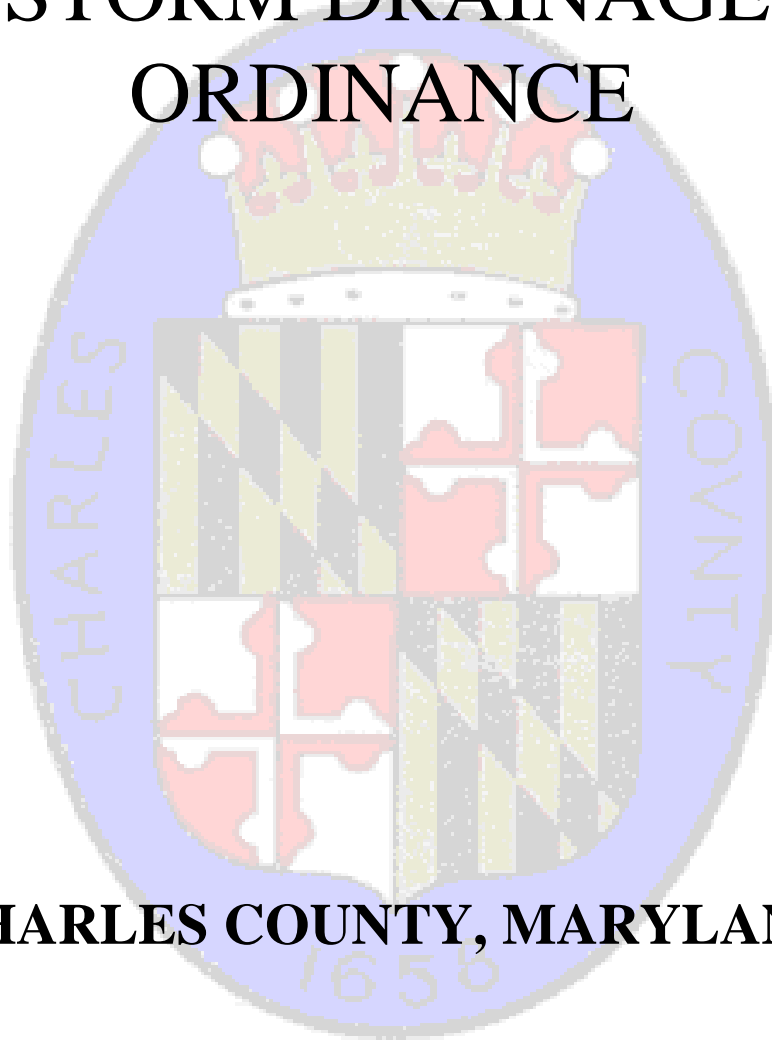


STORMWATER MANAGEMENT & STORM DRAINAGE ORDINANCE



CHARLES COUNTY, MARYLAND

Adopted July 1984

Prepared by:

Department of Planning and Growth Management

Revised January 1, 1986
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Vision Statement

Charles County is a place where ...

- * Private initiative is rewarded and businesses grow and prosper, while the preservation of our heritage is paramount,*
- * Government services have reached the highest level of excellence, and*
- * The quality of life is felt by its citizens to be the best in the region and its government is recognized as a leader in support of these expectations.*

Mission Statement

The Mission of the Charles County Government is to provide our citizens the highest quality service possible in a timely, efficient, and courteous manner. To achieve this goal, government must be operated in an open and accessible atmosphere, be based on comprehensive long and short term planning, and have an appropriate managerial organization tempered by fiscal responsibility.

STORMWATER MANAGEMENT ORDINANCE

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STORMWATER MANAGEMENT ORDINANCE

1.0 PURPOSE

The purpose of this Ordinance 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 and stream channel erosion, reduce local flooding, assist in the attainment and maintenance of water quality standards and maintain after development, as nearly as possible, the pre-development runoff characteristics.

The provisions of this Ordinance pursuant to the Environment Article, Title 4, Subtitle 2 Annotated Code of Maryland, 1996 Replacement Volume are adopted under the authority of the Charles County Code and shall apply to all development occurring within the unincorporated area of Charles County. The application of this Ordinance and the provisions expressed herein shall be the minimum stormwater management requirements and shall not be deemed a limitation or repeal of any other powers granted by State Law. The Department of Planning & Growth Management shall be responsible for the coordination and enforcement of the provisions of this Ordinance.

1.1 INCORPORATION BY REFERENCE

The 2000 Maryland Stormwater Design Manual, Volumes I & II is incorporated by reference by Charles County and shall serve as the official guide for stormwater principles, methods, and practices.

2.0 DEFINITIONS

For the purpose of this Article, the following words and phrases shall have the meanings respectively ascribed to them in this section.

ACCEPTABLE OUTFALL - Shall mean tidewater, or the point as determined by the Department of Planning & Growth Management, at which stormwater can be released to a channel without causing scouring, excessive erosion or sedimentation to the receiving channel or its floodplain.

ADMINISTRATION - Means the State of Maryland Department of Environment (MDE) Water Management Administration (WMA).

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 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 - Means those methods and procedures utilized in the cultivation of land in order to further crop and livestock production and conservation of related soil and water resources.

APPLICANT - Any person, firm, or governmental agency who executes the necessary forms to procure official approval of a project or of a permit to carry out construction of a project.

APPROVED PLAN - A set of representational drawings or other documents submitted by an applicant as a prerequisite to obtaining a stormwater management approval and containing such information and specifications as required by the Department of Planning & Growth Management for Charles County and the Charles Soil Conservation District under the regulations adopted in accordance with the law.

APPROVING AGENCY - Means Charles County Government, Department of Planning & Growth Management.

AQUATIC LIFE - Means a diverse macro invertebrate amphibian and fish population consistent with the state-designated water use classification or the support potential of the existing stream flow, water quality, and habitat quality.

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

BEST MANAGEMENT PRACTICES (BMP) - Means

- 1) Structural device or nonstructural device designed to temporarily store or treat stormwater runoff in order to mitigate flooding, reduce pollution, and provide other amenities; and
- 2) Agricultural runoff control and sediment & erosion control practices approved by the Charles Soil Conservation District used to mitigate adverse effects of land use activities, runoff, sedimentation, and nonpoint source pollution or stream bank erosion, stream hydrology, surface water and groundwater quality, stream habitat, aquatic life, and groundwater replenishment.

CHANNEL PROTECTION STORAGE VOLUME (C_{p_v})- Means the volume used to design structural management practices to control stream channel erosion. Methods for calculating the channel protection storage volume (C_{p_v}) are specified in the latest edition of the 2000 Maryland Stormwater Design Manual, Volumes I & II.

CHIEF - Means the Chief of the Development & Capital Services Division of Charles County or his authorized designee.

CLEARING - The removal of trees and brush from the land but shall not include the ordinary mowing of grass.

COMMERCIAL LOGGING OR TIMBER REMOVAL, roads or similar access construction for logging and timber removal operations, and all structures requiring building permits shall not be considered a part of this definition.

COUNTY - Means Charles County Government.

DAMS AND RESERVOIRS - A water impoundment made by constructing an embankment or by excavating a pit or dugout. See Natural Resources Conservation Service (NRCS) Pond Code 378.

DEPARTMENT - The Department of Planning & Growth Management of Charles County, Maryland.

DESIGN MANUAL - Means the 2000 Maryland Stormwater Design Manual, Volumes I & II (or any manual which is revised, renamed and or adopted by the Maryland Department of the Environment for use in the State of Maryland) that serves as the official guide for stormwater principles, methods, and practices.

DETENTION BASIN/STRUCTURE - Means a permanent structure, container or depression, for the temporary storage of runoff which is designed so as not to create a permanent pool of water.

DEVELOP LAND - Means to change the runoff characteristics of a parcel of land in conjunction with residential, commercial, industrial, or institutional construction or alteration.

DEVELOPER - A person, partnership, corporation, firm or governmental agency undertaking or proposing the construction of a building, a project consisting of interrelated buildings, or other construction, and who is primarily financially responsible for the proposed work.

DEVELOPMENT - See develop land.

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.

DIRECT RUNOFF - Means the flow of rainwater, snowmelt, or spring flow over the land surface toward stream channels.

DIRECTOR - The Director of the Department of Planning and Growth Management of Charles County or his authorized designee.

DISCHARGE - Means adding, introducing, releasing, leaking, spilling, casting, throwing or emitting any

pollutant, or placing any pollutant in a location where it is likely to pollute waters of the State.

DISTRICT - The Charles Soil Conservation District.

DOWNSTREAM REACH - The downstream watercourse to a point where the increase in 10 and 100 year flow due to development is no greater than 10 percent of the existing flow.

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

DRAINAGE MANUAL - Means the Maryland State Highway Administration (MSHA) Drainage Manual or any Drainage Manual adopted to replace the MSHA Drainage Manual for use in Charles County.

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.

EROSION - Means

- 1) The wearing away of the land surface by running water, wind, ice, or other geological agents, including such processes as gravitational creep; and
- 2) Detachment and movement of soil or rock fragments by water, wind, ice or gravity.

EXCAVATING - Any act by which soil, earth, sand, gravel, rock or any similar material is cut into, dug, quarried, uncovered, removed, displaced, relocated or bulldozed, and includes the conditions resulting from such actions.

EXEMPTION - Means those land development activities that are not subject to the stormwater management requirements contained in this Ordinance.

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 the extended detention BMPs are specified in the Design Manual.

EXTREME FLOOD VOLUME (Q_p) - Means 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 floodplain.

FILL - Any act by which soil, earth, sand, gravel, rock or any similar material is deposited, placed, pushed, pulled or transported and shall include the conditions resulting from such actions.

FINISHED GRADE - The final grade or elevation of the ground surface which conforms to the approved grading plan.

FLOODPLAIN - That land typically adjacent to a body of water with ground surface elevations that are inundated by the base flood, excepting the land adjoining the banks of ponds, lakes or stormwater management detention and retention facilities when the banks of such water bodies provide containment of the base flood.

FLOODPLAIN, ONE-HUNDRED YEAR - Means a flood whose frequency of occurrence is 1% in any given year. For the purposes of this Ordinance, the 100-year floodplain is referred to as the Regulatory Floodplain.

FLOODPLAIN MANAGEMENT - Means a program of identifying areas prone to flooding and providing regulation for the use of those areas by a number of possible alternatives including building codes, land use regulations and/or public acquisition.

FLOODPLAIN, REGULATORY - The area adjoining a particular river or stream which would be inundated by the discharge of the Regulatory Flood. The Regulatory Flood is that of a 100-year frequency storm.

FLOODWAY, REGULATORY - The river or stream channel and portions of the floodplain immediately adjacent, which are required to convey the discharge of the Regulatory Flood without increasing flood heights more than one foot.

FLOW ATTENUATION - Means 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.

GROUNDWATER - Means underground water in a zone of saturation or water contained or moving among soils and sands or held within geologic formations under the ground surface.

ILLICIT DISCHARGE - Means any discharge to a municipal separate storm sewer that is not composed entirely of stormwater runoff except discharges from common residential outdoor uses, firefighting activities or from any legally permitted discharge.

INDUSTRIAL WASTES - Means any liquid, gaseous, solid, slurry, or other waste substance, or any combination of these, resulting from any process or industry, manufacturing, trade or business.

IN-FILL DEVELOPMENT - For the purpose of this Ordinance, means a development of not greater than one fourth (¼) acre on a parcel of property which has had no previous development and which is bounded

on all property lines by developed land.

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

LAND DISTURBING ACTIVITY - Any fill, grading or excavation which may result in soil exposure and/or erosion or the covering of land surfaces with an impermeable material.

LAND SURVEYOR - A professional land surveyor duly registered by the State of Maryland to practice professional land surveying in accordance with the provisions of the Annotated Code of Maryland.

MAJOR STORMWATER CONVEYANCE SYSTEM - Shall mean any manmade open or closed system designed specifically to convey concentrated runoff through a residential development across more than two properties to an acceptable outfall.

MSHA - Maryland State Highway Administration.

MUNICIPAL SEPARATE STORM SEWER - Means

- 1) A conveyance or system of conveyances (including, but not necessarily limited to, roads with drainage systems, public streets, catch basins, curbs, gutters, ditches, constructed channels, storm drains, associated underground piping, and any on-site stormwater management facilities) that discharge to waters of the state or of the united states and are:
 - (a) Owned or operated by Charles County;
 - (b) Designed or used for the collection or conveyance of stormwater; and
 - (c) Which is not part of a publicly owned Treatment Works (POTW) as defined in 40CFR122.2.
- 2) In 1)(a) above, Charles County operates a municipal separate storm sewer as a system as designated by the Director of the Environmental Protection Agency.

NPDES - National Pollutant Discharge Elimination System, (40 Code of Federal Regulations 122.26(d)(2)(i)).

NATURAL GROUND SURFACE - The ground surface excluding man-made surfaces, before grading, stripping, excavating or filling.

NRCS - United States Department of Agriculture, Natural Resources Conservation Service which is represented locally by the Charles Soil Conservation District.

NONPOINT SOURCE - Means a diffuse source of pollution that does not result from a pollutant discharge at a specific, single location (such as pipes) but generally results from human or human - induced activities which introduce pollutants into waters of the state through land runoff, precipitation, atmospheric deposition, or percolation.

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

ON-SITE STORMWATER MANAGEMENT - Means the design and construction of systems necessary to control stormwater within an immediate development subject to an application for a Development Services Permit, site plan, or subdivision plan.

OUTFALL - Means the point where a municipal separate storm sewer system discharges in to waters of the State or of the United States.

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 (Qp) are specified in the Design Manual.

OWNER - Means a person or entity with legal right of possession or lawful title to a property.

PARKING LOT WATER RETENTION - Controlled shallow surface ponding on parking lots.

PERSON - Any person, corporation, partnership, joint venture, agency, unincorporated association or any combination thereof. 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 partnership, firm, association, public or private corporation, or any of their affiliates, or any other entity.

PLAN OF COMPLIANCE ACTION - Means a plan submitted to the County by a person who causes or permits a violation of the water quality standards, water quality control or water quality goals of the County. The plan shall establish remedial actions to be taken as established by the County. Each action must be completed to abate or mitigate the impacts of the violation.

POINT SOURCE - Means discernable confined or discrete conveyance, including but not limited to any pipe, ditch, channel, tunnel, conduit, well, container, rolling stock, concentrated animal feeding operation, or vessel or other floating craft, from which any pollutant is or may be discharged.

POLLUTANT - Means any liquid, gaseous, solid, radioactive, hazardous or other substance which, when discharged directly or indirectly into the waters of the state as a point source or nonpoint source, or when applied to or stored on natural or man-made land surfaces, subsurfaces, or other surfaces connected to

these surfaces in a manner other than authorized by applicable permits, regulations, or manufacturer's instructions, has a potential to or does:

- (a) Interfere with state or County designated water uses;
- (b) Obstruct or cause damage in any manner to surface or subsurface waters on the state or the County;
- (c) Change water color, odor, or usability as a drinking water source through causes not attributable to natural stream processes affecting surface water or subsurface processes affecting groundwater;
- (d) Add an unnatural surface film on the water;
- (e) Adversely change other chemical, biological, thermal, or physical conditions in any surface water or stream channel;
- (f) Degrade the quality of groundwater; or
- (g) Harm human life, aquatic life, or terrestrial plant and wildlife.

Pollutant includes but is not limited to significant materials, dredged soil, solid waste, incinerator residue, sewage, garbage, wastewater, wastewater sludge, chemical waste, biological materials, radioactive material, rock, sand, dust, industrial waste, medical waste, sediment, nutrient, toxic substance, pesticide, herbicide, trace metal, automotive fluid, petroleum based substance and oxygen-demanding material.

POLLUTE - Means to discharge pollutants into any waters the state, watercourse or drainageway.

POLLUTION - Means the direct or indirect distribution of pollutants into any waters of the State.

PRIVATE MAINTENANCE - Refers to non-county government maintenance of stormwater management facilities and stormwater conveyance systems.

PROFESSIONAL ENGINEER - An engineer duly licensed in an appropriate field by the State of Maryland to practice Professional Engineering under the requirements of the Annotated Code of Maryland.

PUBLIC FACILITIES - Means the Department of Public Facilities for Charles County.

PUBLIC MAINTENANCE - Refers to County government maintenance of stormwater management facilities or stormwater conveyance systems.

PUD - Means planned unit development.

RECEIVING BODIES OF WATER - Shall mean any waterbodies, watercourses or wetlands into which surface waters flow either naturally, in manmade ditches, or in a closed conduit system.

RECHARGE VOLUME (Re_v)- Means that portion of the water quality volume (WQ_v) used to maintain ground water recharge rates at development sites. Methods for calculating the recharge volume are specified in the Design Manual.

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.

REGIONAL STORMWATER MANAGEMENT FACILITY - Means any such facility or structure serving two or more properties which are the subject of separate site plan or subdivision plan applications for development.

RESTORE - Means to recreate, where feasible, stable and well-shaded riffle, run, stream meander, and pool structures and aquatic habitat conditions with the goal of supporting more balanced indigenous communities in surface waters that have been damaged by excessive or inadequately controlled stormwater flows and nonpoint source pollution discharges from upland watershed development.

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

RETROFITTING - Means 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.

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

SEDIMENTATION - Means the action or process of forming or depositing sediment in a manner which adversely impacts, or has the potential to adversely impact the physical and biological diversity of wetlands and waters of the state.

SIGNIFICANT MATERIALS - Includes, but is not limited to: raw materials; petroleum derivative products; any controlled hazardous substances as described in COMAR 26.13; industrial waste (COMAR 26.08.01.01); infectious waste (COMAR 26.04.07.02); materials such as solvents or detergents; finished materials such as metallic products; raw material used in food processing or production; fertilizers; pesticides; waste products such as ashes, slag and sludge or any other material that could result

in pollution of waters of the State as a constituent in stormwater discharge.

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 for the applicable area shall be made by the Department.

SLOPE - The inclined surface of placed fill, excavation or natural terrain.

SOIL - Any earth, sand, gravel, rock or any other similar material.

SOIL CONSERVATION AND WATER QUALITY PLAN- Means a land use plan for a farm approved by the Charles Soil Conservation District in accordance with the U.S. Department of Agriculture (USDA) Natural Resources Conservation Service Standards and Specifications to make the best possible use of soil and water resources in carrying out agriculture while minimizing the movement of sediment, animal wastes, nutrients, or agricultural chemicals into waters of the State.

STABILIZATION - Means the prevention of soil movement by any of various vegetative and/or structural means.

STANDARD DETAILS - Means the State of Maryland Book of Standards for Highway and Incidental Structures and/or any detail or Detail Manual adopted to replace the book of Standards for Highway and Incidental Structures for use in Charles County.

STATE DESIGNATED WATER USES - Means uses specified in State Water Quality Standards.

STORM - Shall mean a 24 hour storm or rainfall event with a one (1) percent chance of being equaled or exceeded in any given year for a 100-year storm; ten (10) percent for a 10-year storm; twenty (20) percent for a 5-year storm; and fifty (50) percent for a 2-year storm; one hundred (100) percent for a 1-year storm.

STORMWATER MANAGEMENT -

- 1) For quantitative control, a system of vegetative and/or 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/or other measures that reduce or

eliminate pollutants that might otherwise be carried by surface runoff.

STORMWATER MANAGEMENT CONSTRUCTION COSTS - Expenses incurred in constructing stormwater conveyances, and structures, and management facilities exclusive of those within the dedicated road right-of-way (which are bonded separately).

STORMWATER MANAGEMENT PLAN - A set of representations, drawings or other documents submitted by an applicant and containing all information and specifications as required by the Department and/or District as adopted under this Ordinance pertaining to stormwater management and shall include data concerning stormwater management measures as well as the stormwater conveyance system.

STORMWATER MANAGEMENT SUBTITLE - Means Environmental Article, Title 4, Subtitle 2, Annotated Code of Maryland and Cumulative Supplement.

STREAM CHANNEL - Means any part of a water course either naturally or artificially created which contains an intermittent or perennial base flow of groundwater origin.

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

SURFACE WATERS - Means all waters of the state other than groundwaters, which include public or private ponds, lakes, rivers, streams, tidal and nontidal wetlands, public ditches, private ditches, and public or private drainage systems except those used to collect, convey, or dispose of sanitary sewage.

TOXIC SUBSTANCE - Means any liquid, gaseous, or solid substance in a concentration which, when applied to, discharged to, or deposited in waters of the state, may, in the judgement of the Department, exert a detrimental effect on humans or on the propagation, cultivation, or conservation of terrestrial or aquatic life.

TIDEWATER - The area below the mean high tide, affected by the regular rise and fall (flow and ebb) of the tide including State Tidal wetlands.

VARIANCE - Means the modification of the minimum stormwater management requirements for specific circumstances not self-created, where strict adherence to the requirements would result in unnecessary hardship and would not fulfill the intent of the Ordinance.

WAIVER - Means the relinquishment from stormwater management requirements by the Department for a specific development on a case by case review basis.

- (a) "Qualitative Stormwater Management Waiver" includes water quality volume (WQ_v) and recharge volume (Re_v) design parameters.

- (b) “Quantitative Stormwater Management Waiver” includes channel protection storage volume (C_{p_v}), overbank flood protection volume (Q_p), and extreme flood volume (Q_f) design parameter.

WATERCOURSE OR DRAINAGEWAY - Any natural or artificial stream, river, creek, ditch, channel, canal, conduit, culvert, drain, waterway, gully, ravine or wash, in which water flows in a definite direction or course, either continuously or intermittently; and including any area adjacent thereto which is subject to inundation by a reason of overflow or floodwater.

WATERS OF THE STATE - Means, both surface waters and groundwaters within the boundaries of the State of Maryland and subject to its jurisdiction and for the purpose of this Ordinance within the boundaries of Charles County.

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

WATER QUALITY VOLUME (WQ_v) - Means the volume needed to capture and treat the runoff from 90 percent of the average annual rainfall at a development site. Methods for calculating the water quality volume (WQ_v) are specified in the Design Manual.

WETLANDS - Any land which is:

- 1) Considered private wetland or State wetland pursuant to Title 5, Nontidal Wetlands and to Title 16, Wetland and Riparian Rights, Environmental Article, Annotated Code of Maryland; or
- 2) Defined as wetland under the procedures described in the federally accepted "Federal Manual for Identifying and Delineating Jurisdictional Wetlands."

3.0 SCOPE

- 3.1 Development of any land by a person, firm, corporation or governmental agency which shall develop any land for residential, commercial, industrial, or institutional uses will first construct appropriate stormwater management facilities and stormwater conveyance systems, except as hereinafter provided. The stormwater management measures must be designed consistent with the Design Manual and constructed according to an approved plan for new development or policies stated in section 7.2 for redevelopment.

4.0 EXEMPTIONS

The following categories of development are exempted from the requirements of providing stormwater management. This does not exempt the Developer from providing an adequate stormwater conveyance system.

- 4.1 Agricultural land management practices.
- 4.2 New Development
 - A. All new development on sites where no previous development has occurred conducting a land disturbing activity of no more than 5,000 square feet (five thousand square feet/ 0.1148 acres) which are not located within the Buffer area of the County's Critical Area Overlay Zones established in the Charles County Zoning Ordinance shall be exempt from providing stormwater management.
 - B. Any cumulative disturbance exceeding 5,000 square feet shall not be exempt. If the initial disturbance occurred prior to 1985 then stormwater management shall only be provided for new development. If the initial disturbance of the site occurred after 1985 and the site qualified for an exemption for disturbance of less than 5,000 square feet then stormwater management shall be provided for the entire disturbance (initial and proposed) once the disturbance on the site exceeds 5,000 square feet.
- 4.3 Additions or modifications to existing single family detached residential structures that do not disturb more than 5000 s.f. (Five thousand square feet) of land area which are not located within the Buffer area of the County's Critical Area Overlay Zones.
- 4.4 Land disturbing development activities which the Administration determines will be regulated under specific State laws that provide for the management of stormwater runoff.

5.0 WAIVERS

Any developer receiving a waiver of on-site stormwater management for quantitative control shall not be relieved

of the responsibility of providing stormwater management for qualitative control. The Developer is required to demonstrate that such measures as required to reduce or eliminate pollutants will be provided. If the proposed development activity is located in the Intense Development Overlay Zone established in the Charles County Zoning Ordinance, then the developer must demonstrate that the pollutant loading from the site will be reduced by ten (10) percent of pre development levels. If it can be demonstrated that topography prevents runoff from either directly or indirectly entering tidal waters, ten (10) percent pollution reductions shall not be required however, stormwater management must still be addressed to include water quality volume (WQ_v) and recharge volume design parameters as required by the Design Manual.

- 5.1 Stormwater management quantitative control waivers shall be granted only to those projects within areas where watershed management plans have been developed consistent with 5.5 of this section and meet conditions established in 5.6 of this section.
- 5.2 If watershed management plans consistent with 5.5 of this section have not been developed, then stormwater quantitative control waivers may be granted to projects:
 - A. That have direct discharge to tidally influenced receiving waters;
 - B. When the Department determines that circumstances exist that prevent the reasonable implementation of quantity control practices.
- 5.3 Stormwater Management Qualitative Control Waivers apply to:
 - A. In-fill development projects where stormwater management implementation is not feasible;
 - B. Redevelopment projects if the requirements of section 7.2.D. of this Ordinance are satisfied; or
 - C. Sites where the Department determines that circumstances exist that prevent the reasonable implementation of quality control practices.
- 5.4 Waivers will only be granted on a case by case basis after the County has determined that the cumulative effects of the waiver policy has not adversely impacted the receiving waters and the applicant has demonstrated through studies that the development will not adversely impact stream quality.
- 5.5 A watershed management plan developed for the purpose of implementing different stormwater management policies for waivers shall:
 - A. Include a detailed hydrologic and hydraulic analyses to determine hydrograph timing;

- B. Evaluate both quantity and quality management;
- C. Include cumulative impact assessment of watershed development;
- D. Identify existing flooding and receiving channel conditions;
- E. Be conducted at a reasonable scale;
- F. Specify where on-site or off-site quantitative and qualitative stormwater management practices are to be implemented;
- G. Be consistent with the general performance standards for stormwater management in Maryland found in section 1.2 of the Design Manual; and
- H. Be approved by the Administration.

The Department 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 complying with section 5.6 of this Ordinance. The written request must contain descriptions, drawings, and other information that is necessary to evaluate the proposed development. A separate written request shall be required in accordance with the provisions of this section if there is subsequent additions, extensions, or modifications to a development receiving a waiver.

5.6 A developer requesting a waiver for quantitative control for a project within a watershed management plan area (regional facility) must demonstrate:

- A. That the regional facility was developed to include stormwater management for the proposed development;
- B. The regional stormwater management or flood control facility has sufficient capacity for the development and:
 - (1) On-site stormwater management is addressed to include recharge volume design parameters and water quality volume (WQ_v) as required by the Design Manual except when the entire stormwater conveyance system to the regional facility is a manmade system; and
 - (2) There is an adequate natural or manmade stormwater conveyance system to the regional facility as determined as follows:

- a) For manmade designed channels, the resulting velocity is not more than that permitted by the Drainage Manual for the 1-year storm for the lining type and the resulting capacity of the designed channel is adequate to contain the 10-year storm when the entire contributing drainage area is considered developed.
 - b) For unlined natural earthen channels, the maximum permissible velocity and the maximum permissible tractive force shall not exceed those listed in Appendix F for the 1-year storm.
 - c) No downstream drainage, flooding or erosion problems currently exist for the 1-year, 2-year, and 10-year storms.
 - d) The resulting stream flow for a 1-year storm for unlined natural earthen channels shall be contained within the existing natural stream banks.
- (3) That the project has obtained legal rights to utilize the required storage capacity of the facility;
 - (4) Sufficient documentation shall be submitted to assure the existence of offsite easements;
 - (5) That the facility has been constructed per the approved plans and is functioning as designed; and
 - (6) The regional facility is included in the County's stormwater management maintenance and inspection program and has been properly maintained.

5.7 Any developer who shall receive a waiver for on-site quantity and/or stormwater quality management shall make a monetary contribution ("FEE IN LIEU OF") as defined in this section, grant an easement and/or dedicate land as hereinafter provided.

- A. The "fees in lieu of" are to be applied to the cost of planning, designing, acquiring land for, constructing and maintaining regional stormwater management devices or other uses related to stormwater conveyance and/or stormwater management as deemed appropriate by the County Commissioners of Charles County.
- B. The contribution or fee in lieu of providing on-site stormwater management shall be established in the Charles County Fee Schedule, as defined by the Department.
- C. In the event that the development or site is located in an area served by an existing

regional stormwater management facility owned or maintained by the County, the fee shall be determined by a pro-rated cost of that facility.

- D. Fee-in-Lieu shall be paid prior to issuance of a permit. For County owned or maintained facilities, the Department may, at its sole discretion, accept the dedication of land, specify other improvements and/or the granting of an easement for the construction, operation and maintenance of stormwater conveyance systems or stormwater management facility in lieu of a portion of all of the monetary contribution. All costs associated with these contributions shall be the sole responsibility of the applicant. The total value of the contribution shall not be less than the amount of the fee in lieu which would be required by Section 5.7B.
- E. The waivers contained herein do not relieve the Developer of the responsibility of providing an adequate stormwater conveyance system.
- F. Where, at his expense, an applicant constructs or has constructed an off-site and/or a regional stormwater management facility that provides or compensates for his project or any project in his interest then no fees in lieu of shall be assessed for the waiver.
- G. Where an applicant utilizes an off-site stormwater management facility constructed and owned by another developer and applies for a waiver under Section 5.1, the applicant shall make a monetary contribution as required in Section 5.7A if the owner of the facility does not require compensation.

5.8 When an applicant constructs a stormwater management facility which provides stormwater management for additional upstream development, the applicant and the County Commissioners may enter into an agreement to reimburse the applicant for the additional costs of providing the surplus capacity by:

- A. Making a direct cash payment of the cost difference to the applicant upon completion of the facility, or
- B. Making a payment in lieu of providing on-site stormwater management by other upstream developers. Payment shall be 75% of such fees but the total payment to the applicant shall not exceed the applicant's additional costs.

6.0 TRANSITIONAL EXEMPTIONS AND ADMINISTRATIVE VARIANCES

6.1 The Chief may grant a written variance from any requirement of this Ordinance if there are exceptional circumstances applicable to the site such that strict adherence to the provisions of this Ordinance will result in unnecessary hardship and not fulfill the intent of the Ordinance. A

written request for variance will state the specific variances sought and reasons for their granting; however, all variances still must adhere to The Environment Article, Title 4, Subtitle 2, Annotated Code of Maryland, 1996 Replacement Volume on Stormwater Management.

Variances should be addressed to the Chief. Persons may appeal decisions of the Chief to the Director of Planning & Growth Management, whose decision will be final.

7.0 DESIGN CRITERIA

7.1 Basic design criteria and construction specifications for stormwater conveyance systems and stormwater management structures will be those of the Natural Resources Conservation Service (NRCS), State of Maryland Department of Environment - Water Management Administration and MSHA, generally found in the most current edition of the following publications:

- A. The latest edition of the Design Manual.
- B. "Urban Hydrology for Small Watersheds," TR-55 (Technical Release 55).
- C. "Computer Program for Project Formulation," TR-20 (Technical Release 20).
- D. "Stormwater Management Pond Design Manual" (Maryland Association of Soil Conservation Districts).
- E. "Soil Conservation Service Engineering Field Manual".
- F. "Soil Conservation Service, Maryland Standards and Specifications, Pond, Code 378". All overflow devices and stormwater management facilities will be designed to safely pass a 100-year storm. The 100-year storm discharge will be based on the ultimate development of the contributing watershed.
- G. The Charles County Standards and Specifications for Construction Manual.
- H. Drainage Manual and Standard Details.
- I. Other design criteria, specifications, and standard details adopted and approved by the Department.
- J. "A Framework for Evaluation of Compliance with the 10% Rule in the Critical Area," prepared by the Department of Environmental Programs, Metropolitan Washington Council of Governments, prepared for Maryland Critical Area Commission and the Maryland Office of Environmental Programs, April 1987.

7.2 The minimum stormwater control requirements will be as follows:

- A. The design of BMPs shall include the Recharge Volume (Re_v), Water Quality Volume (WQ_v), Channel Protection Storage Volume (Cp_v) and Overbank Flood Protection Volume (Qp) sizing criteria according to the Design Manual.
- B. Control of the Overbank Flood Protection Volume (Qp_{10} - 10-year frequency storm) may be waived by the Department on a case by case basis if:
 - (1) Flooding or drainage problems do not exist downstream; or
 - (2) Acceptable improvements are made to relieve downstream flooding or drainage problems as determined by the Department; or
 - (3) The stormwater management facility drains directly to a regulated floodplain; or
 - (4) The SWM facility drains directly to a storm drain or stormwater conveyance system that is specifically designed to accommodate the entire drainage area based on the ultimate development of the watershed for the 10-year storm; or
 - (5) The Department determines that the control of the Overbank Flood Protection Volume (Qp) does not meet the intent of this Ordinance.
- C. Existing conditions will be based on average site conditions over the preceding three years, and all lands in the site to be developed shall be assumed to be in good hydrological condition. Where runoff is discharged into an off-site stormwater management facility, the control requirements and procedures shall be in accordance with subsection 7.4B.
- D. Redevelopment:

Redevelopment is any construction, alteration, or improvement performed on sites where existing land use is commercial, industrial, institutional, or multifamily residential. For the purpose of this Ordinance, redevelopment includes only those portions of a site which have been previously developed. Portions of the site which have not been previously disturbed shall be considered as new development with the exception that the 5,000 square foot exemption does not apply to that area deemed as new development. The Recharge Volume (Re_v), Channel Protection Storage Volume (Cp_v) and the Overbank Flood Protection Volume (Qp) requirements specified in the Design Manual do not apply to the redevelopment portions of a site but do apply to the new

development portions of the site.

- (1) Redevelopment projects which disturb greater than 5,000 sf:
 - a) Reduction of the existing impervious area by 20 percent unless otherwise specified by watershed management plans developed prior to the development of this site and where the watershed management plan explicitly addresses quantity and/or quality management for the existing and proposed development according to this Ordinance.
 - b) Where site conditions prevent the reduction of existing impervious areas, stormwater management practices shall be implemented to provide water quality control for at least 20 percent of the site's existing impervious area.
 - c) When a combination of the impervious area reduction and stormwater management practice implementation is used for redevelopment projects, the combination of existing impervious area reduction and the existing impervious area controlled by a stormwater management practice shall equal or exceed 20 percent.
 - d) Practical alternatives may be allowed where conditions prevent existing impervious area reduction or on-site stormwater management for existing impervious areas as follows:
 1. An offsite BMP is provided for a drainage area comparable in size and percent impervious, to that of the project; or
 2. Watershed or stream restoration; or
 3. Retrofitting of existing structures; or
 4. Drainage improvements; or
 5. A "fee in lieu" of as established in the Charles County Fee Schedule.
- (2) Redevelopment projects which increase the impervious area shall provide stormwater management for the increase in impervious area and provide stormwater management for existing impervious area as outlined in 7.2.D.1.a)-d) above.

7.3 Stormwater Management Measures:

- A. Stormwater management measures shall be required to satisfy the minimum control requirements. The stormwater management practices being utilized in developing a stormwater management plan shall be according to the Design Manual.

- B. Components of stormwater management systems may include those measures established in the Design Manual. Stormwater management structures shall be designed to:
 - (1) Minimize the need for maintenance.
 - (2) Provide access for maintenance purposes.
 - (3) Be drainable.
 - (4) Be structurally sound.
 - (5) Incorporate safety features as appropriate. See Appendix D for recommended safety features, the Design Manual or NRCS Pond Code 378 for the most restrictive and appropriate safety features.
 - (6) Incorporate buffers and property line setbacks for above ground facilities as follows:
 - a) Minimum property line setback of 25' (twenty five feet) to all residentially zoned property lines. For ponds, the property line setback is measured to the toe of the embankment or to the outside top of the excavation.
 - b) Buffers and landscaping shall be provided for stormwater management practices adjacent to all (residential or nonresidential) property lines. Buffers and landscaping requirements shall be those found in the Design Manual.
 - (7) Avoid concentrated discharge to residential lots. Where a proposed stormwater management facility is designed to outfall concentrated discharge to any offsite residential lot and that discharge is greater than the discharge a 15" corrugated metal pipe can convey at full flow conditions when laid on natural grade, then the principal spillway shall be designed to discharge from

the facility through the use of a subsurface structure and be continued thru the off-site residential lot.

All necessary off-site easements shall be obtained by the developer and will be required prior to plan approval. If the developer can demonstrate that off-site easements and improvements can not be obtained, then the developer may offset these requirements by providing one of the following with approval from the Department:

- a) Watershed or stream restoration plan; or
 - b) Retrofitting of an existing structure; or
 - c) Drainage improvements; or
 - d) A “fee in lieu” of as established in the Charles County Fee Schedule.
- 8) A minimum of 1' (one foot) freeboard will be required for all ponds that are not required to meet the design requirements of the SCS Pond Code 378. The freeboard shall be measured from the 100-year elevation.
 - 9) Account for bank/shore erosion on wet ponds.
- C. All stormwater management facilities and/or stormwater conveyance systems shall be designed to be accessible for routine maintenance. Design and construction of access shall be required.
 - D. Open and closed stormwater conveyance systems shall be designed as a minimum to safely pass flows from a 10-year frequency storm without flooding damage or erosion. Closed stormwater conveyance systems shall be designed according to the drainage manual and standard details.
 - E. When a stormwater management wet, dry, or extended detention pond deeper than twenty-four inches is located within a densely populated area or in the proximity of an elementary school, playground or other areas where small children may congregate without adult supervision, the Department may require a protective enclosure of such body of water except where allowed under County approved stormwater management plans, standards, and specifications.
 - F. Ponding in parking lots is not allowed in residential developments. In non-residential developments, ponding in parking lots shall be limited to those fringe areas of a parking

lot intended for parking during periods of peak customer volume, but not to exceed 25% of the total area available for customer parking or a 6" ponding depth.

- G. If the proposed development activity is located in the Intense Development Critical Area Overlay Zone established by the Charles County Zoning Ordinance, then the developer must demonstrate that the pollutant loading from the site will be reduced by ten (10) percent of predevelopment levels. However, if it can be demonstrated that topography prevents runoff from either directly or indirectly entering tidal waters, ten (10) percent pollution reduction shall not be required. The process for determination of pollutant loading reduction shall be as outlined by the Critical Areas Commission and the Maryland Office of Environmental Programs in "A Framework for Evaluation of Compliance with the 10% Rule in the Critical Area", April, 1987 or a comparable methodology as approved by the Department of Planning & Growth Management. All development must still address Water Quality Volumes (WQ_v) and Recharge Volumes (Re_v) per the Design Manual.
- H. Stormwater management for higher intensity storms may be required if warranted by downstream constraints such as road culverts or if existing drainage or erosion problems exist.
- I. Outfalls for stormwater management facilities and road drainage shall be designed to ensure that no direct discharge occurs into non-tidal or tidal wetlands without pretreatment.
- J. Stormwater management facilities shall be located outside of stream channels, regulatory floodplains, and any Resource Protection Zone adopted as part of Chapter 295 of the County Code. Regional Facilities with an approved alternatives analysis pursuant to the Charles County Floodplain Management Ordinance or Resource Protection Zone Ordinance, as applicable, are excepted provided that State and Federal approvals are obtained if located in jurisdictional waters and/or wetlands.
- K. The siting of stormwater management facilities designed for the control and treatment of non-public waters shall be located outside of existing County right-of-ways and County owned property unless adequate justification is provided to the County. The decision for such approval shall be at the discretion of the Chief with concurrence from the Department of Public Facilities.

7.4 Specific Design Criteria:

- A. One or a combination of the following practices shall be used in developing a stormwater management plan:
- (1) 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 as established in this Ordinance:
 1. Stormwater management ponds;
 2. Stormwater management wetlands;
 3. Stormwater management infiltration;
 4. Stormwater management filtering systems; and
 5. Stormwater management open channel systems.
 - (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.
- B. Nonstructural stormwater management measures:
- (1) The following nonstructural stormwater management practices shall be applied according to the Design Manual to minimize increases in new development runoff:
 - a) Natural area conservation;
 - b) Disconnection of rooftop runoff;
 - c) Disconnection of non-rooftop runoff;
 - d) Sheet flow buffers;

- e) Grass channel; and
 - f) Environmentally sensitive development.
- (2) The use of nonstructural stormwater management practices shall be used, if practical and with prior approval from the Chief, to minimize the reliance on structural measures provided that the measures:
- a) Do not circumvent other sections of this Ordinance or other County codes;
 - b) Are designed not to result in drainage, grading, maintenance or erosion problems;
 - c) Do not result in increased short term or long term maintenance cost; and
 - d) Shall not conflict with existing County policies.
- (3) Reductions in the minimum control requirements of this Ordinance shall be allowed when nonstructural stormwater management practices are incorporated into site designs according to the Design Manual.
- (4) The use of nonstructural stormwater management practices may not conflict with existing State or local laws, ordinances, regulations or policies.
- C. Nonstructural stormwater management practices used to reduce the minimum control requirements according to this Ordinance and the Design Manual may not be altered without prior approval from the Department. These practices shall be protected by appropriate easements and/or inspection and maintenance agreements as required by this Ordinance.
- D. 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 are approved by the administration. Alternative practices for redevelopment shall be approved by the Department.
- E. Any other practices, not specified above, must be approved by the Administration.
- F. Detention ponds shall be designed and constructed in accordance with the criteria of the NRCS (if applicable) and the Design Manual and, shall include the following:

- (1) Small pond approval shall be obtained from the District or the Administration as necessary.
- (2) Where deemed necessary by the Department, the developer shall submit to the Department 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, stormwater conveyance system (natural or manmade), highway, structure, or natural point of restricted stream flow, established with the concurrence of the Department, downstream of a tributary of the following size:
 - a) The first downstream tributary whose drainage area equals or exceeds the contributing areas to the pond; or
 - b) The first downstream tributary whose peak discharge exceeds the largest designed release rate of the pond.
- (3) The designed release rate of the structure shall be modified if any increase in flooding or stream channel erosion would result at the downstream dam, highway, structure, or natural point of restricted stream flow. The release rate of the structure shall:
 - a) Be reduced to a level that will prevent any increase in flooding or stream channel erosion at the downstream control point;
 - b) Be not less than 1-year pre-development peak discharge; and
 - c) Meet the requirements established in the Design Manual.
- (4) Off-site structures to be considered:
 - a) Shall have a contributory drainage area not in excess of 400 acres unless, on a case by case basis, a larger drainage area is approved by the Administration;
 - b) shall comply with all applicable standards established in the Design Manual; and
 - c) shall provide the Channel Protection Storage Volume (C_p) and Overbank Flood Protection (Q_p) per the Design Manual.

- G. Where a stormwater management plan involves direction of some or all runoff off of the site, it shall be the responsibility of the developer to obtain from adjacent property owners any easements or other necessary property interests concerning flowage of water. Approval of a stormwater management plan does not create or affect any such rights. All necessary offsite easements shall be recorded prior to issuance of a Development Services Permit.

- H. The developer shall give consideration to incorporating the use of natural topography and land cover such as existing ponds, natural swales and depressions as they exist prior to development to the degree that they can accommodate the additional flow of water. If existing measures are utilized in the design of a stormwater management plan then such design shall include the following:
 - (1) An analysis of existing measures to determine the feasibility of those measures;
 - (2) A hydrologic and a hydraulic study;
 - (3) A geotechnical study of existing ponds to determine the conditions of the pond;
 - (4) An incorporation of any retrofit as recommended by the geotechnical, hydrologic or hydraulic study;
 - (5) An incorporation of any retrofit to meet the objectives of the Charles County municipal national pollutant discharge elimination system (NPDES) permit; and
 - (6) A life cycle cost analysis of any existing structure (culvert, principal spillway, etc.) will be required prior to acceptance for inclusion into a drainage or stormwater management design. If the structure has exceeded 50% (fifty percent) of its expected life cycle, then the structure will be replaced with a new structure.

- I. Propriety structures may be approved provided that these structures are acceptable for use to meet the stormwater management requirements established in this Ordinance and the Design Manual. These structures shall have received written approvals from the Administration prior to use in the County.

7.5 STORMWATER CONVEYANCE - SUBDIVISIONS:

- A. Subdivision roads shall be designed with open or closed stormwater conveyance systems

as outlined in the most recent edition of the Charles County Road Ordinance. Every subdivision shall be designed with stormwater conveyance systems which discharge to acceptable outfalls as defined by this Ordinance.

- B. Existing stormwater conveyance systems which receive runoff from a proposed development shall be analyzed and shall be improved if considered inadequate to accommodate the proposed development. The design storm to be analyzed shall be established by the County or shall be based upon designed road classifications.
- C. Changes to the limits of natural drainage basins are prohibited in general, runoff after development shall drain to the same outfall as before development.
- D. Closed and open stormwater conveyance systems shall be designed based on the 10 (ten) year frequency storm event.
- E. All major stormwater conveyance systems with the associated easements shall be located outside the limits of residential lots. Unless otherwise stipulated, these systems shall be privately maintained. See Appendixes F and G for sample Private and Public Drainage Easement documents.
- F. Culverts and storm drain systems which receive 50 (fifty) acres or less drainage may be designed utilizing the rational method for determining runoff. Those systems receiving drainage greater than 50 (fifty) acres defined shall utilize the NRCS TR-55 or TR-20 methods for determining runoff.
- G. In the design of a stormwater conveyance system, the present and future runoff from contributing areas shall be determined on the basis of the ultimate development of the watershed in accordance with current zoning for the area.
- H. Closed stormwater conveyance systems for all new subdivisions shall be designed by a Professional Engineer. Open stormwater conveyance systems may be designed by a Professional Engineer, Professional Land Surveyor (as allowed by State law) or a Registered Landscape Architect (as allowed by state law). The professional responsible for the design shall affix an original seal and sign all plan sheets, and the first page of all reports, computations and correspondence supporting the design of the systems.
- I. All culverts that may be required (including driveway culverts) for the project shall be designed and shown on the plans. The minimum size of culverts shall be 18" x 11".
- J. Project design shall include a project report outlining the scope, the methodologies, and assumptions utilized in the design. The project report should include a table of

contents, numbered sheets, narrative, all nomographs, charts, forms, computer generated output, etc. to support the design. If the report includes computer generated output (ex. TR - 20) then a floppy disc must be submitted with all input and output. If necessary the County may request copies of software necessary to duplicate the output.

- K. All drainage area maps used in the design must be included as part of the plan assembly.
- L. Time of concentration paths must be shown on the drainage area maps to each design point. Overland flow lengths should not exceed 100' (one hundred feet).
- M. In the design of storm drain systems, inlet times of concentration of seven minutes may be utilized as a minimum time for all inlets. Otherwise each element should have a calculated time of concentration as supported in the project report. In no case shall the inlet time exceed 15 (fifteen) minutes.
- N. Closed systems located in sump areas shall include overflow paths to safely pass surcharge from the systems. The overflow paths shall be enclosed in drainage easements and continue uninterrupted to natural stormwater conveyance systems or other adequate outfall systems. In no case shall surcharge be allowed to flood buildings or extend beyond easements. Surcharge shall be based on the 100 (one hundred) year storm.
- O. Yard inlets shall be designed to accept no more than 2 (two) acres of drainage. The inlet shall include an examination of the 100 (one hundred) year storm which should not pond more than 24 (twenty-four) inches at the inlet.
- P. Open section roads shall include a design utilizing roadside ditches as a method of disposing of water from the rights-of-way. The roadside ditches shall be designed to accommodate the placement of lot entrance culverts. The ditches shall not be less than 18" (eighteen inches) deep measured from the road shoulder. Closed systems shall be specified if the designed roadside system exceeds a depth 30" (thirty inches) measure from the road shoulder.
- Q. To enhance self-cleaning characteristics, pipes shall not be designed at a slope less than 0.5% or the friction slope, whichever is greater. The minimum full velocity shall not be less than 3 fps (three feet per second).
- R. Drainage ditches shall not be designed on slopes less than 1½ % (one and one half percent) without the approval of the County.
- S. Ditches shall not be designed below the seasonal high water table.

- T. Cross culverts shall be designed such that the 10 (ten) year storm does not exceed the edge of the shoulder and the 100 (one hundred) year storm does not exceed the edge of the pavement or top of curb. The 100 year backwater shall not affect upstream property owners without obtaining the appropriate easements.
- U. Driveway culverts shall be designed such that the 10 (ten) year storm does not exceed the edge of the driveway.
- V. Open channel stormwater conveyance systems shall be designed to accommodate the 10 (ten) year storm. The 10 (ten) year storm depth shall not exceed 9" (nine inches) below the shoulder for roadside ditches. The lining type shall be based on the 2 (two) year storm velocities.
- W. A minimum vertical clearance of 12" (twelve inches) and a minimum horizontal clearance of 5' (five feet), wall to wall, shall be provided between storm drains and other utilities.
- X. All plans shall be submitted with all information as outlined in the "Plan Preparation Package."
- Y. All fees, bonds etc. shall be based on Charles County Fee Schedules, Unit Price List, etc. as appropriate.
- Z. Curb cuts shall not be used to discharge drainage from the right-of-way in new subdivisions. Curb cuts may be considered for drainage improvements to existing roads with permission from the County. If curb cuts are used to improve existing drainage, then a paved gutter will be provided for no less than 5' (five feet) from the end of the curb cut.
- AA. Grate yard inlets are not allowed for used in residential areas. A minimum of a 5' concrete gutter pan will be utilized in the design of all yard inlets.
- BB. Grate inlets shall not be allowed for use with closed section local roads.
- CC. Pipes shall be designed such that the minimum cover shall be 0.75' below the pavement section as measured from the subgrade to the top of the pipe or the manufacturer's requirements, whichever is greater.
- DD. Anchors shall be provided for all storm drain systems placed on grades of 15% (fifteen percent) or greater or as recommended by the manufacturer.
- EE. Riprap shall not be used for lining in publically maintained ditches or roadside ditches

on roads where residential frontage is allowed unless approved by the County.

FF. Scour analysis shall be performed for all bridges.

GG. Bottomless culverts will not be allowed.

8.0 ADMINISTRATION

8.1 Prior to recommending approval of any preliminary plan, subdivision plat or site plan by the Department, the applicant will submit preliminary stormwater management and/or storm drainage information for the proposed on-site development and for related off-site stormwater controls to determine the need for stormwater management according to the provisions of this subtitle. This preliminary information shall define the location, type, and approximate size of proposed stormwater management facilities, show the limits of storm drainage easements, and include preliminary TR55 calculations. The Department shall review the plan to determine compliance with this Ordinance. The Department may require the applicant to provide a detailed stormwater management plan or to investigate alternate types of stormwater management structures or locations for stormwater management structures prior to approval of the preliminary plan. The final construction plans should strictly adhere to conditions and designs established in the preliminary approval.

Where stormwater management is required, the applicant must submit final stormwater management plans and designs for the proposed development according to the provisions of this subtitle prior to issuance of a Development Services or Building permit. Where storm drainage systems are required, the applicant must submit final storm drainage plans and designs for the proposed development prior to final approval. Maintenance agreements and easements for the drainage facilities and stormwater management facilities shall be provided where required.

Stormwater management plans may require separate review and/or approval by the District or by the Administration in accordance with State Law and may require a County Development Services Permit.

8.2 The Developer shall submit a stormwater management and/or storm drainage plan prepared and certified by a Professional Engineer, Registered Landscape Architect (as allowed by State law) or Professional Land Surveyor (as allowed by State law) to the Department for review. If the BMP requires either a dam safety permit or small pond approval then the design shall be prepared by a Professional Engineer licensed in the State of Maryland. The plan shall serve as the basis for all subsequent construction, and shall cover the entire area which is contemplated to be developed. 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.

8.3 Minimum information needed for stormwater management and/or storm drainage plans review:

A. Site Characteristics:

- (1) Intended use of the structures including design criteria, trade-off conditions and/or areas not managed (NRCS Engineering Field Manual, Chapter II).
- (2) Structure classification (NRCS Pond Standard CODE 378).
- (3) Soils investigation, for construction of small ponds and infiltration facilities per the Design Manual for review by the District and the Department (SCS Engineering Field Manual, Chapter IV).
- (4) Topographic survey including the area necessary to determine the downstream effect from any proposed stormwater management structure.
- (5) Topographical information of the contributing watershed based upon USGS topographic quadrangles with a field verified drainage area and acreage noted on the plan or County topographic maps at 1" = 200'.
- (6) Geotechnical investigations, including soils maps, borings, site specific recommendations, and any additional information necessary for the proposed stormwater management plan design.
- (7) Descriptions of all water courses, impoundments, and wetlands on or adjacent to the site or into which stormwater directly flows.

B. Computations:

- (1) Hydrology;
- (2) Hydraulic;
- (3) Structural;
- (4) Unified Sizing Criteria Volume computations according to the Design Manual;
- (5) For development proposed in the Intense Development Overlay Zone within the Charles County Critical Area, the pre-development and post-development

pollutant loadings;

- (6) Scour analysis for bridges;
- (7) Drainage calculations as included in the drainage manual and;
- (8) Any other information as required by the Department in a format as approved by the Department.

C. Stormwater Management Design Plans:

- (1) Location map;
- (2) Vicinity map;
- (3) Topography survey as indicated in this section;
- (4) Any proposed improvements including the location of buildings or other structures, impervious surfaces, storm drainage facilities, and all grading;
- (5) The location of existing and proposed structures and utilities;
- (6) Any easements and rights-of-way;
- (7) The delineation, if applicable, of the 100-year floodplain and any on-site wetlands;
- (8) Structural and construction details for all components of the proposed drainage systems or systems, and stormwater facilities;
- (9) A sequence of construction;
- (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;
- (12) A table of materials to be used for stormwater management facility planting;
- (13) All soil boring logs and locations;

- (14) Pre and post-development watershed maps and design drainage area maps for stormwater conveyance shall be part of the plan assembly;
- (15) Location of utilities in the construction area;
- (16) Structural details for proposed facilities;
- (17) Notes on drawings shall specify materials to be used;
- (18) Construction specifications; and
- (19) Any other information as determined by the Department.

D. Grading and Sediment Control Plan ("Charles County Grading and Sediment Control Ordinance" and "Standards and Specifications for Soil Erosion and Sediment Control in Developing Areas")

E. Construction Cost Estimate

F. Maintenance Schedule

G. The developer or contractor shall also be responsible for submitting to the Department a letter of material certification from the suppliers for all precast structures related to storm drain systems and stormwater management facilities in the following format:

- (1) Contractor's name and address;
- (2) Project name and structure number;
- (3) Manufacturers product certification;
- (4) Type and quality of product; and
- (5) Shop drawings sealed and signed by a Professional Engineer registered in the State of Maryland.

H. Other information as required by the Department.

8.4 Stormwater management and/or storm drainage plans must be prepared in sufficient detail, with reference to appropriate standards and specifications, to ensure understanding by those responsible for review, installation, and inspection. The applicant's study of the downstream

conditions shall extend to the point where the increase in flows after development is no more than 10 percent of the pre development flows.

The Professional Engineer, Registered Landscape Architect or Professional Land Surveyor preparing the stormwater management and/or storm drainage plan will certify on the drawings that the plan meets the criteria set forth in the Design Manual and this Ordinance. The Developer will certify on the drawings that all clearing, grading, and construction and development will be accomplished strictly in accordance with the plans as approved.

Changes in design will not be permitted without prior written approval of the Department and, where a small pond is involved, the District.

The Developer shall submit to the Department and, in the case of small ponds, to the District, "As-Built" plans of storm drainage and stormwater management facilities certified by a Professional Engineer or Professional Land Surveyor as meeting or exceeding the requirements of the approved plans and specifications. Procedures for "as-built" plans shall be as outlined in the Plan Preparation Package. The Developer shall retain a Professional Engineer to inspect construction of small ponds and/or privately owned facilities. A schedule of maintenance to indicate proper maintenance procedures for the facilities shall be included on the "As-Built" plans and approved by the Department.

- 8.5 Where stormwater management and/or storm drainage is to be provided on-site, drainage and stormwater management easements and maintenance agreements as approved by the Department shall be recorded by the applicant for the location and use of such facility. Easement documents shall be submitted for review prior to recording of the plat. The plats shall include grantors and all other necessary parties and grantees at all such easements. Such easements shall be adequate to provide access for maintenance from a public right-of-way and shall include the downstream danger reach of the structure and the area inundated by the 100-year storm. In residential developments, the stormwater management, drainage, and access easements shall be located on properties of persons responsible for maintenance of such easements and facilities or in the case of publically maintained facilities, the easements shall be located in open space or public use lots. In no case shall the access to or the stormwater management facility be located within the limits of a residential lot.

The design plans will indicate the 100-year floodplains, backwaters, ponding for streams, culverts, storm drain systems, and the maximum impounded water surface elevation of the Stormwater management structure during ultimate emergency spillway operation. The resultant inundated area such at this elevation shall be accurately delineated and recorded on the site plan or plat as a perpetual stormwater management, floodplain, backwater, or drainage easement, as applicable. Additional buffer easements may be necessary or required for maintenance, access, and/or safety purposes. No existing or proposed building structures will be allowed within these easements without prior approval of the Department. Peripheral construction may be granted

provided that all floor elevations are at least one foot higher than the maximum water surface elevation.

- 8.6 In those cases where a stormwater management and/or storm drainage facility is to be constructed and maintained as a privately owned facility, a maintenance agreement and related easements, signed by the Owner of record and approved by the Department shall be recorded in the Land Records of Charles County. All such agreements, easements and/or dedications must be recorded prior to the issuance of the Development Services Permit. This recorded agreement shall be binding on all subsequent owners of the property on which the facility is located.
- 8.7 Stormwater management located in residential areas shall be owned and maintained by a private entity or organization other than Charles County Government. Those located in commercial or industrial areas shall be privately owned and maintained.

9.0 AGREEMENTS/BONDS/FEES

- 9.1 A permit and/or agreement shall be required for construction projects and shall specify the developer's responsibilities during the project.
- 9.2 Bonds: The Charles County Commissioners shall require a surety bond, letter of credit, cash guarantee or other means of security acceptable to the County Commissioners from the Developer prior to issuance of the permit as outlined in the Subdivision Regulations. Such bond, letter of credit or cash guarantee shall be in an amount not less than the total estimated construction cost of the stormwater management facilities and/or stormwater conveyance systems. Bonding requirements shall be as established in the most current edition of the Subdivision Regulations.
- 9.3 Conditions of Bond: Bonds required in this Article shall include provisions relative to forfeiture for failure to complete work specified, compliance with all provisions of this Ordinance and other applicable laws and regulations, and any time limitations. The bond shall remain in full force and effect until completion of work to specifications required, submission and approval of "As-Built" plans by the Department, certification of completion by the Designer and the Developer, and recordation of easements, dedications, and maintenance agreement as required.

A provision may be made for partial release of the deposit or the amount of the bond upon completion and acceptance by the Director of the various areas of development as specifically delineated, described, and scheduled on the required plans and specifications. An interim certificate of partial completion shall be duly approved for the type of installation.

- 9.4 Fees: Unless otherwise provided herein, a non-refundable fee will accompany plans to provide

for the cost of plan review, administration and inspection for all projects subject to this Ordinance. The amount of this fee will be established by the Department in the County Fee Schedule.

10.0 INSPECTION

10.1 The Department or its authorized representative shall conduct inspections and file reports during construction of stormwater management systems to insure compliance with the approved plans. Any portion of the inspected work, which does not comply with the approved plans, will be promptly corrected by the developer or his agent as required in Section 10.3.

10.2 Notification and Requirements:

It shall be the responsibility of the developer or his representative to notify the Department forty-eight (48) hours prior to commencement of any work and forty-eight (48) hours prior to work at the specified stages of construction for stormwater management facilities and storm drain systems. The Department has the right to inspect stormwater management facilities and storm drain system construction at any stage.

The developer or his representative will make all necessary arrangements for providing to the Department a certification or letter supplemented with inspection reports documenting the required stages of construction and test results from a Maryland registered Professional Engineer for the construction of stormwater management facilities and storm drain systems.

The developer or his representative shall request for an inspection by the Department at the following specified stages of construction:

- A. Infiltration facilities, such as, but not limited to, infiltration basins, infiltration trenches and drywells:
 - (1) Upon completion of pre-excavation and construction of temporary sediment and erosion control measures;
 - (2) Upon completion of excavation;
 - (3) During the placement of filter fabric, observation well and base aggregate material;
 - (4) During the construction of concrete structures;
 - (5) During the construction of cut-off trench and embankment;

- (6) During the placement of surface layer;
- (7) During the final excavation; and
- (8) Upon completion of final grading and establishment of permanent vegetative stabilization.

B. Flow attenuation facilities, such as, but not limited to open vegetated swales, ditches and open channels:

- (1) Upon completion of pre-excavation and construction of temporary sediment and erosion control measures;
- (2) During placement and backfill of underdrain systems for drywells;
- (3) During the construction of check dams, diaphragms, or weirs; and
- (4) Upon completion of final grading and establishment of permanent vegetative stabilization.

C. Ponds:

- (1) Upon completion of pre-excavation and construction of temporary sediment and erosion control measures;
- (2) Upon completion of excavation to sub-foundation and when required, installation of structural supports or reinforcement for structures, including but not limited to:
 - a) Core trenches for structural embankments;
 - b) Inlet and outlet structures, anti-seep collars or diaphragms, and watertight connectors on pipes; and
 - c) Trenches for enclosed storm drainage facilities.
- (3) During placement of structural fill, concrete, and installation of piping and catch basins;
- (4) During backfill of foundations and trenches;

- (5) During embankment construction; and
 - (6) Upon completion of final grading and establishment of permanent stabilization.
- D. Wetlands - at the stages specific for pond construction in 10.2.C. of this section, during and after wetland reservoir area planting, and during the second growing season to verify a vegetation survival of at least 50 % (fifty percent).
- E. Filtering systems:
- (1) During excavation to subgrade;
 - (2) During placement and backfill of underdrain systems;
 - (3) During placement of geotextiles and all filter media;
 - (4) During construction of appurtenant conveyance systems such as flow diversion structures, prefilters and filters, inlets, outlets, orifices, and flow distribution structures; and
 - (5) Upon completion of final grading and establishment of permanent stabilization.
- F. Storm Drain System:
- (1) At beginning of excavation;
 - (2) During pipe laying and backfill;
 - (3) During placement of precast or construction of cast in-place structures;
 - (4) During placement of outlet protection; and
 - (5) Upon completion of final grading and establishment of permanent stabilization.
- G. Open channel systems:
- (1) During excavation to subgrade;
 - (2) During placement and backfill of under drain systems for dry swales;

- (3) During installation of diaphragm, check dams, or weirs; and
- (4) Upon completion of final grading and establishment of permanent stabilization.

The developer or his representative shall provide additional inspection testings and/or reports as field conditions may warrant as determined by the Department.

10.3 Notification of Non-Compliance:

If at any stage the work does not conform to this Ordinance to the approved plans and specifications, or to any instructions of the Department, a written notice to comply will be given to the developer and his/her surety company. Such notice shall set forth the nature of corrections required and the time within which corrections will be made. Upon failure to comply within the time specified, the developer will be considered in violation of this Article, in which case the bond, will be in default and penalties imposed as under Section 13.0. Warning Notices and Stop Work Orders may be issued on site by the Department, as deemed necessary, to regulate and enforce this Article during construction.

10.4 Testing:

The developer or his representative shall be responsible for making all necessary arrangements for the testing of materials required at specific stages of construction of stormwater conveyance systems and stormwater management facilities. The backfill material for core trench/cut-off trench and fill material for embankments shall be compacted to not less than 95% of the maximum dry density with a moisture content within $\pm 2\%$ of the optimum. Each layer of fill shall be compacted as necessary to obtain the density and tested according to NRCS and County Standards and Specifications. All compaction is to be determined by AASHTO method T-99. Stormwater management ponds shall be constructed per the most recent Maryland NRCS Standard and Specification Pond Code 378 and per approved plan and specifications. Concrete shall meet the requirements of Maryland State Highway Administration standard specifications for construction and materials. Testing of concrete shall be conducted per Maryland State Highway Administration standard method of test. Precast structures shall be constructed per ASTM standards. Concrete cylinder break reports are required by the Department for all cast in-place structures for drain systems and stormwater management facilities. All the test results shall be certified by a Professional Engineer licensed in the State of Maryland and to be submitted to the Department.

10.5 The developer or his agent will notify the Department for final inspection after the completion of permitted work per approved plans. The Department will require the following for their files:

- A. An "as-built" reproducible plan and survey by a Professional Land Surveyor and/or

Professional Engineer at the same scale as the original plan and showing all improvements and final grades. See the Plan Preparation Package for the minimum information required for “as-built” plans.

- B. Certification by the developer that all grading, drainage, erosion control measures, and permanent facilities and vegetative measures have been completed in conformance with the approved plans and specifications.
- C. A report summarizing the inspection reports and test results as per Section 10.2 & 10.4.

Final approval will be given in a timely manner after all work has been completed and the required documents have been submitted to the Department and reviewed. The developer will receive written notification of the results of the final inspection.

10.6 Certificate of Completion:

Upon completion of work, the Department shall submit notice of construction completion to the Administration within forty-five (45) days of construction completion. If detention or retention ponds are constructed, notice of construction completion shall also be submitted to the Charles Soil Conservation District.

11.0 MAINTENANCE

11.1 The Owner of any property containing a stormwater conveyance system and/or stormwater management facility, or any other person or agent in control of such property, shall maintain in good condition and promptly repair or restore such facility or system in accordance with the approved plans.

11.2 Maintenance shall be ensured through inspection of the facilities by the Department. The inspection shall occur during the first year of operation and at least once every three (3) years thereafter. After each inspection, reports shall be prepared and shall include:

- A. The condition of items needing maintenance or repairs, such as principal spillway, emergency spillway, embankment, reservoir area, outfall channel, fences, vegetation, sediment load, dewatering or any other items which could affect the proper functioning of the stormwater management facility.
- B. When the repairs are to be completed.

11.3 If any maintenance required by this Article is not done, the person responsible shall be notified

of the deficiency and a time frame for repairs will be specified. A subsequent inspection will be made to ensure completion of repairs. The required work shall be performed within a given specified time. In the event of an immediate danger to the public health or welfare of the community, nuisance and/or safety, notice shall be given by the most expeditious means and the hazard shall be eliminated immediately. In the event that the person responsible fails to take corrective action, the Department shall do the required work. The cost of such work by the Department shall be paid to the County by the person who failed to take corrective action and shall be a debt due to the County.

- 11.4 The County reserves the right of entry and the right to operate and maintain all private stormwater management and/or storm drainage facilities for which the Owners have failed to perform under the conditions of their operation and maintenance agreement. All costs incurred by the County for operation and maintenance shall be charged to the Owners of the facilities and such costs shall constitute a lien against all property subject to and benefitted by the original agreement. Such costs shall also be personal obligations of the property Owners at the time they are incurred, and shall be assessed, levied, collected and enforced as County real estate taxes are now, or may hereafter be, by law levied and collected, and shall have the same priority rights, bear the same interest and penalties, constitute a lien upon the real property so assessed and in every respect be treated the same as County real estate taxes.

12.0 SEVERABILITY

If any section, subsection, sentence, clause, phrase, or portion of this Ordinance is for any reason held invalid or unconstitutional by any court of competent jurisdiction, such portion shall be deemed a separate, distinct, and independent provisions and such holding shall not affect the validity of the remaining portion of this Ordinance; it being the intent of the County Commissioners of Charles County that this Ordinance shall stand, notwithstanding the invalidity of any section, subsection, sentence, clause, phrase, or portion hereof.

13.0 WATER QUALITY CONTROL

- 13.1 Legislative Intent - In addition to the general purposes of this Ordinance as set forth in section 1.0, this section 13.0 is further intended to:
- A. Implement federal regulations promulgated by the Environmental Protection Agency pursuant to the Clean Water Act of 1977 (P.L. 95-217), as amended.
 - B. To comply with the conditions of the County's National Pollutant Discharge Elimination System (NPDES) permit for discharges from the municipal separate storm sewer system.

- 13.2 Prohibited Actions

- A. No person shall:
 - (1) Discharge any significant materials or pollutant into any component of any municipal separate storm sewer system that would constitute an illicit discharge, or
 - (2) Create any condition that results in the potential for an illicit discharge that could result in the pollution of stormwater conveyed and discharged from any outfall of those systems, or
 - (3) In any way cause or contribute to any type of illicit discharge into those systems that could result in a potential for adverse impacts.
- B. No person shall alter or in any way, create an obstruction to flow, or alter the flow regime within a municipal separate storm sewer system that reduces its intended design capacity or that results in the system being unable to provide its intended function.
- C. No person shall create any new connection that is intended to introduce new or increased stormwater flow into any municipal separate storm sewer system unless reviewed and approved by the County.
- D. No person shall create any new connection or maintain any that currently exist that can introduce any discharge other than stormwater into any municipal separate storm sewer system.
- E. No person shall obstruct any outfall of any municipal separate storm sewer system that impedes the system design discharge.

13.3 Control of Water Quality

- A. The Director may order:
 - (1) The abatement of any illicit discharge and correction of any pollution of the waters of the State including the abatement and correction of any degradation of aquatic and riparian habitat attributed to such pollution; and
 - (2) The abatement and correction of any degradation of riparian habitat and aquatic life, caused by a failure to design, install, operate, or maintain sediment and erosion control, stormwater management, or agricultural best management practices in accordance with an approved sediment and erosion control plan or permit, a stormwater management plan or permit, a Soil Conservation Water

Quality Plan or Plan of Compliance Action.

- B. If illegal pollutant discharges from properties engaged in agriculture impair aquatic life or public health, cause stream habitat degradation, or result in water quality standards or criteria violations, the Department will pursue correction of these violations in conjunction with the Soil Conservation District and if necessary, the Administration. Abatement of any violations will be handled in accordance with a Memorandum of Understanding between the Department and the Soil Conservation District regarding the specific notification and enforcement procedures to be followed in cases of water pollution caused by agriculture.
- C. BMPs used to comply with this Ordinance will be designed, installed, operated and maintained in accordance with the approved sediment and erosion control plans and permits and the approved stormwater management plan. Agricultural BMPs must be designed, installed, operated and maintained in accordance with the soil conservation and water quality plans approved by the Soil Conservation District.

13.4 Enforcement and Compliance

- A. The Department may enter a site at any time during normal business hours, and at other times the Department deems as reasonable, to inspect, investigate, or monitor activities subject to this Ordinance. If the person in charge does not consent to any entry by the Department, the Director must obtain an administrative search warrant from a court with jurisdiction by showing that reasonable administrative standards for inspecting have been met.
- B. Upon finding a violation of this Ordinance, the Director may issue a notice of violation, stop work order, or corrective order to any person causing or permitting a violation.
- C. The Director of the Department may issue a stop work order to any person who violates this Ordinance when performing activities authorized by a building permit, Development Services permit, a sediment and erosion control permit or any other permit issued by any agency for work within the County.
- D. When the Department determines that a violation of section 13.2 has occurred, the Department shall notify the onsite personnel and person or permittee committing the violation in writing of the violation, describe the required corrective action, and specify the time period in which to have the violation corrected.
- E. If the violation persists after the time and date specified for corrective action of violation, the Department shall stop work on the site. The Department shall determine the extent

to which work must be stopped, which may include all work on the site except that work necessary to correct the violation.

- F. If a discharge is observed which represents an immediate hazard or potential hazard to public health or safety or welfare, or to aquatic life, the Director or employees of the sheriff's office, emergency services, and any other agent of the County designated by the commissioners, may enter any property or structure, except a dwelling, as necessary to prevent or stop the hazard.
- G. A person must not hinder, prevent, or unreasonably refuse to permit any inspection, investigation, or monitoring under this Ordinance.
- H. Any person who causes or permits a violation of this Ordinance to occur must submit a plan of compliance action when required by the Department. This plan of compliance action must be approved by the Director prior to implementation. Any person submitting the plan of compliance action must obtain any associated federal, state, County or local permits as required by law.
 - (1) The Director may require the owner or operator, in compliance with the plan to:
 - a) Maintain records to demonstrate compliance;
 - b) Prepare and file reports to demonstrate compliance; and
 - c) Sample and provide physical, biological, or chemical analysis of discharges by using:
 - 1. State certified laboratory; and
 - 2. Sampling methods where, when and how the Department requires.
- I. Upon request of the Department, the owner or operator must provide any records, manifests, and invoices for review. If the documents are not available at the time of the request, the owner or operator must produce records within the designated time allowed by the Director.
- J. A person who has submitted a plan of compliance action that has been approved by the Director and any other permitting agency is not in violation of this Ordinance provided all requirements are implemented in time frames required by the Department.

- K. Any violation of this Ordinance is a violation. Each day a violation continues is a separate violation.
- I. In addition to any other remedy allowed by law, the Department may seek injunctive or other appropriate judicial relief to prevent or stop violations of this Ordinance.

13.5 Liability for Expenses Caused by a Violation

- A. In an immediate danger to the public health, safety or welfare, the Director will notify the responsible party by the most expeditious means, and the party who was notified must remove the illicit discharge or pollutant by the time stated in the notice. If not so removed, the County may remove, mitigate, and clean up any illicit discharge or pollutant. The cost of that clean-up must be paid to the County by the person causing the illicit discharge. The debt associated for the illicit discharge borne by the County is due to the County. This section does not restrict the County from proceeding directly with alternative enforcement procedures as allowed by law.
- B. If, after an inspection by the County, the Director finds that a pollutant discharge poses an immediate hazard to the public health, safety or welfare or to the waters of the state, the Director must take action necessary to abate the pollutant discharge, protect the public, and mitigate any damage that the pollutant discharge has caused to the affected waters. Any cost incurred in carrying out actions under this subsection must be paid by the owner under subsection A.
- C. The Director may establish fees and charges necessary to administer and enforce this Ordinance.

14.0 PENALTIES

- A. Civil Action - The County may bring a civil action against any person for any violation of the provisions of this Ordinance or adopted or approved stormwater management plan. The action may seek the imposition of a civil penalty of not more than \$10,000 against the person, an injunction to prohibit the person from continuing the violation or both.
- B. Criminal Action - Any person convicted of violating the provisions of this Ordinance shall be guilty of a misdemeanor, and upon conviction thereof, shall be subject to a fine of not more than Five Thousand Dollars (\$5,000.00) or imprisonment not exceeding 1 year or both for each and every violation with costs imposed in the discretion of the court. Each day that the violation continues shall be a separate offense. In addition thereof, the Department may institute injunctive or other appropriate action or proceedings at law or equity for the enforcement of this Ordinance or to correct violations of this Ordinance

, and any court of competent jurisdiction shall have the right to issue restraining orders, temporary or permanent injunctions or other appropriate forms of remedy or relief.

15.0 EFFECTIVE DATE

And be it further enacted, that this Ordinance as revised, shall take effect July 1, 2001.

16.0 TRANSITION PROVISIONS

- A. The requirements established in this Ordinance shall not apply to any construction proposed pursuant to a valid permit issued prior to July 1, 2001.
- B. The requirements established in this ordinance shall not apply to pending permit applications received prior to July 1, 2001 provided these permit applications are issued and that manifest commencement of work is undertaken on or before June 30, 2002.

INSTRUCTION - STORMWATER MANAGEMENT AND RIGHT-OF-WAY
INSPECTION AND MAINTENANCE AGREEMENT

Attached is a sample inspection and maintenance agreement for the use of an on-site or off-site stormwater management facility, execution of which is required in all cases where property is served by a private stormwater management facility.

Provisions contained in the sample must be contained in all inspection and maintenance agreements as a condition for the issuance of a Permit.

Use appropriate pronouns and verb tense required by the particular circumstance.

IMPORTANT

Please note the following additional items which shall be contained in the inspection and maintenance agreement.

1. The inspection and maintenance agreement must be signed by all parties with an interest in both the subject property and the property on which the facility is located, and must contain proper acknowledgment of their signatures. If an interested party is a corporation or partnership, the signing individual shall indicate his or her legal authority to sign on behalf of the corporation or partnership.
2. All inspection and maintenance agreements must be accompanied by a current certificate of title or other similar documents indicating all parties in interest whose signatures are required for the execution which encumbers property with covenants and liabilities that run with the land.

INSPECTION AND MAINTENANCE
OF PRIVATE ON-SITE STORMWATER MANAGEMENT FACILITY AGREEMENT
DECLARATION OF COVENANTS

This Declaration and Agreement made this _____ day of _____, 20__, by and between _____, hereinafter referred to as the "Covenantor(s)", owner(s) of the property located at:

hereinafter referred to as the "subject property", and the County Commissioners of Charles County, Maryland, a public body corporate and politic, organized under the laws of the State of Maryland, hereinafter referred to as the "County":

WITNESSETH:

WHEREAS, the Covenantor(s) desire(s) to develop or redevelop all or portions of the subject property; and

WHEREAS, prior to said developing or redeveloping, the Covenantor(s) is/are required by the Charles County Stormwater Management Ordinance to provide for certain stormwater management and to obtain a Development Services Permit, hereinafter alternatively referred to as "Permit"; and

WHEREAS, the Covenantor(s) has/have applied for permit for land disturbing activity at the subject property and desire(s) to utilize a privately owned and operated stormwater management facility located on the subject property (alternatively referred to hereinafter as the "on-site facility" or the "facility"); and

WHEREAS, the Charles County Stormwater Management Ordinance require that as a condition of the issuance of a Permit for development or redevelopment of properties to be served by a privately owned and operated stormwater management facility, an inspection and maintenance agreement be executed by the applicant(s) for a Permit prior to release of bonds covering stormwater management; and

WHEREAS, Covenantor(s) has/have full authority to execute this Declaration and Agreement so as to bind the subject property and all its current and future owners, successors and assigns.

NOW, THEREFORE, in consideration of the issuance by the County of Development Services Permit No. _____, and in accordance with the requirements of the Charles County Stormwater Management Ordinance, the Covenantor(s) does/do hereby covenant and agree(s) as follows:

1. The Covenantor(s) shall construct and/or provide for the maintenance of the on-site facility to insure that said facility is and remains in proper working condition in accordance with approved design standards and

with applicable laws, rules and regulations. If necessary, the Covenantor(s) shall levy regular or special assessments against any and all present or subsequent owners of other property served by the facility to insure that the facility is properly maintained.

2. The County shall inspect the facility. If, after reasonable notice by the County, the Covenantor(s) shall fail to construct, repair, maintain or operate the facility within a reasonable period of time (30 days maximum) in accordance with the approved design standards and with the law and all applicable rules and regulations, the County is obligated to enter onto the facility and perform all necessary construction, repair, maintenance and operating work, and may assess the Covenantor(s) for the cost of said work. Said assessment shall be a lien against the subject property and may be placed on the property tax bill of said property and collected as ordinary taxes by the County. If property other than the subject property is also served by the facility and is the subject of a similar Inspections and Maintenance Agreement with the County, the owner(s) of all such properties shall be jointly and severally liable for the cost of any and all work performed by the County pursuant to this paragraph, and all said properties are jointly and severally subject to the imposition of liens pursuant to the provisions of this paragraph.
3. The Covenantor(s) does/do hereby grant and shall continue to grant the County, its successors, agents and contractor(s) the right of entry to the facility for the purpose of inspecting, and, if necessary, operating, installing, constructing, reconstructing, maintaining, or repairing the facility, and shall provide and maintain perpetual access from public rights-of-way to the facility for the County its successors, agent(s) and contractor(s) for said purposes. The Covenantor(s) shall also grant to the County easements and rights-of-way necessary for the foregoing purposes.
4. The Grantor acknowledges that the County may exercise its emergency authority provided for by Law.
5. The Covenantor(s) shall indemnify and save the County harmless from any and all claims for damages to persons or property arising from the installation, construction, failure, reconstruction, maintenance, repair, operation and use of the facility.
6. The Covenantor(s) shall notify the County of the legal and/or equitable transfer of any of the Covenantor(s) responsibilities for the facility within thirty (30) days of such transfer and shall supply the County with a copy of any documents of transfer, executed by both parties.
7. This Declaration of Covenants and Agreement in no way relieves the Covenantor(s) of responsibility for providing stormwater drainage, in addition to the on-site stormwater management facility, as it may be deemed necessary by the County or other appropriate agency.
8. This Agreement and the covenants contained herein shall run with the land and shall bind the Covenantor(s) and the Covenantor(s) heirs, executors, administrators, successors and assigns, and shall bind all present and subsequent owners of the subject property.

PRIVATE EASEMENT OF STORMWATER MANAGEMENT AND
RIGHT-OF-WAY TO THE
COUNTY COMMISSIONERS OF CHARLES COUNTY, MARYLAND

MADE this _____ date of _____, 20____, by and between _____, hereinafter referred to as the "Grantor", and The County Commissioners of Charles County, Maryland, a public body corporate and politic of the State of Maryland, hereinafter referred to as the "County".

WITNESSETH:

In consideration of the issuance of a Development Services Permit by the County, the Grantor(s) does/do hereby grant and convey to the County, its successors and assigns forever and in perpetuity, the stormwater management easement and right-of-way hereinafter described for the installation, construction, reconstruction, maintenance, repair, operation and inspection of a stormwater management facility, hereinafter referred to as the "facility", within said easement and right-of-way, together with the right of ingress and egress along, over, under and through said right-of-way, for any and all such purposes; said right-of-way and easement being, described as follows:

Insert Metes and Bounds Description of Easement and Right-of-Way from a public road to the facility.

The said easement and right-of-way is hereby intended to be granted and conveyed, together with the rights, privileges, appurtenances, and advantages thereto belonging or appertaining to their proper use and benefit forever by the County, its successors and assigns.

AND the Grantor(s), for herself/himself, their selves/itself, her/his/their/it, heirs, successors and assigns, covenant(s) and agree(s) as follows:

FIRST: That the Grantor(s) will never erect nor permit to be erected a building or structure of any nature, whatsoever, nor fill or excavate within said easement and right-of-way without the County's prior written consent.

SECOND: That the County, its successors and assigns, shall at all times have the right of ingress and egress over said easement and right-of-way for the purpose of installing, constructing, reconstructing, maintaining, repairing, inspecting and operating the facility and appurtenances thereto; said ingress and egress to be along the line herein designated and along such other lines as the Grantor(s) may designate; the foregoing right as ingress and egress in no way obligates the County to exercising said right for any of the aforementioned purposes.

THIRD: That the Grantor(s) will warrant specially said easement and right-of-way, and will execute such further assurances thereof as may be requisite.

Recommended Safety Features
for
Stormwater Management Basins

Wet Basins - If a wet basin is designed according to NRCS Pond Code 378, then the more restrictive of the following recommended safety features or those listed in the referenced code shall apply.

- A vegetative buffer zone, at least 50 feet in width, should be provided where residential lots are in close proximity to the basin. This area will provide a physical vegetative barrier to prevent open access to the basin. This buffer area may be planted or may be left in a natural state. If the buffer area has to be excavated, it should be graded to a slope of not less than 2 percent and not greater than 20 percent. Residential lots should not be included the buffer area.
- All slopes including the dam itself should be on a slope not steeper than 3:1.
- A bench should be provided 6" to 1' above the normal pool suitable for access for maintenance and emergency vehicles and to serve as a safety feature. This bench should have a minimum slope of 2 percent toward the slope of normal pool. The bench should be stabilized with 2" to 4" bluestone 6" CR6 or other accessible material as vehicle access road leading to the outfall, inlet structure and forebay area only. All other areas of the bench should be stabilized by vegetation.
- For wet ponds deeper than 2 feet an underwater bench should be provided extending 5 feet into the normal pool. This bench should be on a flat grade of 2 percent and should be 6" to 1' below the normal pool elevation and extend around the entire perimeter of the pool. This bench area should be planted with wetland vegetation to act as a physical barrier restricting access to the pool.
- Trees or woody plants are not allowed on the embankment or maintenance access road. Landscaping of the basin shall be provided as a part of the approved stormwater management plan. Trees may be planted within the buffer or basin area as approved by the Department or as allowed in the Design Manual.
- The control structure should be incorporated into the dam embankment. Some fencing may be appropriate around the structure depending on the design. A trash rack/antivortex grate should be placed over all control openings.
- Ponds should be designed in accordance with the applicable safety standards discussed above, and not rely on fencing for safety. Fencing may be installed around private ponds, by the owner, but such fencing

should not be used in lieu of adherence to the pond safety design standards and guidelines.

- All manhole covers for riser structures should be bolted down.
- Warning signs clearly stating the possible hazards and listing the prohibited usages, such as ice skating, swimming, boating, etc. should be installed for all facilities.

Extended Detention Basins

These basins should incorporate the same safety features as a wet basin with the following exceptions:

- The safety bench should be placed 1 to 1.5 feet below the designed Cp_v control elevation.
- When landscaping the basin, trees which are tolerant to wet conditions should be planted within the extended detention ponding area.
- Benching is not necessary for basins with extended detention depth averaging less than 2 feet across the floor.

Special Considerations

- When fencing is necessary, vegetation screening is appropriate.
- For large multi-use facilities where recreation is planned, additional safety features may be required as necessary to make the facility suitable for the intended use.

PERMISSIBLE VELOCITY AND PERMISSIBLE TRACTIVE FORCE
 FOR UNLINED EARTHEN CHANNELS
 (FOR WATER TRANSPORTING COLLOIDAL SILTS)

<i>Materials</i>	<i>Permissible Velocity</i>	<i>Permissible Tractive Force</i>
	<i>(ft/sec)</i>	<i>(lbs/ft²)</i>
Fine Sand	2.5	0.075
Sandy Loam (noncolloidal)	2.5	0.075
Silt Loam (noncolloidal)	3.0	0.11
Ordinary Firm Loam	3.5	0.15
Fine Gravel	5.0	0.32
Stiff Clay (very colloidal)	5.0	0.46
Graded, Loam to Cobbles (noncolloidal)	5.0	0.66
Graded, Silt to Cobbles (colloidal)	5.5	0.80
Alluvial Silts (noncolloidal)	3.5	0.15
Alluvial Silts (colloidal)	5.0	0.46
Coarse Gravel (noncolloidal)	6.0	0.67
Cobbles and Shingles	5.5	1.10
Shales and Hardpans	6.0	0.67

PRIVATE DRAINAGE EASEMENT
PRIVATE STORMWATER MANAGEMENT EASEMENT
INSPECTION AND MAINTENANCE AGREEMENT

This agreement is made this _____ day of _____, 20__, by and Between _____ (Grantor), and the County Commissioners of Charles County, Maryland, a body corporate and politic, (County).

Witnesseth, that in consideration of the sum of one dollar (\$1.00), the receipt of which is hereby acknowledged, the Grantor does hereby grant and convey to County a perpetual easement to inspect (and operate as necessary only as described herein) a private stormwater conveyance system consisting of ditches, swales, channels, culverts, storm drains and other appurtenant facilities for the purpose of depositing water within the boundary of the permanent easement(s) as more particularly described and indicated as _____

_____ in the subdivision _____ as shown on a plat recorded among the land records of Charles County, Maryland in plat book _____, page(s) _____; and/or private stormwater management facilities, consisting of ponds, basins, trenches, drywells, buffers, separators, shallow marshes, ditches, filters or other approved appurtenant facilities for the purpose of providing quantity and/or quality stormwater management within the easement(s).

And the Grantor covenants and agrees with the County as follows: **First:** All drainage improvements, all stormwater management facilities, all access drives and appurtenant facilities which will be installed in the easement(s) shall remain the property of Grantor. **Second:** At no time shall Grantor charge the County for the use of the property occupied by the County or for the privilege of exercising the rights granted under this agreement. **Third:** County, its agents, and employees shall have the right of access from a public road to the easement(s) over the property of Grantor. **Fourth:** County shall have such rights and privileges as may be reasonable for the full enjoyment or use of the easement(s) herein granted. **Fifth:** Grantor reserves the right to make use of the easement(s) herein granted in a manner which is not inconsistent with the rights herein conveyed, or which does not interfere with the use of the easement(s) by County for the purposes of this agreement. However, Grantor shall not erect any building, fence or other structure on the easement(s) without obtaining the prior written approval of the County.

Grantor further covenants and agrees that it shall be responsible for and agrees to perform the necessary maintenance to allow the proper and efficient flow of water through the system within the easement(s) and to perform the necessary maintenance to allow access and proper operation of the stormwater management facility within the easement(s). Should Grantor fail to construct, repair or maintain the system or facility, or should the system within the easement(s) become blocked so that the water will not flow in an efficient manner, or the access become impassable or the stormwater

management facility fail to function as designed, Grantor shall make necessary repairs or maintenance to allow the proper and efficient flow of water, or to allow access to the stormwater management facility or to allow the stormwater management facility to function as designed. If, after reasonable notice by the County, the Grantor shall fail to construct, repair, maintain or operate the facility within a reasonable period of time in accordance with the approved design standards and with the law and all applicable rules and regulations, the County is not obligated to enter onto the facility and perform all necessary construction, repair, maintenance and operating work, and may assess the Grantor for the cost of said work. The assessment shall be a lien against all property subject to and benefitted by the systems and facilities described in this agreement. Such costs shall be assessed, levied, collected and enforced as County real estate taxes are now, or may hereafter be, by law levied and collected, and shall have the same priority rights, bear the same interest and penalties, constitute a lien upon the real property so assessed, be placed upon the property tax bill and in every respect be treated the same as County real estate taxes. Such costs shall also be personal obligations of the owners of the property at the time the costs are incurred, and may be collected accordingly.

Grantor warrants that it is seized of the property subject to the easement(s) and has the right to convey the easement(s); that there are no encumbrances; that County shall have quiet enjoyment; and that Grantor shall execute such further assurances as may be required.

This agreement and the covenants contained herein shall run with the land and shall bind the Grantor and the Grantor's heirs, executors, administrators, successors and assigns, and shall bind all present and subsequent owners of the subject property.

Lienholders join herein for the purpose of releasing any deeds of trust, mortgages or other liens as to the easement(s). The liens as to the remainder of the property will not be affected. The parties, date of instrument, and recordation information for the instrument being partially released are as follows:

Witness our hands and seals:

ATTEST:

GRANTOR:

_____ (seal)

State of Maryland, Charles County, to wit:

I hereby certify, that on this _____ day of _____, 20____, before me, the subscriber, a notary public of the state and County aforesaid, personally appeared _____ and acknowledged the foregoing easement to be his/her _____ duly authorized act.

As witness my hand and notarial seal.

Notary Public

My commission expires: _____

LIENHOLDER:

Witness: _____ (seal)

Witness: _____ (seal)

State of Maryland, Charles County, to wit:

I hereby certify, that on this _____ day of _____, 20____, before me, the subscriber, a notary public of the state and County aforesaid, personally appeared _____ and acknowledged the foregoing easement to be his/her _____ duly authorized act.

As witness my hand and notarial seal.

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My commission expires: _____

State of Maryland, Charles County, to wit:

I hereby certify, that on this _____ day of _____, 20____, before me, the subscriber, a notary public of the state and County aforesaid, personally appeared _____ and acknowledged the foregoing easement to be his/her _____ duly authorized act.

As witness my hand and notarial seal.

Notary Public

My commission expires: _____

APPROVED FOR ACCEPTANCE:

APPROVED AS TO LEGAL SUFFICIENCY:

Director
Planning and Growth Management

County Attorney

ATTEST:

County Commissioners of
Charles County, Maryland

Clerk

President

PUBLIC DRAINAGE EASEMENT
PUBLIC STORMWATER MANAGEMENT EASEMENT

This agreement is made this _____ day of _____, 20__, by and between _____ (Grantor), and the County Commissioners of Charles County, Maryland, a body corporate and politic, (County).

Witnesseth, that in consideration of the sum of one dollar (\$1.00), the receipt of which is hereby acknowledged, the Grantor does hereby grant and convey to County a perpetual easement to inspect, operate and maintain a public stormwater conveyance system consisting of ditches, swales, channels, culverts, storm drains and other appurtenant facilities for the purpose of depositing water within the boundary of the permanent easement(s) or more particularly described and indicated as _____

_____ in the Subdivision _____ as shown on a plat recorded among the land records of Charles County, Maryland in plat book _____, page(s) _____; and/or public stormwater management facilities, consisting of ponds, basins, trenches, drywells, buffers, separators, shallow marshes, ditches, filters or other approved appurtenant facilities for the purpose of providing quantity and/or quality stormwater management within the easement(s).

And the Grantor covenants and agrees with the County as follows: **First:** All drainage improvements, all stormwater management facilities, all access drives and appurtenant facilities which will be installed in the easement(s) shall remain the property of Grantor. **Second:** At no time shall Grantor charge County for the use of the property occupied by County or for the privilege of exercising the rights granted under this agreement. **Third:** County, its agents, and employees shall have the right of access from a public road to the easement(s) over the property of Grantor. **Fourth:** County shall have such rights and privileges as may be reasonable for the full enjoyment or use of the easement(s) herein granted. **Fifth:** Grantor reserves the right to make use of the easement(s) herein granted in a manner which is not inconsistent with the rights herein conveyed, or which does not interfere with the use of the easement(s) by County for the purposes of this agreement. However, Grantor shall not make or erect any improvements whatsoever, including buildings, fences or other structures on the easement(s) without obtaining the prior written approval of County. **Sixth:** After final approval of construction of the systems or facilities, County agrees to perform the necessary maintenance to allow the proper and efficient flow of water through the systems or facilities within the easement.

Grantor warrants that it is seized of the property subject to the easements(s) and has the right to convey the easement(s); that there are no encumbrances; that County shall have quiet enjoyment; and that Grantor shall execute such further assurances as may be required.

This agreement and the covenants contained herein shall run with the land and shall bind the Grantor and the Grantor's heirs, executors, administrators, successors and assigns, and shall bind all present and subsequent owners of the subject property.

Lienholders join herein for the purpose of releasing any deeds of trust, mortgages or other liens as to the easement(s). The liens as to the remainder of the property will not be affected. The parties, date of instrument, and recordation information for the instrument being partially released are as follows:

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As witness my hand and notarial seal.

Notary Public

My commission expires: _____

LIENHOLDER:

Witness: _____ (seal)

Witness: _____ (seal)

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Director
Planning and Growth Management

County Attorney

ATTEST:

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Charles County, Maryland

Clerk

President