STORMWATER MANAGEMENT ORDINANCE

ORDINANCE NO. 12-01

TOWNSHIP OF CODORUS

YORK COUNTY, PENNSYLVANIA

Adopted

MARCH 14
~~February 8~~, 2012

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ARTICLE I - GENERAL PROVISIONS

Section 101. Short Title

This Ordinance shall be known and may be cited as the "Codorus Township Stormwater Management Ordinance."

Section 102. Statement of Findings

The Board of Supervisors of Codorus Township finds that:

A. Inadequate management of accelerated runoff of stormwater resulting from development throughout a watershed increases flows and velocities, contributes to erosion and sedimentation, overtaxes the carrying capacity of streams and storm sewers, greatly increases the cost of public facilities to carry and control stormwater, undermines flood plain management and flood control efforts in downstream communities, reduces groundwater recharge, threatens public health and safety, and increases non-point source pollution of water resources.

B. A comprehensive program of stormwater management, including reasonable regulation of development and activities causing accelerated runoff, is fundamental to the public health, safety, and welfare and the protection of people of the Commonwealth, their resources, and the environment.

C. Stormwater is an important water resource, which provides groundwater recharge for water supplies and base flow of streams, which also protects and maintains surface water quality.

D. Federal and state regulations require certain municipalities to implement a program of stormwater controls. These municipalities are required to obtain a permit for stormwater discharges from their separate storm sewer systems under the National Pollutant Discharge Elimination System (NPDES).

Section 103. Purpose

The purpose of this Ordinance is to promote health, safety, and welfare within the Township and its watershed(s) by minimizing the harm and maximizing the benefits described in Section 102 of this Ordinance, through provisions designed to:

A. Meet legal water quality requirements under state law, including regulations at 25 Pa. Code 93 to protect, maintain, reclaim, and restore the existing and designated uses of the waters of this Commonwealth.

B. Preserve the natural drainage systems as much as possible.

C. Manage stormwater runoff close to the source.

D. Provide procedures and performance standards for stormwater planning and management.

E. Maintain groundwater recharge to prevent degradation of surface and groundwater quality and to

otherwise protect water resources.

F. Prevent scour and erosion of stream banks and stream beds.

G. Provide proper operation and maintenance of all SWM BMPs that are implemented within the Township.

H. Provide standards to meet NPDES permit requirements.

Section 104. Statutory Authority

A. Primary Authority:

The Township is empowered to regulate land use activities that affect stormwater impacts by the authority vested in Second Class Townships by the Second Class Township Code, 53 P.S. § 65101 through §67201, and the Act of October 4, 1978, P.L. 864 (Act 167), 32 P.S. Section 680.1, et seq., as amended, the "Stormwater Management Act."

B. Secondary Authority:

The Township is also empowered to regulate land use activities that affect runoff by the authority of the Act of July 31, 1968, P.L. 805, No. 247, The Pennsylvania Municipalities Planning Code, as amended.

Section 105. Applicability

All regulated activities and all activities that may affect stormwater runoff, including land development and earth disturbance activity, are subject to regulation by this Ordinance.

Section 106. Repealer

Any other ordinance provision or regulation of the Township inconsistent with any of the provisions of this Ordinance is hereby repealed to give this Ordinance full force and effect to the extent of the inconsistency only.

Section 107. Severability

In the event that a court of competent jurisdiction declares any section, clause or provision of this Ordinance invalid, such decision shall not affect the validity of any of the remaining sections, clauses or provisions of this Ordinance.

Section 108. Compatibility with Other Permit and Ordinance Requirements

Permits and approvals issued pursuant to this Ordinance do not relieve the applicant of the responsibility to secure required permits or approvals for activities regulated by any other applicable code, rule, act or ordinance. If more stringent requirements concerning regulation of stormwater or erosion and sedimentation control are contained in another code, rule, act or ordinance, the more stringent regulations shall apply.

Section 109. Interpretation

Unless otherwise expressly stated, the succeeding shall, for the purposes of this Ordinance, be interpreted in the following manner:

A. Words used in the present tense also imply the future tense.

B. Words used in the singular imply the plural, and vice versa.

C. Words of masculine gender include feminine gender, and vice versa.

D. The words and abbreviation "includes," "including," "shall include," "such as," and "e.g." are not limited to the specific example(s) given but are intended to extend the word's or words' meaning(s) to all other instances of like kind and character.

E. The words "person", "applicant", or "developer" include, a partnership, corporation, or other legal entity, as well as an individual.

F. The words "shall", "required", or "must" are mandatory; the words "may" and "should" are permissive.

Section 110. Erroneous Permit

Any permit or authorization issued or approved based on false, misleading or erroneous information provided by an applicant is void without the necessity of any proceedings for revocation. Any work undertaken or use established pursuant to such permit or other authorization is unlawful. No action may be taken by a board, agency or employee of the Township purporting to validate such a violation.

ARTICLE II - DEFINITIONS

Accelerated Erosion – The removal of the surface of the land through the combined action of man's activities and natural processes at a rate greater than would occur because of the natural processes alone.

Act 167 - Act of October 4, 1978, P.L.864, (Act 167), as amended, and known as the "Stormwater Management Act".

Agricultural Activity - Activities associated with agriculture such as, but not limited to, agricultural cultivation, agricultural operations, and animal heavy use areas. This includes the work of producing crops including tillage, land clearing, plowing, disking, harrowing, planting, harvesting crops or pasturing and raising of livestock and installation of conservation measures. Construction of new buildings or impervious area is not considered an agricultural activity.

Applicant - A landowner, developer, or other person who has filed an application to the Township for approval to engage in any regulated activity at a project site in the Township.

Best Management Practice (BMP) - Activities, facilities, designs, measures, or procedures used to manage stormwater impacts from regulated activities, to meet state water quality requirements, to promote groundwater recharge, and to otherwise meet the purposes of this Ordinance. Stormwater BMPs are commonly grouped into one of two broad categories or measures: "structural" or "nonstructural." In this Ordinance, nonstructural BMPs or measures refer to operational and/or behavior-related practices that attempt to minimize the contact of pollutants with stormwater runoff whereas structural BMPs or measures are those that consist of a physical device or practice that is installed to capture and treat stormwater runoff. Structural BMPs include, but are not limited to, a wide variety of practices and devices, from large-scale retention ponds and constructed wetlands, to small-scale underground treatment systems, infiltration facilities, filter strips, low impact design, bioretention, wet ponds, permeable paving, grassed swales, riparian or forested buffers, sand filters, detention basins, and manufactured devices. Structural stormwater BMPs are permanent appurtenances to the project site.

BMP Manual - Pennsylvania Stormwater Best Management Practices Manual, as amended and updated.

Clean Water Act – The Federal Water Pollution Control Act, 33 U.S.C. §1251 *et seq.,* and any subsequent amendments thereto.

Conservation District - The York County Conservation District, which District is as defined in Section 3(c) of the Conservation District Law (3 P. S. § 851(c)) that has the authority under a delegation agreement executed with DEP to administer and enforce all or a portion of the regulations promulgated under 25 Pa. Code 102.

Construction Activity – activities subject to NPDES construction permits. NPDES Storm Water Phase II permits will be required for construction projects resulting in land disturbance of one acre or more. Such activities include but are not limited to clearing and grubbing, grading, excavating and demolition.

County - York County Pennsylvania

Culvert – A structure which carries surface water through an obstruction.

Dam - An impoundment structure regulated by the Pennsylvania DEP Chapter 105 regulations.

DEP - The Pennsylvania Department of Environmental Protection.

Design Storm - The magnitude and temporal distribution of precipitation from a storm event measured in probability of occurrence, e.g., a 5-year storm, and duration, e.g., 24 hours, used in the design and evaluation of stormwater management systems. Also see Return Period.

Developer - Any person, partnership, association, corporation or other entity, or any responsible person therein or agent thereof, that undertakes any Regulated Activity.

Detention Basin - A structure designed to retard stormwater runoff by temporarily storing and releasing the runoff at a predetermined rate.

Detention District – Those subareas in which some type of detention is required to meet the plan requirements and the goals of appropriate and approved Act 167 Plans

Detention Volume - The volume of runoff that is captured and released into the waters of this Commonwealth at a controlled rate.

Development Site (Site) - See Project Site.

Disconnected Impervious Area (DIA) - An impervious or impermeable surface that is disconnected from any stormwater drainage or conveyance system and is redirected or directed to a pervious area, which allows for infiltration, filtration, and increased time of concentration as specified in Appendix B. Disconnected Impervious Area of this Ordinance.

Disturbed Area - An unstabilized land area where an earth disturbance activity is occurring or has occurred.

Down-slope Property Line – That portion of a property line of a lot or parcel of land being developed located such that overland or pipe flow from the development site would be directed toward it.

Drainage Conveyance Facility – A stormwater management facility designed to transmit stormwater runoff, including but not limited to, streams, channels, swales, pipes, conduits, culverts and storm sewers.

Drainage Easement – A limited right of use granted in private land, allowing the use of private land for stormwater management purposes, where in no structure may be constructed.

Earth Disturbance Activity - A construction or other human activity which disturbs the surface of the land, including, but not limited to: clearing and grubbing; grading; excavations; embankments; road maintenance; building construction; and the moving, depositing, stockpiling, or storing of soil, rock, or earth materials.

Erosion - The natural process by which the surface of the land is worn away by water, wind, or chemical action.

E & S Manual - Erosion and Sediment Pollution Control Manual, as amended and updated.

Erosion and Sediment Control Plan - A site specific plan consisting of both drawings and a narrative that identifies BMPs to minimize accelerated erosion and sedimentation before, during and after earth disturbance activity.

Existing Condition - The dominant land cover during the 5-year period immediately preceding a proposed regulated activity.

FEMA - Federal Emergency Management Agency.

Flood – A general but temporary condition of partial or complete inundation of normally dry land areas from the overflow of streams, rivers, and other waters of this Commonwealth.

Floodplain - Any land area susceptible to inundation by water from any natural source as delineated by applicable FEMA maps and studies as being a special flood hazard area.

Floodway - The channel of the watercourse and those portions of the adjoining floodplains that are reasonably required to carry and discharge the 100-year flood. Unless otherwise specified, the boundary of the floodway is as indicated on maps and flood insurance studies provided by FEMA. In an area where no FEMA maps or studies have defined the boundary of the 100-year floodway, it is assumed, absent evidence to the contrary, that the floodway extends from the stream to 50 feet from the top of the bank of the stream.

Forest Management/Timber Operations - Planning and activities necessary for the management of forest land. These include conducting a timber inventory, preparation of forest management plans, silvicultural treatment, cutting budgets, logging road design and construction, timber harvesting, site preparation, and reforestation.

Groundwater Recharge – Replenishment of existing natural underground water supplies.

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

Hydrologic Soil Group (HSG) - Infiltration rates of soils vary widely and are affected by subsurface permeability as well as surface intake rates. Soils are classified into four HSGs (A, B, C, and D) according to their minimum infiltration rate, which is obtained for bare soil after prolonged wetting. The NRCS defines the four groups and provides a list of most of the soils in the United States and their group classification. The soils in the area of the development site may be identified from a soil survey report that can be obtained from local NRCS offices or conservation district offices. Soils become less pervious as the HSG varies from A to D (NRCS 3,4).

IWRP - The York County Integrated Water Resources Plan, which Plan includes Act 167 Plan elements and requirements.

Impervious Surface (Impervious Area) - A surface that prevents the infiltration of water into the ground. Impervious surfaces and areas shall include, but not be limited to, roofs, additional indoor living spaces, patios, garages, storage sheds and similar structures, and any new streets and sidewalks. However, any surface or area designed, constructed and maintained to permit infiltration as specified herein shall be considered pervious, not impervious. For the purposes of this Ordinance, a surface or area shall not be considered impervious if such surface or area does not diminish the capacity for infiltration of stormwater for storms up to, and including, a two (2)-year 24-hour storm event.

Infiltration - The entrance of surface water into the soil, usually at the soil-air interface.

Infiltration Structures – A structure designed to direct runoff into the ground (e.g. french drains, seepage pits, seepage trench).

Karst - A type of topography or landscape characterized by surface depressions, sinkholes, rock pinnacles/uneven bedrock surface, underground drainage, and caves. Karst landscapes are formed on carbonate rocks, such as limestone or dolomite.

Land Development - Shall include any of the following activities:

A. the improvement of one lot or two or more contiguous lots, tracts, or parcels of land for any purpose involving:

   1. a group of two (2) or more residential or nonresidential buildings, whether proposed initially or cumulatively, or a single nonresidential building on a lot or lots regardless of the number of occupants or tenure; or

   2. the division or allocation of land or space between or among two (2) or more existing or prospective occupants by means of, or for the purpose of streets, common areas, leaseholds, condominiums, building groups, or other features.

B. A subdivision of land.

C. Development in accordance with Section 503(1.1) of the Pennsylvania Municipalities Planning Code.

Municipality/Township - Codorus Township, York County, Pennsylvania.

NPDES - National Pollution Discharge Elimination System

NRCS - USDA Natural Resources Conservation Service (previously SCS).

O & M - Operation and Maintenance

O & M Plan - Operation and Maintenance Plan

PCSWMP - Post-Construction Stormwater Management Plan

Peak Discharge - The maximum rate of stormwater runoff from a specific storm event.

Percolation - The downward movement, under the influence of gravity, of water under hydrostatic pressure through interstices of the soil or rock.

Person – An individual, partnership, public or private association or corporation, firm, trust, estate, Township, governmental unit, public utility or any other legal entity whatsoever. Whenever used in any section prescribing or imposing a penalty, the term "person" shall include the members of a partnership, the officers, agents and servants of a corporation and the officers of a Township.

Pervious Area - Any area not defined as impervious.

Project Site - The specific area of land where any regulated activities in the Township are planned, conducted, or maintained.

Qualified Person - Any person licensed by the State of Pennsylvania or otherwise qualified by law to perform the work required by this Ordinance.

Regulated Activities - Any earth disturbance activities or any activities that involve the alteration or development of land in a manner that may affect stormwater runoff.

Regulated Earth Disturbance Activity - Activity involving earth disturbance subject to regulation under 25 Pa. Code 92, 25 Pa. Code 102, or the Clean Streams Law.

Retention Basin - An impoundment in which stormwater is stored and not released during a storm event. Stored water may be released from the basin at some time after the end of a storm.

Retention Volume/Removed Runoff - The volume of runoff that is captured and not released directly into the surface waters of this Commonwealth during or after a storm event.

Return Period - The average interval, in years, within which a storm event of a given magnitude can be expected to occur one time. For example, the 25-year return period rainfall would be expected to occur on average once every 25 years; or stated in another way, the probability of a 25-year storm occurring in any one year is 0.04, i.e., a 4% chance.

Riparian Buffer - A Best Management Practice that is an area of permanent vegetation along surface waters. (Such areas serve as natural vegetative filters between upland landscapes and waterways.)

Riser – A vertical pipe extending from the bottom of a pond or other water impoundment that is used to control the discharge rate from the pound or impoundment for a specified design storm.

Rooftop Detention – Temporary ponding and gradual release of stormwater falling directly onto roof surface by incorporating control-flow roof drains into building design.

Runoff - Any part of precipitation that flows over the land.

Runoff Characteristics – The surface components on any watershed which either individually or in any combination thereof, directly affect the rate, amount and direction of stormwater runoff. These may include, but are not limited to; vegetation, soils, slopes and any type of manmade landscape alterations.

SCS – Soil Conservation Service, U.S. Department of Agriculture

Sediment - Soils or other materials transported by surface water as a product of erosion.

Sediment Basin – A barrier, dam, retention or detention basin designed to retain sediment.

Seepage Pit/Seepage Trench – An area of excavated earth filled with loose stone or similar materials into which surface water is directed for infiltration into the ground.

Semi-Pervious Surface – A surface which permits a limited amount of vertical transmission of water.

Sheet Flow - Water flow with a relatively thin and uniform depth.

Soil-Cover Complex Method – A method of runoff computation in NRCS publication "Urban Hydrology for Small Watersheds", technical Release No. 55.

Spillway - A depression in the embankment of a pond or basin which is used to pass peak discharge greater than the maximum design storm controlled by the pond or basin.

State Water Quality Requirements - The regulatory requirements to protect, maintain, reclaim, and restore water quality under Title 25 of the Pennsylvania Code and the Clean Streams Law.

Storm Drain System – Publicly or privately owned facilities by which stormwater is collected and/or conveyed including, but not limited to, any roads with drainage systems, municipal streets, gutters, curbs, inlets, piped storm drains, pumping facilities, retention and detention basins, natural and human-made or altered drainage channels, reservoirs, and other drainage structures.

Storm Frequency - The number of times that a given storm event occurs on average in a stated period of years.

Storm Sewer - A pipe or conduit, or a system of pipes or conduits, which intercepts and carries surface stormwater runoff, but excludes sewage, industrial wastes and similar discharges.

Stormwater - Drainage runoff from the surface of the land resulting from precipitation or snow or ice melt.

Stormwater Management District Watershed Map – Appendix C. Defining release rate criteria within the watershed.

Stormwater Management Facility - Any structure, natural or man-made, that, due to its condition,

design, or construction, conveys, stores, or otherwise affects stormwater runoff. Typical stormwater management facilities include, but are not limited to, detention and retention basins, open channels; storm sewers, pipes, and infiltration facilities.

Stormwater Management Plan - Parts and/or elements of the York County Integrated Water Resources Plan which incorporate the requirements of the Act of October 4, 1978, P.L. 864, (Act 167), as amended, and known as the "Storm Water Management Act."

Stormwater Management Best Management Practices - Is abbreviated as BMPs or SWM BMPs throughout this Ordinance.

Stormwater Management Site Plan - The plan prepared by the developer or his representative indicating how stormwater runoff will be managed at the development site in accordance with this Ordinance. Stormwater Management Site Plan will be designated as SWM Site Plan throughout this Ordinance. For all NPDES permitted sites, the Stormwater Management Site Plan shall include, and be consistent with, the Erosion and Sediment Control Plan as submitted to the York County Conservation District (YCCD) and/or DEP.

Subarea – The smallest drainage unit of a watershed for which stormwater management criteria have been established in the Stormwater Management Plan.

Subdivision - The division or re-division of a lot, tract or parcel of land by any means into two or more lots, tracts or parcels or other divisions of land including changes in existing lot lines for the purpose, whether immediate or future, of lease, partition by the court for distribution to heirs or devisees, transfer of ownership or building or lot development; provided, however, that the subdivision by lease of land for agricultural purposes into parcels of more than ten acres, not involving any new street or easement of access or any residential dwelling, shall be exempted.

Swale – A low-lying stretch of land which gathers and/or carries surface water runoff.

SWM - Stormwater Management.

Time of Concentration (Tc) – The time for surface runoff to travel from the hydraulically most distant point of the watershed to a point of interest within the watershed. This time is the combined total of overland flow time and flow time in pipes or channels, if any.

USDA - United States Department of Agriculture.

Watercourse – a stream of water; river, brook, creek, or a channel or ditch for water, whether natural or man-made.

Waters of this Commonwealth – Any and all rivers, streams, creeks, rivulets, impoundments, ditches, watercourses, storm sewers, lakes, dammed water, wetlands, ponds, springs, and all other bodies or channels of conveyance of surface and underground water, or parts thereof, whether natural or artificial, within or on the boundaries of this Commonwealth.

Watershed - Region or area drained by a river, watercourse, or other surface water of this

Commonwealth.

Wetland - Areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions, including swamps, marshes, bogs, and similar areas.

YCCD - York County Conservation District

ARTICLE III - STORMWATER MANAGEMENT STANDARDS

Section 301. General Requirements

A. For all regulated activities, unless preparation of an SWM Site Plan is specifically exempted in Section 302:

1. Preparation and implementation of an approved SWM Site Plan is required.

2. No regulated activities shall commence until the Township issues written approval of an SWM Site Plan which demonstrates compliance with the requirements of this Ordinance.

B. SWM Site Plans approved by the Township, in accordance with Section 406, shall be on site throughout the duration of the regulated activity.

C. The Township may, after consultation with DEP, approve measures for meeting the state water quality requirements other than those in this Ordinance, provided that they meet the minimum requirements of, and do not conflict with, State law including, but not limited to, the Clean Streams Law. The Township shall maintain a record of consultations with DEP pursuant to this paragraph.

1. DEP is not required to be consulted for waiver of the requirements within:

a. Section 303. Stormwater Management Districts
b. Section 307. Design Criteria
c. Section 308. Regulations Governing Stormwater Management Facilities
d. Section 309. Calculation Methodology
e. Section 310. Carbonate Geology
f. Section 311. Erosion and Sedimentation Control Requirements
g. Section 605. Municipal Stormwater Maintenance Fund

D. For all regulated earth disturbance activities, erosion and sediment control BMPs shall be designed, implemented, operated, and maintained during the regulated earth disturbance activities, i.e., during construction, to meet the purposes and requirements of this Ordinance and to meet all requirements under Title 25 of the Pennsylvania Code and the Clean Streams Law. Various BMPs and their design standards are listed in the Erosion and Sediment Pollution Control Program Manual (E&S Manual) 2, No. 363-2134-008 (April 15, 2000), as amended and updated.

E. For all regulated activities, implementation of the volume controls in Section 304. is required, unless specifically exempted under Section 301.C., or exempted by an approved modification request as specified in Section 403.B. of this Ordinance.

F. Impervious areas:

1. The measurement of impervious areas shall include all of the impervious areas in the total proposed development even if development is to take place in phases.

2. For development taking place in phases, the entire development plan must be used in

determining conformance with this Ordinance.

3. For projects that add impervious area to a parcel, the total impervious area on the parcel is subject to the requirements of this Ordinance; except that the volume controls in Section 304 and the peak rate controls of Section 305 do not need to be retrofitted to existing impervious areas that are not being altered by the proposed regulated activity.

G. Stormwater flows onto adjacent property shall not be created, increased, decreased, relocated, or otherwise altered without written notification of the adjacent property owner(s). Such stormwater flows shall be subject to the requirements of this Ordinance.

H. All regulated activities shall include such measures as necessary to:

1. Protect health, safety, and property;

2. Meet the water quality goals of this Ordinance, as stated in Section 103. Purpose, by implementing measures to:

a. Minimize disturbance to floodplains, wetlands, wooded areas, and existing vegetation.

b. Maintain or extend riparian buffers.

c. Avoid erosive flow conditions in natural flow pathways.

d. Minimize thermal impacts to waters of this Commonwealth.

e. Disconnect impervious surfaces by directing runoff to pervious areas, wherever possible.

f. Minimize soil disturbance and compaction. Topsoil, if removed, shall be replaced to a minimum depth equal to its depth prior to removal or four (4) inches, whichever is greater. (Additional topsoil may be needed for vegetation other than sod.)

3. To the maximum extent practicable, incorporate the techniques for Low Impact Development Practices described in the Pennsylvania Stormwater Best Management Practices Manual (BMP Manual).

I. The design of all facilities in areas of carbonate geology or karst topography shall include an evaluation of measures to minimize adverse effects, including hydro-geologic studies if required by the Township.

J. Infiltration BMPs shall be spread out, made as shallow as practicable, and located to maximize use of natural on-site infiltration features while still meeting the other requirements of this Ordinance. In addition, infiltration BMPs shall include pre-treatment BMPs where appropriate.

K. All natural streams, channels, swales, drainage systems and/or areas of surface water concentration shall be maintained in their existing condition unless an alteration is approved by the Township. All encroachment activities shall comply with the requirements of PA DEP 25 PA Code Chapter 105

(Water Obstructions and Encroachments), Rules and Regulations of PA DEP. Any approvals or permits issued do not relieve compliance as referenced in Section 108, Compatibility with Other Permit and Ordinance Requirements.

L. All stormwater management facilities (excluding individual residential underground infiltration facilities) are considered structures and must comply with building setback requirements. The outside toe of slope of the embankment in a fill condition or the top of embankment in a cut condition shall be considered as the point that must meet the setback requirements. Individual residential underground infiltration facilities shall be a minimum of ten (10) feet from the property line. Discharge of controlled flows can be no closer to an adjacent property than two (2) times the length of the required discharge rip-rap apron. This requirement applies to discharge aprons that do not outlet to a defined waterway or an existing storm sewer. Minimum distance is ten (10) feet.

M. All storage facilities shall completely drain both the volume control and rate control capacities over a period of time not less than 24 hours and not more than 72 hours from the end of the design storm. However, any designed infiltration at such facilities is exempt from the minimum 24-hour standard, i.e., may infiltrate in a shorter period of time, so long as none of the stormwater flowing into the infiltration facility is discharged directly into the surface waters of the Commonwealth. (Inordinately rapid infiltration rates may indicate the presence of large fractures or other conditions for which an additional soil buffer may be required.)

N. The design storm volumes and precipitation intensities to be used in the analysis of discharge or runoff shall be obtained from the Precipitation-Frequency Atlas of the United States, Atlas 14, Volume 2, Version 3.0, U.S. Department of Commerce, National Oceanic and Atmospheric Administration (NOAA), National Weather Service, Hydrometeorological Design Studies Center, Silver Spring, Maryland. NOAA's Atlas 14 can be accessed at: http://hdsc.nws.noaa.gov/hdsc/pfds/.

O. For all regulated activities, SWM BMPs shall be designed, implemented, operated, and maintained to meet the purposes and requirements of this Ordinance and to meet all requirements under Title 25 of the Pennsylvania Code, the Clean Streams Law, and the Storm Water Management Act.

P. Various BMPs and their design standards are listed in the BMP Manual.

Q. All work shall be in accordance with the Township's Construction and Material Specifications.

R. The technical provisions provided within this Ordinance are considered the baseline for design and layout of an SWM Site Plan. Use of other alternative and innovative designs for controlling stormwater runoff may be permitted when approved by the Township Engineer.

Section 302. Exemptions

Any Regulated Activity that meets the following exemption criteria is exempt from the part(s) of this Ordinance as specified herein. However, the requirements of the Ordinance shall otherwise remain in effect. The criteria for exemption in this Section apply to the total development proposed, including instances in which the development is proposed to take place in phases. The date of enactment of this Ordinance shall be the starting point from which future development and the respective proposed impervious surface computations shall be cumulatively considered and regulated. Exemption shall not

relieve an applicant from implementing such measures as necessary to meet the intent of this Ordinance, or compliance with any NPDES Permit requirements.

A. Regulated activities that create DIAs equal to or less than 1,000 square feet are exempt from the peak rate control and the SWM Site Plan preparation requirements of this Ordinance and therefore, no formal application to the Township is required.

B. Regulated activities that create DIAs greater than 1,000 square feet and equal to or less than 5,000 square feet are exempt only from the peak rate control requirement of this Ordinance.

C. Agricultural activity is exempt from the rate control and SWM Site Plan preparation requirements of this Ordinance provided the activities are performed according to the requirements of 25 Pa. Code 102. For regulated activities that meet this exemption criteria, no formal application to the Township is required.

D. Forest management and timber operations are exempt from the rate control and SWM Site Plan preparation requirements of this Ordinance provided the activities are performed according to the requirements of 25 PA Code 102. For regulated activities that meet this exemption criteria, no formal application to the Township is required.

E. Domestic gardening and landscaping are exempt from specific approval and permitting under this Ordinance so long as those activities are associated with one, and only one, dwelling unit and the activities comply with all other applicable ordinances and statutes.

F. Exemptions from certain provisions of this Ordinance shall not relieve the applicant from the requirements in Sections 301.D. through N. of this Ordinance.

G. The Township may deny or revoke any exemption pursuant to this Section at any time for any project that the Township determines poses a threat to public health, safety, property or the environment.

Section 303. Stormwater Management Districts

A. Codorus Township has been divided into release rate districts as shown in Appendix C.

B. Description of stormwater management districts – two types of stormwater management districts may be applicable to Codorus Township, namely the Release Rate Districts and Provisional No Detention Districts as described below:

1. Release Rate Districts – Rate districts differ in the extent to which post-development runoff must be controlled. Within a given district, the post-development peak rate of storm runoff must be controlled to the stated percentage of the pre-development peak rate of storm runoff in order to protect downstream watershed areas.

2. Provisional No Detention Districts – These watershed areas may discharge post-development peak runoff without detention without adversely affecting the total watershed peak flow. In certain instances, however, the "local" runoff conveyance

facilities, which transport runoff from the site to the main channel, may not have adequate capacity to safely transport increased peak flows associated with no detention for a proposed development. In those instances, the developer shall either use a 100% release rate control or provide increased capacity of downstream drainage elements to convey increased peak flows consistent with Section 309. In determining if adequate capacity exists in the local watershed drainage network, the developer must assume that the entire local watershed is developed per current zoning and that all new development would use the runoff controls specified in this Ordinance. Similarly, any capacity improvements must be designed to convey runoff from development of all areas tributary to the improvements consistent with the capacity criteria specified in Section 309.

3. When a project or land disturbance activity is located in more than one stormwater management district, stormwater may not be transferred from a district with stricter stormwater management criteria to a district with less strict criteria, unless the need for such a transfer is identified in the regional water quality management plan Act 167 Study. In any district, infiltration and volume regulations dictated in Section 304 will be required.

CODORUS CREEK– DISTRICT 1

District ID	Regulated Storm Frequency	Percentage of Pre-Developed Peak Flow Rate to Determine Allowable Post-Developed Release Rate
District 1	2	100% 2-Year
District 1	5	100% 5-Year
District 1	10	100% 10-Year
District 1	25	100% 25-Year
District 1	50	100% 50-Year
District 1	100	100% 100-Year

SOUTH BRANCH CODORUS – DISTRICT 2

District ID	Regulated Storm Frequency	Percentage of Pre-Developed Peak Flow Rate to Determine Allowable Post-Developed Release Rate
District 2	2	100% 2-Year
District 2	5	100% 5-Year
District 2	10	100% 10-Year

District 2	25	100% 25-Year
District 2	50	100% 50-Year
District 2	100	100% 100-Year

GUNPOWDER – DISTRICT 3

District ID	Regulated Storm Frequency	Percentage of Pre-Developed Peak Flow Rate to Determine Allowable Post-Developed Release Rate
District 3	2	100% 2-Year
District 3	5	100% 5-Year
District 3	10	100% 10-Year
District 3	25	100% 25-Year
District 3	50	100% 50-Year
District 3	100	100% 100-Year

*The intention of these Tables is to reduce the runoff rate.

Section 304. Volume Controls

The low impact development practices provided in the BMP Manual shall be utilized for all regulated activities to the maximum extent practicable. Water volume controls shall be implemented using the Design Storm Method in Subsection A or the Simplified Method in Subsection B below. For regulated activity areas equal or less than one (1) acre that do not require hydrologic routing to design the stormwater facilities, this Ordinance establishes no preference for either methodology; therefore, the applicant may select either methodology on the basis of economic considerations, the intrinsic limitations on applicability of the analytical procedures associated with each methodology, and other factors.

A. The Design Storm Method (CG-1 in the BMP Manual) is applicable to any size of regulated activity. This method requires detailed modeling based on site conditions.

   1. Do not increase the post-development total runoff volume for all storms equal to or less than the two (2)-year 24-hour duration precipitation.

   2. For modeling purposes:

      a. Existing (pre-development) non-forested pervious areas must be considered meadow.

      b. For computation of pre-development runoff volume, twenty percent (20%) of existing

impervious areas, when present, shall be considered meadow.

B. The Simplified Method (CG-2 in the BMP Manual) provided below is independent of site conditions and should be used if the Design Storm Method is not followed. This method is not applicable to regulated activities greater than one (1) acre or for projects that require design of stormwater storage facilities.

For new impervious surfaces:

1. Stormwater facilities shall capture at least the first two (2) inches of runoff from all new impervious surfaces.

2. At least the first one (1) inch of runoff from new impervious surfaces shall be permanently removed from the runoff flow, i.e., it shall not be released into the surface waters of this Commonwealth. Removal options for the first one (1) inch of runoff include reuse, evaporation, transpiration, and infiltration.

3. Wherever possible, infiltration facilities should be designed to accommodate infiltration of the entire permanently removed runoff; however, in all cases at least the first 0.5 inch of the permanently removed stormwater runoff shall be infiltrated.

4. This method is exempt from the requirements of Section 305. Rate Controls.

Section 305. Rate Controls

A. For computation of pre-development peak discharge rates, twenty percent (20%) of the existing impervious area of a project site, when present, shall be considered meadow.

B. Post-development discharge rates shall not exceed the pre-development discharge rates provided in Section 303.B.3 for the 1-, 2-, 5-, 10-, 25-, 50-, and 100-year 24-hour storms. If it is shown that the peak rates of discharge indicated by the post-development analysis are less than or equal to the peak rates of discharge indicated by the pre-development analysis for 1-, 2-, 5-, 10-, 25-, 50-, and 100-year, 24-hour storms, then the requirements of this section have been met. Otherwise, the applicant shall provide additional controls as necessary to satisfy the peak rate of discharge requirement.

Section 306. Stormwater Management Facilities for Pennsylvania Department of Transportation and Pennsylvania Turnpike Commission Roadways and Associated Facilities

For the purposes of the Act 167 Stormwater Management (Plan) elements, contained within the York County Integrated Water Resources Plan, and this Ordinance, design policy pertaining to stormwater management facilities for Pennsylvania Department of Transportation (PennDOT) and Pennsylvania Turnpike Commission (PTC) roadways and associated facilities is provided in Section 13.7 (Antidegradation and Post Construction Stormwater Management Policy) of PennDOT Publication No. 13M, Design Manual Part 2 (August 2009), as developed, updated, and amended in consultation with the Pennsylvania Department of Environmental Resources (DEP). As stated in DM-2.13.7.D (Act 167 and Municipal Ordinances), PennDOT and PTC roadways and associated facilities shall be consistent with Act 167 Plans. Dm-2.13.7.B (Policy on Antidegradation and Post Construction Stormwater

Management) was developed as a cooperative effort between PennDOT and DEP. DM-2.13.7.C (Project Categories) discusses the anticipated impact on the quality, volume, and rate of stormwater runoff.

Where standards in the Act 167 elements of the IWRP and this Ordinance are impractical, PennDOT or the PTC may request assistance from DEP, in consultation with the Township and County, to develop an alternative strategy for meeting State water quality requirements and the goals and objectives of the Act 167 elements within the IWRP.

For the purposes of the Act 167 elements in the IWRP and this Ordinance, road maintenance activities are regulated under 25 PA Code Chapter 102.

Section 307. Design Criteria

A. Sites located in more than One District - for a proposed development site located within two or more stormwater management district category subareas, the peak discharge rate from any subarea shall meet the discharge requirements for that subarea as indicated in Section 303. The calculated peak discharges shall apply regardless of whether the grading plan changes the drainage area by subarea.

B. Off-Site Areas - Off-site areas which drain through a proposed development site are not subject to release rate criteria when determining allowable peak runoff rates. However, on-site drainage facilities shall be designed to safely convey off-site flows through the development site.

C. On-Site Areas - On- Site Areas proposed to remain undisturbed as part of the Regulated Activity, including previously developed areas, that are not within the drainage area of any proposed BMPs shall be considered as existing conditions, without considering any reductions in cover type.

D. "Downstream Hydraulic Capacity Analysis" - Any existing downstream hydraulic capacity analysis shall be conducted in accordance with this Ordinance.

1. All downstream facilities impacted by the total site area of the Regulated Activity shall be studied to determine if the facility has adequate capacity to handle existing and proposed flows. An impacted downstream facility is one to which the runoff from the total site area of the Regulated Activity comprises more than 50% of the total flow to such a facility. The study shall end at a perennial stream. Downstream facilities include, but are not limited to, manmade or natural swales and open channels, pipes, inlets, culverts, bridges and roadways.

2. If any private facility is found to be undersized, the applicant shall be responsible for updating the facility in coordination with the Regulated Activity.

3. If any public facility is found to be undersized or inadequate, the applicant shall work with the Township on upgrading the facility in coordination with the Regulated Activity.

E. Regional Detention Alternatives - For certain areas within the study area, it may be more cost-effective to provide one control facility for more than one development site than to provide an individual control facility for each development site. The initiative and funding for any regional

runoff control alternatives are the responsibility of prospective developers. The design of any regional control basins must incorporate reasonable development of the entire upstream watershed. The peak outflow of a regional basin would be determined on a case-by-case basis using the hydrologic model of the watershed consistent with protection of the downstream watershed areas. "Hydrologic model" refers to the calibrated model as developed for the Stormwater Management Plan.

F. Capacity Improvements of Local Drainage Networks - In certain instances, primarily within the provisional no detention areas, local drainage conditions may dictate more stringent levels of runoff control than those based upon protection of the entire watershed. In these instances, if the developer could prove that it would be feasible to provide capacity improvements to relieve the capacity deficiency in the local drainage network, then the capacity improvements could be provided by the developer in lieu of runoff controls on the development site. Any capacity improvements would be designed based upon development of all areas tributary to the proposed improvement and the capacity criteria specified in Section 308. In addition, all new development upstream of a proposed capacity improvement shall be assumed to implement the applicable runoff controls consistent with this Ordinance except that all new development within the entire subarea(s) within which the proposed development site is located shall be assumed to implement the developer's proposed discharge control, if any.

G. Capacity improvements may also be provided as necessary to implement any regional or subregional detention alternatives.

H. Where the potential for groundwater and/or surface water contamination exists, based on the proposed use of the Regulated Activity, safeguards shall be incorporated into the site.

1. For industrial or commercial sites where it is possible that toxic or hazardous substances may come into contact with stormwater runoff, pretreatment of the first-flush (first 1/2 inch) runoff over areas where industrial and commercial operations take place shall be provided. Pretreatment shall include means for separating light and heavy toxic and hazardous substances from the stormwater before the stormwater is conveyed to the general stormwater management facility(ies).

2. Infiltration systems may be used to handle runoff from commercial or industrial working or parking areas only after the first-flush stormwater from these areas has been pretreated for removal of toxic and hazardous substances.

I. Roof drains and sump pumps shall discharge to infiltration or vegetative BMPs and to the maximum extent practicable satisfy the criteria for DIAs.

Section 308. Regulations Governing Stormwater Management Facilities

A. Any stormwater facility located on State highway rights-of-way shall be subject to approval by the Pennsylvania Department of Transportation (PennDOT).

B. Any stormwater management facilities regulated by this Ordinance that would be located in or adjacent to waters of the Commonwealth or wetlands shall be subject to approval by PA DEP

through the Joint Permit Application process, or, where deemed appropriate by PA DEP, the General Permit process. When there is a question whether wetlands may be involved, it is the responsibility of the Developer or his agent to show that the land in question cannot be classified as wetlands, otherwise approval to work in the area must be obtained from PA DEP.

C. Any stormwater management facility located within the vicinity of a Floodplain shall be subject to approval in accordance with PA DEP 25 PA Code Chapter 106 (Floodplain Management) of PA DEP's Rules and Regulations.

D. All earthmoving activities must be reviewed and approved by the York County Conservation District prior to commencing work.

E. The design of all stormwater management facilities shall incorporate good engineering principles and practices. The Township shall reserve the right to disapprove any design that would result in the occupancy or continuation of adverse hydrologic or hydraulic conditions within the watershed.

F. The existing points of concentrated drainage that discharge onto adjacent property shall not be altered without permission of the adjacent property owner(s) and shall be subject to any applicable discharge criteria specified in this Ordinance.

G. Areas of existing diffused drainage discharge shall be subject to any applicable discharge criteria in the general direction of existing discharge, whether proposed to be concentrated or maintained as diffused drainage areas, except as otherwise provided by this ordinance. If diffused flow is proposed to be concentrated and discharged onto adjacent property, the Developer must document that adequate downstream conveyance facilities exist to safely transport the concentrated discharge, or otherwise prove that no erosion, sedimentation, flooding or other harm will result from the concentrated discharge.

H. Where a development site is traversed by watercourses, drainage easements shall be provided conforming to the line of such watercourses. The terms of the easement shall prohibit excavation, the placing of fill or structures, and any alterations that may adversely affect the flow of stormwater within any portion of the easement. Also, maintaining of vegetation in a natural state within the easement shall be required, except as approved by the appropriate governing authority.

I. When it can be shown that, due to topographic conditions, natural drainageways on the site cannot adequately provide for drainage, open channels may be constructed conforming substantially to the line and grade of such natural drainageways. Work within natural drainageways shall be subject to approval by PA DEP through the Joint Permit Application process, or, where deemed appropriate by PA DEP, through the General Permit process.

J. Roof drains must not be connected to streets, sanitary or storm sewers or roadside ditches to promote overland flow and infiltration/percolation of stormwater where advantageous to do so. When it is more advantageous to connect directly to streets or storm sewers, then it shall be permitted on a case by case basis by the Township.

K. Special requirements for areas falling within defined Exceptional Value and High Quality Subwatersheds: The temperature and quality of water and streams that have been declared as exceptional value and high quality is to be maintained as defined in Chapter 93, Water Quality Standards, Title 25 of Pennsylvania Department of Environmental Protection Rules and Regulations. Temperature sensitive BMP's and stormwater conveyance systems are to be used and designed with storage pool areas and supply outflow channels and should be shaded with trees. This will require modification of berms for permanent ponds and the relaxation of restrictions on planting vegetation within the facilities, provided that capacity for volumes and rate control is maintained. At a minimum, the southern half on pond shorelines shall be planted with shade or canopy trees within ten (10) feet of the pond shoreline. In conjunction with this requirement, the maximum slope allowed on the berm area to be planted is 10 to 1. This will lessen the destabilization of berm soils due to root growth. A long term maintenance schedule and management plan for the thermal control BMP's is to be established and recorded for all development sites within defined Exceptional Value and/or High Quality Subwatersheds.

Section 309. Calculation Methodology

A. Stormwater runoff from all development sites shall be calculated using the Rational Method, Modified Rational Method, or a Soil Cover Complex methodology.

1. Any stormwater runoff calculations involving drainage areas greater than 200 acres, including on- and off-site areas, shall use generally accepted calculation technique that is based on the NRCS Soil Cover Complex method. It is assumed that all methods will be selected by the design professional based on the individual limitations and suitability of each method for a particular site.

2. The Township may allow the use of the Rational Method or Modified Rational Method to estimate peak discharges from drainage areas that contain less than 200 acres.

3. All calculations consistent with this Ordinance using the Soil Cover Complex method shall us the appropriate design rainfall depths. If a hydrologic computer model such as PSRM or HEC-RAS is used for stormwater runoff calculations, then the duration of rainfall shall be 24 hours. The SCS Rainfall Type II curve shall be used for the rainfall distribution.

4. For the purposes of pre-development flow rate determination, undeveloped land, including areas to be disturbed as part of the Regulated Activity, shall be considered as "meadow" in good condition, unless the natural ground cover generates a lower curve number or Rational "C" value (i.e., forest), as listed it Tables 1 and 2, respectively.

5. All calculations using the Rational Method shall use rainfall intensities consistent with appropriate times-of-concentration for overland flow and return periods. Times-of-concentration for overland flow shall be calculated using the methodology presented in Chapter 3 of Urban Hydrology for Small Watersheds, NRCS, TR-55 (as amended or replaced from time to time by NRCS). Time-of-concentration for channel and pipe flow shall be computed using Manning's equation.

6. Runoff Curve Numbers (CN) for both existing and proposed conditions to be used in the Soil Cover Complex method shall be obtained from Table 1.

7. Runoff coefficients (c) for both existing and proposed conditions for use in the Rational Method shall be obtained from Table 2.

8. Where uniform flow is anticipated, the Manning equation shall be used for hydraulic computations such as the capacity of open channels, pipes, and storm sewers. Values for Manning's roughness coefficient (n) shall be consistent with Table 3.

9. The design of any stormwater detention facilities intended to meet the performance standards of this Ordinance shall be verified by routing the design storm hydrograph through these facilities, using either manual methods or computerized routing. Routing shall be based upon the modified PULS method; other routing methodologies shall be subject to the approval of the Township Engineer.

10. The stormwater collection system shall be designed using the peak discharge computed using the Rational Formula.

B. Design Standards – Water Carrying Facilities

1. All storm sewer pipes, streets, and inlets (excluding detention and retention basin outfall structures) shall be designed for a 10-year storm event. Sole access structures (culverts and bridges) shall be designed to convey the 25-year flood without overtopping the roadway.

   a. When a pipe or culvert is intended to convey the discharge from a stormwater management facility, its required capacity shall be computed by the rational method and compared to the peak outflow from the stormwater facility for the 100-Year storm. The greater flow shall govern the design of the pipe or culvert.

   b. When a pipe is part of a storm sewer system and crosses the roadway, it shall be designed as a storm sewer with the same design storm as the remainder of the drainage system.

   c. Greater design frequencies may be justified on individual projects.

   d. A 100-year storm frequency may be required for design of the stormwater collection system to insure that the resultant stormwater runoff from the post-development storm is directed into the management facility.

2. In general, inlets shall be spaced such that, based upon the Rational Method, tc = 5 min. and 10-year rainfall intensity, the area contributing to the inlet shall not produce a peak runoff of greater than 4 cfs. Also, inlets shall be spaced so that their efficiency, based upon efficiency curves published by the Pennsylvania Department of Transportation, is not less than 65%.

3. Inlets shall be placed on both sides of the street at low spots and at the upper side of street intersections to prevent stormwater from crossing an intersection. Other devices such as high efficiency grates or perforated pipe may be required if conditions warrant. All inlets at low points along the roadway shall have a 10" curb reveal and shall be equipped with pavement base drain extending 50 feet in either direction, parallel to the centerline of the roadway.

4. In all cases where drainage is picked up by means of a headwall, the pipe shall be designed as a culvert. Inlet and outlet conditions shall be analyzed. The minimum diameter of culvert shall be 18 inches. The procedure contained in Hydraulic Engineer Circulars No. 5 and No. 13, as prepared by the U. S. Department of Transportation, Federal Highway Administration, Washington, D.C., shall be used for the design of culverts. All culverts shall include concrete headwalls and endwalls.

5. Guards shall be provided on all intake and outfall structures as well as outlet structures. The guard bars shall be one-half inch (½") diameter galvanized bars on six inch (6") centers attached to the structure with three eighth inch (3/8") diameter stainless steel anchors. Guards shall also be provided for any pipe opening, 18" in diameter or larger.

6. Manholes, inlets, headwalls, and endwalls shall conform to the requirements of the PennDOT Publication 408, as modified by the adopted Township Standards.

7. Proposed channels or swales must be able to convey the increased runoff associated with a proposed 100-year return period event within their banks at velocities consistent with protection of the channels from erosion. Acceptable velocities shall be based upon criteria included in the PA DEP *Erosion and Sediment Pollution Control Program Manual.*

8. Existing natural or man-made channels or swales must be able to convey proposed 100-year return period runoff without creating any hazard to persons or property.

9. Stormwater runoff on roadways (i.e. gutter spread, lane encroachment, etc.) shall be controlled in accordance with PennDOT Publications 13M, "Design Manual, Part 2" and 584, "Drainage Manual".

C. Design Standards – Detention and Retention Basins

1. Permanent Detention and Retention Basins shall be designed to meet the following standards:

   a. The maximum permitted depth for detention or retention basins shall be 6 feet, measured from the bottom of the emergency spillway to the lowest point in the basin.

   b. The minimum top width of all basin embankments shall be 8 feet.

c. The maximum permitted side slopes for detention or retention basins shall be 4 horizontal to 1 vertical. In order to obtain a waiver for slopes steeper than 4:1, the plan must include a planting schedule to stabilize the embankments. The proposed vegetation shall be low maintenance varieties.

d. Minimum Bottom Slope - All detention basins shall have a minimum bottom slope of 2% unless infiltration facilities are provided.

e. Any stormwater management facility (i.e., detention basin) designed to store runoff and requiring a berm or earthen embankment required or regulated by this Ordinance shall be designed to provide an emergency spillway to handle flow up to and including the 100-year, 24 hour design storm at post-development conditions, assuming the principal outlet structure to be clogged. The height of embankment must be set as to provide a minimum 1 foot of freeboard above the maximum elevation computed for the clogged orifice condition. Should any stormwater management facility require a dam safety permit under PA DEP 25 PA Code Chapter 105, the facility shall be designed in accordance with PA DEP 25 PA Code Chapter 105 and meet the regulations of PA DEP 25 PA Code Chapter 105 concerning dam safety which may be required to pass storms larger than 100-year event.

f. A cutoff trench of impervious material shall be provided within all basin embankments.

g. Where a basin embankment is constructed using fill on an existing 15% or greater slope, the basin must be keyed into the existing grade.

h. Fencing. Any above-ground stormwater management detention/retention facility, that is designed to store at least a two foot (2') depth of runoff, shall be subject to the following fencing requirements:

   i. Stormwater facility must be completely surrounded by a chain link fence of not less than four (4) feet in height. Alternative fences and barriers may be permitted upon request to and approval by the Township.

   ii. All gates or doors opening through such enclosure shall be equipped with a self-closing and self-latching device for keeping the gate or door securely closed at all times, when not in actual use.

i. All outlet structures and emergency spillways shall include a satisfactory means of energy dissipation at its outlet to assure conveyance and flow without endangering the safety and integrity of the basin and the downstream drainage area.

j. A concentrated discharge of stormwater to an adjacent property shall be

within a natural drainage way or watercourse, or an easement shall be required.

k. Plans for infiltration must show the locations of existing and proposed septic tank infiltration areas and wells. A minimum 25 foot separation from On Lot Disposal Systems (OLDS) infiltration areas, including replacement areas, is desired and will be evaluated by the Township on a case by case basis. However, the separation shall not be less than the PA DEP required 10 feet. Infiltration rates shall be based upon perc and probe tests conducted at the site of the proposed facility.

Section 310. Carbonate Geology

A. In areas of carbonate geology, a geologist shall certify to the following:

1. No stormwater management facility will be placed in, over, or immediately adjacent to the following features:

   a. closer than 100 feet from sinkholes
   b. closer than 100 feet from closed depressions
   c. closer than 100 feet from caverns, intermittent lakes, or ephemeral streams
   d. closer than 50 feet from lineaments in carbonate areas
   e. closer than 50 feet from fracture traces
   f. closer than 25 feet from bedrock pinnacles (surface or subsurface)

2. Stormwater resulting from regulated activities shall not be discharged into sinkholes.

3. If the developer can prove through analysis that the project site is an area underlain by carbonate geology, and such geologic conditions may result in sinkhole formations, then the project site is exempt from recharge requirements as described in Section 304, Volume Control. However, the project site shall still be required to meet all other standards found in this Ordinance.

4. It shall be the developer's responsibility to verify if the project site is underlain by carbonate geology. The following note shall be attached to all stormwater management plans and signed and sealed by the developer's geologist: "I, _____, certify that the proposed stormwater management facility (circle one) is / is not underlain by carbonate geology."

5. Whenever a stormwater management facility will be located in an area underlain by carbonate geology, a geological evaluation of the proposed location by a geologist shall be conducted to determine susceptibility to sinkhole formation. The evaluation may include the use of impermeable liners to reduce or eliminate the separation distances listed in the BMP Manual. Additionally, the evaluation shall at a minimum, address soil permeability, depth to bedrock, seasonally high groundwater table, susceptibility for sinkhole formation, suitability of stormwater management facilities, subgrade stability and maximum infiltration capacity in depth of water per unit area.

6. A detailed soils evaluation of the project site shall be performed to determine the suitability of recharge facilities. The evaluation shall be performed by a qualified professional, and at a minimum, address soil permeability, depth to bedrock, susceptibility to sinkhole formation, and subgrade stability. The general process for designing the infiltration BMP shall be:

   a. Site evaluation to determine general areas of suitability for infiltration practices.

   b. Provide field test throughout the area proposed for development to determine appropriate percolation rate and/or hydraulic conductivity. At least one (1) infiltration test must be included in each soil group and at least one (1) infiltration test must be conducted for each five (5) lots proposed for development. Infiltration tests must be taken at the location and depth of all proposed infiltration structures.

   c. Design infiltration structure for required storm volume based on all available data.

7. Extreme caution shall be exercised where infiltration is proposed in geologically susceptible areas such as strip mine or limestone areas. It is also extremely important that the design professional evaluate the possibility of groundwater contamination from the proposed infiltration/recharge facility and recommend a hydrogeologic justification study be performed if necessary. Whenever a basin will be located in an area underlain by limestone, a geological evaluation of the proposed location shall be conducted to determine susceptibility to sinkhole formations. The design of all facilities over carbonate formations shall include measures to prevent ground water contamination and, where necessary, sinkhole formation. The infiltration requirement in the High Quality/Exceptional Waters shall be subject to the Department's Chapter 93 and Anti-degradation Regulations. A detailed hydrogeologic investigation may be required by the Township and where appropriate, the Township may require the installation of an impermeable liner in detention basins

Section 311. Erosion and Sedimentation Control Requirements

A. As required in Section 301.D, whenever the vegetation and topography are to be disturbed, such activity must be in conformance with PA DEP 25 PA Code Chapter 105, Rules and Regulations, Part I, Subpart C, protection of natural Resources, Article II, Water Resources, Chapter 102, "Erosion Control", and in accordance with the York County Conservation District.

B. It is extremely important that strict erosion and sedimentation control measures be applied surrounding infiltration structures during installation to prevent the infiltrative surfaces from becoming clogged. Additional erosion and sedimentation control design standards and criteria must be applied where infiltration BMPs are proposed shall include the following:

1. Areas proposed for infiltration BMPs shall be protected from sedimentation and compaction during the construction phase, so as to maintain their maximum infiltration capacity.

C. Fencing for sedimentation basins or traps must comply with Section 309.C.1.h.

D. The developer shall demonstrate that the post-development hydrograph flows during erosion and sedimentation control phase are less than or equal to the pre-development hydrograph flows to assure the rate and volume of runoff leaving the site is controlled for the 2-, 5-, and 10-year frequency storms. All calculation methodology shall be in accordance with Sections 303 through Section 310.

ARTICLE IV - STORMWATER MANAGEMENT (SWM) SITE PLAN REQUIREMENTS

Section 401. Plan Requirements

Although not a requirement of this Ordinance, prior to proceeding with SWM Site Plan preparation and submission, the applicant is encouraged to request a pre-application meeting with the Township, Township's Engineer and a staff member of the York County Conservation District to discuss the plan concept and responsibility for submission of required documents and information.

The following items shall be included in the SWM Site Plan:

A. Appropriate sections of the Township's Subdivision and Land Development Ordinance, and other applicable ordinances of the Township regarding subdivision and land development plan preparation and applicable plan requirements shall be followed in preparing all SWM Site Plans, regardless of whether or not a SWM Site Plan involves a subdivision and/or land development plan. If the Township has not adopted a Subdivision and Land Development Ordinance, the content of SWM Site Plans shall follow the plan preparation and applicable plan requirements of the York County Subdivision and Land Development Ordinance.

B. The Township shall not approve any SWM Site Plan that is deficient in meeting the requirements of this Ordinance. At its sole discretion, and in accordance with this Article, when a SWM Site Plan is found to be deficient, the Township may either disapprove the submission, or, in the case of minor deficiencies, the Township may accept the submission of a revised SWM Site Plan as noted in Section 404. of this Ordinance.

C. Provisions for permanent access or maintenance easements for all physical SWM BMPs, such as ponds and infiltration structures, as necessary to implement the Operation and Maintenance (O&M) Plan discussed in Item E.9 below.

D. The following signature block for the Township:

"(***Municipal official or designee***), on this date (***date of signature***), has reviewed and hereby certifies that the SWM Site Plan meets all design standards and criteria of the Township Ordinance No. (***number assigned to the Ordinance***)."

E. If not required by the Township or York County Subdivision and Land Development Ordinance, as specified in Section 401.A. of this Ordinance, the SWM Site Plan shall also provide the following information where applicable:

1. The overall stormwater management concept for the project, including any additional information required for a Post-Construction Stormwater Management Plan (PCSWMP) as applicable.

2. A determination of site conditions in accordance with the BMP Manual. A detailed site evaluation shall be completed for projects proposed in areas of carbonate geology or karst topography, as well as for other environmentally sensitive areas, whether natural or

manmade, including floodplains, streams, lakes, ponds, hydric soils, wetlands, brownfields and wellhead protection zones.

3. Stormwater runoff design computations, and documentation as specified in this Ordinance, or as otherwise necessary to demonstrate that the maximum practicable measures have been taken to meet the requirements of this Ordinance, including the recommendations and general requirements in Section 301.

4. Expected project time schedule.

5. A soil erosion and sediment control plan, where applicable, as prepared for, reviewed, and approved by the York County Conservation District.

6. The effect of the project in terms of runoff volumes, water quality, and peak flows on surrounding properties and aquatic features, and on any existing stormwater conveyance system that may be affected by the project.

7. Plan and profile drawings of all SWM BMPs, including drainage structures, pipes, open channels, and swales.

8. The SWM Site Plan shall show the locations of existing and proposed on-lot wastewater facilities and water supply wells.

9. The SWM Site Plan shall include an Operation and Maintenance (O&M) Plan for all existing and proposed physical stormwater management facilities. This plan shall address long-term ownership and responsibilities for O&M as well as schedules and costs for O&M activities.

10. A description of permanent stormwater management techniques, including the construction specifications of the materials to be used for stormwater management facilities.

11. A notarized signature of the owner of the parcel for which the SWM Site Plan is proposed indicating that they are aware of and will be responsible for operation and maintenance of the facilities.

12. Existing and proposed land uses.

13. The location of the proposed regulated activity relative to streets, municipal boundaries, and other significant manmade features.

14. Significant physical features and associated boundary limits including flood hazard areas, sinkholes, existing drainage courses, and areas of natural vegetation.

15. The location of existing and proposed utilities, stormwater facilities, sanitary sewers, and water lines on the parcel and within 50 feet of property lines.

16. Proposed changes to the land surface and vegetative cover, and the type and amount of existing and proposed impervious area.

17. Existing and proposed structures, buildings, streets, driveways, access drives, and parking areas.

18. Preferred contour intervals of two (2) feet in moderately sloped areas, and contours at intervals of five (5) feet for slopes in excess of 15 %. Dependent upon site conditions, alternative contour intervals proposed by an applicant or his designee may be accepted by the Township.

19. The name of the development, the name and address of the owner of the property, and the name and address of the individual or firm preparing the Plan. Also to be included are the name, address, signature and seal of any registered surveyor (attesting the accuracy of the boundary survey), professional engineer, landscape architect, or professional geologist (for geomorphological assessments) contributing to and/or with a responsibility for any aspect of the Plan where applicable.

20. Preferred graphic and written scale of one (1) inch equals no more than 50 feet. For parcels of 20 acres or more, the preferred scale is one (1) inch equals no more than 100 feet. Dependent upon site conditions, an alternative scale proposed by the applicant or his designee may be accepted by the Township.

21. North point (arrow).

22. A map showing all existing manmade features beyond the subject parcel's boundary lines that will be affected by the proposed regulated activities.

23. Horizontal and vertical profiles of all open channels, including hydraulic capacity.

24. A note on the plan indicating the location, and responsibility for maintenance of, SWM facilities and/or easements that would be located on adjoining properties as a result of proposed regulated activities, and the location of such facilities and/or easements.

25. A hydrogeologic assessment of the effects of stormwater runoff on sinkholes where present.

26. The effect of the proposed regulated activity in terms of runoff volumes and peak flows on adjacent properties and/or any existing municipal stormwater collection system that may receive runoff from the project site.

27. Drainage flow pathways.

Section 402. Plan Submission

A. Three (3) copies of the SWM Site Plan shall be submitted as follows:

1. Two (2) copies to the Township.

2. One (1) copy to the York County Planning Commission when a SWM Site Plan accompanies a subdivision/land development plan application.

B. Additional copies shall be submitted as requested by the Township or DEP.

C. The Township may establish a fee schedule for the review of SWM Plans, the amount of which shall be set by resolution of the Board of Supervisors.

Section 403. Plan Review and Approval Procedure

A. SWM Site Plans shall be reviewed by the Township for consistency with the provisions of this Ordinance.

B. Modification Requests:

1. When reviewing a SWM Site Plan, whether or not the SWM Site Plan is included in a subdivision and/or land development plan application, the Township's governing body may, after consulting with DEP as noted in Section 301.C. of this Ordinance, grant a modification of the requirements of one or more provisions of this Ordinance if the literal enforcement will enact undue hardship because of peculiar conditions pertaining to the land in question, provided that such modification will not be contrary to the public interest and that the purpose and intent of the Ordinance is observed.

2. All requests for modifications from an applicant shall be in writing and shall accompany and be a part of the application for approval of a SWM Site Plan and/or a subdivision or land development plan as applicable. The request shall state in full the grounds and facts of unreasonableness or hardship on which the request is based, the provision or provisions of the Ordinance involved and the minimum modification necessary.

3. In granting of any modification, the Township may attach such reasonable conditions and safeguards as it may deem necessary to implement the purposes of the Act 167 Plan and this Ordinance.

4. The governing body of the Township shall keep a written record of all action on requests for modifications. The response of any consultation and/or review by DEP shall be included as an original report if available or otherwise documented in the required written record.

C. SWM Site Plan Review and Approval Procedure:

1. If a SWM Site Plan does not involve a subdivision and/or land development, the review of the SWM Site, recommendations, approval, approval with conditions, or disapproval, i.e., the review and decision period, shall occur within forty five (45) days of submission to the Township. However, the Township, in its sole discretion, may extend the review and decision period another forty five (45) days due to the nature of the application and/or site conditions. If an extension of another forty five (45) days is imposed or granted by the Township beyond the first forty five (45) day review and decision period designated by this paragraph, the Township shall notify the applicant in writing and deliver such notice to said applicant within fifteen (15) days of the decision to extend the review and decision period by the Township. If no extension is imposed or granted by the Township beyond the first forty five (45) day review and decision period, and no decision has been rendered by the Township within that period, the SWM Site Plan shall be

deemed approved. Similarly, if after a forty five (45) day extension of the review and decision period has been imposed or granted by the Township, and no decision has been rendered by the Township within that period, the SWM Site Plan shall be deemed approved.

2. If a SWM Site Plan involves a subdivision and/or land development plan, the period of time from the submission to the Township of the subdivision and/or land development plan application which includes the SWM Plan and the approval, approval with conditions, or disapproval, i.e., review and decision period, shall be 90 days, in accordance with the procedure for approval of plats in Section 508 of the Pennsylvania Municipalities Planning Code.

3. From the time an application for approval of a plat involving a subdivision or land development plan, whether preliminary or final, which includes a SWM Site Plan, is duly filed with the Township, no change or amendment of this Ordinance or other governing ordinance or plan shall affect the decision on such application in accordance with the provisions of the governing ordinances or plans as they stood at the time the application was duly filed, as specified in Section 508. (4) (I) of the Pennsylvania Municipalities Planning Code.

D. Decision Notification Procedure:

In all cases, the decision of the Township to approve or disapprove the SWM Site Plan shall be in writing and shall be delivered to the applicant no later than 15 days following the decision. If the SWM Site Plan is disapproved, the written decision by the Township shall specify the defects in the application, describe the requirements which were not met, and shall cite the provisions of the Ordinance relied upon. If the SWM Site Plan is approved with conditions, the notification to the applicant shall state the acceptable conditions for approval and the time limit for satisfying such conditions. The time limit for satisfying conditions of approval shall be the time limit prescribed for conditional approval of subdivision and land development plans as stated in the Township's Subdivision and Land Development Ordinance, or the York County Subdivision and Land Development Ordinance where applicable.

Section 404. Revision of Plans

A revision to a previously submitted SWM Site Plan that involves a change in SWM BMPs, stormwater management facilities, or changes in analytical techniques, or that involves the relocation or redesign of SWM BMPs, or that is necessary because soil or other conditions are not as stated on the SWM Site Plan, as determined by the Township, shall require a re-submission of the revised SWM Site Plan in accordance with this Article, including applicable fees. For NPDES permitted sites, any revised SWM Site Plan shall also be re-submitted to the York County Conservation District for review. In the case of a SWM Site Plan which contains minor deficiencies, such as a missing label, omission of a required note or minor construction detail, as determined by the Township, the Township may accept a re-submission of such SWM Site Plan without the requirement of a review fee, or for a lesser fee as provided for in the Township fee schedule.

Section 405. Re-submission of Disapproved SWM Site Plans

A disapproved SWM Site Plan may be resubmitted, with the revisions addressing the Township's concerns as stated regarding the original submission, to the Township in accordance with this Article. The applicable review fee must accompany the submission of a revised SWM Site Plan, unless such fee is waived by the Township. (See Section 404.)

Section 406. Authorization to Construct and Term of Validity

A. SWM Site Plans Independent of Subdivision and Land Development Plans

The Township's approval of a SWM Site Plan, when such Plan is submitted independent of a subdivision and/or land development plan, authorizes the regulated activities contained in the SWM Site Plan for a maximum term of validity of five (5) years following the date of approval. The Township may, in its sole discretion, specify a term of validity shorter than five (5) years in the approval for any specific SWM Site Plan, particularly if the nature of the proposed SWM facilities require more frequent maintenance and/or short-term replacement of certain components. Terms of validity shall commence on the date the Township signs the approval for an SWM Site Plan. If an approved SWM Site Plan is not completed according to Section 407 within the term of validity, then the Township may consider the SWM Site Plan disapproved and may revoke any and all permits. SWM Site Plans that are considered disapproved by the Township may be resubmitted in accordance with Section 405 of this Ordinance.

B. SWM Site Plans Included in a Subdivision and/or Land Development Plan

The Township's approval of a SWM Site Plan, which is a part of a subdivision and/or land development plan, authorizes that plan and the regulated activities therein so that no subsequent change or amendment in this Ordinance or other governing ordinances or plans shall be applied to affect adversely the right of the applicant to commence and to complete any aspect of the approved development in accordance with the terms of such approval within five years from such approval, as specified in Section 508. (4) (ii) - (vii) of the Pennsylvania Municipalities Planning Code.

Section 407. As-Built Plans, Completion Certificate, and Final Inspection

A. The developer shall be responsible for providing as-built plans of all SWM BMPs included in the approved SWM Site Plan. The as-built plans and an explanation of any discrepancies with the construction plans shall be submitted to the Township.

B. The as-built submission shall include a certification of completion signed by a qualified person verifying that all permanent SWM BMPs have been constructed according to the approved plans and specifications. If any licensed qualified person contributed to the construction plans, then a licensed qualified person must sign the completion certificate.

C. After receipt of the completion certification by the Township, the Township may conduct a final inspection to verify compliance with, and accuracy of, the as-built plans.

D. The financial guarantee, as discussed under Section 603, shall not be released by the Township until the items of this Section are completed.

ARTICLE V – CONSTRUCTION INSPECTIONS

Section 501. Schedule of Inspections

A. The Township Engineer or his Township assignee shall inspect phases of the installation of the permanent stormwater management facilities as deemed appropriate by the Township Engineer. It is the responsibility of the permittee to notify the Township Engineer forty-eight (48) hours in advance of the beginning of construction of stormwater management facilities. Individual residential on-lot stormwater management systems shall be inspected by the Township staff.

B. During any stage of the work, if the Township Engineer determines that the permanent stormwater management facilities are not being installed in accordance with the approved Stormwater Management Site Plan, the Township shall revoke any existing approvals issued under this Ordinance until a revised Stormwater Management Site Plan is submitted and approved, as specified in this Ordinance.

ARTICLE VI - OPERATION AND MAINTENANCE

Section 601. Responsibilities of Developers and Landowners

A. The Township shall make the final determination on the continuing maintenance responsibilities prior to final approval of the SWM Site Plan. The Township may require a dedication of such facilities as part of the requirements for approval of the SWM Site Plan. Such a requirement is not an indication that the Township will accept the facilities. The Township reserves the right to accept or reject the ownership, maintenance, and operating responsibility for any portion of the stormwater management facilities and controls.

B. Facilities, areas, or structures included in the SWM Site Plan and used as Stormwater Management BMPs shall be enumerated as permanent real estate appurtenances and recorded in the York County Recorder of Deeds Office as deed restrictions/protective covenants or easements that run with the land.

C. The Operation and Maintenance (O&M) Plan shall be recorded as a restrictive deed covenant that runs with the land.

D. The Township may take enforcement actions against an owner for any failure to satisfy the provisions of this Article.

E. No person shall modify, remove, fill, landscape, or alter any SWM BMPs, facilities, areas, or structures without the written approval of the Township, with the exception of necessary maintenance activities such as mowing.

Section 602. Operation and Maintenance Agreements

A. Prior to final approval of the SWM Site Plan, the property owner shall sign and record an Operation and Maintenance (O&M) Agreement (see Appendix A) covering all stormwater control facilities which are to be privately owned.

   1. The owner, successor and assigns shall maintain all facilities in accordance with the approved maintenance schedule in the O&M Plan.

   2. The owner shall convey to the Township easements to assure access for periodic inspections by the Township and maintenance, as necessary.

   3. The owner shall keep on file with the Township the name, address, and telephone number of the person or company responsible for maintenance activities; in the event of a change, new information shall be submitted by the owner to the Township within ten (10) working days of the change.

B. The owner is responsible for operation and maintenance (O&M) of the SWM BMPs. If the owner fails to adhere to the O&M Agreement, the Township may perform the services required and charge the owner appropriate fees. Nonpayment of fees may result in a lien against the property.

C. The Township is exempt from the requirement to sign and record an Operation and Maintenance Agreement.

Section 603. Performance Guarantee

For SWM Site Plans that involve subdivision and land development, the applicant shall provide a financial guarantee to the Township for the timely installation and proper construction of all stormwater management controls as required by the approved SWM Site Plan and this Ordinance in accordance with the provisions of Sections 509, 510, and 511 of the Pennsylvania Municipalities Planning Code.

Section 604. Maintenance Guarantee

For SWM Site Plans that involve the dedication of all or some of the required improvements following completion, the Township may require the posting of financial security to secure structural integrity of said improvements as well as the functioning of said improvements in accordance with the design and specifications as depicted on the SWM Site Plan for a term not to exceed 18 months from the date of acceptance of dedication. Said financial security shall be of the same type as otherwise required in Section 603 with regard to installation of such improvements, and the amount of the financial security shall not exceed 15% of the actual cost of installation of said improvements in accordance with the provisions of Section 509 of the Pennsylvania Municipalities Planning Code.

Section 605. Municipal Stormwater Maintenance Fund

A. Persons installing stormwater storage facilities shall be required to pay a specified amount to the Municipal Stormwater Maintenance Fund to help defray costs of periodic inspections and maintenance expenses. The amount of the deposit shall be determined as follows:

1. If the storage facility is to be privately owned and maintained, the deposit shall cover the cost of periodic inspections performed by Township for a period of ten (10) years, as estimated by the Township Engineer. After that period of time, inspections expenses will be assessed by Township on an as needed basis thereafter.

2. If the storage facility is to be owned and maintained by Township, the deposit shall cover the estimated costs for maintenance and inspections for ten (10) years. The Township Engineer will establish the estimated costs utilizing information submitted by the applicant.

3. The amount of the deposit to the fund shall be converted to present worth of the annual series values. The Township Engineer shall determine the present worth equivalents which shall be subject to the approval of the governing body.

4. The general formula for calculating the annual inspection fee shall be as follows:

   a. $I_{Ti} \times I_R \times N_i = I_{Ci}$

b. $I_{Ci} + I_{Cii} + \ldots = I_C$

c. $.25\ (I_C) = A_C$

d. $I_C + A_C$ = Annual Inspection Cost

e. Where:

i. I_{Ti} = Inspection Time Per SWM BMP (Varies per BMP)
ii. I_R = Inspection Rate (Varies per Year)
iii. N_i = Quantity of Particular SWM BMP
iv. I_{Ci} = Inspection Cost for Particular SWM BMP
v. I_C = Total Inspection Cost of all SWM BMPs
vi. A_C = Administrative Cost

ARTICLE VII - FEES AND EXPENSES

Section 701. General

A. The developer shall be required to submit a Subdivision/Land Development or Building Permit Application prior to any stormwater management facilities construction. The fee for plan reviews, permit issuance, and inspections shall be established by Resolution of the Board of Supervisors to defray the following expenses:

1. The review of the Stormwater Management/Erosion and Sedimentation Control Plan by the Township Engineer.

2. The site inspections.

3. The inspection of stormwater management facilities and drainage improvements during construction.

4. The final inspection upon completion of the stormwater management facilities and drainage improvements presented in the Stormwater Management/Erosion and Sedimentation Control Plan.

5. Any additional work required to enforce any permit provisions regulated by this Ordinance, correct violations, and assure proper completion of stipulated remedial actions.

B. All fees shall be paid by the Applicant at the time of application and shall be included in the required deposit for review of Subdivision/Land Development Plans.

C. Any additional costs incurred by Township in the administration of this Ordinance shall be charged to the applicant and shall be paid promptly by the Applicant. Upon completion of the construction of the stormwater management facility and upon final approval thereof by the Township Engineer, any monies in excess of the Township's costs or expenses deposited by the Applicant shall be refunded to the Applicant.

ARTICLE VIII – PROHIBITIONS

Section 801. Prohibited Discharges and Connections

A. Any drain or conveyance, whether on the surface or subsurface, that allows any non-stormwater discharge including sewage, process wastewater, and wash water to enter the waters of this Commonwealth is prohibited.

B. No person shall allow, or cause to allow, discharges into surface waters of this Commonwealth which are not composed entirely of stormwater, except (1) as provided in Subsection C below and (2) discharges allowed under a state or federal permit.

C. The following discharges are authorized unless they are determined to be significant contributors to pollution to the waters of this Commonwealth:

- Discharges from firefighting activities	- Flows from riparian habitats and wetlands
- Potable water sources including water line flushing	- Uncontaminated water from foundations or from footing drains
- Irrigation drainage	- Lawn watering
- Air conditioning condensate	- De-chlorinated swimming pool discharges
- Springs	- Uncontaminated groundwater
- Water from crawl space pumps	- Water from individual residential car washing
- Pavement wash waters where spills or leaks of toxic or hazardous materials have not occurred (unless all spill material has been removed) and where detergents are not used	- Routine external building wash-down (which does not use detergents or other compounds)
- Diverted stream flows	- Water discharged in well testing for potable water supplies

D. In the event that the Township or DEP determines that any of the discharges identified in Subsection C significantly contribute to pollution of the waters of this Commonwealth, the Township or DEP will notify the responsible person(s) to cease the discharge.

Section 802. Roof Drains

Roof drains and sump pumps shall discharge to infiltration or vegetative BMPs and to the maximum extent practicable satisfy the criteria for DIAs.

Section 803. Alteration of SWM BMPs

No person shall modify, remove, fill, landscape, or alter any SWM BMPs, facilities, areas, or structures in a manner without the written approval of the Township, with the exception of necessary maintenance activities such as mowing.

ARTICLE IX - ENFORCEMENT AND PENALTIES

Section 901. Right-of-Entry

Upon presentation of proper credentials, the Township may enter at reasonable times upon any property within the Township to inspect the condition of the stormwater structures and facilities in regard to any aspect regulated by this Ordinance.

Section 902. Inspection

SWM BMPs included in the approved SWM Site Plan shall be inspected by the landowner, or the owner's designee, including the Township for dedicated and owned facilities, according to the following list of minimum frequencies:

A. Annually.

B. During or immediately after the cessation of a 10-year or greater storm.

C. A report of all inspections shall be submitted to the Township annually.

D. All inspection records shall be maintained by the landowner and shall be made available to the Township upon written request

Section 903. Notification

In the event that a person fails to comply with the requirements of this Ordinance, or fails to conform to the requirements of any permit issued hereunder, the Township shall provide written notification of the violation. Such notification shall set forth the nature of the violations and establish a time limit for the correction of these violation(s). Failure to comply within the time specified shall subject such person to the penalty provisions of this Ordinance. All such penalties shall be deemed cumulative and does not prevent the Township from pursuing any and all remedies. It shall be the responsibility of the Owner of the real property on which any Regulated Activity is proposed to occur, is occurring, or has occurred, to comply with the terms and conditions of this Ordinance.

Section 904. Enforcement

A. It shall be unlawful for a person to undertake any regulated activity except as provided in an approved SWM Site Plan, unless specifically exempted in Section 302.

B. It shall be unlawful to violate any Section of this Ordinance.

C. Inspections regarding compliance with the SWM Site Plan are a responsibility of the Township.

Section 905. Suspension and Revocation

A. Any approval or permit issued by the Township pursuant to this Ordinance may be suspended or revoked for:

1. Non-compliance with or failure to implement any provision of the approved SWM Site Plan or O&M Agreement.

2. A violation of any provision of this Ordinance or any other applicable law, ordinance, rule, or regulation relating to the Regulated Activity.

4. The creation of any condition or the commission of any act during the Regulated Activity which constitutes or creates a hazard, nuisance, pollution, or endangers the life or property of others.

B. A suspended approval shall be reinstated by the Township when:

1. The Township has inspected and approved the corrections to the violations that caused the suspension.

2. The Township is satisfied that the violation has been corrected.

C. An approval that has been revoked by the Township cannot be reinstated. The applicant may apply for a new approval under the provisions of this Ordinance.

D. If a violation causes no immediate danger to life, public health, or property, at its sole discretion, the Township may provide a limited time period for the owner to correct the violation. In these cases, the Township will provide the owner, or the owner's designee, with a written notice of the violation and the time period allowed for the owner to correct the violation. If the owner does not correct the violation within the allowed time period, the Township may revoke or suspend any, or all, applicable approvals and permits pertaining to any provision of this Ordinance.

Section 906. Penalties

A. Anyone violating the provisions of this Ordinance shall be guilty of a summary offense, and, upon conviction, shall be subject to a fine of not more than $1,000.00 for each violation, recoverable with costs. Each day that the violation continues shall be a separate offense.

B. The Township may institute injunctive, mandamus, or any other appropriate action or proceeding at law or in equity for the enforcement of this Ordinance. Any court of competent jurisdiction shall have the right to issue restraining orders, temporary or permanent injunctions, mandamus or other appropriate forms of remedy or relief.

Section 907. Appeals

A. Any person aggrieved by any action of the Township or its designee, relevant to the provisions of this Ordinance, may appeal to the Board of Supervisors within 30 days of that action.

B. Any person aggrieved by any decision of the Township, relevant to the provisions of this Ordinance, may appeal to the York County Court of Common Pleas within 30 days of the Township's decision.

ARTICLE X - REFERENCES

1. Pennsylvania Department of Environmental Protection. No. 363-0300-002 (December 2006), as amended and updated. Pennsylvania Stormwater Best Management Practices Manual. Harrisburg, PA.

2. Pennsylvania Department of Environmental Protection. No. 363-2134-008 (April 15, 2000), as amended and updated. Erosion and Sediment Pollution Control Program Manual. Harrisburg, PA.

3. U.S. Department of Agriculture, National Resources Conservation Service (NRCS). National Engineering Handbook. Part 630: Hydrology, 1969-2001. Originally published as the National Engineering Handbook, Section 4: Hydrology. Available from the NRCS online at: http://www.nrcs.usda.gov/.

4. U.S. Department of Agriculture, Natural Resources Conservation Service. 1986. Technical Release 55: Urban Hydrology for Small Watersheds, 2nd Edition. Washington, D.C.

5. U.S. Department of Commerce, National Oceanic and Atmospheric Administration, National Weather Service, Hydrometeorological Design Studies Center. 2004-2006. Precipitation-Frequency Atlas of the United States, Atlas 14, Volume 2, Version 3.0, Silver Spring, Maryland. Internet address: http://hdsc.nws.noaa.gov/hdsc/pfds/.

6. Act of July 31, 1968, P.L. 85, No.247, The Pennsylvania Municipalities Planning Code, as amended.

ARTICLE XI - ENACTMENT

Codorus Township Stormwater Ordinance.

ENACTED and **ORDAINED** at a regular meeting of the

Board of Supervisors

on this ~~8th~~ 14TH day of ~~February~~ MARCH, 2012.

This Ordinance shall take effect immediately.

Lamar R. Glatfelter
Chairman

Robert S. Sheaffer
Vice Chairman

Brian L. Kattner
Supervisor

ATTEST:

April K. Rehbein
Secretary

APPENDIX A

OPERATION AND MAINTENANCE (O&M) AGREEMENT

STORMWATER MANAGEMENT BEST MANAGEMENT

PRACTICES (SWM BMPs)

THIS AGREEMENT, made and entered into this _____ day of _____, 20___, by and between _____, (hereinafter the "Landowner"), and _____, _____ County, Pennsylvania, (hereinafter "Township");

WITNESSETH

WHEREAS, the Landowner is the owner of certain real property as recorded by deed in the land records of _____ County, Pennsylvania, Deed Book _____ at page _____, (hereinafter "Property").

WHEREAS, the Landowner is proceeding to build and develop the Property; and

WHEREAS, the SWM BMP Operation and Maintenance (O&M) Plan approved by the Township (hereinafter referred to as the "O&M Plan") for the property identified herein, which is attached hereto as Appendix A and made part hereof, as approved by the Township, provides for management of stormwater within the confines of the Property through the use of BMPs; and

WHEREAS, the Township, and the Landowner, his successors and assigns, agree that the health, safety, and welfare of the residents of the Township and the protection and maintenance of water quality require that on-site SWM BMPs be constructed and maintained on the Property; and

WHEREAS, the Township requires, through the implementation of the SWM Site Plan, that SWM BMPs as required by said SWM Site Plan and the Township Stormwater Management Ordinance be constructed and adequately operated and maintained by the Landowner, successors, and assigns.

NOW, THEREFORE, in consideration of the foregoing promises, the mutual covenants contained herein, and the following terms and conditions, the parties hereto agree as follows:

1. The Landowner shall construct the BMPs in accordance with the plans and specifications identified in the SWM Site Plan.

2. The Landowner shall operate and maintain the BMPs as shown on the SWM Plan in good working order in accordance with the specific operation and maintenance requirements noted on the approved O&M Plan.

3. The Landowner hereby grants permission to the Township, its authorized agents and employees, to enter upon the property, at reasonable times and upon presentation of proper credentials, to inspect the BMPs whenever necessary. Whenever possible, the Township shall notify the Landowner prior to entering the property.

4. In the event the Landowner fails to operate and maintain the BMPs per paragraph 2., the Township or its representatives may enter upon the Property and take whatever action is deemed necessary to maintain said BMP(s). It is expressly understood and agreed that the Township is under no obligation to maintain or repair said facilities, and in no event shall this Agreement be construed to impose any such obligation on the Township.

5. In the event the Township, pursuant to this Agreement, performs work of any nature, or expends any funds in performance of said work for labor, use of equipment, supplies, materials, and the like, the Landowner shall reimburse the Township for all expenses (direct and indirect) incurred within ten (10) days of receipt of invoice from the Township.

6. The intent and purpose of this Agreement is to ensure the proper maintenance of the onsite BMPs by the Landowner; provided, however, that this Agreement shall not be deemed to create or effect any additional liability of any party for damage alleged to result from or be caused by stormwater runoff.

7. The Landowner, its executors, administrators, assigns, and other successors in interests, shall release the Township from all damages, accidents, casualties, occurrences, or claims which might arise or be asserted against said employees and representatives from the construction, presence, existence, or maintenance of the BMP(s) by the Landowner or Township.

8. The Township may inspect the BMPs at a minimum of once every three (3) years to ensure their continued functioning. Optionally, at its sole discretion, the Township may inspect the BMPs at more or less frequent intervals.

This Agreement shall be recorded at the Office of the Recorder of Deeds of _____ County, Pennsylvania, and shall constitute a covenant running with the Property and/or equitable servitude, and shall be binding on the Landowner, his administrators, executors, assigns, heirs, and any other successors in interests, in perpetuity.

ATTEST:

WITNESS the following signatures and seals:

(SEAL) For the Township:

For the Landowner:

ATTEST:

_____(City, Borough, Township)
County of _____, Pennsylvania
I, _____, a Notary Public in and for the county and state aforesaid, whose commission expires on the _____ day of _____, 20____, do hereby certify that _____
whose name(s) is/are signed to the foregoing Agreement bearing date of the _____ day of _____, 20____, has acknowledged the same before me in my said county and state.

GIVEN UNDER MY HAND THIS _____ day of _____, 20____.

_____ _____
NOTARY PUBLIC **(SEAL)**

APPENDIX B

DISCONNECTED IMPERVIOUS AREA (DIA)

B.1. Rooftop Disconnection

When rooftop down spouts are directed to a pervious area that allows for infiltration, filtration, and increased time of concentration, the rooftop may qualify as completely or partially DIA and a portion of the impervious rooftop area may be excluded from the calculation of total impervious area.

A rooftop is considered to be completely or partially disconnected if it meets the requirements listed below:

- The contributing area of rooftop to each disconnected discharge is 500 square feet or less, and
- The soil, in proximity of the roof water discharge area, is not designated as hydrologic soil group "D" or equivalent, and
- The overland flow path from roof water discharge area has a positive slope of five percent (5%) or less.

For designs that meet these requirements, the portion of the roof that may be considered disconnected depends on the length of the overland path as designated in Table B.1.

Table B.1: Partial Rooftop Disconnection

Length of Pervious Flow Path *	Roof Area Treated as Disconnected
(ft)	(% of contributing area)
0 – 14	0
15 – 29	20
30 – 44	40
45 – 59	60
60 – 74	80
75 or more	100

* Flow path cannot include impervious surfaces and must be at least 15 feet from any impervious surfaces.

B.2. Pavement Disconnection

When pavement runoff is directed to a pervious area that allows for infiltration, filtration, and increased time of concentration, the contributing pavement area may qualify as a DIA that may be

excluded from the calculation of total impervious area. This applies generally only to small or narrow pavement structures such as driveways and narrow pathways through otherwise pervious areas, e.g., a walkway or bike path through a park.
Pavement is disconnected if the pavement, or area adjacent to the pavement, meets the requirements below:

- The contributing flow path over impervious area is not more than 75 feet, and
- The length of overland flow is greater than or equal to the contributing length, and
- The soil is not designated as hydrologic soil group "D" or equivalent, and
- The slope of the contributing impervious area is five percent (5%) or less, and
- The slope of the overland flow path is five percent (5%) or less.

If the discharge is concentrated at one or more discrete points, no more than 1,000 square feet may discharge to any one point. In addition, a gravel strip or other spreading device is required for concentrated discharges. For non-concentrated discharges along the edge of the pavement, this requirement is waived; however, there must be a provision for the establishment of vegetation along the pavement edge and temporary stabilization of the area until vegetation becomes stabilized.

REFERENCE

Philadelphia Water Department. 2006. Stormwater Management Guidance Manual. Section 4.2.2: Integrated Site Design. Philadelphia, PA.

APPENDIX C

STORMWATER MANAGEMENT DISTRICT WATERSHED MAP

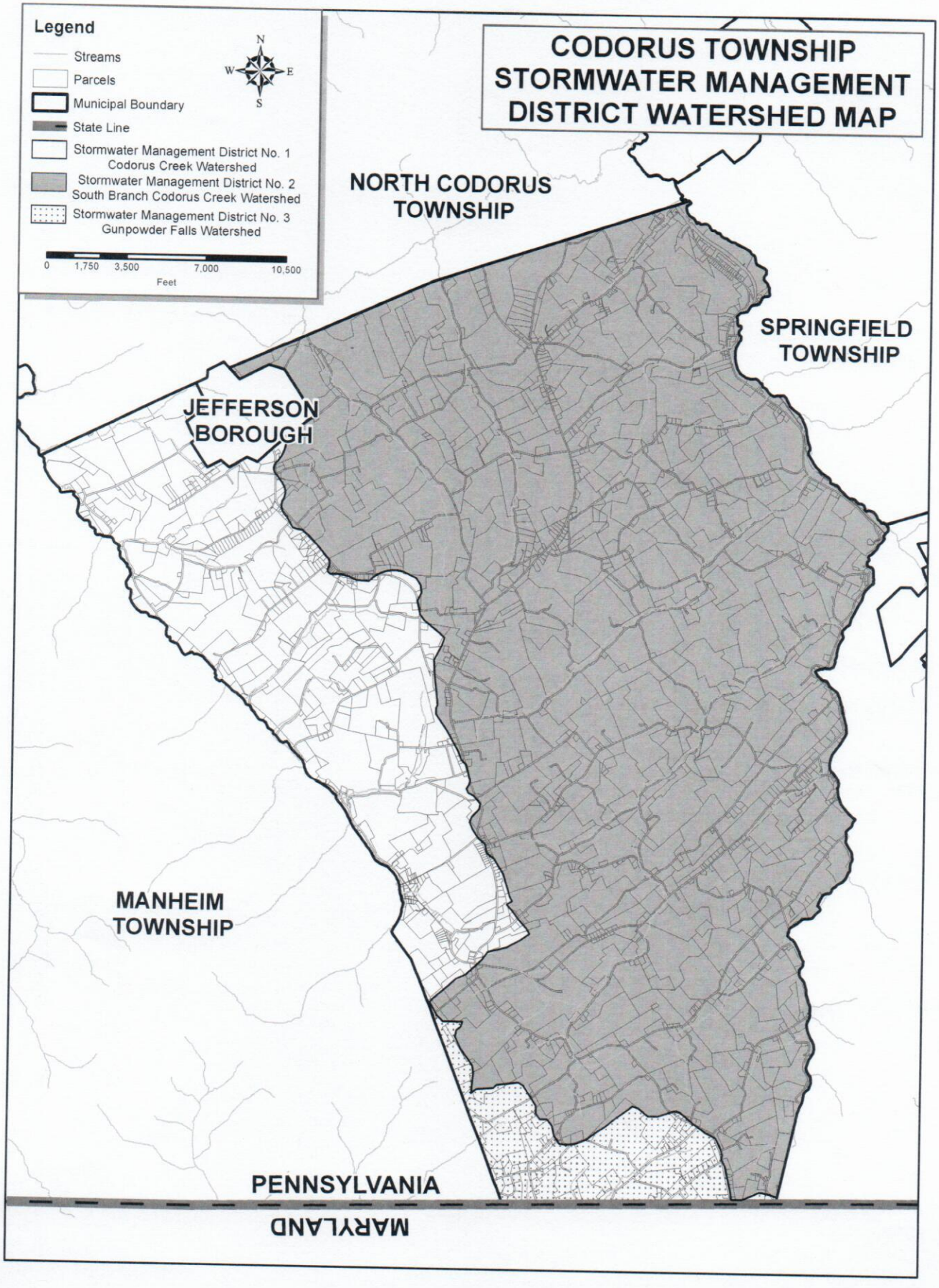
CODORUS TOWNSHIP
STORMWATER MANAGEMENT
DISTRICT WATERSHED MAP
Legend
Streams
Parcels
Municipal Boundary
State Line
Stormwater Management District No. 1
Codorus Creek Watershed
Stormwater Management District No. 2
South Branch Codorus Creek Watershed
Stormwater Management District No. 3
Gunpowder Falls Watershed
N
W
E
S
0
1,750
3,500
7,000
10,500
Feet
NORTH CODORUS
TOWNSHIP
SPRINGFIELD
TOWNSHIP
JEFFERSON
BOROUGH
MANHEIM
TOWNSHIP
PENNSYLVANIA
MARYLAND

TABLE 1
Runoff Curve Numbers
[From NRCS (SCS) TR-55]

		HYDROLOGIC SOIL GROUP			
LAND USE DESCRIPTION		**A**	**B**	**C**	**D**
Open Space		44	65	77	82
Meadow		30**	58	71	78
Agricultural		59	71	79	83
Forest		36**	60	73	79
Commercial	(85% Impervious)	89	92	94	95
Industrial	(72% Impervious)	81	88	91	93
Institutional	(50% Impervious)	71	82	88	90
Residential					
Average Lot Size	% impervious				
1/8 acre or less*65		77	85	90	92
1/8 - 1/3 acre	34	59	74	82	87
1/3 - 1 acre	23	53	69	80	85
1 - 4 acres	12	46	66	78	82
Farmstead		59	74	82	86
Smooth Surfaces (Concrete, Asphalt, Gravel or Bare Compacted Soil)		98	98	98	98
Water		98	98	98	98
Mining Newly Graded Areas (Pervious Areas Only)		77	86	91	94

* Includes Multi-Family Housing unless justified lower density can be provided.
** Caution - CN values under 40 may produce erroneous modeling results.

NOTE: Site conditions of bare earth or fallow shall be considered as meadow when choosing a CN value for existing undeveloped conditions.

TABLE 2
RATIONAL RUNOFF COEFFICIENTS
By Hydrologic Soils Group and Overland Slope (%)

	A			B			C			D		
Land Use	0-2%	2-6%	6%+	0-2%	2-6%	6%+	0-2%	2-6%	6%+	0-2%	2-6%	6%+
~~Cultivated Land~~	~~0.08[a]~~	~~0.13~~	~~0.16~~	~~0.11~~	~~0.15~~	~~0.21~~	~~0.14~~	~~0.19~~	~~0.26~~	~~0.18~~	~~0.23~~	~~0.31~~
	~~0.14[b]~~	~~0.18~~	~~0.22~~	~~0.16~~	~~0.21~~	~~0.28~~	~~0.20~~	~~0.25~~	~~0.34~~	~~0.24~~	~~0.29~~	~~0.41~~
*Cultivated Land	0.33[a]	0.37	0.42	0.40	0.43	0.49	0.45	0.49	0.55	0.48	0.53	0.59
	0.37[b]	0.43	0.48	0.44	0.49	0.55	0.51	0.55	0.63	0.54	0.59	0.69
Pasture	0.12	0.20	0.30	0.18	0.28	0.37	0.24	0.34	0.44	0.30	0.40	0.50
	0.15	0.25	0.37	0.23	0.34	0.45	0.30	0.42	0.52	0.37	0.50	0.62
Meadow	0.10	0.16	0.25	0.14	0.22	0.30	0.20	0.28	0.36	0.24	0.30	0.40
	0.14	0.22	0.30	0.20	0.28	0.37	0.26	0.35	0.44	0.30	0.40	0.50
Forest	0.05	0.08	0.11	0.08	0.11	0.14	0.10	0.13	0.16	0.12	0.16	0.20
	0.08	0.11	0.14	0.10	0.14	0.18	0.12	0.16	0.20	0.15	0.20	0.25
Residential												
Lot Size 1/8 Acre	0.25	0.28	0.31	0.27	0.30	0.25	0.30	0.33	0.38	0.33	0.36	0.42
	0.33	0.37	0.40	0.35	0.39	0.44	0.38	0.42	0.49	0.41	0.45	0.54
Lot Size ¼ Acre	0.22	0.26	0.29	0.24	0.29	0.33	0.27	0.31	0.36	0.30	0.34	0.40
	0.30	0.34	0.37	0.33	0.37	0.42	0.36	0.40	0.47	0.38	0.42	0.52
Lot Size 1/3 Acre	0.19	0.23	0.26	0.22	0.26	0.30	0.25	0.29	0.34	0.28	0.32	0.39
	0.28	0.32	0.35	0.30	0.35	0.39	0.33	0.38	0.45	0.36	0.40	0.50
Lot Size ½ Acre	0.16	0.20	0.24	0.19	0.23	0.28	0.22	0.27	0.32	0.26	0.30	0.37
	0.25	0.29	0.32	0.28	0.32	0.36	0.31	0.35	0.42	0.34	0.38	0.48
Lot Size 1 Acre	0.14	0.19	0.22	0.17	0.21	0.26	0.20	0.25	0.31	0.24	0.29	0.35
	0.22	0.26	0.29	0.24	0.28	0.34	0.28	0.32	0.40	0.31	0.35	0.46
Industrial	0.67	0.68	0.68	0.68	0.68	0.69	0.68	0.69	0.69	0.69	0.69	0.70
	0.85	0.85	0.86	0.85	0.86	0.86	0.86	0.86	0.87	0.86	0.86	0.88
Commercial	0.71	0.71	0.72	0.71	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72
	0.88	0.88	0.89	0.89	0.89	0.89	0.89	0.89	0.90	0.89	0.89	0.90
Streets	0.70	0.71	0.71	0.71	0.72	0.74	0.72	0.73	0.76	0.73	0.75	0.78
	0.76	0.77	0.79	0.80	0.82	0.84	0.84	0.85	0.89	0.89	0.91	0.95
Open Space	0.05	0.10	0.14	0.08	0.13	0.19	0.12	0.17	0.24	0.16	0.21	0.28
	0.11	0.16	0.20	0.14	0.19	0.26	0.18	0.23	0.32	0.22	0.27	0.39
Parking	0.85	0.86	0.87	0.85	0.86	0.87	0.85	0.86	0.87	0.85	0.86	0.87
	0.95	0.96	0.97	0.95	0.96	0.97	0.95	0.96	0.97	0.95	0.96	0.97

[a] Runoff coefficients for storm recurrence intervals less than 25 years.
[b] Runoff coefficients for storm recurrence intervals 25 years or more.
Source: Rawls, W.J., S.L. Wong and R.H. McCuen, 1981, "Comparison of Urban Flood Frequency Procedures", Preliminary Draft, U. S. Department of Agriculture, Soil Conservation Service, Baltimore, MD.
*Cultivated land "C" coefficients were compiled using other sources to reflect varying conditions of the ground cover due to tilling, plant growth, harvesting, maintenance, land management and similar factors.

TABLE 3

Roughness Coefficients (Manning's "n") for Overland Flow
(U.S. Army Corps Of Engineers, HEC-1 Users Manual)

Surface Description	n
Dense Growth 0.4	- 0.5
Pasture 0.3	- 0.4
Lawns 0.2	- 0.3
Bluegrass Sod 0.2	- 0.5
Short Grass Prairie	0.1 - 0.2
Sparse Vegetation	0.05 - 0.13
Bare Clay-Loam Soil (eroded)	0.01 - 0.03
Concrete/Asphalt - very shallow depths (less than 1/4 inch)	0.10 - 0.15
- small depths (1/4 inch to several inches)	0.05 - 0.10

Roughness Coefficients (Manning's "n") for Sheet Flow
(U.S. Soil Conservation Service Technical Release 55)

Surface Description	n
Smooth Surfaces (concrete, asphalt, gravel, or bare soil)	0.011
Fallow (no residue) 0.05	
Cultivated Soils:	
Residue Cover Less Than or 20%	0.06
Residue Cover Greater Than 20%	0.17
Grass:	
Short Grass Prairie	0.15
Dense Grasses	0.24
Bermuda Grass	0.41
Range (natural)	0.13
Woods:	
Light Underbrush	0.40
Dense Underbrush	0.80