STORMWATER MANAGEMENT ORDINANCE OF PENN TOWNSHIP

ORDINANCE NO. 2019-03

PENN TOWNSHIP
CUMBERLAND COUNTY
PENNSYLVANIA

Adopted at a Public Meeting
July 11, 2019

Article I - General Provisions

Article II - Definitions

Article III - Stormwater Management Standards

Article IV - Stormwater Management Site Plan Requirements

Article V - Fees and Expenses

Article VI - Maintenance Responsibilities

ARTICLE I
GENERAL PROVISIONS

Section 101. Short Title.

This Ordinance shall be known and may be cited as Penn Township Stormwater Management Ordinance.

Section 102. Statement of Findings.

The Board of Supervisors of Penn 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 stream, which also protects and maintains surface water quality.

Section 103. Purpose.

The purpose of this Ordinance is to promote health, safety, and welfare within Penn Township and its watershed by minimizing the harms 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 of Title 25 PA Code Chapter 93 to protect, maintain, reclaim and restore the existing and designated uses of the waters of this Commonwealth.

B. Require the preservation of natural drainage systems, their functionality and capacity. Existing drainage conditions shall be maintained during and post construction.

C. Manage accelerated stormwater runoff and the effects of erosion and sedimentation control problems close to the source.

D. Provide procedures and performance standards for stormwater planning and management during and after construction.

E. Maintain groundwater recharge, to prevent degradation of surface and groundwater quality and to otherwise protect water resources, including those on adjacent and neighboring properties.

F. Prevent scour and erosion of stream banks and streambeds during and after construction.

G. Provide proper operation and maintenance of all permanent Stormwater Management (SWM) Best Management Practices (BMPs) that are implemented within Penn Township.

H. Provide standards to meet NPDES permit requirements.

I. Meet general water quality and soil disturbance goals by implementing measures to:

1. Minimize disturbance to floodplains, wetlands, natural slopes over 15% and existing native vegetation.

2. Preserve and maintain trees and woodlands. Maintain or extend riparian buffers and protect existing forested buffer. Provide trees and woodlands adjacent to impervious areas whenever feasible.

3. Establish and maintain non-erosive flow conditions.

4. Minimize soil disturbance and soil compaction. Over disturbed areas replace topsoil to a minimum depth equal to the original depth or 4 inches, whichever is greater. Use tracked equipment for grading when feasible.

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

6. Incorporate the techniques for Low Impact Development Practices described in the most current version of "The Pennsylvania Stormwater Best Management Practices Manual" (SWM Manual)[1], as amended.

7. Minimize thermal impacts to Waters of the Commonwealth.

Section 104. Statutory Authority.

A. Primary Authority:

The municipality is empowered to regulate these activities by the authority of the Act of October 4, 1978, P.L. 864 (Act 167), 32 P.S. Section 680.1, et seq., as amended the "Storm Water Management Act" and Penn Township.

Hereafter, all earthmoving activities and land development within Penn Township, including without limitation, the location, design and construction within the watershed

of storm water management systems, obstructions, flood control projects, subdivisions and major land developments, highways and transportation facilities, facilities for the provisions of public utility services and facilities owned or financed in whole or in part by funds from the Commonwealth, shall be in full compliance with the requirements of the Cumberland County Stormwater Management Plan and shall be conducted in a manner consistent therewith. Any violation of the Cumberland County Stormwater Management Plan shall be considered a violation of this ordinance.

B. Secondary Authority:

Penn Township also is 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 as is reasonably necessary to prevent injury to health, safety or other property. The following activities are defined as "regulated activities" and shall be subject to the provisions of this Ordinance (unless otherwise exempted by Section 302):

1. Land development and/or redevelopment
2. Subdivision
3. Construction of new or additional impervious or semi-pervious surfaces (driveways, parking lots, etc.)
4. Construction of structures or additions to existing structures, as determined by the municipality
5. Diversion or piping of any natural or man-made stream channel
6. Installation of stormwater management facilities or appurtenances thereto
7. Forest management/timber operations that include logging road construction and timber harvesting.

Section 106. Repealer.

Any other ordinance provision(s) or regulation of Penn Township inconsistent with any of the provisions of this Ordinance is hereby repealed to the extent of the inconsistency only.

Section 107. Severability.

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

Section 108. Compatibility with Other Requirements.

Approvals issued and actions taken under this Ordinance do not relieve the Applicant of the responsibility to secure required permits or approvals for activities regulated by any other code, law, regulation or ordinance.

Section 109. Waiver Procedure.

The provisions of this Ordinance are intended as minimum standards for the protection of the public health, safety and welfare. The elected officials may waive any mandatory provisions of these regulations to the benefit of the applicant provided the waiver:

1. Is consistent with the purpose of the ordinance as described in Section 103.

2. Will remove or reduce an unreasonable standard or undue hardship as it applies to the particular property, which is grossly disproportionate to any benefit derived from the standard, or when an alternative standard provides equal or better results.

3. Is consistent with Section 301.C when involving water quality requirements.

It shall be the burden of the Applicant to demonstrate compliance with the above conditions. All waivers must be submitted to Penn Township in writing a minimum of 14 calendar days prior to the next meeting at which the waiver is to be considered.

ARTICLE II
DEFINITIONS

For the purposes of this Ordinance, certain terms and words used herein shall be interpreted as follows:

A. Words used in the present tense include the future tense; the singular number includes the plural, and the plural number includes the singular; words of masculine gender include feminine gender; and words of feminine gender include masculine gender.

B. The word "includes" or "including" shall not limit the term to the specific example but is intended to extend its meaning to all other instances of like kind and character.

C. The words "shall" and "must" are mandatory; the words "may" and "should" are permissive.

D. The word "person" includes an individual, firm, association, organization, partnership, trust, company, corporation, or any other similar entity.

All definitions included in the Penn Township Zoning Ordinance and Subdivision and Land Development Ordinance are included by reference. If any discrepancy is found, the definition in this ordinance shall supersede the other ordinances.

Agricultural Activity - The work of producing crops, including tillage, land clearing, plowing, disking, harrowing, planting, harvesting crops, 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 Penn Township for approval to engage in any Regulated Activity at a project site in Penn 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 "non-structural". In this Ordinance, non-structural 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 bio-retention, 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.

Conservation District – A conservation district, as defined in Section 3(c) of the Conservation District Law (3 P.S. § 851(c)), which has the authority under a delegation agreement executed with the Department to administer and enforce all or a portion of the erosion and sediment control program in this Commonwealth.

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.

Detention Volume – The volume of runoff that is captured and then infiltrated, evaporated, reused, or released into the waters of this Commonwealth at a controlled rate.

DEP – The Pennsylvania Department of Environmental Protection.

Development Site (Site) – See Project Site.

Disconnected Impervious Area (DIA) – An impervious or impermeable surface which has its stormwater runoff 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.

Disturbed Area – An stabilized land area where an Earth Disturbance Activity is occurring or has occurred.

Drainage Express Easement – An express right granted in a notarized writing by a landowner to a grantee allowing the use of offsite land for stormwater management purposes, as may be required for the discharge of offsite stormwater pursuant to this Ordinance.

Earth Disturbance Activity – A construction or other human activity which disturbs or exposes the underlying soil, including, but not limited to, clearing and grubbing; grading; excavations; embankments; road maintenance; building construction; 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.

Existing Condition – The initial condition of a project site prior to an Earth Distrubance Activity. For the purposes of this ordinance, the existing condition of undeveloped land shall be considered meadow in good condition unless the natural land cover is proven to generate a lower curve number or Rational "C" value, such as forested land.

FEMA – Federal Emergency Management Agency.

Floodplain – The lowland and relatively flat areas adjoining inland and coastal waters including, at a minimum, that area subject to a one percent or greater chance of flooding in any given year.

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 Operation - Planning and activities necessary for the management of forestland. 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.

Hydrologic Soil Group (HSG) - Refers to soils grouped according to their runoff-producing characteristics. The chief consideration is the inherent capacity of soil bare of vegetation to permit infiltration. Infiltration rates of soils vary widely and are affected by subsurface permeability as well as surface intake rates. Soils are classified into four HSG's (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 (NRCS3.4).

Impervious Surface (Impervious Area) - A surface that prevents the infiltration of water into the ground. Impervious surfaces (or areas) shall include, but not be limited to, roofs used to cover indoor living spaces, patios, garages, storage sheds and similar structures, and any new streets or sidewalks. Decks, parking areas, and driveways are not counted as impervious areas if they allow for infiltration. For the purposes of this ordinance, gravel parking areas and driveways that do not allow for the storage and infiltration of runoff shall be considered impervious area.

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

Land Development (Development) - Inclusive of any of the following activities:

1. The improvement of one lot or two or more contiguous lots, tracts, or parcels of land for any purpose involving
    a. A group of two or more 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
    b. The division or allocation of land or space, whether initially or cumulatively, between or among two or more existing or prospective occupants by means of, or for the purpose of streets, common areas, leaseholds, condominiums, building groups, or other features;
2. Any subdivision of land;
3. Development in accordance with Section 503.(1.1) of the PA Municipalities Planning Code.

Municipality - Penn Township, Cumberland County, Pennsylvania.

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

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

Pervious Area - Any area not defined as impervious.

Project Site - The specific area of land where any Regulated Activities in Penn Township are planned, conducted or maintained.

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

Regulated Activities - Shall include, but not be limited to, any Earth Disturbance Activities or any activities that involve the alteration or development of land in a manner that may affect stormwater runoff as specified in Section 105.

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

Retention Volume/Removed Runoff - The volume of runoff that is captured and not released directly into the surface waters of this Commonwealth or onto neighboring properties 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).

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

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

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

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

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 - the Cumberland County Stormwater Management Plan for managing stormwater runoff adopted by the County of Cumberland as required by the Act of October 4, 1978, P.L. 864, (Act 167), as amended, and shown as the "Storm Water Management Act".

Stormwater Management Site Plan - The plan prepared by the developer, municipality, or other entity indicating how storm water 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.

Subdivision - As defined in The Pennsylvania Municipalities Planning Code, Act of July 31, 1968, P.L. 805, No. 247, as amended.

USDA - United States Department of Agriculture.

Waters of this Commonwealth - Rivers, streams, creeks, rivulets, impoundments, ditches, watercourses, storm sewers, lakes, dammed water, wetlands, ponds, springs and 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 the Commonwealth.

Wetland - Those areas that are inundated or saturated by surface or ground water 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, fens, and similar areas.

ARTICLE III
STORMWATER MANAGEMENT STANDARDS

Section 301. General Requirements.

A. For all Regulated Activities, unless preparation of a 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 Penn Township issues written approval of an SWM Site Plan, which demonstrates compliance with the requirements of this Ordinance. All express Drainage Easements for offsite discharge of stormwater must be submitted to the Township and approved with the SWM Site Plan.

B. SWM Site Plans approved by Penn Township in accordance with this ordinance, shall be on site throughout the duration of the Regulated Activity.

C. The Municipality, after consultation with DEP, may 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.

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 (e.g. during construction) to meet the purposes and requirements of this Ordinance and to meet all requirements under the Pennsylvania Code Title 25 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], Commonwealth of Pennsylvania, Department of Environmental Protection, No. 363-2134-008 (2000), as amended and updated. Stormwater control during the construction phase must be specifically addressed in the plans to prevent any change in pre-construction volume and flow across adjacent or neighboring properties.

E. For all Regulated Activities not exempted by Section 302, implementation of the Volume Controls in Section 303 is required.

F. For all new development projects, 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 stages. Similarly, for new development projects taking place in stages, the entire proposed new development plan must be used in determining conformance with this Ordinance.

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

1. Protect health, safety and property;

2. Meet State Water Quality Requirements as defined in Article II;

3. Meet the water quality goals of this ordinance by implementing measures to:

   a. Minimize disturbance to floodplains, wetlands, natural slopes over 15%, and existing native vegetation.

   b. Preserve and maintain trees and woodlands. Maintain or extend riparian buffers along streams and wetlands. Provide trees and woodlands adjacent to impervious areas whenever feasible.

   c. Establish and maintain non-erosive flow conditions in natural flow pathways.

   d. Minimize soil disturbance and compaction.

   e. Disconnect impervious surfaces by directing runoff to pervious areas.

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

I. Storage facilities should completely drain both the volume control and rate control capacities within 72 hours from the end of the design storm subject to site conditions.

J. The design storm precipitation depth estimates to be used in the analysis of peak rates of discharge should be obtained from the Precipitation-Frequency Atlas of the United States, Atlas 14, Volume 2, U.S. Department of Commerce, National Oceanic and Atmospheric Administration (NOAA), National Weather Service, Hydrometeorological Design studies Center, Silver Spring, Maryland 20910. NOAA's Atlas 145 can be accessed at Internet Address: http://hdsc.nws.noaa.gov/hdsc/pfds/.

K. 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 Stormwater Management Act.

L. Surface Water and Ground Water quality shall not be adversely affected by the proposed development during construction or after construction has been completed. Water quality testing in accordance with Section 605 B shall be performed every three months during construction. Results shall be submitted to the Township within 15 calendar days of testing.

M. The use of injection/gravity wells is not a preferred method of stormwater management within the Township due to its potential impact on drinking water sources and the absence of a public system. Wherever injection/gravity wells are proposed to be used for

stormwater management, thermal impacts to the groundwater must also be considered and addressed in any development plans. All stormwater runoff infiltrated or injected into the ground shall be treated to filter out organic compounds, sediment, nutrients, metals, salts, microorganisms, bacteria, fertilizers, pesticides or any other contaminate. All stormwater runoff shall meet current PADEP requirements for water quality.

N. Runoff from impervious surfaces that experience vehicle traffic cannot be managed with injection/gravity wells. It must be filtered to capture oil and other chemicals and must be managed through surface BMPs (retention ponds, etc). Final testing before discharge from the property must be performed.

Section 302. Exemptions

A. Regulated Activities resulting in less than or equal to 1,000 square feet of new impervious surface are exempt from Article IV SWM Site Plan preparation requirements including Sections 303 and 304 of this Ordinance.

B. Regulated Activities meeting the following parcel size and square footage requirements are exempt from the SWM Site Plan preparation requirements including Sections 303 and 304 of this Ordinance. These criteria shall apply to the total proposed development even if development is to take place in phases. The date of the municipal ordinance adoption shall be the starting point from which to consider tracts as "parent tracts" in which future subdivisions and respective impervious area computations shall be cumulatively considered.

New Impervious Area Exemption Criteria for Peak Rate Control

Total Parcel Size (acres)	Total Parcel Size (square feet)	New Impervious Area Exemption (square feet)
<0.25	<10,890	1,000
0.25-0.5	10,890-21,780	2,500
>0.5	>21,780	5,000

C. Agricultural plowing and tilling are exempt from the SWM Site Plan requirements including Sections 303 and 304 of this Ordinance provided the activities are performed according to the requirements of Title 25 PA Code Chapter 102.

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 Title 25 PA Code Chapter 102.

E. Exemptions from any provisions of the Ordinance shall not relieve the applicant from the requirements in Sections 301.D, F, G, H and L.

Section 303. Calculation Methodology

Stormwater runoff from all development sites shall be calculated using either the Rational Method or a soil-cover complex methodology.

A. Any stormwater runoff calculations involving drainage areas greater than 200 acres, including on- and off-site areas, shall use a generally accepted calculation technique that is based on the NRCS soil-cover complex method. Permissible computation methods include TR-20, TR-55[4] and HEC-HMS. 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. The Municipality may approve the use of the Rational Method to estimate peak discharges from drainage areas that contain less than 200 acres.

B. All calculations consistent with this Ordinance using the soil-cover complex method shall use the appropriate design rainfall depths for the various return period storms presented by NOAA[5]. If a hydrologic computer model such as HEC-HMS is used for stormwater runoff calculations, then the duration of rainfall shall be 24 hours. The NRCS 'S' be used for the rainfall distribution.

C. All calculations using the Rational Method shall use rainfall intensities consistent with appropriate times of concentration for overland flow and return periods from NOAA. 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[4] (as amended or replaced from time to time by NRCS). Times of concentration for channel and pipe flow shall be computed using Manning's equation.

D. Runoff Curve Numbers (CN) for both existing and proposed conditions to be used in the soil-cover complex method shall be obtained from TR-55 Manual[4]. For existing conditions, the land use shall be considered as "meadow" in good condition unless the land cover is proven to generate lower curve numbers or rational "C" values, such as forested land.

E. Runoff coefficients (c) for both existing and proposed conditions for use in the Rational Method shall be obtained from Table B-1 in Appendix B of this Ordinance.

F. Where uniform flow is anticipated, the Manning Equation shall be used for hydraulic computations, and to determine the capacity of open channels, pipes, and storm sewers. Values for Manning's roughness coefficient (n) shall be consistent with Table B-2 in Appendix B of this Ordinance. Outlet structures for stormwater management facilities shall be designed to meet the performance standards of this Ordinance using any generally accepted hydraulic analysis technique or method.

G. 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 the Storage-Indication Method. For drainage areas greater than 20 acres in size, the design storm hydrograph shall be computed using a calculation method that produces a full hydrograph. The Municipality may approve the use of any

generally accepted full hydrograph approximation technique that shall use a total runoff volume that is consistent with the volume from a method that produces a full hydrograph.

H. The Municipality has the authority to require that computed existing runoff rates be reconciled with field observations and conditions. If the designer can substantiate through actual physical calibration that more appropriate runoff and time-of-concentration values should be utilized at a particular site, then appropriate variations may be made upon review and recommendations of the Municipal Engineer. Calibration shall require detailed gauge and rainfall data for the particular site in question.

I. All SWM BMPs that include infiltration shall be evaluated in accordance with SWM Manual[1] Appendix C.

Section 304. Volume Controls.

Water volume controls shall be implemented using the Design Storm Method in Subsection I or the Simplified Method in Subsection 2 below for all Regulated Activities not otherwise exempted by Section 302. 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 (See Section 8.7 of the most current version of the SWM Manual[1]) is applicable to any size of Regulated Activity. This method requires detailed modeling based on site conditions.

1. Do not increase the post-development runoff volume for all storms equal to or less than the 2-year 24-hour storm event.

2. For modeling purposes:

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

   b. Twenty (20) percent of existing impervious area, when present, shall be considered meadow in the model for existing conditions.

3. Calculations of the post-development peak discharge shall assume that all areas being disturbed during construction will be reduced by one Hydrologic Soil Group category level (e.g. C to B, etc.), or other cover type and coefficient as approved by the Township.

B. The Simplified Method (See Section 8.7 of the most current version of the SWM Manual[1]) 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 detention or rate control facilities. For new impervious surfaces:

1. Stormwater facilities shall be sized to capture at least the first two inches of runoff from all new impervious surfaces.

2. At least the first one 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 include reuse, evaporation, transpiration, and infiltration.

3. Infiltration facilities should be designed to accommodate infiltration of the entire permanently removed runoff; however, in all cases at least the first one-half inch of the permanently removed runoff should be infiltrated.

4. The second one inch of runoff from new impervious surfaces should be detained using structural and non-structural BMPs (as outlined in the most current version of the SWM Manual) and released at a controlled rate.

5. Regulated Activities eligible under this method are exempt from the requirements of Section 305, Rate Controls.

Section 305. Rate Controls

A. Post-development discharge rates shall not exceed the predevelopment discharge rates for the 1-, 2-, 5-, 10-, 25-, 50-, and 100-year 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.

B. Any stormwater management facility 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 post-development conditions. The height of embankment must be set as to provide a minimum 1.0 foot of freeboard above the maximum pool elevation computed when the facility functions for the 100-year post-development inflow. Should any stormwater management facility require a dam safety permit under PA DEP Chapter 105, the facility shall be designed in accordance with Chapter 105 and meet the regulations of Chapter 105 concerning dam safety which may be required to pass storms larger than 100-year event.

C. The design of all stormwater management facilities shall incorporate sound engineering principles and practices. The Municipality shall reserve the right to disapprove any design

that would result in the occupancy or continuation of an adverse hydrologic or hydraulic condition within the watershed.

Section 306. Karst Geology

A. The design of all facilities over Karst shall include an evaluation of measures to minimize adverse effects in accordance with the procedures outlined in Section 7.4 (Special Management Areas - Karst Areas) of the most current version of the SWM Manual[1].

B. In areas that are underlain by limestone bedrock, stormwater management facilities shall be designed to minimize the concentration of stormwater runoff. A detailed geologic evaluation of the project site shall be performed to determine the suitability of recharge facilities. The evaluation shall be performed by a qualified geologist and/or soil scientist, and at a minimum, address soil permeability, depth to bedrock, susceptibility to sinkhole formation, and subgrade stability. Where pervious pavement is permitted for parking lots, recreational facilities, non-dedicated streets, or other areas, pavement construction specifications shall be noted on the plan. Stormwater management facilities for the recharge of groundwater in limestone bedrock areas must provide for infiltration opportunities distributed over a very large area. Examples include filter strips, large bioretention areas, and pervious pavement. Stormwater management facilities that create concentrated sources of infiltration, such as infiltration trenches or dry wells, shall not be used in limestone bedrock areas. Implementation of these infiltration requirements in defined HQ and EV watersheds is subject to the Department of Environmental Protection's Chapter 93 Water Quality Regulations and Antidegradation Regulations.

C. 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 limestone formations shall include measures to prevent groundwater contamination and, where necessary, sinkhole formation. Soils used for the construction of basins shall have low-erodibility factors ("K" factors). The Municipality may require the installation of an impermeable liner in detention basins.

D. It shall be the developer's responsibility to verify if the site is underlain by limestone. The following note shall be attached to all drainage plans and signed and sealed by the developer's engineer/surveyor/landscape architect/architect: _____ certify that the proposed detention basin (circle one) is/is not underlain by limestone.

Section 307. Preservation of Natural Drainage Features and Depressions

For all land development plans, the elimination of natural drainageways or depressions shall only be accepted if the developer cannot reasonably comply with this requirement because of a property's configuration and/or topography.

Section 308. Avoiding Adverse Impacts on Downstream Properties

A. The natural stormwater drainage features and man-made drainage facilities that convey stormwater runoff from a development site's discharge point(s) of concentrated stormwater runoff to a perennial stream must be located in a recorded drainage easement, or a public utility or road right-of-way with a minimum width of 15 feet. The Applicant must obtain written permission with signatures for easement approval for any stormwater discharge (increase or decrease) change in volume, rate, water quality or manner of flow onto neighboring properties in the flow path until it reaches the surface waters.

B. The quantity, velocity and direction of the stormwater runoff discharge must be evaluated in order to determine that there is no increase in the risk to the health and safety of the public and no damage to property for the 1-year through 100-year storm events following development.

C. The following criteria shall be used for the stormwater runoff discharge evaluation.

1. The capacity in the downstream natural or man-made conveyance system between a development site's discharge point(s) of concentrated stormwater runoff to a perennial stream may be used only in proportion to the development site's area relative to the total upstream area draining to the conveyance system (i.e., If a development site represents 10 percent of the upstream area draining to a conveyance system, the development site may use 10 percent of the capacity available in the conveyance system).

2. Open channels, in combination with the drainage easement in which the channel is located, must have the capacity to convey the peak rate of runoff for the 25-year storm event within the drainage easement at velocities that will not lead to erosion of the channel or in the drainage easement. In order to minimize the occurrence of critical erosive velocities in natural stream channels, stormwater runoff from new development sites must be gradually released. To attain this objective, stormwater runoff from new development sites, for the 2-year, 24-hour storm event must be released over a minimum period of 24-hour event within the drainage easement at velocities that will not lead to erosion of the channel or in the drainage easement.

3. Storm sewers, culverts, bridges, or any other facilities in combination with the drainage easements in which the facilities are located must have the capacity to convey the peak rate of runoff for the 25-year storm event within the drainage easement at velocities that will not lead to erosion in the drainage easement.

ARTICLE IV
STORMWATER MANAGEMENT PLAN REQUIREMENTS

Section 401. General Requirements.

For any of the activities regulated by this Ordinance, the final approval of subdivision and/or land development plans, the issuance of any building or occupancy permit, or the commencement of any land disturbance activity may not proceed until the Property Owner or Developer or his/her agent has received written approval of a Stormwater Management Site Plan from Penn Township.

Section 402. Stormwater Management Site Plan Contents.

The Stormwater Management Site Plan shall consist of all applicable calculations, maps, and plans. A note on the maps shall refer to the associated computations and erosion and sedimentation control plan by title and date. The cover sheet of the computations and erosion and sedimentation control plan shall refer to the associated maps by title and date. All Stormwater Management Site Plan materials shall be submitted to the municipality in a format that is clear, concise, legible, neat, and well organized; otherwise, the Stormwater Management Site Plan shall be disapproved and returned to the Applicant.

The following items shall be included in the Stormwater Management Site Plan:

A. General description of project.

   1. General description of project.

   2. A general description of the Construction Phase Erosion Control Plan needs to be presented. Permanent stormwater management techniques, including construction specifications of the materials to be used for stormwater management facilities.

   3. A general description of Construction Phase changes to stormwater rates, flows and volumes including temporary and permanent changes to natural drainage pathways.

   4. Complete hydrologic, hydraulic, and structural computations for all stormwater management facilities.

B. Map(s) of the project area shall be submitted on 24-inch x 36-inch or 18-inch x 24-inch sheets and shall be prepared in a form that meets the requirements for recording the offices of the Recorder of Deeds of Cumberland County. The contents of the map(s) shall include, but not be limited to:

   1. The location of the project relative to highways, municipalities or other identifiable landmarks.

2. Existing contours at intervals of two feet within 250 feet of project boundaries. In areas of steep slopes (greater than 15 percent), five-foot contour intervals may be used.

3. Existing streams, lakes, ponds, wetlands, waters of the commonwealth or other bodies of water within 250 feet of the project area.

4. Other physical features including flood hazard boundaries, sinkholes, sinks, existing drainage courses and areas of natural vegetation to be preserved within 250 feet of the project area. The total extent of the upstream area draining through the site shall be shown on the drainage area map.

5. The locations of all existing and proposed utilities, sanitary sewers, water lines, on-lot septic systems and wells within 250 feet of property lines and any property sharing the waterways.

6. An overlay showing soil names and boundaries.

7. Proposed changes to the land surface and vegetative cover, including the type and amount of impervious area that would be added.

8. Proposed structures, roads, paved areas, buildings, and other improvements.

9. For the purposes of this ordinance, all stormwater management BMPs are considered structures and shall therefore meet the building setback requirements for the applicable zone as specified in the Penn Township Zoning

10. Final contours at intervals at two feet. In areas of steep slopes (greater than 15 percent), five-foot contour intervals may be used.

11. The name of the development, the name and address of the owner of the property, and the name of the individual or firm preparing the plan.

12. The date of submission.

13. A graphic and written scale of one (1) inch equals no more than fifty (50) feet; for tracts of twenty (20) acres or more, the scale shall be one (1) inch equals no more than one hundred (100) feet.

14. A North arrow.

15. The total tract boundary and size with distances marked to the nearest foot and bearings to the nearest degree.

16. Existing and proposed land use(s).

17. A key map showing all existing man-made features beyond the property boundary that would be affected by the project.

18. Horizontal and vertical profiles of all culverts, storm drainage pipes and open channels, including hydraulic capacity and velocity for the ten-year storm event.

19. Overland drainage paths.

20. For any natural drainage paths that are altered during construction, provisions must be made to mitigate any change in flow rate, volume or velocity.

21. A fifteen-foot wide access easement around all stormwater management facilities that would provide ingress to and egress from a public right-of-way.

22. A note on the plan indicating the location and responsibility for maintenance of stormwater management facilities that would be located off-site. All off-site facilities shall meet the performance standards and design criteria specified in this Ordinance.

23. A construction detail of any improvements made to sinkholes and the location of all notes to be posted, as specified in this Ordinance.

24. A statement signed by the landowner, acknowledging the stormwater management system to be a permanent fixture that can be altered or removed only after approval of a revised plan by the municipality.

25. The location of all erosion and sedimentation control facilities.

C. Supplemental Information

1. A written description of the following information shall be submitted. This is to include all activities for the existing condition, post condition and during construction.

   a. The overall stormwater management concept for the project.

   b. Stormwater runoff computations as specified in this Ordinance.

   c. Stormwater management techniques to be applied both during and after development.

   d. Expected project time schedule.

2. A soil erosion and sedimentation control plan, where applicable, including all reviews and approvals, as required by the Penn Township Subdivision and Land Development Ordinance, as amended, and PA DEP.

3. A geologic assessment of the effects of runoff on sinkholes as specified in this Ordinance by a licensed geologist.

4. The effect of the project (in terms of runoff volumes and peak flows) on adjacent properties and on any existing municipal stormwater collection system that may receive runoff from the project site.

5. A Declaration of Adequacy and Highway Occupancy Permit from PennDOT District Office when utilization of a PennDOT storm drainage system is proposed.

D. Stormwater Management Facilities

1. All stormwater management facilities must be located on a plan and described in detail.

2. When groundwater recharge methods such as seepage pits, beds or trenches are used, the locations of existing and proposed septic tank infiltration areas and wells within 250 feet must be shown.

3. All calculations, assumptions, and criterion used m the design of the stormwater management facilities must be shown.

4. Inspection plan needs to be submitted by timeframe, as per section 605.

Section 403. Plan Submission.

For all activities regulated by this Ordinance, the steps below shall be followed for submission. For any activities that require a PA DEP Joint Permit Application and regulated under Chapter 105 (Dam Safety and Waterway Management) or Chapter 106 (Floodplain Management) of PA DEP's Rules and Regulations, require a PennDOT Highway Occupancy Permit, or require any other permit under applicable state or federal regulations, the permit(s) shall be part of the plan.

A. The SWM Site Plan shall be submitted by the Developer as part of the Preliminary Plan submission for the Regulated Activity.

B. Four (4) copies of the SWM Site Plan shall be submitted.

C. Distribution of the SWM Site Plan will be as follows:

1. Two (2) copies to the Municipality accompanied by the requisite Municipal Review Fee, as specified in this Ordinance.

2. One (1) copy to the Municipal Engineer.

3. One (1) copy to the County Planning Commission.

D. Additional copies may be requested by PADEP, Cumberland County Conservation District or PennDOT. The Township may need to request additional copies for their use.

Section 404. Stormwater Management (SWM) Site Plan Review.

A. The Municipal Engineer shall review the SWM Site Plan for consistency with this Ordinance.

B. The Municipal Engineer shall review the SWM Site Plan for any subdivision or land development against the municipal subdivision and land development ordinance provisions not superseded by this Ordinance.

C. For activities regulated by this Ordinance, the Municipal Engineer shall notify the Municipality in writing, within a time frame consistent with the Subdivision and Land Development Ordinance, whether the SWM Site Plan is consistent with the Stormwater Management Plan. Should the SWM Site Plan be determined to be consistent with the Stormwater Management Plan, the Municipal Engineer will forward an approval letter to Penn Township with a copy to the Developer (Consultant).

D. Should the SWM Site Plan be determined to be inconsistent with the Stormwater Management Plan, the Municipal Engineer will forward a disapproval letter to Penn Township with a copy to the Developer (Consultant) citing the reason(s) for the disapproval. Any disapproved SWM Site Plan may be revised by the Developer and resubmitted consistent with this Ordinance.

E. For Regulated Activities requiring a PA DEP Joint Permit Application, the Municipal Engineer shall notify PA DEP whether the SWM Site Plan is consistent with the Stormwater Management Ordinance and forward a copy of the letter to Penn Township and the Developer. PA DEP may consider the Municipal Engineer's review comments in determining whether to issue a permit.

F. The Township's Building Permit Office shall not issue a building permit for any Regulated Activity specified in Section 105 of this Ordinance if the SWM Site Plan has been found to be inconsistent with the Stormwater Management Ordinance, as determined by the Municipal Engineer, or without considering the comments of the Municipal Engineer.

G. The Developer shall be responsible for completing an "As-Built Survey" of all stormwater management facilities included in the approved SWM Site Plan. The As-Built Survey and an explanation of any discrepancies with the design plans shall be submitted to the Township Engineer for final approval. The submission shall include a certification of completion from an engineer, architect, surveyor, or other qualified person verifying that all permanent SWM BMPs have been constructed according to the plans and specifications as approved. In no case shall the Municipality approve the As-Built Survey until the Municipality receives a copy of an approved Declaration of Adequacy, Highway Occupancy Permit from the PennDOT District Office, and any applicable permits from PA DEP.

H. The Municipality's approval of a SWM Site Plan shall be valid for a period not to exceed three (3) years. This five-year time period shall commence on the date that Penn Township approves the SWM Site Plan. If stormwater management facilities included in the approved plan have not been constructed, or if an As-Built Survey of these facilities has not been approved within this five-year time period, then Penn Township may consider the SWM Site Plan disapproved and may revoke any and all permits.

Section 405. Modification of Plans.

A modification to a submitted SWM Site Plan for a development site that involves a change in stormwater management facilities or techniques, or that involves the relocation or re-design of stormwater management facilities, or that is necessary because soil or other conditions are not as stated on the SWM Site Plan as determined by the Township Engineer, shall require a resubmission of the modified SWM Site Plan consistent with Section 403 of this Ordinance and be subject to review as specified in Section 404 of this Ordinance.

Section 406. Resubmission of Disapproved SWM Site Plans.

A disapproved SWM Site Plan may be resubmitted, with the revisions addressing the Township Engineer's concerns documented in writing, to the Township Engineer in accordance with Section 403 of this Ordinance and be subject to review as specified in Section 404 of this Ordinance. The applicable Review Fee must accompany a resubmission of a disapproved SWM Site Plan.

ARTICLE V
FEES AND EXPENSES

Section 501. General.

The fee required by this Ordinance is the Township Review Fee. The Township Review Fee shall be established by Penn Township to defray review costs incurred by Penn Township and the Township Engineer. All fees shall be paid by the Applicant.

Section 502. Township SWM Site Plan Review Fee.

Penn Township shall establish a Review Fee Schedule by resolution based on the size of the Regulated Activity and based on the Township's costs for reviewing the SWM Site Plans. Penn Township shall periodically update the Review Fee Schedule to ensure that review costs are adequately reimbursed.

Section 503. Expenses Covered by Fees.

The fees required by this Ordinance shall at a minimum cover:

A. Administrative costs/clerical processing.

B. The review of the SWM Site Plan by the Township and the Township Engineer.

C. Site inspections.

D. Inspection of stormwater management facilities and drainage improvements during construction.

E. Final inspection upon completion of the stormwater management facilities and drainage improvements presented in the SWM Site Plan.

F. Attendance at meetings.

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

ARTICLE VI
MAINTENANCE RESPONSIBILITIES

Section 601. Performance Guarantee.

The Applicant should provide a financial guarantee to Penn Township for the timely installation and proper construction of all stormwater management controls as required by the approved stormwater plan and this Ordinance equal to the full construction cost of the required controls.

Section 602. Maintenance Responsibilities.

A. The SWM Site Plan for the development site shall contain an operation and maintenance plan prepared by the Developer and approved by the Township Engineer. The operation and maintenance plan shall outline required routine maintenance actions and schedules necessary to insure proper operation of the facility(ies).

B. The SWM Site Plan for the development site shall establish responsibilities for the continuing operating and maintenance of all proposed stormwater control facilities, consistent with the following principals:

   1. If a development consists of structures or lots that are to be separately owned and in which streets, sewers and other public improvements are to be dedicated to the Municipality, stormwater control facilities may also be dedicated to and maintained by the Municipality.

   2. If a development site is to be maintained in a single ownership or if sewers and other public improvements are to be privately owned and maintained, then the ownership and maintenance of stormwater control facilities shall be the responsibility of the owner or private management entity.

C. The governing body, upon recommendation of the Township engineer, shall make the final determination on the continuing maintenance responsibilities prior to final approval of the stormwater management plan. The governing body reserves the right to accept the ownership and operating responsibility for any or all of the stormwater management controls.

Section 603. Maintenance Agreement for Privately Owner Stormwater Facilities.

Prior to final subdivision plan approval or the issuance of any building permit and prior to the final approval of the site's stormwater management plan, the property owned shall sign and record the maintenance agreement contained in Appendix A of this Ordinance. The agreement shall be recorded among the land records of Cumberland County, Pennsylvania and on the final (approved) subdivision plan.

A. Other items may be included in the agreement by the Municipality where determined necessary to guarantee the satisfactory maintenance of all facilities. The maintenance agreement shall be subject to the review and approval of the Municipal Solicitor, Municipal Engineer and the Board of Supervisors.

Section 604. Municipal Stormwater Maintenance Fund.

A. If stormwater facilities are accepted by Penn Township for dedication, persons installing stormwater storage facilities shall be required to pay a specified amount to Penn Township's 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 owned and maintained by Penn Township the deposit shall cover the estimated costs for maintenance and inspections for twenty (20) years. The Township Engineer will establish the estimated costs utilizing information submitted by the Applicant.

2. 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 Board of Supervisors.

B. If a storage facility is proposed that also serves as a recreation facility (e.g. ball field, lake), Penn Township may reduce or waive the amount of the maintenance fund deposit based upon the value of the land for public recreation purpose.

C. If at some future time a storage facility (whether publicly or privately owned) is eliminated due to the installation of storm sewers or other storage facility, the unused portion of the maintenance fund deposit will be applied to the cost of abandoning the facility and connecting to the storm sewer system or other facility. Any amount of the deposit remaining after the costs of abandonment are paid will be retained by Penn Township.

Section 605. Post-Construction Maintenance Inspections.

A. Stormwater facilities shall be inspected by the land owner/developer and township official annually.

B. Stormwater quality testing shall be conducted annually at the point of discharge on the subject property. Testing shall include, at a minimum, total suspended solids, nutrients, bacteria, pH and heavy metals. If any testing result exceeds the maximum amount established by Title 25 PA Code Chapter 93, a second test during a second rainfall event shall be conducted. If the second test results exceed the maximum amount established, the property owner must improve their existing BMPs or add additional BMPs to address the violations.

C. The entity conducting the inspection shall be required to submit a report to Penn Township regarding the condition of the facility and recommending any necessary repairs, if needed,

within 30 calendar days. Recommended repairs must be made within 60 calendar days of report submission to Penn Township.

D. Property will be inspected for sinkholes every 6 months or as needed.

ARTICLE VII
ENFORCEMENT AND PENALTIES

Section 701. Right-of-Entry.

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

Section 702. 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, Penn Township shall provide timely written notification of the violation. Such notification shall set forth the nature of the violation(s) and establish a time limit for correction of these violation(s). Failure to comply within the time specified shall subject such person to the penalty provision of this Ordinance. All such penalties shall be deemed cumulative and shall not prevent Penn Township from pursuing any and all other remedies. It shall be the responsibility of the owner of the real property on which any Regulated Activity is proposed to occur, or has occurred, to comply with the terms and conditions of this Ordinance and the Stormwater Operation and Maintenance Agreement.

Section 703. Enforcement.

The Board of Supervisor's designated municipal employees and the municipality's solicitor are hereby authorized and directed to enforce all of the provisions of this ordinance. All inspections regarding compliance with the SWM Site plan shall be the responsibility of the Municipal Engineer or other qualified persons designated by Penn Township.

A. A set of design plans approved by the Municipality shall be on file at the site throughout the duration of the construction activity. Periodic inspections shall be made by Penn Township or designee during construction.

B. Adherence to Approved Plan.

   It shall be unlawful for any person, firm or corporation to undertake any Regulated Activity under Section 105 on any property except as provided for in the approved drainage plan and pursuant to the requirements of this Ordinance. It shall be unlawful to alter or remove any control structure required by the drainage plan pursuant to this Ordinance or to allow the property to remain in a condition which does not conform to the approved SWM Site Plan.

C. At the completion of the project, and as a prerequisite for the release of the Performance Guarantee, the owner or his representative shall:

1. Provide a certification of completion from an engineer, architect, surveyor or other qualified person verifying that all permanent facilities have been constructed according to the plans and specifications and approved revisions thereto.

2. Provide a set of as-built drawings when applicable.

D. After receipt of the certification by Penn Township, a final inspection shall be conducted by the Township Engineer to certify compliance with this Ordinance.

E. Prior to revocation or suspension of a permit, the Board of Supervisors will schedule a hearing to discuss the non-compliance if there is no immediate danger to life, public health or property.

F. Suspension and Revocation of Permits.

1. Any permit issued under this ordinance may be suspended or revoked by the Board of Supervisors for:

   a. Non-compliance with or failure to implement any provision of the permit.

   b. A violation of any provision of this Ordinance or any other applicable law, ordinance, rule or regulation relating to the project.

   c. The creation of any condition or the commission or any act during construction or development which constitute or creates a hazard or nuisance, pollution or which endangers the life or property of others, or as outlined in this Ordinance.

2. A suspended permit shall be reinstated by the Board of Supervisors.

   a. The Municipal Engineer or his designee has inspected and approved the corrections to the stormwater management and erosion and sediment pollution control measure(s), or the elimination of the hazard or nuisance, and/or

   b. The Board of Supervisors is satisfied that the violation of the ordinance, law, or rule and regulation has been corrected.

   c. A permit that has been revoked by the Board of Supervisors cannot be reinstated. The applicant may apply for a new permit under the procedures outlined in this Ordinance.

G. Occupancy Permit.

An occupancy permit shall not be issued unless a certification of compliance has been secured. The occupancy permit shall be required for each lot owner and/or developer for all subdivisions and land development in Penn Township.

Section 704. Public Nuisance.

A. The violation of any provision of this Ordinance is hereby deemed a Public Nuisance.

B. Each day that a violation continues shall constitute a separate violation.

Section 705. Penalties.

A. Anyone violating the provisions of this Ordinance shall be subject to a fine of not more than $1,000.00 for each violation, plus court costs and attorney fees. Each day that the violation continues shall be a separate offense.

B. In addition, Penn Township, through its solicitor, 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 706. Appeals.

A. Any person aggrieved by any action of Penn Township or its designated representatives, relevant to the provisions of this Ordinance or the Stormwater Operation and Maintenance Agreement, may appeal to the Board of Supervisors within thirty (30) days of that action.

B. Any person aggrieved by any decision of the Board of Supervisors, relevant to the provisions of this Ordinance of the Stormwater Operation and Maintenance Agreement, may appeal to the County Court of Common Pleas in the county where the activity has taken place within thirty (30) days of the Board of Supervisor's decision.

ARTICLE VIII – REFERENCES

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

2. The Pennsylvania Department of Environmental Protection (DEP). 363-2134-008 (2000), as amended and updated. *Erosion and Sediment Pollution Control Program Manual.* Harrisburg, PA.

3. United States Department of Agriculture (USDA), National Resources Conservation Service (NRCS). *National Engineering Handbook.* Part 630: Hydrology, 1969-2001. Originally published as the *National Engineering Handbook,* Section 4: Hydrology. Available online at: http://www.wcc.nrcs.usda.gov/hydro/hydro-techref-neh-630.html.

4. United States Department of Agriculture (USDA), Natural Resources Conservation Service (NRCS). 1986. *Technical Release 55: Urban Hydrology for Small Watersheds*, 2nd Edition. Washington, D.C.

5. US Department of Commerce (USDC), National Oceanic and Atmospheric Administration (NOAA), National Weather Service (NWS), Hydrometeorological Design Studies Center. 2004-2006. *Precipitation-Frequency Atlas of the United States, Atlas 14, Volume 2*, Silver Spring, Maryland, 20910. Internet address: http://hdsc.nws.noaa.gov/hdsc/pfds/.

ENACTED and ORDAINED at a regular meeting of Penn Township on the 11th day of July 2019. This Ordinance shall take effect immediately.

GARY MARVIN, CHAIRMAN

KENNETH SHEAFFER, VICE CHAIRMAN

RONALD TRITT, SUPERVISOR

ATTEST:

VICKI KNEPP, SECRETARY

Appendix A

APPENDIX A

OPERATION AND MAINTENANCE 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 Penn Township, Cumberland County, Pennsylvania, (hereinafter "Municipality");

WITNESSETH

WHEREAS, the Landowner is the owner of certain real property as recorded by deed in the land records of Cumberland 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 Plan approved by the Municipality (hereinafter referred to as the "Plan") for the property identified herein, which is attached hereto as Appendix A and made part hereof, as approved by the Municipality, provides for management of stormwater within the confines of the Property through the use of BMPs; and

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

WHEREAS, the Municipality requires, through the implementation of the SWM Site Plan, that SWM BMPs as required by said Plan and the Municipal 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 Plan in good working order in accordance with the specific maintenance requirements noted on the approved SWM Site Plan.

3. The Landowner hereby grants permission to the Municipality, 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 Municipality 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 Municipality 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 Municipality 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 Municipality.

5. In the event the Municipality, 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 Municipality for all expenses (direct and indirect) incurred within 10 days of receipt of invoice from the Municipality.

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 Municipality 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 Municipality.

8. The Municipality shall inspect the BMPs at a minimum of once every year to ensure their continued functioning.

This Agreement shall be recorded at the Office of the Recorder of Deeds of Cumberland 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 Municipality:

_____

For the Landowner:

_____

ATTEST:

_____ (City, Borough, Township)

County of Cumberland, 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

TABLE B-1

RATIONAL RUNOFF COEFFICIENTS

By Hydrologic Soils Group and Overland Slope (%)

Land Use	A			B			C			D		
	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
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 1/4 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 1/2 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 of 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

Table B.2. Manning's Roughness Coefficients for Various Boundaries.

Rigid Boundary Channels	Manning's n
Very smooth concrete and planed timber	0.011
Smooth concrete	0.012
Ordinary concrete lining	0.013
Wood	0.014
Vitrified clay	0.015
Shot concrete, untroweled, and earth channels in best condition	0.017
Straight unlined earth canals in good condition	0.020
Mountain streams with rocky beds	0.040 -0.050
MINOR STREAMS (top width at flood stage < 30 m)	
Streams on Plain	
1. Clean, straight, full stage, no rifts or deep pools	0.025-0.033
2. Same as above, but more stones and weeds	0.030-0.040
3. Clean, winding, some pools and shoals	0.033-0.045
4. Same as above, but some weeds and stones	0.035-0.050
5. Same as above, lower stages, more ineffective slopes and sections	0.040-0.055
6. Same as 4, but more stones	0.045-0.060
7. Sluggish reaches, weedy, deep pools	0.050-0.080
8. Very weedy reaches, deep pools, or floodways with heavy stand of timber and underbrush	0.075-0.150
Mountain Streams, no Vegetation in Channel, Banks Usually Steep, Trees and Brush Along Banks Submerged at High Stages	
1. Bottom: gavels, cobbles and few boulders	0.030-0.050
2. Bottom: cobbles with large boulders	0.040-0.070
Floodplains	
Pasture, No Brush	
1. Short Grass	0.025-0.035
2. High Grass	0.030-0.050
Cultivated Areas	
1. No Crop	0.020-0.040
2. Mature Row Crops	0.025-0.045
3. Mature Field Crops	0.030-0.050
Brush	
1. Scattered brush, heavy weeds	0.035-0.070
2. Light brush and trees in winter	0.035-0.060
3. Light brush and trees in summer	0.040-0.080
4. Medium to dense brush in winter	0.045-0.110
5. Medium to dense brush in summer	0.070-0.160

Table B.2. Manning's Roughness Coefficients for Various Boundaries (continued).

Rigid Boundary Channels	Manning's n
Trees	
1. Dense willows, summer, straight	0.110-0.200
2. Cleared land with tree stumps, no sprouts	0.030-0.050
3. Same as above, but with heavy growth of sprouts	0.050-0.080
4. Heavy stand of timber, a few down trees, little undergrowth, flood stage below branches	0.080-0.120
5. Same as above, but with flood stage reaching branches	0.100-0.160
MAJOR STREAMS (Topwidth at flood stage > 30 m)	
The n value is less than that for minor streams of similar description, because banks offer less effective resistance.	
Regular section with no boulders or brush	0.025-0.060
Irregular and rough section	0.035-0.100
Alluvial Sand-bed Channels (no vegetation)	
Tranquil flow, Fr < 1	
Plane bed	0.014-0.020
Ripples	0.018-0.030
Dunes	0.020-0.040
Washed out dunes or transition	0.014-0.025
Plane bed	0.010-0.013
Rapid Flow, Fr > 1	
Standing waves	0.010-0.015
Antidunes	0.012-0.020
Overland Flow and Sheet Flow	
Smooth asphalt	0.011
Smooth concrete	0.012
Cement rubble surface	0.024
Natural range	0.13
Dense grass	0.24
Bermuda grass	0.41
Light underbrush	0.40
Heavy underbrush	0.80

SOURCE: USDOT FHWA, HDS No. 4 Introduction to Highway Hydraulics, June 2008.