

**STORMWATER MANAGEMENT MODEL ORDINANCE**

**ORDINANCE NUMBER**

**1-2011**

**SPRINGFIELD TOWNSHIP,**

**COUNTY OF MERCER,**

**COMMONWEALTH OF PENNSYLVANIA**

**Adopted at a Public Meeting Held on  
June 7, 2011**

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# **ARTICLE I - GENERAL PROVISIONS**

## **SECTION 101 – Short Title**

This Ordinance shall be known as and may be cited as the **“Springfield Township Stormwater Management Ordinance.”**

## **SECTION 102 – Statement of Findings**

The governing body of the **Springfield 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, and **Springfield Township**, 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).
- E. Public education is necessary for the proper understanding and implementation of stormwater management in the community in which it functions.

## **SECTION 103 – Purpose**

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

- A. Meet legal water quality requirements under state law, including regulations at 25 Pa. Code Chapter 93 to protect, maintain, reclaim and restore the existing and designated uses of this Commonwealth.
- B. Manage the volume, rate and quality of stormwater runoff.
- C. Preserve the natural drainage systems as much as possible.
- D. Manage stormwater runoff as close to the source as possible.
- E. Provide procedures and performance standards for stormwater planning and management.
- F. Maintain groundwater recharge to prevent degradation of surface and groundwater quality and to otherwise protect water resources.
- G. Prevent scour and erosion of stream banks and streambeds from accelerated runoff.
- H. Provide proper operation and maintenance of all permanent SWM BMP's that are implemented and constructed within **Springfield Township** .
- I. Provide standards to meet NPDES permit requirements.
- J. Integrate stormwater management into the land development site planning process.

## **SECTION 104 - Statutory Authority**

### A. Primary Authority:

**Springfield Township** 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 "Stormwater Management Act" and the Second Class Township Code.

### B. Secondary Authority:

**Springfield 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 disturbing activities, are subject to regulation by this Ordinance.

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 303 and the peak rate controls of Section 304 do not need to be retrofitted to existing impervious areas that are not being altered by proposed regulated activities.

## **SECTION 106 - Repealer**

Any other ordinance provision(s) or regulation of **Springfield 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 provision 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 – Obligation to Safeguard**

Notwithstanding any provision(s) of this Ordinance, including exemptions, any landowner or any person engaged in the alteration or development of land which may affect stormwater runoff characteristics shall implement such measures as are reasonably necessary to prevent injury to health, safety, or other property. Such measures also shall include actions as are required to manage the rate, volume, direction, and quality of resulting stormwater runoff in a manner which otherwise adequately protects health, property, and water quality.

## **ARTICLE II - DEFINITIONS**

### **SECTION 201- 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.

**Agricultural Activity** – Activities associated with agriculture such as agricultural cultivation, agricultural operation, 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 agent of a property owner who has filed an application for approval to engage in any Regulated Activity at a project site in **Springfield Township**.

**BMP (Best Management Practice)** – 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. Permanent 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-scaled 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 permanent stormwater BMPs are permanent appurtenances to the project site.

**Channel** – A natural or artificial watercourse with a defined bed and banks that conveys continuously or periodically flowing water.

**Conservation District** - A conservation district, 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.

**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.

**Detention Volume** - the volume of runoff that is captured and released into the Waters of the 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 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 A.

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

**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, roadside maintenance, building construction and the moving, depositing, stockpiling, or storing of soil, rock or earth materials.

**Easement** – A legal right granted by a landowner to a grantee allowing the use of private land for conveyance or treatment of stormwater runoff and access to stormwater practices.

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

**Erosion and Sediment Control Plan (E & S Plan)** - A plan that is designed to minimize the accelerated erosion and sediment runoff at a site during construction activities.

**Existing Pre-Development Condition** – The dominant land cover during the five (5) year period immediately preceding a proposed Regulated Activity.

**Floodplain** - Any land area susceptible to inundation by water from any natural source or delineated by applicable Federal Emergency Management Agency (FEMA) maps and studies as being a special flood hazard area. Also included are those soil groups found in Appendix 13 of the (1993) DER Technical Manual for Sewage Enforcement Officers , Soil Groups, Appendix A (as amended or replaced from time to time by PADEP).

**Floodway** - The channel of the watercourse and those portions of the adjoining floodplains that is 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 forestland. These include timber inventory and preparation of forest management plans, silvicultural treatment, logging road design and construction, timber harvesting, site preparation and reforestation.

**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 HSG's (A, B, C, and D) according to their minimum infiltration rate, which is obtained for bare soil after prolonged wetting. The Natural Resources Conservation Service

(NRCS) of the US Department of Agriculture 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<sup>3,4</sup>).

**Impervious Surface (Impervious Area)** - A surface that prevents the infiltration of precipitation into the ground (e.g., building area/footprint, pavement, sidewalks, driveways, etc). Decks, gravel parking areas, gravel driveways, porous concrete, porous asphalt, porous pavers, and green roofs are not counted as impervious areas if they do not prevent infiltration.

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

**Land Development (Development)** – Inclusive of any or all of the following meanings: (i) 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, or (b) the division or allocation of land or space 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; (ii) any subdivision of land; (iii) development in accordance with Section 503(1.1) of the PA Municipalities Planning Code.

**MCCD – Mercer County Conservation District**

**Municipality - Springfield Township**, Mercer County, Pennsylvania.

**Non-Structural Best Management Practices (BMP)** – a combination of design and planning techniques that focus on preserving open space, protecting natural systems, and incorporating existing landscape features such as wetlands and stream corridors into a SWM site plan to manage stormwater at its source.

**NPDES (National Pollutant Discharge Elimination System) Stormwater Discharge Permit** - A permit issued by the EPA, or by a State under authority delegated pursuant to 33 USC § 1342(b), that authorizes the discharge of pollutants to waters of the State, whether the permit is applicable on an individual, group, or general area-wide basis.

**NRCS** – USDA Natural Resources Conservation Service (previously SCS).

**Optional** – These are requirements that are recommended but may be modified or deleted at the discretion of **Springfield Township s**.

**Owner** - The owner or owners of the freehold of the premises or lesser estate therein, a mortgagee or vendee in possession, assignee of rents, receiver, executor, trustee, lessee or other person, firm or corporation in control of a piece of land. As used herein, owner also refers to, in the appropriate context: (i) any other person authorized to act as the agent for the owner; (ii) any person who submits a stormwater management concept or design plan for approval or requests issuance of a permit, when required, authorizing land development to commence; and (iii) any person responsible for complying with an approved stormwater management design plan.

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

**Permanent Stormwater BMP** - A stormwater (BMP) that will be operational after the construction phase of a project and that is designed to become a permanent part of the site for the purposes of managing stormwater runoff.

**Pervious Area** – Any area not defined as impervious.

**Project Site** - The specific area of land where any Regulated Activities in the **Municipality** 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.

**Receiving Stream or Channel** - A body of water or conveyance into which stormwater runoff is discharged.

**Recharge** - The replenishment of underground water reserves.

**Redevelopment** - A change to previously existing, improved property, including but not limited to the demolition or building of structures, filling, grading, paving, or excavating, but excluding ordinary maintenance activities, remodeling of buildings on the existing footprint, resurfacing of paved areas, and exterior changes or

improvements that do not materially increase or concentrate stormwater runoff or cause additional non-point source pollution.

**Regulated Activities** – Any earth disturbing 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 a regulation under 25 Pa. Code Chapter 92, 25 Pa. Code Chapter 102, or the Clean Streams Law.

**Return Period** – The recurrence interval, in years, which a storm event of a given magnitude has the probability of occurrence in any given year, i.e. the probability of a 2-year storm occurring in any one year is 0.5 (a 50% chance), the probability of a 10-year storm occurring in any one year is 0.1 (a 10% chance). The probability of a 25-year storm occurring in any one year is 0.04 (a 4% chance) and the probability of a 100-year storm occurring in any one year is 0.01 (a 1% chance).

**Responsible Party** - Any individual, partnership, co-partnership, firm, company, corporation, association, joint stock company, trust, estate, governmental entity, or any other legal entity; or their legal representatives, agents, or assigns that is named on a stormwater maintenance agreement as responsible for long-term operation and maintenance of one or more permanent stormwater BMPs.

**Riparian Buffer** - An area of land at or near a stream bank, wetland, or water body that has intrinsic water quality value due to the ecological and biological processes it performs or is otherwise sensitive to changes which may result in significant degradation to water quality.

**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 are designed to reduce all of the following: stormwater runoff pollutant loads, discharge volumes, peak flow discharge rates and detrimental changes in stream temperature that affect water quality and habitat.

**Stormwater Management Plan** - The plan for managing storm water runoff adopted by the County of Mercer as required by the Act of October 4, 1978, P.L. 864, (Act 167), as amended, and known as the "Stormwater Management Act".

**Stormwater Management (SWM) BMP's**- Is abbreviated as SWM BMPs throughout this Ordinance.

**Stormwater Management (SWM) Site Plan** - The plan prepared by the Developer or his representative indicating how stormwater runoff associated with industrial, commercial, institutional, residential or other land uses 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.

**Stream** – A body of water with a current, confined within a bed and stream banks, less than sixty (60) feet in width, that is subject to inundation from overflow or flood water. A stream may be referred to as a branch, brook, creek or run.

**Structural Best Management Practices (BMP)** – a constructed facility or measure that helps to protect receiving water quality and control stormwater runoff rate and volume.

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

**Watercourse** - A permanent or intermittent stream or other body of water, either natural or man-made, which gathers or carries surface water.

**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 body of water, whether natural or artificial.

**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 (Exemptions):
  - 1. Design and implementation of an approved SWM Site Plan is required.
  - 2. No regulated activities shall commence until the Municipality issues written approval of an SWM Site Plan, which demonstrates compliance with the requirements of this Ordinance.
- B. SWM Site Plan approved by the Municipality, in accordance with Section 407 (Authorization to Construct and the Term of Validity), shall be on site throughout the duration of the Regulated Activity.
- C. The Municipality 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.
- 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 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 Manual (E&S Manual), No. 363-2134-008 (April 15, 2000), as amended and updated.
- E. For all regulated activities, implementation of the volume controls in Section 303 (Volume Controls) is required.
- 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 stages.
  2. For development taking place in stages, the entire development plan must be used in determining conformance with this Ordinance.
- G. Stormwater flow onto adjacent property shall not be created, increased, decreased, relocated, or otherwise altered without a written agreement from 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, to the maximum extent practicable, to:
1. Protect health, safety, and property and the public welfare.
  2. Meet the water quality goals of this Ordinance by implementing measures to:
    - a. Minimize disturbance to floodplains, wetlands, and wooded areas.
    - b. Maintain or extend riparian buffers.
    - c. Maintain natural drainage patterns.
    - d. Avoid erosive flow conditions in natural flow pathways.
    - e. Minimize the creation of impervious surfaces.
    - f. Minimize thermal impacts to waters of this Commonwealth.
    - g. Disconnect impervious surfaces by directing runoff to pervious areas, wherever possible.
  3. Incorporate the techniques for Low Impact Development Practices.

- I. Discharge roof drains and sump pumps to infiltration or vegetative BMPs or satisfy the criteria for DIAs..
- J. Infiltration BMPs should 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.
- K. Stormwater storage facilities should 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.
- L. The design storm volumes to be used in the analysis of peak rates of discharge will be the 24-hour values as shown in the following table:

<b>STORM FREQUENCY</b>	<b>24-Hour depth in INCHES</b>
2 - year	2.45
10 - year	3.44
25 - year	4.07
100 - year	5.13

Or the 24-hour values 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/>

- M. 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.

- N. Various BMP's and their design standards are listed in the BMP Manual.
- O. Offsite 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.
- P. Any stormwater management facility designed to store stormwater runoff and not eligible for a waiver from permit requirements pursuant to 25 Pa Code §105.12 requiring a berm or earthen embankment 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 a minimum 1-foot above the maximum pool elevation computed when the facility functions for the 100-year post-development inflow.
- Q. Any facilities that constitute water obstructions (e.g., culverts, bridges, outfalls, or stream enclosures), and any work involving wetlands pursuant to 25 Pa Code Chapter 105 regulations, as amended or replaced, shall be designed, permitted, and constructed in accordance with Chapter 105.
- R. Any drainage conveyance facility and/or channel that does not fall under Chapter 105 Regulations, must be able to convey, without damage to the drainage structure or roadway, runoff from the 25-year design storm. Conveyance facilities discharging to or exiting from stormwater management facilities shall be designed to convey the design flow to or from that structure.
- S. Storm sewers must be able to convey post-development runoff from a 10-year storm event without surcharging inlets, where appropriate.
- T. Adequate erosion protection shall be provided along all open channels, and at all points of discharge.
- U. The design of all stormwater management facilities shall incorporate sound engineering principles and practices and shall not result in the creation or continuation of adverse

hydrologic or adverse hydraulic conditions within the watershed.

### **SECTION 302 – Exemptions**

- A. Regulated activities that create impervious areas smaller than 2,500 square feet are exempt from the Peak Rate Control and Stormwater Management Site Plan requirements of this Ordinance unless the municipality disqualifies the project for an exemption pursuant to Section 302.G.
- B. Regulated activities that create impervious areas of 2,500 square feet to 5,000 square feet require a Small Project Application to be submitted to **Springfield Township** and volume controls must be installed to meet the requirements of the BMP manual, or meet the requirements for the Disconnected Impervious Area (DIA) Credits in Section 401 (Small Project Application).
- C. Agricultural activity is exempt from this 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.
- D. Forest management and timber operations are exempt from the rate control and the SWM Site Plan preparation requirements of this Ordinance provided the activities are performed according to the requirements of 25 Pa. Code, Chapter 102.
- E. Oil and gas 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, Chapter 102.
- F. Exemptions from any provisions of this Ordinance shall not relieve the applicant from the requirements in Section 301 (General Requirements), Items D. through U.
- G. **Springfield Township** may deny or revoke any exemption pursuant to this Section at any time for any project that **Springfield Township** believes may pose a threat to public health, safety, property or the environment.

### **SECTION 303 – Volume Controls**

The Low Impact Development practices, like those 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. For regulated activity areas equal or less than 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 2-year 24-hour duration precipitation.
2. For hydrologic modeling purposes:
  - a. Existing pre-development non-forested pervious areas must be considered meadow or its equivalent in good condition.
  - b. Existing (pre-development) impervious areas, when present, must consider twenty (20) percent of the impervious area as meadow in good condition.

B. The *Simplified Method* (CG-2 in the BMP Manual) 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 inches (2") of runoff from all new impervious surfaces.
2. At least the first one inch (1") of runoff from new impervious surfaces shall be permanently removed from the runoff flow, i.e., it shall not be release into the surface waters of this Commonwealth. Removal options 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 one-half inch (0.5") of the permanently removed runoff should be infiltrated.
4. This method is exempt from the requirements of Section 304 (Rate Controls).

### **SECTION 304 – Rate Controls**

Post-development peak discharge rates shall not exceed the pre-development peak discharge rates for the, 2-year, 10-year, 25-year, and 100-year storm events.

### **SECTION 305 – Calculation Methodology**

Stormwater runoff from all development sites shall be calculated using either the Rational Method (stormwater conveyance systems only) or a soil cover complex methodology as follows:

- A. Major and minor conveyance systems up to 20 acres may be designed using the Rational Method. The Rational Method may also be used in sizing the minor conveyance systems for larger sites. Any stormwater runoff calculations involving drainage areas greater than 20 acres, including on-site and off-site areas, shall use a generally accepted runoff hydrograph technique that is based on the NRCS Soil Cover Complex method. Runoff hydrograph methods must be used for major drainage system designs for all systems with greater than 20 acres of drainage area and for design of all stormwater storage facilities.
- 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 Section 301 (General Requirements), Item L. If a hydrologic computer model is used for stormwater runoff calculations, the duration of rainfall shall be 24 hours. The SCS Rainfall Type II curve shall be used for the rainfall distribution.
- C. For the purposes of existing pre-development runoff rate determination, undeveloped non-forested pervious areas

including disturbed areas must be considered meadow in good condition, or its equivalent in good condition. Those areas that have existing impervious areas within the planned development area may be included in the determination of the predevelopment flow rate.

- D. All calculations using the Rational Method shall use rainfall intensities 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/>.
- E. 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. Travel time for channel and pipe flow shall be computed using velocities determined using Manning's equation.
- F. Runoff Curve Numbers (CN) for both existing (pre-development) and proposed (post-development) conditions to be used in the Soil Cover Complex method shall be obtained from Chapter 2 of Urban Hydrology for Small Watersheds, NRCS, TR-55.***
- G. Runoff coefficients (C) for both existing (pre-development) and proposed (post-development) conditions for use in the Rational method shall be:***

<i>Runoff Factors for the Rational Equation</i>		
<i>TYPE OF DRAINAGE AREA OR SURFACE</i>	<i>RUNOFF FACTOR "C"</i>	
	<i>MINIMUM</i>	<i>MAXIMUM</i>
<i>Pavement, concrete or bituminous concrete</i>	<i>0.75</i>	<i>0.95</i>
<i>Pavement, bituminous macadam or surface-treated gravel</i>	<i>0.65</i>	<i>0.80</i>
<i>Pavement, gravel, macadam, etc.</i>	<i>0.25</i>	<i>0.60</i>
<i>Sandy soil, cultivated or light growth</i>	<i>0.15</i>	<i>0.30</i>
<i>Sandy soil, woods or heavy brush</i>	<i>0.15</i>	<i>0.30</i>
<i>Gravel, bare or light growth</i>	<i>0.20</i>	<i>0.40</i>
<i>Gravel, woods or heavy brush</i>	<i>0.15</i>	<i>0.35</i>
<i>Clay soil, bare or light growth</i>	<i>0.35</i>	<i>0.75</i>
<i>Clay soil, woods or heavy growth</i>	<i>0.25</i>	<i>0.60</i>
<i>City business sections</i>	<i>0.60</i>	<i>0.80</i>
<i>Dense residential sections</i>	<i>0.50</i>	<i>0.70</i>
<i>Suburban, normal residential areas</i>	<i>0.35</i>	<i>0.60</i>
<i>Rural areas, parks, golf courses</i>	<i>0.15</i>	<i>0.30</i>

**Runoff Coefficient for Rural Watersheds**

<b>Runoff Coefficient for Rural Watersheds</b>				
	<b>Slope</b>			
	<b>extreme</b>	<b>high</b>	<b>normal</b>	<b>low</b>
<b>Relief (Cr)</b>	<i>0.28-0.35 steep, rugged terrain with average slopes above 30%</i>	<i>0.20-0.28 hilly, with average slopes of 10-30%</i>	<i>0.14-0.20 rolling, with average slopes of 5-10%</i>	<i>0.08-0.14 relatively flat land, with average slopes of 0-5%</i>
<b>Soil Infiltration (Ci)</b>	<i>0.12-0.16 no effective soil cover either rock or thin soil mantle of negligible infiltration capacity</i>	<i>0.08-0.12 slow to take up water, clay or shallow loam soils of low infiltration capacity or poorly drained</i>	<i>0.06-0.08 normal; well drained light or medium textured soils, sandy loams</i>	<i>0.04-0.06 deep sand or other soil that takes up water readily, very light well drained soils</i>
<b>Vegetative Cover (Cv)</b>	<i>0.12-0.16 no effective plant cover, bare or very sparse cover</i>	<i>0.08-0.12 poor to fair; clean cultivation, crops or poor natural cover, less than 20% of drainage area over good cover</i>	<i>0.06-0.08 fair to good; about 50% of area in good grassland or woodland, not more than 50% of area in cultivated crops</i>	<i>0.04-0.06 good to excellent; about 90% of drainage area in good grassland, woodland, or equivalent cover</i>
<b>Surface (Cs)</b>	<i>0.10-0.12 negligible; surface depression few and shallow; drainageways steep and small, no marshes</i>	<i>0.08-0.10 well defined system of small drainageways; no ponds or marshes</i>	<i>0.06-0.08 normal; considerable surface depression storage lakes and ponds and marshes</i>	<i>0.04-0.06 much surface storage, drainage system not sharply defined; large flood plain storage or large number of ponds or marshes</i>

*The total runoff coefficient based on the four runoff components is:  $C = Cr + Ci + Cv + Cs$*

*as obtained from Pub. 584, PennDOT Drainage Manual, Sections 7.5.c thru 7.5.g. 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 Pub. 584, PennDOT Drainage Manual Section 7.3.*

*H. Outlet structures for stormwater storage facilities shall be designed to meet the performance standards of this Ordinance using any generally accepted hydraulic analysis technique or method. Orifices smaller than 3 inches diameter are not recommended; however, if the qualified professional can provide proof that the smaller orifices are protected from clogging by use of anti-clogging devices, then smaller orifices may be permitted.*

*I. The design of any stormwater storage facilities intended to meet the performance standards of this Ordinance shall be verified by routing the design storm hydrograph through these facilities.*

## **ARTICLE IV – STORMWATER MANAGEMENT SITE PLAN REQUIREMENTS**

### **SECTION 401 – Small Project Application (< 5000 Sq. Ft. of Impervious Area)**

This section applies to eligible projects with Total Impervious Surface Area from 1,000 square feet to less than 5,000 square feet.

If the Total Impervious Surface Area is 2,500 square feet to 5,000 square feet your project requires a Small Project Application to be submitted to **Springfield Township** and volume controls must be installed to meet the requirements of the surface area of BMP's required.

For areas where runoff from impervious areas can be directed to pervious areas that allow for infiltration, filtration, and increased time of concentration Disconnected Impervious Area (DIA) Credits may be used. To qualify as DIA the concentrated discharge must meet the following criteria:

For Rooftop Areas:

1. area draining to a downspout must be 500 square feet or less,
2. discharge must be to an area with a positive slope of 5% (one foot of fall per twenty feet of length, 20:1) or less, and
3. be a minimum distance of 75-feet from a watercourse or down slope property line.

For Paved Areas (driveways):

1. runoff draining to a point must be 1,000 square feet of less,
2. discharge must be to a gravel strip or spreading device, and the
3. flow length of the pervious surface must be greater than or equal to the contributing length.



4. Project location map overlaid on the title sheet showing the project and the nearest intersecting street
5. Tract boundaries showing bearings, distances, and curve data
6. Existing and proposed contours at a vertical interval of one (1) foot, unless steeper slopes do not permit the visual representation at this scale
7. Existing and proposed natural and/or artificial objects thereon
8. Existing subsurface objects as required by Pa One Call, as well as proposed subsurface objects
9. 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, and other environmentally sensitive areas, such as brownfields.
10. A report containing stormwater runoff design calculations, assumptions, criteria, methodology and documentation used in the design 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 (General Requirements).
11. A soil erosion and sediment control plan, where applicable, as prepared for and submitted to the approval authority.
12. Plan and profile drawings of all SWM BMPs, including drainage structures and pipes.
13. A plan showing the locations of existing and proposed on-lot wastewater facilities and water supply wells.
14. Operation and maintenance procedures for all

existing and proposed physical stormwater management facilities that shall address long-term ownership and responsibilities for O&M.

### **SECTION 403 – Plan Submission (To Be Determined)**

- A. 5 copies of the SWM Site Plan shall be submitted as follows:
  - 1. 3 copy(s) to the **Municipality**
  - 2. 1 copy(s) to the municipal engineer (when applicable)
  - 3. 1 copy(s) to the County Conservation District (when applicable)
  
- B. Additional copies shall be submitted as requested by **Springfield Township** or other regulatory authorities.

### **SECTION 404 – Plan Review**

- A. The SWM Site Plan shall be reviewed by a qualified professional for **Springfield Township** for consistency with the provisions of this Ordinance. After review, the qualified professional shall provide a written recommendation **Springfield Township** to approve or disapprove the SWM Site Plan. If it is recommended to disapprove the SWM Site Plan, the qualified professional shall state the reasons for the disapproval in writing. The qualified professional also may recommend approval of the SWM Site Plan with conditions and, if so, shall provide the acceptable conditions for approval in writing. The SWM Site Plan review and recommendations shall be completed within the time allowed by the Municipalities Planning Code for reviewing subdivision plans.
  
- B. **Springfield Township** shall notify the applicant in writing within 30 days whether the SWM Site Plan is approved or disapproved. If the SWM Site Plan involves a Subdivision and Land Development Plan, the notification period is 60 days. If a longer notification period is provided by other statute, regulation, or ordinance, the applicant will be notified by **Springfield Township**. If **Springfield Township**

disapproves the SWM Site Plan, the **Municipality** shall cite the reasons for disapproval in writing.

#### **SECTION 405 – Modification of Plans**

A modification to a submitted SWM Site Plan that involves a change in SWM BMPs or techniques, or that involves the relocation or redesign of SWM BMPs, or that is necessary because **Springfield Township** has determined that other conditions are not as stated on the SWM Site Plan, then **Springfield Township** shall require a resubmission of the modified SWM Site Plan in accordance with this Article.

#### **SECTION 406 – Resubmission of Disapproved SWM Site Plans**

A disapproved SWM Site Plan may be resubmitted, with the revisions addressing **Springfield Township's** concerns, to **Springfield Township** in accordance with this Article. The applicable review fee must accompany a resubmission of a disapproved SWM Site Plan.

#### **SECTION 407 – Authorization to Construction and Term of Validity**

**Springfield Township's** approval of an SWM Site Plan authorizes the regulated activities contained in the SWM Site Plan for a maximum term of validity of 5 years following the date of approval. **Springfield Township** may specify a term of validity shorter than 5 years in the approval for any specific SWM Site Plan. Terms of validity shall commence on the date **Springfield Township** signs the approval for a SWM Site Plan. If an approved SWM Site Plan is not completed according to Section 408 (As-Built Plans, Completion Certificate, and Final inspection) within the term of validity, then **Springfield Township** may consider the SWM Site Plan disapproved and may revoke any and all permits. SWM Site Plans that are considered disapproved by **Springfield Township** shall be resubmitted in accordance with Section 405 (Resubmission of Disapproved SWM Plans) of this Ordinance.

## **SECTION 408 – As-Built Plans, Completion Certificate, and Final Inspection**

- A. The developer shall be responsible for providing as-built plans of all SWM BMPs including in the approved SMW Site Plan. The as-built plans and an explanation of any discrepancies with the construction plans shall be submitted to **Springfield Township**.
- B. The as-built submission shall include a certification of completion signed by a qualified professional verifying that all permanent SWM BMPs have been constructed according to the approved plans and specifications.
- C. After receipt of the completion certification by **Springfield Township, Springfield Township** may conduct a final inspection.

**ARTICLE V - RESERVED**

## **ARTICLE VI – OPERATION AND MAINTENANCE**

### **SECTION 601 – Responsibilities of Developers and Landowners**

- A. **Springfield Township** shall make the final determination on the continuing maintenance responsibilities prior to final approval of the SWM Site Plan. **Springfield 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 **Springfield Township** will accept the facilities. **Springfield Township** reserves the right to accept or reject the ownership and operating responsibility for any portion of the stormwater management facilities.
- B. Facilities, areas, or structures used as SWM BMP's shall be enumerated as permanent real estate appurtenances and recorded as deed restrictions or conservation easements that run with the land.
- C. The O&M Plan shall be recorded as a restrictive deed covenant that runs with the land. The Municipality itself is exempt from the requirement to sign and record an O&M agreement.
- D. The responsible party named in the stormwater maintenance agreement shall maintain in good condition and promptly repair and restore all structural and non-structural permanent stormwater BMP's and all necessary access routes and appurtenances.
- E. **Springfield Township** may take enforcement actions against an owner for any failure to satisfy the provisions of this Article.

### **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 (Appendix B) 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 **Springfield Township** conservation easements to assure access for periodic inspections by **Springfield Township** and maintenance as necessary.
  3. The owner shall keep on file with **Springfield Township** the name, address, and telephone number of the entity responsible for maintenance activities; in the event of a change, new information shall be submitted by the owner to the municipality within ten (10) days of the change.
- B. The owner is responsible for O&M of the SWM BMPs. If the owner fails to adhere to the O&M Agreement, **Springfield Township** may perform the services required and charge the owner appropriate fees. Nonpayment of fees may result in a lien against the property.

## **ARTICLE VII – FEES AND EXPENSES**

### **SECTION 701 – General**

**Springfield Township** may charge to the applicant, all reasonable costs incurred in their review.

The review fee may include, but not limited to, costs for the following:

- A. Administrative and/or clerical processing.
- B. Review of the SWM Site Plan and associated documents by any duly authorized representatives of **Springfield Township**.
- C. Attendance at public and/or municipal meetings relating to the enforcement of this ordinance.
- D. Inspection of stormwater management facilities.

## **ARTICLE VIII – PROHIBITIONS**

### **SECTION 801 – Prohibited Discharges and Connections**

- A. Any drain or conveyance, whether on the surface or subsurface, that allows a non-stormwater discharge including sewage, process waste water, and waste water to enter the waters of this Commonwealth is prohibited.
- B. No persons 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 A below and (2) discharges allowed under a state or federal permit.

### **SECTION 802 – Authorized Discharges**

- A. The following discharges are authorized unless they are determined to be significant contributors to pollution to the waters of this Commonwealth:
  - 1. Discharges from fire fighting activities
  - 2. Flows from riparian habitats and wetlands
  - 3. Potable water sources including waterline and fire hydrant flushing
  - 4. Uncontaminated water from foundations or from footing drains
  - 5. Irrigation drainage
  - 6. Lawn watering
  - 7. Air conditioning condensate
  - 8. De-Chlorinated swimming pool discharges
  - 9. Springs
  - 10. Uncontaminated groundwater
  - 11. Water from crawl space pumps

12. Water from individual residential car washing
  13. 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
  14. Routine external building wash down (which does not use detergents or other compounds)
  15. Discharge from diverted stream flows
- B. In the event that **Springfield Township** or DEP determines that any of the discharges identified in Subsection A significantly contribute to pollution of the waters of this Commonwealth, **Springfield Township** or DEP will notify the responsible person(s) to cease the discharge.

### **SECTION 803 – Alteration of SWM BMPs**

No person shall modify, remove, fill, landscape, or alter any SWM BMPs, facilities, areas, or structures without the written approval of **Springfield Township**.

## **ARTICLE IX – ENFORCEMENT AND PENALTIES**

### **SECTION 901 – Right-of-Entry**

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

### **SECTION 902 – Inspection**

SWM BMPs should be inspected by the landowner, or the owner's designee (including **Springfield Township** for dedicated and owned facilities), according to the following list of minimum frequencies:

- A. Annually for the first 5 years.
- B. Once every 3 years thereafter.

All inspections shall be documented in writing and shall document any maintenance and repair needs.

### **SECTION 903 - Violations**

- A. When **Springfield Township** determines that an activity is not being carried out in accordance with the requirements of this Ordinance, it shall issue a written notice of violation to the owner of the property. The notice of violation shall contain:
  - 1. The name and address of the owner or applicant.
  - 2. The address when available or a description of the building, structure or land upon which the violation is occurring.
  - 3. A statement specifying the nature of the violation and a time schedule for the completion of such remedial action.
  - 4. A statement of the penalty or penalties that shall or may be assessed against the person to whom the notice of violation is directed.

5. A statement that the determination of violation may be appealed to **Springfield Township** by filing a written notice of appeal within fifteen (15) days of service of notice of violation.
- B. Persons receiving a notice of violation will be required to halt all construction activities. This “stop work order” will be in effect until **Springfield Township** confirms that the development activity is in compliance and the violation has been satisfactorily addressed. Failure to address a notice of violation in a timely manner can result in civil, criminal, or monetary penalties in accordance with the enforcement measures authorized in 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 (Exemptions).
- B. It shall be unlawful to violate Section 803 (Alterations of SWM BMP’s) of this Ordinance.
- C. Inspections regarding compliance with the SWM Site Plan are a responsibility of **Springfield Township**.

#### **SECTIOIN 905 – Suspension and Revocation**

- A. Any approval or permit issued by **Springfield Township** pursuant to this Ordinance may be suspended or revoked for:
  1. Non-compliance with or failure to implement any provisions 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.
  3. 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 may be reinstated by **Springfield Township** when:
1. **Springfield Township** has inspected and approved the corrections to the violations that cause the suspension.
  2. **Springfield Township** is satisfied that the violation has been corrected.
- C. An approval that has been revoked by **Springfield 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, **Springfield Township** may provide a limited time period for the owner to correct the violation. In these cases, **Springfield 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, **Springfield 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 \$300.00 for each violation, recoverable with costs. Each day that the violation continues shall be a separate offense and penalties shall be cumulative.
- B. In addition, **Springfield Township** may institute injunctive, mandamus, or any other appropriate action or proceeding of 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 **Springfield Township** or its designee, relevant to the provisions of this Ordinance, may appeal to **Springfield Township** within 30 days of that action.
- B. Any person aggrieved by any decision of **Springfield Township**, relevant to the provisions of this Ordinance, may appeal to the County Court of Common Pleas in the county where the activity has taken place within 30 days of **Springfield Township's** decision.

## **APPENDIX A**

### **INSTRUCTIONS FOR COMPLETING THE SMALL PROJECT APPLICATION**

The Small Projects Application was designed to assist individuals constructing improvements of impervious surfaces (surfaces that do not infiltrate water, i.e. rooftops driveways, sidewalks, etc.) a method for determining if control measures are required to be implemented to comply with the SWM Ordinance.

- Step 1: Determine the length (in feet) and width (in feet) of the proposed improvement and insert into the "Length" and "Width" columns under the respective "Surface Type." If the "Surface Type" is not listed use "Other" and list the improvement type. Irregular surfaces will require additional mathematical equations not listed in the application or the examples.
- Step 2: Multiply the length times the width and insert that number into the "Impervious Area (ft<sup>2</sup>)" column. This number will be in square feet.
- Step 3: Add the numbers in the "Impervious Area (ft<sup>2</sup>)" column and insert the total number of square feet in the "TOTAL IMPERVIOUS AREA" box.
- Step 4: If the "TOTAL IMPERVIOUS AREA" is:
- 2,500 square feet or less your project is exempt and you can proceed with construction as planned (see Example #1),
  - 2,500 square feet to 5,000 square feet you are required to submit the application to the municipality, along with details on how you will manage the increase in runoff (implement volume controls) (see Example #2)
  - 5,000 square feet or more your project requires a SWM Plan prepared by a Pennsylvania Registered Design Professional experienced in the design of such control measures and to the requirements of the Stormwater Management Ordinance.
- Step 5: If credit will be taken for DIA (Disconnected Impervious Area), list the "Qualifying Surfaces" obtain the square footage of the impervious area by multiplying the length times the width (see Example #2).
- Step 6: Subtract the "DIA CREDITS" from the "TOTAL IMPERVIOUS AREA" and insert this number in the "TOTAL AREA TO BE MANAGED BY BMP'S" box.
- Step 7: Multiply the number in the "TOTAL AREA TO BE MANAGED BY BMP'S" box by 0.20 (20 %) and insert that number into the "SURFACE AREA OF BMP'S (ft<sup>2</sup>)" box. This number will be in square feet.

**PLEASE USE WORKSHEET ON FOLLOWING PAGE**

**SMALL PROJECT APPLICATION SWM PLAN WORKSHEET**

Surface Type-Description	Length	x	Width	=	Impervious Area (ft <sup>2</sup> )
Building		x		=	
		x		=	
Garage		x		=	
		x		=	
Driveway		x		=	
		x		=	
Other Parking Areas		x		=	
		x		=	
Patios or Sidewalks		x		=	
		x		=	
Other		x		=	
<b>"TOTAL IMPERVIOUS AREA"</b>				=	
<p><i>If the "TOTAL IMPERVIOUS AREA" is 2,500 Square Feet or less your project is exempt.</i></p> <p><i>If the "TOTAL IMPERVIOUS AREA" is 2,500 Square Feet to 5,000 Square Feet your project requires this Small Project Application be submitted to the municipality and Volume Controls must be installed to meet the requirements of the "SURFACE AREA OF BMP's REQUIRED."</i></p> <p><i>If the "TOTAL IMPERVIOUS AREA" is greater than 5,000 Square Feet your project requires a Stormwater Management Plan prepared by a Pennsylvania Registered Design Professional experienced in the design of such control measures and to the requirements of the Stormwater Management Ordinance.</i></p>					
<b>REQUIREMENTS FOR USE OF Disconnected Impervious Area (DIA) CREDITS</b>					
<p>1. <b>Rooftop area</b> draining to a downspout must be 500 sq. ft. or less,                  2. Discharge must be to an area with positive slope of 5% (one foot of fall per twenty feet of length, 20:1) or less, and a                  3. Minimum distance of 75-feet from a watercourse or down slope property line.</p>			<p>1. <b>Paved area</b> (drives) draining to a point must be 1000 sq. ft. or less,                  2. Discharge must be to a gravel strip or spreading device, and the                  3. Flow length of the pervious surface must be greater than or equal to the contributing length.</p>		
<b>DIA CREDITS TO BE SUBTRACTED FROM "TOTAL IMPERVIOUS AREA"</b>					
Qualifying Surfaces	Length	x	Width	=	
		x		=	-
		x		=	-
		x		=	-
		x		=	-
<b>TOTAL AREA TO BE MANAGED BY BMP'S</b>				=	
<b>20% CONVERSION TO BMP</b>				x	0.20
<b>"SURFACE AREA OF BMP'S REQUIRED" (ft<sup>2</sup>)</b>				=	

**SMALL PROJECT APPLICATION SWM PLAN WORKSHEET  
EXAMPLE #1**

Surface Type-Description	Length	x	Width	=	Impervious Area (ft <sup>2</sup> )	
Building		x		=		
		x		=		
Garage	30'-0"	x	18'-0"	=	540	
		x		=		
Driveway	31'-0"	x	10'-0"	=	310	
		x		=		
Other Parking Areas		x		=		
		x		=		
Patios or Sidewalks		x		=		
		x		=		
Other		x		=		
		x		=		
<b>"TOTAL IMPERVIOUS AREA"</b>					=	850
<p><i>If the "TOTAL IMPERVIOUS AREA" is 2,500 Square Feet or less your project is exempt.</i></p> <p><i>If the "TOTAL IMPERVIOUS AREA" is 2,500 Square Feet to 5,000 Square Feet your project requires this Small Project Application be submitted to the municipality and Volume Controls must be installed to meet the requirements of the "SURFACE AREA OF BMP's REQUIRED."</i></p> <p><i>If the "TOTAL IMPERVIOUS AREA" is greater than 5,000 Square Feet your project requires a Stormwater Management Plan prepared by a Pennsylvania Registered Design Professional experienced in the design of such control measures and to the requirements of the Stormwater Management Ordinance.</i></p>						
<b>REQUIREMENTS FOR USE OF Disconnected Impervious Area (DIA) CREDITS</b>						
<p>1. <b>Rooftop area</b> draining to a downspout must be 500 sq. ft. or less,                  2. Discharge must be to an area with positive slope of 5% (one foot of fall per twenty feet of length, 20:1) or less, and a                  3. Minimum distance of 75-feet from a watercourse or down slope property line.</p>			<p>1. <b>Paved area</b> (drives) draining to a point must be 1000 sq. ft. or less,                  2. Discharge must be to a gravel strip or spreading device, and the                  3. Flow length of the pervious surface must be greater than or equal to the contributing length.</p>			
<b>DIA CREDITS TO BE SUBTRACTED FROM "TOTAL IMPERVIOUS AREA"</b>						
Qualifying Surfaces	Length	x	Width	=		
		x		=	-	
		x		=	-	
		x		=	-	
		x		=	-	
<b>TOTAL AREA TO BE MANAGED BY BMP'S</b>				=	0	
<b>20% CONVERSION TO BMP</b>				x	0.20	
<b>"SURFACE AREA OF BMP'S REQUIRED" (ft<sup>2</sup>)</b>				=	0	

**SMALL PROJECT APPLICATION SWM PLAN WORKSHEET  
EXAMPLE #2**

<b>Surface Type-Description</b>	<b>Length</b>	<b>x</b>	<b>Width</b>	<b>=</b>	<b>Impervious Area (ft<sup>2</sup>)</b>
Building ( <i>Barn</i> )	<i>40'-0"</i>	x	<i>30'-0"</i>	=	<i>1,200</i>
		x		=	
Garage	<i>30'-0"</i>	x	<i>25'-0"</i>	=	<i>750</i>
		x		=	
Driveway	<i>41'-0"</i>	x	<i>20'-0"</i>	=	<i>820</i>
		x		=	
Other Parking Areas		x		=	
		x		=	
Patios or Sidewalks		x		=	
		x		=	
Other		x		=	
		x		=	
<b>"TOTAL IMPERVIOUS AREA"</b>					<i>2,770</i>
<p><i>If the "TOTAL IMPERVIOUS AREA" is 2,500 Square Feet or less your project is exempt.</i></p> <p><i>If the "TOTAL IMPERVIOUS AREA" is 2,500 Square Feet to 5,000 Square Feet your project requires this Small Project Application be submitted to the municipality and Volume Controls must be installed to meet the requirements of the "SURFACE AREA OF BMP'S REQUIRED."</i></p> <p><i>If the "TOTAL IMPERVIOUS AREA" is greater than 5,000 Square Feet your project requires a Stormwater Management Plan prepared by a Pennsylvania Registered Design Professional experienced in the design of such control measures and to the requirements of the Stormwater Management Ordinance.</i></p>					
<b>REQUIREMENTS FOR USE OF Disconnected Impervious Area (DIA) CREDITS</b>					
<p><b>1. Rooftop area</b> draining to a downspout must be 500 sq. ft. or less,                  2. Discharge must be to an area with positive slope of 5% (one foot of fall per twenty feet of length, 20:1) or less, and a                  3. Minimum distance of 75-feet from a watercourse or down slope property line.</p>			<p><b>1. Paved area</b> (drives) draining to a point must be 1000 sq. ft. or less,                  2. Discharge must be to a gravel strip or spreading device, and the                  3. Flow length of the pervious surface must be greater than or equal to the contributing length.</p>		
<b>DIA CREDITS TO BE SUBTRACTED FROM "TOTAL IMPERVIOUS AREA"</b>					
<b>Qualifying Surfaces</b>	<b>Length</b>	<b>x</b>	<b>Width</b>	<b>=</b>	
<i>Barn roof downspout #1</i>	<i>20'-0"</i>	x	<i>15'-0"</i>	=	<i>-300</i>
<i>Barn roof downspout #2</i>	<i>20'-0"</i>	x	<i>15'-0"</i>	=	<i>-300</i>
		x		=	<i>-</i>
		x		=	<i>-</i>
<b>TOTAL AREA TO BE MANAGED BY BMP'S</b>					<i>2,170</i>
<b>20% CONVERSION TO BMP</b>					<i>0.20</i>
<b>"SURFACE AREA OF BMP'S REQUIRED" (ft<sup>2</sup>)</b>					<i>434</i>

## **APPENDIX B**

### **OPERATION AND MAINTENANCE (O&M) AGREEMENT** **STORMWATER MANAGEMENT BEST MANAGEMENT PRACTICES** **(SWM BMP'S)**

**THIS AGREEMENT**, made and entered into this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_. By \_\_\_\_\_ and \_\_\_\_\_, (hereinafter "Landowner"), and \_\_\_\_\_, (hereinafter "Municipality"), Mercer County, Pennsylvania,

**WHEREAS**, the Landowner is the owner of certain real property as recorded in Deed Book \_\_\_\_\_ at Page \_\_\_\_\_, (hereinafter "Property") of the Mercer County Records, Pennsylvania, and

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

**WHEREAS**, the SWM Site Plan approved by the Municipality (hereinafter "Plan") for the property identified herein, which is attached hereto as Addendum 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 SWM BMP's; 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 BMP's be constructed and maintained on the Property; and

**WHEREAS**, the Municipality requires, through the implementation of the SWM Site Plan, that SWM BMP's as required by said Plan and the Municipal Stormwater Management Ordinance be constructed and adequately operated and maintained by the landowner, successors 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 SWM BMP's in accordance with the plans and specifications identified in the SWM Site Plan.
2. The Landowner shall operate and maintain the SWM BMP's as shown on the Plan in good working order in accordance with the specific maintenance requirements of "Section 902 - Inspection" of the SWM Ordinance.
3. The Landowner hereby grants permission to the Municipality, its authorized agents, and employees, to enter upon the property, at reasonable times and upon the presentation of proper credentials, to inspect the SWM BMP's 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 SWM BMP's per paragraph 2, the Municipality or its representatives may enter upon the property and take whatever action is deemed necessary to maintain said SWM 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 ten (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 on-site SWM BMP's 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, causalities, occurrences or claims which might arise or be asserted against said employees and representatives from the construction, presence, existence, or maintenance of the SWM BMP's by the Landowner or Municipality.
8. The Municipality may inspect the SWM BMP's at a minimum of once every three years to ensure their continued functioning.

This Agreement shall be recorded at the Office of the Recorder of Deeds of Mercer 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 other successors in interests, in perpetuity.

ATTEST:

WITNESS the following signatures and seals:

(SEAL) \_\_\_\_\_ For the Municipality:

ATTEST: \_\_\_\_\_ For the Landowner:

\_\_\_\_\_ (City, Borough, Township)

County of \_\_\_\_\_, State of \_\_\_\_\_

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 C**

### **REVIEW FEE REIMBURSEMENT AGREEMENT**

THIS AGREEMENT MUST BE COMPLETED AND SIGNED BY THE DEVELOPER/APPLICANT PRIOR TO SUBMISSION OF THE SUBDIVISION/LAND DEVELOPMENT APPLICATION AND PLANS, SKETCH PLANS, CONDITIONAL USE APPLICATIONS OR ANY OTHER SUBMISSION WHICH REQUIRES MUNICIPAL CONSULTANT REVIEW.

REVIEW FEE REIMBURSEMENT AGREEMENT

**THIS AGREEMENT**, made and entered into this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_, by and between

\_\_\_\_\_, (hereinafter the "Landowner"), and

\_\_\_\_\_, Mercer County, Pennsylvania, (hereinafter "Municipality");

WITNESSETH

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

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

**WHEREAS**, the Landowner has submitted a SWM Site Plan for review and approval by the Municipality (hereinafter referred to as the "Plan") for the property identified herein; and

**WHEREAS**, the Developer has requested and/or required the Municipality approval and/or review of its proposed plans, and the Municipality is willing to authorize its professional consultants to review said Plan and/or proposal upon execution of this agreement, and upon deposit of an escrow account according to the current Fee Schedule.

**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 and Municipality hereby authorize and direct the Municipality's professional consultants, as defined at Section 107 of the Pennsylvania Municipalities Planning Code to review Landowner's plans or proposals to use its property, and to make such recommendations and specifications as may be necessary with respect to such plans in accordance with all applicable Municipality ordinances, and State and Federal rules and regulations.

2. The Landowner and Municipality acknowledge that the Municipality will incur costs and fees relating to the review of Landowner's plans by its professional consultants, and Landowner agrees to pay and/or reimburse the Municipality for such costs in accordance with this agreement.

3. The Landowner shall pay the professional consultant's charges and fees for the following: (a) review of any and all Stormwater Management Plans, studies, or other correspondence relating to the Landowners submission; (b) attendance at any and all meetings relating to Landowner's plan; (c) preparation of any reports, legal documents, or other correspondence relating to Landowner's plan or proposal; and (d) administrative cost and incurred expenses relating to the administration of this agreement. It is understood by the execution of this agreement that the Landowner specifically accepts the Fee Schedule currently in effect in the Municipality.

4. The Landowner hereby agrees to deposit with the Municipality the sum of \_\_\_\_\_ Dollars (\$\_\_\_\_\_), payable as cash in U.S. Dollars or check drawn on a Pennsylvania bank, as security for the payment of all costs and expenses, charges and fees as set forth in Paragraph 3 above, upon execution of this agreement, which shall be held in a non-interest bearing account by the Municipality. In the event that the above deposited escrow fund shall fall below fifty percent (50%) of the original deposit, the Landowner shall immediately, upon receipt of written notice from the Municipality or its agent(s), deposit sums with the Municipality necessary to replenish the account to its original balance. In the event that this is insufficient to pay current Municipality incurred expenses, Landowner agrees to pay the total amount currently due for Municipality incurred expenses without delay in addition to re-establishing the base escrow

account balance. The Municipality will use its best efforts to advise the Landowner of the impending likelihood that its costs have exceeded the required escrow account sums as described above.

5. Landowner and Municipality agree that upon completion of the Municipality's review of Landowner's plan or proposal, all unused portions of the escrow account as described above shall be returned to the applicant upon written request to the Municipality.

6. Landowner and Municipality acknowledge that the Ordinance and appropriate fee schedules require Landowner to pay Municipality's professional consultant fees relating to this plan or project, and in the event that Landowner fails to provide sufficient funds in the above-described revolving escrow account upon fifteen (15) days written notice to the Landowner or make the initial deposit payment described above within five (5) days of the date of this agreement, Landowner shall be in default of this agreement and in violation of the above Sections of Ordinance. In the event of Landowner's default as described above, the Municipality may refuse to issue any permit or grant any approval necessary to further improve or develop the subject site until such time as the terms of this Agreement are strictly met by Landowner. Moreover, final approval or further review may be denied or delayed until such time as the terms of this agreement are strictly met by Landowner.

7. Landowner and the Municipality further agree that all fees or costs arising out of this Agreement shall be paid prior to the issuance of any permit, occupancy or otherwise, for the use, improvement or construction of the buildings as proposed on the Landowner's plan. The Landowner agrees and acknowledges that no permit, occupancy or otherwise, or recordable plans, shall be released by the Municipality until all outstanding professional consultant fees and costs are paid to the Municipality, and provided that the Landowner is not in default under this agreement.

8. The Landowner may at any time terminate all further obligations under this Agreement by giving fifteen (15) days written notice to the Municipality that it does not desire to proceed with the development as set forth on the plan and upon receipt of such written notice by the Landowner to the Municipality, the Landowner shall be liable to the Municipality for its costs and expenses incurred to the date and time of its receipt of the notice, plus

the applicable administrative costs and expenses as outlined in Paragraph 3 above.

9. The Landowner and the Municipality further agree that the Municipality shall have the right and privilege to sue the Landowner or the property owner in court for reimbursement or to lien the property or both, in its sole discretion, for any expense in excess of the then current balance of funds on deposit with the Municipality in accordance with this agreement incurred by the Municipality by reason of any review, supervision and inspection of Landowner's project by its professionals including, but not limited to, the Municipality Engineer and Solicitor. The Municipality's election of its remedies under this paragraph shall not constitute a waiver of any other remedies the Municipality may have.

10. The Landowner and the Municipality acknowledge that this agreement represents their full understanding as to the Municipality's reimbursement for professional or consultant services.

11. This agreement shall be binding on and insure to the benefit of the successors and assigns of Landowner. The Municipality shall receive thirty (30) days advance written notice from Landowner of any proposed assignment of Landowner's rights and responsibilities under this Agreement.

ATTEST:

WITNESS the following signatures and seals:

(SEAL) \_\_\_\_\_ For the Municipality:

ATTEST: \_\_\_\_\_ For the Landowner:

\_\_\_\_\_ (City, Borough, Township)  
County of Mercer, 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)

**ORDAINED AND ENACTED BY THE SPRINGFIELD TOWNSHIP BOARD OF SUPERVISORS THIS 7th day of June 2011.**