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**COUNTY-WIDE  
ACT 167  
STORMWATER MANAGEMENT  
MODEL ORDINANCE**

**(Table of Contents)**

**DRAFT - February 6, 2012  
FOR COMPARISON ONLY -  
Superseded by more recent draft model  
ordinance documents**

**CHESTER COUNTY, PENNSYLVANIA**

Approved by PA Department of Environmental Protection  
\_\_\_\_\_, 20\_\_

*2/6/2012*

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**[Municipality]**  
**STORMWATER MANAGEMENT**  
**MODEL ORDINANCE**

**ORDINANCE NO. \_\_\_\_\_ OF \_\_\_\_\_**

**[Municipality], [County] COUNTY,**

**PENNSYLVANIA**

**Adopted at a Public Meeting held on**

**\_\_\_\_\_, 20\_\_**

**2/6/2012**

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# ***COUNTY-WIDE MODEL ORDINANCE 2012***

## **ARTICLE I – GENERAL PROVISIONS**

***[Internal Notes for future revisions are highlighted in Grey]***

### **Section 101. Short Title**

This Ordinance shall be known as the “[*Municipality*] Stormwater Management Ordinance.”

### **Section 102. Statement of Findings**

The governing body of the Municipality finds that:

- A. Inadequate management of accelerated stormwater runoff resulting from land disturbance and development throughout a watershed increases flooding, 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 convey and manage stormwater, undermines floodplain management and flood reduction efforts in upstream and downstream communities, reduces infiltration and groundwater recharge, threatens public health and safety, and increases nonpoint source pollution to waterways.
- B. Inadequate planning and management of stormwater runoff resulting from land disturbance and development throughout a watershed can also harm surface water resources by changing the natural hydrologic patterns, accelerating stream flows (which increase scour and erosion of stream beds and stream banks, thereby elevating sedimentation), destroying aquatic habitat, and elevating aquatic pollutant concentrations and loadings such as sediments, nutrients, heavy metals, and pathogens. Groundwater resources are also impacted through loss of recharge.
- C. A comprehensive program of stormwater management, including minimization of impacts of new development, redevelopment, and activities causing accelerated runoff and erosion and loss of natural infiltration, is fundamental to the public health, safety, and welfare, and to the protection of the people of the Municipality and all of the people of the Commonwealth, their resources, and the environment.
- D. Stormwater is an important water resource that provides infiltration and groundwater recharge for water supplies and baseflow of streams, which also protects and maintains surface water quality.
- E. Impacts from stormwater runoff can be minimized by using project designs that maintain the natural hydrologic regime and sustain high water quality, infiltration, stream baseflow, and aquatic ecosystems. The most cost-effective and environmentally advantageous way to manage stormwater runoff is through nonstructural project design that minimizes impervious

surfaces and sprawl, avoids sensitive areas (i.e., stream buffers, floodplains, steep slopes), and considers topography and soils to maintain the natural hydrologic regime.

- F. Public education on the control of pollution from stormwater is an essential component in successfully addressing stormwater.

G. *[NOTE TO USER: Include this if you are an MS4 municipality]* Federal and state regulations require the Municipality to implement a program of stormwater controls. The Municipality is required to obtain a permit and comply with its provisions for stormwater discharges from its separate storm sewer system under the National Pollutant Discharge Elimination System (NPDES).

- H. Nonstormwater discharges to municipal separate storm sewer systems can contribute to pollution of waters of the Commonwealth by the Municipality.

**Section 103. Purpose**

The purpose of this Ordinance is to protect the public health, safety and general welfare within the Municipality by implementing drainage and stormwater management practices that accomplish land disturbance, new development and redevelopment in a manner that sustains or improves the natural hydrologic characteristics of groundwater and streams, stable stream channel conditions, the flood carrying capacity of streams and their floodplains, groundwater and surface water quality, and aquatic living resources and their habitats throughout the Municipality through provisions included herein to achieve the following:

- A. Fulfill requirements of PA Act 167, including:
  - 1. Encouraging planning and management of stormwater runoff that is consistent with sound water and land use practices;
  - 2. Authorize a comprehensive program of stormwater management designated to preserve and restore the flood carrying capacity of streams; to preserve to the maximum extent practicable natural stormwater runoff regimes and natural course, current and cross-section of water; protect and conserve ground waters and ground-water recharge areas;
  - 3. Encourage local administration and management of storm water consistent with the Commonwealth's duty as trustee of natural resources and the people's constitutional right to the preservation of natural, economic, scenic, aesthetic, recreational and historic values of the environment.
  
- B. Utilize to the maximum extent possible nonstructural best management practices (BMPs), Low Impact Development and Conservation Design practices, and other alternative project designs and layouts that minimize negative impacts on surface waters and groundwater.

- C. Reduce and minimize the volume of stormwater generated, and manage and release stormwater as close to the source of runoff as possible.
- D. Provide infiltration to maintain natural groundwater recharge to protect groundwater supplies and stream baseflows, prevent degradation of surface water and groundwater quality, and to otherwise protect water resources.
- E. Reduce stormwater pollutant loads to the maximum extent practical to protect and improve the chemical, physical, and biological quality of ground and surface waters.
- F. Prevent scour, erosion and sedimentation of stream channels.
- G. Reduce flooding impacts and preserve and restore the natural flood-carrying capacity of streams and their floodplains.
- H. Protect adjacent lands from adverse impacts of direct stormwater discharges.
- I. Preserve the natural drainage patterns and watershed systems to the maximum extent practicable.
- J. Minimize impervious surfaces and connected impervious surfaces to promote infiltration and reduce the volume and impacts of stormwater runoff.
- K. Provide proper long-term operation and maintenance of all permanent stormwater management facilities and BMPs that are implemented within the Municipality.
- L. Reduce the impacts of runoff from existing developed sites undergoing redevelopment while encouraging development and redevelopment in urban areas and areas designated for growth.
- M. Implement an illicit discharge detection and elimination program that addresses non-stormwater discharges.
- N. Provide performance standards and design criteria based on watershed-wide stormwater management planning.
- O. Provide standards to meet certain NPDES permit requirements.
- P. Meet legal water quality requirements under state law, including regulations at 25 Pa. Code Chapter 93 to protect and maintain “existing and designated uses” and maintain the level of water quality to support those uses in all streams, and to protect and maintain water quality in “special protection” streams.
- Q. Implement the requirements of Total Maximum Daily Load (TMDLs) where applicable to waters within or impacted by the Municipality.

- R. Provide review procedures and performance standards for stormwater planning and management.

**Section 104. Statutory Authority**

The Municipality is empowered or required to regulate land use activities that affect runoff and surface and groundwater quality and quantity by the authority of:

- A. Act of October 4, 1978, 32 P.S., P.L. 864 (Act 167) Section 680.1 et seq., as amended, the “Storm Water Management Act” (hereinafter referred to as “the Act”);
- B. Borough Code, 53 P.S. Section 46201 et seq.;
- C. First Class Township Code, 53, Section 55101 et seq.;
- D. Second Class Township Code, 53 P.S. Sections 66501 et seq., 66601 et seq.;
- E. Act of July 31, 1968, P.L. 805, No. 247, Pennsylvania Municipalities Planning Code, Act 247, as amended.

**Section 105. Applicability/Regulated Activities**

- A. Activities Regulated by this Ordinance

All regulated activities and all activities that may affect stormwater runoff, **including but not limited to new development, redevelopment, and earth disturbance activity** located within [municipal name] are subject to regulation by this Ordinance. [SEE NOTE TO MUNICIPALITIES BELOW]

At the time of application for a building permit for any regulated activity on an existing parcel or approved lot created by a subdivision and/or improved as a land development project, issuance of the permit shall be conditioned upon adherence to the terms of this Ordinance.

This Ordinance contains the stormwater management performance standards and design criteria that are necessary from a watershed-wide perspective. Local stormwater management facility design criteria (e.g., inlet spacing, inlet type, collection system design and details, outlet structure design, etc.) shall continue to be regulated by the applicable municipal ordinances and applicable state regulations [Note to User: include the following phrase if you choose to include these criteria within this Ordinance: “, or as included elsewhere in this Ordinance”].

## B. Phasing and Cumulative Impact Requirements

For new development or redevelopment activity that is to take place in phases, or occurs in sequential projects on the same parcel or property, the applicant must meet the requirements of this Ordinance if the cumulative proposed impervious surface or earth disturbance exceeds the threshold for exemption (as presented in Table 106.1). The date of adoption of this Ordinance shall be the starting point from which to consider tracts as “parent tracts” relative to future subdivisions, and from which impervious surface and earth disturbance computations shall be cumulatively considered, (unless such requirements have previously been adopted, then the earliest date of the applicable municipal Ordinance adoption shall remain as the starting point). For example:

If, after adoption of this Ordinance, an applicant proposes construction of a 150 square foot shed, that project would be exempted from water quality and quantity control and stormwater plan submission requirements of this Ordinance as noted in Table 106.1. If, at a later date, an applicant proposes to construct a 900 square foot room addition on the same property, the applicant would then be required to implement the full stormwater quantity and quality control and plan submission requirements of this Ordinance for the cumulative total of 1,050 square feet of additional impervious surface added to the property since adoption of this Ordinance.

*NOTE TO MUNICIPALITIES THAT ARE LOCATED PARTIALLY WITHIN ANY OF THE FOLLOWING WATERSHEDS THAT HAVE APPROVED ACT 167 STORMWATER MANAGEMENT PLANS – Chester Creek, Conestoga River, Crum Creek, Darby Creek, and (East) Valley Creek:*

- *Where more than one Act 167 stormwater management plan applies to any given municipality, it is recommended that the municipality prepare and adopt one stormwater management ordinance that applies to their entire municipality. The ordinance must include -*
  - *The peak runoff release rate standards from the approved Act 167 plan(s) and a clear description and delineation of those land areas to which those peak rate standards apply.*
  - *The most restrictive of all other standards and requirements of either this model ordinance or the other applicable Act 167 Plan(s).*
  - *For Chester Creek watershed, this County-wide Act 167 model ordinance must be used to replace the Chester Creek Act 167 ordinance; the peak runoff release rate standards must be carried forward from the Chester Creek ordinance into this ordinance; other provisions from the Chester Creek ordinance that are not covered by this ordinance maybe carried forward at the municipality's discretion as long as they do not result in weakening of any requirements of this County-wide 167 ordinance.*
  
- *Any municipality that chooses to adopt the applicable Act 167 ordinance(s) for those areas of their municipality that lie within any of the above listed watersheds (except Chester Creek), and must then adopt this ordinance for all remaining areas of the municipality. In this circumstance –*
  - *The first paragraph of Section 105 must be revised to clearly and accurately state the land area to which this ordinance applies.*
  - *A map clearly illustrating the boundaries of the area to which this ordinance applies should be included in an Appendix, and referenced in paragraph 1 of Section 105.*

## **Section 106. Exemptions**

### **A. Requirements for Exempt Activities**

1. An exemption shall not relieve the Applicant from implementing all other applicable requirements of this Ordinance or from implementing such measures as are necessary to protect public health, safety, and property.
2. An exemption shall not relieve the Applicant from complying with the requirements for state-designated special protection waters designated by PADEP as high quality (HQ) or exceptional value (EV) waters, or any other current or future state or municipal water quality protection requirements.

3. The Municipality may deny or revoke any exemption at any time for any project that the Municipality believes may pose a threat to public health and safety or to the environment.
4. Even though the Applicant is exempt, he is not relieved from complying with all other applicable municipal ordinances or regulations.

**B. General Exemptions**

Table 106.1 presents those activities that are exempt from certain requirements of this Ordinance. Exemptions are for the items noted in Table 106.1 only, and shall not relieve the Applicant from other applicable sections of this Ordinance. Any Regulated Activity that is exempt from some provisions of the Ordinance is exempt only from those provisions. Exemption shall not relieve the applicant from implementing such measures as are necessary to protect health, safety and property.

*[Note to User: municipality may, at its option, do either (or neither) of the following:*

- 1. reduce the minimum size threshold(s) in Table 106.1 for projects that must comply with this Ordinance; the thresholds cannot be increased.*
- 2. establish a size range of smaller projects (e.g. 500 – 999 sq.ft.of proposed impervious surface, or other range) that would be required to implement a simplified approach.*

*Two simplified approaches are available for consideration, or the Municipality may develop its own:*

- 1. PADEP PAG13 Model Ordinance Section 303.B.(date to be provided)*
- 2. “Simplified Approach to Stormwater Management for Small Projects” presented in Appendix A of this Chester County 167 Model Ordinance.]*

**TABLE 106.1  
Activities Exempted from Listed Requirements of This Ordinance**

*[Edits to Sections listed in column 1 of this change may occur in future revisions and to reconcile with 301.D-K of DEP]*

Ordinance Article/Section	Proposed Impervious Surface		Earth Disturbance	
	0 to 999 sq. ft.	≥ 1,000 sq. ft.	0 to 4,999 sq. ft.	≥ 5,000 sq. ft.
Sections 304, 305, 306, 307, and 308	Exempt	Not Exempt	Exempt	Not Exempt
Article IV (Sections 401, 402, 403, 404, 405, and 406), & Article VI	Exempt	Not Exempt	Exempt	Not Exempt
Other Erosion, Sediment and Pollution Control Requirements	Must comply with Title 25, Chapter 102 of the PA Code and other applicable state and municipal codes, including the Clean Streams Law.			

Table 106.1 Legend:

- “Proposed Impervious Surface” in Table 106.1 includes all new, additional, and replacement impervious surface proposed as part of new development or redevelopment activity.
- Exempt - Exempt from requirements of listed section(s) only – stormwater management site plan submission may still be required if other section provisions are determined to be applicable.

C. Exemptions for Specific Activities

The following specific activities are exempt from on-site stormwater quantity and quality control requirements (Section 304, 305, 306, 307, and 308) and the requirements for preparation and submission of the Stormwater Management (SWM) Site Plan (Section 401 through 406) *[additional sections may be added in future revisions and to reconcile with 301.D-K of DEP]* of this Ordinance, unless otherwise noted below. All other stormwater management design elements, such as storm sewer system, road culverts, erosion and sedimentation control, etc. shall be required. *[Note to User: municipality may, at its option, eliminate any or all of the items below from the list of exempted activities; however, no additional activities can be added to the list.]*

1. Emergency Exemption - Emergency maintenance work performed for the protection of public health, safety and welfare. This exemption is limited to repair

- of the existing facility; upgrades, additions or other improvements are not permitted under this exemption. A written description of the scope and extent of any emergency work performed shall be submitted to the [municipality] within two (2) calendar days of the commencement of the activity. A detailed plan shall be submitted no later than 30 days following commencement of the activity. If the [municipality] finds that the work is not an emergency, then the work shall cease immediately and the requirements of this ordinance shall be addressed as applicable.
2. Maintenance - Any maintenance to an existing stormwater management system made in accordance with plans and specifications approved by the municipal engineer or [municipality].
  3. Landscaping for Existing Residential Properties - Use of land for maintenance, replacement or enhancement of existing residential landscaping by residential property owner.
  4. Gardening - Use of land for gardening for home consumption.
  5. Agricultural Activities - Agriculture activities, limited to growing crops, rotating crops, tilling of soil and grazing animals, when operated in accordance with a conservation plan, nutrient management plan or erosion and sedimentation control plan approved by the Chester County Conservation District. For agriculture with an approved conservation plan, installation or expansion of existing farmsteads, animal housing, waste storage, and production areas having impervious surfaces that result in a net increase in impervious surface of greater than or equal to 1,000 square feet shall be subject to all requirements of this Ordinance.
  6. Forest Management - Forest management operations, which are consistent with a sound forest management plan as filed with the [municipal] zoning officer and which follow the Pennsylvania Department of Environmental Protection's management practices contained in its publication "Soil Erosion and Sedimentation Control Guidelines for Forestry." Such operations are required to have an erosion and sedimentation control plan, which meets the requirements of 25 Pa. Code Chapter 102 and meets the erosion and sediment control standards of Section 303 of this Ordinance.
  7. Maintenance of Existing Paved Surfaces - Replacement of existing paved surfaces must meet the erosion and sediment control requirements of 25 Pa. Code Chapter 102 and Section 303 of this Ordinance, and is exempt from all other stormwater management requirements of this Ordinance. Resurfacing of existing paved surfaces is exempt from the stormwater management requirements of this Ordinance. Construction of new or additional impervious surface must comply with all requirements of this Ordinance as indicated in Table 106.1.

8. In-Kind Replacement of Residential Dwelling Unit - The replacement in the exact footprint of an existing one- or two-family dwelling unit.
9. In-Kind Replacement, Repair, or Maintenance of Residential impervious surfaces -- The replacement of existing residential patios, decks, driveways, pools, garage, and/or sidewalks in the exact footprint of the existing impervious surface.
10. Interior or Exterior Cosmetic Improvements to Existing Dwellings and Other - Residential Accessory Structures Improvements and home maintenance (such as replacing roofs, siding, etc) to existing dwellings and other residential accessory structures (such as garages, sheds, etc.).

**Section 107. Repealer**

Any ordinance or ordinance provision of the Municipality inconsistent with any of the provisions of this and other applicable federal and state regulations are hereby repealed to the extent of the inconsistency only.

**Section 108. Severability**

Should any section or provision of this Ordinance be declared invalid by a court of competent jurisdiction, such decision shall not affect the validity of any of the remaining provisions of this Ordinance.

**Section 109. Compatibility with Other Ordinances or Legal Requirements**

- A. Approvals issued and actions taken pursuant to this Ordinance do not relieve the Applicant of the responsibility to secure and comply with other required permits or approvals for activities regulated by any other applicable code, rule, act, law, regulation, or ordinance.
- B. To the extent that this Ordinance imposes more rigorous or stringent requirements for stormwater management, the specific requirements contained in this Ordinance shall be followed.
- C. Nothing in this Ordinance shall be construed to affect any of the Municipality's requirements regarding stormwater matters that do not conflict with the provisions of this Ordinance, such as local stormwater management design criteria (e.g., inlet spacing, inlet type, collection system design and details, outlet structure design, etc.). The requirements of this Ordinance shall supersede any conflicting requirements in other municipal ordinance or regulations.

**Section 110. Performance Guarantee**

For all activities requiring submittal of a Stormwater Management (SWM) Site Plan that involve subdivision and land development, the Applicant shall provide a financial guarantee to the Municipality for the timely installation and proper construction of all stormwater management facilities as required by the approved SWM Site Plan and this Ordinance:

A. Equal to or greater than the full construction cost of the required facilities;

OR

B. The amount and method of payment provided for in the Municipality’s Subdivision and Land Development Ordinance (SALDO).

**Section 111. Waivers** [*text of this section still under development; requires PADEP review*]

A. General

The requirements of this Ordinance are essential and shall be strictly adhered to. For any regulated activity or earth disturbance where, after a close evaluation of alternative site designs, it proves to be impracticable to meet any one or more of the mandatory minimum standards of this Ordinance onsite, the Municipality may approve measures other than those in this Ordinance, and subject to Subsection 111.B.

Requests for waivers from any requirement of this Ordinance shall be considered only where the requirement of strict adherence would cause undue hardship or an alternative standard or approach can be demonstrated to provide equal or better results. The Applicant must plead his/her case to the Governing Body with the final determination made by the Municipality. The Applicant shall assume all liabilities that may arise due to exercising this option. Cost or financial burden shall not be considered as a hardship. Any request for waiver shall demonstrate that the requested waiver or alternative is the minimum necessary to provide relief and that all other applicable requirements of this Ordinance have been achieved.

B. PADEP Approval Required

For any proposed regulated activity or earth disturbance equal to or greater than one acre, the Municipal may approve measures for minimum volume and infiltration control other than those required in this Ordinance only after consultation with and evaluation by PADEP that the alternate site design meets State water quality requirements and does not conflict with State law, including, but not limited to, the Clean Streams Law.

*[Note to User: municipality may, at its option, include Section 112:]*

**Section 112. Erroneous Permit**

Any permit or authorization issued or approved based on false, misleading or erroneous information provided by an applicant is void without the necessity of any proceedings for revocation. Any work undertaken or use established pursuant to such permit or other authorization is unlawful.

# ***COUNTY-WIDE MODEL ORDINANCE 2012***

## **ARTICLE II – DEFINITIONS**

***[ADDITIONAL DEFINITIONS MAY BE ADDED IN FUTURE DRAFTS]***

***[Note to User – do not include definition for the term “structure” within this Ordinance to avoid conflict with the meaning of the definition of “impervious surface”]***

### **Section 201. Interpretation**

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 word “person” includes an individual, firm, association, organization, partnership, trust, company, corporation, unit of government, or any other similar entity.
- D. The words “shall” and “must” are mandatory; the words “may” and “should” are permissive.
- E. The words “used” or “occupied” include the words “intended, designed, maintained, or arranged to be used, occupied, or maintained.”

### **Section 202. Definitions**

***Note to User: the definitions shaded in grey are “mandatory” and must be retained in the Ordinance exactly as written here.***

**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, 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 land or property owner, developer, or other person who has filed an application to the Municipality for approval to engage in any regulated activity defined in Section 105 of this Ordinance.

**As-built Plans (Drawings)** – Engineering or site plans or drawings maintained by the contractor as he constructs the project and upon which he documents the actual locations of the improvements, building components and changes to the original contract documents. These documents, or a copy of same, are submitted to the Municipality at the completion of the project, as per the requirements of Section 502 of this Ordinance. Also referred to as “record plans”. (see also Record Plans)

**Bankfull** – The channel at the top-of-bank or point from where water begins to overflow onto a floodplain.

**Baseflow** – Portion of stream discharge derived from groundwater; the sustained discharge that does not result from direct runoff or from water diversions, reservoir releases, piped discharges, or other human activities.

**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. Stormwater BMPs are commonly grouped into one of two broad categories or measures: “structural” or “nonstructural.” In this Ordinance, nonstructural BMPs or measures refer to operational and/or behavior-related practices that attempt to minimize the contact of pollutants with stormwater runoff whereas structural BMPs or measures are those that consist of a physical device or practice that is installed to capture and treat stormwater runoff. Structural BMPs include, but are not limited to, a wide variety of practices and devices, from large-scale retention ponds and constructed wetlands to small-scale underground treatment systems, infiltration facilities, filter strips, low impact design, bioretention, wet ponds, permeable paving, grassed swales, riparian or forested buffers, sand filters, detention basins, and manufactured devices. Structural stormwater BMPs are permanent appurtenances to the project site.

**Buffer** – See Riparian Buffer

**CFS** – Cubic Feet per Second.

**Channel** – A natural or artificial open drainage feature that conveys, continuously or periodically, flowing water and through which stormwater flows. Channels include, but shall not be limited to, natural and man-made drainageways, swales, streams, ditches, canals, and pipes flowing partly full.

**CN** – curve number.

**Commonwealth** – Commonwealth of Pennsylvania.

**Conservation Design** - An approach to land development site design that minimizes the disturbance of land area, environmental resources and natural site hydrology, preserves significant concentrations of open space, woodlands, and corridors of environmentally sensitive features, and incorporates non-structural BMPs and low impact development techniques to, wherever practicable, minimize utilization of more intrusive structural stormwater facilities.

**Conservation District** – The Chester County Conservation District.

**Conveyance** – A facility or structure used for the transportation or transmission of something from one place to another.

**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., twenty-four (24) hours), used in the design and evaluation of stormwater management systems. Also see Return Period.

**Detention** or **To Detain** – The prevention of, or to prevent, the discharge, directly or indirectly, of a given volume of stormwater runoff into surface waters by temporary storage.

**Detention Basin** – An impoundment designed to collect and retard stormwater runoff by temporarily storing the runoff and releasing it at a predetermined rate. Detention basins are designed to drain completely shortly after any given rainfall event and are dry until the next rainfall event.

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

**Developer** – A person who seeks to undertake any regulated earth disturbance activities at a project site in the Municipality.

**Development Site** – The specific tract, parcel or area of land where any regulated activity in the Municipality set forth in Section 105 of this Ordinance is planned, conducted, or maintained. (See also Project Site)

**Diameter at Breast Height (DBH)** – The outside bark diameter of a tree at breast height which is defined as four and one half (4.5) feet (1.37m) above the forest floor on the uphill side of the tree.

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

**Drainage Area** - That land area contributing runoff to a single point and that is enclosed by a ridge line.

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

**Easement** – A right of use granted by a land or property owner to allow a grantee the use of the designated portion of land for a specified purpose, such as for stormwater management or other drainage purposes.

**Erosion** – The process by which the surface of the land, including water/stream channels, is worn away by water, wind, or chemical action.

**Erosion and Sediment Control Plan** – A plan required by the Conservation District to minimize accelerated erosion and sedimentation. Said plan must be submitted to and approved by the Conservation District before the regulated activity can begin.

**FEMA** – Federal Emergency Management Agency.

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

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

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

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

**Freeboard** – A vertical distance between the elevation of the design high-water and the top of a dam, levee, tank, basin, swale, or diversion berm. The space is required as a safety margin in a pond or basin.

**Grade/Grading** – 1. (noun) A slope, usually of a road, channel, or natural ground, specified in percent and shown on plans as specified herein. 2. (verb) To finish the surface of a roadbed, the top of an embankment, or the bottom of an excavation.

**Groundwater** – Water that occurs in the subsurface and fills or saturates the porous openings, fractures and fissures of under-ground soils and rock units.

**Groundwater Recharge** – The replenishment of existing natural groundwater supplies from infiltration of rain or overland flow.

**HEC-1** – The U.S. Army Corps of Engineers, Hydrologic Engineering Center (HEC) hydrologic runoff model.

**HEC-HMS** – The U.S. Army Corps of Engineers, Hydrologic Engineering Center (HEC) - Hydrologic Modeling System (HMS).

**Hotspots** – Areas where land use or activities can potentially generate highly contaminated runoff with concentrations of pollutants in excess of those typically found in stormwater.

**Hydrologic Regime** – The hydrologic system, cycle or balance that sustains the quality and quantity of stormwater, stream baseflow, storage, and groundwater supplies under natural conditions.

**Hydrologic Soil Group (HSG)** – A classification of soils by the Natural Resources Conservation Service (NRCS), into four runoff potential groups. The groups range from A soils, which are very permeable and produce little runoff, to D soils, which are not very permeable and produce much more runoff.

**Impervious Surface** - A surface that has been compacted or covered with a layer of material so that it prevents or is resistant to infiltration of water, including but not limited to: structures such as roofs, buildings, storage sheds; other solid, paved or concrete areas such as streets, driveways, sidewalks, parking lots, patios, [decks, swimming pools see Note to User below], tennis or other paved courts; or athletic playfields comprised of synthetic turf materials. For the purposes of determining compliance with this Ordinance, compacted soils or stone surfaces used for vehicle parking and movement shall be considered impervious. Existing surfaces that were designed to allow infiltration (i.e. areas of porous pavement) will be considered on a case-by-case basis by the municipal engineer, based on appropriate documentation and condition of the material, etc. [Note to User - Municipality may, at its option, include or delete decks or swimming pools in first sentence ] [MANDATORY DEFINITION]

**Infiltration** – Movement of surface water into the soil, where it is absorbed by plant roots, evaporated into the atmosphere, or percolated downward to recharge groundwater.

**Infiltration Structures** – A stormwater BMP structure designed to collect and discharge runoff into the subsurface in a manner that allows infiltration into underlying soils and groundwater (e.g., French drains, seepage pits, or seepage trenches, etc.).

**Intermittent Stream** – A defined channel in which surface water is absent during a portion of the year, in response to seasonal variations in precipitation or groundwater discharge.

**Invert** – The lowest surface, the floor or bottom of a culvert, drain, sewer, channel, basin, BMP, or orifice.

**Karst** – A type of topography that is formed over limestone or other carbonate rock formations by dissolving or solution of the rock by water, and that is characterized by closed depressions, sinkholes, caves, a subsurface network of solution conduits and fissures through which ground water moves, and no perennial surface drainage features.

**Land Development** – Any of the following activities:

- (i) The improvement of one (1) lot or two (2) or more contiguous lots, tracts, or parcels of land for any purpose involving:
  - a. A group of two (2) or more residential or nonresidential buildings, whether proposed initially or cumulatively, or a single nonresidential building on a lot or lots regardless of the number of occupants or tenure, or
  - b. The division or allocation of land or space, whether initially or cumulatively, between or among two (2) or more existing or prospective occupants by means of, or for the purpose of, streets, common areas, leaseholds, condominiums, building groups, or other features;
- (ii) A subdivision of land;
- (iii) Development in accordance with Section 503(1.1) of the Pennsylvania Municipalities Planning Code (as amended).

**Licensed Professional** – A Pennsylvania Registered Professional Engineer, Registered Landscape Architect, Registered Professional Land Surveyor, or Registered Professional Geologist, or any person licensed by the Pennsylvania Department of State or qualified by law to perform the work required by the Ordinance within the Commonwealth of Pennsylvania.

**Limiting Zone** – A soil horizon or condition in the soil profile or underlying strata that includes one of the following:

- (i) A seasonal high water table, whether perched or regional, determined by direct observation of the water table or indicated by soil mottling.
- (ii) A rock with open joints, fracture or solution channels, or masses of loose rock fragments, including gravel, with insufficient fine soil to fill the voids between the fragments.
- (iii) A rock formation, other stratum, or soil condition that is so slowly permeable that it effectively limits downward passage of water.

**MS4** - Municipal Separate Storm Sewer System.

**Maintenance** -The action taken to restore or preserve the as-built functional design of any facility or system.

**Municipal Engineer** – A professional engineer licensed as such in the Commonwealth of Pennsylvania, duly appointed as the Engineer for a Municipality, planning agency, or joint planning commission.

**Municipality** – [*Municipality*], Chester County, Pennsylvania.

**NOAA** - National Oceanic and Atmospheric Administration.

**New Development** - Activity involving placement or construction of new impervious surface or grading over existing pervious land areas not classified as redevelopment as defined in this Ordinance. [*MANDATORY DEFINITION*]

**Nonpoint Source Pollution** – Pollution that enters a waterbody from diffuse origins in the watershed and does not result from discernible, confined, or discrete conveyances.

**Nonstormwater Discharges** – Water flowing in stormwater collection facilities, such as pipes or swales, which is not the result of a rainfall event or snowmelt.

**Nonstructural Best Management Practice (BMPs)** – (see Best Management Practice (BMP)).

**NPDES** – National Pollutant Discharge Elimination System, the federal government's system for issuance of permits under the Clean Water Act, which is delegated to PADEP in Pennsylvania.

**NRCS**– Natural Resource Conservation Service (previously Soil Conservation Service, SCS), an agency of the U.S. Department of Agriculture.

**PADEP** – Pennsylvania Department of Environmental Protection.

**Parent Tract** – The parcel of land from which a land development or subdivision originates, determined from the date of municipal adoption of this Ordinance.

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

**Penn DOT** – Pennsylvania Department of Transportation.

**Pennsylvania Stormwater Best Management Practices Manual** (PADEP BMP Manual) - Document Number 363-0300-002 (December 2006, and as subsequently amended).

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

**Planning Commission** – The Planning Commission of [*Municipal Name*].

**Point Source** – Any discernible, confined, and discrete conveyance including, but not limited to, any pipe, ditch, channel, tunnel, or conduit from which stormwater is or may be discharged, as defined in state regulations at 25 Pennsylvania Code § 92.1.

**Post-construction** – Period after construction during which disturbed areas are stabilized, stormwater controls are in place and functioning, and all proposed improvements in the approved land development plan are completed.

**Predevelopment** – land cover conditions assumed to exist within the proposed disturbed area prior to commencement of the regulated activity for the purpose of calculating the predevelopment water quality volume, infiltration volume, and peak flow rates as required in this Ordinance.

**Pretreatment** – Techniques employed in stormwater BMPs to provide storage or filtering, or other methods to trap or remove coarse materials and other pollutants before they enter the stormwater system, but may not necessarily be designed to meet the entire water quality volume requirements of this Ordinance.

**Project Site** – The specific tract, parcel or area of land where any regulated activity in the Municipality set forth in Section 105 of this Ordinance are planned, conducted, or maintained. (See also Development Site)

**Proposed Impervious Surface** - All new, additional and replacement impervious surfaces. [*MANDATORY DEFINITION*]

**Rainfall Intensity** -The depth of accumulated rainfall per unit of time.

**Recharge** – The replenishment of groundwater through the infiltration of rainfall, other surface waters, or land application of water or treated wastewater.

**Record Plans (Record Drawings)** – Original documents revised to show the as-built conditions, signed and sealed by a Licensed Professional and provided to the Municipality for review and approval as per Section 502 of this Ordinance. (See also As-Built Plans).

**Redevelopment** - Any regulated activity that involves demolition, removal, reconstruction, or replacement of existing impervious surface(s). [*MANDATORY DEFINITION*]

**Regulated Activity** - Any earth disturbance activity or any activities that involve the alteration or development of land in a manner that may affect stormwater runoff. [MANDATORY DEFINITION]

**Regulated Earth Disturbance Activity** – Any activity involving earth disturbance subject to regulation under 25 Pennsylvania Code Chapter 92, Chapter 102, or the Clean Streams Law. [MANDATORY DEFINITION]

**Retention or To Retain** – The prevention of direct discharge of stormwater runoff into receiving waters or water bodies by temporary or permanent containment in a pond or depression; examples include systems which discharge by percolation to groundwater, exfiltration, and/or evaporation processes and which generally have residence times of less than three (3) days.

**Retention Basin** – A structure in which stormwater is stored and not released during the storm event. Retention basins are designed for infiltration purposes and do not have an outlet.

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

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

**Riparian** – Pertaining to anything connected with or immediately adjacent to the banks of a stream or other body of water.

**Riparian Buffer** – An area of land adjacent to a body of water and managed to maintain vegetation to protect the integrity of stream channels and shorelines, to reduce the impact of upland sources of pollution by trapping, filtering, and converting sediments, nutrients, and other chemicals, and to supply food, cover and thermal protection to fish and other aquatic species and wildlife.

**Runoff** – Any part of precipitation that flows over the land surface.

**SALDO** – Subdivision and land development ordinance.

**SCS** – Soil Conservation Service.

**Sediment** – Soil or other materials transported by, suspended in or deposited by surface water as a product of erosion.

**Separate Storm Sewer System** – A conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains) primarily used for collecting and conveying stormwater runoff.

**Sheet Flow** – A flow process associated with broad, shallow water movement on sloping ground surfaces that is not channelized or concentrated.

**Soil Cover Complex Method** – A method of runoff computation developed by NRCS that is based on relating soil type and land use/cover to a runoff parameter called curve number (CN).

**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.

**Storm Frequency** – (see Return Period).

**Stormwater** – Drainage runoff from the surface of the land resulting from precipitation, and 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 quality, rate, or quantity. Typical stormwater management facilities include, but are not limited to, detention and retention basins, open channels, storm sewers, pipes, and infiltration structures.

**Stormwater Management (SWM) Site Plan** – The plan prepared by the Applicant or his representative indicating how stormwater runoff will be managed at the particular site of interest in accordance with this Ordinance, and including all necessary design drawings, calculations, supporting text, and documentation to demonstrate that Ordinance requirements have been met, herein referred to as “SWM Site Plan.”

**Stream** – A natural watercourse.

*[Note to User – do not include definition for the term “structure” within this Ordinance to avoid conflict with the meaning of the definition of “impervious surface”]*

**Structural Stormwater Management Practices** See Best Management Practices (BMPs)

**Subdivision** - The division or redivision of a lot, tract, or parcel of land as defined in The Pennsylvania Municipalities Planning Code, Act of July 31, 1968, P.L. 805, No. 247 (as amended).

**Swale** – An artificial or natural waterway or low-lying stretch of land that gathers and conveys stormwater or runoff, and is generally vegetated for soil stabilization, stormwater pollutant removal, and infiltration.

**SWM Site Plan** – See Stormwater Management Site Plan.

**Timber Operations** – See Forest Management.

**Top-of-bank** – Highest point of elevation of the bank of a stream or channel cross-section at which a rising water level just begins to flow out of the channel and into the floodplain.

**USDA** – United States Department of Agriculture.

**Watercourse** – A channel or conveyance of surface water having a defined bed and banks, whether natural or artificial, with perennial or intermittent flow.

**Water Table** – The upper most level of saturation of pore space or fractures by groundwater. Seasonal High Water Table refers to a water table that rises and falls with the seasons due either to natural or man-made causes.

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

**Watershed** – land area that drains to a common stream, river, watercourse, or other body of water, whether natural or artificial.

**Wetland** – Those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, fens, and similar areas.

**Woods** - Any land area of at least one-quarter (0.25) acre with a natural or naturalized ground cover (excluding manicured turf grass) and that has an average density of two (2) or more viable trees per 1,500 square feet with a DBH of six inches or greater [*“and where such trees existed at any time within three (3) years of the time of land development application submission of the proposed project.” See Note to User below*]. The land area to be considered woods must be measured from the outer drip lines of the outer trees. [MANDATORY DEFINITION] [*Note to User – Municipality may, at its option delete or include the italicized text, which is intended to address concerns of potential for conversion or removal of woodlands immediately in advance of submission of the land development application.*]

# ***COUNTY-WIDE MODEL ORDINANCE 2012***

## **ARTICLE III – STORMWATER MANAGEMENT STANDARDS**

*[Internal Notes for future revisions are highlighted in Grey]*

### **Section 301. General Requirements**

- A. Applicants proposing regulated activities in the Municipality which do not fall under the exemption criteria shown in Section 106 shall submit a stormwater management Site plan (SWM Site Plan) to the Municipality for review and approval in accordance with Articles III and IV. SWM Site Plans approved by the Municipality shall be on site throughout the duration of the regulated activity.
- B. The stormwater management criteria of this Ordinance shall apply to the total proposed disturbed area even if the proposed project is to take place in stages. The measurement of impervious surfaces shall include all of the impervious surfaces in the total proposed disturbed area even if the development is to take place in stages.
- C. No regulated activity within the Municipality shall commence until:
1. The Municipality issues approval of a SWM Site Plan, which demonstrates compliance with the requirements of this Ordinance.
  2. The Applicant has received an adequate erosion and sediment control plan review by the Municipality and the Conservation District (if required), and all other required state and federal permit approvals.
- D. Neither submission of a Stormwater Management Site Plan (SWM Plan) under the provisions herein nor compliance with the provisions of this Ordinance shall relieve any person from responsibility for damage to any person or property otherwise imposed by law.
- E. The Applicant shall design the site to minimize the disturbances to land, site hydrology, and other environmental resources, and to maintain, to the maximum extent practicable, the natural hydrologic regime and natural flow conditions. To the maximum extent practicable and consistent with the requirements of this Ordinance, stormwater designs shall:
- Minimize site disturbance and maximize protection of natural resources.
  - Minimize the cumulative area covered by impervious surfaces.
  - Minimize the volume and peak flow rates of stormwater generated.
  - Minimize or avoid stormwater pollutant loads and receiving stream channel erosion.
  - Maximize infiltration and the use of natural on-site infiltration features.
  - Locate BMPs at or as near to the source of generation as possible, within conveyances, and at depths that are as shallow as possible.

In meeting the requirements of this Ordinance, the SWM Site Plan design must apply the provisions of Section 304.

- F. To the maximum extent practicable, post-construction stormwater shall be discharged within the drainage area of the same stream or water body receiving the runoff prior to construction of the proposed project.
- G. The runoff control standards required herein apply to the total area of the proposed regulated activity.
- H. *[The following text is preliminary and under consideration for potential further edits]* Existing drainage discharges onto, or through, adjacent property(ies) or downgradient property(ies), including diffuse drainage discharge, shall not be altered in any manner without written permission from, and a maintenance and access easement agreement with, the affected property owner(s) for conveyance of discharges onto or through their property(ies). Such discharge shall be subject to any applicable discharge criteria specified in this Ordinance.
- I. 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.
- J. 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.
- K. The design of all stormwater management facilities shall incorporate sound engineering principles and practices in a manner that does not aggravate existing stormwater problems. The Municipality reserves the right to disapprove any design that would result in construction in or continuation of a stormwater problem area.
- L. Existing wetlands, either on site or on an adjacent property, shall not be used to meet the minimum design requirements for stormwater management or stormwater runoff quality treatment, except when used as part of a treatment train that incorporates a portion of the outer zone (filter strip) of the wetland's riparian buffer as a stormwater outfall. Stormwater discharges to existing wetlands shall not degrade the quality or hydrologic integrity of the wetland.
- M. "Hot Spots" Runoff Controls –  
Specific structural or pollution prevention practices may be required at the municipal Engineer's discretion to pretreat runoff from "hot spots" prior to infiltration. Below is a list of examples of hotspots:
- Vehicle salvage yards and recycling facilities

- Vehicle fueling stations
- Vehicle service and maintenance facilities
- Vehicle and equipment cleaning facilities
- Fleet storage areas (bus, truck, etc.)
- Industrial sites based on Standard Industrial Classification Codes
- Marinas (service and maintenance areas)
- Outdoor liquid container storage
- Outdoor loading/unloading facilities
- Public works storage areas
- Facilities that generate or store hazardous materials
- Commercial container nursery
- Contaminated sites/brownfields
- Other land uses and activities as designated by an appropriate review authority .

The following land uses and activities are not normally considered hotspots:

- Residential streets and rural highways
- Residential development
- Institutional development
- Office developments
- Nonindustrial rooftops
- Pervious areas, except golf courses and nurseries (which may need an integrated pest management (IPM) plan).

While streets and highways (average daily traffic volume (ADT) greater than thirty thousand (30,000) are not considered stormwater hotspots, such street and highway stormwater management facilities shall be designed to adequately protect the water quality of receiving streams and groundwater.

N. Contaminated and Brownfield Sites -

Where stormwater infiltration Best Management Practices (BMPs) may contribute to the migration of contaminants in groundwater, the water quality and runoff volume, stream channel protection, and peak rate control standards must be met; however, at the municipal Engineer's discretion, the minimum infiltration requirement may be reduced or eliminated commensurate with the contaminated area and the required water quality and runoff control measures may be increased to mitigate the reduced infiltration requirement for the contaminated area.

O. Additional Water Quality Requirements

The Municipality may require additional stormwater control measures for stormwater discharges to special management areas including but not limited to:

- water bodies listed as "impaired" by PADEP.

- any water body or watershed with an approved Total Maximum Daily Load (TMDL).  
*[Note to User: Municipality may, at its option, keep or delete any of the following bullets or add others]*
- areas of existing flooding problems.
- Critical areas with sensitive resources (e.g., state designated special protection waters, cold water fisheries, carbonate or other groundwater recharge areas highly vulnerable to contamination, drainage areas to water supply reservoirs, etc.)

P. Applicants shall refer to the *Pennsylvania Stormwater Best Management Practices Manual* (BMP Manual), as amended, or other sources acceptable to the municipal Engineer, for BMP design standards.

Q. For areas underlain by karst and/or carbonate geology that may be susceptible to the formation of sinkholes and other karst features, the location, type, and design of infiltration BMPs shall be based on a site evaluation conducted by a Licensed Professional and based on the PA BMP Manual or other design guidance acceptable to the municipal Engineer.

*[Note to User: the Municipality may, at its option, include or delete any or all of Subsections 301.R, 301.S, and 301.T.]*

R. All development activity within a Special Flood Hazard Area designated by the Federal Emergency Management Agency (FEMA) shall comply with Chapter [reference applicable Municipal ordinance section] of the Zoning Ordinance [i.e., municipal floodplain management ordinance] and this paragraph. All development shall be designed to maintain the flood carrying capacity of the floodway such that the base flood elevations are not increased, either upstream or downstream. The natural conveyance characteristics of the site and the receiving floodplain shall be incorporated into the stormwater management practices proposed for the site.

S. Disturbance of existing ground cover during construction of the proposed regulated activity is prohibited within 50 feet of top-of-bank of all perennial and intermittent waterways, water bodies (lakes, ponds and wetlands), except for activities otherwise approved by state or local agencies (e.g. stream restoration projects, road crossings, subsurface utility projects, etc.). At the municipal Engineer's discretion, and with Conservation District and PADEP approval where needed, the non-disturbance buffer may be reduced because of setback or other site constraints, but never to be less than 10 feet.

T. *[Note to User – Municipality may, at its option, include requirement for establish, protection, creation, and/or enhancement of riparian buffers within this Ordinance OR include a cross-reference here to other Municipal ordinance/code where those standards are codified If the Municipality does not have existing standards, examples can be provided upon request.]*

**Section 302. Permit Requirements by Other Governmental Entities**

The following permit requirements may apply to certain regulated earth disturbance activities and must be met prior to final approval by the Municipality of the SWM Site Plan and commencement of regulated earth disturbance activities, as applicable:

- A. All regulated earth disturbance activities subject to permit requirements by PADEP under regulations at Title 25 Pennsylvania Code Chapter 102.
- B. Work within natural drainageways subject to permit by PADEP under Title 25 Pennsylvania Code Chapter 105.
- C. Any stormwater management facility that would be located in or adjacent to surface waters of the Commonwealth, including wetlands, subject to permit by PADEP under Title 25 Pennsylvania Code Chapter 105.
- D. Any stormwater management facility that would be located on or discharging to a state highway right-of-way, or require access to or from a state highway shall be subject to approval by PennDOT.
- E. Culverts, bridges, storm sewers, or any other facilities which must pass or convey flows from the tributary area and any facility which may constitute a dam subject to permit by PADEP under Title 25 Pennsylvania Code Chapter 105.

**Section 303. Erosion and Sediment Control During Regulated Earth Disturbance Activities**

- A. No regulated earth disturbance activities within the Municipality shall commence until the Municipality receives documentation that the Applicant has received:
  - 1. An approval from the Conservation District or PADEP in compliance with Title 25 Chapter 102 of the Pennsylvania Code of an erosion and sediment control plan for construction activities if applicable.
  - 2. A PADEP “NPDES Construction Activities” Permit as required for regulated earth disturbance activities under Title 25 Pennsylvania Code Chapter 92, if applicable
  - 3. Evidence of any other permit(s) required for the regulated earth disturbance activities.

*[Note to User: Municipality may, at its option, replace 303.A.1 with the Municipality’s Erosion and Sedimentation control requirements and/or erosion and sedimentation Control Plan review requirements so long as the Municipality’s requirements are consistent with PADEP’s “Erosion and Sedimentation Pollution Control Program Manual” (as periodically amended)]*

- B. A copy of the erosion and sediment control plan and any required permit(s), as required by PADEP regulations, shall be available on the project site at all times.
- C. Additional erosion and sediment control design standards and criteria are recommended to be applied where infiltration BMPs are proposed. At a minimum, they shall include the following:
  - 1. Areas proposed for infiltration BMPs shall be protected from sedimentation and compaction during the construction phase to maintain maximum infiltration capacity.
  - 2. Infiltration BMPs shall not be constructed nor receive runoff until the entire drainage area contributory to the infiltration BMP has achieved final stabilization.

**Section 304. Conservation and Low Impact Site Design Process** *[The following text is preliminary and under consideration for potential further edits]*

- A. The Applicant shall demonstrate in their Stormwater Management (SWM) Site Plan that the design sequence, objectives and techniques described in this Section were applied in the site design of the regulated activity, to the maximum extent practicable and consistent with all other requirements of this Ordinance.
- B. First identify and delineate all existing environmental resources and management areas listed in Subsection 402.B.x. that are located within the project site or will be impacted by disturbance to the proposed regulated activity.
- C. Then apply Conservation Design and Low Impact Development (LID) site design methods to develop a site design that achieves the following objectives, to the maximum extent practicable:
  - 1. Minimize disturbances to the land, and existing site hydrology (in particular natural drainage features and patterns, discharge points, and infiltration characteristics), and maximize protection of the environmental resources and management areas.
  - 2. Minimize the cumulative area covered by impervious surfaces.
  - 3. Maintain the natural hydrologic regime and natural flow conditions.
  - 4. Minimize the volume and peak flow rates of stormwater generated.
  - 5. Minimize or avoid stormwater pollutant loads and receiving stream channel erosion.
  - 6. Maximize infiltration and the use of natural on-site infiltration features.
  - 7. Locate all BMPs at or as near to the source of runoff as possible.
- D. Utilize Conservation Design and Low Impact Development techniques such as, but not limited to, those listed below, those described in Appendix B, and those described in the PA BMP Manual, to the maximum extent practicable:
  - 1. Incorporate the onsite hydrology, including natural waterways, wetlands and water bodies, drainage patterns, discharge points, and natural infiltration patterns, into the site

design to protect them from disturbance and utilize those features to provide the basis for the site design, construction and vegetation decisions.

2. Utilize minimum disturbance and minimum maintenance techniques combined with site grading that distributes runoff to reduce and minimize concentrated flows.
3. Utilize nonstructural stormwater BMPs that:
  - a. Minimize earth disturbance.
  - b. Minimize impervious surfaces,
  - c. Break up large impervious surfaces, and
  - d. Disconnect runoff from one impervious surface to another.
4. Where impervious surfaces are planned, utilize porous surfaces where practicable.
5. In selection and design of infiltration facilities give first preference to nonstructural BMPs, then surface structural BMPs, then subsurface structural BMPs.
6. Locate all BMPs at or as near to the source of runoff as possible, within conveyances, and at depths that are as shallow as possible.

### **Section 305. Water Quality and Runoff Volume Requirements**

To control post-construction stormwater impacts from regulated activities and meet state water quality requirements, BMPs must be provided in the site design that replicate predevelopment stormwater infiltration and runoff conditions, such that post-construction stormwater discharges do not degrade the physical, chemical, or biological characteristics of the receiving waters. The Applicant shall comply with the following water quality and runoff volume requirements for all new development and redevelopment regulated activities:

- A. As required in Section 304, Conservation Design and LID practices shall be utilized for all regulated activities to the maximum extent practicable.
- B. The post-construction total runoff volume shall not exceed the predevelopment total runoff volume for all storms equal to or less than the 2-year, 24-hour duration precipitation (design storm). The water quality volume to be managed shall consist of any runoff volume generated by the proposed regulated activity over and above the predevelopment total runoff volume and shall be captured and permanently retained or infiltrated onsite. Permanent retention options may include, but are not limited to, reuse, evaporation, transpiration, and infiltration.
- C. For modeling purposes, the predevelopment ground cover conditions shall be determined using the corresponding Ground Cover Assumptions presented in Section 309.D of this Ordinance.
- D. Release of water can begin at the start of the storm (i.e., the invert of the water quality and runoff control orifice is at the invert of the proposed BMP facility). The design of the facility outlet shall provide for protection from clogging and unwanted sedimentation.
- E. BMPs that moderate the temperature of stormwater shall be used to protect the temperature of receiving waters.

*[Note to User: Municipality may, at its option, include the following additional thermal requirement in paragraph 305.F – “The applicant shall fulfill the requirements of the PADEP “Thermal Impact Analysis” for the “PAG-02 Stormwater Discharges Associated with Construction Activities, NOI for Coverage under General or Individual Permit” if they cannot meet the volume control requirements.”]*

- A. Water quality improvement shall be achieved in conjunction with achieving the infiltration requirements of Section 306. The infiltration volume required under Section 306 may be included as a component of the water quality volume. If the calculated water quality and runoff volume is greater than the volume infiltrated, then the difference between the two volumes shall be managed for water quality and runoff volume control through other techniques or practices as long as it is not discharged offsite.
- B. Runoff from all portions of the disturbed area shall be treated for water quality prior to entering existing waterways or water bodies. If a stormwater management practice does not provide water quality treatment, then water quality BMPs shall be utilized prior to the runoff entering the stormwater management practice.
- C. The Municipality may require additional water quality and runoff control measures for stormwaters discharging to areas of special management needs such as those listed in Section 301.P.
- D. When a project contains or is divided by multiple drainage areas, the water quality and runoff volume shall be separately addressed for each drainage area.
- E. Weighted averaging of runoff coefficients shall not be used for manual computations or input data for water quality and runoff volume calculations.
- F. The water quality and runoff volume shall be based on the proposed disturbed area of the regulated activity. Offsite existing impervious areas may be excluded from the calculation of the water quality and runoff volume requirements.

*[Note to User: if the municipality included the requirement for “simplified method” for small projects in Section 106.A, then, include in Section 305 language describing the required approach to be used and water quality volume to be managed]*

### **Section 306. Infiltration Requirements**

Providing for infiltration consistent with the natural hydrologic regime is required to compensate for the reduction in the recharge that occurs when the ground surface is disturbed or impervious surface is created or expanded. As required in Section 304, Conservation Design and LID practices shall be utilized for all regulated activities to the maximum extent practicable. The Applicant shall achieve the following infiltration requirements:

- A. Wherever possible, infiltration should be designed to accommodate the entire water quality volume.
- B. For new development regulated activities, the volume of a minimum of 1-inch of runoff from all proposed impervious surfaces shall be infiltrated.
- C. For redevelopment regulated activities, whichever is less of the following volume options shall be infiltrated:
  1. the volume of a minimum of 1-inch of runoff from all proposed impervious surfaces;
  - OR
  2. the total water quality and runoff volume required in Section 305 of this Ordinance.
- D. If the requirements of Section 306.C cannot be physically accomplished, then the Applicant shall be responsible for demonstrating with data or calculations to the satisfaction of the municipal Engineer why this infiltration volume cannot be physically accomplished on the site (e.g., shallow depth to bedrock or limiting zone, open voids, steep slopes, etc.) and what alternative volume can be infiltrated; however in all cases at least the first 0.5 inch of water quality volume shall be infiltrated.
- E. Only if the minimum of 0.50 inch of infiltration requirement cannot be physically accomplished onsite, shall a waiver from Section 306, Infiltration Requirements be considered by from the Municipality.
- F. If site conditions preclude capture of runoff from portions of the impervious area, the infiltration volume for the remaining area should be increased an equivalent amount to offset the loss.
- G. When a project contains or is divided by multiple drainage areas, the infiltration volume shall be addressed for each drainage area.
- H. The infiltration volume shall be based on the proposed impervious surfaces of the proposed regulated activity. Offsite existing impervious areas may be excluded from the calculation of the required infiltration volume.
- I. Infiltration BMPs shall be selected based on suitability of soils and site conditions and shall be constructed on soils that have the following characteristics:

1. A minimum depth of twenty-four (24) inches between the bottom of the BMP and the top of the limiting zone.
  2. An infiltration rate sufficient to accept the additional stormwater volume and dewater completely as determined by field tests conducted by the Applicant.
  3. The infiltration facility shall completely drain the retention (infiltration) volume within three (3) days (72 hours) from the end of the design storm.
- J. Soils - Infiltration practices shall be selected based on suitability of soils and site conditions. A Soil Use Guide is provided in Appendix C that may be used for preliminary assessment of potential conditions. A detailed soils evaluation of the project site shall be conducted by a Licensed Professional and at a minimum shall address soil permeability, depth to bedrock, and subgrade stability. The general process for designing the infiltration BMP shall :
1. Analyze hydrologic soil groups as well as natural and man-made features within the site to determine general areas of suitability for infiltration practices. In areas where development on fill material is under consideration, conduct geotechnical investigations of sub-grade stability; infiltration may not be ruled out without conducting these tests.
  2. Provide field tests such as double ring infiltrometer or hydraulic conductivity tests (at the level of the proposed infiltration surface) to determine the appropriate hydraulic conductivity rate. Percolation tests are not acceptable for design purposes.
  3. Design the infiltration structure for the required retention (infiltration) volume based on field-determined infiltration capacity at the level of the proposed infiltration surface.
  4. On-lot infiltration features are encouraged; however, it must be demonstrated to the municipality Engineer that the soils are conducive to infiltration on the identified lots.
- K. In choosing methods of infiltration, preference shall be given first to non-structural BMPs, then to surface structural BMPs, and then to subsurface structural BMPs. Where impervious surfaces are needed, utilize porous surfaces or materials wherever practicable.
- L. The use of multiple infiltration features and facilities shall be considered, where practicable, to:
1. minimize concentration of flows,
  2. maximize disconnection of flows,
  3. Infiltrate as close to the source of runoff as possible, and
  4. Reduce visual impact.

- M. Infiltration areas should be designed to maintain any broad and even infiltration pattern, which existed prior to development. Such facilities should use the natural topography and vegetation in order to blend in with the site. Infiltration designs, which do not provide this may be used if the Applicant demonstrates to the Municipality's satisfaction that alternative approaches would be more effective, more harmonious with their existing environment and as easily maintained.
- N. Above-ground stormwater infiltration facilities should be as shallow as possible while still achieving the requirements of this ordinance.
- O. All infiltration practices shall be set back at least fifteen (15) feet from all buildings and features with sub-grade elements (e.g., basements, foundation walls).
- P. Infiltration facilities shall, to the maximum extent practicable, be located to avoid introducing contaminants to groundwater:
1. An evaluation of the possibility of groundwater contamination from the proposed infiltration facility shall be performed as well as a hydrogeologic justification study, if necessary.
  2. When located in the vicinity of a public water supply well, infiltration practices shall be in conformance with any approved source water protection assessment or source water protection plan, where applicable.
  3. Roadway drainage systems should provide an opportunity to capture accidental spills. Road de-icing material storage facilities shall be designed to avoid salt and chloride runoff from entering waterways and infiltration facilities.
  4. The applicant shall provide safeguards against groundwater contamination for land uses that may cause groundwater contamination should there be a mishap or spill.
- Q. During site construction, all infiltration practice components shall be protected from compaction due to heavy equipment operation or storage of fill or construction material. Infiltration areas shall also be protected from sedimentation. Areas that are accidentally compacted or graded shall be remediated to restore soil composition and porosity. Adequate documentation to this effect shall be submitted for review by the municipal Engineer. All areas designated for infiltration shall not receive runoff until the contributory drainage area has achieved final stabilization.
- R. All infiltration practices that serve more than one (1) lot and are considered a common facility shall have a stormwater easement and Operations and Maintenance Agreement as required in Article VII. The easement shall provide the Municipality with the right of access and shall have a physical access from the street.

*[Note to User - Municipalities with areas of karst and/or carbonate geology, the following Subsection 306.S should be included within the stormwater ordinance. For municipalities where no karst or carbonate geology exists, Subsection 306.S should be deleted.]*

- S. Consideration of infiltration BMPs for areas underlain by karst or carbonate geology is encouraged but only where the design, supporting calculations, results of soils or other site investigations or other documentation are provided to the Municipality demonstrating that the potential or likelihood of subsidence or sinkholes is minimal. Evaluation of site conditions and infiltration design shall rely on guidance in the PA BMP Manual or other guidance acceptable to the municipal Engineer.
- T. Groundwater quality of the carbonate aquifer shall be protected from infiltration of pollutants. At a minimum, stormwater runoff from “hotspots” (i.e., sources of significant pollutant runoff) shall first be discharged through a water quality BMP(s) to remove pollutants prior to infiltration. Where soil characteristics are insufficient to provide removal of pollutants from sources other than “hotspots”, stormwater runoff shall first be discharged through a water quality BMP(s) to remove pollutants prior to infiltration
- U. Where sediment transport in the stormwater runoff is anticipated to reach the infiltration system, appropriate permanent measures to prevent or collect sediment shall be installed prior to discharge to the infiltration system
- V. Where roof drains are designed to discharge to infiltration practices, they shall have appropriate measures to prevent clogging by unwanted debris (for example, silt, leaves and vegetation). Such measures shall include but are not limited to leaf traps, gutter guards and cleanouts.
- W. All infiltration practices shall have appropriate positive overflow controls to prevent storage within one (1) foot of the finished surface or grade, unless a specific amount of surface storage away from pedestrian and vehicular traffic is provided and such areas infiltrate the stored volume within forty-eight (48) hours.
- X. No sand, salt or other particulate matter may be applied to a porous (pervious) surface for winter ice conditions.
- Y. The following procedures and materials shall be required during the construction of all subsurface facilities:
  - 1. Excavation for the infiltration facility shall be performed with equipment that will not compact the bottom of the seepage bed/trench or like facility.
  - 2. The bottom of the bed and/or trench shall be scarified prior to the placement of aggregate.
  - 3. Only clean aggregate with documented porosity, free of fines, shall be allowed.

4. The tops and sides of all seepage beds, trenches, or like facilities shall be covered with drainage fabric. Fabric shall meet the specifications of Penn DOT Publication 408, Section 735, Construction Class 1.
5. Perforated distribution pipes connected to centralized catch basins and/or manholes with the provision for the collection of debris shall be provided in all facilities unless the municipal engineer agrees that site soils provide superior infiltration (A soils or highly porous B soils). Where perforated pipes are used to distribute stormwater to the infiltration practice, stormwater shall be distributed throughout the entire seepage bed/trench or like facility.

### **Section 307. Stream Channel Protection Requirements**

To minimize stream channel erosion and associated water quality impacts to the receiving waters, the Applicant shall comply with the following stream channel protection requirements:

- A. For all regulated activities involving new development, the peak flow rate of the post-construction 2-year, 24-hour design storm shall be reduced to the predevelopment peak flow rate of the 1-year 24-hour duration precipitation, using the SCS Type II distribution. For modeling purposes, the predevelopment ground cover conditions shall be determined using the corresponding Ground Cover Assumptions presented in **Section 309.D** of this Ordinance.
- B. For all regulated activities involving new development and/or redevelopment, to the maximum extent practical and unless otherwise approved by the municipal Engineer, the post-construction 1-year 24-hour storm flow shall be detained for a minimum of twenty-four (24) hours and a maximum not to exceed 72 hours from a point in time when the maximum volume of water from the 1-year 24-hour storm is stored in a proposed BMP (i.e., when the maximum water surface elevation is achieved in the facility). Release of water can begin at the start of the storm (i.e., the invert of the orifice is at the invert of the proposed BMP).
- C. The minimum orifice size in the outlet structure to the BMP shall be three (3) inches in diameter where possible, and a trash rack shall be installed to prevent clogging. On sites with small drainage areas contributing to the BMP that do not provide enough runoff volume to allow a 24-hour attenuation with the 3-inch orifice, the calculations shall be submitted showing this condition.
- D. When the calculated orifice size is below three (3) inches, gravel filters (or other methods) are recommended to discharge low-flow rates subject to the municipal Engineer's satisfaction. When filters are utilized, maintenance provisions shall be provided to ensure filters meet the design function.
- E. All proposed stormwater facilities shall make use of measures to extend the flow path and increase the travel time of flows in the facility.

### Section 308. Stormwater Peak Rate Control Requirements

The Applicant shall comply with the following peak flow rate control requirements for all new development and redevelopment regulated activities [*Note to User – Municipality **MUST** include the following language here along with the appropriate watershed(s) names if any portion of your municipality lies within any of these watersheds – “that are NOT located in the Conestoga River, Chester Creek, Darby Creek, (East) Valley Creek, or Crum Creek watershed(s)]:*

- A. Post-construction peak flow rates from any regulated activity shall not exceed the predevelopment peak flow rates as shown for each of the design storms specified in Table 308.1.

**TABLE 308.1**

**Peak Flow Rate of the Post-Construction Design Storm Shall be Reduced to the Peak Flow Rate of the Corresponding Predevelopment Design Storm Shown in the Table**

POST-CONSTRUCTION DESIGN STORM	PREDEVELOPMENT DESIGN STORM	
	New Development Regulated Activities	Redevelopment Regulated Activities
2	1	2
5	2	5
10	2	10
25	25	25
50	50	50
100	100	100

- B. For modeling purposes, the predevelopment ground cover conditions shall be determined using the corresponding Ground Cover Assumptions presented in **Subsection 309.D** of this Ordinance.
- C. For regulated activities involving redevelopment, no peak flow rate controls are required **only if** the total proposed impervious surface area is at least 20% less than the total existing impervious surface area to be disturbed by the regulated activity. In all cases where this

requirement is not met, the redevelopment regulated activity must achieve the peak flow rate controls presented in Table 308.1, using the Redevelopment Ground Cover Assumptions presented in Subsection 309.D.

- D. Off-site areas that drain through a proposed project site are not subject to peak flow rate control requirements. On-site drainage facilities shall be designed to safely convey off-site flows through the proposed project site.
- E. Where the site area to be impacted or disturbed by a proposed regulated activity differs significantly from the total site area (property), only the proposed disturbed area shall be subject to the peak flow rate control standards noted above. Undisturbed areas for which the discharge point has not changed are not subject to the peak flow rate control standards.
- F. The effect of structural and non-structural stormwater management practices implemented as part of the overall site design may be taken into consideration when calculating total storage volume and peak flow rates.
- G. *[Note to User – Municipality MUST include the following language here along with the appropriate watershed(s) names if any portion of your municipality lies within any of these watersheds, and also insert here a corresponding table of required release rates, and include corresponding release rate map(s) in an appendix to this Ordinance. If this does NOT apply to your municipality, delete the following language.]*

Regulated activities located within the *[Conestoga River, Chester Creek, Darby Creek, (East) Valley Creek, or Crum Creek]* watershed(s) shall achieve the applicable peak flow release rate controls presented in the approved PA Act 167 Plan for that watershed and as presented in Table *[308.x]* below, and as presented in the *(watershed name)* Watershed Release Rate Map in Appendix *[XX]* of this Ordinance.

### **Section 309. Calculation Methodology**

- A. Stormwater runoff from all development sites with a drainage area of greater than five (5) acres shall be calculated using a generally accepted calculation technique that is based on the NRCS Soil Cover Complex Method. Table 309.1 summarizes acceptable computation methods. The method selected for use shall be based on the individual limitations and suitability of each method for a particular site. The use of the Rational Method to estimate peak discharges for drainage areas greater than five (5) acres shall be permitted only upon approval by the municipal Engineer.

**TABLE 309.1****ACCEPTABLE COMPUTATION METHODOLOGIES FOR  
SWM SITE PLAN**

<b>METHOD</b>	<b>DEVELOPED BY</b>	<b>APPLICABILITY</b>
TR-20  (or commercial computer package based on TR-20)	USDA NRCS	Applicable where use of full hydrology computer model is desirable or necessary.
TR-55  (or commercial computer package based on TR-55)	USDA NRCS	Applicable for land development plans where limitations described in TR-55 are met.
HEC-1/ HEC-HMS	US Army Corps of Engineers	Applicable where use of a full hydrologic computer model is desirable or necessary.
Rational Method  (or commercial computer package based on Rational Method)	Emil Kuichling  (1889)	For sites up to five (5) acres, or as approved by the Municipality and/or municipal Engineer.
Other Methods	Varies	Other computation methodologies approved by the Municipality and/or municipal Engineer.

- B. All calculations using the Soil Cover Complex Method shall use the appropriate design rainfall depths for the various return period storms consistent with this Ordinance. Rainfall depths used shall be obtained from NOAA Atlas 14 values consistent with a partial duration series. When stormwater calculations are performed for routing procedures or infiltration, water quality and runoff volume functions, the duration of rainfall shall be twenty-four (24) hours.

- C. All calculations using the Rational Method shall use rainfall intensities consistent with appropriate times-of-concentration (duration) and storm events with rainfall intensities obtained from NOAA Atlas 14 partial duration series estimates, or the latest version of the PennDOT Drainage Manual (PDM Publication 584). Times-of-concentration shall be calculated based on the methodology recommended in the respective model used. Times of concentration for channel and pipe flow shall be computed using Manning's equation.
- D. The Applicant shall utilize the following Ground Cover Assumptions for all predevelopment water quality and runoff volume, infiltration volume and peak flow rate calculations:  
*[language regarding other Act 167 plans to be added in future revisions]*
1. For new development regulated activities, the following Ground Cover Assumptions shall be used:
    - a. For areas of the site that are woods (as defined in Article II of this Ordinance), pre-development calculations must assume ground cover of "woods in good condition".
    - b. For all other areas of the site (including all impervious surfaces), pre-development calculations must assume ground cover of "meadow".
  2. For redevelopment regulated activities, the following Ground Cover Assumptions shall be used:
    - a. For areas of the site that are woods (as defined in Article II of this Ordinance), predevelopment calculations must assume ground cover of "woods in good condition".
    - b. For areas of the site to be disturbed that are not woods or not impervious surfaces, pre-development calculations must assume ground cover of "meadow".
    - c. For areas of the site to be disturbed that are impervious surfaces, predevelopment calculations must assume at least 20% of the existing impervious surface area to be disturbed as "meadow" ground cover.
  3. The Applicant shall determine which stormwater standards apply to the proposed regulated activity as follows:
    - a. Stormwater standards for new development shall apply to all proposed regulated activities that involve only new development activities as defined in this Ordinance.
    - b. Stormwater standards for redevelopment shall apply to all proposed regulated activities that involve only redevelopment activities as defined in this Ordinance.
    - c. At the discretion of the municipal Engineer, regulated activities that involve a combination of both new development and redevelopment activities, as defined in this Ordinance, may either:
      - i. Apply the stormwater standards (redevelopment or new development) that are associated with the activity that involves the greatest amount of land area

within the proposed disturbed area of the project site;

OR

- ii. Apply the redevelopment and new development stormwater standards to the corresponding redevelopment and new development portions of the proposed disturbed areas of the project site.
- E. Runoff curve numbers (CN) for both predevelopment and proposed (post-construction) conditions to be used in the Soil Cover Complex Method shall be obtained from Table D-1 in Appendix D of this Ordinance. [*CNs in Appendix D to be confirmed*]
- F. Runoff coefficients (c) for both predevelopment and proposed (post-construction) conditions for use in the Rational Method shall be obtained from Table D-2 in Appendix D of this Ordinance. [*Cs in Appendix D to be confirmed*]
- G. Weighted averaging of runoff coefficients shall not be used for manual computations or input data for water quality and runoff volume calculations.
- H. When a project contains or is divided by multiple drainage areas, the volume shall be addressed for each drainage area.
- I. Hydraulic computations to determine the capacity of pipes, culverts, and storm sewers shall be consistent with methods and computations contained in the Federal Highway Administration Hydraulic Design Series Number 5 (Publication No. FHWA-NHI-01-020 HDS No. 5). Hydraulic computations to determine the capacity of open channels shall be consistent with methods and computations contained in the Federal Highway Administration Hydraulic Engineering Circular Number 15 (Publication No. FHWA-NHI-05-114 HEC 15). Values for Manning's roughness coefficient (n) shall be consistent with Table D-3 in Appendix D of the Ordinance. [*Ns in Appendix D to be confirmed*]
- J. Runoff calculations shall include the following assumptions:
1. Average antecedent moisture conditions (for the Soil Cover Complex Method only for example, TR-55, TR-20).
  2. A type II distribution storm (for the Soil Cover Complex Method only for example, TR-55, TR-20).

### **Section 310. Other Requirements**

- A. A. All wet basin designs shall incorporate biologic controls consistent with the West Nile Guidance found in Appendix E, PADEP document 363-0300-001 "Design Criteria – Wetlands Replacement/Monitoring," or contact the Pennsylvania State Cooperative Wetland

Center ([www.wetlands.psu.edu/](http://www.wetlands.psu.edu/)) or the Penn State Cooperative Extension Office ([www.extension.psu.edu/extmap.html](http://www.extension.psu.edu/extmap.html)).

- B. Any stormwater basin required or regulated by this Ordinance designed to store runoff and requiring a berm or earthen embankment shall be designed to provide an emergency spillway to safely convey flow up to and including the 100-year proposed conditions. The height of embankment must provide a minimum [*recommended 1.0 foot*] of freeboard above the maximum pool elevation computed when the facility functions for the 100-year proposed conditions inflow. Should any stormwater management facility require a dam safety permit under PA Chapter 105 regulations, the facility shall be designed in accordance with and meet the regulations of Chapter 105 concerning dam safety. Chapter 105 may require the safe conveyance of storms larger than 100-year event.
- C. Any drainage conveyance facility and/or channel not governed by PA Chapter 105 regulations must be designed to convey, without damage to the drainage structure or roadway, runoff from the 25-year storm event. Larger storm events (50-year and 100-year storms) must also be safely conveyed in the direction of natural flow without creating additional damage to any drainage structures, nearby structures, or roadways.
- D. Conveyance facilities to or exiting from stormwater management facilities (i.e., detention basins) shall be designed to convey the design flow to or from the facility.
- E. Roadway crossings or structures located within designated floodplain areas must be able to convey runoff from a 100-year design storm consistent with Federal Emergency Management Agency National Flood Insurance Program – Floodplain Management Requirements.
- F. Any facility located within a PennDOT right-of-way must meet PennDOT minimum design standards and permit submission requirements.
- G. Adequate erosion protection and energy dissipation shall be provided along all open channels and at all points of discharge. Design methods shall be consistent with the Federal Highway Administration Hydraulic Engineering Circular Number 11 (Publication No. FHWA-IP-89-016) and the PADEP Erosion and Sediment Pollution Control Program Manual (Publication No. 363-2134-008), or other design guidance acceptable to the municipal Engineer.

### **311. Conveyance and Other System Design Standards**

*[Note to User – include here either full set of design standards or include a cross-reference to other ordinance/codes where those design standards are codified by the Municipality that must be adhered to. If the Municipality does not have existing design standards, examples can be provided upon request. Content should include items such as dimensions, capacity, other specifications and requirements for features such as outlet structures; discharge points; inlets, manholes, swales, etc.]*

***COUNTY-WIDE MODEL ORDINANCE 2012***  
**ARTICLE IV – STORMWATER MANAGEMENT (SWM) SITE  
PLAN REQUIREMENTS**

*[Internal Notes for future revisions are highlighted in Grey]*

**Section 401. General Requirements**

For any of the activity regulated by this Ordinance, unless the proposed activity qualifies for an exemption in Section 106:

- A. Preparation and implementation of an approved SWM Site Plan is required.
- B. No regulated activity shall commence until the Municipality issues written approval of an SWM Site Plan, which demonstrates compliance with the requirements of this Ordinance and, if required, a letter of adequacy has been issued by the Conservation District for an erosion and sediment control plan.
- C. The preliminary or final approval of subdivision and/or land development plans, and the issuance of any building or occupancy permit will not proceed until the Applicant has received written approval of a SWM Site Plan from the Municipality.
- D. The SWM Site Plan approved by the Municipality shall be on site throughout the duration of the regulated activity.

**Section 402. SWM Site Plan Contents**

The SWM Site Plan shall consist of a general description of the project including sequencing items described in Section 304, calculations, maps, and plans. A note on the maps shall refer to the associated computations and erosion and sediment control plan by title and date. The cover sheet of the computations and erosion and sediment control plan shall refer to the associated maps by title and date. All SWM Site Plan materials shall be submitted to the Municipality in a format that is clear, concise, legible, neat, and well organized; otherwise, the SWM Site Plan shall not be accepted for review and shall be returned to the Applicant.

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

- A. General
  - 1. General description of the proposed project.
  - 2. A listing of all regulatory approvals required for the proposed project and the status of the review and approval process for each, and final approval or adequacy

letters for each. Proof of application or documentation of required permit(s) or approvals for the programs listed below shall be part of the Plan, if applicable:

- a. NPDES Permit for Stormwater Discharges from Construction Activities
  - b. PADEP permits as needed:
    - i. PADEP Joint Permit Application
    - ii. Chapter 105 (Dam Safety and Waterway Management)
    - iii. Chapter 106 (Floodplain Management)
  - c. PennDOT Highway Occupancy Permit
  - d. Erosion and sediment control plan letter of adequacy
  - e. Any other permit under applicable state or federal regulations.
3. A statement, signed by the Applicant, acknowledging that any revision to the approved SWM Site Plan must be submitted to and approved by the Municipality, and that a revised erosion and sediment control plan must be submitted to and approved by the Conservation District for a determination of adequacy prior to construction of the revised features.
4. The following signature block signed and sealed by the Licensed Professional responsible for the preparation of the SWM Site Plan:
- “I (name), on this date (date of signature), hereby certify that the SWM Site Plan meets all design standards and criteria of the *[Municipality]* Ordinance No. \_\_\_\_\_, *[followed by title of Ordinance]*.” *[Note: include signature, name, discipline of professional license, and license stamp here]*
5. The SWM Site Plan Application and completed fee schedule form ( Appendix **F**). *[Appendix F to be reconciled with Final Draft Model Ordinance]*
6. The SWM Site Plan Checklist (Appendix **G**). *[Appendix G to be reconciled with Final Draft Model Ordinance]*

**B. Maps**

Map(s) or plan sheets of the project area shall be submitted on 24-inch x 36-inch sheets and/or shall be prepared in a form that meets the requirements for recording at the Chester County Office of the Recorder of Deeds and the requirements of the Operation and Maintenance Plan and Agreement (**Article VII**). If the SALDO has

more stringent criteria than this Ordinance, then the more stringent criteria shall apply. The contents of the map(s) shall include, but not be limited to:

1. The location of the project property relative to highways, municipal boundaries, or other identifiable landmarks.
2. The name of the project, the name and address of the owner of the property and Applicant, and the name of the individual and firm preparing the plan.
3. Signature and seal of the Licensed Professional(s) responsible for preparation of the maps and plans.
  - a. The date of submission and revision dates as applicable.
  - b. 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.
  - c. A north arrow.
  - d. Legal property boundaries, including:
    - i. The total project property boundary and size with distances marked to the nearest foot and bearings to the nearest degree.
    - ii. Boundaries, size and description of purpose of all existing easements and deed-restricted areas of the project property, with distances marked to the nearest foot and bearings to the nearest degree.
4. Existing environmental resources and management areas, on the project site or receiving discharge from or that may otherwise be impacted by the proposed regulated activity, to be utilized to comply with Section 304, including but not limited to:
  - a. waterways, water bodies and other water features such as streams (intermittent and perennial), ponds, lakes, wetlands, hydric soils, vernal pools, and aquatic resources, and any existing constructed drainage courses, facilities, open channels, swales, etc.
  - b. drainage areas, discharge points, and locations of concentrated flows.
  - c. for named streams, show stream names and watershed boundaries
  - d. state designated use of all water bodies and wetlands on the site or receiving discharges from the site.

- e. streams or water bodies on the site or receiving discharges from the site that are designated by the state as “impaired”, and the listed source and cause of impairment.
- f. woods and vegetated riparian buffers, and areas of natural vegetation.
- g. topography using contours at intervals of two (2) feet. In areas of slopes greater than [     15 - or other at option of Municipality] percent, 5-foot contour intervals may be used.
- h. areas classified as steep slopes.
- i. soil names and boundaries, general type of soils with Hydrologic Soil Group noted, and in particular note areas most conducive to infiltration BMPs, such as groups A and B, etc., estimated permeabilities in inches per hour, and location and results of all soil tests and borings.
- j. if present, underlying carbonate geologic units, existing sinkholes, subsidence or other karst features, and any associated groundwater recharge areas with increased vulnerable to contamination.
- k. any contaminated surface or subsurface areas of the site.
- l. water supply wells –
  - i. location of existing well(s) on the project property and delineation of the(ir) recharge area(s) (if known), or a 50 foot diameter assumed recharge area.
  - ii. location of existing well(s) within 50 feet beyond the boundary of the project property boundary (if public water supply is proposed for the regulated activity).
  - iii. location of existing wells within one-quarter mile of the project property boundary if onsite private or public water well(s) are proposed.
- m. Identify site-specific existing condition drainage areas and discharge points.
- n. Current FEMA 100-year floodplain boundaries, elevations, and floodway boundaries for any Special Flood Hazard Areas on or within one hundred (100) feet of the property. For any stream where no FEMA floodway has been established, floodway boundaries shall be delineated 50 feet from top of each bank of the stream.

- o. For redevelopment sites, also show the ten (10) and twenty-five (25)–year flood elevations for any Special Flood Hazard Areas on or within one hundred (100) feet of the property. The source of these elevations shall also be shown.
  - p. *[Boundaries of riparian buffer(s) as required by Section XXX or Municipal Ordinance # XX-X] [Note to User – include preceding italicized text if the Municipality has riparian buffer standards in this Ordinance or another ordinance. If none, then Item 304.B.2.p. should be deleted.]*
  - q. *[Boundaries of a 50 foot construction non-disturbance buffer to protect streams (intermittent and perennial), wetlands and water bodies during construction of the proposed regulated activity]. [Note to User – include preceding italicized text if the Municipality included the construction non-disturbance buffer requirement in Section 301. Otherwise, delete Item 304.B.2.q.]*
5. Location of the proposed regulated activity, limits of earth disturbance, and non-structural and structural stormwater BMPs relative to the location of existing environmental resources and management areas resulting from the Conservation and Low Impact Development site design process of Section 304.
  6. Description of existing and proposed ground cover and land use including the type and total area.
  7. Existing and proposed man-made features including roads, paved areas, buildings, and other impervious and porous features on the project property and within the proposed disturbed area, and including the type and total area of the following:
    - a. existing impervious surfaces,
    - b. existing impervious surfaces proposed to be replaced;
    - c. existing impervious surfaces to be permanently removed and replaced with pervious ground cover;
    - d. new or additional impervious surfaces;
    - e. percent impervious surfaces for the proposed disturbed area for both existing and proposed post-construction conditions.
  8. The total extent of the upstream area draining through the site,
  9. All stormwater management facilities must be located on a plan, including profile drawings, construction details, materials to be used, etc., and be described in detail.

- a. All calculations, assumptions, loading ratios (consistent with the guidelines presented in the PA BMP Manual and Article III), and criteria used in the design of the stormwater management facilities must be shown.
  - b. Show complete delineation of the flow paths used for calculating the time of concentration for the predevelopment and post-construction conditions.
10. The locations of all existing and proposed utilities, sanitary sewers, water supply wells, and on-lot wastewater facilities (including subsurface tanks and leach fields), and water supply lines within the project site and within fifty (50) feet beyond the proposed limits of earth disturbance.
  11. A grading plan, including all areas of proposed earth disturbance and the proposed regulated activity and delineating the boundary or limits of earth disturbance. The total area of disturbance shall be noted in square feet and acres.
  12. Proposed final grade elevations and contours at intervals of two (2) feet. In areas of steep slopes (greater than [\_\_\_15 – or other at option of Municipality] percent), 5-foot contour intervals may be used.
  13. All existing natural and man-made features beyond the limits of disturbance and beyond the property boundary that will be affected by the proposed project.
  14. For each structural and non-structural stormwater BMP included in SWM Site Plan for stormwater control for the proposed regulated activity, both onsite and offsite, the following shall be included in the SWM Site Plan:
    - a. Identification of the entity responsible for ongoing inspections, operation and maintenance of the BMP after completion of construction.
    - b. Boundaries of an access and maintenance easement shall be shown on the maps or plan sheets for any stormwater BMPs to be owned by an entity other than the Municipality, and for any stormwater BMP to be owned or operated by the Municipality but on lands not owned by the Municipality, for the purposes of post-construction inspections, operation and maintenance, with distances shown in feet and bearings to the nearest degree. Easement areas shall:
      - i. include a minimum 15-foot wide perimeter around all stormwater management facilities,
      - ii. provide ingress to and egress from a public right-of-way and roadway,

- iii. include accompanying notes on the recorded plan sheets for the following purposes:
    1. granting the access and maintenance easement to the Municipality for the purposes of access for inspection and, if circumstances require, maintenance or repairs of the stormwater BMP, as described in Article VII.
    2. where roadways are not to be dedicated to the Municipality, a note shall also be included on the recorded plan sheets granting easement to the Municipality for access of the roadways necessary to access the BMP.
  - iv. shall meet all other requirements of Article VII.
  - c. An Operation and Maintenance (O&M) Plan, per the requirements of Subsection 402.E and Article VII.
  - d. An Operation and Maintenance Agreement, per the requirements of Subsection 402.E and Article VII.
  - e. Boundaries of any areas for which deed restrictions are required for the purpose of protecting and prohibiting disturbance to a structural or non-structural BMP, indicating the area to which the restriction applies with distances shown in feet and bearings to the nearest degree, and a description of purpose of the restriction.
15. Other land development or other requirements outlined in the Municipality's SALDO.
16. Other features required for the Stormwater BMP Operation and Maintenance (O&M) Plan and Operation and Maintenance Agreement as required in Article VII.
- C. A written description of the following information shall be included in the SWM Site Plan:
1. Existing features, conditions, and environmental resources and management areas (as listed in Subsection 402.B).
  2. How the site design achieves the Conservation Design and Low Impact Development components of Section 304, and, if applicable, where they could not be achieved and why.
  3. The overall stormwater management concept for the project and how the site design achieves the requirements of Article III.

4. Proposed features and conditions, and proposed erosion and sediment control and permanent stormwater management system(s), BMPs, and techniques.
  5. A description of the effect of the project (in terms of flow alteration and runoff volumes, water quality and peak flows, etc.) on onsite or offsite existing environmental resources and management areas, adjacent and downgradient properties, and any existing municipal or other stormwater conveyance system(s), that may be affected by or receive runoff from the regulated activity, and specifics of how erosion, water quality and flow impacts will be avoided or otherwise mitigated.
  6. Proposed nonpoint source pollution controls and justification and confirmation that the proposed project will not cause or contribute pollutant loadings to any existing stream impairment identified by PADEP, or to any receiving water body.
  7. Expected project time schedule.
  8. Description of construction stages or project phases, if so proposed.
- D. A detailed site evaluation conducted by a Licensed Professional for projects proposed in areas of carbonate geology or karst topography, and other environmentally sensitive areas, such as brownfields, as described in Section 301 of this Ordinance.
- E. Stormwater runoff design computations and documentation (such as hydrologic, hydraulic, and structural computations, etc.) for all stormwater management facilities and BMPs as specified in this Ordinance, or as otherwise necessary to demonstrate that the requirements of this Ordinance have been met, including the requirements in Section 301 and 304.
- F. Operation and Maintenance Plans, Agreements and Deed Restrictions
1. An Operation and Maintenance (O&M) Plan shall be provided in the SWM Site Plan for each structural and non-structural stormwater BMP included in SWM Site Plan for stormwater control for the proposed regulated activity, both onsite and offsite, and the O&M Plan shall:
    - a. Name the entity identified on the SWM Site Plan maps or plan sheets as the entity who shall be responsible for ongoing inspections, operation and maintenance of the BMP after completion of construction,
    - b. Meet all other applicable requirements of **Article VII** for the O&M Plan.
  2. An Operation and Maintenance Agreement shall be provide in the SWM Site Plan for any stormwater BMP to be owned by an entity other than the Municipality, and the Agreement shall:

- a. Be signed by the designated owner of the BMP prior to submittal of the SWM Site Plan to the Municipality.
  - b. Meet all other applicable requirements of Article VII for the Operation and Maintenance Agreement.
3. An Access and Maintenance Easement Agreement shall be provided in the SWM Site Plan for any stormwater BMP that is to be operated and maintained by an entity other than the owner of the property on which the BMP is located. The Easement Agreement shall:
  - a. Be signed by the designated owner of the BMP prior to submittal of the SWM Site Plan to the Municipality,
  - b. Meet all other applicable requirements of Article VII.
4. A written deed amendment or equivalent document to be recorded against the subject property shall be included in the SWM Site Plan for any areas shown on the recorded plan sheets as requiring deed restrictions for the purpose of protecting and prohibiting disturbance to a structural or non-structural stormwater BMP. The Amendment document shall:
  - a. Include the written legal description (metes and bounds description) of the area to which the restrictions apply, and consistent with the boundary shown on the plan sheets,
  - b. Include a clear and understandable description of the purpose, terms and conditions of the restricted use,
  - c. Include language that the terms of the restriction run with the land,
  - d. Be signed by the designated owner of the BMP prior to submittal of the SWM Site Plan to the Municipality.
  - e. Shall meet all other applicable requirements of Article VII.
- G. An erosion and sediment control plan, where applicable, as prepared for and submitted to the Conservation District and/or Municipality, and letter of adequacy from the Conservation District.
- H. A Declaration of Adequacy and Highway Occupancy Permit from the Pennsylvania Department of Transportation (PennDOT) District office when utilization of a PennDOT storm drainage system is proposed.

**Section 403. Plan Submission**

A complete SWM Site Plan shall be submitted to the Municipality, as specified in this Section.

- A. The SWM Site Plan shall be coordinated with the state and federal permit process and the municipal SALDO review process.
- B. For projects that require SALDO approval, the SWM Site Plan shall be submitted by the Applicant as part of the preliminary plan submission where applicable for the regulated activity.
- C. For regulated activities that do not require SALDO approval, the SWM Site Plan shall be submitted by the applicant for review in accordance with instructions from the Municipality.
- D. Copies of the SWM Site Plan shall be submitted by the applicant for review in accordance with instructions by the Municipality.
- E. The corresponding review fee shall be submitted to the Municipality simultaneously with the SWM Site Plan per the fee schedule in Appendix F. [Appendix F to be reconciled with Final Draft Model Ordinance]
- F. Any submissions to the Municipality that are found to be incomplete will not be accepted for review and will be returned to the Applicant with a notification in writing of the specific manner in which the submission is incomplete.

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

- A. SWM Site Plan shall be submitted to the Municipality for review by the municipal Engineer for consistency with this Ordinance and the respective Act 167 Stormwater Management Plan(s). Any SWM Site Plan found incomplete may not be accepted for review and may be returned to the Applicant. The municipal Engineer will review the SWM Site Plan for any subdivision or land development for compliance with this Ordinance and the Municipal SALDO provisions not otherwise superseded by this Ordinance.
- B. The applicant shall respond to the Conservation District comments on the SWM Site Plan prior to being considered for final approval by the Municipality.
- C. For activities regulated by this Ordinance (**Section 105**), the municipal Engineer will notify the Applicant and the Municipality in writing, with a copy to the Building Permit Officer, within [*45 – or other at option of Municipality*] calendar days, whether the SWM Site Plan is consistent with the requirements of this Ordinance. If the SWM Site Plan involves a Subdivision and Land Development Plan, the

notification shall occur within the time period allowed by the PA Act 247 Municipalities Planning Code (90 days). If a longer notification period is provided by other statute, regulation, or ordinance, the Applicant will be so notified by the Municipality.

1. If the municipal Engineer determines that the SWM Site Plan is consistent with this Ordinance, the municipal Engineer will forward a letter of consistency to the Municipality, who will then forward a copy to the Applicant.
  2. The Municipality may approve the SWM Site Plan with conditions and, if so, shall provide the acceptable conditions for approval in writing.
  3. If the municipal Engineer determines that the SWM Site Plan is inconsistent or noncompliant with this Ordinance, the municipal Engineer will forward a letter to the Municipality, with a copy to the Applicant citing the reason(s) and specific Ordinance sections for the inconsistency or noncompliance. Inconsistency or noncompliance may be due to inadequate information to make a reasonable judgment as to compliance with this Ordinance. Any SWM Site Plans that are inconsistent or noncompliant may be revised by the Applicant and resubmitted when consistent with this Ordinance.
- D. For regulated activities under this Ordinance that require an NPDES Permit Application, the Applicant shall forward a copy of the municipal Engineer's letter stating that the SWM Site Plan is consistent with this Ordinance to the Conservation District. PADEP and the Conservation District may consider the municipal Engineer's review comments in determining whether to issue a permit.
- E. The Municipality will not grant preliminary or final approval to any subdivision or land development for regulated activities specified in this Ordinance if the SWM Site Plan has been found by the municipal Engineer to be inconsistent with this Ordinance. All required permits from PADEP must be obtained prior to approval of any subdivision or land development by the Municipality.
- F. No building permits for any regulated activity specified in this Ordinance will be approved by the Municipality if the SWM Site Plan has been found to be inconsistent with this Ordinance, as determined by the municipal Engineer and Conservation District, or without considering the comments of the municipal Engineer and Conservation District. All required permits from PADEP must be obtained prior to issuance of a building permit.
- G. The Municipality's approval of a SWM Site Plan shall be valid for a period not to exceed [*recommended 5*] years commencing on the date that the Municipality signs the approved SWM Site Plan. If stormwater management facilities included in the approved SWM Site Plan have not been constructed, or if constructed, record drawings of these facilities have not been approved within this [\_\_\_\_] year time

period, then the Municipality may consider the SWM Site Plan inconsistent or noncompliant and may revoke any and all permits. SWM Site Plans that are determined to be inconsistent or noncompliant by the Municipality shall be resubmitted in accordance with **Section 406** of this Ordinance.

- H. Upon completion of construction, the Applicant shall be responsible for completing record drawings (as-built plans) of all stormwater management facilities included in the approved SWM Site Plan. The record drawings and an explanation of any discrepancies with the final approved SWM Site Plan design plans shall be prepared and submitted to the municipal Engineer for final approval as per the requirements of **Section 502** of this Ordinance.

### **Section 405. Revision of Plans**

- A. A revision to a submitted SWM Site Plan under review by the Municipality for a development site that involves the following shall require a resubmission to the Municipality of a revised SWM Site Plan consistent with **Section 403** of this Ordinance and be subject to review as specified in **Section 404** of this Ordinance:
1. Change in stormwater management facilities or techniques,
  2. Relocation or redesign of stormwater management facilities, or
  3. Is necessary because soil or other conditions are not as stated on the SWM Site Plan as determined by the municipal Engineer.
- B. A revision to an already approved or inconsistent or noncompliant SWM Site Plan shall be submitted to the Municipality, accompanied by the applicable municipal review and inspection fee. A revision to a SWM Site Plan for which a formal action has not been taken by the Municipality shall be submitted to the Municipality accompanied by the applicable municipal review and inspection fee.

### **Section 406. Resubmission of Inconsistent or Noncompliant SWM Site Plans**

An inconsistent or noncompliant SWM Site Plan may be resubmitted with the revisions addressing the municipal Engineer's concerns documented in writing. It must be addressed to the Municipality in accordance with **Section 403** of this Ordinance, distributed accordingly, and be subject to review as specified in **Section 404** of this Ordinance. The applicable municipal review and inspection fee must accompany a resubmission of an inconsistent or noncompliant SWM Site Plan.

# COUNTY-WIDE MODEL ORDINANCE 2012

## ARTICLE V – INSPECTIONS AND AS-BUILT PLANS

*[Internal Notes for future revisions are highlighted in Grey]*

### Section 501. Inspections

- A. The municipal Engineer or his municipal designee shall be provided access to inspect all phases of the erosion and sediment control measures and installation of the permanent BMPs and/or stormwater management facilities as deemed appropriate by the municipal Engineer.
- B. A set of design plans approved by the Municipality shall be on file and available for viewing at the site throughout the duration of the construction activity. Periodic inspections may be made by the Municipality or its designee during construction.
- C. A final inspection of all constructed BMPs, stormwater management facilities, and /or related improvements may be conducted by the Municipality or its designee to confirm compliance with this Ordinance and with the final approved SWM Site Plan and approved revisions thereto, prior to the issuance of any occupancy permit, use permit, or other form of final approval of the project by the Municipality.

### Section 502. As-built Plans (Record Plans)

- A. For regulated activities involving more than 1 acre of disturbance the developer shall provide as-built plans (record drawings) signed and sealed by a Licensed Professional of all SWM BMPs, facilities and related improvements included in the final approved SWM Site Plan and approved revisions thereto. *[Note to User: municipality may, at its option, reduce the 1 acre threshold to reflect the thresholds presented in Table 106.1.]* *[Note to User: Municipality may, at its option, also require as-built plans for small projects that are required to implement the simplified approach, if the Municipality has chosen to include the simplified approach requirements in Section 106.]*
- B. The as-built plans and explanation of any discrepancies with the final approved SWM Site Plan, other related approved construction plans, calculations and specifications (and approved revisions thereto) shall be submitted to the Municipality within *[(XXX) months - Municipality to chose time frame]* of the completion of construction of all improvements including all SWM BMPs, facilities and related improvements.
- C. As-built plans shall show the location and as-built conditions of all stormwater facilities, BMPs, structures, and related improvements including all typical details for

storm drainage and conveyance systems and stormwater management facilities, and all impervious surfaces (existing, proposed, or constructed), included in the approved SWM Site Plan (and approved revisions thereto), and topographic contours .

- D. *[Note to User: Municipality may, at its option, include or delete subsection 502.D]*  
The as-built submission shall include a certification of completion signed and sealed by a Licensed Professional verifying that all permanent SWM facilities and BMPs have been constructed according to the final approved SWM Site Plan and related approved construction plans, calculations and specifications. If any Licensed Professional contributed to the final approved SWM Site Plan, then a Licensed Professional of similar discipline must sign and seal the completion certificate.
- E. After receipt of the as-built submission by the Municipality, the Municipality or their designee may review the as-built submission for consistency with this Ordinance, the final approved SWM Site Plan, other related approved construction plans, and approved revisions thereto, as well as actual conditions at the project site, and the Municipality may conduct a final inspection.
- F. In no case will the Municipality approve the as-built plans (record drawings) until the Municipality receives a copy of an approved Declaration of Adequacy and/or Highway Occupancy Permit from the PennDOT District office, NPDES Permit, and any other applicable permits or approvals from PADEP or the Conservation District. The above permits and approvals must be based on the record drawings.
- G. Prior to the Municipality's final approval of the as-built submission, all areas of the project site must be stabilized as required by the County Conservation District or PADEP. *[Note to User - Municipality may, at its option, include or delete 502.G.]*
- H. The as-built submission must be received, reviewed and deemed acceptable by the Municipality prior to:
1. Close out of the drainage permit;
  2. Issuance of final occupancy permit(s), use permit or other deemed approval to use or operate the constructed project;
  3. Release of the performance guarantee;
  4. Dedication of the stormwater facilities to the Municipality, Home Owners Association, or other designated entity.
- I. Upon final approval of the as-built plans by the Municipality, the Applicant shall review and, if necessary, revise the Operation & Maintenance Plan and the Operation and Maintenance Agreement to reflect the as-built conditions, per the requirements of Article VII.

# ***COUNTY-WIDE MODEL ORDINANCE 2012***

## **ARTICLE VI – FEES AND EXPENSES**

### **Section 601. Municipality SWM Site Plan Review and Inspection Fee**

Fees have been established by the Municipality to defray plan review and construction inspection costs incurred by the Municipality. All fees listed in Section 602.A shall be paid by the Applicant at the time of SWM site plan submission. *[Note to User: municipality may, amend the following sentence as needed to appropriately reference the relevant fee schedule, or insert the schedule of fees herein] A review and inspection fee schedule has been established by resolution of the municipal Governing Body based on the size of the regulated activity and based on the Municipality’s costs for reviewing SWM site plans and conducting inspections pursuant to Section 501. ]* The Municipality shall periodically update the review and inspection fee schedule to ensure that review costs are adequately reimbursed.

### **Section 602. Expenses Covered by Fees**

- A. The fees required of the Applicant by this Ordinance shall at a minimum cover:
  - 1. Administrative costs.
  - 2. The review of the SWM Site Plan by the Municipality and the municipal Engineer.
  - 3. Coordination and meetings with the Applicant.
  - 4. The inspection of erosion and sediment control measures and stormwater management facilities and drainage improvements during construction.
  - 5. Other site inspections.
  - 6. The final inspection upon completion of the stormwater management facilities and drainage improvements presented in the SWM Site Plan.
- B. The Applicant shall also reimburse all expenses incurred by the Municipality for any additional work required to enforce any permit provisions regulated by this Ordinance, correct violations, and assure proper completion of stipulated remedial actions.

# ***COUNTY-WIDE MODEL ORDINANCE 2012***

## **ARTICLE VII – OPERATION AND MAINTENANCE (O&M) RESPONSIBILITIES**

### **Section 701. Operation and Maintenance of Permanent Stormwater BMPs**

- A. The Municipality will make the final determination on the continuing operations and maintenance responsibilities of all permanent stormwater management facilities prior to final approval of the SWM Site Plan. The Municipality may require a dedication of such facilities as part of the requirements for approval of the SWM Site Plan. Such a requirement is not an indication that the Municipality will accept the facilities. The Municipality reserves the right to accept or reject the operations and maintenance responsibility for any portion of or all of the stormwater controls, facilities and BMPs.
- B. Stormwater management easements are required for all areas used for non-structural and structural stormwater BMPs and other facilities for the control of stormwater from the regulated activity, whether located on the project site or off-site, and shall cover the stormwater management facilities, and any drainage or conveyances to and from such facilities, unless a waiver is granted by the Municipality.
- C. The owner shall convey the stormwater management easements to the Municipality to assure access by the Municipality for periodic inspections and, if circumstances so require, maintenance or repairs for the preservation of all stormwater facilities, conveyances, BMPs, as necessary, per the requirements of **Section 703**. Such easements shall be delineated on the SWM Site Plan recorded plan sheets, with bearings and distances, and with accompanying record plan note(s) granting the municipality the right but not the duty to access all stormwater management facilities from a public right-of-way and roadway. Where roadways will not be dedicated to the Municipality, a record plan note(s) shall be added granting the municipality access to the roadways as necessary to access all the stormwater facilities.
- D. All stormwater management easements and any site restrictions to be recorded against the property shall run with the land and be binding upon the landowner and any successors in interest.
- E. Facilities, areas, or structures used as Stormwater Management BMPs shall be enumerated in the SWM Site Plan as permanent real estate appurtenances and recorded as deed restrictions or conservation easements that run with the land.
- F. An Operation and Maintenance (O&M) Plan shall be included in the SWM Site Plan for each existing and proposed permanent structural and non-structural stormwater BMP included in SWM Site Plan for stormwater control for the proposed regulated

activity, both onsite and offsite. Multiple BMPs may be addressed by a combined O&M Plan where similar in O&M requirements and ownership.

- G. When the BMP is to be owned by an entity other than the Municipality, the O&M Plan shall be attached to, incorporated within, and recorded as a public record along with an Operation and Maintenance Agreement and if needed, an Access and Maintenance Agreement, all of which shall be recorded as a restrictive deed covenant that runs with the land. and that shall be prepared per the requirements of Sections 702 and 703, respectively.h
- H. Each O&M Plan, Operation and Maintenance Agreement and Access and Maintenance Agreement shall be submitted with the SWM Site Plan for review and approval by the municipal Engineer for consistency with the requirements of this Ordinance as per Section 404.
- I. The O&M Plan shall name the entity identified on the SWM Site Plan maps or plan sheets who shall be the owner of and be responsible for ongoing inspections, operation and maintenance of the BMP after completion of construction,
- J. The designated owner, their successor and assigns, shall be responsible for the proper and ongoing operation, inspection and maintenance of the stormwater BMP after construction, and shall maintain the stormwater BMP in accordance with the approved O&M Plan.

## **Section 702. Operation and Maintenance Plans**

The following items shall be included in the O&M Plan, unless otherwise approved by the municipal Engineer:

- A. A plan sheet(s) or map(s) showing the as-built condition of the BMP and shall include, but not be limited to:
  - 1. Site name, property boundaries and tax parcel number of the land parcel in which the stormwater control or BMP is located,
  - 2. Name, address, date prepared, signature and seal of the Licensed Professional responsible for preparation of the plan sheet or map.
  - 3. Notation indicating the map or plan sheet represents the as-built condition of the BMP.
  - 4. Clear identification of the location and nature of each existing and proposed permanent stormwater control and BMP,

5. The location of the stormwater control or BMP relative to roadways, property boundaries, or other identifiable landmarks and existing natural drainage features such as streams, lakes, ponds, or other bodies of water within the immediate vicinity of, or receiving discharge from, the stormwater control or BMP,
  6. Delineation of the land area, structures, impervious surfaces and conveyances draining to the stormwater control or BMP,
  7. Representative as-built elevations and/or topographic contours at intervals of two (2) feet, or others as acceptable to the municipal Engineer,
  8. Other features including FEMA floodplain and floodway boundaries, sinkholes, etc. located within the immediate proximity of the BMP,
  9. Locations of areas of vegetation to be managed or preserved that function as a stormwater control or BMP,
  10. The locations of all surface and subsurface utilities, sanitary sewers, and water lines within fifteen (15) feet of the stormwater control or BMP,
  11. Access and maintenance easement boundaries with distances and bearings shown that encompasses the stormwater BMP and its conveyances and that includes a 15-foot perimeter area surrounding these features and that provides sufficient ingress to and egress from a public right-of-way and roadway.
  12. Boundaries with distances and bearings shown for any areas subject to deed restrictions or permanent conservation/permanent protection easements recorded against the property for the purpose of protection or prohibiting disturbance to a stormwater BMP.
  13. The plan sheet or map shall be prepared at sufficient scale for municipal review and ultimately for the use by the entity responsible for maintenance, and shall also be prepared at a legible scale that meets the requirements for recordation along with the Operation and Maintenance Agreement and O&M Plan at the Chester County Office of the Recorder of Deeds.
- B. The following information shall be included in the O&M Plan and written in a manner, consistent with the knowledge and understanding of an individual who will be responsible for the maintenance activities:
1. The name and address of the following:
    - a. Property on which the stormwater control or BMP is located,
    - b. Owner of the property,

- c. Owner of the stormwater BMP who is responsible for implementation of the O&M Plan, and
    - d. Individual or firm preparing the O&M Plan.
  - 2. A description of how the BMP is intended to function,
  - 3. A description of actions required to operate, inspect, and maintain the BMP, including but not limited to:
    - a. Lawn care, vegetation maintenance, landscaping and planting,
    - b. Clean out of accumulated debris and sediment (including from grates, trash racks, inlets, etc.),
    - c. Liability insurance, and payment of taxes,
    - d. Other anticipated periodic maintenance and repair, and
  - 4. A statement that the BMP shall not be used by the owner or others for any purpose other than its intended stormwater control function, or, if approved by the Municipal Engineer, a statement of specific allowable uses of the BMP (i.e., recreational benefits that maybe associated with certain BMPs owned by a homeowners association, or allowable uses by an individual residential property owner).
  - 5. Inspection and maintenance schedules.
- C. The following statement shall be included:
  - “It shall be unlawful to alter, impair the effectiveness or remove any permanent stormwater BMP described in this O&M Plan or to allow the property to remain in a condition which does not conform to this O&M Plan.”
- D. The purpose of any O&M, access and maintenance easements and the purpose and limitations required by any deed restrictions associated with any stormwater BMP to be recorded against the property shall be explained in the O&M Plan.
- E. After approval of the final as-built plans per the requirements of Article V, the Applicant shall review and, if necessary, revise and re-record the O&M Plan and Operation and Maintenance Agreement to reflect the final as-built conditions of the stormwater BMP(s) if different from the information included in the original recorded documents, unless otherwise approved by the municipal Engineer.

### Section 703. Operation and Maintenance Agreements

- A. An Operation and Maintenance Agreement for any stormwater BMP to be owned by an entity other than the Municipality, and the Agreement shall:
1. be submitted for review and approval of the Municipality as part of the SWM Site Plan.
  2. Be signed by the designated owner of the BMP prior to submittal of the SWM Site Plan to the Municipality.
  3. Include the approved O&M Plan(s) that cover(s) all permanent stormwater controls and BMPs owned by the entity signing the Agreement.
  4. be fully executed and recorded at the Chester County Office of the Recorder of Deeds within fifteen (15) days of municipal approval of the O&M Site Plan.
  5. The Operation and Maintenance Agreement shall be substantially the same as the Operation and Maintenance Agreement in Appendix I, [*Appendix I to be reconciled with final draft Model Ordinance language*].
- B. Other items or conditions may be required by the Municipality to be included in the Operation and Maintenance Agreement where determined necessary by the Municipality to guarantee the satisfactory operation and maintenance of all permanent stormwater controls and BMPs.
- C. After approval of the final as-built plans per the requirements of Article V, the Applicant shall review and, if necessary, revise and re-record the O&M Plan and Operation and Maintenance Agreement to reflect the final as-built conditions of the stormwater BMP(s) if different from the information included in the original recorded documents, unless otherwise approved by the municipal Engineer.
- D. An Access and Maintenance Easement Agreement shall be provided in the SWM Site Plan for any stormwater BMP that is to be operated and maintained by an entity other than the owner of the property on which the BMP is located. The Easement Agreement shall:
1. Be signed by the designated owners of the BMP and the property prior to submittal of the SWM Site Plan to the Municipality,
  2. shall be fully executed and recorded at the Chester County Office of the Recorder of Deeds within fifteen (15) days of municipal approval of the O&M Site Plan.

3. Shall make reference to or be recorded with the corresponding O&M Plan and Operation and Maintenance Agreement.
- E. Any written deed amendment or equivalent document to be recorded against the subject property shall be included in the SWM Site Plan for any areas shown on the recorded plan sheets as requiring deed restrictions for the purpose of protecting and prohibiting disturbance to a structural or non-structural stormwater BMP. The Amendment document shall:
  1. Include the written legal description (metes and bounds description) of the area to which the restrictions apply, and consistent with the boundary shown on the plan sheets,
  2. Include a clear and understandable description of the purpose, terms and conditions of the restricted use,
  3. Shall make reference to or be recorded with any corresponding O&M Plan and Operation and Maintenance Agreement
  4. Include language that the terms of the restriction run with the land,
  5. Be signed by the designated owner of the BMP prior to submittal of the SWM Site Plan to the Municipality.
  6. Shall be fully executed and recorded at the Chester County Office of the Recorder of Deeds within fifteen (15) days of municipal approval of the O&M Site Plan.

**Section 704. Other Post-Construction Responsibilities**

- A. It shall be unlawful to alter, impair the effectiveness or remove any permanent stormwater control or BMP constructed as part of an approved SWM Site Plan or covered by an approved O&M Plan or to allow the property to remain in a condition which does not conform to an approved O&M Plan.
- B. Parties responsible for the long term operation and maintenance of stormwater management facilities shall make records of the installation and of all maintenance and repairs, and shall retain the records for at least ten (10) years. These records shall be submitted to the Municipality, if requested.
- C. The owner shall keep on file with the Municipality the name, address, and telephone number of the person or company responsible for maintenance activities and implementation of the O&M Plan. In the event of a change, new information shall be submitted by the owner to the Municipality within ten (10) working days of the change.

**Section 705. Municipal Right of Entry, Inspections and Enforcement**

- A. The municipal Engineer or his municipal designee shall be provided access to inspect all permanent stormwater controls and BMPs to confirm compliance with the O&M Plans, Operation and Maintenance Agreements, and this Ordinance per the provisions of Article IX.
- B. If the owner fails to adhere to the Operation and Maintenance Agreement or the O&M Plan or other deed restrictions, the Municipality has the ability to take corrective measures, including the ability of the Municipality to cause the work to be done and lien all costs against the property should the required corrective measures not be taken by the lot owner, following written notification, within a period of time set by municipal Engineer, per the provisions of Article IX.

*[The following article provisions are optional. Please see box below and should be carefully reviewed by the Municipality’s Solicitor prior to use.]*

**Section 706. Municipal Stormwater Control and BMP Operation and Maintenance Fund**

- A. Persons installing stormwater controls or BMPs shall be required to pay a specified amount to the Municipal Stormwater Control and BMP Operation and 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 stormwater control or BMP is to be privately owned and maintained, the deposit shall cover the cost of periodic inspections performed by the Municipality, as estimated by the municipal engineer, for a period of *[ten (10) or twenty five (25)]* years. This is to be paid in a manner specified by the municipality. After that period of time, inspections will be performed at the expense of the Municipality.
  - 2. If the stormwater control or BMP is to be owned and maintained by the Municipality, the deposit shall cover the estimated costs for maintenance and inspections for *[ten (10) or twenty five (25)]* years. The municipality will establish the estimated costs utilizing information submitted by the Applicant.

- 3. The amount of the deposit to the fund shall be converted to present worth of the annual series values. The municipality shall determine the present worth equivalents, which shall be subject to the approval of the Governing Body.
- B. If a stormwater control or BMP is proposed that also serves as a recreational facility (e.g., ball field or lake), the Municipality may reduce or waive the amount

- of the maintenance fund deposit based upon the value of the land for public recreational purpose.
- C. If at some future time, a stormwater control or BMP (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 or demolishing the facility and connecting to the storm sewer system or other facility. Any amount of the deposit remaining after the costs of abandonment or demolition will be used for inspection, maintenance, and operation of the receiving stormwater management system.
  - D. If stormwater controls or BMPs are accepted by the Municipality for dedication, the Municipality may require persons installing stormwater controls or BMPs to pay a specified amount to the Municipal Stormwater Control and BMP Operation and Maintenance Fund to help defray costs of operations and maintenance activities. The amount may be determined as follows:
    - 1. The amount shall cover the estimated costs for operations and maintenance for ten (10) years, as determined by the Municipality.
    - 2. The amount shall then be converted to present worth of the annual series values.
  - E. If a stormwater control or BMP is proposed that also serves as a recreational facility (e.g., ball field or lake), the Municipality may adjust the amount due accordingly.
  - F. The Municipality may require Applicants to pay a fee to the Municipal Stormwater Control and BMP Operation and Maintenance Fund to cover long-term maintenance of stormwater controls and BMPs.
  - G. The Municipality may require Applicants to pay a fee to the Municipal Stormwater Control and BMP Operation and Maintenance Fund to cover stormwater related problems which may arise from the land development and earth disturbance.

# COUNTY-WIDE MODEL ORDINANCE 2012

## ARTICLE VIII – PROHIBITIONS

*[Note to User – This Ordinance applies only to regulated activities involving new development or redevelopment. It is strongly recommended that municipalities adopt a separate ordinance with identical language that will cover all situations in the municipality, including already constructed illicit connections, illicit dumping activities, etc. If your municipality already has a separate Prohibitions ordinance, it is recommended that Article VIII be included in this Ordinance to address new development and redevelopment, and that the separate ordinance also be reviewed and revised as necessary to be consistent with the language herein to cover all other situations.]*

### Section 801. Prohibited Discharges

*[Note to User: Municipalities are strongly encouraged to develop and adopt a separate ordinance covering prohibited discharges from existing development. Municipalities with an MS4 permit should have this in place from previous permit requirements.]*

- A. Any drain or conveyance, whether on the surface or subsurface, that allows any non-stormwater discharge including sewage, process wastewater, and wash water to enter the waters of the Commonwealth is prohibited.
- B. No person shall allow, or cause to allow, discharges into the Municipality’s separate storm sewer system that are not composed entirely of stormwater, except (1) as provided in subsection C below, and (2) discharges allowed under a state or federal permit.
- C. The following discharges are authorized unless they are determined by the Municipality to be significant contributors to pollution to the waters of the Commonwealth:
  - 1. Discharges from fire fighting activities;
  - 2. Potable water sources including water line and fire hydrant flushings;
  - 3. Irrigation drainage;
  - 4. Air conditioning condensate;
  - 5. Springs;
  - 6. Water from crawl space pumps;
  - 7. Pavement washwaters 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;

- 8. Diverted stream flows;
  - 9. Flows from riparian habitats and wetlands;
  - 10. Uncontaminated water from foundations or from footing drains;
  - 11. Lawn watering;
  - 12. Dechlorinated swimming pool discharges;
  - 13. Uncontaminated groundwater;
  - 14. Water from individual residential car washing;
  - 15. Routine external building washdown (which does not use detergents or other compounds).
- D. In the event that the Municipality determines that any of the discharges identified in Section 801.C. significantly contribute pollution to waters of the Commonwealth, or is so notified by PADEP, the Municipality will notify the responsible person to cease the discharge.
- E. Upon notice provided by the Municipality under Section 801.D. the discharger shall, within a reasonable time period consistent with the degree of pollution caused by the discharge, as determined by the Municipality, cease the discharge.
- F. Nothing in this section shall affect a discharger's responsibilities under state law.

**Section 802. Prohibited Connections**

The following connections are prohibited, except as provided in Section 801.C above:

- A. Any drain or conveyance, whether on the surface or subsurface, that allows any non-stormwater discharge, including sewage, process wastewater, and wash water to enter a separate storm sewer system, and any connections to the separate storm sewer system from indoor drains and sinks.
- B. Any drain or conveyance connected from a commercial or industrial land use to a separate storm sewer system, which has not been documented in plans, maps, or equivalent records and approved by the Municipality.

**Section 803. Roof Drains and Sump Pumps**

- A. Roof drains and sump pump discharges shall not be connected to sanitary sewers.
- B. Roof drain, sump pump, foundation and footing drain discharges:
  - 1. To the maximum extent practicable, shall discharge to infiltration or vegetative BMPs, or to vegetated or other areas with sufficient capacity.

2. May be connected to streets, storm sewers, or roadside ditches only if determined necessary or acceptable on a case-by-case basis by the municipal engineer
3. Must be considered in stormwater management calculations to demonstrate that conveyance and receiving facilities have adequate capacity.

**Section 804. Alteration of BMPs**

- A. No person shall modify, remove, fill, landscape, or alter any existing stormwater facilities, controls or BMPs, unless it is part of an approved maintenance program, without the written approval of the Municipality.
- B. No person shall place any structure, fill, landscaping, vegetation, yard waste, brush cuttings, or other waste or debris into a stormwater control or BMP or within a drainage easement that would limit or alter the functioning of the stormwater control or BMP without the written approval of the Municipality.

# COUNTY-WIDE MODEL ORDINANCE 2012

## ARTICLE IX – ENFORCEMENT AND PENALTIES

*[GreyShaded text is still tentative]*

### Section 901. Right-of-Entry

- A. Upon presentation of proper credentials, duly authorized representatives of the Municipality may enter at reasonable times upon any property within the Municipality to inspect the implementation, condition, or operation and maintenance of all erosion and sediment controls and permanent stormwater facilities or BMPs, both during and after completion of construction, for compliance with any aspect governed by this Ordinance.
- B. Persons working on behalf of the Municipality shall have the right to temporarily locate on or in any stormwater control or BMP in the Municipality such devices as are necessary to conduct monitoring and/or sampling of the discharges from such stormwater control or BMP.
- C. C. If the property owner or representative does not grant access to the Municipality within 24 hours of notification, it will be a violation of this Ordinance.

D. *[Note to User: municipality may, at its option, consider adding language enabling municipal representatives to enter buildings/dwellings to check for prohibited connections and sump pump connections/configuration in accordance with Sections 802 and 803.]*

### Section 902. 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 903. Enforcement

- A. The Municipal Governing Body is hereby authorized and directed to enforce all of the provisions of this Ordinance.
- B. It shall be the responsibility of the owner of the real property on which any regulated activity is proposed to occur, is occurring, or has occurred to comply with the terms and conditions of this Ordinance.

- C. All inspections regarding compliance with the SWM Site Plan shall be the responsibility of the Municipality or its designee.
- D. 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 SWM Site Plan and pursuant to the requirements of this Ordinance.
- E. 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 106.
- F. It shall be unlawful to alter or remove any control structure required by the SWM Site Plan pursuant to this Ordinance or to allow the property to remain in a condition that does not conform to the approved SWM Site Plan or an approved Operation and Maintenance Plan or Operation and Maintenance Agreement.
- G. It shall be unlawful to violate Section 703 of this Ordinance.
- H. During any stage of the work, if the municipal Engineer or his municipal designee determines that the erosion and sediment control measures, permanent BMPs and/or stormwater management facilities, or other improvements are not being installed or maintained in accordance with the approved SWM Site Plan, the Municipality may revoke any existing permits or other approvals and issue a cease and desist order until a revised SWM Site Plan is submitted and approved, as specified in this Ordinance, and until the deficiencies are corrected.
- I. In the event that the Municipality finds that a person has violated a prohibition of this Ordinance, fails to comply with any requirement of this Ordinance, or fails to conform to the requirements of any permit or approval issued by the Municipality, or any O&M Plan or Operation and Maintenance Agreement approved by the Municipality the Municipality may order compliance by written notice of the violation to the responsible person.
- J. Such notice may, without limitation, require the following remedies:
  - 1. Performance of monitoring, analyses, and reporting;
  - 2. Elimination of prohibited connections or discharges;
  - 3. Cessation of any violating discharges, practices, or operations;
  - 4. Abatement or remediation of stormwater pollution or contamination hazards and the restoration of any affected property;
  - 5. Payment of a fine to cover administrative and remediation costs;

6. Implementation of stormwater controls and BMPs; and
  7. Operation and maintenance of stormwater controls and BMPs.
- K. Such notification shall set forth the nature of the violation(s) and establish a time limit for correction of these violations(s). Said notice may further advise that, if applicable, should the violator fail to take the required action within the established deadline, the work may be done by the Municipality or designee, and the expense thereof shall be charged to the violator.
- L. Failure to comply within the time specified shall also subject such person to the penalty provisions of this Ordinance. All such penalties shall be deemed cumulative and shall not prevent the Municipality from pursuing any and all other remedies available in law or equity.
- M. For projects of one acre or more disturbance [*Note to User: municipality may, at its option, choose to delete the preceding phrase and apply this standard to all activities not listed as exempt in Section 106*], at the completion of the project and as a prerequisite for the release of the performance guarantee the owner or his representatives shall provide a set of as-built plans (record drawings) [*“and certificate of completion” Note to User: include the preceding phrase if the requirement for “certificate of completion” is included in Section 502*] signed and sealed by a Licensed Professional subject to review and approval by the Municipality per Section 502.
- N. After receipt of the as-built submission by the Municipality, a final inspection may be conducted by the Municipality or its designee to verify compliance with this Ordinance.
- O. Final occupancy permit(s) or Use Permit or other deemed approval to use or operate the constructed improvement will not be issued by the Municipality until the as-built submission has been approved pursuant to Section 502. The occupancy permit shall be required for each lot owner and/or Applicant for all subdivisions and land developments in the Municipality.
- P. Upon approval of the as-built plans per the requirements of Article V, the O&M Plan(s) and Operatin and Maintenance Agreement(s) shall be reviewed and if necessary revised and re-recorded to accurately reflect the as-built conditions and information for each permanent stormwater BMP.
- Q. Immediately upon approval of the as-built plans by the Municipality, all permanent stormwater BMPs shall be inspected, operated and maintained by the owner in compliance with the final approved O&M Plan(s) and Operation and Maintenance Agreement(s).

- R. The Municipality or its designee may periodically inspect any permanent stormwater BMP or facility for compliance with this Ordinance, an approved O&M Plan, or an approved Operation and Maintenance Agreement, per the provisions of this Article IX, and pursue notification and enforcement consistent with the provisions of this Article IX.

**Section 904. Suspension and Revocation of Permits and Approvals**

- A. Any building, land development, or other permit or approval issued by the Municipality may be suspended or revoked by the Municipality for:
  - 1. Noncompliance with or failure to implement any provision of the permit or approved SWM Site Plan or O&M Agreement;
  - 2. A violation of any provision of this Ordinance or any other applicable law or regulation applicable to the regulated activity;
  - 3. The creation of any condition or the commission of any act during the regulated activity that constitutes or creates a hazard, nuisance, or pollution, or endangers the life, health, safety, or property of others.
  - 4. Failure to correct a violation within the allowed time period.
- B. Prior to revocation or suspension of a permit and at the request of the Applicant, the Municipality's Governing Body shall schedule a hearing to discuss the noncompliance if there is no immediate danger to life, public health, or property. The expense of a hearing shall be the Applicant's responsibility.
- C. A suspended permit or approval may be reinstated by the Municipality when:
  - 1. The municipal Engineer or designee has inspected and approved the corrections to the stormwater controls and BMPs or the elimination of the hazard or nuisance, and/or
  - 2. The Municipality is satisfied that the violation has been corrected.
- D. A permit or approval that has been revoked by the Municipality cannot be reinstated. The Applicant may apply for a new permit or approval in accordance with this Ordinance.

**Section 905. Penalties**

- A. Any person violating the provisions of this Ordinance shall be subject to the enforcement provisions of the PA Act 247, the Pennsylvania Municipalities Planning

Code (as amended). Each day that the violation continues shall constitute a separate offense and the applicable fines are cumulative .

- B. In addition, the Municipality 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 906. Appeals**

- A. Any person aggrieved by any action of the [*Municipality*] or its designee relevant to the provisions of this Ordinance may appeal to the Municipality’s Governing Body or the Municipal Zoning Hearing Board (as applicable) within thirty (30) days of that action.
- B. Any person aggrieved by any decision of the Municipality’s Governing Body 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 thirty (30) days of the municipal decision.