

**Appendix A**  
**Model Stormwater**  
**Management Ordinance**



**MUNICIPAL  
STORMWATER MANAGEMENT  
ORDINANCE**

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

**MUNICIPALITY OF**

**ADAMS COUNTY, PENNSYLVANIA**

Adopted at a Public Meeting Held on

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

2011

## MODEL STORMWATER MANAGEMENT ORDINANCE FOR THE COUNTY OF ADAMS

This Model Stormwater Management Ordinance is based upon a February 2010, draft of the “Pennsylvania Model Stormwater Management Ordinance” (Document Number 363-0300-003) created by the Bureau of Watershed Management of the Pennsylvania Department of Environmental Protection. The “Model” has been revised by the staffs of the Adams County Office of Planning and Development and the Adams County Conservation District, with suggestions and assistance from the Stormwater Planning Advisory Committee, PA DEP, as well as agencies, firms and individuals, both public and private.

The Model Ordinance contains a number of spaces which require insertions by the adopting Municipality. The information needed includes the municipality’s name, number values, or a term or phrase. These missing parts of the Model Ordinance are identified by *(parentheses, underlining, and bold italics)*. In some instances, the completion of such information may require consultation with the municipal staff or municipal advisors. Municipalities are also encouraged to make sure definitions are consistent with other Ordinances.

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## ARTICLE I - GENERAL PROVISIONS

### Section 101. Short Title

This Ordinance shall be known and may be cited as the “(Name of Municipality) Stormwater Management Ordinance.”

### Section 102. Statement of Findings

The governing body of (Name of Municipality) finds that:

- A. Stormwater is an important water resource, which provides groundwater recharge for water supplies and base flow of streams, which also protects and maintains surface water quality.
- B. Inadequate management of accelerated runoff of stormwater resulting from development throughout a watershed increases flows and velocities, contributes to erosion and sedimentation, overtaxes the carrying capacity of streams and storm sewers, greatly increases the cost of public facilities to carry and control stormwater, undermines floodplain management and flood control efforts in downstream communities, reduces groundwater recharge, threatens public health and safety, and increases nonpoint source pollution of water resources.
- C. A comprehensive program of stormwater management, including reasonable regulation of development and activities causing accelerated runoff, is fundamental to the public health, safety, and welfare and the protection of people of (Name of Municipality), their resources, and the environment.

### Section 103. Purpose

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

- A. Meet water quality requirements under state law, including regulations at 25 Pa. Code 93, to protect, maintain, reclaim, and restore the existing and designated uses of the waters of the Commonwealth.
- B. Preserve the natural drainage systems as much as possible.
- C. Manage stormwater runoff close to the source.
- D. Provide procedures and performance standards for stormwater planning and management.

- E. Maintain groundwater recharge to prevent degradation of surface and groundwater quality and to otherwise protect water resources.
- F. Prevent scour and erosion of stream banks and stream beds.
- G. Provide proper operation and maintenance of all stormwater management Best Management Practices that are implemented within the municipality.
- H. Provide standards to meet NPDES permit requirements.

#### **Section 104. Statutory Authority**

The Municipality is empowered to regulate land use activities that affect stormwater impacts by the authority of the (Cite relevant sections of the applicable municipal code,— confer with municipal solicitor.), and the Act of October 4, 1978, P.L. 864 (Act 167), 32 P.S. Section 680.1, *et seq.*, as amended, the “Stormwater Management Act.”

#### **Section 105. Applicability**

- A. All Regulated Activities, as defined in Article II, and all activities that may affect stormwater runoff, including land development and earth disturbance activity, are subject to regulation by this Ordinance.
- B. Any submission that does not require a stormwater management plan at the time of subdivision or land development will still be required to address stormwater management at the time the individual lots are developed or construction commences, unless said subdivision proposes infrastructure features, such as a cul-de-sac street, for which stormwater management controls are ordinarily required.
- C. Development of the individual lots is subject to stormwater management as defined within the ordinance.

#### **Section 106. Repealer**

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

#### **Section 107. Severability**

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

### **Section 108. Compatibility with Other Requirements**

Approvals issued and actions taken under this Ordinance do not relieve the applicant of the responsibility to secure required permits or approvals for activities regulated by any other code, law, regulation, or ordinance. In the event of a conflict, between this Ordinance and any other ordinance, the more restrictive ordinance shall apply.

### **Section 109. Interpretation**

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

- A. Words used in the present tense also imply the future tense.
- B. Words used in the singular include the plural, and vice versa.
- C. Words of masculine gender include feminine gender, and vice versa.
- D. The words and abbreviation “includes,” “including,” “shall include,” “such as,” and “e.g.” are not limited to the specific example(s) given but are intended to extend the words or words’ meaning(s) to all other instances of like kind and character.
- E. The words “shall,” “required,” or “must” are mandatory; the words “may” and “should” are permissive.

### **Section 110. Erroneous Permit**

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

### **Section 111. Duty of Persons Engaged in the Development of Land**

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

*(The following was included as guidance. Municipalities should consult with their Solicitor.)*

**Section 112. Municipal Liability Disclaimer**

- A. Neither the granting of any approval under this Ordinance, nor the compliance with the provisions of this Ordinance, or with any condition imposed by a municipal official hereunder, shall relieve any person from any responsibility or damage to persons or property resulting there from, or as otherwise imposed by law nor impose any liability upon the Municipality for damages to persons or property.
  
- B. The granting of a permit which includes any stormwater management facilities shall not constitute a representation, guarantee, or warranty of any kind by the Municipality, or by an official or employee thereof, of the practicability or safety of any structure, use or other plan proposed, and shall create no liability upon or cause of action against such public body, official or employee for any damage that may result pursuant thereto.

## ARTICLE II – DEFINITIONS

**Adams County Conservation District** – As defined in Section 3(c) of the Conservation District Law (3 P.S. § 851 (c)) that has the authority under a delegation agreement executed with DEP to administer and enforce all or a portion of the regulations promulgated under 25 Pa. Code 102.

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

**Applicant** - A landowner, developer, or other person who has filed an application to the municipality for approval to engage in any Regulated Activity at a project site in the Municipality.

**Best Management Practice (BMP)** - Activities, facilities, designs, measures, or procedures used to manage stormwater impacts from Regulated Activities, to meet state water quality requirements, to promote groundwater recharge, and to otherwise meet the purposes of this Ordinance.

**Best Management Practice, Nonstructural** – Operational and/or behavior-related practices that attempt to minimize the contact of pollutants with stormwater runoff.

**Best Management Practice, Structural** – Measures consisting of a physical device or practice that is installed to capture and treat stormwater runoff. Structural BMPs include, but are not limited to, a wide variety of practices and devices, from large-scale retention ponds and constructed wetlands, to small-scale underground treatment systems, infiltration facilities, filter strips, low impact design, bioretention, wet ponds, permeable paving, grassed swales, riparian or forested buffers, sand filters, detention basins, and manufactured devices. Structural stormwater BMPs are permanent appurtenances to the project site.

**BMP Manual** – Pennsylvania Stormwater Best Management Practices Manual, Pennsylvania Department of Environmental Protection, December 2006 (Document #363-0300-002), as amended and updated.

**Culvert** - A structure which carries surface water through an obstruction.

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

**DEP** - The Pennsylvania Department of Environmental Protection.

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

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

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

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

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

**Drainage Plan (also stormwater management plan)** – The documentation of the stormwater management system, if any, to be used for a given project site.

**Earth Disturbance Activity** - A construction or other human activity which disturbs the surface of the land, including land clearing and grubbing, grading, excavations, embankments, land development, agricultural plowing or tilling, operation of animal heavy use areas, timber harvesting activities, road maintenance activities, oil and gas activities, well drilling, mineral extraction, and the moving, depositing, stockpiling, or storing of soil, rock or earth materials.

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

**E&S Manual** – The Pennsylvania DEP Erosion and Sedimentation Control Manual, as amended and updated.

**Erosion and Sedimentation Control Plan (E&S Plan)** – A site-specific plan consisting of both drawings and a narrative that identifies BMPs to minimize accelerated erosion and sedimentation before, during and after earth disturbance activities.

**Evapotranspiration** - The combined process of water surface evaporation, soil moisture evaporation, and plant transpiration.

**Existing Condition** - The dominant land cover during the 5-year period immediately preceding a proposed Regulated Activity.

**FEMA** - Federal Emergency Management Agency.

**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.

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

**Hydrologic Soil Group (HSG)** - A group of soils having similar runoff potential under similar storm and cover conditions. HSGs range from A to D, with A soils being the most pervious and D soils being the least pervious.

**Impervious Surface (Impervious Area)** - A surface that prevents the infiltration of water into the ground. Impervious surfaces and areas include but are not limited to roofs, additional indoor living spaces, patios and decks, garages, storage sheds and similar structures, streets, driveways, access drives, parking areas, and sidewalks. Any areas designed to be covered by loose surfacing materials such as gravel, stone and/or crushed stone, and intended for storage of and/or travel by vehicles, or pedestrians shall be considered impervious. Surfaces or areas designed, constructed and maintained to permit infiltration may be considered pervious.

**Infiltration** - Water flowing downward through the ground surface.

**In-Kind Repair/ Replacement** – Repair or replacement which uses the same or similar materials in the same location.

**Invasive/ Exotic Plants** – Plant species on the “Invasive Exotic Plants in Pennsylvania List” published by the PA Department of Conservation and Natural Resources, as amended.

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

**Land Development** - Shall include any of the following activities:

- A. the improvement of one lot or two or more contiguous lots, tracts, or parcels of land for any purpose involving:
  1. a group of two (2) or more residential or nonresidential buildings, whether proposed initially or cumulatively, or a single nonresidential building on a lot or lots regardless of the number of occupants or tenure; or

2. the division or allocation of land or space, 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.

B. A subdivision of land.

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

**Limit of Disturbance** – A line provided on the E&S Plan or SWM Plan that indicates the total area to be disturbed over the life of the project.

**Loading Ratio** – The ratio of impervious area draining to a stormwater management facility to the area of the stormwater management facility itself.

**Municipality** - (*name of municipality*), Adams County, Pennsylvania.

**Noxious Plant** – Those species as listed in the PA Noxious Weed Control Law (3 P.S. § 255.1—255.11), as amended and/or recodified.

**NPDES** - National Pollution Discharge Elimination System, as authorized by the Clean Water Act (33 U.S.C. §1251 *et seq.* [1972], as amended).

**NPDES Permit** – A permit required for stormwater discharges associated with construction activities, as required by the Clean Water Act (33 U.S.C. §1251 *et seq.* [1972], as amended).

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

**O&M** - Operation and Maintenance.

**O&M Plan** - Operation and Maintenance Plan.

**PCSM** - Post-Construction Stormwater Management.

**PCSM Plan** – Post Construction Stormwater Management Plan.

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

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

**Pennsylvania Municipalities Planning Code** - Act of 1968, P.L.805, No. 247, as reenacted and amended.

**Point Source** - Any discernible, confined, or discrete conveyance, including, but not limited

to: any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, CAAP, CAFO, landfill leachate collection system, or vessel or other floating craft from which pollutants are or may be discharged.

**Project Site (Site)** - The specific area of land where any Regulated Activity in the municipality is planned for, conducted on, constructed, or maintained.

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

**Reduction Factor** – A form of safety factor that, when multiplied by the site tested infiltration rate, is used to help determine the design infiltration rate for a stormwater management facility.

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

**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.

**Retention Basin** - An impoundment in which stormwater is stored and not released to surface waters of the Commonwealth.

**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 Forest Buffer** - A type of riparian buffer that consists of permanent vegetation that is predominantly native trees and shrubs along surface waters that is maintained in a natural state or sustainably managed to protect and enhance water quality, stabilize stream channels and banks, and separate land use activities from surface waters.

**Road Maintenance Activities** – See definition as found in Title 25, Chapter 102.1.

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

**Safety Factor** – An adjustment applied to a site-tested infiltration rate to ensure that the designed infiltration rate for a stormwater management facility is less than that shown under tested conditions.

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

**Simplified Approach (SA)** – A process that property owners proposing certain types of projects may utilize to prepare a stormwater management plan without having to conduct the detailed technical analysis and design required for larger projects.

**Special Management Areas** – Those areas outlined in Chapter 7 of the BMP Manual. Special Management Areas include: brownfields, highways and roads, karst areas, mined lands, water supply well areas, surface water supplies and special protection waters.

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

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

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

**Stormwater Management Facility** - Any structure, natural or man-made, that, due to its condition, design, or construction, conveys, stores, or otherwise affects stormwater runoff. Typical stormwater management facilities include, but are not limited to: detention and retention basins; open channels; storm sewers; pipes; and infiltration facilities.

**Stormwater Management Plan (The Plan)** - The Adams County Stormwater Management Plan of <<Insert Approval Date>>, which incorporates the requirements of the Act of October 4, 1978, P.L. 864 (Act 167), as amended, and known as the “Storm Water Management Act.”

**Stormwater Management Site Plan (SWM Site Plan)** – A plan prepared by the developer or his representative indicating how stormwater runoff will be managed at the development site in accordance with this Ordinance.

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

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

**SWM** - Stormwater Management.

**Technical Review Checklist (Optional)** – A checklist of technical items to be used by the reviewing entity when reviewing a PCSM Plan.

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

**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** - Region or area drained by a river, watercourse, or other surface water of this Commonwealth.

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

## ARTICLE III - STORMWATER MANAGEMENT STANDARDS

### Section 301. General SWM Site Plan Requirements

- A. For all regulated activities, unless preparation of a SWM Site Plan is specifically exempted in Section 302:
1. Preparation and implementation of an approved SWM Site Plan is required.
  2. No regulated activities shall commence until the Municipality issues written approval of an SWM Site Plan which demonstrates compliance with the requirements of this Ordinance.
- B. All SWM Site Plans for Regulated Activities shall include such measures as necessary to:
1. Protect health, safety, and property.
  2. Meet the water quality goals of this Ordinance, as stated in Section 103, by including measures that:
    - a. Minimize disturbance to floodplains, wetlands, wooded areas, and existing vegetation.
    - b. Maintain or extend riparian buffers. *(If municipality already has specific riparian buffer standards, cross reference these standards here.)*
    - c. Avoid erosive flow conditions in natural flow pathways.
    - d. Minimize thermal impacts to waters of the Commonwealth.
    - e. Disconnect impervious surfaces by directing runoff to pervious areas.
    - f. Minimize soil disturbance and compaction.
  3. Incorporate the techniques for Low Impact Development Practices described in the Pennsylvania Stormwater Best Management Practices Manual (BMP Manual).
- C. Stormwater flows onto adjacent property shall not be created, increased, decreased, relocated, or otherwise altered without the written notification of the adjacent property owner(s) by the developer. Copies of all such notifications shall be included in the SWM Site Plan submission.
- D. For all Regulated Activities where erosion and sediment control is required in accordance with Title 25 of the Pennsylvania Code and the Clean Streams Law, the SWM Site Plan shall include the required erosion and sedimentation control

measures. Necessary E&S BMPs shall be designed in accordance with the Erosion and Sediment Pollution Control Program Manual (E&S Manual) 2, No. 363-2134-008 (April 15, 2000), as amended and updated. Approval of the SWM Site Plan by (*Name of Municipality*) shall be conditioned on the applicant obtaining erosion and sedimentation control approval from the appropriate agency(ies), when applicable .

- E. For all Regulated Activities where NPDES permitting is required in accordance with the Clean Water Act (33 U.S.C. §1251 *et seq.* [1972], as amended), the SWM Site Plan shall include the information required in the applicant's NPDES Permit application. Approval of the SWM Site Plan by (*Name of Municipality*) shall be conditioned on the applicant obtaining NPDES Permit approval from the appropriate agency(ies), when applicable.
- F. For all regulated activities, implementation of the volume controls in Section 304 is required.
- G. Special Management Areas – SWM Site Plans involving Regulated Activities within Special Management Areas shall be prepared in a manner consistent with the guidance provided in Chapter 7 of the BMP Manual. The SWM Site Plan submission shall include design details for SWM BMPs within said Special Management Area.
- H. A SWM Site Plan may propose that stormwater related to the proposed Regulated Activities be accommodated by existing stormwater management facilities on adjoining or nearby properties provided that the SWM Site Plan documents the following.
  - 1. The use of the stormwater management facilities located on said adjoining or nearby property is approved in writing by the owner of the property.
  - 2. The stormwater management facilities located on said adjoining or nearby property are designed in a manner that can accommodate the stormwater management needs of the Regulated Activity in a manner consistent with all requirements of this Ordinance. The SWM Site Plan shall include all documentation necessary for (*Name of Municipality*) to confirm such compliance.
- I. The design storm volumes to be used in the analysis of peak rates of discharge shall be obtained from the Precipitation-Frequency Atlas of the United States, Atlas 14, Volume 2, Version 3.0, as amended and updated, U.S. Department of Commerce, National Oceanic and Atmospheric Administration (NOAA), National Weather Service, Hydro meteorological Design Studies Center, Silver Spring, Maryland. NOAA's Atlas 14 can be accessed at: <http://hdsc.nws.noaa.gov/hdsc/pfds/>.
- J. SWM Site Plans, once approved by (*Name of Municipality*), shall remain on site throughout the duration of the Regulated Activity and be available for review as may be necessary by representatives of (*Name of Municipality*).

- K. The design of all facilities over karst shall include an evaluation of measures to minimize adverse effects.
- L. (Name of Municipality) may, after consultation with DEP, approve measures for meeting the state water quality requirements other than those in this Ordinance, provided that they meet the minimum requirements of, and do not conflict with, state law including, but not limited to, the Clean Streams Law. The municipality shall maintain a record of consultations with DEP pursuant to this paragraph.

### **Section 302. Exemptions**

- A. A property owner or developer of any Regulated Activity that meets the following exemption criteria is, upon approval from (Name of Municipality), exempt from the formal SWM plan submission requirements of this Ordinance as specified herein. However, the property owner or developer shall be subject to all other requirements of this Ordinance other than the formal SWM plan submission requirements for which an exemption or exemptions have been authorized. The criteria for exemption in this Section apply to the total development proposed, including instances in which the development is proposed to take place in phases. The date of enactment of this Ordinance shall be the starting point from which future development and the respective exemption criteria shall be cumulatively considered and regulated.
1. Regulated Activities that involve equal to or less than one thousand (1,000) square feet of impervious surface may be exempted from the peak rate control, volume control and the SWM Site Plan preparation and submission requirements of this Ordinance. The applicant shall complete page 1 of the Municipal Stormwater Management Worksheet from the Stormwater Management Design Assistance Manual (see Plan Appendix C) and file said Worksheet with (Name of Municipality).
  2. Regulated Activities that involve greater than one thousand (1,000) square feet and equal to or less than ten thousand (10,000) square feet of impervious area, and where the all the proposed impervious area can be entirely disconnected, may be exempted from the peak rate control, volume control, and the SWM Site Plan preparation and submission requirements of this Ordinance. The applicant shall complete the Stormwater Management Worksheets from the Stormwater Management Design Assistance Manual (see Plan Appendix C) and file said Worksheets with (Name of Municipality).
  3. Regulated Activities that involve greater than one thousand (1,000) square feet and equal to or less than five thousand (5,000) square feet of impervious area may be exempted from the peak rate control and volume control preparation and submission requirements of this Ordinance. A Minor Stormwater Site Plan, as detailed in the Stormwater Management Design Assistance Manual (see Plan Appendix C), shall be submitted to (Name of Municipality) instead of the

submission of a full SWM Site Plan in accordance with Article IV of this Ordinance.

4. Agricultural Activities shall be exempt from the rate control, volume control and SWM Site Plan preparation and submission requirements of this Ordinance provided the agricultural activities are performed in accordance with the requirements of 25 Pa. Code 102. Further, such activities shall not be subject to the exemption approval process of Section 302.B of this ordinance.
5. Forest management and timber operations are exempted from the rate control, volume control and SWM Site Plan preparation and submission requirements of this Ordinance provided the forest management and timber operations are performed in accordance with the requirements of 25 PA Code 102.
6. Regulated Activities involving domestic gardening for single-family consumption shall be exempted from volume control, rate control, and SWM Site Plan preparation and submission requirements of this Ordinance, and shall not be subject to the exemption approval process of Section 302.B of this Ordinance.
7. In Kind Repair, In Kind Replacement, and maintenance of existing surfaces, and structures shall be exempted from volume control, rate control, and SWM Site Plan preparation and submission requirements of this Ordinance, and shall not be subject to the exemption approval process of Section 302.B of this Ordinance.

*(Each Municipality should develop a procedure to formally request Exemptions. The following language is recommended.)*

- B. Authorization of Exemptions: (Name of Municipality) shall determine, in accordance with the following requirements and process, whether a proposed Regulated Activity may be exempted from any of the requirements of this Ordinance.
1. The property owner or developer proposing the Regulated Activity shall submit, in writing on a form supplied by (Name of Municipality), a request for said proposed Regulated Activity to be exempted from allowable requirements of this Ordinance pursuant to Section A. The written request shall identify the project and shall indicate the specific exemption criteria, as listed in Section 302.A, that apply to the project.
  2. Upon receipt of the exemption request form, the (Name of Governing Body) or its designee shall either approve or deny the exemption request. If the exemption request is denied, the (Name of Governing Body) or its designee shall direct the property owner or developer to submit the information required to demonstrate that the proposed Regulated Activity complies with the requirements of this Ordinance or meets the exemption criteria.

3. Exemption request approval shall be at the discretion of (*Name of Municipality*), and shall be subject to the following:
  - a. (*Name of Municipality*) may deny any exemption request or suspend or revoke any approved exemption request at any time for any project where (*Name of Municipality*) believes that the proposed Regulated Activity poses a threat to public health, safety, property, or the environment.
  - b. Approval of an exemption request does not relieve the property owner or developer from other applicable requirements of this Ordinance or of other (*Name of Municipality*) ordinance or regulations.
  - c. (*Name of Municipality*) reserves the right to deny an exemption request if a drainage problem is known or identified by (*Name of Municipality*) to exist or is expected to exist downstream from the proposed Regulated Activity.

### **Section 303. General Design Standards**

#### **A. Impervious Area.**

1. The measurement of impervious areas shall include all of the impervious areas in the total proposed development, even if development is to take place in phases.
2. For development taking place in phases, the total proposed impervious area within the SWM Site Plan must be used in determining conformance with this Ordinance.
3. For projects that add impervious area to a parcel, the total impervious area on the parcel is subject to the requirements of this Ordinance; except that the volume controls in Section 304 and the peak rate controls of Section 305 do not need to be retrofitted to existing impervious areas that are not being altered by the proposed Regulated Activity.

B. Normally dry, open-top storage facilities, designed as such, shall completely drain both the volume control and rate control capacities over a period of time not less than 24 hours and not more than 72 hours from the end of the design storm. However, any designed infiltration volume at such facilities is exempt from the minimum 24-hour standard, i.e., may infiltrate in a shorter period of time, so long as none of the stormwater intended for infiltration is discharged into the surface waters of the Commonwealth.

C. Infiltration BMPs shall be spread out, made as shallow as practicable, and located to maximize use of natural on-site infiltration features while still meeting the other requirements of this Ordinance.

## **Section 304. Volume Controls**

The low impact development practices provided in the BMP Manual shall be utilized for all Regulated Activities. Water volume controls shall be implemented using the Design Storm Method in Section 304.A or the Simplified Method in Section 304.B. For Regulated Activity involving less than one (1) acre of impervious coverage that does not require hydrologic routing to design the stormwater facilities, the applicant may select either methodology on the basis of economic considerations, the intrinsic limitations on applicability of the analytical procedures associated with each methodology, and/ or other factors. The Design Storm Method in Section 304.A shall be used for all Regulated Activity involving greater than one (1) acre of impervious coverage.

A. The Design Storm Method (CG-1 in the BMP Manual) may be used for any size of Regulated Activity. This method requires detailed modeling to achieve the following standards.

1. The post-development total runoff volume shall not increase for all storms equal to or less than the two (2)-year 24-hour duration precipitation.
2. For modeling purposes:
  - a. Existing (pre-development), non-forested, pervious areas must be considered meadow.
  - b. Twenty percent (20%) of existing impervious area, when present, shall be considered meadow in the model for existing conditions.

B. The Simplified Method (CG-2 in the BMP Manual) is independent of site conditions and may be used for projects involving Regulated Activities proposing equal to or less than one (1) acre of impervious coverage and that do not require design of stormwater storage facilities. When the Simplified Method is used to address stormwater management needs of new impervious surfaces, the following design standards shall be achieved:

1. Stormwater facilities shall capture at least the first two (2) inches of runoff from all new impervious surfaces.
2. At least the first one (1) inch of runoff from new impervious surfaces shall be permanently removed from the runoff flow and shall not be released into the surface waters of the Commonwealth. Removal options for the first one (1) inch of runoff include, but are not necessarily limited to, reuse and infiltration.
3. Infiltration facilities shall be designed to accommodate infiltration of as much of the permanently removed runoff as site conditions will allow. If the soils within the project area do not allow for infiltration of the entire first one (1) inch of runoff from new impervious surfaces, other forms of runoff volume control shall

be used to achieve the required removal volume. Such measures may include, but are not limited to vegetated roofs, bioretention, and capture-and-reuse systems. In addition, the Infiltration Alternative authorized in Section 304.C may be employed.

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

C. Infiltration Alternative: Where infiltration is not possible due to soil characteristics or is not desirable given other characteristics, water quality control may be proposed as an alternative to strict adherence to the volume control standards of Section 304 of this Ordinance. Where water quality control is proposed, the following standards shall be achieved.

1. At a minimum, the following documentation shall be provided to justify the proposal to reduce the infiltration requirements:

- a. Description of and justification for field infiltration/ permeability testing with respect to the type of test and test locations.
- b. An interpretive narrative describing existing soils of the site and their structure as these relate to the interaction between soils and water characteristics of the site. In addition to providing soil and soil profile descriptions, this narrative shall identify depth to seasonal water tables and depth to bedrock and provide a description of all subsurface elements (restrictive layers, geology, etc.) that influence the direction and rate of subsurface water movement.
- c. A qualitative assessment of the site’s contribution to annual aquifer recharge shall be made, along with the identification of any restrictions or limitations associated with the use of designed infiltration facilities.
- d. The provided documentation must be signed and sealed by a professional engineer or geologist.

2. Water Quality BMPs shall be implemented on all permanent stormwater discharges from the proposed project site to achieve pollutant removal efficiencies in accordance with the Table 304.1.

**Table 304.1 Required Pollutant Removal Efficiencies for Infiltration Alternatives**

<b>Pollutant Load</b>	<b>Units</b>	<b>Required Removal Efficiency (%)</b>
Total Suspended Solids (TSS)	Pounds	85%
Total Phosphorus (TP)	Pounds	85%
Total Nitrate (NO <sub>3</sub> )	Pounds	50%

3. Design guidance from the most current version of the Pennsylvania Stormwater Best Management Practices Manual, or equivalent resource as pre-coordinated with (Name of Municipality), shall be consulted when choosing design criteria for water quality BMPs.

### **Section 305. Rate Controls**

- A. Post-development discharge rates shall not exceed the pre-development discharge rates for the 1-, 2-, 5-, 10-, 25-, 50-, and 100-year 24-hour storms. If it is shown that the peak rates of discharge indicated by the post-development analysis are less than or equal to the peak rates of discharge indicated by the pre-development analysis for 1-, 2-, 5-, 10-, 25-, 50-, and 100-year, 24-hour storms, then the requirements of this section have been met. Otherwise, the applicant shall provide additional controls as necessary to satisfy the peak rate of discharge requirement.
- B. For computation of pre-development peak discharge rates, twenty percent (20%) of existing impervious areas, when present, shall be considered meadow.

### **Section 306. – Riparian Buffers/ Riparian Forest Buffers**

Where an applicant proposes to utilize riparian buffers as the means to meet the requirements of this Ordinance, said riparian buffers shall be established and/or maintained in accordance with the BMP Manual or the publication *Riparian Forest Buffer Guidance*, published November, 2010 by the Pennsylvania Department of Environmental Protection, and as may be amended or updated.

### **Section 307. Prohibited Discharges and Connections**

- A. Any drain or conveyance, whether on the surface or subsurface, that allows any non-stormwater discharge including sewage, process wastewater, and wash water to enter the waters of the Commonwealth is prohibited.
- B. No person shall allow, or cause to allow, discharges into surface waters of the Commonwealth which are not composed entirely of stormwater, except (1) as provided in Subsection C below and (2) discharges allowed under a state or federal permit.
- C. The following discharges are authorized unless they are determined to be significant contributors to pollution to the waters of the Commonwealth:

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

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

**Section 308. Roof Drains, Sump Pumps and Footer Drains**

Roof drains, sump pumps, and footer drains should discharge to infiltration or vegetative BMPs and, to the maximum extent practicable, satisfy the criteria for DIAs. Discharges of each should be conveyed in such a manner as to not cause water problems for adjoining property owners.

**Section 309. Alteration of SWM BMPs**

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

## **ARTICLE IV - STORMWATER MANAGEMENT (SWM) SITE PLAN REQUIREMENTS**

### **Section 401. SWM Site Plan Submission**

- A. When a property owner or developer proposes a Regulated Activity, said property owner or developer shall submit a SWM Site Plan to demonstrate compliance with the stormwater management provisions of this Ordinance. Said submission shall be required by (Name of Municipality) unless said Regulated Activity is exempted from SWM Site Plan submission in accordance with the exemption criteria and exemption approval process established in Section 302 of this Ordinance. Where (Name of Municipality) determines that the property owner or developer proposing the Regulated Activity is eligible to employ the process established in the Stormwater Management Design Assistance Manual (SWM Plan Appendix C) to address the stormwater management needs of a site, the submission of the required documentation from said Manual shall substitute for the SWM Site Plan requirements of this Article.
- B. Copies of the SWM Site Plan shall be distributed as follows:
1. \_\_\_\_ Two (2) copies to the Municipality.
  2. \_\_\_\_ One (1) copy to the (Name of Municipality) Engineer, when applicable.
  3. \_\_\_\_ One (1) copy to the Adams County Conservation District (if an NPDES permit is required).
  4. \_\_\_\_ One (1) copy to the Adams County Planning Commission (only if submitted as a component of a subdivision and land development plan in accordance with the (Name of Municipal Subdivision and Land Development Ordinance)).
- C. Additional copies shall be submitted as requested by (Name of Municipality).
- D. The property owner or developer shall submit a review fee in accordance with Article VI. Payment of the required fee shall be considered a component of the SWM Site Plan submission. The SWM Site Plan submission shall not be considered to be complete until such time that any required fee is paid.

### **Section 402. Plan Requirements**

- A. The SWM Site Plan shall include the following information. Where the Regulated Activity for which a SWM Site Plan is being submitted is also subject to subdivision and/or land development plan review in accordance with the (Name of Municipality)

Subdivision and Land Development Ordinance, the SWM Site Plan shall be submitted as a component of the subdivision or land development plan submission for the project and shall include the following information. Where the submission requirements of this section conflict with the submission requirements of the (Name of Municipal Subdivision and Land Development Ordinance), the submission requirements of this Ordinance shall control.

1. The name of the development, the name and address of the owner of the property, and the name and address of the individual or firm preparing the SWM Site Plan. Also to be included are the name, address, signature and seal of any registered surveyor (attesting the accuracy of the boundary survey), professional engineer, landscape architect, or professional geologist (for geomorphological assessments) contributing to and/or responsible for any aspect of the SWM Site Plan.
2. A graphic and written plan scale of one (1) inch equals no more than fifty (50) feet. For parcels of twenty (20) acres or more, the scale shall be one (1) inch equals no more than one hundred (100) feet.
3. North point (arrow).
4. Existing and proposed land uses within the project boundary plus twenty-five (25) feet outside the project boundary.
5. The location of existing and proposed utilities, stormwater facilities, sanitary sewers, and water lines within the project boundary and for the entire area within the first twenty-five (25) feet beyond the project boundary.
6. Significant physical features and associated boundary limits, including flood hazard areas, sinkholes, existing drainage courses, and areas of natural vegetation.
7. Existing and proposed structures, buildings, streets, driveways, access drives, and parking areas.
8. The SWM Site Plan shall show the locations of existing and proposed on-lot wastewater facilities and water supply wells.
9. The location of the proposed Regulated Activity relative to streets, municipal boundaries, and other significant manmade features for the entire area within the first 25 feet beyond the project boundary.
10. A determination of site conditions in accordance with the BMP Manual. A detailed site evaluation shall be completed for projects proposed in areas of carbonate geology or karst topography, as well as for other environmentally sensitive areas, whether natural or manmade, including floodplains, streams, lakes, ponds, hydric soils, wetlands, brownfields, and wellhead protection zones.

11. Stormwater runoff design computations and documentation as specified in this Ordinance, or as otherwise necessary, to demonstrate compliance with the requirements of this Ordinance.
12. The overall stormwater management concept for the project, including any additional information required for a PCSM Plan as applicable.
13. A hydrogeologic assessment of the effects of stormwater runoff on sinkholes, where present.
14. A description of permanent stormwater management techniques, including the construction specifications of the materials to be used for stormwater management facilities.
15. Plan and profile drawings of all SWM BMPs, including drainage structures, pipes, open channels, and swales.
16. Horizontal and vertical profiles of all open channels, including hydraulic capacity.
17. Proposed changes to the land surface and vegetative cover and the type and amount of existing and proposed impervious area.
18. Existing and final contours at intervals of two (2) feet. In areas of slopes in excess of fifteen percent (15%), five (5) foot contour intervals may be used.
19. Drainage flow pathways.
20. The effect of the project in terms of runoff volumes, water quality, and peak flows on surrounding properties and aquatic features and on any existing stormwater conveyance system that may be affected by the project.
21. The effect of the proposed Regulated Activity in terms of runoff volumes and peak flows on adjacent properties and/or any existing municipal stormwater collection system that may receive runoff from the project site.
22. A map showing all existing manmade features beyond the subject parcel's boundary lines that may be affected by the proposed Regulated Activities.
23. Expected project time schedule.
24. An E&S plan, where applicable, as approved by the Adams County Conservation District.
25. An NPDES Permit application, including PCSM Plan, where applicable, as administratively reviewed and approved by the Adams County Conservation District.

26. The SWM Site Plan shall include an O&M Plan for all existing and proposed physical stormwater management facilities. The plan shall address long-term ownership and maintenance responsibilities as well as schedules and estimated costs for maintenance activities. The O&M Plan shall be prepared in accordance with the requirements of Article V of this Ordinance.
27. Provisions for permanent access or maintenance easements for all physical SWM BMPs, as necessary to implement the O&M Plan
28. A note on the SWM Site Plan indicating the location, and responsibility for maintenance of, SWM facilities and/or easements that would be located on adjoining properties as a result of proposed Regulated Activities, and the location of such facilities and/or easements.
29. The following signature block shall be provided:

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

### **Section 403. Plan Review and Approval Procedure**

A. Pre-Application Meeting: Prior to proceeding with SWM Site Plan preparation and submission, the applicant is encouraged to request a pre-application meeting with (Name of Municipality) to discuss the plan concept and responsibility for submission of required documents and information. If the project requires an E&S plan or an NPDES permit, the applicant is encouraged to meet with a staff member of the Adams County Conservation District as well.

B. SWM Site Plan Review and Approval Procedure:

1. If a SWM Site Plan is not submitted as a component of a subdivision and/or land development plan, the review of the SWM Site Plan, recommendations, approval, approval with conditions, or disapproval shall occur within 45 calendar days of submission to (Name of Municipality). Where the applicant submits revisions to a previously submitted SWM Site Plan, either because the applicant has elected to revise the SWM Site Plan or as a result of a determination by (Name of Municipality) that a revision is necessary to meet the requirements of this Ordinance, this 45-day period shall be restarted. Should (Name of Municipality) fail to render a decision on the SWM Site Plan within this 45 day time period, the application shall be deemed approved. The review process shall include the following components.

(Each Municipality should develop a review process and insert ordinance language describing the process here. For guidance, please see the review

**process discussion in Section VII of the Adams County Stormwater Management Plan.)**

2. If a SWM Site Plan is submitted as a component of a subdivision and/or land development plan, the SWM Site Plan shall be reviewed in accordance with the review process and time frame established in the **(Name of Municipal Subdivision and Land Development Ordinance)** and in accordance with Section 508 of the Pennsylvania Municipalities Planning Code.
3. NPDES Permit Technical Coordination: Where the project for which a SWM Site Plan is submitted is subject to NPDES permitting, **(Name of Municipality)** shall notify the Adams County Conservation District when the applicant has achieved technical compliance with the requirements of this Ordinance. **(Name of Municipality)** may address this requirement through the completion of the Technical Review Checklist for NPDES Sites in Appendix D or comparable process as determined by **(Name of Municipality)**. Upon receipt of this notification, the Adams County Conservation District will acknowledge a General NPDES permit. In the case of an Individual NPDES permit, the Adams County Conservation District will coordinate municipal reviews with the DEP Regional Office.
4. NPDES Permits and E&S Plans: Where the project for which a SWM Site Plan is submitted is subject to NPDES permitting or the submission of an E&S Plan, or both, any final approval of the SWM Site Plan by **(Name of Municipality)** shall be conditioned on the applicant's receipt of the required NPDES Permit or E&S Plan approval, as appropriate.
5. Decision Notification Procedure: In all cases, the decision of the **(Name of Municipal Governing Body)** to approve, approve with conditions, or disapprove the SWM Site Plan shall be in writing and shall be delivered to the applicant no later than fifteen (15) calendar days following the decision. If the SWM Site Plan is disapproved, the written decision by the **(Name of Municipal Governing Body)** shall specify the defects in the application, describe the requirements which were not met, and shall cite the provisions of the Ordinance relied upon. If the SWM Site Plan is approved with conditions, the notification to the applicant shall state the acceptable conditions for approval and the time limit for satisfying such conditions. Should **(Name of Municipality)** fail to notify the applicant of the decision within this fifteen (15) calendar day period, the application shall be deemed approved.

C. Waiver Requests:

1. If a SWM Site Plan is not submitted as a component of a subdivision and/or land development plan, the **(Name of Municipal Governing Body)** may accept a request for waiver of one or more of the requirements of this Ordinance. Any such waiver requests shall comply with the following requirements.

- a. The (Name of Municipal Governing Body) may accept a request for waiver of the requirements of one or more provisions of this Ordinance if the literal enforcement will enact undue hardship because of peculiar conditions pertaining to the land in question, provided that (Name of Municipality) determines that such waiver will not be contrary to the public interest and that the purpose and intent of the Ordinance is observed.
  - b. All requests for waivers from an applicant shall be in writing and shall accompany and be a part of the application for approval of a SWM Site Plan. The request shall state in full the grounds and facts of unreasonableness or hardship on which the request is based, the provision or provisions of the Ordinance involved, and the minimum waiver necessary to afford relief.
2. The (Name of Municipal Governing Body) shall act to accept or reject requests for waivers within the context of its SWM Site Plan decision-making process established in Section 403.B.1 of this Ordinance. The decision of the (Name of Municipal Governing Body) regarding acceptance of each request for waiver shall be incorporated into the written decision of the (Name of Municipal Governing Body) for the overall SWM Site Plan as required in Section 403.B.3 of this Ordinance. The (Name of Municipal Governing Body) shall keep a written record of all action on requests for waivers.
  3. If a SWM Site Plan is submitted as a component of a subdivision and land development plan, requests for waiver to obtain relief from one or more of the requirements of this Ordinance shall be handled in accordance with the modification process established in the (Name of Municipal Subdivision and Land Development Ordinance) and Section 512.1 of the Pennsylvania Municipalities Planning Code.
  4. The final decision to approve or disapprove all accepted requests for waiver shall be made in accordance with Section 301.L.

#### **Section 404. Revision of Plans**

- A. SWM Site Plan not Submitted as a Component of a Subdivision and/or Land Development Plan: Revisions to a previously approved SWM Site Plan to incorporate a change in SWM BMPs or techniques, or the relocation or redesign of SWM BMPs, or different information about soil or other conditions from what was stated in the SWM Site Plan, shall be submitted by the applicant to (Name of Municipality). (Name of Municipality), at its sole discretion may require a re-submission of the revised SWM Site Plan in accordance with this Ordinance, including applicable review fee. For NPDES permitted sites, any revised SWM Site Plan shall be re-submitted to the Adams County Conservation District for its review.

In the case of a SWM Site Plan which contains minor deficiencies (such as a missing label, omission of a required note or minor construction detail). At its sole discretion, (Name of Municipality) may accept a re-submission of such SWM Site Plan without the requirement of a full review fee, or a lesser fee, as determined by (Name of Municipality).

- B. SWM Site Plan Submitted as a Component of a Subdivision and/or Land Development Plan: A revision of an SWM Site Plan approved as a component of a subdivision and/or land development plan shall be treated as a revision of the subdivision and/or land development plan and shall be subject to the review process established in the (Name of Municipal Subdivision and Land Development Ordinance).

#### **Section 405. Re-submission of Disapproved SWM Site Plans**

- A. SWM Site Plan not Submitted as a Component of a Subdivision and/or Land Development Plan. A previously disapproved SWM Site Plan may be resubmitted with the revisions addressing the defects of the original submission as listed in (Name of Municipality) Decision Notification provided in accordance with Section 403.B.1.e. The re-submitted SWM Site Plan shall be reviewed and acted upon in accordance with Section 403.B.1 of this Ordinance. The applicable review fee must accompany the submission of a revised SWM Site Plan, unless such fee is waived by (Name of Municipality).
- B. SWM Site Plan Submitted as a Component of a Subdivision and/or Land Development Plan: The resubmission of the SWM Site Plan originally submitted as a component of a subdivision and/or land development plan shall be treated as resubmission of said subdivision and/or land development plan and shall be subject to the review process established in the (Name of Municipal Subdivision and Land Development Ordinance).

#### **Section 406. Authorization to Construct and Term of Validity**

- A. SWM Site Plans not Submitted as a Component of a Subdivision and/or Land Development Plan - (Name of Municipality) approval of a SWM Site Plan, when such Plan is not submitted as a component of a subdivision and/or land development plan, authorizes the Regulated Activities contained in the SWM Site Plan for a maximum term of validity of five (5) years following the date of approval. (Name of Municipality) may specify a term of validity shorter than five (5) years in the Decision Notification for any specific SWM Site Plan, particularly if the nature of the proposed SWM facilities requires more frequent maintenance and/or short-term replacement of certain components. Terms of validity shall commence on the date (Name of Municipality) signs the Decision Notification for an SWM Site Plan. If an approved SWM Site Plan is not completed according to Section 407 within the term of validity, (Name of Municipality), and if a request to extend the permit has not been submitted to (Name of Municipality) by the applicant, the permit terminates and

(Name of Municipality) may revoke any and all permits applicable to the project. SWM Site Plans for projects with expired permits may be resubmitted in accordance with Section 405 of this Ordinance.

- B. SWM Site Plans Submitted as a Component of a Subdivision and/or Land Development Plan - (Name of Municipality) approval of a SWM Site Plan as a component of a subdivision and/or land development plan is subject to the term of validity as specified in the (Name of Municipality) Subdivision and Land Development Ordinance.

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

*(The Municipality may wish to consider including language regarding inspection during the construction of BMPs on those sites that do not require an NPDES permit)*

- A. The stormwater management facilities constructed in accordance with a SWM Site Plan not submitted as a component of a subdivision and/or land development plan shall be subject to the following process upon the completion of construction of said facilities.
1. The property owner or developer shall contact (Name of Municipality) within seven (7) days of the completion of the construction process to schedule a Final Inspection. The Final Inspection shall be conducted by the (Name of Municipality)
  2. The (Name of Municipality) may inspect the completed improvements to confirm consistency with the approved SWM Site Plan. Following the inspection, if any, the (Name of Municipality) may take one of the following two actions.
    - a. Issue a Completion Certificate: A Completion Certificate may be issued when the (Name of Municipality) determines that the stormwater management facilities have been constructed in conformance with the approved SWM Site Plan.
    - b. Issue Correspondence Regarding Discrepancies: If (Name of Municipality) determines that the stormwater management facilities have not been constructed in accordance with the approved SWM Site Plan, (Name of Municipality) shall issue correspondence addressed to the property owner or developer summarizing the discrepancies from the approved SWM Site Plan. Such correspondence does not by itself constitute an extension of any applicable SWM Permit.
  3. Upon receipt of correspondence summarizing discrepancies in the constructed stormwater facilities, the property owner or developer shall, apply for permit extensions when necessary, and take one of the following two actions.

- a. Reconstruct the required stormwater management facilities in a manner that complies with the approved SWM Site Plan. Upon completion of the reconstruction work, the property owner or developer shall contact the municipality for a subsequent Final Inspection in accordance with the process established in Section 407.A.1.
  - b. Submit a revised SWM Site Plan in accordance with the process established in Section 404.A. The revised SWM Site Plan shall be consistent with the improvements as constructed. Upon receipt, (Name of Municipality) may review the revised SWM Site Plan in accordance with the review and approval process of Section 403. If the revised SWM Site Plan is approved, (Name of Municipality) shall issue the Completion Certificate. If the revised SWM Site Plan fails to demonstrate that the constructed stormwater management facilities can comply with the requirements of this Ordinance, (Name of Municipality) may then require the property owner or developer to reconstruct the required stormwater facilities in accordance with the originally approved SWM Site Plan. If the revised SWM Site Plan is approved, (Name of Municipality) shall then issue the Completion Certificate.
4. Within fifteen (15) days of the Completion Certificate, the property owner or developer shall submit to (Name of Municipality) an As-Built Plan depicting the stormwater management facilities as constructed. If requested by the applicant, (Name of Municipality) may grant an extension of the deadline to submit As-Built Plans.
- B. The stormwater management facilities constructed in accordance with a SWM Site Plan submitted as a component of a subdivision and/or land development plan shall be subject to the completion of improvements requirements of the (Name of Municipal Subdivision and Land Development Ordinance) and Sections 509 through 511 of the Pennsylvania Municipalities Planning Code.

## ARTICLE V - OPERATION AND MAINTENANCE

### Section 501. Determination of Ownership and Maintenance Responsibility

- A. The (Name of Municipal Elected Body) shall make the final determination on the continuing operation and maintenance responsibilities prior to final approval of the SWM Site Plan. The (Name of Municipal Elected Body) may require a dedication of such facilities as part of the requirements for approval of the SWM Site Plan. (Name of Municipality) shall not be obligated to accept the facilities if offered for dedication. The (Name of Municipal Elected Body) reserves the right to accept or reject the ownership, maintenance, and operating responsibility for any portion of the stormwater management facilities and controls.
- B. If the (Name of Municipal Elected Body) accepts dedication of any or all stormwater management facilities associated with a project, (Name of Municipality) shall operate and maintain said facilities in accordance with the approved O&M Plan.
- C. If the (Name of Municipal Elected Body) does not accept dedication of some or all of the stormwater management facilities associated with a project, the property owner shall sign an O&M Agreement in accordance with Section 502 of this Ordinance. The Municipality shall not approve the SWM Site Plan before the owner signs the O&M Agreement.

### Section 502. Operation and Maintenance Agreements

- A. Prior to final approval of the SWM Site Plan, the property owner shall sign and record an O&M Agreement binding the property owner to conduct all maintenance activities identified in the approved O&M Plan for all stormwater control facilities which are to be privately owned.
1. The property owner, heirs, successors and assigns shall maintain all facilities in accordance with the approved maintenance schedule in the O&M Plan.
  2. The property owner shall provide to (Name of Municipality) easements to ensure access for periodic inspections and maintenance by (Name of Municipality), as necessary.
  3. The property owner shall keep on file with (Name of Municipality) the name, address, and telephone number of the person or company responsible for maintenance activities. In the event of a change, new information shall be submitted by the property owner to (Name of Municipality) within ten (10) working days of the change.
  4. The O&M Plan shall be recorded with the Adams County Recorder of Deeds.

- B. The owner is responsible for operation and maintenance of the SWM BMPs. If the owner fails to adhere to the O&M Agreement or the O&M Plan, (*Name of Municipality*) may perform the services required and charge the owner appropriate fees. Nonpayment of fees, costs and other expenses incurred in the performance of services required may result in a municipal lien against the property.

### **Section 503. Performance Guarantee**

For SWM Site Plans submitted as a component of a subdivision and/or land development plan, the property owner or developer shall provide a financial guarantee to (*Name of Municipality*) for the timely installation and proper construction of all stormwater management controls as required by the approved SWM Site Plan and this Ordinance in accordance with the completion of improvements requirements of the (*Name of Municipal Subdivision and Land Development Ordinance*) and the provisions of Sections 509 through 511 of the Pennsylvania Municipalities Planning Code.

## ARTICLE VI - FEES AND EXPENSES

### Section 601. General

- A. The (Name of Municipal Elected Body) shall, by resolution, establish a fee schedule to defray costs incurred by (Name of Municipality) associated with the administration and enforcement of this Ordinance.
- B. The applicant shall be responsible for the payment of all fees, costs, and other expenses incurred in the submission, review, and decision on SWM Site Plans and/ or other submissions pursuant to this ordinance.

### Section 602. Expenses Covered by Fees

The fee(s) may include, but are not limited to, costs for the following:

- A. Administrative, clerical, and legal costs.
- B. Review of the SWM Site Plan and reports by (Name of Municipality) and representatives or counselors of the Municipality.
- C. Attendance at meetings by (Name of Municipality) and representatives and counselors of the Municipality, as may be necessary.
- D. Various Inspections (such as during construction and after construction) by (Name of Municipality) or its representatives.
- E. Any additional work required to enforce any provision (s) regulated by this Ordinance, correct violations, and ensure proper completion of stipulated remedial actions.

## ARTICLE VII - ENFORCEMENT AND PENALTIES

### Section 701. Municipal Inspection

- A. Upon presentation of proper credentials, (*Name of Municipality*) officials or their designee may enter at reasonable times upon any property within (*Name of Municipality*) to inspect the condition of the stormwater structures and facilities in regard to any aspect regulated by this Ordinance.
- B. Inspections regarding compliance with the SWM Site Plan may be conducted by the Municipality at any time when there may be a question of compliance with the approved SWM Site Plan, the approved O&M Plan, or when any condition exists that may threaten public health, safety, or welfare.

### Section 702. Owner Inspection

- A. SWM BMPs shall be inspected by the landowner, or landowner's designee (which shall include (*Name of Municipality*) where such facilities have been dedicated to (*Name of Municipality*), or the owner's designee, according to the following list of minimum frequencies:
  - 1. Annually for the first five (5) years.
  - 2. Once every three (3) years thereafter.
  - 3. During or immediately after the cessation of a ten (10)-year or greater storm, i.e., a storm of an estimated frequency of recurrence of ten (10) years or greater interval of time.
  - 4. At any other interval as may be specified in the approved O&M Agreement.

*(Municipalities may decide how, when, and in what form they would like inspection records and include in Section 702)*

### Section 703. Suspension or Revocation of SWM Site Plan Approval

- A. Any SWM Site Plan approval issued by (*Name of Municipality*) pursuant to this Ordinance may be suspended or revoked for any of the following reasons.
  - 1. Non-compliance with or failure to implement any provision of the approved SWM Site Plan or O&M Plan.
  - 2. A violation of any provision of this Ordinance or any other applicable law, ordinance, rule, or regulation relating to the Regulated Activity.

3. The creation of any condition or the conduct of any Regulated Activity which constitutes or creates a hazard, nuisance, pollution, or endangers life or property.
- B. A suspended SWM Site Plan approval may be reinstated by the (Name of Municipal Elected Body) when the following conditions are met.
1. (Name of Municipality) officials or their designee(s) have inspected and approved the corrections to the violations that caused the suspension.
  2. The (Name of Municipal Elected Body) is satisfied that the violation has been corrected.
- C. An SWM Site Plan approval that has been revoked by the (Name of Municipal Elected Body) shall not be reinstated. The applicant may apply for a new SWM Site Plan approval under the provisions of this Ordinance.
- D. If a violation causes no immediate danger to life, public health, or property, the (Name of Municipal Elected Body) may, at its sole discretion, provide a limited time period for the owner to correct the violation. In these cases, the (Name of Municipal Elected Body) will provide the owner, or the owner's designee, with a written notice of the violation and the time period allowed for the owner to correct the violation. If the owner does not correct the violation within the allowed time period, the municipality may revoke or suspend any, or all, applicable approvals and permits pertaining to any provision of this Ordinance.

#### **Section 704. Enforcement**

(Name of Municipality) may institute injunctive, mandamus, or any other appropriate action or proceeding at law or in equity for the enforcement of this Ordinance when (Name of Municipality) determines that a property owner or developer has initiated a Regulated Activity without receiving SWM Site Plan approval, that a property owner or developer has failed to comply with an approved SWM Site Plan or approved O&M Plan, or that a property owner or developer has violated any other provision 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 705. Penalties**

*(Municipalities should confer with their solicitors to provide appropriate wording and a judgment amount for this section.)*

- A. Anyone violating the provisions of this Ordinance shall be guilty of a summary offense, and upon conviction, shall be subject to a fine of not more than (List Dollar Amount) for each violation, recoverable with costs. Each day that the violation continues shall be a separate offense and penalties shall be cumulative.

- B. In addition, 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 706. Appeals**

- A. Any person aggrieved by any action of (*Name of Municipality*) or its designee, relevant to the enforcement of the provisions of this Ordinance, may appeal said action to the (*Name of Municipal Elected Body*) within thirty (30) days of that action.
- B. Any person aggrieved by any decision of the (*Name of Municipal Elected Body*) regarding the appeal of any action of (*Name of Municipality*) or its designee, may appeal the decision to the Adams County Court of Common Pleas within thirty (30) days of the decision of the (*Name of Municipal Elected Body*).

**ARTICLE VIII: ENACTMENT**

(Municipality will add appropriate language and signatory lines)

**APPENDIX A**  
**OPERATION AND MAINTENANCE (O&M) AGREEMENT**  
**STORMWATER MANAGEMENT BEST MANAGEMENT**  
**PRACTICES (SWM BMPs)**

**THIS AGREEMENT**, made and entered into this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_\_, by and between \_\_\_\_\_, (hereinafter the “Landowner”), and \_\_\_\_\_, Adams County, Pennsylvania, (hereinafter “Municipality”);

**WITNESSETH**

**WHEREAS**, the Landowner is the legal or equitable owner of certain real property as recorded by deed in the land records of Adams County, Pennsylvania, Deed Book \_\_\_\_\_ at page \_\_, (hereinafter “Property”).

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

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

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

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

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

1. The Landowner shall construct, or cause the construction of, the BMPs in accordance with the plans and specifications identified in the SWM Site Plan.

2. The Landowner shall operate and maintain the BMPs as shown on the SWM Plan in good working order in accordance with the specific operation and maintenance requirements noted on the approved O&M Plan.
3. The Landowner hereby grants permission to the Municipality, its authorized agents and employees, to enter upon the property, at reasonable times and upon presentation of proper credentials, to inspect the BMPs whenever the Municipality deems it appropriate. Whenever possible, the Municipality shall notify the Landowner prior to entering the property.
4. In the event the Landowner fails to operate and maintain the BMPs as provided in the O&M Plan, the Municipality or its representatives may enter upon the Property and take whatever action is deemed necessary to maintain said BMP(s). It is expressly understood and agreed that the Municipality is under no obligation to maintain or repair said facilities, and in no event shall this Agreement be construed to impose any such obligation on the Municipality.
5. In the event the Municipality, pursuant to this Agreement, performs work of any nature, or expends any funds in performance of said work for labor, use of equipment, supplies, materials, and the like, the Landowner shall reimburse the Municipality for all expenses (direct and indirect) incurred within ten (10) days of receipt of invoice from the Municipality.
6. The intent and purpose of this Agreement is to ensure the proper maintenance of the onsite BMPs by the Landowner; provided, however, that this Agreement shall not be deemed to create or affect any additional liability of any party for damage alleged to result from or be caused by stormwater runoff.
7. The Landowner, its executors, administrators, assigns, and other successors in interests, shall release the Municipality from all damages, accidents, casualties, occurrences, or claims which might arise or be asserted against said employees and representatives from the construction, presence, existence, or maintenance of the BMP(s) by the Landowner or Municipality.
8. The Municipality intends to inspect the BMPs at a minimum of once every three (3) years to ensure their continued functioning.

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

ATTEST:

WITNESS the following signatures and seals:

(SEAL) For the Municipality:

For the Landowner:

ATTEST:

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

County of Adams, Pennsylvania

I, \_\_\_\_\_, a Notary Public in and for the county and state aforesaid, whose commission expires on the \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_, do hereby certify that

\_\_\_\_\_ whose name(s) is/are signed to the foregoing Agreement bearing date of the \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_ has acknowledged the same before me in my said county and state.

**GIVEN UNDER MY HAND THIS** \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_

\_\_\_\_\_  
**NOTARY PUBLIC**

\_\_\_\_\_  
**(SEAL)**



## APPENDIX B

### NOXIOUS AND INVASIVE PLANT CONTROL

A list of noxious and invasive plants in Pennsylvania may be found in several locations:

#### **The Pennsylvania Code**

7 Pa. Code § 110. Noxious Weeds

§ 110.1. Noxious weed control list.

Under section 3(b) of the Noxious Weed Control Law (3 P. S. § 255.3(b)), the Noxious Weed Control Committee establishes the following noxious weed control list:

- (1) *Cannabis sativa*, commonly known as marijuana.
- (2) The *Lythrum salicaria* Complex: Any nonnative *Lythrum* including, *Lythrum salicaria* and *Lythrum virgatum*, their cultivars and any combination thereof.
- (3) *Cirsium arvense*, commonly known as Canadian thistle.
- (4) *Rosa multiflora*, commonly known as multiflora rose.
- (5) *Sorghum halepense*, commonly known as Johnson grass.
- (6) *Carduus nutans*, commonly known as musk thistle.
- (7) *Cirsium vulgare*, commonly known as bull thistle.
- (8) *Datura stramonium*, commonly known as jimson weed.
- (9) *Polygonum perfoliatum*, commonly known as mile-a-minute.
- (10) *Puerria lobata*, commonly known as kudzu vine.
- (11) *Sorghum bicolor* cv. *drummondii*, commonly known as shattercane.
- (12) *Heracleum mantegazzianum*, commonly known as Giant Hogweed.
- (13) *Galega officinalis*, commonly known as Goatsrue.

#### **Pennsylvania Department of Conservation and Natural Resources (DCNR)**

The PA Department of Conservation and Natural Resources (DCNR) lists Invasive Exotic Plants in Pennsylvania on their website:

<http://www.dcnr.state.pa.us/forestry/invasivetutorial/List.htm>

A copy of the (DCNR) publication “Invasive Plants in Pennsylvania” (rev. 2006) may be found on their web site: [www.dncr.state.pa.us](http://www.dncr.state.pa.us)

A listing of plants is included on the following page.

# Invasive Plants in Pennsylvania

SCIENTIFIC NAME	COMMON NAME	PLANT FORM	NOTES
The species below are serious threats to our native ecosystems. Many have been designed as "Noxious Weeds" by the PA Department of Agriculture and are also a major concern to our agricultural community.			
<i>Aegopodium podagraria</i>	Goutweed	Flower	Commonly planted in the past and escaped; spreads aggressively by roots
<i>Alliaria petiolata</i>	Garlic mustard	Flower	Invasive in many states; spreading aggressively in woodlands by seed
<i>Carduus nutans</i>	Musk thistle	Flower	PA Noxious Weed
<i>Cirsium arvense</i>	Canada thistle	Flower	PA Noxious Weed
<i>Cirsium vulgare</i>	Bull thistle	Flower	PA Noxious Weed
<i>Datura stramonium</i>	Jimsonweed	Flower	Sometimes cultivated; spreads by seed, PA Noxious Weed
<i>Galega officinalis</i>	Goatsrue	Flower	PA and Federal Noxious Weed
<i>Heracleum mantegazzianum</i>	Giant hogweed	Flower	PA and Federal Noxious Weed; sap can cause burning blisters
<i>Hesperis matronalis</i>	Dame's rocket	Flower	Planted in gardens; escaped and naturalized along roads; spreads by seed
<i>Lytium salicaria, L. virgatum</i>	Purple loosestrife	Flower	Garden escape which has become invasive in many states; PA Noxious weed
<i>Myriophyllum spicatum</i>	Eurasian water-milfoil	Flower	Invasive in many states; aquatic
<i>Ornithogalum nutans, umbellatum</i>	Star-of-Bethlehem	Flower	Common garden plant which has widely escaped
<i>Pastinaca sativa</i>	Wild parsnip	Flower	Found commonly along roadsides; widespread and abundant; spread by seed
<i>Perilla frutescens</i>	Beefsteak plant	Flower	Garden escape; widespread mostly along roadsides; spreads by seed
<i>Polygonum (Falopia) cuspidatum</i>	Japanese knotweed	Flower	Invasive in many states; difficult to control; spreads by roots and seeds
<i>Ranunculus ficaria</i>	Lesser celandine	Flower	Spreads by roots and shoots; can be very aggressive in wetlands
<i>Trapa natans</i>	Water chestnut	Flower	Wetland plant; should not be introduced as it will escape, spread, and naturalize
<i>Bromus tectorum</i>	Cheatgrass	Grass	Annual grass; very invasive throughout the west; spreads by seed
<i>Microstegium vimineum</i>	Japanese stilt grass	Grass	Annual grass; invasive in many states; spreading through woodlands by seed
<i>*Miscanthus sinensis</i>	Maiden grass	Grass	Commonly planted ornamental grass which can escape and spread by seed
<i>Phalaris arundinacea</i>	Reed canary grass	Grass	Aggressive wetland grass; native and introduced strains; widespread and abundant
<i>Phragmites australis</i>	Common reed	Grass	Native and introduced strains; wetland grass which can form huge colonies
<i>Sorghum bicolor ssp. drummondii</i>	Shattercane	Grass	Grass; PA noxious weed
<i>Sorghum halepense</i>	Johnsongrass	Grass	Grass; PA noxious weed; spreads by roots and seeds
<i>*Berberis thunbergii</i>	Japanese barberry	Shrub	Escaped from cultivation and invasive in many states; spread by birds
<i>Berberis vulgaris</i>	European barberry	Shrub	Escaped from cultivation; spread by birds
<i>Elaeagnus angustifolia</i>	Russian olive	Shrub	Escaped from plantings and invasive in many states; spread by birds
<i>Elaeagnus umbellata</i>	Autumn olive	Shrub	Escaped from plantings and invasive in many states; rapidly spread by birds
<i>*Euonymus alatus</i>	Winged Euonymus	Shrub	Escaped from plantings; invasive in moist forests
<i>Ligustrum obtusifolium</i>	Border privet	Shrub	Escaped from cultivation; seeds spread by birds
<i>Ligustrum vulgare</i>	Common privet	Shrub	Planted very commonly in the past and escaped; invasive in many states
<i>Lonicera maackii</i>	Amur honeysuckle	Shrub	Escaped from plantings; seeds spread by birds
<i>Lonicera morrowii</i>	Morrow's honeysuckle	Shrub	Escaped from plantings and invasive in many states; seeds spread by birds
<i>Lonicera morrowii x tatarica</i>	Bell's honeysuckle	Shrub	Escaped from cultivation
<i>Lonicera standishii</i>	Standish honeysuckle	Shrub	Escaped from plantings; seeds spread by birds
<i>Lonicera tatarica</i>	Tartarian honeysuckle	Shrub	Escaped from plantings; seeds spread by birds
<i>Rhamnus catharticus</i>	Common buckthorn	Shrub	Becoming a problem in PA
<i>Rhamnus frangula</i>	Glossy buckthorn	Shrub	Becoming a problem in PA
<i>Rosa multiflora</i>	Multiflora rose	Shrub	Invasive in many states; seeds spread by birds; PA noxious weed
<i>Rubus phoenicolasius</i>	Wineberry	Shrub	Common bramble; not cultivated; spreads by seed
<i>*Spiraea japonica</i>	Japanese spiraea	Shrub	Frequently planted; escaped in some areas
<i>*Viburnum opulus var. opulus</i>	Guelder rose	Shrub	Resembles native <i>Viburnum trilobum</i> which it replaces; both are cultivated and planted
<i>*Acer platanoides</i>	Norway maple	Tree	Commonly planted and escaped; invasive in many states; wind spreads prolific seeds
<i>Acer pseudoplatanus</i>	Sycamore maple	Tree	Escaped from cultivation; wind spreads prolific seeds
<i>Ailanthus altissima</i>	Tree-of-heaven	Tree	Invasive in many states; wind spreads prolific seeds
<i>Paulownia tomentosa</i>	Empress tree	Tree	Prolific seeds fall to start new seedlings
<i>*Pyrus calleryana</i>	Callery pear	Tree	Commonly planted street tree; becoming a problem as an escape
<i>Ulmus pumila</i>	Siberian elm	Tree	Escaped from cultivation
<i>Akebia quinata</i>	Fiveleaf akebia	Vine	Escaped from cultivation and becoming a major problem in the Philadelphia area
<i>Ampelopsis brevipedunculata</i>	Porcelain-berry	Vine	Escaped from cultivation; spread by birds
<i>Celastrus orbiculatus</i>	Oriental bittersweet	Vine	Escaped from cultivation and invasive in many states; spreading rapidly (by birds)
<i>Lonicera japonica</i>	Japanese honeysuckle	Vine	Invasive in many states
<i>Polygonum perfoliatum</i>	Mile-a-minute vine	Vine	Range expanding, PA Noxious weed
<i>Pueraria lobata</i>	Kudzu	Vine	Invasive in many states; PA Noxious weed

This list of invasive species is not meant to be definitive, but rather a guideline to some of the most troublesome species that degrade native plant communities in Pennsylvania. These species were chosen from a more extensive list compiled from adjacent state or regional lists of invasive plant species. Input was sought from experienced individuals familiar with Pennsylvania's flora from a field perspective. For a more extensive list of invasive species, please contact DCNR, Bureau of Forestry, P.O. Box 8552, Harrisburg, PA 17105-8552.

**SITUATIONAL INVASIVES:** Some plants become problematic invasive species to a given area. For example, some species are commonly planted for quick groundcover but can be a serious problem when planted, seeded or discarded near native herbaceous communities. These situational invasives require greater care and monitoring when planted near native plant communities. These species include: *Crown-Vetch*, *Coronilla varia*; *English Ivy*, *Hedera helix*; *\*Tall fescue*, *Festuca elatior*; *\*Orange day-lily*, *Hemerocallis fulva*, *periwinkle*, *Yinca minor*; and *Chinese and Japanese wisteria*, *wisteria sinensis* and *w. floridibunda*.

**(ASTERIX):** An asterix (\*) denotes that the species has cultivars that are not known to be invasive. Cultivars are cultivated varieties of plant species bred for predictable attributes like shorter height, showier flowers, or colored foliage. An example is Norway Maple 'Crimson King' grown for its reddish leaves; this cultivar is not known to be invasive. Another example are the day lilies which have a host of cultivars that are not known as invasives. If you choose to plant a cultivar of an invasive species, ask a PA certified horticulturalist (PCH), your Penn State extension agent, or a professional horticulturalist about the cultivar's potential to be invasive.

APPENDIX C

TECHNICAL REVIEW CHECKLIST (OPTIONAL)

THESE CHECKLISTS WERE DEVELOPED TO BE UTILIZED BY CONSERVATION DISTRICTS FOR NPDES SITES

Technical Review

Project Name: \_\_\_\_\_

Applicant: \_\_\_\_\_

Document#: \_\_\_\_\_

Written Narrative

- Calculations for permanent stormwater BMPs are consistent with the E&S Report
- Curve numbers are consistent with Stormwater BMP Manual or stormwater methodology used

Infiltration:

- Infiltration/Geotechnical Report has addressed the following
  - Water Re-use
  - Infiltration
  - If unable to infiltrate, explanation of site-specific constraints
- Elevation of each infiltration test provided
- Elevation of bottom of each infiltration BMP is provided (in report or on drawings)
- Summary of pervious and impervious areas for each infiltration BMP provided
- Summary of pre-development and post-development runoff volume for each infiltration BMP provided
- Infiltration period provided (not to exceed 72 hours from the end of the design storm)
- Infiltration rates **including the safety factor and reduction factor** are not less than 0.05 and inches per hour

Worksheets:

*Stormwater calculation volume control credits and criteria – worksheets from Chapter 8.8 of the BMP manual must be provided as applicable.*

- Worksheet 1 – General Site information, provided and appears to be completed properly
- Worksheet 2, appears to be completed properly
- Worksheet 3, appears to be completed properly

Volume Control Guideline 1 – Flow Chart B

- Worksheet 4, appears to be completed properly

- Worksheet 5, appears to be completed properly
- Worksheet 6, appears accurate

**Water Quality Calculations – Flow Chart D (if needed)**

- Worksheet 10 appears to be completed properly

Plans/Drawings

- PCSM Plan legend meets the E&S Standards for Maps and Drawing requirements
- Proposed limits of disturbance on PCSM and E&S Plans are consistent
- All details for permanent stormwater BMPs are consistent with E&S Plan
- PCSM Plan is consistent with the information as provided in the PCSM report and NOI
- Locations of infiltration testing represents locations of proposed BMPs

The following features are identified on plans:

Existing	Proposed	
<input type="checkbox"/>	<input type="checkbox"/>	Labeled Contours
<input type="checkbox"/>	<input type="checkbox"/>	Roads
<input type="checkbox"/>	<input type="checkbox"/>	Buildings
<input type="checkbox"/>	<input type="checkbox"/>	Utilities
<input type="checkbox"/>	<input type="checkbox"/>	BMPs
<input type="checkbox"/>	<input type="checkbox"/>	Channels
<input type="checkbox"/>	<input type="checkbox"/>	Floodplains
<input type="checkbox"/>	<input type="checkbox"/>	Floodways
<input type="checkbox"/>	<input type="checkbox"/>	Stormwater Systems
<input type="checkbox"/>	<input type="checkbox"/>	Streams
<input type="checkbox"/>	<input type="checkbox"/>	Watercourses
<input type="checkbox"/>	<input type="checkbox"/>	Water Bodies
<input type="checkbox"/>	<input type="checkbox"/>	Wetlands

- Proposed features on PCSM Plan and E&S Plan are consistent
- Wetland Boundaries on PCSM Plan and E&S Plan are consistent
- Will the runoff impact the hydrology of any EV wetlands?  Yes  No

Ownership, Operations and Maintenance Procedures

- Inspection Schedule of each BMP is provided
- Directions for maintenance and/or replacement of each BMP are provided
- Directions for sediment disposal are provided

## Technical Review

Project Name: \_\_\_\_\_

Applicant: \_\_\_\_\_

Document#: \_\_\_\_\_

### Written Narrative

- Routing analysis to demonstrate peak control for the 2-year through 100-year storm events appears to be adequate to control peak flows. (*Routing should consider the benefits of BMPs*)
- Special Conditions stated in report as required may be conditions of the permit. (*Items used by the consultant may need to be added as a special condition to the permit. It should be at the discretion of the DEP regional office.*)

### Infiltration:

- Infiltration calculations include a safety factor

### Thermal Impact Analysis:

- Applicant has adequately addressed thermal impacts of stormwater runoff from the project's impervious surfaces in order to manage, avoid, and minimize or mitigate thermal impacts to surface waters.

### Worksheets:

#### Volume Control Guideline 1 – Flow Chart B

- 5.4.1 – Protect Sensitive/ Special Value Features has been addressed
- 5.4.2 – Protect/Conserve/enhance Riparian Areas has been addressed
- 5.4.3 – Protect/Utilize Natural Flow pathways in Overall Stormwater Planning Design has been addressed
- 5.6.1 – Minimize Total Disturbed Area-Grading has been addressed
- 5.6.2 – Minimize Soil Compaction in Disturbed Areas has been addressed
- 5.6.3 – Re-vegetate and Re-Forest Disturbed Areas, Using native Species has been addressed
- 5.8.1 – Rooftop Disconnection has been addressed
- 5.8.2 – Disconnect from Storm Sewers has been addressed

#### Water Quality Calculations – Flow Chart D (if needed)

- Worksheet 11, appears to be completed properly
- Worksheet 12, appears to be completed properly
- Worksheet 13, appears to be completed properly