STORMWATER MANAGEMENT ORDINANCE

ORDINANCE NO. 25-02

MUNICIPALITY OF

HOWE TOWNSHIP

PERRY COUNTY, PENNSYLVANIA

Adopted at a Public Meeting Held on

September 4, 2025

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ARTICLE I – GENERAL PROVISIONS

Section 101. Short Title

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

Section 102. Statement of Findings

The Board of Supervisors of the Township finds that:

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

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

C. Existing improvements that lack compliant stormwater controls and are proposed for re-development disproportionately increase the cost of comprehensive stormwater management for Howe Township.

D. Stormwater is an important water resource that provides groundwater recharge for water supplies and supports the base flow of streams.

E. The use of green infrastructure and low impact development (LID) is intended to address the root cause of water quality impairment by using systems and practices which use or mimic natural processes to: 1. infiltrate and recharge, 2. evapotranspire, and/or 3. harvest and use precipitation near where it falls to earth. Green infrastructure practices and LID contribute to the restoration or maintenance of pre-development hydrology.

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

Section 103. Purpose

The purpose of this Ordinance is to promote health, safety, and welfare within Howe Township and its watersheds by minimizing the harms and maximizing the benefits described in Section 102 of this Ordinance, through provisions designed to:

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

B. Preserve natural drainage systems.

C. Manage stormwater runoff close to the source, reduce runoff volumes, and mimic predevelopment hydrology.

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 streambeds.

G. Provide proper operation and maintenance (O&M) of all stormwater best management practices (BMPs) that are implemented within Howe Township.

H. Provide standards to meet NPDES permit requirements.

Section 104. Statutory Authority

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

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

Section 106. Repealer

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

Section 107. Severability

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

Section 108. Compatibility with Other Requirements

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

Section 109. 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 Howe Township purporting to validate such a violation.

Section 110. Waivers

A. If Howe Township determines that any requirement under this Ordinance cannot be achieved for a particular regulated activity, Howe Township may, after an evaluation of alternatives, approve measures other than those in this Ordinance, subject to Section 110, paragraphs B and C.

B. Waivers or modifications of the requirements of this Ordinance may be recommended for approval by the Planning Commission and may be approved or denied by the Board of Supervisors, if enforcement will exact undue hardship because of peculiar conditions pertaining to the land in question, provided that the modifications will not be contrary to the public interest and that the purpose of the Ordinance is preserved. Cost or financial burden shall not be considered a hardship. Modification may be considered if an alternative standard or approach will provide equal or better achievement of the purpose of the Ordinance. A request for modifications shall be in writing. The written request shall provide the facts on which the request is based, the provision(s) of the Ordinance involved, and the proposed modification. Any SWM Site Plan, Report, or other related changes not matching the written request are considered void.

C. No waiver or modification of any regulated stormwater activity involving earth disturbance greater than or equal to one acre may be granted by Howe Township unless that action is approved in advance by the Department of Environmental Protection (DEP) or the delegated county conservation district.

ARTICLE II – DEFINITIONS

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

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

B. The words and phrases “includes”, “including”, “for example”, “e.g.”, and/or other related words and phrases shall not limit the term to the specific example, but are intended to extend their meaning to all other instances of like kind and character.

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

These definitions do not necessarily reflect the definitions contained in pertinent regulations or statutes, and are intended for this Ordinance only.

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, pasturing and raising of livestock, and installation of approved agriculturally-related conservation measures. Construction of new buildings or impervious area is not considered an agricultural activity.

Applicant – A landowner, developer, or other person/entity who has filed an application to the Municipality for approval to engage in any regulated activity at a project site in the Municipality. “Applicant” also refers to any person/entity that may be exempt from certain, but not all, provisions of this Ordinance.

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

Conservation District – A conservation district, as defined in Section 3(c) of the Conservation District Law (3 P. S. § 851(c)), 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.

Conveyance Facility – A system or structure designed to collect and transport stormwater runoff from a specific area to a designated discharge point. These facilities can be natural, like streams and swales, or constructed, such as pipes, channels, and culverts.

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

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

DEP – The Pennsylvania Department of Environmental Protection.

Development Site (Site) – See Project Site.

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

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

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

Existing Condition – The dominant land cover and/or condition during the 5-year period immediately preceding a proposed regulated activity.

Facility, Conveyance – Any structure or practice that is designed and/or constructed to transmit or otherwise transfer stormwater runoff from one location to another. Typical Conveyance Facilities include but are not limited to: swales and other open channel facilities; stormsewers; and pipe culverts.

Facility, Erosion and Sediment Control – Any structure or practice that is designed and/or constructed to capture, reduce, prevent, or otherwise mitigate the effects of stormwater runoff and sedimentation. Typical Erosion and Sediment Control Facilities include but are not limited to: erosion control matting, silt fence, silt sock, inlet protection, temporary seeding, and sediment ponds. **Erosion and Sediment Control Facility** may be designated as **ESC Facility** throughout this Ordinance.

Facility, Stormwater Management – Any structure or practice that is designed and/or constructed to store or otherwise attenuate stormwater runoff. Typical stormwater management facilities include but are not limited to: detention and retention basins; rain gardens; and infiltration facilities. **Stormwater Management Facility** may be designated as **SWM Facility** throughout this Ordinance.

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. Also includes areas that comprise Group 13 Soils, as listed in Appendix A of the Pennsylvania DEP Technical Manual for Sewage Enforcement Officers (as amended or replaced from time to time by DEP).

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

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

Green Infrastructure – Systems and practices that use or mimic natural processes to infiltrate, evapotranspire, or reuse stormwater on the site where it is generated.

HEC-RAS – A software that allows the user to perform one-dimensional steady flow, one and two-dimensional unsteady flow calculations, sediment transport/mobile bed computations, and water temperature/water quality modeling.

Hotspot Use – Any proposed land use that has the potential to have an increased amount of stormwater pollutant runoff, generally based upon its use or generation of pollutants, including but not limited to: chemicals, oil-based products, pesticides, fertilizers, large traffic volume, and/or outdoor storage. Example uses include but are not limited to automobile repair, filling, and washing facilities; automobile, boat, and trailer storage and/or sales; commercial and/or retail uses with parking lots; restaurants with drive-thrus; industrial or heavy manufacturing establishments; warehousing; athletic fields; golf courses; and swimming pools not accessory to an individual residential use.

Hydrologic Soil Group (HSG) – Infiltration rates of soils vary widely and are affected by subsurface permeability as well as surface intake rates. Soils are classified into four HSGs (A, B, C, and D) according to their minimum infiltration rate, which is obtained for bare soil after prolonged wetting. The NRCS defines the four groups and provides a list of most of the soils in the United States and their group classification. The soils in the area of the development site may be identified from a soil survey report that can be obtained from local NRCS offices or conservation district offices. Soils become less pervious as the HSG varies from A to D (NRCS[1,2]). Appendix F

Impervious Surface (Impervious Area) –Any substance placed on a lot which covers the surface in such fashion as to prevent natural absorption of surface water by the earth so covered. The following items shall be deemed to be impervious material: buildings, concrete sidewalks, paved driveways and parking areas, compacted gravel, cracker dust, swimming pools and other nonporous structures or materials. Pervious pavement and similar surfaces that are specifically designed to allow for porous infiltration of stormwater, however, may be used with proper operation and maintenance provisions in lieu of traditional SWM conveyance facilities, such as inlets and pipes, in order to provide for the transmission of stormwater runoff to subsurface SWM Facilities; if this method of transmission is utilized, the surfaces in question are still considered impervious surfaces for this Ordinance and the purpose of modeling.

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

Land Development (Development) – As defined in the Howe Township Subdivision and Land Development Ordinance.

Low-flow Channel – A channel designed to move water rapidly during small storm events to nearby watercourses.

Low Impact Development (LID) – Site design approaches and small-scale stormwater management practices that promote the use of natural systems for infiltration, evapotranspiration, and reuse of rainwater. LID can be applied to new development, urban retrofits, and revitalization projects. LID utilizes design techniques that infiltrate, filter, evaporate, and store runoff close to its source. Rather than rely on costly large-scale conveyance and treatment systems, LID addresses stormwater through a variety of small, cost-effective landscape features located on-site.

Manning's Equation – An equation used to calculate open channel flow. It is an empirical equation that applies to uniform flow in open channels and is a function of the channel velocity, flow area and channel slope.

Municipality – Howe Township, Perry County, Pennsylvania.

Nonpoint Source Pollution – Pollutants carried into waterways such as rivers, streams, lakes, wetlands, and groundwater from rain and snowmelt.

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

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

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

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

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

Regulated Activities – Any earth disturbance activities, any activities that involve the alteration or development of land in a manner that may affect stormwater runoff, or any activities that clearly increase the pollution potential of stormwater runoff.

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

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

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

Riparian Buffer – A permanent area of trees and shrubs located adjacent to streams, lakes, ponds, and wetlands.

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

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

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

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

Stormwater Management Facility – A structure or device designed to control the flow and characteristics of stormwater runoff, including its quantity, quality, rate of release, and velocity.

Stormwater Management Permit – The permit prepared by the Applicant or their representative providing necessary details, including but not limited to disturbance area, impervious areas, and other items. **Stormwater Management Permit** will be designated as **SWM Permit** throughout this Ordinance, and shall be divided into two categories:

1. **Minor SWM Permit** – Regulated activities that result in: the alteration or development of 1,000-2,999 SF of land in a manner that may affect stormwater runoff; earth disturbances of 5,000 to 43,559 SF; and/or the cumulative increase of 1,000-2,999 SF of impervious area. “Cumulative” shall include incremental and phased development. (for example: Adding a 1,000 SF pole building to a property will require a Minor SWM Permit)

2. **Major SWM Permit** – Regulated activities that result in: the alteration or development of greater than or equal to 3,000 SF of land in a manner that may affect stormwater runoff; earth disturbances of greater than or equal to 43,560 SF; and/or the cumulative increase of greater than or equal to 3,000 SF of impervious area. Regulated activities taking place on sites: 1. with greater than or equal to 3,000 SF of existing impervious area; 2. that are not controlling the runoff from the existing impervious area in a manner consistent with this Ordinance; and 3. whose activities do not qualify for the exemptions listed in Section 302, shall also fall under the category of Major SWM Permit. “Cumulative” shall include incremental and phased development. (for example: A new home with more than 3,000 SF of impervious will require a Major SWM Permit)

Stormwater Management Report – The report prepared by the Applicant or their representative documenting the necessary design computations and data in order to demonstrate that the maximum practicable measures have been taken to meet the requirements of this Ordinance. **Stormwater Management Report** will be designated as **SWM Report** throughout this Ordinance.

Stormwater Management Site Plan – The plan prepared by the Applicant or their representative indicating how stormwater runoff will be managed at the development site in accordance with this Ordinance. **Stormwater Management Site Plan** will be designated as **SWM Site Plan** throughout this Ordinance.

Subdivision – As defined in the Howe Township Subdivision and Land Development Ordinance.

Trash Rack – A sturdy cage-like stormwater filtration structure that keeps large debris and trash out of stormwater systems and waterways.

USDA – United States Department of Agriculture.

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

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

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

ARTICLE III – STORMWATER MANAGEMENT STANDARDS AND METHODOLOGIES

Section 301. General Requirements

A. For all regulated activities, SWM Facilities shall be designed, implemented, operated, and maintained to meet the purposes and requirements of this Ordinance and to meet all requirements under Title 25 of the Pennsylvania Code, the Clean Streams Law, and the Storm Water Management Act. Various SWM BMPs and their design standards are listed in the *Pennsylvania Stormwater Best Management Practices Manual* (BMP Manual[3]), as amended and updated, which shall be followed unless otherwise noted within this or other Ordinances or regulations of the Municipality.

B. For all regulated activities, ESC Facilities shall be designed, implemented, operated, and maintained during the regulated earth disturbance activities (e.g., during construction) to meet the purposes and requirements of this Ordinance and to meet all requirements under Title 25 of the Pennsylvania Code and the Clean Streams Law. Various ESS BMPs and their design standards are listed in the *Erosion and Sediment Pollution Control Program Manual* (E&S Manual[4]), as amended and updated, which shall be followed unless otherwise noted within this or other Ordinances or regulations of the Municipality.

C. All design and construction shall comply with all Howe Township Ordinances and the latest edition of the building code.

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

   1. Protect health, safety, and property.

   2. Meet the water quality goals of this Ordinance by implementing measures to:

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

      b. Maintain or extend riparian buffers.

      c. Avoid erosive flow conditions in natural flow pathways.

      d. Minimize thermal impacts to waters of this Commonwealth.

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

      f. Prevent pollution of stormwater runoff by ceasing activities that clearly contaminate runoff.

   3. Incorporate the techniques for LID Practices described in the BMP Manual.

   4. Incorporate methods described in the Pennsylvania Stormwater Best Management Practices Manual (BMP Manual), latest edition. If methods other than green infrastructure and LID methods are proposed to achieve the volume and rate controls required under this Ordinance, the SWM Site Plan must include a detailed justification demonstrating that the use of LID and green infrastructure is not practicable.

E. For all regulated activities, unless preparation of a SWM Site Plan and Report is specifically exempted in Section 302:

   1. Preparation, submission, and implementation of a SWM Site Plan and SWM Report is required.

   2. No regulated activities shall commence until the Municipality issues written approval of a SWM Site Plan.

F. SWM Site Plans approved by the Municipality shall be on site throughout the duration of the regulated activity.

G. Impervious areas:

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

2. For development taking place in stages or phases, the entire development plan must be used in determining conformance with this Ordinance.

3. For projects that add impervious area to a parcel, the total impervious area on the parcel is subject to the requirements of this Ordinance. Volume and peak rate controls in Article IV do not need to be retrofitted to existing impervious areas unless otherwise specified.

H. Stormwater flows onto adjacent or downstream property shall not be created, increased, relocated, significantly concentrated, or otherwise altered to impact adjacent or downstream properties without written approval from the affected property owner(s). Provided, however, that if the Applicant demonstrates compliance with this ordinance such that the requirements of this ordinance have been met or exceeded, such approval from adjacent or downstream property owners shall not be required. Such stormwater flows shall be subject to the requirements of this Ordinance.

I. No stormwater or other related discharges shall discharge directly into a public right-of-way or onto paved surfaces intended for vehicular or pedestrian travel (including but not limited to parking lots, public roads, and sidewalks.)(collectively herin “Public Surfaces”). If discharging onto a private street, approval from all parties having ownership, partial ownership, or shared ownership of the private street shall be provided. The term “directly for the purpose of this Ordinance will be dependent upon site conditions, the concentration and volume of the discharge, and intermediary surfaces, but in no case shall a discharge point directed toward a Public Surface be closer than 25 feet to the Public Surface.

J. All regulated activities shall limit surface water runoff or stormwater discharges into areas of karst geology or where karst features are observed.

K. For regulated activities involving the subdivision and/or land development of 5 or more lots or structures, communal SWM and Conveyance Facilities with a single entity responsible for operation and maintenance of all facilities shall be required. Stormwater management may not be accomplished by utilizing SWM facilities individually designed for and placed within or on each lot or structure, and the operation and maintenance of such communal facilities shall not be delegated to individual lot owners, tenants, or other multiples of entities within the project.

M. Any regulated activities within an existing, known stormwater management problem area, or having the potential to negatively impact an existing, known stormwater management problem area, may be required by the Municipality to include additional, reasonable measures beyond those listed within this Ordinance in order to ensure that any effects of the regulated activity do not exacerbate or further contribute to the issues affecting said problem area. In no case shall the Applicant be required to resolve the existing, known stormwater management problems beyond the obligations so-listed.

N. The Municipality may, after consultation with Perry County Conservation District and/or DEP, approve measures for meeting the state water quality and other stormwater runoff 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.

Section 302. Exemptions

A. Regulated activities that result in any one or more of (1) the alteration or development of less than 1,000 SF of land in a manner that may affect stormwater runoff; (2) earth disturbances of less than 5,000 SF; or (3) the cumulative increase of impervious area less than 1,000 SF since the first regulated instance on a property under this Ordinance or the preceding versions of the Howe Township stormwater regulations, regardless of whether a permit was properly applied for and received, are exempt from the requirements in Article IV (except Section 410: Closeout, for Minor SWM Permits) of this Ordinance. Reduced requirements for small projects will be according to Table 1.

B. Regulated activities that require a Minor SWM Permit are exempt from the requirements in Section 309.C of this Ordinance (Rate Controls), Sections 303 to 309 and Article IV (except Sections 401.a Minor SWM Site Plan Requirements and 410: Closeout, for Minor SWM Permits) of this Ordinance; provided that the Applicant provides a completed Site Design Worksheet and applicable Stormwater Facility Calculations for the design of volume controls (see Appendix C).

C. Agricultural activity is exempt from the requirements in Article IV of this Ordinance provided the activities are performed according to the requirements of 25 Pa. Code Chapter 102.

D. Forest management and timber operations are exempt from the requirements in Article IV of this Ordinance provided the activities are performed according to the requirements of 25 Pa. Code Chapter 102.

E. Exemptions from any provisions of this Ordinance shall not relieve the Applicant from the requirements in Section 301. If any of the requirements in Section 301 are not met, the Municipality at its sole discretion may revoke any exemptions from any provisions of this Ordinance without the necessity of any proceedings for revocation, and the Applicant may be required by the Municipality to cease all activities and/or comply with the provisions of this Ordinance.

F. Not eligible for exemption: additions, modifications, or alterations to sites, structures, projects, plans, or any other items that previously required stormwater management, whether in part or in whole (for example: adding a 1,000 SF pole building as part of a larger subdivision and land development plan that required stormwater management would *not* be an exempt regulated activity).

G. The Municipality may deny or revoke any exemption pursuant to this Section at any time for any project that the Municipality believes may pose a threat to public health and safety or the environment.

Table 1 – Reduced Stormwater Management Requirements

Impervious and/or Disturbed Area (SF)	Applicant Must Submit to the Municipality
Exempt 0-999 SF new impervious area And 0-4,999 SF disturbed area	---
Minor Stormwater Management 1,000-2,999 SF new impervious area And/or 5,000-43,559 SF disturbed area And Hydrologic Soil Group A, B, or C Soils	*Minor Stormwater Permit*: Site Design Worksheets and Sketch Plan (Appendix D), volume controls, Operation and Maintenance Agreement, and Financial Security
Major Stormwater Management 3,000 SF or more new impervious area Or 43,559 SF disturbed area Or Hydrologic Soil Group D	*Major Stormwater Permit*: SWM Site Plan and Report, Volume and Rate Controls, Operation and Maintenance Agreement, and Financial Security

H. For any of the activities regulated by this Ordinance and not eligible for the exemptions provided in Section 302, the final approval of subdivision and/or land development plans, the issuance of any building or occupancy permit, the issuance of a Major Stormwater Permit, or the commencement of any land disturbance activity, may not proceed until the Applicant has received written approval of a SWM Site Plan from the Municipality

Section 303. Riparian Buffers

A. For all regulated activities requiring a Major SWM Permit, a Riparian Buffer Easement shall be created, executed, and recorded to memorialize an existing or potential Riparian Buffer. Riparian Buffers must include the right of access to permit the Municipality or other State or regulatory agency to enter the affected property to inspect the Riparian Buffer areas.

B. Except as required by Chapter 102, the Riparian Buffer Easement shall be measured to be the greater of the limit of the 100-year floodplain or a minimum of 50 feet from the top of the streambank (on each side).

C. When present, provisions for permanent access to Riparian Buffer Easements shall also be granted to the Municipality via a note as listed in Section 401.b.X.8.

D. Minimum Management Requirements for Riparian Buffers:

1. Existing native vegetation shall be protected and maintained within the Riparian Buffer Easement. If no or limited existing native vegetation is present, additional native vegetation shall be specified and planted within the Riparian Buffer Easement to create a diverse native plant community appropriate to the intended ecological context of the site.

2. Whenever practicable, invasive vegetation shall be actively removed, and the Riparian Buffer Easement shall be specified and planted with native trees, shrubs, and other native vegetation in the invasive vegetation's place to create a diverse native plant community appropriate to the intended ecological context of the site.

E. The Riparian Buffer Easement shall be enforceable by the Municipality and shall be recorded in the appropriate County Recorder of Deeds Office so that it shall run with the land and shall limit the use of the property located therein. The easement shall allow for continued private ownership and shall count toward the minimum lot area as required by Zoning, unless otherwise specified in the Zoning Ordinance.

F. Any permitted use within the Riparian Buffer Easement shall be conducted in a manner that will maintain the extent of the existing 100-year floodplain, improve or maintain the stream stability, leave native vegetation undisturbed as much as is practicable, and preserve and protect the ecological function of the floodplain.

G. Specific Prohibitions within Riparian Buffer Easements:

1. Septic drainfields and sewage disposal systems

2. Livestock grazing and access, except areas specifically necessary for livestock crossing of waterways

H. Specific Requirements for Uses within Riparian Buffer Easements:

1. All uses shall comply with the ordinances, provisions, and regulations of the Municipality, including among others, the Municipality Floodplain Ordinance where applicable, and any other applicable entities.

2. All uses shall limit vegetative clearing to the minimum extent necessary for the execution of the use; general clearing of the Riparian Buffer Easement is not permitted.

3. Trails shall be for non-motorized use only.

4. Docks, boat ramps, and other similar improvements shall be comprised of stable, non-erosive material(s).

Section 304. Erosion and Sedimentation Requirements During Construction Activities

A. The applicant shall meet requirements as contained in 25 PA Code, Chapters 92 and 102 as required and applicable as follows:

1. The implementation and maintenance of erosion and sediment control BMPs.

2. Development of written plans.

3. Submission of plans for approval.

4. Obtaining Erosion and Sediment Control and NPDES permits.

5. Maintaining plans and permits on site.

B. Evidence of any necessary plan or permit approval for Earth Disturbance activities from PADEP or the Perry County Conservation District must be provided to the Municipality.

C. A copy of the approved Erosion and Sediment Control Plan and any other permit, as required by PADEP or the Perry County Conservation District, shall be available at the project site at all times if required under Chapter 102.

D. Construction of temporary roadways (e.g., for utility construction, timber harvesting, etc.) shall comply with all applicable standards for erosion and sedimentation control and stream crossing regulations under 25 PA Code, Chapters 102 and 105. The Erosion and Sedimentation Control Plan shall be submitted to the Perry County Conservation District for approval and shall address the following, as applicable:

1. Design of the roadway system, including haul roads, skid roads, landing areas, trails, and storage and staging areas.

2. Runoff control structures (e.g., diversions, culverts, detention ponds, etc.).

3. Stream crossings for both perennial and intermittent streams.

4. Access to public roadways, including design of rock construction entrance for mud and debris control.

5. A remediation plan for restoring the disturbed area through re-grading, topsoil placement, reseeding, and other stabilization techniques, as required.

E. Additional erosion and sedimentation control design standards and criteria that must be applied where infiltration BMPs are proposed include the following:

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

2. Infiltration BMPs shall be protected from receiving sediment-laden runoff.

3. The source of protection for infiltration BMPs shall be identified (i.e. orange construction fence surrounding the perimeter of the BMP).

Section 305. Total Maximum Daily Load (TMDL) Requirements

A. Agricultural activities contributory to a watershed within Perry County containing an established non-point source (agricultural) TMDL, shall be conducted in compliance with Chapter 102 (Erosion and Sediment Pollution Control), Chapter 91 - Section 91. 36 (General Provisions related to Manure Management) and Act 38 (Nutrient Management).

B. This section shall apply also to agricultural activities conducted in watersheds where TMDLs are established in the future

Section 306. General Design Guidelines

A. Stormwater shall not be transferred from one watershed to another, unless (1) the watersheds are sub-watersheds of a common watershed which join together within the perimeter of the property; (2) the effect of the transfer does not alter the peak rate discharge onto adjacent lands; or (3) easements from the affected landowner(s) are provided.

B. Consideration shall be given to the relationship of the subject property to the drainage pattern of the watershed. A concentrated discharge of stormwater to an adjacent property shall be within an existing watercourse or confined in an easement or returned to a pre-development flow type condition.

C. Stormwater BMPs and recharge facilities are encouraged (e.g., rooftop storage, drywells, recreation area ponding, diversion structures, porous pavements, holding tanks, infiltration systems, stream channel storage, in-line storage in storm sewers, and grading patterns). They shall be located, designed, and constructed in accordance with the latest technical guidance published by PADEP, provided they are accompanied by detailed engineering plans and performance capabilities and supporting site specific soils, geology, runoff and groundwater and infiltration rate data to verify proposed designs. Additional guidance from other sources may be accepted at the discretion of the Municipal Engineer (a pre-application meeting is suggested).

D. All existing and natural watercourses, channels, drainage systems and areas of surface water concentration shall be maintained in their existing condition unless an alteration is approved by the appropriate regulatory agency.

E. No outlet structure from a stormwater management facility, or swale, shall discharge directly onto a Municipal or State roadway.

F. The invert of all SWM facilities and underground infiltration/ storage facilities shall be located a minimum of two (2) feet above the seasonal high groundwater table or other soil limiting zone. The invert of stormwater facilities may be lowered if adequate sub-surface drainage, which does not alter the existing water table level, is provided.

G Any stormwater management facility having a maximum ponding depth of three (3) feet or more shall be fenced with a minimum four (4) foot high fence of material acceptable to the Municipality. Gates shall be self-closing and self-latching, and shall have a minimum opening of ten (10) feet. In addition, when deemed a public safety hazard at the sole discretion of the Municipality, any SWM facility may be required to be fenced with a minimum 4-foot high fence of material and design acceptable to the Municipality

H. SWM facilities excavated to carbonate rock must either be fitted with an impervious clay liner, or over-excavated four (4) feet and refilled with a suitable material mix. Suitable backfill material is subject to the approval of the Municipal Engineer.

I. SWM Facilities shall be set back a minimum of 10’ from all structures, property lines, and rights-of-way.

J. .The type, location, and number of landscaping and planting specification shall be provided for all SWM facilities and be specific for each type of facility.

Section 307. SWM Facilities Standards and Methodologies

SWM Facilities shall comply with the below standards as applicable to the proposed facility:

A. All designs shall be consistent with the guidelines set forth in the BMP Manual unless otherwise stated herein.

B. The maximum water depth within any stormwater management facility shall be no greater than six (6) feet when functioning through the primary outlet structure.

C. Infiltration tests performed at the facility locations and proposed basin bottom depths, in accordance with the BMP Manual, must support time-to-empty calculations if infiltration is a factor is the sizing of the stormwater management facility.

D. Impervious low-flow channels are not permitted within SWM facilities installed to meet water quality or groundwater recharge requirements. Facilities designed as water quality/ infiltration BMPs may have a bottom slope of zero. Water storage below the lowest outlet structure stage (i. e. dead storage) is permitted in SWM facilities designed as water quality / infiltration BMPs. Low maintenance, saturation tolerant vegetation must be provided in basins designed as water quality / infiltration BMPs.

E. SWM facilities that are constructed to meet only rate control requirements must have a minimum slope of 1% extending radially out from the primary outlet structure.

F. Basin outflow culverts discharging into floodplains must account for tailwater. Tailwater corresponding to the 100-year floodplain elevation may be used for all design storms, or the Applicant may elect to determine flood elevations of the adjacent watercourse for each design storm. For the purpose of this provision, the floodplain is assumed to be fifty (50) feet from top of stream bank in areas where a floodplain is not designated or where no other evidence is provided.

G. Infiltration facilities 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.

H. Trash racks shall be provided for all orifices equivalent to 12 inches or smaller in diameter.

I. Anti-seep collars shall be provided on all outflow culverts in accordance with the methodology in the E&S Manual. An increase in seepage length of 15 percent must be used in accordance with the requirements for permanent anti-seep collars.

J. Embankment/berm tops shall not be planted with trees. Only vegetation that is 5 feet or lesser in mature height and tolerant to the conditions of embankment planting (for example: lack of water retainage in the soil) may be planted on berm tops. When this requirement is in conflict with other ordinances or regulations (for example: buffer screenings), relief may be granted from this requirement without the need for a waiver at the sole discretion of the Municipal Engineer.

K. Embankment/berm side slopes shall be no steeper than 3:1.

L. Embankment/berm soils shall have low erodibility factors as per the E&S Manual and be identified on the SWM Site Plan.

M. Embankments/berms greater than or equal to 3 feet in height shall:

1. Have a cross-sectional top width of at least 5 feet.

2. Have emergency spillways capable of providing non-erosive release of the post-development 100-year design storm with at least 1 foot of freeboard when the primary outflow structure is blocked.

3. Have cutoff/key trenches of impervious material.

4. The primary outflow structure must be designed to pass all design storms (up to and including the one-hundred-year event) without discharging through the emergency spillway.

5. If a development of a property requires a Major Permit, all SWM Facilities shall be designed to meet the requirements in Section 307.M regardless of the SWM Facility depth.

N. All facilities shall drain over a period of time not less than 24 hours and not more than 72 hours from the end of the facility's inflow hydrograph.

O. Floodplains:

1. Facilities and their points of discharge shall not be located within the 100-year floodplain as determined by FEMA, HEC-RAS, or similar analysis. If no floodplain is defined, the floodplain is assumed to extend 50' from the top of stream bank in both directions.

2. Facility bottom elevations must be greater than 100-year floodplain elevations. If no floodplain is defined, the floodplain is assumed to extend 50' from the top of stream bank in both directions.

3. Novel approaches to stormwater management that require placement within the floodplain, including but not limited to floodplain restorations, may be exempted from the requirements in Sections 307.O.1 and 307.O.2 above at the sole discretion of the Municipal Engineer.

P. SWM Facilities shall not be placed within 15 feet of a property line, public right-of-way, or structure as measured from the nearest point of the facility that may provide water storage.

Q. The bottom elevation of all SWM Facilities shall be located a minimum of 2 feet above the seasonal high groundwater table or other soil limiting zone.

R. The type, location, and number of landscaping and planting specification shall be provided for all SWM and be specific for each type of facility.

Section 308. Conveyance Facilities Standards and Methodologies

Conveyance Facilities shall:

A. Conveyance Facilities shall safely convey the 25-year design storm utilizing Manning's equation.

B. Conveyance Facilities shall be prohibited from connecting to or discharging into existing downstream conveyance or storage systems, whether manmade or natural, without verification of the adequacy of downstream hydraulic capacity.

C. Any conveyance facility that is part of a SWM facilities drainage area shall be sized appropriately to safely convey the 100-year design storm to the SWM facility. In the event that conveyance facilities can not be reasonably designed to convey the 100-year design storm, other methods should be incorporated to ensure the 100-year design storm is directed to the appropriate SWM facility.

D. In the case of stormsewers:

1. Storm sewers must be able to convey post-development runoff from a twenty-five 25) year design storm without surcharging inlets where appropriate.

2. A minimum pipe size of fifteen (15) inches in diameter shall be used in all roadway systems (public or private) proposed for construction and shall be constructed of concrete or plastic.

3. Pipes shall be designed to provide a minimum velocity of two and one-half (2 1/ 2) feet per second when flowing full, but in all cases, the slope shall be no less than 0.5%.

4. Arch pipe of equivalent cross-sectional area may be substituted in lieu of circular pipe where cover or utility conflict conditions exist.

5. On curbed sections, Type C inlets shall be placed on both sides of the street at the low point and longitudinally at an elevation 0.2 feet above the low point.

6. At all roadway low points, swales and easements shall be provided behind the curb or swale and through adjacent properties to channelize and direct any overflow of stormwater runoff away from dwellings and structures.

7. Inlets shall be placed so drainage cannot cross intersections or street centerlines.

8. All inlets in paved areas shall have heavy duty bicycle safe grating consistent with PennDOT Publication 72M. A note to this effect shall be added to the SWM Site Plan or inlet details therein.

9. All pipes entering or exiting inlets shall be cut flush with the inlet wall. A note to this effect shall be added to the SWM Site Plan or inlet details therein.

10. Inlets shall have weep holes covered with geotextile fabric placed at appropriate elevations to completely drain the sub grade prior to placing the base and surface course on roadways.

11. Inlets, junction boxes, or manholes greater than five (5) feet in depth shall be equipped with ladder rungs and shall be detailed on the SWM Site Plan.

12. Inlets shall not have a sump condition in the bottom (unless designed as a water quality BMP).

13. Pipes shall be flush with the bottom of the box or concrete channels shall be poured.

14. Inlets, manholes, pipes, and culverts shall be constructed in accordance with the specifications set forth in PennDOT's Publication 408, latest edition, and as detailed in the PennDOT's Publication 72M - Standards for Roadway Construction RC), latest edition, or as approved by the Municipal Engineer. All material and construction details (inlets, manholes, pipe trenches, etc.), must be shown on the SWM Site Plan, and a note added that all construction must be in accordance with PennDOT's Publication 408 and PennDOT's Publication 72M, latest edition. A note shall be added to the plan stating that all frames, concrete top units, and grade adjustment rings shall be set in a bed of full mortar according to Publication 408.

15. All storm drainage piping (equal to or greater than 12") discharging to the ground surface shall be provided with either reinforced concrete headwalls and end sections or plastic and metal pipe end sections compatible with the pipe size involved in accordance with PennDOT Publication 408 and Publication 72M.

16. Outlet protection shall be provided at all surface discharge points with storm drainage piping (equal to or greater than 12") in order to minimize erosion consistent with the E& S Manual.

17. Pavement base drain shall be provided at all low points in cut areas, toe of slope areas, and other areas as dictated by proven engineering principles and design judgment. All base drain shall be in accordance with PennDOT Publication 408

18. Be constructed with watertight joints. If Conveyance Facilities are proposed that require watertight joints, provide a note as listed in Section 401.b.X.6.

19. Be designed and constructed without “knocking out” any inlet or structure corners. If inlets or structures are proposed, provide a note as listed in Section 401.b.X.7 below.

20. Have inlets, manholes, or similar structures at all horizontal and/or vertical directional changes. Tee joints, elbows, wyes, and similar structures are prohibited.

21. Include inlets set 0.2 feet below the final paving elevation on both sides of the low point of a curbed street.

22. Not have inlets placed in front of or within 3 feet of a driveway.

23. Not have inlets spaced more than 600 feet apart and not have manholes spaced more than 600 feet apart without an inlet in between.

25. All inlets shall provide a minimum 2" drop between the lowest inlet pipe invert elevation and the outlet pipe invert elevation.

D. In the case of gutters:

1. Not allow flow to encroach into adjacent roadway lanes more than one-half of the lane width, exceed 3 inches in depth, or exceed 1.5 inches in depth across driveways.

E. In the case of swales:

1. Swales must be able to convey post-development runoff from a 25-year design storm with 6 inches of freeboard to the top of the swale.

2. Have side slopes no steeper than 3:1.

3. Be designed for stability using velocity (slopes less than 10%) or shear (all slopes) criteria.

4. Multiply velocities or shear stresses by the following factors when swale bends occur:

   a. 1.75: when the bend is 30 to 60 degrees.

   b. 2.00: when the bend is 60 to 90 degrees.

c. 2.5: when the bend is 90 degrees or greater.

5. Be designed for both temporary and permanent conditions in accordance with the latest E&S manual.

6. All swales shall be labeled on the SWM Site Plan, and details provided to adequately construct and maintain the design dimension of the swales.

Section 309. Volume and Rate Control Standards and Methodologies

A. For modeling purposes of both volume and rate controls:

1. Design storm values should be obtained from the following sources depending on methodology:

a. TR-20/TR-55 precipitation frequency estimates: the latest version of the Precipitation-Frequency Atlas of the United States[5], National Oceanic and Atmospheric Administration (NOAA), National Weather Service, for the 24-hour storm. If this method is used for volume and water quality, the 2-year design storm value should be selected for the upper 90% confidence. For rate controls, the 5 through 100-year design storm should be selected from the mean value rainfall depth. For conveyance facilities, the 25-year design storm value should be selected for the upper 90% confidence.

b. Rational Method design intensity values: the latest version of PennDOT Publication 584[6], Chapter 7A, for the 1- Through 100-year Storm (U.S. Customary)

c. If either source is replaced in full by either entity, the latest version of the replacement source shall be utilized.

2. Time of concentration (Tc) shall be calculated utilizing the TR-55 segmental method, with a maximum sheet flow length of 100 feet.

3. For sites with insignificant channelized flow and less than 20% impervious coverage, the time of concentration may be computed using the NRCS equation for lagtime.

a. The minimum Tc for any watershed or sub-watershed shall be 5 minutes.

b. Post-development conditions may assume a 5-minute Tc, but may never be greater than the pre-development Tc for any watershed or sub-watershed.

c. Pre-development Tc values may not be assumed; pre-development Tc values must be calculated.

d. The time of concentration for all inlets shall be a minimum Tc of 5-minutes.

4. Drainage areas tributary to sinkholes or closed depressions in areas underlain by limestone or carbonate geologic features shall be excluded from the modeled point of analysis defining pre-development flows. If left undisturbed during construction activities, areas draining to closed depressions may also be removed from peak runoff rates in the post-development analysis. New, additional contributing runoff shall not be directed to existing sinkholes or closed depressions.

5. The Manning's equation should not be used for analysis of pipes under pressure flow or for analysis of culverts.

6. Runoff coefficients and curve numbers are listed within Appendix B.

7. Existing (pre-development) non-forested pervious areas must be considered meadow in good condition.

8. 20% of existing impervious area, when present, shall be considered meadow in good condition in the model for existing conditions.

9. Inlet control shall be checked at all inlet boxes to ensure the headwater depth during the ten (10) year design event is contained below the top of grate for each inlet box.

10. All SWM facilities shall be verified by routing the proposed 1year, 2-year, 10-year, 25-year, 50-year, and 100-year hydrographs through the facility using the storage indication (Modified Puls) method. The design storm hydrograph shall be computed using a calculation method that produces a full hydrograph. The stormwater management and drainage system shall be designed to safely convey the post-development 100-year storm event to stormwater detention facilities for the purpose of meeting peak rate control.

11. All structures (culvert or bridges) proposed to convey runoff under a Municipal road shall be designed to pass the 50-year design storm with a minimum one (1) foot of freeboard measured below the lowest point along the top of the roadway.

12. All design within State or Federal rights-of-way or that falls under the design criteria of any higher authority must meet the requirements of that agency in addition to meeting the minimum requirements of this Ordinance.

13. Meadow may not be used to model proposed (post-development) non-forested pervious areas unless the area being modeled is specifically designed to be and designated/delineated on the plan to remain as a bona fide meadow that may not be removed or altered by the property owner. Specified native plantings and O&M, including but not limited to routine weeding of invasive species, should be included on the plan and in any agreements if this option is chosen.

14. Alternative methods of modeling volume and rate controls may be accepted on a case-by-case basis at the sole discretion of the Municipal Engineer.

15. All redevelopment projects shall evaluate the feasibility of reducing site impervious area by at least 20%. Where project site conditions prevent the reduction of impervious area, then stormwater BMPs shall be evaluated to provide qualitative controls for at least 20% of the site's existing impervious area.

B. Volume Controls

1. Volume controls shall be required for all regulated activities requiring a Minor or Major SWM Permit.

2. Water volume controls shall be implemented using the *Design Storm Method or the Simplified Method. For Regulated Activities equal to or less than one acre, this Ordinance establishes no preference for either method; therefore, the Applicant may select either method on the basis of economic considerations, the intrinsic limitations on applicability of the analytical procedures associated with each methodology, and other factors.*:

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

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

      2. For modeling purposes of volume controls, in addition to the modeling requirements of Section 306.A above:

         a. Volume shall be calculated using the NRCS Type-II Curve Number runoff method (SCS).

   b. The *Simplified Method* (CG-2 in the BMP Manual) provided below is independent of site conditions, may only be used if the *Design Storm Method* is not followed, and may only be used for regulated activities requiring a Minor SWM Permit. For new impervious surfaces:

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

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

3. Wherever possible, infiltration facilities should be designed to accommodate infiltration of the entire permanently removed runoff; however, in all cases at least the first 0.5 inch of the permanently removed runoff should be infiltrated (unless otherwise required by geologic conditions). This requirement may overlap with the 1-inch requirement in Section 309.B.2.b.2 above (for example: infiltrating the first 1 inch of runoff will satisfy both requirements).

3. For Major Stormwater Permits, all applicable worksheets from Chapter 8 of the BMP Manual must be used when establishing Volume Controls.

4. For Minor Stormwater Permits, the applicant may utilize the Site Design Worksheet provided in Appendix C. If the applicant for a Minor Stormwater Permit does not wish to use any of the BMP types outlined in Appendix C, all applicable worksheets from Chapter 8 of the BMP Manual must be used when establishing Volume Controls.

C. Rate Controls

1. Rate controls shall be required only for regulated activities requiring a Major SWM Permit; regulated activities that require a Minor SWM Permit are not required to provide rate controls.

2. Post-development peak discharge rates shall not exceed the pre-development peak discharge rates for the 1, 2, 5, 10, 25, 50, and 100-year, 24-hour storm events. Otherwise, the applicant shall provide additional controls as necessary to satisfy the peak rate of discharge requirement.

3. For modeling purposes of rate controls, in addition to the modeling requirements of Section 309.A above:

   a. Infiltration, exfiltration, evapotranspiration, and/or any other environmentally-dependent discharge rates are prohibited from being used in the modeling of rate controls.

   b. For regulated activities under 10 acres in size, Modified Rational Method or TR-55 may be used for the calculation of peak rates; this Ordinance shows no preference for either method. For regulated activities above 10 acres in size, TR-55 shall be used.

ARTICLE IV – SWM SITE PLAN AND REPORT SUBMISSION REQUIREMENTS

Section 401.a Minor SWM Site Plan Requirements

The following items shall be included in the SWM Site Plan as provided in Appendix C – Site Design Worksheet:

A. Project information:

   1. Project name

   2. Project address

   3. Name, address, telephone number, and email address of Applicant and, if separate from Applicant, property owner

   4. Name, address, telephone number, and email address of the qualified professional responsible for project design

B. Date of submission, and the dates of all revisions

C. North arrow

D. Location of all existing and proposed on-site improvements

E. Approximate location of all existing and proposed utilities and utility easements, including but not limited to on-lot wastewater facilities, water supply wells, sanitary sewers, water lines, gas lines, and electric lines

F. Location and clear identification of the type of proposed permanent SWM Facilities

G. Proposed limit of disturbance line(s) and disturbed acres

H. An erosion and sediment control plan. Note that further review by the county conservation district/reviewing authority may be required per Section 301.N.

I. SWM Conservation Easements for all physical SWM Facilities, Conveyance Facilities, areas downstream of discharges and spillways, and designated meadows. When present, provisions for permanent access to SWM Conservation Easements shall also be granted to the Municipality via a note as listed in Section 401.b.X.8 below.

   1. Easements shall be a minimum of 25’ in width and must extend at least 5’ beyond the edge of any SWM facility.

   2. Where possible, easements should be centered on the facilities within the easement.

   3. Easements shall be identified with a metes and bounds description. In the case of conveyance facilities such as pipes and swales, and if desired by the Applicant, a note as listed in Section 401.b.X.10 below may be added to the plan in lieu of metes and bounds stating that easements are to be defined as twenty (20) feet wide, centered on the installed conveyance facility. Subterranean facilities utilizing this alternative easement identification method shall use metal marking tape – or other methods that provide simple identification from the surface as reviewed and accepted by the Municipal Engineer – in order to mark the location of said facilities; subsurface conveyance facilities shall add the identification method to the note required above, and the identification method shall be added to relevant construction details.

J. A list of any permits or authorizations related to stormwater management, erosion and sediment control, waterways and wetlands, or other relevant plan authorizations/permits other than those required by the Municipality, including but not limited to Conservation District adequacy letters; NPDES permits; PADEP/ACOE water obstruction and encroachments permits; FEMA CLOMR/LOMRs; PNDI clearances; PennDOT HOP approvals when the proposed project encroaches into or impacts a PennDOT right-of-way; and other appropriate permits as determined by the Municipality. The reviewing authority for each permit shall also be included in this list.

K. If stormwater BMP(s) described in Appendix C are proposed, the applicable worksheet(s) from Appendix C shall be submitted with the Minor SWM Site plan. If a BMP type not described in Appendix C, a SWM Report conforming to the requirements of Section 402 shall be submitted with the Minor SWM Site Plan.

Section 401.b Major SWM Site Plan Requirements

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

A. Project information:

1. Project name

2. Project address

3. Name, address, telephone number, and email address of Applicant and, if separate from Applicant, property owner

4. Name, address, telephone number, and email address of the qualified professional responsible for project design

B. Date of submission, and the dates of all revisions

C. Graphical and written scale on all drawings, maps, details, profiles, and other items as necessary

D. North arrow

E. Location map at a minimum scale of 1 inch equals 2,000 feet

F. Metes and bounds of the entire tract perimeter

G. Existing and proposed contours at intervals of 1 or 2 feet.

H. A determination of site conditions in accordance with the BMP Manual. A detailed site evaluation shall be completed for projects proposed in environmentally sensitive areas such as brownfields.

I. Soil names, boundaries, and hydrologic soil group classification

J. Location of all existing and proposed on-site improvements

K. Location of improvements outside of the property boundary that may be affected by the project

L. Location of all existing and proposed utilities and utility easements, including but not limited to on-lot wastewater facilities, water supply wells, sanitary sewers, water lines, gas lines, and electric lines

M. Location of all sensitive natural features, including waterways, wetlands, floodplains, significant karst features (including but not limited to sinkholes, rock pinnacles, and closed depressions), and natural slopes over 25%. If no sensitive natural features are present on the site, provide a note as listed in Section 401.b.X.9 below, and provide evidence of their absence. See Section 403.C below for further requirements on the identification of wetlands.

N. Location and clear identification of the type of permanent SWM Facilities

O. Proposed limit of disturbance line(s) and disturbed acres

P. Construction details and material schedules including data necessary for proper construction

Q. Plan and profile drawings of all ESC, SWM, and Conveyance Facilities, including but not limited to basins, drainage structures, pipes, open channels, sediment traps, and swales

1. Plans and profiles for the same facilities shall be displayed together on the same sheet.

2. All facilities shall be clearly labeled, with labels matching calculations and designations within the SWM Report.

3. All plans and profiles shall provide clear labels of applicable data necessary for proper construction, including but not limited to inverts, top of grate elevations, pipe slopes, materials, spillway elevations and widths, outlet structure elevations, orifice sizes and elevations, basin bottom elevations, etc.

4. Plan and profile drawings may take the place of, supplement, or be combined with construction details where desired so long as the above standards and overall design clarity are maintained

R. An erosion and sediment control plan. Note that further review by the county conservation district/reviewing authority may be required per Section 301.N.

S. An O&M plan for all existing and proposed physical SWM facilities. This plan shall address short-term and long-term responsibilities for O&M as well as schedules for O&M activities.

T. SWM Conservation Easements for all physical SWM Facilities, Conveyance Facilities, areas downstream of discharges and spillways, and designated meadows. When present, provisions for permanent access to SWM Conservation Easements shall also be granted to the Municipality via a note as listed in Section 401.b.X.10 below.

1. Easements shall be a minimum of 25’ in width, and must extend at least 5’ beyond the edge of any SWM facility.

2. Where possible, easements should be centered on the facilities within the easement.

3. Easements shall be identified with a metes and bounds description. In the case of conveyance facilities such as pipes and swales, and if desired by the Applicant, a note as listed in Section 401.b.X.10 below may be added to the plan in lieu of metes and bounds stating that easements are to be located and offset from the center of the installed conveyance facility. Subterranean facilities utilizing this alternative easement identification method shall use metal marking tape – or other methods that provide simple identification from the surface as reviewed and accepted by the Municipal Engineer – in order to mark the location of said facilities; subsurface conveyance facilities shall add the identification method to the note required above, and the identification method shall be added to relevant construction details.

U. For SWM Site Plans involving two (2) or more lots, an assignment of impervious area to each individual lot that may not be exceeded at the time of construction and is accounted for in the SWM Report.

V. A list of any permits or authorizations related to stormwater management, erosion and sediment control, waterways and wetlands, or other relevant plan authorizations/permits other than those required by the Municipality, including but not limited to Conservation District adequacy letters; NPDES permits; PADEP/ACOE water obstruction and encroachments permits; FEMA CLOMR/LOMRs; PNDI clearances; PennDOT HOP approvals when the proposed project encroaches into or impacts a PennDOT right-of-way; and other appropriate permits as determined by the Municipality. The reviewing authority for each permit shall also be included in this list.

W. Provide a list of construction inspections to be completed by the Township Municipal Engineer based upon the installation of the proposed SWM BMP’s and structures. The list should be specific to the BMP type(s) proposed, the site conditions, and the items that will require a release of financial security.

X. Notes, signature blocks, and certifications:

1. “(Municipal Engineer or Municipal designee), on this date, (signature date), has reviewed and hereby certifies that the SWM Site Plan appears to meet all design standards and criteria of the stormwater management ordinance. Strict compliance with the stormwater management ordinance, however, is the responsibility of the Applicant.”

2. “(Applicant or owner), on this date, (signature date), acknowledges that SWM and Conveyance Facilities are permanent fixtures and may not be modified, removed, filled, landscaped, or otherwise altered without written approval of Howe Township.”

3. “Qualified professional responsible for project design), on this date, (signature date), certifies that this plan complies with the ordinances, provisions, and regulations of the Municipality and any other applicable entities.” A seal and dated signature shall accompany this statement.

4. “Howe Township is not responsible for the maintenance of any area not dedicated to and accepted for public use.”

5. “The Operation and Maintenance Agreement is an integral part of the plan hereby approved. If the Owner fails to adhere to the terms of the Operations and Maintenance agreement, the Municipality shall have the right, but not the obligation, to perform the services required and charge the Owner appropriate fees.”

6. If Conveyance Facilities are proposed that require watertight joints, “All stormwater conveyance facilities shall be constructed with watertight joints.”

7. If inlets or other structures are proposed, “The knocking out of inlet or other structure corners is prohibited.”

8. If SWM Conservation Easements and/or Riparian Buffer Easements are required on the site per Section 303.C and/or Section 401.b.T above, “The Landowner hereby grants permission to the Municipality, its authorized agents, and employees access to any and all SWM Conservation Easements and Riparian Buffer Easements on the property.”

9. “The SWM Report is a part of the plan.”

10. If an as-built plan is required per Section 410 below, “A copy of the recorded As-Built Plan will be provided to the Municipality prior to occupancy and/or the release of financial security.”

Section 402. SWM Report Requirements

The following items shall be included in the SWM Report:

A. Project information:

   1. Project name

   2. Project address

   3. Name, address, telephone number, and email address of Applicant and, if separate from Applicant, property owner

   4. Name, address, telephone number, email address, seal, and dated signature of the qualified professional responsible for project design

B. A narrative describing the pre-development conditions, post-development conditions, philosophy of SWM design, and projected project time schedule.

C. Stormwater runoff design computations and documentation demonstrating that the requirements of this Ordinance have been met for all watersheds and sub-watersheds, including but not limited to the recommendations, standards, and calculation methodologies specified in Article III. This information shall also include but not be limited to the following:

   1. Summary tables of existing and proposed peak rates.

   2. For applicable SWM Facilities, a plotting and tabulation of the storage volumes and discharge curves with corresponding water surface elevations, inflow hydrographs, and outflow hydrographs.

3. For applicable Conveyance Facilities, a tabulation of open or closed channel flow data, including but not limited to shear stress, erosion, provided freeboard, Manning's N values, etc. (open channel conveyance), and hydraulic grade lines, top of grate elevations, pipe sizes, crown and invert elevations, materials, etc. (closed channel flow).

4. Breakouts of Tc calculation segments and input data for each segment, including but not limited to slope, length, Manning's N values, etc.

5. Summary tables of curve number (CN) or runoff coefficient (C) calculation averages for all watersheds and/or sub-watersheds.

6. A plotting or tabulation of the rainfall depths or intensities used in modeling.

7. Supporting calculations as necessary for any ESC Facilities.

8. The Municipality has the authority to require that any calculations or modeling be reconciled with field observations, conditions, and site history.

D. Watershed/sub-watershed maps, which shall include:

1. All points of interests being used in modeling

2. Existing and proposed watersheds and sub-watersheds, including labeling that matches calculations and designations within the SWM Report.

3. Time of concentration (Tc) paths

4. Inlet drainage areas with labels corresponding to receiving inlets

5. Facility labeling that matches calculations and designations within the SWM Site Plan and SWM Report

Section 403. Special SWM Site Plan and Report Submission Requirements

A. Carbonate Assessment

1. For regulated activities requiring Major SWM Permits, a carbonate assessment report shall be submitted including recommendations on SWM BMP types, whether infiltration is allowed as a SWM method, and/or an evaluation of measures to minimize adverse effects of stormwater management – shall be required.

2. For regulated activities requiring Minor SWM Permits, detailed evidence provided as part of the SWM Report describing the carbonate conditions on site – including recommendations on SWM Facility types, whether infiltration is allowed as a SWM method, and/or an evaluation of measures to minimize adverse effects of stormwater management – shall be required. Acceptable evidence includes soil surveys and other desktop-level resources. A statement shall be added to the plan indemnifying the Municipality from any damages that may result from carbonate site conditions.

B. Infiltration Testing

1. For regulated activities proposing to use infiltration SWM Facilities and requiring Major SWM Permits, infiltration testing shall be required.

2. For regulated activities proposing to use infiltration SWM Facilities and requiring Minor SWM Permits, other information – such as soil survey data – supporting the use of infiltration SWM Facilities shall be required as part of the SWM Report. A statement shall be added to the plan indemnifying the Municipality any damages that may result from the utilization of infiltration SWM BMPs.

C. Wetland Delineation Report

1. For regulated activities requiring Major SWM Permits, a wetland delineation report shall be required. National Wetlands Inventory searches or other similar database queries are not valid methods for determining the presence of wetlands.

2. For regulated activities requiring Minor SWM Permits, other information – such as the National Wetlands Inventory or soil survey data displaying no hydric soils are present on the project site – showing that no wetland impacts are expected shall be required as part of the SWM Report.

D. All Required Permits

1. An NPDES Permit

2. Permits from PADEP and ACOE

3. A Highway Occupancy Permit from PennDOT when utilization of a PennDOT storm drainage system is proposed or when proposed facilities would encroach onto a PennDOT right-of-way. The Municipality reserves the right to require Applicant to maintain such storm drainage system or facilities within the PennDOT right-of-way or otherwise provide for sufficient financial resources to enable the Municipality to do the same if PennDOT requires or Applicant requests that the Municipality act as the named permittee on said HOP.

Section 404. Submission

A. Ten (10) physical copies and one digital copy of the SWM Site Plan and Report ("Submission") shall be submitted to the Municipality. If the SWM Site Plan and Report are submitted in conjunction with a Subdivision or Land Development Plan, additional copies shall be submitted as required by the Subdivision and Land Development Ordinance. Submission timelines shall be as outlined within the Subdivision and Land Development Ordinance.

B. The Submission shall also include the following components:

1. SWM Permit application with applicable review fees

2. As applicable, waiver requests in compliance with Section 110 of this Ordinance

3. As applicable, carbonate assessment report

4. As applicable, infiltration testing results

5. As applicable, wetland delineation report

6. As applicable, Stormwater Pollution and Prevention Plan

7. As applicable, any permit or authorization copies related to stormwater management, erosion and sediment control, waterways and wetlands, or other relevant plan clearances other than those required by the Municipality, including but not limited to county conservation district adequacy letters, NPDES permits, PADEP/ACOE water obstruction and encroachments permits, FEMA CLOMR/LOMRs, PNDI clearances, PennDOT HOP approvals when the proposed project encroaches into or impacts a PennDOT right-of-way, and other appropriate permits as determined by the Municipality.

Section 405. Submission Review & SWM Site Plan Approval

A. The Submission shall be reviewed by the Municipality for consistency with the provisions of this Ordinance.

B. The Municipality shall notify the Applicant in writing within 30 days whether the SWM Site Plan is approved, disapproved, or provide comments. If the Submission also involves a Subdivision and/or Land Development Plan, the notification shall occur within the time period allowed by the Municipalities Planning Code, and it shall further be coincident with any extensions, approvals, or other schedule changes with the Subdivision and/or Land Development Plan.

C. The Municipality shall not approve any SWM Site Plan that is deficient in meeting the requirements of this Ordinance or has not received all other permits/authorizations. At its sole discretion, when a Submission is found to be deficient, the Municipality may either disapprove the SWM Site Plan and require a resubmission per Section 407 below, or in the case of minor deficiencies, the Municipality may accept submission of modifications per Section 406 below.

D. If the Municipality disapproves the SWM Site Plan, the Municipality will state the reasons for the disapproval in writing. The Municipality may also approve the SWM Site Plan with conditions and, if so, shall provide the acceptable conditions for approval in writing.

E. If the Municipality approves the SWM Site Plan, or all the conditions of an approval per Section 405.D above are met, the Municipality shall promptly issue a SWM Permit to the Applicant.

F. For any SWM Site Plan that proposes to use any BMPs other than green infrastructure and LID practices to achieve the volume and rate controls required under this Ordinance, the Municipality will not approve the SWM Site Plan unless it determines that green infrastructure and LID practices are not practicable

G. The Municipality shall not issue a building permit for any Regulated Activity if the SWM Site Plan & Report has been found to be inconsistent with this Ordinance, as determined by the Municipality. All required permits from PADEP must be obtained prior to issuance of a building permit.

Section 406. Modification of Submissions With Minor Deficiencies

A modification to a Submission with minor deficiencies shall require a resubmission of the modified SWM Site Plan and Report in full in accordance with this Article. If modifications require updates to other components of the Submission as determined by the Municipality, including but not limited to the O&M agreement or further waiver requests, said components shall also be submitted. Any modifications shall renew the notification timeline as listed in Section 405.B above.

Section 407. Resubmission of Disapproved SWM Site Plans

A disapproved SWM Site Plan may be resubmitted to the Municipality, with the revisions addressing the Municipality's concerns, in accordance with this Article. A resubmitted SWM Site Plan shall include all other Submission components in full, including applicable review fees.

Section 408. Modification of Approved SWM Site Plans

A. A request for modification to a SWM Site Plan that has already been approved shall be in writing and shall provide specific details on what portions of the SWM Site Plan are being proposed for modification and shall be accompanied by Submission components showing the proposed modifications as required by the Municipality. Any modifications within the associated Submission not matching the written request are considered void.

B. Requests for modification shall follow the Submission review process per Section 405 above, including the payment of applicable fees. Modifications may not alter SWM facilities in a manner which significantly affects the discharge of stormwater to an adjacent property and/or significantly relocates a stormwater management facility within the project site; requests for modifications of this nature shall be treated as new Submissions in accordance with this Article.

C. The Municipality reserves the right, in its sole and absolute discretion, to deny requests for modification and require new Submissions in accordance with this Article upon review of the nature and extent of the requested modifications.

Section 409. Authorization to Construct and Term of Validity

A. The Municipality's approval of a SWM Site Plan and issuance of a SWM Permit authorizes the regulated activities contained in the SWM Site Plan for a maximum term of validity of 5 years following the date of approval. In the event that the SWM Plan is issued in conjunction with an approved subdivision and/or land development plan, the 5-year period of validity shall be deemed to commence in accordance with Section 508 of the Pennsylvania Municipalities Planning Code, as amended. Terms of validity shall commence on the date the Municipality issues the SWM Permit. If an approved SWM Site Plan is not completed according to Section 410 within the term of validity, then the Municipality may consider the SWM Site Plan disapproved and may revoke any and all permits without the necessity of any proceedings for revocation. SWM Site Plans that are considered disapproved by the Municipality shall be resubmitted in accordance with Section 407 of this Ordinance. An Applicant may request an extension of the period of validity from the Municipality for good cause shown, which may be granted or denied in Municipality's sole and absolute discretion.

Section 410. Project Closeout

A. After completing the improvements listed in the SWM Site Plan, confirming the site has achieved permanent stabilization, and removing or retrofitting any ESC Facilities, the Applicant shall notify the Municipality in writing that the work is complete.

B. In the case of Minor SWM Permits:

1. After receipt of the written notification of completion, the Municipality shall conduct a final inspection for the purposes of determining the extent of project completion.

2. If any deficiencies are noted by the Municipality, they shall be delivered to the Applicant in writing.

3. Upon the correction of any deficiencies and determination of final completion, the Municipality shall notify the Applicant of said determination in writing.

C. In the case of Major SWM Permits:

1. The Applicant shall also submit to the Municipality with the written notification of completion and As-Built Plan for review. The As-Built Plan shall be submitted as a physical and digital copy. The As-Built Plan shall include the following items:

    a. Depiction of all items required in the original SWM Site Plan per Section 174-401.b, including but not limited to profiles and construction details of improvements

    b. Clear identification of all discrepancies alongside their original design criteria, dimensions, specifications, etc.

    c. Latitude and longitude coordinates at the central location of all permanent SWM BMPs

    d. A note stating, "Qualified professional responsible for as-built plan composition, on this date, (Signature date), certifies that all SWM and Conveyance Facilities have been constructed according to the approved plans and specifications."

    e. A narrative explanation of any discrepancies with the approved SWM Site Plan

2. After receipt of the written notification of completion and As-Built Plan, the Municipality shall within 45 days: 1. conduct a final inspection for the purposes of determining the extent of project completion and the amount of release of financial security; and 2. review the As-Built Plan for acceptability and accuracy.

3. If any deficiencies with either the work or the As-Built Plan are noted by the Municipality, they shall be delivered to the Applicant in writing.

4. After the correction of any deficiencies and determination of final completion, the Municipality shall notify the Applicant of said determination in writing.

5. After receipt of the written notification of determination of final completion, the Applicant shall record the As-Built Plan in full within 90 days of receipt of said determination. Evidence of recording and a copy of the recorded As-Built Plan shall be provided by the Applicant to the Municipality.

6. After receipt of the evidence of recording of the As-Built Plan and a copy of the recorded As-Built Plan itself, the Municipality shall release to the Applicant any remaining financial security. Occupancy and/or the release of financial security are prohibited until receipt of a copy of the recorded As-Built Plan is received, and a note per Section 401.b.X.10 shall be provided on the plan stating such.

D. If the SWM Site Plan was submitted as part of a Subdivision and Land Development Plan, the requirements of the Stormwater Ordinance shall be followed in addition to the project closeout and process requirements provided in the Subdivision and Land Development Ordinance. The entirety of the SWM Site Plan and Report including but not limited to grading plan, profiles, details, and calculations shall be recorded with the Subdivision and Land Development plan.

1. For Major SWM Permits, an As-Built Plan as required above shall still be required or incorporated with the Subdivision and Land Development Plan's closeout process and shall be recorded in full or incorporated in full with the Subdivision and Land Development As-Built Plan.

2. For Major SWM Permits, an As-Built SWM Report meeting the requirements of Section 402 shall also be provided with the As-Built Plan, reviewed by the Township Engineer for conformance with the original design, and recorded once reviewed.

Section 411. Easements

A. Easements shall be established to accommodate the existence of drainageways.

B. Easements shall be established for all on-site stormwater management or drainage facilities, including but not limited to: detention facilitates (above or below ground), infiltration facilities, all stormwater BMPs, drainage swales, and drainage facilities inlets, manholes, pipes, etc.).

C. Easements are required for all areas used for off-site stormwater control.

D. All easements shall be a minimum of twenty-five (25) feet wide.

E. Easements shall provide ingress to and egress from a public right-of-way. In lieu of providing an easement to the public right-of-way, a note may be added to the plan granting the Municipality or their designees access to all easements via a public right-of-way.

F. Where possible, easements shall be centered on side and/or rear lot lines.

G. The following note shall be placed on the recorded plan, " Nothing shall be placed, stored, erected, constructed over, or otherwise located within a stormwater easement other than the SWM facilities within the easement."

H. A note shall be placed on the SWM Site Plan identifying the party responsible for assuring the continued functionality and required maintenance of any easement.

ARTICLE V – OPERATION AND MAINTENANCE

Section 501. Responsibilities of Developers and Landowners

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

B. SWM and Conveyance Facilities shall be enumerated as permanent real estate appurtenances, shown on the recorded plans (if applicable), and shall be subject to the required recording of an BMP Stormwater Management Operations and Maintenance Agreement or successor agreement, that shall run with the land.

C. The O&M plan shall be recorded as a restrictive deed covenant that runs with the land.

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

Section 502. Operation and Maintenance Agreements

A. Prior to final approval of the SWM Site Plan, the property owner shall sign and record as a restrictive deed covenant that runs with the land an Operation and Maintenance Agreement (see Appendix A) covering all stormwater control facilities which are to be privately owned.

   1. Prior to recording, the O&M Agreement shall be submitted to the Municipality for review and approval.

   2. The Owner, successor and assigns shall maintain all facilities in accordance with the approved maintenance schedule in the O&M Agreement.

   3. The Owner shall convey to the Municipality access easements to assure access for periodic inspections by the Municipality and maintenance, as necessary.

   4. It shall be the Owner's duty and responsibility to provide the Municipality with current information including the name, address, and telephone number of the person or company responsible for operation and maintenance activities. In the event of a sale of the subject property or change in the responsible party, revised/new information shall be submitted by the owner to the Municipality within ten (10) working days of the change. Failure of the Owner to provide such information to the Township shall constitute a violation of this Ordinance.

   5. Other items may be included in the O&M Agreement where determined necessary to guarantee the satisfactory operation and maintenance of all SWM BMP facilities.

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

Section 503. Financial Security

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

B. For Minor Stormwater Permits, the required amount of financial security may be calculated as described in Appendix C for the applicable BMP types. For Major Stormwater permits, or for BMP types other than the ones described in Appendix B, the applicant shall submit an itemized cost estimate for the stormwater improvements based on the quantities and installed unit cost of each material used in construction of the subject facilities.

C. At the completion of the project and as a prerequisite for the release of the Financial Security, the Applicant shall:

1. Provide a certification of completion from an engineer, architect, surveyor or other qualified professional, verifying that all permanent facilities have been constructed and are operating in accordance with the approved SWM Site Plan & Report and any approved revisions thereto.

2. The applicant shall demonstrate that all required inspections by the Municipal Engineer have been completed and the items inspected were found to be satisfactory. Required inspections by the municipal engineer shall be per the schedule of required inspections described in section 802 for Major Stormwater Permits, or in accordance with Appendix C for Minor Stormwater Permits.

3. Provide a set of Record Drawings.

4. Request a final inspection from the Municipality to certify compliance with this Ordinance, after receipt of the certification of completion and As-Built Drawings by the Municipality.

ARTICLE VI – FEES AND EXPENSES

Section 601. General

A. No application for preliminary or final plan approval shall be filed and processed until the fees and/or escrow deposit, as set forth below, have been paid.

B. The Township Board of Supervisors shall adopt and amend by resolution a schedule of fees, payable by the applicant to the Township for the filing of minor and major stormwater management plans.

C. The Township Board of Supervisors shall adopt and amend by resolution a schedule of escrow deposits to be paid by the applicant to the Township at the time of the filing of an application, sufficient to pay all Township expenditures anticipated in the course of its review and disposition of plans.

1. Costs incurred by the Township in excess of the escrowed amount shall be paid by the applicant prior to the granting of approvals or permits.

2. If costs incurred by the Township are less than the escrowed amount, the difference shall be refunded to the applicant following disposition of the plans.

Section 602. Fees and Expenses

A. The amount subject to escrow may include, but not be limited to fees, costs, and expenses for the following:

1. Administrative/clerical processing

2. Review of the SWM Site Plan

3. Attendance at meetings

4. Inspections.

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

6. Engineering, legal and other professional fees associated incurred by the Municipality for any of the foregoing.

ARTICLE VII – PROHIBITIONS

Section 701. 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 surface waters of this Commonwealth is prohibited.

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

C. The following discharges are authorized unless they are determined to be significant contributors of pollution to a regulated small MS4 or to the waters of this Commonwealth:

1. Discharges or flows from firefighting activities

2. Discharges from potable water sources including water line flushing and fire hydrant flushing, if such discharges do not contain detectable concentrations of Total Residual Chlorine (TRC)

3. Non-contaminated irrigation water, water from lawn maintenance, landscape drainage and flows from riparian habitats and wetlands

4. Diverted stream flows and springs

5. Non-contaminated pumped groundwater and water from foundation and footing drains and crawl space pumps

6. Non-contaminated HVAC condensation and water from geothermal systems

7. Residential (i.e., not commercial) vehicle wash water where cleaning agents are not utilized

8. Non-contaminated hydrostatic test water discharges, if such discharges do not contain detectable concentrations of TRC

D. In the event that the Municipality or DEP determines that any of the discharges identified in Section 701.C significantly contribute pollutants to a regulated small MS4 or to the waters of this Commonwealth, the Municipality or DEP will notify the responsible person(s) to cease the discharge.

Section 702. Roof Drains and Sump Pumps

A. Roof drains and sump pumps shall discharge to infiltration or vegetative SWM BMPs wherever feasible. In no event shall roof drains or sump pumps be connected to or discharge into the Municipal sanitary sewer system.

Section 703. Dumping

A. “Dumping” and/or unregulated disposal of waste, including but not limited to yard waste, construction refuse, paint, petrochemicals, domestic solid waste, etc., is prohibited. Composting of yard waste shall not be considered dumping as long as it is not placed in a waterway or drains directly to a waterway/collection system. The activity of dumping does not need to directly drain into a concentrated discharge or collection system to be prohibited. Dumping prohibitions do not include incidental, short-term, temporary storage of soon-to-be-used materials that pose a low risk for stormwater runoff pollution (e.g., mulch piles for domestic gardening, stone piles for driveway sub-base, brick pallets for home construction, etc.), nor agricultural activity or forest management and timber operations provided that the activities are performed according to the requirements of 25 Pa. Code Chapter 102.

Section 704. Open Storage

A. Open storage of pollutants, including but not limited to uncapped barrels, leaking containers, chemical tank drainage, etc., is prohibited. The activity of openly storing pollutants does not need to directly drain into a

concentrated discharge or collection system to be prohibited. Open storage prohibitions do not include agricultural activity or forest management and timber operations provided that the activities are performed according to the requirements of 25 Pa. Code Chapter 102.

Section 705. Alteration of SWM BMPs

A. No person shall modify, remove, fill, landscape, or otherwise alter any SWM or Conveyance Facilities that were installed as a requirement of this Ordinance or previous Stormwater Management Ordinances without the written approval of the Municipality. A note shall be provided on the SWM Site Plan stating as such as listed in Section 401.b.X.2.

ARTICLE VIII – ENFORCEMENT AND PENALTIES

Section 801. Right-of-Entry

A. Upon presentation of proper credentials, the Municipality or its designated agent may enter at reasonable times upon any property within the Municipality to inspect the condition of items required by this Ordinance in regard to any aspect regulated by this Ordinance.

Section 802. Inspection

A. PADEP or its designees normally ensure compliance with any permits issued, including those for stormwater management. In addition to PADEP compliance programs, the Municipality or their municipal assignee may inspect all phases of the installation of temporary or permanent SWM facilities.

B. During any stage of Earth Disturbance Activities, if the Municipality determines that the temporary or permanent SWM facilities are not being installed in accordance with the approved SWM Site Plan, the Municipality shall revoke any existing permits or approvals until a revised SWM Site Plan is submitted and approved as specified in this Ordinance.

C. Stormwater BMPs shall be inspected by the landowner, or the landowner's designee according to the inspection schedule described on the SWM Site Plan for each BMP included as part of a major stormwater permit.

1. The Municipality may require copies of the inspection reports, in a form as stipulated by the Municipality.

2. If such inspections are not conducted or inspection reports not submitted as scheduled, the Municipality, or their designee, may conduct such inspections and charge the Owner appropriate fees. Non-payment of fees may result in a lien against the property.

    a. Prior to conducting such inspections, the Municipality shall inform the Owner of its intent to conduct such inspections. The Owner shall be given thirty (30) days to conduct required inspections and submit the required inspection reports to the Municipality.

D. Stormwater BMPs shall be inspected by the Municipality, or the Municipality's designee according to the inspection schedule described on the Site Design Worksheets and Sketch Plan (Appendix C) for each BMP included as part of a minor stormwater permit.

E. Inspections should be conducted during or immediately following precipitation events. A written inspection report shall be created to document each inspection. The inspection report shall contain the date and time of the inspection, the individual(s) who completed the inspection, the location of the SWM BMP, facility or structure inspected, observations on performance, and recommendations for improving performance, if applicable. Inspection reports shall be submitted to the Municipality within 30 days following completion of the inspection.

Section 803. Enforcement

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

B. It shall be unlawful to violate Article VII of this Ordinance and shall be subject to penalty as listed in section 805.

C. Inspections regarding compliance with the SWM Site Plan are a responsibility of the Municipality, and therefore may not be unreasonably denied.

Section 804. Suspension and Revocation

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

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

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

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

B. A suspended approval may be reinstated by the Municipality when:

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

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

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

D. If a violation causes no immediate danger to life, public health, or property, at its sole discretion, the Municipality may provide a limited time period for the Owner to correct the violation. In these cases, the Municipality 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 805. Penalties

A. Anyone violating the provisions of this Ordinance shall be guilty of a summary offense, and upon conviction, shall be subject to a fine of not more than $1,000.00 for each violation, recoverable with costs. Each day that the violation continues shall be a separate offense and penalties shall be cumulative. Further, in the event of the failure to pay such fines, such offender may be imprisoned as permitted by applicable law.

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 806. Appeals

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

B. Any person aggrieved by any decision of the Municipality, relevant to the provisions of this Ordinance, may appeal to the County Court of Common Pleas in the county where the activity has taken place within 30 days of the Municipality's decision.

ARTICLE IX – REFERENCES

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

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

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

4. Pennsylvania Department of Environmental Protection. No. 363-2134-008 (March 31, 2012), as amended and updated. *Erosion and Sediment Pollution Control Program Manual.* Harrisburg, PA.

5. U.S. Department of Commerce, National Oceanic and Administration (NOAA). *NOAA Atlas 14 Point Precipitation Frequency Estimates: PA*, as amended and updated. Howe Township, Pennsylvania. Available from NOAA online at: https://hdsc.nws.noaa.gov/hdsc/pfds/pfds_map_cont.html

6. Pennsylvania Department of Transportation. Publication 584, Chapter 7A (2010), as amended and updated. *Field Manual for Pennsylvania Design Rainfall Intensity Charts*. Harrisburg, PA. Available from PennDOT online at: https://www.dot.state.pa.us/public/bureaus/design/PUB584/PDMChapter07A.pdf

(Ordinance Name)

(Ordinance Number)

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

on this _____ day of _____, 20_____.

This Ordinance shall take effect immediately.

(Name)	(Title)
(Name)	(Title)
(Name)	(Title)

ATTEST:

Secretary

APPENDIX A

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

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

WITNESSETH

WHEREAS, the Landowner is the owner of certain real property as recorded by deed in the land records of Perry 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 SWM 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 the SWM BMP(s) in accordance with the plans and specifications identified in the SWM Site Plan.

2. The Landowner shall operate and maintain the SWM BMPs as shown on the SWM Site 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 necessary. Whenever possible, the Municipality shall notify the Landowner prior to entering the property.

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

5. In the event the Municipality, pursuant to this Agreement, performs work of any nature, or expends any funds in performance of said work for labor, use of equipment, supplies, materials, and the like, the Landowner shall reimburse the Municipality for all expenses (direct and indirect) incurred within 20 days of receipt of invoice from the Municipality.

6. The intent and purpose of this Agreement is to ensure the proper maintenance of the on-site SWM BMPs by the Landowner; provided, however, that this Agreement shall not be deemed to create 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 SWM BMP(s) by the Landowner or Municipality.

8. The Municipality intends to inspect the SWM BMPs at a minimum of once every three years to ensure their continued functioning.

This Agreement shall be recorded at the Office of the Recorder of Deeds of Perry 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.

The Applicant shall record the agreement and provide proof of the recording to the Municipality.

ATTEST:

WITNESS the following signatures and seals:

(SEAL)

For the Municipality:

_____

For the Landowner:

_____

ATTEST:

_____ (City, Borough, Township)

County of _____, Pennsylvania

I, _____, a Notary Public in and for the county and state aforesaid, whose commission expires on the _____ day of _____, 20_____, do hereby certify that _____ whose name(s) is/are signed to the foregoing Agreement bearing date of the _____ day _____, 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

RATIONAL METHOD 'C' VALUES

	Min	Max	Percent Impervious
Construction Sites			
Bare Packed Soil, smooth	0.30	0.60	0
Bare Packed Soil, rough	0.20	0.50	0
Wooded Areas			
Heavy Ground Litter	0.10	0.20	0
Light Ground Litter	0.15	0.30	0
Steep Rocky Slopes	0.20	0.50	0
Reverting Farmland/Meadow			
100% Vegetative Cover	0.10	0.20	0
80% Vegetative Cover	0.15	0.30	0
50% Vegetative Cover	0.25	0.60	0
Rural Homes			
1 home per 10 acres	0.15	0.30	1
Residential			
1-acre lots	0.15	0.40	20
½-acre lots	0.25	0.50	25
¼-acre lots	0.40	0.60	36
Multi-units (attached)	0.60	0.75	65
Industrial Area			
Light to Medium Density	0.50	0.80	
High Density	0.60	0.95	
Streets and Parking Lots			
Asphalt	0.70	0.95	
Concrete	0.80	0.95	
Gravel	0.45	0.60	
Open Space, parks, golf courses	0.15	0.30	
Meadow	0.10	0.20	
Cultivated Land	0.10	0.40	
Pasture	0.15	0.50	

Minimum values to be used for flatter slopes and soils with better drainage characteristics.

Maximum values to be used for steeper slopes and soils with worse drainage characteristics.

TR-55 RUNOFF COEFFICIENTS

Cover Type	Avg. Percent Impervious Area	HYDROLOGIC SOIL CLASSIFICATION A	B	C	D
Open Space (Lawns, parks, golf courses, cemeteries, etc.)					
Poor Condition (grass cover <50%)		68	79	86	89
Fair Condition (grass cover 50 to 75%)		49	69	79	84
Good Condition (grass cover > 75%)		39	61	74	80
Impervious areas:					
Paved parking lots, roofs, driveways, etc.		98	98	98	98
Streets and Roads:					
Paved; curbs and storm sewers (excl. right-of-way)		98	98	98	98
Paved; open ditches (including right-of-way)		83	89	92	93
Gravel (including right-of-way)		76	85	89	91
Dirt (including right-of-way)		72	82	87	89
Urban Districts					
Commercial and business	85	89	92	94	95
Industrial	72	81	88	91	93
Residential Areas by average lot size					
1/8-acre or less (townhouses)	65	77	85	90	92
¼-acre	38	61	75	83	87
1/3-acre	30	57	72	81	86
½-acre	25	54	70	80	85
1 acre	20	51	68	79	84
2 acres	12	46	65	77	82
Pasture, grassland, or range	Poor (<50%)	68	79	86	89
	Fair (50%-75%)	49	69	79	84
	Good (>75%)	39	61	74	80
Meadow		30	58	71	78
Brush (brush-weed-grass mixture with brush as the major component)	Poor (<50%)	48	67	77	83
	Fair (50%-75%)	35	56	70	77
	Good (>75%)	30	48	65	73
Woods-grass combination (orchard or tree farm)	Poor	57	73	82	86
	Fair	43	65	76	82
	Good	32	58	72	79
Woods	Poor	45	66	77	83
	Fair	36	60	73	79
	Good	30	55	70	77

Poor – forest litter, small trees, and brush are destroyed by heavy grazing or regular burning
Fair – woods are grazed but not burned, and some forest litter covers the soil
Good – Woods are protected from grazing, and litter and brush adequately cover the soil
For additional cover types not listed, see appropriate table in TR-55

APPENDIX C
MINOR SWM PERMIT SITE DESIGN WORKSHEET

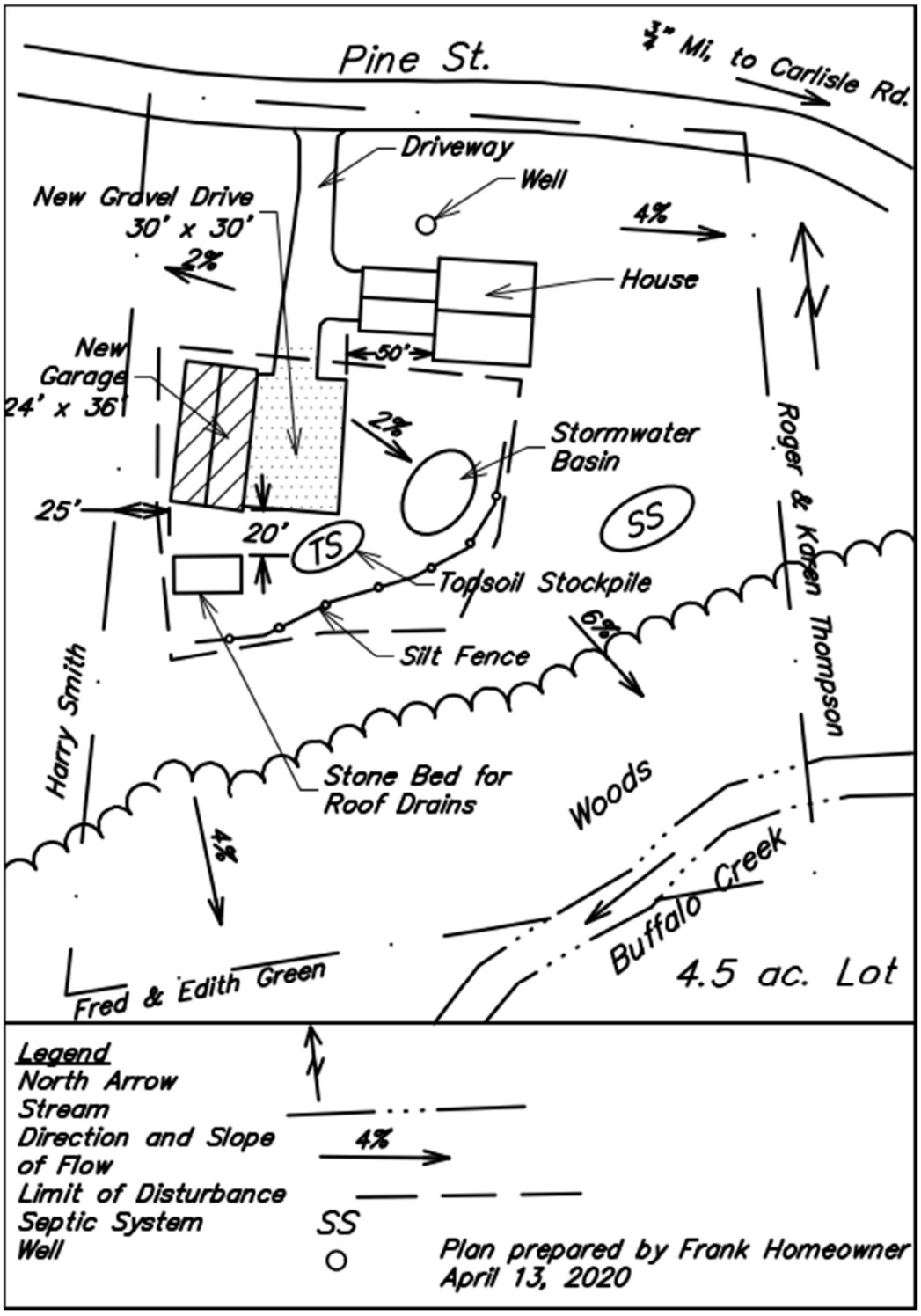
Draw a general site plan including the following: 1. The general layout of the property, including approximate lot lines and existing improvements; 2. All proposed improvements; 3. Flow arrows showing the direction of runoff; 4. The location of the proposed stormwater facilities. An example site plan is available on the following page.

By submitting this worksheet, the Applicant agrees:

1. To submit a Minor SWM Permit for Municipal approval with this Site Design Worksheet.
2. To direct **all** runoff from proposed impervious areas to the proposed stormwater facilities.
3. To construct the stormwater facilities in conformance with the details and calculations within this worksheet.
4. That the proposed regulated activity conforms to the requirements of the Howe Township Stormwater Management Ordinance, including but not limited to the provision of a 10 foot setback for stormwater facilities, and an O&M agreement.
5. That stormwater flows onto adjacent properties shall not be created, increased, relocated, significantly concentrated, or otherwise detrimentally altered without written approval from the affected property owner(s).
6. That SWM facilities are permanent fixtures and may not be modified, removed, filled, landscaped, have improvements placed within them, or otherwise be altered without written approval of Howe Township.
7. To provide Howe Township or its representatives access to the property for the purposes of inspecting SWM and ESC facilities.
8. That all construction shall follow the PADEP BMP Manual and E&S Manual.
9. That identification of sensitive natural features, such as wetlands or karst features, is the Applicant's responsibility, and that sensitive natural features on the site will not be encroached upon without proper permitting and/or Municipal approval.
10. That Howe Township and its representatives bear no design responsibility for the proposed improvements, including proposed SWM facilities. All design responsibility is borne by the Applicant, and the Applicant should consult with a professional if desired.
11. That the designs produced by utilizing this worksheet are likely conservative in nature.
12. To indemnify Howe Township and its representatives from any damage that may result from the proposed improvements, including SWM facilities.

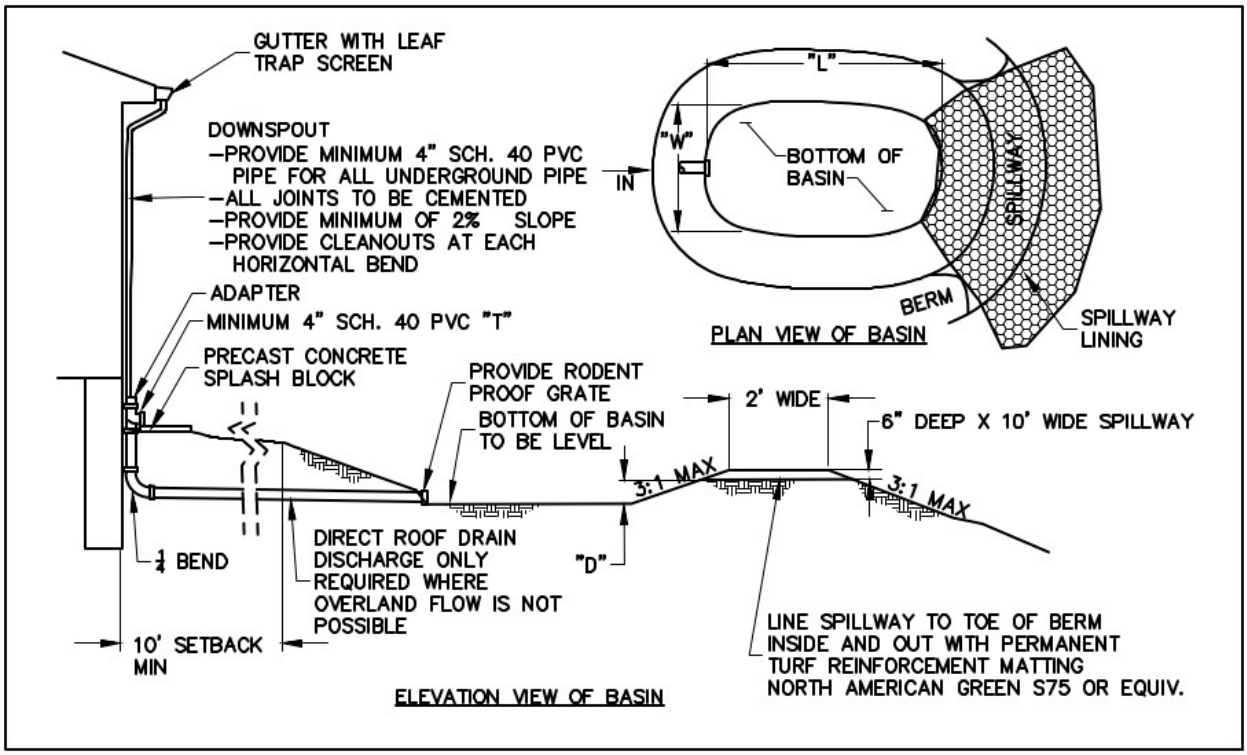
Signature of Applicant: _____ Date: _____

Example Minor SWM Permit Site Plan



Stormwater Facility Standard Details

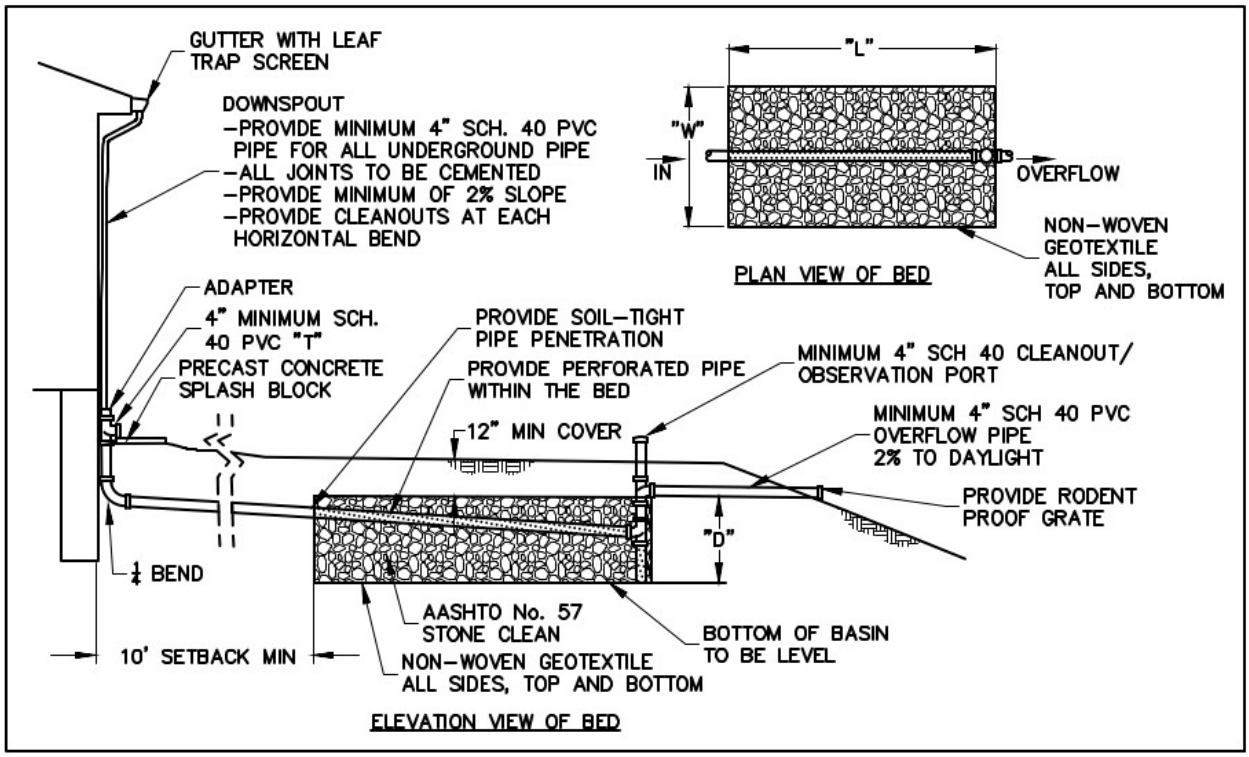
Rain Garden



Notes

NOTE 1: Infiltration trenches may only be used for structures; infiltration basins may be used for all surfaces, including structures.
NOTE 2: Infiltration basins deeper than 3 feet must be fenced.
NOTE 3: No stormwater facility may be deeper than 6 feet.
NOTE 4: Any infiltration facilities located within HSG D, Applicant shall provide infiltration testing results that show adequate infiltration rates.

Infiltration Trench



NOTE 1: Infiltration trenches may only be used for structures; infiltration basins may be used for all surfaces, including structures.
NOTE 2: Infiltration basins deeper than 3 feet must be fenced.
NOTE 3: No stormwater facility may be deeper than 6 feet.
NOTE 4: Any infiltration facilities located within HSG D, Applicant shall provide infiltration testing results that show adequate infiltration rates (minimum 0.5 inches per hour).

Disconnected Impervious Area (DIA)

When rooftop or pavement runoff is directed to a pervious area that allows for infiltration, filtration, and increased time of concentration, the contributing rooftop or pavement area may qualify as a Disconnected Impervious Area (DIA). A rooftop or pavement area is considered to be a DIA if it meets the requirements listed below:

- The soil in proximity of the discharge area, is not designated as hydrologic soil group “D” or equivalent (see Appendix F – Hydrologic Soil Group Map).
- The overland flow path (pervious area serving as BMP) from discharge area has a positive slope of 10% or less.
- The length of overland flow path (pervious area serving as BMP) is greater than or equal to the contributing rooftop or pavement length.
- The length of overland flow path (pervious area serving as BMP) is greater than 25 feet.

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

If rainspouts are discharged underground to provide infiltration, the portion of the impervious area draining to those rainspouts is waived from the DIA discharge requirements. Rainspouts discharged underground which are directly connected to a storm sewer system are not waived from the DIA requirements.

See Attached Disconnected Impervious Area worksheet.

Disconnected Impervious Area (DIA) Worksheet

Applicant Address:	**Brief Description of Project:**				
Nearest Waterbody:	**No more than 1,000 sq. ft can discharge to one point on the surface.** **Number of discharge points required:**				
Total Proposed Impervious Area(A):	**Discharge Point 1**	**Discharge Point 2**	**Discharge Point 3**	**Discharge Point 4**	**Discharge Point 5**
Total Earth Disturbance:	**Area:**	**Area:**	**Area:**	**Area:**	**Area:**
Are rainspouts discharged underground? (Y/N) **If yes, contributing impervious area (B):**	**Impervious Path Length:**	**Impervious Path Length:**	**Impervious Path Length:**	**Impervious Path Length:**	**Impervious Path Length:**
	Pervious Path Length:	**Pervious Path Length:**	**Pervious Path Length:**	**Pervious Path Length:**	**Pervious Path Length:**
Total Impervious Area Discharged on Surface (A) – (B)	**Pervious Path Slope <10%? (Y/N)**	**Pervious Path Slope <10%? (Y/N)**	**Pervious Path Slope <10%? (Y/N)**	**Pervious Path Slope <10%? (Y/N)**	**Pervious Path Slope <10%? (Y/N)**
HSG Soil Group from Appendix F – Hydrologic Soils Group Map (Cannot be "D" Soils):					
Project Sketch: Only show discharge points, slopes, and pervious flow path lengths:					

Stormwater Facility Calculations

(The following worksheets is only applicable to Minor SWM Permits)

How to calculate the size of your stormwater facility

1. Determine the area of your property available for the installation of stormwater facilities in terms of length and width (in feet). If large areas of your property are available, determine how much you would like to dedicate to the installation of stormwater facilities in terms of length and width.
2. Enter the length and width chosen into #1: (Facility Area) in the table below, and multiply them together. This will tell you the area (in square feet) that your stormwater facility will take up.
3. Determine the area of impervious surfaces you are proposing to construct that will discharge into the stormwater facility. For example, a 30 foot x 40 foot garage would be 1200 square feet. For surfaces that are not simple geometric shapes, you may need to get the area of impervious surfaces from your contractor.
4. Enter the area of impervious surfaces into #2: (Runoff Volume) in the table below, and multiply this by 0.2. This will tell you the volume of stormwater runoff the impervious surfaces are generating (in cubic feet).
5. Enter the runoff volume (#2 below) and the stormwater facility area (#1 below) into #3: (Facility Depth) in the table below. Divide #2 by #1. This will tell you how deep (in feet) your stormwater facility will need to be if it is an infiltration basin. **If you are proposing to construct an infiltration basin, skip step 6 and proceed to step 7.**
6. **If you are proposing to construct an infiltration trench,** enter the facility depth (#3 below) into #4: (Depth w/ Stone) in the table below, and divide by 0.4. This will tell you how deep (in feet) your stormwater facility will need to be since it is using stone. Stone takes up approximately 60% of the volume within an infiltration trench, so only 40% of the volume of the infiltration trench is available to actually store stormwater. Dividing by 0.4 compensates for this loss of runoff storage.
7. If your stormwater facility depth is greater than 6 feet, you will need to expand the area for the stormwater facility determined in #1 above, and repeat the above process until the depth is equal to or lesser than 6 feet.

Facility Name or #			
	1: Facility Area	________ (L) x ________ (W)	SF
	2: Runoff Volume	________ (Imp. Area to Facility) x 0.2	CF
	3: Facility Depth	________ (#2) / ________ (#1)	F
	4: Depth w/ Stone	(TRENCHES ONLY) ________ (#3) / 0.4	F

NOTE: Extra tables provided below for repeat calculations or for extra facilities.

Facility Name or #			
	1: Facility Area	________ (L) x ________ (W)	SF
	2: Runoff Volume	________ (Imp. Area to Facility) x 0.2	CF
	3: Facility Depth	________ (#2) / ________ (#1)	F
	4: Depth w/ Stone	(TRENCHES ONLY) ________ (#3) / 0.4	F

Facility Name or #			
	1: Facility Area	________ (L) x ________ (W)	SF
	2: Runoff Volume	________ (Imp. Area to Facility) x 0.2	CF
	3: Facility Depth	________ (#2) / ________ (#1)	F
	4: Depth w/ Stone	(TRENCHES ONLY) ________ (#3) / 0.4	F

Facility Name or #			
	1: Facility Area	________ (L) x ________ (W)	SF
	2: Runoff Volume	________ (Imp. Area to Facility) x 0.2	CF
	3: Facility Depth	________ (#2) / ________ (#1)	F
	4: Depth w/ Stone	(TRENCHES ONLY) ________ (#3) / 0.4	F

SWMO Ordinance # 25-02

Dale M. Beaver — Chairman

[illegible] — Vice Chairman

Patricia A. Shaugh — Member/Supervisor

September 4, 2025 — Date

Nancy Cangioli — Secretary