

**CHAPTER 21**

**STORMWATER MANAGEMENT ORDINANCE**

**ORDINANCE NO. 2022-11**

**TOWNSHIP OF WEST POTTS GROVE**

**MONTGOMERY COUNTY, PENNSYLVANIA**

**LAST REVISED: 08/16/2022**

**Adopted at public Meeting Held on**

**DECEMBER 21<sup>ST</sup>, 2022**

## **ARTICLE I – GENERAL PROVISIONS**

### **§ 101. Short Title.**

This Chapter shall be known and cited as “The West Pottsgrove Township Stormwater Management Ordinance of 2022” (hereinafter referred to as the “Ordinance” or the “Stormwater Ordinance”).

### **§ 102. Statement of Findings.**

The Governing Body of West Pottsgrove 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, including reasonable regulation of development and activities causing accelerated runoff, is fundamental to the public’s health, safety, and welfare and the protection of people of the Commonwealth, their resources, and the environment.

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

D. The use of green infrastructure and Low Impact Development (“LID”) are 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.

E. 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.

F. Through project design, impacts from stormwater runoff can be minimized to maintain the natural hydrologic regime and sustain high water quality, groundwater recharge, stream baseflow, and aquatic ecosystems. The most cost-effective and environmentally advantageous way to manage stormwater runoff is through non-structural project design, minimizing impervious surfaces and sprawl, avoiding sensitive areas (e.g., stream buffers, floodplains, steep slopes), and designing to topography and soils to maintain the natural hydrologic regime.

### **§ 103. Purpose.**

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

A. Meet legal water quality requirements under state law, including regulations found at 25 Pa. Code §§ 93.1-93.9z (“Chapter 93”), as amended, to protect, maintain, reclaim, and restore the existing and designated uses of the Waters of the Commonwealth.

B. Preserve natural drainage systems.

C. Manage stormwater runoff close to the source, reduce runoff volumes, and mimic pre-development 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 of all stormwater Best Management Practices (“BMPs”) that are implemented within West Pottsgrove Township.

H. Provide standards to meet NPDES permit requirements.

#### **§ 104. Statutory Authority.**

West Pottsgrove Township is empowered to regulate land use activities that affect runoff by the Pennsylvania Municipalities Planning Code (“MPC”), the Act of July 31, 1968, P.L. 805, No. 247, codified at 53 P.S. § 10101, *et seq.*, as reenacted and amended; the Pennsylvania Storm Water Management Act (“SWMA”), the Act of October 4, 1978, P.L. 864, No. 167, codified at 32 P.S. § 680.1, *et seq.*, as amended; and the First Class Township Code, the Act of May 27, 1949, P.L. 1955, codified at 53 P.S. § 55101, *et seq.*, as reenacted and amended.

#### **§ 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. For the purposes phased and/or incremental project applicability, May 5, 2005 shall be considered the starting point from which to consider tracts as parent tracts relative to future subdivisions, and from which impervious surface and earth disturbance computations shall be cumulatively considered.

#### **§ 106. Repealer/Interpretation.**

This Ordinance is intended to be consistent with, and shall be interpreted and construed in accordance with, the Municipal Code and Ordinance Compliance Act, the Act of December 20,

2000, P.L. 724, No. 99, codified at 63 P.S. §§ 1081-1084, and as amended from time to time. In the event of a conflict between this Ordinance and the Municipal Code and Ordinance Compliance Act, or any other applicable statute of this Commonwealth or the United States, such statute of the Commonwealth or the United States shall govern. All other provision(s) of the Code of Ordinances or other regulations of the Township of West Pottsgrove, or any parts thereof in conflict or inconsistent with any provisions of this Ordinance are hereby repealed to the extent of the inconsistency only.

#### **§ 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, which remaining provisions shall remain in full force and effect.

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

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

#### **§ 109. Erroneous Permit.**

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

#### **§ 110. Waivers.**

The following provisions govern the issuance of waivers or approval of modifications to the requirements and provisions of this Ordinance:

A. The Governing Body of West Pottsgrove Township may, after an evaluation of alternatives and a recommendation from the Planning Commission, its staff, and/or its professionals, render a determination that any requirement under this Ordinance cannot be achieved for a particular regulated activity and may approve waivers or modifications to the provisions of this Ordinance, subject to the standards provided in Subsections B and C below.

B. Waivers or modifications of the requirements of this Ordinance may be approved by West Pottsgrove Township 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 and accompany the Stormwater Management Site Plan submission. The request shall provide the facts upon which the request is based, the provision(s)

of the Ordinance involved, and the proposed modification.

C. No waiver or modification of any regulated stormwater activity involving earth disturbance greater than or equal to one (1) acre may be granted by West Pottsgrove Township unless that action is approved in advance by the Pennsylvania Department of Environmental Protection (hereinafter, "PADEP" or the "Department") or the Montgomery County Conservation District ("MCCD"), provided, however, that MCCD is appropriately delegated with such approval authority by the Department.

## ARTICLE II – TERMINOLOGY

### § 201. Definitions.

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

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

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

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

D. The words "shall" and "must" refer to items which are mandatory; the words "may" and "should" refer to items which are permissive.

E. The words "used or occupied" include the words "intended, designed, maintained, or arranged to be used, occupied, or maintained."

F. The words "day" or "days" shall mean calendar days unless otherwise specified.

The definitions in this Section 201 do not necessarily reflect the definitions contained in other pertinent regulations or statutes and are intended for this Ordinance only.

**AASHTO** – the American Association of State Highway and Transportation Officials.

**Accelerated Erosion** – The removal of the surface of the land through the combined action of man's activity and the natural processes at a rate greater than would occur because of the natural process alone.

**Acre** – An area of land measuring 43,560 square feet.

**Agricultural Activities** – 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, the pasturing and raising of livestock, and installation of **Conservation Measures** designed to conserve soils and prevent erosion from agricultural activities. Construction of new buildings or impervious area is not, in and of itself, considered an agricultural activity.

**Alteration** – As applied to land, a change in topography as a result of the moving of soil and/or rock from one location or position to another; or the changing of surface conditions by causing the surface to be more or less impervious; or any land disturbance.

**Applicant** – A landowner, developer, or any other person who has filed an application to West Pottsgrove Township for approval to engage in any regulated activity at a project site in the Township.

**As-Built Drawings (As-Built Plans)** – Drawings or plans maintained by a contractor as they construct any project and upon which they document the actual locations of the building components and changes to the original contract documents. These, or a copy of the same, are turned over to the Township and the Township Engineer at the completion of the project and may be required to be recorded with the Recorder of Deeds of Montgomery County. As-built drawings are not considered complete until reviewed and approved by the Township or their designee.

**Attenuate** – To reduce the magnitude of the flow rate by increasing the time it takes to release a specified volume of runoff (for example the one-year, twenty-four-hour storm event). Attenuation is a method of reducing the peak flow rates for post development compared to the peak flow rates in predevelopment.

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

**Baseflow** – The portion of stream flow that is sustained by groundwater discharge.

**Berm** – A well-compacted, earth-filled ridge that is generally human-made but may be naturally occurring.

**Bioretention** – A stormwater retention area which utilizes woody and herbaceous plants and soils to remove pollutants before infiltration occurs.

**Best Management Practice(s) (“BMP” or “BMPs”)** – 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 (2) 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 measures, bioretention, wet ponds, permeable paving, grassed swales, riparian or forested buffers, sand filters, detention basins, and manufactured devices. Structural stormwater BMPs are permanent appurtenances to the project site.

**BMP Manual** – the Pennsylvania Stormwater Best Management Practices Manual (No. 363-0300-002), prepared by the Pennsylvania Department of Environmental protection, dated December 30, 2006, as amended and updated.

**Brownfield** – A parcel of real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant, subject to certain legal exclusions and additions, as more fully defined by 42 U.S.C. §9601(39) *et seq.*

**Channel Erosion** – The widening, deepening, and headward cutting of small channels and waterways due to erosion caused by moderate to large floods.

**Channelized Flow** – See “**Concentrated Flow**.”

**Cistern** – An underground reservoir or tank designed or intended for storing rainwater.

**Code Enforcement Officer (“CEO”)** – A Township staff member appointed by the West Pottsgrove Township Board of Commissioners to be certified under Township codes and ordinances to engage in the practice of code enforcement. The Code Enforcement Officer shall enforce and administer all of the provisions of this Ordinance and of those other applicable codes and ordinances of the Township. The duties of the Code Enforcement Officer shall include, but not be limited to, the undertaking of such investigations and other activities as may be required to determine compliance with the applicable codes and ordinances of the Township, to issue all necessary notices to abate illegal or unsafe conditions, to insure compliance with the Township’s Code of Ordinances for the safety, health, and general welfare of the public, and to make inspections and determine compliance with the applicable codes and ordinances of the Township. The Code Enforcement Officer shall be authorized to initiate, on behalf of the Township, appropriate legal actions against persons or other legal entities for violations of the Township’s Code of Ordinances.

**Concentrated Flow** – A flow of stormwater that gains speed and increases depth, forming small channels. There are two (2) types of Concentrated Flow: **Shallow Concentrated Flow** and **Channelized Flow**. Shallow Concentrated Flow forms small channels of stormwater from several inches to a foot in width. As Shallow Concentrated Flows of stormwater come together, they form Channelized Flow eventually forming the channels of streams or rivers.

**Conservation District** – A conservation district, as defined by Section 3(c) of the Pennsylvania Conservation District Law, the Act of December 19, 1984, P.L. 1125, No. 221, codified at 3 P.S. § 849, *et seq.*, as amended, that has the authority under a delegation agreement executed with PADEP to administer and enforce all or any portion of the Erosion and Sediment Control regulations pursuant to 25 Pa. Code §§ 102.1-102.52 (also referred to as “Chapter 102”). The Conservation District covering West Pottsgrove Township is the Montgomery County

Conservation District (“MCCD”); however, for projects that may border or cross the western boundaries of the Township, the Berks County Conservation District (“BCCD”) may also be applicable.

**Conservation Easement** – An easement required at the discretion of West Pottsgrove Township to preserve and conserve natural areas typically associated with Riparian Buffers, Streams, Wetlands, Surface Waters, and stormwater management BMPs.

**Conservation Measures** – See “*Agricultural Activities.*”

**Culvert** – A structure with appurtenant works which carries a stream under or through an embankment or fill.

**Dam** – An artificial barrier, together with its appurtenant works, constructed for the purpose of impounding or storing water or another fluid or semifluid, or a refuse bank, fill, or structure for highway, railroad, or other purposes which does, or may, impound water or another fluid or semifluid.

**Designee** – An agent of West Pottsgrove Township and/or any agent of the Governing Body involved with the administration, review, or enforcement of any provisions of this Ordinance.

**Design Professional (Qualified)** – A Pennsylvania registered Professional Engineer (“P.E.”), Registered Landscape Architect (“R.L.A.”), Professional Geologist (“P.G.”), or a Professional Land Surveyor (“P.L.S.”) holding a valid license from the Commonwealth of Pennsylvania for their particular discipline or specialty or other like professional otherwise qualified by law to perform the work required by this Ordinance.

**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 Basin** – An impoundment structure designed to manage stormwater runoff by temporarily storing the runoff and releasing it slowly at a predetermined rate.

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

**Developer** – See “*Applicant.*”

**Development (Redevelopment)** – See “*Earth Disturbance Activity.*”

**Development Site** – See “*Project Site.*”

**Diffused Drainage Discharge (Diffused Flow)** – Drainage discharge not confined to a single point location or channel that generally moves down slope via sheet flow rather than concentrating in rills, gullies, or ditches and, in doing so, is able to infiltrate into the soil and plant root zone.



***Discharge –***

- A. (verb) To release water from a project, site, aquifer, drainage basin, or other point of interest;
- B. (noun) The rate and volume of flow of water, such as in a stream, and generally expressed in volume per unit of time, such as cubic feet per second (“cfs”).

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

***Downslope Property Line(s)*** – That portion of the property line(s) of a lot, tract, or parcels of land being developed, located such that all overland or pipe flow from the site would be directed towards it.

***Drainage Conveyance Facility*** – A Stormwater Management Facility designed to transmit stormwater runoff and shall include, but not be limited to, streams, rivers, channels, swales, pipes, conduits, culverts, storm sewers, etc.

***Drainage Easement*** – A non-possessory interest in land granted by a landowner (*grantor*) to another (*grantee*) allowing the use of the land burdened by the Drainage Easement for stormwater management purposes by the grantee.

***Drainage Permit*** – See “*Stormwater Management Permit.*”

***Drainage Plan*** – See “*Stormwater Management Site Plan.*”

***Earth Disturbance Activity*** – Any construction or other human activity which disturbs the surface of land including, but not limited to, clearing and grubbing, grading, excavation, embankments, land development, agricultural plowing or tilling, timber harvesting activities, road maintenance activities, mineral extraction, and the moving, depositing, stockpiling, or storing of soil, rock, or earth materials.

***Earthmoving*** – For the purposes of this Ordinance, includes any one or more of the following activities:

- A. Cutting down of trees or clearing of brush, other than clearing of grass and weeds;
- B. Excavation of the ground; filling of the ground, or mineral extraction;
- C. Grading, re-grading, any change in the ground surface elevation greater than one foot, disturbance of topsoil or vegetative cover of the land;
- D. For the purposes of this definition, the term “Earthmoving” shall apply to any soil, clay, overburden, sediment, dredge spoils, or similar material;
- E. Removal of tree stumps or brush with earthmoving equipment.

Earthmoving shall also include any applicable definition contained in applicable PADEP regulations including Chapter 102.

***Emergency Spillway*** – A conveyance area that is used to pass Peak Discharge greater than the maximum Design Storm controlled by the Stormwater Facility.

***Encroachment*** – A structure or activity that changes, expands, or diminishes the course, current, or cross section of a watercourse, floodway, or body of water.

***Energy Dissipater*** – A concrete, stone, or other similar structure designed to reduce the velocity and force of a Concentrated Flow of water.

***EPA*** – the United States Environmental Protection Agency.

***Erosion*** – The natural process by which the surface of the land is worn away by natural mechanical or chemical action, such as flowing water, blowing wind, or hydrolysis.

***Erosion and Sediment Pollution Control Plan (“E&S Plan”)*** – A plan that is designed to minimize accelerated erosion and sedimentation. Said plan must be submitted to, and approved by, the Conservation District before any development or construction can proceed, if the Disturbed Area exceeds 1-acre in totality.

***Exceptional Value Waters*** – Surface waters of exceptionally high quality which satisfy the designation criteria pursuant to 25 Pa. Code § 93.4b(b).

***Existing Conditions*** – The dominant land cover during the 5-year period immediately preceding the occurrence of an activity regulated by this Ordinance, regardless of whether approval has been properly obtained pursuant to this Ordinance prior to the commencement of said regulated activity. For the purposes of this Ordinance, Existing Conditions also includes the physical condition of a project site prior to commencing of the regulated activity.

***FEMA*** – the United States Federal Emergency Management Agency.

***Filter Strips*** – See “*Vegetated Buffers*.”

***Flood*** – A general but temporary condition of partial or complete inundation of normally dry land areas from the overflow of streams, rivers, and/or other Waters of the Commonwealth.

***Floodplain*** – Any land area susceptible to inundation by water from any natural source or which is delineated as a Special Flood Hazard area on the applicable National Flood Insurance Program Flood Insurance Rate Map (“FIRM”) prepared by FEMA. Floodplains also include areas that comprise Group 13 soils, as listed in Appendix A of the PADEP Technical Manual for Sewage Enforcement Officers (the “SEO Technical Manual”), as the SEO Technical Manual may be amended or replaced from time to time by PADEP.

***Floodway*** – The channel of a watercourse and those portions of the adjoining Floodplains that are

reasonably required to carry and discharge the 100-year frequency flood (the “100-year Flood”). Unless otherwise specified, the boundary of the Floodway is as indicated on FIRM maps and/or related FEMA flood insurance studies. In an area where no FIRM maps or FEMA flood insurance studies have defined the boundary of the 100-year Flood, it is assumed—absent evidence to the contrary—that the Floodway extends from the stream to a line parallel to the stream’s course measured 50-feet horizontally from the top of the bank of the stream.

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

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

**Governing Body** – The Board of Commissioners of the Township of West Pottsgrove, Montgomery County, Pennsylvania.

**Grade (Gradient/Slope/Incline)** – (*noun*) The grade of a physical feature or landform (e.g., road, channel, ground surface) refers to the tangent of the angle of that feature or landform’s surface to the horizontal. The grade is specified as a percentage of a ratio where the numerator consists of the gain or loss in elevation and the denominator consists of the distance between any two distinct points (i.e., “rise over run” x 100) along that feature or landform’s surface. The grade shall be shown on plans as a percent (%) as required herein.

**Grading (To Grade)** – See “*Earthmoving*.”

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

**Grassed Waterway** – A natural or constructed waterway, usually broad and shallow, covered with erosion-resistant grasses, used to convey surface water.

**Groundwater Recharge** – Replenishment of existing natural underground water supplies.

**High Quality Waters** – Surface waters having quality which exceeds levels necessary to support the propagation of fish, shellfish and wildlife, and recreation in and on the water by satisfying the designation criteria pursuant to 25 Pa. Code § 93.4b(a).

**Hot Spot** – An area where land use or activity generates highly-contaminated stormwater runoff, with concentrations of pollutants in excess of those typically found in stormwater, including but not limited to: vehicle salvage yards and recycling facilities; vehicle fueling stations; vehicle service and maintenance facilities; vehicle and equipment cleaning facilities; fleet storage areas (e.g., bus yards, truck depots, etc.); industrial sites based on standard industrial codes; marinas (including those used for storage, service, and/or maintenance); outdoor liquid container storage;

outdoor loading/unloading facilities; public works storage areas; facilities that generate or store hazardous materials; commercial container nurseries; and other land uses and activities as designated by an appropriate review authority.

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

***Hydrologic Soil Group (“HRG”)*** – Infiltration rates of soils vary widely and are affected by subsurface permeability as well as surface intake rates. Soils are classified into four (4) Hydrologic Soil Groups (A, B, C, and D) according to their minimum infiltration rate, which is obtained for bare soil after prolonged wetting. The United States Natural Resources Conservation Service (“NRCS”) defines the four (4) 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 the MCCD offices. Soils become less pervious as the HSG increases with Group A having the highest infiltration rates and Group D having the lowest infiltration rates.

***Hydrograph*** – A graphical representation of average rainfall, rainfall excess rates, or volumes over specified areas during successive units of time during a storm.

***Impervious Surface (Impervious Area)*** – A surface that has been compacted, or covered with material, to the extent that it is resistant to infiltration by water, including, but not limited to, conventional impervious surfaces such as paved streets, roofs, indoor living space, patios, decks, garages, sheds, and similar structures, compacted stone, sidewalks, and compacted earth or turf. In addition, the following shall be considered impervious surfaces when used by motor vehicles: graveled areas, bricks, and cobblestone. The term excludes water surfaces associated with in-ground or above-ground pools. Conventional Impervious Surfaces that are designed such that they do not prevent infiltration are eligible to be excluded as Impervious Surfaces at the discretion of the Township and their professionals.

***Impoundment*** – A retention or detention basin designed to retain stormwater runoff and release it at a controlled rate.

***Infill*** – Development that occurs on smaller parcels that remain undeveloped but are located within, or in very close proximity to, urban areas. Infill development relies on existing infrastructure and does not require an extension of water, sewer, or other public utilities.

***Infiltration*** – The passing of stormwater downward into the soil from the ground surface, thereby resulting in its availability for vegetative uptake or the recharge of groundwater supplies.

***Infiltration Facility*** – A permanent stormwater management facility that temporarily impounds stormwater runoff and discharges it via infiltration into the surrounding soil. While an infiltration facility may also be equipped with an outlet structure to discharge impounded stormwater runoff, such discharge is normally reserved for overflow and/or other emergency conditions. Since an infiltration facility impounds runoff only temporarily, it is intended that it remains normally dry during non-rainfall periods. Infiltration basins, infiltration trenches, infiltration dry wells, and

porous pavement shall be considered infiltration facilities designed to direct stormwater runoff into the ground.

***Infiltration Practice*** – A practice designed to direct stormwater runoff into the ground using an Infiltration Facility (e.g., a French Drain, Seepage Pit, Seepage Trench, Bioretention Basin, etc.).

***Inlet*** – A surface connection to a closed stormwater conveyance system; a structure at the diversion end of a stormwater conduit; the upstream end of any structure through which stormwater or surface water may flow.

***Invert (also “Invert Level” or “Invert Elevation”)*** – The lowest point of a surface, whether the bottom interior of a pipe, the floor of a basin or culvert, the bottom of an inlet structure, drain, sewer, swale, channel, orifice, or any other BMP utilized in the management of stormwater.

***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 geology, such as limestone or dolomite.

***Land Development*** – Any of the following involving land:

A. The improvement of a single lot or the improvement of two or more contiguous lots, tracts, or parcels of land for any purpose involving:

(1) A group of two (2) or more residential or nonresidential buildings, whether initially or cumulatively, or a single nonresidential building on a single lot or multiple lots, regardless of the number of occupants or tenure; or

(2) The division or allocation of land or space, whether initially or cumulatively, between or among two (2) or more existing or prospective occupants by means of or for the purpose of streets, common areas, leaseholds, condominiums, building groups, or other features.

B. A subdivision of land.

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

***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 stormwater 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 the project site.

***Land/Earth Disturbance*** – Any activity involving grading, tilling, digging or filling of ground, or stripping of vegetation or any other activity that causes an alteration to the natural condition of the land. See also “***Earth Disturbance Activity***.”

***Landowner*** – See “***Owner***.”

***Level Spreader*** – A stormwater management facility perpendicular to the direction of slope and extending across the width of the slope for the purpose of intercepting surface runoff and spreading it behind the stormwater management facility to enhance infiltration and reduce erosion and runoff from the slope. The purpose of a level spreader is to prevent concentrated erosive flows from occurring and to spread out stormwater runoff uniformly over the ground as sheet flow.

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

A. A seasonal high-water table, whether perched or regional, determined by direct observation of the water table or indicated by soil mottling.

B. A rock with open joints, fracture, or solution channels or masses of loose rock fragments, including gravel, with insufficient fine soil to fill the voids between the fragments.

C. A rock formation, other stratum, or soil condition having permeability that is so low that it effectively limits the downward passage of water.

D. The presence of Karst topography or geologic features which may limit the feasibility of stormwater infiltration due to risk that such infiltration increases the risk of the formation of sinkholes and other dissolution activity within the underlying carbonate formation.

***Loading*** – The total amount (generally measured in pounds or kilograms per acre per year) of material (e.g., sediment, nutrients, oxygen-demanding material, or other chemicals or compounds) brought into a lake, stream, or water body by inflowing streams, runoff, direct discharge through pipes, groundwater, the air (e.g., aerial or atmospheric deposition), and other sources over a specific period of time (e.g., annually, monthly, weekly, daily, etc.).

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

***Manning Equation (In Manning Formula)*** – A method for the calculation of flow velocity (e.g., feet per second) and flow rate (e.g., cubic feet per second) in open channels based upon channel shape, roughness, depth of flow, and slope. “***Open Channels***” may include closed conduits so long as the flow is not under pressure.

***MCCD*** – the Montgomery County Conservation District.

***MCHD*** – the Montgomery County Health Department.

***MS4*** – a Municipal Separate Storm Sewer System. See also “***Separate Storm Sewer System***.”

***Municipality*** – See “***Township***.”

***Natural Hydrologic Regime*** – See “***Hydrologic Regime***.”

***Nonpoint Source Pollution*** – Pollution that enters a body of water from diffuse origins in the watershed and does not result from confined or discrete conveyances.

***NPDES*** – the National Pollutant Discharge Elimination System, the federal government’s system for the issuance of permits pursuant to the Clean Water Act. In the Commonwealth of Pennsylvania, the issuance of NPDES permits, and their enforcement, is delegated to the Pennsylvania DEP pursuant to a Memorandum of Agreement with EPA. Additionally, PADEP has, in turn delegated the issuance of certain NPDES General Permits for stormwater discharges associated with construction activities to county conservation districts.

***NRCS*** – the Natural Resources Conservation Service. NRCS was previously known as the Soil Conservation Service (“SCS”) and is a division of the United States Department of Agriculture (“USDA”).

***Observation Port (Inspection Port)*** – A device, typically installed as part of an underground stormwater BMP (e.g., underground basins, infiltration trenches, etc.), that allows for the observation or inspection of levels of infiltration below grade and facilitates periodic inspection and maintenance. The Observation/Inspection Port is accessible ground surface and typically consists of a perforated PVC pipe installed vertically, and anchored at its invert, with a durable cap installed flush with the ground surface.

***Open Channel*** – A drainage element in which stormwater flows with an open surface by gravity. Open channels include, but shall not be limited to, natural and man-made drainageways, swales, streams, ditches, canals, and pipes (provided the pipes are neither under pressure nor flowing at capacity).

***Outfall*** – a discrete point where water flows from a conduit, stream, or drain into a receiving water. For the purposes of this Ordinance, an Outfall includes any point where stormwater is discharged from any one public or private stormwater management or conveyance system into another conveyance system or Waters of the Commonwealth and includes the point(s) at which an MS4 system leaves one municipality and enters another.

***Outlet*** – A point at which water discharges from a river, creek, or other flow line; lake, tidal basin, or drainage depression; or pipe, channel, dam, or other hydrologic structure. For the purposes of this Ordinance, an Outlet includes the point(s) where stormwater discharges from a stormwater facility, structure, or other BMP.

***Owner (Landowner)*** – The legal or beneficial owner or owners of land including the holder of an option or contract to purchase (whether or not such option or contract is subject to any condition), a lessee if authorized under the lease to exercise the rights of the landowner, or other person having a proprietary or other possessory interest in land.

***PADEP (“DEP” or the “Department”)*** – the Pennsylvania Department of Environmental Protection.

**PA DOT (PennDOT)** – the Pennsylvania Department of Transportation.

**Parking Lot Storage** – A practice involving the use of impervious parking areas as temporary impoundments with controlled release rates during rainstorms.

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

**Perennial Streams** – Streams that flow throughout the majority of the year in a defined channel. Perennial streams derive their flow from both groundwater and surface water runoff, and the groundwater table never drops below the streambed.

**Pervious Surface (Pervious Area)** – Any area not defined as impervious area.

**Person** – Any individual (i.e., natural person), partnership, public or private association or corporation, or a governmental unit, public utility, or any other legal entity whatsoever which is recognized by law as the subject of rights and duties within the Commonwealth of Pennsylvania.

**Pipe** – A culvert, closed conduit, or similar structure (including appurtenances) that conveys stormwater.

**Planning Commission** – the Planning Commission of the Township of West Pottsgrove, Montgomery County, Pennsylvania.

**Point Source** – Any discernible, confined, and discrete conveyance including, but not limited to, any pipe, ditch, channel, tunnel, or conduit from which stormwater is or may be discharged, as defined pursuant to 25 Pa. Code § 92a.2.

**Predevelopment (Pre-Development)** - Undeveloped/natural condition prior to any alteration or development.

**Pretreatment (Pre-Treatment)** - Techniques employed in stormwater BMPs to provide storage or filtering to help trap, remove, settle out, or otherwise prevent coarse materials and other pollutants from entering the system.

**Project Site** – The specific area of land in the Township where any activities regulated by this Ordinance are planned, conducted, or maintained.

**Qualified Professional** – See “*Design Professional (Qualified)*.”

**Rainfall Intensity** – The depth of accumulated rainfall per unit time (e.g., inches per hour).

**Rational Formula (Rational Method)** – A method for computing quantities of stormwater runoff. The rational formula relates runoff to rainfall by the following equation:

$$Q = c * i * a.$$



Where “Q” equals the peak runoff in cubic feet per second; “c” equals the runoff coefficient which is actually the ratio of the peak runoff rate to the average rainfall rate for a period known as the time of concentration; “i” equals the average rainfall intensity in inches per hour for a period equal to the time of concentration; and “a” equals the drainage area in acres.

**Recharge Area** – An undisturbed surface area or depression where stormwater collects and a portion of which infiltrates and replenishes the soil and/or groundwater.

**Reconstruction** – The process by which an existing developed area is adaptively reused, rehabilitated, restored, renovated, and/or expanded. Such a development relies on existing infrastructure and does not require an extension of water, sewer, or other public utilities. See also “**Redevelopment (Development)**.”

**Record Drawings** – See “**As-Built Drawings (As-Built Plans)**.”

**Redevelopment (Development)** – See “**Earth Disturbance Activity**.”

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

**Regulated Earth Disturbance Activity** – Any activity involving earth disturbance subject to regulation under the Pennsylvania NPDES Permitting, Monitoring, and Compliance Program, codified at 25 Pa. Code §§ 92a.1-92a.104 (hereinafter “Chapter 92”), Chapter 102, or the Clean Streams Law including, but not limited to, the following:

- A. Any earth disturbance activity associated with land development and/or redevelopment.
- B. Any earth disturbance activity associated with any subdivision.
- C. Construction of new or additional impervious or semipervious surfaces (driveways, parking lots, patios, tennis courts, etc.) which are not exempt pursuant to Section 302 of this Ordinance.
- D. Construction of new buildings or additions to existing buildings.
- E. Diversion or piping of any natural or man-made stream channel.
- F. Installation of BMPs and/or stormwater management facilities or appurtenances thereto.

**Release Rate** – The percentage of a project site or subarea’s existing conditions (i.e., pre-development) peak rate of runoff to which the proposed conditions (i.e., post-development) peak rate of runoff must be reduced to protect downstream areas.

**Retention Basin** – An impoundment in which stormwater is stored and not released during the storm event. Stored stormwater may be released from the basin at some time after the end of the storm.

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

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

***Riser*** – A vertical pipe extending from the bottom of a stormwater management facility (e.g., a retention basin) that is designed to control the amount of stormwater ponded within the facility and to provide positive overflow when the facility reaches a predetermined design volume.

***Riparian Buffer*** – A permanent area of land adjoining and immediately up-gradient from rivers, streams, lakes, ponds, and wetlands that is vegetated with a combination of trees, shrubs, and herbaceous plants. A riparian buffer functions to maintain the integrity of stream channels, to reduce the impact of upland sources of pollution by trapping, filtering, and converting sediments, nutrients, and other chemicals, and supply food, cover, and thermal protection to fish and other wildlife.

***Road Maintenance/Roadside Maintenance*** – Earth disturbance activities within the existing cross-section of a road including, but not limited to, grading or restabilizing existing unpaved roads, shoulder grading, slope stabilization, cutting existing cut slopes, inlet and endwall cleaning, reshaping and cleaning drainage ditches and swales, pipe cleaning, pipe replacement, support activities incidental to resurfacing activities such as minor vertical adjustment to meet grade of resurfaced area, and other similar activities.

***Rooftop Detention*** – Temporary ponding and gradual release of stormwater falling directly onto flat roof surfaces by incorporating controlled-flow roof drains into building designs.

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

***SALDO*** – the West Pottsgrove Township Subdivision and Land Development Ordinance of 2009, as amended.

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

***Sediment Basin*** – A barrier, dam, or retention or detention basin located and designed to retain rock, sand, gravel, silt, or other material transported by surface water.

***Sediment Pollution*** – The placement, discharge, or any other introduction of sediment into the Waters of the Commonwealth occurring from the failure to design, construct, implement, or maintain control measures and control facilities in accordance with the requirements of the PADEP Erosion and Sediment Pollution Control Program Manual, Technical Guidance No. 363-2134-008 (2012), as amended.

***Sedimentation*** – The process by which mineral or organic matter is accumulated or deposited by the movement of surface water.

***Seepage Pit/Seepage Trench*** – An area of excavated earth filled with loose stone or similar coarse material into which surface water is directed for infiltration into the ground.

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

***Shallow Concentrated Flow*** – See “***Concentrated Flow***.”

***Sheet Flow*** – Surface water runoff that flows over the ground surface as a thin, even layer and not concentrated or channelized. See also “***Concentrated Flow***.”

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

***Source Water Protection Area (“SWPA”)*** – A identified as an area where the risk of contaminant migration to a surface water intake or groundwater wellhead is likely to occur. SWPAs are typically identified on plans, maps, or diagrams as an area of a watershed draining toward a surface water intake or a circular zone measured a specified distance radially from a wellhead (e.g., 100-feet).

***Special Protection Watersheds*** – Watersheds or sub-watersheds for which the receiving surface waters are designated as Exceptional Value (“EV”) or High Quality (“HQ”) Waters of the Commonwealth by Chapter 93.

***Spillway*** – A conveyance that is used to pass the peak discharge of the maximum design storm controlled by a stormwater facility.

***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.

***Storage Indication Method*** – A reservoir routing procedure for calculating the outflow hydrograph of a stormwater storage facility (a level pool elevation is assumed) using the continuity equation (the average volume of inflow minus the average volume of outflow for a given time interval equals the change in storage) where the outflow is defined as a function of the facility’s storage volume and depth.

***Storm Frequency*** – The average period of time within which a storm of a given duration and intensity can be expected to be equaled or exceeded. See also “***Return Period***.”

***Storm Sewer*** – See “***Separate Storm Sewer System***.”

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

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

***Stormwater Filters*** – Any number of structural mechanisms (e.g., multi-chamber catch basins, sand/peat filters, sand filters, etc.) installed to intercept stormwater flow and remove pollutants prior to discharge to a storm sewer. Stormwater filters typically require periodic cleaning and maintenance.

***Stormwater Management Permit*** – A permit issued by the Township Code Enforcement Officer after a Stormwater Management Site Plan has been approved by the Township.

***Stormwater Management Site Plan*** – A plan prepared by an Applicant, or their designated representative, indicating how stormwater runoff will be managed at the Project Site in accordance with this Ordinance, the contents of which Stormwater Management Site Plan are established herein.

***Stream*** – A body of surface water that flows in a defined and naturally occurring channel.

***Subarea (Sub-Area)*** – The smallest drainage unit of a watershed for which stormwater management criteria have been established in a Stormwater Management Site Plan.

***Subdivision*** – The division or redivision of a lot, tract, or parcel of land by any means into two or more lots, tracts, parcels, or other divisions of land including changes in existing lot lines for the purpose, whether immediate or future, of lease, partition by the court for distribution to heirs or devisees, transfer of ownership or building, lot development, or as otherwise defined by Section 107 of the Pennsylvania Municipalities Planning Code, as amended.

***Swale*** – A low-lying stretch of land which gathers or carries surface water runoff whether natural or man-made.

***Timber Operations*** – See “*Forest Management*.”

***Time-of-Concentration (“T<sub>c</sub>”)*** – The time for surface runoff to travel from the hydraulically most-distant point of a watershed to a point of interest within the same watershed. This time is the combined total of overland flow time and flow time in pipes or channels, if any.

***Township*** – the Township of West Pottsgrove, Montgomery County, Pennsylvania.

***Township Engineer (Municipal Engineer)*** – The Township’s appointed engineering representative, consultant, or engineering firm, who personally holds, or maintains employees who

hold, a qualified license to practice as a Professional Engineer (“PE”) within the Commonwealth of Pennsylvania.

***Township Manager*** - The appointed or acting Manager of the Township of West Pottsgrove who is duly appointed by the Board of Commissioners.

***TR-55*** – A program developed by the NRCS (also known as Technical Release 55: Urban Hydrology for Small Watersheds) which presents simplified procedures to calculate storm runoff volume, peak rate of discharge, hydrographs, and storage volumes required for floodwater reservoirs.

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

***Vegetated Buffers*** – Gently sloping areas that convey stormwater as sheet flow over a broad, densely-vegetated earthen area, possibly coupled with the use of level spreaders. Vegetated buffers should be situated on minimally disturbed soils, have low-flow velocities, and extended residence times.

***Water Table*** – The upper surface of saturation of pore space or fractures by subsurface water in an aquifer; the level below ground which is saturated by water. The seasonal high water table refers to a water table that rises and falls with the seasons due either to natural or human-made causes.

***Watercourse*** – A river, brook, creek, or a channel or ditch for water, whether natural or man-made, with perennial flow.

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

***Watershed*** – A region or area drained by a river, watercourse, or other surface water of the Commonwealth.

***Wellhead*** – The point at which a groundwater well bore hole meets the surface of the ground.

***Wellhead Protection Area*** – The surface and subsurface area surrounding a groundwater supply well, well field, spring, or infiltration gallery supplying a public water system, through which contaminants are reasonably likely to move towards and reach the water source.

***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. Development in wetlands is regulated by the United States Army Corps of Engineers (“USCOE”) and PADEP. The identification of wetlands should be based upon the Federal Manual for Identifying and Delineating Jurisdictional Wetlands: An Interagency Cooperative Publication of the United States Army Corps of Engineers, EPA, the United States

Fish and Wildlife Service, and USDA SCS, dated January 1989, as amended.

***Woodlands*** – Areas, groves, or stands of mature or largely mature trees (i.e., greater than 6-inches in caliper) covering an area greater than ¼-acre or groves of mature trees (i.e., greater than 12-inches in caliper) consisting of more than ten (10) individual tree specimens.

***Zoning Ordinance*** – The West Pottsgrove Township Zoning Ordinance of 2009, as amended.

## ARTICLE III – REQUIREMENTS AND STANDARDS

### § 301. General Requirements.

A. For all regulated activities, unless preparation of a Stormwater Management Site Plan is specifically exempted pursuant to Section 302:

(1) Preparation and implementation of an approved Stormwater Management Site Plan is required.

(2) No regulated activities shall commence until West Pottsgrove Township issues written approval of a Stormwater Management Site Plan, which demonstrates compliance with the requirements of this Ordinance. Written approvals may come from the Township Code Enforcement Officer and/or the Township Engineer if requested by the Code Enforcement Officer due to the complexity of the proposed improvements.

B. Stormwater Management Site Plans approved by West Pottsgrove Township in accordance with Section 406 of this Ordinance shall be present on-site, and available for examination upon request by Township representatives, throughout the duration of the regulated activity.

C. West Pottsgrove Township may approve measures for meeting the State Water Quality Requirements other than those measures provided in this Ordinance, only when the Applicant demonstrates, to the satisfaction of the Township, that the proposed measures meet the minimum requirements of, and do not conflict with, the laws or regulations of this Commonwealth including, but not limited to, the Clean Streams Law.

D. For all regulated earth disturbance activities, erosion and sediment control BMPs shall be designed, implemented, operated, and maintained during the regulated earth disturbance activities (e.g., during construction) to meet the purposes and requirements of this Ordinance and to meet all requirements under Title 25 of the Pennsylvania Code and the Clean Streams Law. Various BMPs and their design standards are listed in the Erosion and Sediment Pollution Control Program Manual (the “E&S Manual”), No. 363-2134-008, as amended and updated.

E. Impervious areas:

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

(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 not specifically exempted pursuant to Section 302 that add impervious area to a parcel, the total impervious area on the parcel is subject to the requirements of this Ordinance; except that the volume controls contained in Section 303 and the peak rate controls contained in Section 304 do not need to be retrofitted to existing impervious areas that are not being altered by the proposed regulated activity.

F. The flow of stormwater onto adjacent property shall not be created, increased, or otherwise altered without providing written approval from the affected adjacent property owner to

the Township, unless the activity meets the exemption criteria set forth in Section 302.

G. If stormwater flow is proposed to be concentrated and discharged onto adjacent property, the applicant must document to the Township in accordance with Section 301.F that adequate downstream conveyance exists to safely transport the concentrated discharge, or the applicant must obtain drainage easements from affected downstream property owners and provide all necessary facilities to safely convey the flow.

H. 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.

(3) Incorporate methods described in the Pennsylvania Stormwater Best Management Practices Manual (the “BMP Manual”) prepared by PADEP, Document No. 353-0300-002, as amended and supplemented. 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.

I. The design of all facilities over karst geology shall include an evaluation of measures to minimize adverse effects prepared and sealed by a Qualified Professional.

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

K. Normally dry, open top, storage facilities should completely drain both the volume control and rate control capacities over a period of time not less than 24- and not more than 72-hours from the end of the design storm, unless otherwise approved.

L. The design storm volumes to be used in the analysis of peak rates of discharge should be obtained from the latest version of the Precipitation-Frequency Atlas of the United States (“Atlas 14”) prepared by the National Oceanic and Atmospheric Administration (“NOAA”), National Weather Service, Hydrometeorological Design Studies Center, Silver Spring, Maryland.

NOAA’s Atlas 14 can be accessed at: <https://hdsc.nws.noaa.gov/hdsc/pfds/>.

M. For all regulated activities, Stormwater BMPs shall be designed, implemented,



operated, and maintained to meet the purposes and requirements of this Ordinance and to meet all requirements under Title 25 of the Pennsylvania Code, the Clean Streams Law, and the Storm Water Management Act.

N. Various BMPs and their design standards are listed in the BMP Manual and within this Ordinance. If the BMP Manual and this Ordinance have conflicting requirements, the more restrictive requirements shall apply.

O. Areas of existing diffused drainage discharge shall be subject to any applicable discharge criteria in the general direction of the existing discharge, whether proposed to be concentrated or maintained as diffused drainage areas, except as otherwise provided by this Ordinance. If diffused flow is proposed to be concentrated and discharged onto adjacent property, the applicant must demonstrate that adequate downstream conveyance facilities exist to safely transport the concentrated discharge or otherwise prove that no erosion, sedimentation, flooding, or other harm will result from the concentrated discharge.

P. Whenever a watercourse is located within a development site, it shall remain open in its natural state and location and should not be piped, impeded, or otherwise altered in any way (apart from road, utility, and/or driveway crossings for which valid NPDES permits have been obtained). It is the responsibility of the developer to stabilize existing eroded stream/channel banks.

Q. Where Earth Disturbance Activities governed by this Ordinance also require approval from other government agencies, evidence of the receipt of a valid permit from the appropriate government agency must be provided to the Township prior to the commencement of any regulated earth disturbance activity pursuant to this Ordinance. Examples of activities requiring approval from other government agencies include, but are not limited to, the following:

(1) Any regulated earth disturbance activities requiring a permit from PADEP pursuant to Chapter 102.

(2) Work within natural drainage ways subject to the issuance of a permit by PADEP pursuant to Chapter 105.

(3) Any stormwater management facility regulated by this Ordinance that would be located in, or adjacent to, surface Waters of the Commonwealth, including wetlands, subject to the issuance of a permit by PADEP pursuant to Chapter 105.

(4) Any stormwater management facility regulated by this Ordinance that would be located on, or discharge into, state highway rights-of-way or requires access to or from a state highway shall be subject to approval by PennDOT.

(5) Any culvert, bridge, storm sewer, or any other facility which must pass or convey flows from a tributary area and any facility which may constitute a dam subject to the issuance of a permit by PADEP pursuant to Chapter 105.

R. Where a development site is traversed by watercourses, a riparian corridor conservation easement shall be granted to the Township. Conservation Easements 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) or a minimum of 25-ft surrounding any wetland or as

further required by the Flood Plain Conservation District (Article XIII, Sections 1300-1315 of the Zoning Ordinance, as amended), where more strict requirements may apply. The terms of the easement shall prohibit excavation, the placing of fill or structures, or any alterations that may adversely affect the flow of stormwater within any portion of the easement. Residential Accessory Structures, up to and including 225 square feet in floor area, are exempt from the limitations associated with a Conservation Easement, subject to the express written approval of the Code Enforcement Officer.

### **§ 302. Exemptions.**

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

(1) An exemption from any requirement of this Ordinance shall not relieve the Applicant from implementing all other applicable requirements of this Ordinance or from implementing such measures as are necessary to protect the health, safety, and welfare of the public, property, and water quality.

(2) An exemption shall not relieve the Applicant from complying with the requirements for State-designated special protection waters designated by PADEP as High Quality ("HQ") or Exceptional Value ("EV") waters, or any other current or future Federal, State, or Township water quality protection requirements.

(3) An exemption under this Ordinance shall not relieve the Applicant from complying with all other applicable Township ordinances or regulations.

#### **B. General Exemptions**

(1) Regulated activities that result in less than one-thousand-five-hundred (1,500) square feet of new Proposed Impervious Surfaces AND less than five-thousand (5,000) square feet of Earth Disturbance in the aggregate, since May 5, 2005.

(2) Regulated activities listed in Section 302.C are exempt from only those requirements of this Ordinance that are included in the sections and articles listed in Table 302.1. Exemptions are for those items noted in Table 302.1 only and shall not relieve the Applicant from other applicable requirements of this Ordinance. Exemption shall not relieve the Applicant from implementing such measures as are necessary to protect health, safety, and welfare of the public, property, and water quality.

(3) Any regulated activity that meets the exception criteria in Table 302.1 is exempt from the Stormwater Management Site Plan submission requirement of Article IV of this Ordinance. This exception shall apply to the total development even if development is to take place in phases. The date from which impervious area computations shall be cumulatively considered shall be May 5, 2005. Impervious areas existing on the subject tract prior to May 5, 2005 shall not be considered in cumulative impervious area calculations for exemption purposes. An exemption shall not relieve the Applicant from implementing such measures as are necessary to protect the health, safety, and welfare of the public, property, and water quality. This exemption shall not relieve the Applicant from meeting the special requirements for watersheds draining to HQ or EV waters.

**TABLE 302.1 – Thresholds for Regulated Activities that are Exempt from the Provisions of this Ordinance as Listed Below (see also Table 302.1 Notes)**

<b>Ordinance Article/Section</b>	<b>Activities Listed in § 302.D.</b>	<b>&lt; 1,500 SF of Proposed Impervious Surfaces AND &lt; 5,000 SF of Proposed Earth Disturbance</b>	<b>1,500 SF to 3,000 SF of Proposed Impervious Surfaces AND &lt; 10,000 SF of Proposed Earth Disturbance</b>	<b>&gt;3,000 SF of Proposed Impervious Surfaces</b>
Article I	Not Exempt	Not Exempt	Not Exempt	Not Exempt
Article II	Not Exempt	Not Exempt	Not Exempt	Not Exempt
§ 301 and §§307-309	Not Exempt	Not Exempt	Not Exempt	Not Exempt
§§ 303-306	Exempt	Exempt	Exempt	Not Exempt
Article IV	Exempt	Exempt	Exempt	Not Exempt
Article V	Exempt	Not Exempt	Not Exempt	Not Exempt
Article VI	Exempt	Not Exempt	Not Exempt	Not Exempt
Article VII	Not Exempt	Not Exempt	Not Exempt	Not Exempt
Article VIII	Not Exempt	Not Exempt	Not Exempt	Not Exempt
<b>Other E&amp;S Pollution Control Requirements</b>	Must comply with Chapter 102 and any other applicable Federal, State, and Township codes, including the Clean Streams Law.			

**Table 302.1 Notes:**

- (1) Specific activities listed in Section 302.D are exempt from the indicated requirements, regardless of size.
- (2) A proposed Regulated Activity must be less than **BOTH** the Proposed Impervious Surfaces **AND** the proposed Earth Disturbance thresholds to be eligible for exemption from the requirements listed in this table.
- (3) “**Proposed Impervious Surface**” as defined in Section 201 of this Ordinance.
- (4) “**Exempt**” – Regulated Activities are exempt from the requirements of the listed section(s) only; all other provisions of this Ordinance shall apply.
- (5) “**Modified Requirements**” – Regulated Activities listed within the Sections of this Ordinance noted in Table 302.1 are eligible for exemption only from the indicated sections of this Ordinance and only if the modified requirements of Section 302.D are met to the satisfaction of the Township; all other provisions of this Ordinance shall apply.

C. Exemptions shall be at the discretion of the Township upon review of site conditions, topography, soils, and other factors as deemed appropriate by the Code Enforcement Officer and the Township Engineer based upon comprehensive Township goals and strategies for local development. The fact that a project otherwise meets exemption criteria as provided in this Ordinance does not guarantee an exemption will be granted by the Township.

D. **Exemptions for Specific Activities.** The following specific Regulated Activities

are exempt, as shown in Table 302.1, unless otherwise noted below. All other conveyance and system design standards established by the Township in other codes or ordinances shall be required, and all other provisions of this Ordinance shall apply.

(1) **Emergency Exemption.** Emergency maintenance work performed for the protection of public health, safety, and welfare. This exemption is limited to repair of the existing facility or facilities; upgrades, additions, or other improvements are not exempt. A written description of the scope and extent of any emergency work performed shall be submitted to the Township within two (2) calendar days of the commencement of the activity. A detailed plan shall be submitted no later than thirty (30) days following commencement of the activity. If the Township finds that the work is not an emergency, then the work shall cease immediately, and the requirements of this Ordinance shall be addressed as applicable.

(2) **Maintenance.** Any maintenance to an existing stormwater management system, facility, BMP, or Conveyance made in accordance with plans and specifications approved by the Township Engineer or Township.

(3) **Existing Landscaping.** Use of land for maintenance, replacement, or enhancement of existing landscaping.

(4) **Gardening.** Use of land for gardening for private, home consumption only.

(5) **Agricultural Related Activities.** Agricultural Activities as defined in Section 201 of this Ordinance, including Conservation Measures, that do not involve construction of any new or expanded Impervious Surfaces.

(6) **Forest Management.** Forest management operations, which are consistent with a sound Forest Management Plan as filed with the Township and which comply with the management practices contained in Chapter 14 of the PADEP E&S Manual. Such operations are required to have an Erosion and Sedimentation Control Plan which meets the requirements of Chapter 102 and meets the erosion and sediment control standards of Section 301 of this Ordinance.

(7) **Maintenance of Existing Paved Surfaces.** Replacement of existing paved surfaces shall meet the erosion and sediment control requirements of Chapter 102 and Article III of this Ordinance and is exempt from all other requirements of this Ordinance. Construction of new or additional Impervious Surfaces shall comply with all requirements of this Ordinance as listed in Table 302.1.

(8) **Municipal Roadway Shoulder Improvements.** Shoulder improvements conducted within the existing roadway cross-section of Township-owned roadways, unless said improvements require an NPDES permit, in which case the proposed work must comply with all requirements of this Ordinance.

(9) **In-Place Replacement of Residential Dwelling Unit.** The replacement in the exact footprint of an existing one- or two-family dwelling unit.

(10) **In-Place Replacement, Repair, or Maintenance of Residential Impervious Surfaces.** The replacement of existing residential patios, decks, driveways, pools, garages, and/or sidewalks that are accessory to an existing one- or two-family dwelling unit in the

exact footprint of the existing Impervious Surface.

E. Modified Requirements for Small Projects.

(1) Regulated Activities that involve an area from 1,500- to 3,000-square feet of Proposed Impervious Surfaces and 10,000-square feet or less of proposed Earth Disturbance may apply the modified requirements presented in the “*Simplified Approach to Stormwater Management for Small Projects*” (the “Simplified Approach”), attached hereto and incorporated herein as Appendix C, to comply with the requirements of Table 302.1. The applicant shall first contact the Township or their designee to confirm that (1) the proposed project is eligible for use of the Simplified Approach and is not otherwise exempt from these Ordinance provisions; (2) to determine what components of the proposed project are to be considered as Impervious Surfaces; and (3) to determine if other known site or local conditions exist that may preclude the use of any techniques included in the Simplified Approach. The instructions and procedures for the preparation, submittal, review, and approval of documents required when using the Simplified Approach is attached hereto as Appendix C and all requirements of the Simplified Approach shall be adhered to by the Applicant. All other provisions of this Ordinance shall apply.

(2) Projects that qualify for the Simplified Approach will be administered by, and may be approved by, the Township Code Enforcement Officer and the Township Engineer, if so requested by the Code Enforcement Officer due to the complexity of the proposed improvements. The use of the Simplified Approach shall be at the sole and absolute discretion of Township Code Enforcement Officer upon review of site conditions, topography, soils, and other factors as deemed appropriate based upon comprehensive Township goals and strategies for local development. The fact that a project otherwise meets Simplified Approach criteria as provided in this Ordinance does not guarantee the Simplified Approach will be approved by the Township Code Enforcement Officer.

(3) The Board of Commissioners hereby delegates authority for execution of all agreements, contracts, and covenants associated with Simplified Approach projects meeting the criteria of Section 302.E.1 above to Township Manager, subject to the review and approval of the Township Engineer and Township Solicitor.

**§ 303. Volume Controls.**

The green infrastructure and low impact development practices provided in the BMP Manual shall be utilized for all regulated activities wherever possible. Water volume controls shall be implemented using the Design Storm Method in Section 303.A or the Simplified Method in Section 303.B below. For regulated activity areas equal or less than 1-acre that do not require hydrologic routing to design the stormwater facilities, this Ordinance establishes no preference for either methodology; therefore, the Applicant may select either methodology on the basis of economic considerations, the intrinsic limitations on applicability of the analytical procedures associated with each methodology, or other factors.

A. **The Design Storm Method.** This 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) The Applicant shall not increase the post-development total runoff volume for all storms equal to or less than the 2-year, 24-hour duration storm event.

(2) For modeling purposes:

(a) Existing (predevelopment) non-forested pervious areas must be considered meadow in good condition.

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

**B. The Simplified Method.** This method (CG-2 in the BMP Manual) is independent of site conditions and should be used if the Design Storm Method is not followed. This method is not applicable to regulated activities greater than 1-acre or for projects that require design of stormwater storage facilities. For new impervious surfaces:

(1) Stormwater facilities shall capture at least the first 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 the Commonwealth). Removal options include reuse, evaporation, transpiration, and infiltration.

(3) Wherever possible, infiltration facilities should be designed to accommodate infiltration of the entire volume of permanently removed runoff; however, in all cases at least the first ½-inch of the permanently removed runoff should be infiltrated.

(4) This method is exempt from the requirements of Section 304, Rate Controls.

#### **§ 304. Rate Control.**

**A.** For areas not covered by a release rate map from an approved Act 167 Stormwater Management Plan:

(1) Post-development discharge rates shall not exceed the pre-development discharge rates for the 1-, 2-, 5-, 10-, 25-, 50-, and 100-year, 24-hour storm events.

(2) If it is shown that the peak rates of discharge indicated by the post-development analysis are less than or equal to the peak rates of discharge indicated by the pre-development analysis for 1-, 2-, 5-, 10-, 25-, 50-, and 100-year, 24-hour storms, then the requirements of this section have been met.

(3) Otherwise, the Applicant shall provide additional controls as necessary to satisfy the peak rate of discharge requirement.

**B.** For areas covered by a release rate map from an approved Act 167 Stormwater Management Plan:

(1) For the 1-, 2-, 5-, 10-, 25-, 50-, and 100-year, 24-hour storm events, the post-development peak discharge rates will follow the applicable approved release rate maps.

(2) For any areas not shown on the release rate maps, the post-development discharge rates shall not exceed the pre-development discharge rates.

### § 305. Groundwater Recharge.

A. Infiltration BMPs shall meet the following minimum requirements:

(1) Regulated activities will be required to recharge (infiltrate) a portion of the runoff created by the development as part of an overall stormwater management plan designed for the site. The volume of runoff to be recharged shall be determined from Section 305.A.(1)(b), depending upon demonstrated site conditions.

(a) Infiltration BMPs intended to receive runoff from developed areas shall be selected based on suitability of soils and site conditions and shall be constructed on soils that have the following characteristics:

(i) A minimum depth of 24-inches between the bottom of the BMP and the limiting zone.

(ii) An infiltration and/or percolation rate sufficient to accept the additional stormwater load and drain completely, as determined by field tests conducted by the Applicant's Design Professional.

(iii) The recharge facility shall be capable of completely infiltrating the recharge volume within 72-hours following the end of the storm event.

(iv) Pretreatment shall be provided prior to infiltration.

(v) The requirements for recharge are applied to all disturbed areas, even if they are ultimately to be an undeveloped land use such as grass, since studies have found that compaction of the soils during disturbance reduces their infiltrative capacity.

(b) The size of the infiltration facility shall be based upon the net "*Two-Year Volume Approach*," where the Recharge (infiltration) Volume ("Rev") to be captured and infiltrated shall be the volume difference between the pre-development 2-year, 24-hour storm event and post-development 2-year, 24-hour storm event. The Recharge Volume calculated using this section is the minimum volume the Applicant shall control through an infiltration BMP facility.

(2) The recharge values derived from these methods are the minimum volumes the Applicant must control through an infiltration/recharge BMP facility; however, if a site has areas of soils where additional volume of infiltration can be achieved, the Applicant is encouraged to recharge as much of the stormwater runoff from the site as possible.

B. The general process for designing the infiltration BMP shall be:

(1) A detailed soils evaluation of the project site shall be required to determine the suitability of recharge facilities. The evaluation shall be performed by a Qualified Professional and, at a minimum, address soil permeability, depth to bedrock, and subgrade stability.

(a) Analyze hydrologic soil groups as well as natural and man-made features within the watershed to determine general areas of suitability for infiltration practices.

(b) Provide field tests, such as double-ring infiltration tests at the level

of the proposed infiltration surface to determine the appropriate hydraulic conductivity rate.

(c) Design the infiltration facilities for the required storm volume based on field-determined capacity at the level of the proposed infiltration surface.

(d) Where the recharge volume requirement cannot be physically accomplished due to the results of the field soils testing, supporting documentation and justification shall be supplied to the Township with the Stormwater Management Site Plan. Alternate methods to address volume control and water quality requirements may be approved by the Township Engineer or by PADEP. Means and methods approved by PADEP, such as the "*Managed Release Concept*," may be utilized to meet volume control requirements.

(e) If on-lot infiltration facilities are proposed by the Applicant's Design Professional, the Applicant must demonstrate, to the Township's satisfaction, that the soils are conducive to infiltrate on the lots identified.

(f) No infiltration should be proposed within 10-feet of a building, structure, or property line.

(g) Infiltration should not be proposed in locations of known Hot Spots.

(h) Infiltration should not be proposed in areas which contain Karst material or topography which may lead to an increased potential for the development of sinkholes or other dissolution features common to carbonate formations. If BMPs are proposed in Karst areas, they must contain a bottom impermeable liner, or other approved method to prevent infiltration. The liner shall be sandwiched between two layers of geotextile fabric to prevent puncture of the liner.

C. West Pottsgrove Township shall require the applicant to provide safeguards against groundwater contamination for uses or activities (e.g., industrial, commercial, etc.) which may increase the likelihood of groundwater contamination should there be a release or spill, whether intentional or accidental, at the development site. Facilities which have a high potential for the release of hazardous or regulated materials, products, or wastes shall incorporate a shut off valve within the storm water system such that the release shall be contained and remediated on site, rather than downstream.

### **§ 306. Calculation Methodology.**

Stormwater runoff from all development sites shall be calculated using either the Rational Method or the Soil-Cover-Complex Method.

A. Any stormwater runoff calculations shall use generally accepted calculation technique that is based on the NRCS Soil-Cover-Complex Method. Table 306.1 in Section 306.I summarizes acceptable computation methods. It is assumed that all methods will be selected by the Applicant based on the individual limitations and suitability of each method for a particular site. The Township may allow the use of the Rational Method to estimate peak discharges from drainage areas that contain less than 20-acres.

B. All calculations consistent with this Ordinance using the Soil-Cover-Complex Method shall use the appropriate design rainfall depths for the various return period storms



according to the latest version of NOAA Atlas 14.

C. Runoff Curve Numbers ("CN") for both existing and proposed conditions to be used in the Soil-Cover-Complex Method shall be obtained from Table B-1 in Appendix B of this Ordinance.

(1) For the purposes of modeling, the existing conditions (i.e., pre-development) of non-forested pervious areas shall be considered "Meadow in Good Condition" and 20% of existing impervious area, when present, shall be considered "Meadow in Good Condition" in the model for existing conditions.

(2) For the purposes of modeling, the proposed conditions (i.e., post-development) of actual land cover conditions shall be applied in accordance with the requirements in Appendix B.

D. All calculations using the Rational Method shall use rainfall intensities consistent with appropriate times of concentration for overland flow and return periods from the latest version of the NOAA Atlas 14. Times of concentration for overland flow shall be calculated using the methodology presented in Chapter 3 of *Urban Hydrology for Small Watersheds*, NRCS, TR-55, as amended, supplemented, revised, or replaced. Times of concentration for channel and pipe flow shall be computed using Manning's Equation.

E. The Applicant's Design Professional shall consider that the runoff from proposed site conditions will not have the same runoff conditions as the site under existing conditions, even if topsoiled and seeded. The Design Professional shall increase their proposed condition CN or runoff coefficient to reflect proposed soil conditions by using the CN or runoff coefficient of one HSG lower than the existing site soils.

F. Runoff coefficients ("c") for both existing and proposed conditions for use in the Rational Method shall be obtained from Table B-2 in Appendix B of this Ordinance. For the purpose of estimating runoff, a ratio of 3:7 ascending/receding limb factor shall be applied.

G. Where uniform flow is anticipated, Manning's Equation shall be used for hydraulic computations and to determine the capacity of open channels, pipes, and storm sewers. Values for Manning's Roughness Coefficient ("n") shall be consistent with Table B-3 in Appendix B of this Ordinance.

H. Outlet structures for stormwater management facilities shall be designed to meet the performance standards of this Ordinance using any generally accepted hydraulic analysis technique or method.

I. Acceptable computation methodologies for the design and preparation of Stormwater Management Site Plans are indicated the following Table 306.1:

**Table 306.1: Acceptable Computation Methodologies for Stormwater Management Plans**

Method	Developed By	Applicability
TR-20 (or commercial software based on TR-20)	USDA NRCS	Applicable where use of full hydrology computer model is desirable or necessary.
TR-55 (or commercial software based on TR-55)	USDA NRCS	Applicable for land development plans within limitations described in TR-55.
HEC-1, HEC-HMS	U.S. Army Corps of Engineers	Applicable where use of full hydrologic computer model is desirable or necessary.
PSRM	Pennsylvania State University	Applicable where use of a hydrologic computer model is desirable or necessary; simpler than TR-20 or HEC-1.
Rational Method (or commercial software based on Rational Method)*	Emil Kuichling (1889)	For sites less than 20-acres, or as approved by the Township and/or the Township Engineer.
Other methods	Varies	Other computation methodologies approved by the Township and/or the Township Engineer.

\* Use of the Rational Method to estimate peak discharges from drainage areas that contain more than 20-acres must be approved in advance by the Township Engineer. The Rational Method shall not be used to satisfy the requirements of Article III without the express written consent of the Township Engineer.

### **§ 307. Design of Basins, Storm Sewers, Culverts, Bridges, and Other Structural Installations.**

A. Standards for conventional basins shall meet requirements listed in this section.

(1) All basins designed for a project site shall be installed prior to any earth disturbance activities for which the basins are intended to serve. The phasing of their construction shall be noted in the Erosion and Sedimentation Control Narrative and on the E&S Plan. Permanent vegetation shall be established prior to denuding any other land unless the basin functions as an E&S device.

(2) Energy dissipaters and/or level spreaders shall be installed at points where pipes or drainageways discharge from basins. Multiple-outlet structures and multiple-outlet piping from a basin may be required by the Township to reduce the impact of point source discharges.

(3) The following slope restrictions shall apply to basins:

(a) Exterior slopes of compacted soil shall not exceed 1-foot vertical rise for 3-feet of horizontal run (i.e., 33% slope) and may be required to be further reduced if the soil has unstable characteristics.

(b) Interior slopes of the basin shall not exceed a 33% slope unless

expressly approved by the Township, and:

- (i) Where maximum water depth will not exceed 3-feet; or
- (ii) When a 2-inch rainfall in 1-hour will not exceed the capacity of the basin in 1-hour; or

- (iii) Where concrete, stone, or brick walls are used with side slopes proposed to be steeper than 33% slope, in which case the basin shall be fenced by a permanent fence 42-inches in height and a ramp of durable, nonslip materials for maintenance vehicles shall be provided for access to the basin floor.

- (c) The maximum bottom slope of all basins shall be 3% for grass; however, a 1% slope may be approved where an underdrain system is provided.

- (4) Basins shall also be designed to meet the following requirements:

- (a) The minimum top of berm width shall be 8-feet.

- (b) Outlet pipes shall have a minimum inside diameter of 15-inches.

- (c) Properly spaced anti-seep collars shall be installed on all basin outlet pipes. Design calculations shall be provided.

- (d) All basins shall be constructed with a compacted, relatively impervious (e.g., unified soil classification CL-ML or CL) key trench and core. The key trench shall extend at least 2-feet into undisturbed subsoil (i.e., below the topsoil layer). The minimum bottom width of the trench shall be 6-feet, and the minimum top width of the core shall be 4-feet. The side slopes of the compacted core and trench shall not exceed 1-foot vertical rise for a 1-foot horizontal run (i.e., 100% slope), and the top elevation of the core shall be set at or above the 25-year design pool elevation for the basin. The Township may require an impermeable liner to be installed up to the 100-year design pool surface elevation for the basin.

- (5) Basin outlet structures and emergency spillways shall be designed to meet the following requirements:

- (a) Outlet structures within basins which will control peak discharge flows and distribute the flows by pipes to discharge areas shall be constructed of reinforced vegetative or stone material and shall have childproof, non-clogging trash racks covering all design openings, except those openings designed to carry perennial stream flows. Trash rack material should be epoxy-coated, galvanized, or stainless steel or high-density polyethylene. Other materials may be approved at the sole discretion of the Township.

- (b) A minimum of 6-inches of freeboard shall be provided between the crest of the primary outlet structure and the invert of the emergency spillway.

- (c) Emergency spillways shall be constructed in undisturbed earth wherever possible. When constructed in fill materials, sod, precast concrete paving blocks, concrete, or permanent erosion control matting shall be used. Design calculations shall be submitted indicating that the specified material can withstand velocities based on the 100-year design storm event. When using sod for emergency spillways, the sod shall be applied along the

inside slope above the 25-year design pool elevation for the basin, along the face and sides of the spillway and down the outside slope to existing grade. Emergency spillways shall be designed to safely convey the 100-year basin inflow hydrograph through the basin assuming the principal outlet is completely blocked, and the basin pool surface elevation is equal to the spillway invert elevation.

(6) Basin inlet and outlet structures should be located at maximum distances from one another. The Township may require a rock filter berm or rock-filled gabions between inlet and outlet areas when the distance is deemed insufficient for sediment trappings.

(7) Permanent grasses or stabilization measures shall be established on the sides of all earthen basins within 5-days of initial construction (or when being converted from sediment basin or sediment trap). The Township may require erosion control matting to be installed inside the basin or on the basin embankment.

(8) Stormwater runoff shall discharge to a suitable natural drainage course (except where prohibited by Riparian Buffer area regulations of this Ordinance or Article XIII of the Zoning Ordinance) or storm sewer system. Where discharge to a suitable natural drainage course or storm sewer system is not possible or not permitted, level spreading devices or other suitable facilities (i.e., swales) shall be designed with sufficient capacity to convey the 100-year storm event without creating any risk to the health, safety and welfare of the public, flooding, or property hazard. Securing of necessary drainage easements for this purpose shall be the sole responsibility of the Applicant.

(9) The Township may require soil samples from the site to be analyzed to determine if the project site's soils are suitable for berm embankment construction. If, in the opinion of the Township or the Township Engineer, the soils are found to be unsuitable, the Applicant shall import suitable soils for constructing the basin.

(10) Where basin storage depths will exceed 2-feet of impounded stormwater, the Township, at its discretion, may require a security fence of appropriate design to surround the basin.

B. Swales shall be designed to meet the following requirements:

(1) Grass swales not specifically designed as BMP devices shall have a minimum bottom slope of 2%, and their depth shall be sufficient to convey the 25-year storm event with a minimum of 1-foot of freeboard. Swale linings shall be designed based on the 10-year velocity. Swales shall have sufficient freeboard to convey the 100-year storm discharge without creating any risk to the health, safety, and welfare of the public, flooding, or other property hazard.

(2) Swales, when located outside of a Township right-of-way, shall be located within an easement not less than 20-feet wide but of sufficient width to allow access for maintenance and to convey all storms up to and including the 100-year storm. A note on the plan shall indicate that the easement grants the Township the right, though not the responsibility, to perform needed maintenance and/or repairs and to charge the property owner the reasonable costs for said maintenance or repairs and, should the property owner fail to pay said reasonable costs, the Township may record a lien against the property for payment of said reasonable costs.

C. Storm sewers shall be designed to meet the following requirements:

(1) Where storm sewer piping and inlets are required, they shall be placed immediately in front of the curb or road edge within the right-of-way. Any storm sewer pipe which discharges onto private residential property may only discharge to the side and rear yards, and such discharge must be located a minimum of 50-feet beyond any habitable structures, unless other means and methods such as level spreaders are used. Discharges to the front yard may not be included in the designs for the project site unless expressly approved by the Township.

(2) Storm sewers shall have a minimum inside diameter of 15-inches and only reinforced cement concrete pipe or smooth-bore corrugated polyethylene pipe shall be used. The minimum slope of the pipe shall be one-half of 1-percent (0.5%). Corrugated metal pipe will not be permitted within the Township for any purpose, regardless of the party responsible for the storm sewer's maintenance or repair.

(3) All storm sewers within the public right-of-way and/or beneath a paved surface shall be bedded and backfilled with PennDOT No. 2A stone. This backfill shall be placed at a minimum, unless the Township Engineer approves an adjustment in the field (which field approval shall be followed by written confirmation), in 6-inch lifts and solidly compacted to the satisfaction of the Township Engineer.

(4) Watertight pipe connections are required, and appropriate specifications shall be provided on the plans and in any design narrative report.

(5) Headwalls, end walls, or end sections shall be required on all open pipes, shall be of reinforced concrete construction, and shall be set on a minimum of 12-inches of AASHTO No. 57 (PennDOT 2B) coarse aggregate.

(6) All storm sewers shall be constructed per PennDOT specifications as outlined in Publication 408, Design Manual, Part 2, and the Highway Design and Standards for Roadway Construction, RC-Series, unless otherwise directed by the Township.

(7) Any changes in alignment along the run of a storm sewer, whether vertical or horizontal, shall be accomplished through the use of inlets or manholes intersecting with straight sections at the point of alignment change.

(8) Precast, reinforced concrete inlet tops and boxes shall meet the requirements of PennDOT Publication 408. PennDOT type "C" precast concrete inlet tops are to be provided with a 5-inch by 24-inch cast iron "Dump No Waste – Drains To Waterway" (with ½-inch raised lettering) plate including the trout logo as manufactured by E. Jordan Iron Works, or equivalent manufacturer approved by the Township. The underside of inlet top and box grates shall be clearly marked with the grade of iron (ASTM A48, Class 35B), product number, and date of manufacture. All other PennDOT approved inlets are to be provided with either a painted or stenciled logo on the roadway or another acceptable marking approved by the Township.

(9) The words "Dump No Waste – Drains To Waterway" in 1 ¼-inch raised letters and a trout logo shall be cast or stamped into the storm sewer manhole covers as manufactured by E. Jordan Iron Works, or equivalent manufacturer approved by the Township. The underside of storm sewer manhole covers shall be clearly marked with the grade of iron (ASTM A48, Class 35B), product number, and date of manufacture.

(10) When there is a change in pipe size for a storm sewer run through an inlet,

the top inside elevation of the outlet pipe shall be at or below the top inside elevations of all incoming pipes.

(11) Storm sewer sizes shall be determined based upon the following design storm frequencies:

- (a) 25-years storm event for all subdivisions or land developments, or
- (b) Other design storm frequencies if so determined by the Township Engineer based on the particular conditions at the project site.

(12) The design of storm sewer systems within the drainage area of detention or retention facilities must be analyzed for adequacy during the 100-year storm, including the effects of the control facility tailwater. This may require a hydraulic grade-line analysis. When approved by the Township Engineer, overflow swales may be provided at low points in streets to safely convey the full 100-year peak flow to the control facility, in lieu of providing the full capacity in the storm sewer.

(13) Storm sewer design shall be based upon PennDOT design methods. Inlet efficiency and bypass flow shall be determined for all inlets, and the gutter flow spread shall not exceed  $\frac{1}{2}$  of the travel lane width or to a maximum width of 8-feet where parking is permitted. The Township may require that a hydraulic grade-line analysis be performed on storm sewer systems.

(14) Culverts shall be evaluated for inlet and outlet control restrictions.

(15) Rainfall intensity curves and other hydraulic design data from NOAA shall be used for design purposes.

(16) Manholes and/or inlets shall not be more than 300-feet apart for pipe sizes up to 24-inches and not more than 400-feet apart for larger sizes.

(17) Inlets, manholes, covers, and frames shall conform to PennDOT specifications. At street intersections, every attempt should be made to place inlets in the tangent and not in the curved portion of the curbing.

(18) When precast concrete inlets or manholes are used within a street, either concrete adjustment units or rubber ring adjustment units shall be placed to bring the grate or cover to the proper elevation.

D. Roof drains shall be designed to meet the following requirements:

(1) Stormwater roof drains shall not discharge water directly over a sidewalk or into any sanitary sewer line.

(2) Proposed roof drains and collector locations shall be shown on the Stormwater Management Site Plans. Roof drains and collectors shall meet all appropriate Township codes.

(3) Gutters shall have gutter guards or similar devices to prevent debris from entering any underground drains associated with a roof.

(4) Underdrain pipes associated with roof drains or downspouts are permitted to be a diameter no smaller than 4-inches and shall be comprised of smooth lined high-density polyethylene pipe or Schedule-40 PVC pipe. All underdrains shall contain an overflow tee or similar outlet at the ground surface.

E. Bridges and culverts shall be designed to meet the following requirements:

(1) Bridges and culverts shall have ample waterway to carry the design flows, based on a minimum storm frequency of 100-years, unless a larger design flow is required by PADEP. The design shall ensure that the 100-year design storm water depths shall not exceed 6-inches above the roadway center-line elevation. Bridge and/or culvert construction shall be in accordance with PennDOT specifications and shall meet PADEP requirements. The appropriate permits and approvals from other government agencies having authority over the construction of bridges and culverts must be acquired by the Applicant prior to the issuance of a permit pursuant to this Ordinance.

(2) Culverts shall be provided with wing walls and constructed for the full width of the right-of-way. If the Township determines that the character of the road is expected to change for future planning, the cartway of the bridge shall be made to anticipate this future planned condition. On each side of the bridge cartway, the bridge railing must be set back from the edge of the final cartway, and this area may be used to place sidewalks, bike trails, etc.

(3) Permanent easements must be granted to the township for all Bridges or Culverts used for vehicular access. The easements shall include entire bridge or culvert, provide additional areas for future staging which may be necessary for future maintenance, and access areas no less than 20-ft wide. The determination of the size of easement areas should be prepared through coordination with the Township and Township Engineer to ensure an adequately sized easement is offered to the Township.

F. Stone and pipe underground infiltration beds shall be designed to meet the following requirements:

(1) The plans shall include the following note: "Areas proposed for infiltration BMPs shall be protected from sedimentation and compaction during the construction phase so as to maintain their maximum infiltration capacity."

(2) All stormwater runoff shall be pretreated for water quality prior to discharge to an infiltration facility or BMP. This pretreatment shall consist of a water quality device (e.g., snout, water quality filter, water quality structure, etc.) installed upstream of the infiltration facility.

(3) Pipes shall be made of perforated high-density polyethylene pipe, or an approved equivalent. Any pipes within the infiltration bed shall be placed a minimum of 6-inches above the bed bottom and shall be underlain with clean stone. Pipes may be substituted with arched storm chambers if constructed in accordance with manufacturer recommendations.

(4) The minimum pipe separation between parallel pipes and the pipes to the outer limits of the basin bed shall be 18-inches, or as specified by the manufacturer.

(5) Infiltration beds shall be wrapped in non-woven geotextile fabric on all

sides. Fabric should overlap a minimum of 12-inches where applicable. Where pipes puncture the geotextile fabric, a pipe boot, or similar fitting, should be used to secure the pipe to the geotextile fabric. The bottom of the bed may substitute a combination of sand, pea gravel, and fine stone in lieu of a geotextile fabric to create the required separation.

(6) A minimum of 1-foot of natural cover over the top of the infiltration bed shall be provided in non-vehicular areas. In vehicular areas, a minimum of 12-inch of natural materials shall be provided beneath any pavement. Example: an infiltration bed under a parking lot with a 4-inch pavement section would require a top of pipe depth to be 16-inches below the paving surface.

(7) Observation ports shall be provided for the underground pipe network, as required by the Township Engineer. For pipe diameters 24-inches and greater, a manhole shall be provided which would allow access to the pipe network.

(8) All underground infiltration facilities shall contain an overflow pipe outlet such that water can be released if the bed were to become filled with stormwater. Surcharging inlets or structures shall not be acceptable.

(9) Stone and pipe underground infiltration beds shall have a flat bottom.

(10) The stone portion of the bed shall be comprised of clean washed stone, typically AASHTO #57 Stone, AASHTO #1 Stone, or AASHTO #3 Stone, which contains a 40% void space, unless otherwise approved by the Township Engineer.

G. Rain Gardens shall be designed to meet the following requirements:

(1) The plans shall include the following note: "Areas proposed for infiltration BMPs shall be protected from sedimentation and compaction during the construction phase so as to maintain their maximum infiltration capacity."

(2) Rain gardens shall contain no greater than a 12-inch ponding depth, unless otherwise approved by the Township Engineer.

(3) An outlet overflow control device shall be provided within the rain garden which would allow for water to leave the rain garden in the event the rain garden becomes full. This device shall be in the form of an outlet structure with a grate or domed pipe riser. The riser top elevations shall be 6-inches below the top of berm.

(4) Raingarden interior and exterior slopes shall be no greater than 33% grade.

(5) The max loading ratio permitted is 5:1 (impervious drainage area to infiltration area).

(6) The planting soil within the rain garden shall be no less than a depth of 18-inches and be comprised of amended soils.

(7) Native plant species accustomed to increased amounts of water should be utilized to plant the rain garden bottom.

(8) A minimum 3-inch depth of mulch or similar natural material shall be



placed upon the rain garden surface.

(9) When underdrain pipes are proposed within a rain garden, they shall be within a stone trench that is a minimum width of 4-feet wide and shall contain a minimum of 6-inches of stone above and below the underdrain pipe. The stone trench shall be lined on all sides with non-woven geotextile fabric. The fabric should overlap a minimum of 12-inches where applicable. Where pipes puncture the geotextile fabric, a pipe boot, or similar fitting, should be used to secure the pipe to the geotextile fabric. The bottom of the bed may substitute a combination of sand, pea gravel, and fine stone in lieu of a geotextile fabric to create required separation. All pipes should be level. Clean outs and or observation ports shall be included within any underdrain network.

(10) All underground infiltration facilities shall contain an overflow pipe outlet such that water can be released if the bed were to become filled with stormwater. Surcharging inlets or structure shall not be acceptable.

H. **Existing Facilities.** If proposed improvements rely on existing stormwater management facilities, a detailed study and or investigation of the facilities may be required, to the extent deemed necessary by the Township Engineer, to determine the conditions and capacity of the existing stormwater facilities. In the event the existing stormwater facility is determined to be inadequate, whether for existing conditions or the proposed conditions, the stormwater facility may be required to be upgraded or replaced, at the Applicant's expense, in order to use said existing facilities.

### **§ 308. Other Site Development Requirements.**

A. Procedures for protecting soils or geologic structures with water supply potential from contamination by surface water or other disruption by construction activity shall be established in consultation with the Township, and such areas shall include, at minimum, those underlain by carbonate limestone formations. The Township may require pollution control facilities to be provided on existing or proposed stormwater management systems within or adjacent to the project site.

B. Provisions for protecting existing wells or other water supplies shall be established.

C. Any graded slopes shall not be steeper than one vertical unit to three horizontal units (i.e., 33% slope).

D. Any approvals required by the Flood Plain Conservation District (Article XIII of the Zoning Ordinance) shall be secured prior to earthmoving or stripping of vegetation.

E. A minimum of 4-inches of topsoil shall be provided on all disturbed areas prior to final seeding and mulching.

F. Given the ability of mature trees and other established vegetation to reduce stormwater uptake through their root systems, the following standards apply to any project site:

(1) Mature healthy trees with a 6-inch caliper or greater and other significant existing vegetation within the limits of earth disturbance shall be located in the field and shown on the Stormwater Management Site Plan. Provisions shall be made to retained and protected these

trees and significant vegetation. The placement of soil or other fill materials over the roots of trees or significant vegetation to be preserved is prohibited. Roots are presumed to extend outward from the tree or significant vegetation as far as their branches extend outward.

(2) Where more than five (5) largely mature trees and/or mature trees (i.e., 6-inch caliper or greater) are removed, they shall be replaced at a rate of two (2) 1-inch caliper trees per 6-inch caliper tree removed, unless otherwise approved by the Township. Replacement trees shall be guaranteed for a period of 18-months from the date of installation.

(3) Dead trees do not require replacement. Photographic evidence for each dead tree should be provided for review and shall be certified by a Registered Consulting Arborist or Certified Arborist, or as otherwise approved by the Township, the Planning Commission, or the Township Engineer.

(4) Replacement tree requirements are not applicable to projects that are exempt per Section 302.B, Section 302.D, and projects that qualify for the use of the Simplified Approach pursuant to Section 302.E.

### **§ 309. Erosion and Sedimentation Requirements.**

A. Whenever the vegetation and topography are to be disturbed, such activity must be conducted in conformance with Pennsylvania Chapter 102 and in accordance with the permitting requirements of the Montgomery County Conservation District.

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

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

(2) Infiltration BMPs shall not be constructed nor receive runoff until the entire contributory drainage area to the infiltration BMP has received final stabilization.

C. The Applicant shall submit evidence to the Township that they have received approval for any project in which the earth disturbance will exceed 1-acre or more from the Montgomery County Conservation District.

### **§ 310. Riparian Buffers.**

A. In order to protect and improve water quality, a Riparian Buffer Easement shall be created and recorded as part of any subdivision or land development that encompasses a Riparian Buffer.

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) or 25-feet from the boundary of any wetland area.

C. The Minimum Management Requirements for Riparian Buffers are as follows:

(1) Existing native vegetation shall be protected and maintained within the

Riparian Buffer Easement.

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

D. The Riparian Buffer Easement shall be enforceable by the Township and shall be recorded in the office of the Recorder of Deeds for Montgomery County, so that it shall run with the land and shall limit the use of the property located therein. The easement shall allow for the continued private ownership of the land encumbered and shall count toward the minimum lot area required by the Zoning Ordinance, unless otherwise specifically required to be deducted from the minimum lot area by the Zoning Ordinance.

E. 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, and preserve and protect the ecological function of the floodplain.

F. The following conditions shall apply when public and/or private recreation trails are permitted within Riparian Buffers:

(1) Trails shall be for non-motorized use only.

(2) Trails shall be designed to have the least impact on native plant species and other sensitive environmental features.

G. Septic drain fields and on-lot sewage disposal systems shall not be permitted within the Riparian Buffer Easement and shall comply with setback requirements established under 25 Pa. Code §§ 73.13(a)-(e) (relating to minimum horizontal isolation distances).

## ARTICLE IV – STORMWATER SITE PLAN REQUIREMENTS

### § 401. Plan Requirements.

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

A. Appropriate sections from the Township's Subdivision and Land Development Ordinance, and other applicable local ordinances, shall be followed in preparing the Stormwater Management Site Plans.

B. The Township shall not approve any Stormwater Management Site Plan that is deficient in meeting the requirements of this Ordinance. At its sole discretion and in accordance with this Article, when a Stormwater Management Site Plan is found to be deficient, the Township may either disapprove the submission and require a resubmission, or in the case of minor deficiencies, the Township may accept submission of modifications.

C. Provisions for permanent access or maintenance easements for all physical Stormwater BMPs, such as ponds and infiltration structures, as necessary to implement the Operation and Maintenance ("O&M") Plan discussed in Section 401.D(34) below.

D. The Stormwater Management Site Plan shall provide the following information:

(1) The overall stormwater management concept for the project.

(2) A determination of site conditions in accordance with the BMP Manual, by a Qualified Professional. A detailed site evaluation shall be completed for projects proposed in areas of carbonate geology or Karst topography, and other environmentally sensitive areas, such as Brownfields or Hot Spots.

(3) Stormwater runoff design computations and documentation as specified in this Ordinance, or as otherwise necessary to demonstrate that the maximum practicable measures have been taken to meet the requirements of this Ordinance, including the recommendations and general requirements in Section 301.

(4) Expected project time schedule.

(5) A soil erosion and sediment pollution control plan. Submission of a copy an E&S Plan as prepared for submission to the Montgomery County Conservation District, when applicable, shall satisfy this requirement.

(6) The effect of the project (in terms of runoff volumes, water quality, and peak flows) on surrounding properties and aquatic features and on any existing stormwater conveyance system that may be affected by the project.

(7) Plan and profile drawings of all Stormwater BMPs, including drainage structures, pipes, open channels, and swales.

(8) The Stormwater Management Site Plan shall show the locations of existing and proposed on-lot wastewater facilities and water supply wells.

(9) A general description of project.

(10) A justification must be included in the Stormwater Management Site Plan if BMPs other than green infrastructure methods and LID practices are proposed to achieve the volume, rate, and water quality controls under this Ordinance.

(11) The location of the project relative to highways, municipalities, or other identifiable landmarks.

(12) Existing and proposed contours at intervals of no more than 2-feet.

(13) Steep slopes, as defined by the Section 201 of the Zoning Ordinance, shall be highlighted or hatched on the plans. A summary of steep slopes for the project site shall be provided in a tabular format which identifies all steep slope areas in square feet.

(14) Existing streams, lakes, ponds, or other bodies of water within the project site.

(15) Other physical features including flood hazard boundaries, sinkholes, streams, existing drainage courses, areas of natural vegetation to be preserved, and the total extent of the upstream area draining through the site.

(16) The locations of all existing and proposed utilities, sanitary sewers, and waterlines within 50-feet of property lines, including existing and proposed on-lot wastewater facilities and water supply wells.

(17) An overlay showing the soil names, and their boundaries, within the project site.

(18) Proposed changes to the land surface and vegetative cover, including limits of earth disturbance and the type and amount of impervious area that would be added. An impervious surface summary shall be provided in a tabular format identifying the various types of impervious area within the project site in square feet (e.g., building, pavement, compacted stone, etc.).

(19) Existing and proposed structures, roads, paved areas, and buildings.

(20) The name of the development which is consistent with the application submitted (e.g., Land Development; Subdivision and Land Development; Minor Subdivision Plan, Building Permit Plan, Sketch Plan, etc.).

(21) The name, address, phone number, and email address of the owner of the property, and of the individual or firm preparing the plan.

(22) The date of the initial submission; and the date(s) of any plan revisions or iterations of the plan. Plan revision dates shall be consistent on every sheet of a plan set.

(23) A graphic and written scale of 1-inch equals no more than 50-feet; however, for tracts of 20-acres or more, the scale shall be 1-inch equals no more than 100-feet.

(24) A North arrow. Plans should be prepared such that the project site is oriented such that North is generally aligned with the top of the plan sheet, unless unusual site configuration or other compelling circumstances prevent such orientation. Deviations of "plan

North” from “project North” by more than more than 90-degrees require the approval of the Township Engineer.

(25) The total tract boundary and size with distances marked to the nearest foot and bearings to the nearest degree. Metes and Bounds for all property lines shall be provided. Plans shall identify the presence or absence of monumentation for each property line intersection.

(26) Existing and proposed land use(s).

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

(28) Overland drainage paths, including Time-of-Concentration (“TC”) paths.

(29) A pre- and post-construction drainage area plan and inlet drainage area plan.

(30) Stormwater Management Site Plans shall contain a Pennsylvania One-Call (“PA One-Call”) Serial Number and reference any utilities who have responded with contact information (e.g., utility name, type, and contact information). If Stormwater Management Site Plans are a component of a larger plan, e.g., Land Development plans, the required information does not need to be specifically on the Stormwater Management Site Plans but should be included within the larger plan set. The Stormwater Management Site Plans shall also include the following note: “The Contractor must submit a PA One-Call notification a minimum of 10-days prior to the start of any work. Proof that a PA One-Call notification was made shall be provided to the Township.”

(31) A note shall be provided on the plans indicating that the Township shall be notified a minimum of 72-hours prior to construction of any stormwater management facilities.

(32) When groundwater recharge infiltration methods, such as seepage pits, beds, or trenches are used, the locations of existing and proposed septic tank infiltration areas and groundwater supply wells must be shown. Distances from the proposed infiltration method to the existing or proposed septic infiltration areas or groundwater supply wells must be shown.

(33) A Zoning Compliance table shall be included summarizing the requirements applicable to the project site, the existing site compliance information, and the proposed zoning compliance information in accordance with the Township’s Zoning Ordinance.

(34) The Stormwater Management Site Plan shall include a Stormwater Management Operation and Maintenance (“O&M”) Plan for all existing and proposed physical stormwater management facilities. The O&M Plan shall address long-term ownership and responsibilities for operations and maintenance of the permanent stormwater BMPs, as well as schedules and costs for O&M activities. The O&M Plan shall become part of a Stormwater Maintenance and Project Improvements Agreement to be executed by the Landowner and the Township. The O&M Plan shall contain the following information at a minimum:

(a) The following notes shall be included as part of the O&M Plan and shown the Stormwater Management Site Plan:

(i) “The Landowner hereby grants and conveys to the Township an easement in gross (i.e., a “blanket easement”) over the entire property for access at such limited

times as the Township reasonably deems necessary, to inspect any Stormwater Management Facilities, BMPs, erosion and sedimentation management facilities, and other improvements (collectively, the "Project Facilities"). The purpose of the inspection is to ensure safe and proper function of the Project Facilities and the condition of all adjacent areas, all pursuant to the provisions of the Stormwater Management Ordinance. The Township shall have the right, but not the obligation, to conduct such inspections."

(ii) "The Landowner acknowledges that the Stormwater Management Facilities and BMPs are permanent fixtures that cannot be altered or removed; and the Landowner shall not place any structure, fill, landscaping, or vegetation into a stormwater BMP or within a conservation easement which would limit or alter the function of the BMP, unless a revised plan is submitted and approved by the Township. Such revised plan shall be recorded with a new Stormwater Operation & Maintenance Agreement, prior to alterations being implemented."

(iii) "Before proceeding with any of the improvements, the Landowner shall provide at least 72-hours advance notice to the Township and the Township Engineer so that arrangements can be made for the inspection of the work as it progresses."

(iv) "Before the Township issues a Use and Occupancy Permit, the Landowner shall submit an As-Built Plan, prepared and signed by a Qualified Professional, to the Township. The As-Built Plan shall show the location of any building(s), the property corner monuments with elevations, rain leaders, utility line locations, building envelopes, walkways, driveways, decks, patios, easements, steep slopes, floodplains, riparian corridors, the stormwater management facilities and associated construction details with elevations, the final grade elevations, all landscape features including hardscapes and walls, and any other information that may be deemed necessary by the Township which shall be consistent with those shown on the approved plan. The plan shall also contain a chart for each lot listing the impervious area each stormwater management facility was designed to handle and how much impervious area has been installed to date. In all other respects, the Property shall be developed in accordance with the original approved plan."

(v) "The Landowner agrees to provide a copy of the Stormwater Maintenance and Project Improvements Agreement (the "O&M Agreement") between the Landowner and the Township to its successors and/or assigns and agrees to incorporate a reference to the terms of the O&M Agreement in any future deed of conveyance. The failure of Landowner to perform any act required by this paragraph shall not impair the validity of the O&M Agreement, limit its enforceability in any way, nor impair any portion of the O&M Agreement or the requirements or responsibilities of the O&M Plan. The term "Landowner" shall include the above-named Landowner, its successors, and/or assigns and upon the heirs, administrators, executors, successors, and/or assigns, whether or not such future owners have signed this O&M Agreement."

(vi) The following signature block for the Design Professional who is licensed in the Commonwealth of Pennsylvania:

"\_\_\_\_\_, (the "Design Engineer") on this \_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_, (date of signature) has reviewed and hereby certifies that this Stormwater Management Site Plan meets all design standards and criteria of the West Pottsgrove Township Stormwater Management Ordinance of 2022."

(vii) “The Landowner, or the Landowner’s Qualified Professional, shall inspect the Stormwater Management Facilities and BMPs installed under this Ordinance according to the following frequencies, at a minimum, to ensure the BMPs, facilities, and/or structures continue to function as intended:

*(The Design Professional shall select from the following, based on the project site’s relevant criteria: (Criteria 1) – Development by an individual homeowner, on a single lot, with stormwater management facilities and BMPs located entirely within their property boundaries, and which only serve their individual property; or (Criteria 2) Any other type of Development)*

*(Criteria 1)*

Within 30-days following receipt of the Township’s written request for inspection unless a greater period of time is granted by the Township.

*Or (Criteria 2)*

- Annually for the first 5-years after the construction of the stormwater facilities.
- Once every 3-years thereafter.
- During or immediately following the cessation of a 10-year or greater storm event.
- Within 30-days following receipt of the Township’s written request for inspection unless a greater period of time is granted by the Township.

Inspections shall be conducted during or immediately following precipitation events. A written inspection report with photos shall be prepared 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 all stormwater management facilities, BMPs, or other structures inspected, observations on performance, and recommendations for improving performance, if applicable. Inspection reports shall be submitted to the Township within 30-days following completion of the inspection. The Township shall have the right, but not the obligation, to track the required written inspection reports.

(b) For each Stormwater Management Facility or BMP, a list of applicable maintenance items to be performed shall be provided and said maintenance items shall be accompanied by the required maintenance frequency (e.g., annually, quarterly, after significant storm events, etc.). The required maintenance items shall be generally consistent with the requirements of the BMP Manual, or as required by the Township Engineer.



(c) The O&M Plan shall identify the location of each BMP and note the latitude and longitude of its centroid in tabular format on the plans.

(d) The O&M Plan shall identify the location of all Stormwater Management Facilities and BMPs. The technical specifications of all stormwater facility component structures shall be noted on the plans including but not limited to, construction details, profiles, and design specifications.

(e) The O&M Plan shall include an overall site plan showing the entire property boundary.

E. The Stormwater Management Site Plan shall provide the following supplemental information:

(1) A Stormwater Management Report which includes:

(a) The overall stormwater management concept for the project designed in accordance with Article III of this Ordinance.

(b) Stormwater runoff computations as specified in this Ordinance.

(c) Complete hydrologic, hydraulic, and structural computations for all stormwater management facilities.

(d) Stormwater management techniques to be applied both during and after development.

(e) Development stages (i.e., project phases) if so proposed.

(f) A geologic assessment of the potential risks for the potential for runoff to create sinkholes or other dissolution features if the project site is underlain by carbonate geology or Karst topography.

(g) A report documenting the results of infiltration, geological, geotechnical, or related soils testing that includes documented infiltration rates and provides a summary of the soil horizons associated with each test pit.

(h) An O&M Plan in accordance with Sections 401 and 502, and with Appendix A of this ordinance.

(i) In the event an existing stormwater management facility has unknown characteristics a study shall be conducted, and documentation of the findings shall be provided to the Township. Credits for any existing stormwater facilities may only be utilized, at the discretion of the Township Engineer, if the documented evidence demonstrates the existing facility adequately manages stormwater in accordance with this ordinance and the BMP Manual.

(2) All plan submissions and supporting documents submitted to and received from the Montgomery County Conservation District, PADEP, PennDOT, and other third-party agencies that may be involved with the project shall be provided to the Township.

(3) A stormwater Management Permit Application, as provided in Appendix D to this Ordinance.

#### **§ 402. Plan Submission.**

A. The Applicant shall provide the Township with one (1) electronic copy of the Stormwater Management Site Plans, including all supplemental information, in PDF format on a portable media device, e.g., thumb drive, flash drive, portable hard disk drive, etc. The portable media device shall be provided at the expense of the Applicant and shall not be returned to the Applicant.

B. At the Township's request, five (5) hard copies of all plans and project-related files may be required as follows:

(1) Two (2) or more copies provided to the offices of the Township accompanied by the requisite review fee, as specified in the most-recently adopted fee resolution of the Township.

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

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

(4) One (1) copy to the Conservation District, if applicable.

C. The Stormwater Management Site Plan shall be submitted by the Applicant to the Township for all regulated activities and shall be accompanied with the applicable fees in accordance with the Township's most-recently adopted fee resolution and applicable application forms (e.g., Zoning, SALDO, Building Permit, Construction, etc.). All submission items shall also be submitted electronically in PDF format as discussed above.

#### **§ 403. Plan Review.**

A. Stormwater Management Site Plans shall be reviewed by the Township for consistency with the provisions of this Ordinance, as well as the Township's SALDO and Zoning Ordinances. The provisions of the Township's SALDO and Zoning Ordinances are not superseded by this Ordinance.

B. The Township shall notify the Applicant in writing within 45-days following the receipt of a complete application whether the Stormwater Management Site Plan is approved or disapproved. If the Stormwater Management Site Plan involves a Subdivision and Land Development Plan, the notification shall occur within the required time periods pursuant to Section 508 of the Municipalities Planning Code, 53 P.S. § 10508, *et seq.*

C. For any Stormwater Management 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 Township will not approve the Stormwater Management Site Plan unless it determines that green infrastructure and LID practices are not practicable due to unique conditions present at the project site.

D. If the Township disapproves the Stormwater Management Site Plan, the Township shall state the reasons for the disapproval in writing. The Township may issue an approval of the Stormwater Management Site Plan subject to conditions and, if so, shall provide the acceptable

conditions for approval in writing.

E. The Code Enforcement Officer shall not issue a building permit for any regulated activity if the Stormwater Management Site Plan has been found to be inconsistent with this Ordinance.

#### **§ 404. Modification of Plans.**

A modification to a submitted Stormwater Management Site Plan that involves a change in stormwater facilities, BMPs, or techniques, or that involves the relocation or redesign of any stormwater facility, BMP, or technique that becomes necessary due to soil or other site conditions found to be different from those included in the Stormwater Management Site Plan as determined by the Township shall require a resubmission of a modified Stormwater Management Site Plan in accordance with this Ordinance.

#### **§ 405. Resubmission of Disapproved Plans.**

A disapproved Stormwater Management Site Plan may be resubmitted to the Township, with the revisions addressing the Township's concerns, to the Township in accordance with this Ordinance. All applicable review fees must accompany any resubmission of a disapproved Stormwater Management Site Plan.

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

The Township's approval of a Stormwater Management Site Plan authorizes the regulated activities contained in the Stormwater Management Site Plan for a maximum term of validity of 5-years following the date of approval. The Township may specify a term of validity shorter than 5-years when granting the approval of any specific Stormwater Management Site Plan. Terms of validity shall commence from the date when the Township signs the approved Stormwater Management Site Plan. If an approved Stormwater Management Site Plan is not completed according to Section 407 within the term of validity, the Township shall consider the Stormwater Management Site Plan disapproved and may revoke any and all permits. Stormwater Management Site Plans that are considered disapproved by the Township shall be resubmitted in accordance with Section 405 of this Ordinance.

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

A. The Township shall determine whether the Applicant shall be responsible for providing As-Built Plans, or a certification of completion, which shall be signed by a Qualified Professional, or both following the completion of construction of all stormwater BMPs included in the approved Stormwater Management Site Plan. If the As-Built Plans show any deviations in the constructed stormwater BMPs from the designs contained in the approved Stormwater Management Site Plan, the Applicant shall provide an explanation for those deviations. As-Built Plans shall include the following items, at a minimum:

(1) A certification of completion signed by a Qualified Professional verifying that all permanent Stormwater BMPs have been constructed in accordance with the approved Stormwater Management Site Plan and specifications.

(2) The latitude and longitude coordinates of the centroid of all permanent stormwater BMPs.

(3) Any impervious credit associated with the project site based on the difference between the impervious surface design capacity and the actual impervious surfaces identified in the field. If there is no impervious credit, the plans shall include a note indicating that impervious surface credit is not applicable to each particular impervious surface for which credit is not taken.

(4) The project site's tract boundary with metes and bounds.

(5) The finished grades and elevations including the top and bottom of curb elevations, spot elevations around the building foundations including all building corners, spot elevations along driveways, spot elevations at each Township right-of-way, elevations at all property corners from found monuments or pins.

(6) The maximum widths and lengths of any building.

(7) Each stormwater management facility or BMP shall provide the following detailed information: pipe sizes, pipe length, pipe type, and the slopes and inverts for each pipe segment; the elevation of the bottom and top of each facility; each outlet structure's dimensions and elevations; each structure's size, type, and grate and the inverts for the structure's bottom, clean outs, etc. as required by the Township Engineer;

(8) A reference to the approved Stormwater Management Site Plan including the title, preparer, date of preparation, latest revision dates, recorded deed book and page number (or the Instrument Number, if applicable) of any recorded plans.

(9) A reference to the recorded Stormwater Facilities Operation & Maintenance and Project Improvement Agreement including the recorded deed book and page number (or the Instrument Number, if applicable) of the approved Stormwater Management Site Plan.

(10) Any additional items required by the Township Engineer.

B. After receipt of the Applicant's completion certification, the Township may conduct a final inspection in order to verify the as-built conditions.

## **ARTICLE V – OPERATION AND MAINTENANCE**

### **§ 501. Responsibilities of Developers and Landowners.**

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

B. Facilities, areas, or structures used as stormwater BMPs shall be enumerated as permanent real estate appurtenances and recorded as deed restrictions or conservation easements that run with the land.

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

D. The Township may take enforcement actions against a Landowner for any failure to satisfy the provisions of this Ordinance.

### **§ 502. Operation and Maintenance Agreements.**

A. Prior to final approval of the Stormwater Management Site Plan, the Landowner shall execute, and the Township shall record, at the expense of the Landowner, a Stormwater Facilities Operation & Maintenance and Project Improvement Agreement (the “O&M Agreement”), a form of which O&M Agreement is attached hereto as Appendix A and incorporated herein by reference, covering all stormwater facilities which are to be privately owned.

(1) The Landowner, their successors, and assigns shall maintain all stormwater facilities in accordance with the approved maintenance schedule included in the O&M Plan.

(2) The Landowner shall convey to the Township all conservation easements necessary to assure access for periodic inspections by the Township and maintenance, if necessary, said maintenance constituting a right, but not an obligation, of the Township for which expenses the Landowner shall remain wholly liable.

(3) The Landowner shall keep on file with the Township the name, address, and telephone number of the person or company responsible for the ongoing maintenance of the stormwater facilities, if such maintenance responsibility is delegated to a third-party. In the event of a change to the third-party responsible for stormwater facilities maintenance, the Landowner shall provide the contact information for the new third-party within 10-days of said change.

B. Prior to final approval of any Simplified Approach Plan pursuant to this Ordinance, the Landowner shall execute, and the Township shall record, at the expense of the Landowner, a Simplified Approach – Stormwater Facilities Operation & Maintenance (the “Simplified O&M Agreement”), a form of which Simplified O&M Agreement is attached hereto as Appendix C and incorporated herein by reference, covering all stormwater facilities which are to be privately owned

C. The Landowner shall be responsible for operation and maintenance of the

Stormwater BMPs. If the Landowner fails to comply with the terms of an O&M Agreement or Simplified O&M Agreement, as applicable, or implement the requirements of an O&M Plan, the Township retains the right, but not the obligation, to perform any services required and assess the Landowner for the reasonable fees incurred by the Township from their performance. Nonpayment of any assessed fees may result in a municipal lien against the property.

**§ 503. Performance Guarantee.**

For Stormwater Management Site Plans that involve any subdivision or land development approvals pursuant to the Township's SALDO, the Applicant shall execute, and the Township shall record, at the Applicant's expense, a Land Development and Financial Security Agreement securing the timely installation and proper construction of all stormwater management facilities as required by the approved Stormwater Management Site Plan and this Ordinance in accordance with the provisions of Sections 509, 510, and 511 of the Pennsylvania Municipalities Planning Code, 53 P.S. §§ 10509-10511, *et seq.*

## **ARTICLE VI – FEES AND EXPENSES**

### **§ 601. Fees.**

The Township shall include all costs incurred in the review fees charged to an Applicant. Fees shall be in accordance with the Township's most-current fee resolution as adopted by the Board of Commissioners. The review fees may include, but not be limited to, costs for the following:

- A. Administrative/clerical processing of any application, supplements, revisions, or resubmissions.
- B. Review of the Stormwater Management Site Plan, including any supplements, revisions, or resubmissions.
- C. Attendance at staff meetings, site meetings, other government agency meetings, or meetings of the Governing Body or any appointed bodies having authority to review the application.
- D. The performance of all inspections, including pre-construction meetings, progress inspections, and final inspections.
- E. Any additional work required by the Township to enforce any permits or provisions governed by this Ordinance, to correct violations, and to ensure proper completion of stipulated remedial actions.

## ARTICLE VII – PROHIBITIONS

### § 701. Prohibited Discharges.

A. Any drain or conveyance, whether on the surface or subsurface, that allows any non-stormwater discharge including sewage, process wastewater, non-process wastewater (including non-contact cooling waters), rinse or wash waters, or backwash or flush waters to enter a regulated small MS4 or to enter the Waters of the Commonwealth is expressly prohibited.

B. In West Pottsgrove Township no person shall allow, or cause to allow, discharges into a regulated small MS4, or discharges into Waters of the Commonwealth, which are not composed entirely of stormwater, except (1) as provided in Section 701.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 to pollution to a regulated small MS4 or to the Waters of the Commonwealth:

- (1) Discharges or flows from firefighting activities.
- (2) Discharges from municipal or public utility owned or controlled potable water sources including water line flushing and fire hydrant flushing, provided 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 flows from streams and natural springs or seeps.
- (5) Non-contaminated, pumped groundwater and infiltration water from foundation and footing drains and crawl space/basement sumps, provided said foundation and footing drains or crawl space sumps do not receive water from any other non-groundwater or non-infiltration source.
- (6) Non-contaminated HVAC condensate and water from appropriately permitted and installed geothermal systems.
- (7) Residential, non-commercial automobile or vehicle wash or rinse water containing bio-degradable and eco-friendly cleaning agents.
- (8) Non-contaminated hydrostatic test discharge waters provided such discharge waters do not contain detectable concentrations of TRC.
- (9) Routine rinse waters from external building cleaning processes (e.g., steam pressure washing, etc.) provided said cleaning processes do not use detergents or other cleaning compounds.
- (10) Pavement cleaning rinse waters provided said rinse waters are not generated from the location of a release of toxic or hazardous materials, excepting those locations where said release has been entirely remediated and said rinse waters contain no detergents or other cleaning



compounds.

D. In the event the Township determines that any of the discharges identified in Sections 701.B and C significantly contribute pollutants to a regulated small MS4 or to the Waters of the Commonwealth, the Township or PADEP will notify the responsible person(s) to cease the discharge(s) immediately.

#### **§ 702. Prohibited Connections.**

A. Roof drains and sump pumps shall discharge to infiltration areas or vegetative BMPs to the maximum extent practicable. No roof drain or sump pump shall be installed with a direct connection to any separate storm sewer system. No roof drain or sump pump shall be installed with a connection, whether direct or indirect, to a sanitary sewer system.

B. Any drain or conveyance, whether surface or subsurface, which allows any non-stormwater discharge including sewage, process wastewater, non-process wastewater (including non-contact cooling waters), rinse or wash waters, or backwash or flush waters to enter the Township's separate storm sewer system. No indoor floor drain, sink drain, or any indoor plumbing system shall connect to the separate storm sewer system for any building or structure within the Township.

C. When it is determined that the utilization of stormwater overland flow or infiltration is not feasible, subject to the absolute discretion of the Township Engineer, the Township may approve the discharge of roof drains, foundation and footer drains, or basement sumps to public streets, roadside ditches or swales, or other non-direct connection to the separate storm sewer system.

#### **§ 703. Alteration of BMPs.**

A. No person shall modify, remove, fill, landscape, or alter any stormwater BMPs, facilities, areas, or structures that were installed pursuant to the requirements of this Ordinance without the express written permission of the Township.

B. No person shall place any structure, fill, landscaping, or vegetation into or otherwise alter a stormwater BMP, or within a conservation easement, which would limit or alter the functioning of the BMP, or otherwise affect the conservation easement, without the express written approval of the Township.

## ARTICLE VIII – ENFORCEMENT AND PENALTIES

### § 801. Right of Entry.

A. Upon presentation of proper credentials, the Township or its designated agents, employees, or professionals, may enter at reasonable times upon any property within the municipality to inspect the condition of the stormwater facilities, BMPs, areas, or structures in regard to any aspect governed by this Ordinance.

B. All owners and operators of any stormwater facilities, BMPs, areas, or structures shall allow ready access to all parts of the premises to all persons working on behalf, or at the behest, of the Township for the purposes of determining compliance with this Ordinance.

C. Any person(s) working on behalf, or at the behest, of the Township shall have the right to temporarily place upon, or locate within, any stormwater facilities, BMPs, areas, or structures within the Township such devices as are necessary to conduct monitoring and/or sampling of the discharges from such stormwater facilities, BMPs, areas, or structures.

D. Any action or inaction by an Applicant or Landowner that prevents or impedes the Township, or its agents, employees, or professionals, from accessing any stormwater facilities, BMPs, areas, or structures shall be violation of this Ordinance.

### § 802. Inspection.

A. The Landowner, or the Landowner's Qualified Professional, shall inspect the Stormwater Management Facilities and BMPs installed under this Ordinance according to the following frequencies, at a minimum, to ensure the BMPs, facilities, and/or structures continue to function as intended:

*(The Design Professional shall select from the following, based on the project site's relevant criteria: (Criteria 1) – Development by an individual homeowner, on a single lot, with stormwater management facilities and BMPs located entirely within their property boundaries, and which only serve their individual property; or (Criteria 2) Any other type of Development)*

*(Criteria 1)*

Within 30-days following receipt of the Township's written request for inspection unless a greater period of time is granted by the Township.

*Or (Criteria 2)*

- Annually for the first 5-years after the construction of the stormwater facilities.
- Once every 3-years thereafter.
- During or immediately following the cessation of a 10-year or greater storm event.
- Within 30-days following receipt of the Township's written request for inspection

unless a greater period of time is granted by the Township.

B. Inspections shall be conducted during or immediately following precipitation events. A written inspection report with photos shall be prepared 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 all stormwater management facilities, BMPs, or other structures inspected, observations on performance, and recommendations for improving performance, if applicable. Inspection reports shall be submitted to the Township within 30-days following completion of the inspection. The Township shall have the right, but not the obligation, to track the required written inspection reports.

### **§ 803. Enforcement.**

The Township of West Pottsgrove, Montgomery County, Pennsylvania is hereby authorized and directed to enforce all of the provisions of this Ordinance.

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

B. It shall be unlawful for a person to violate Section 703 of this Ordinance.

C. The Township shall have the right, but not the obligation, to conduct such inspections regarding compliance with the Stormwater Management Site Plan.

### **§ 804. Suspension and Revocation.**

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

(1) Non-compliance with or failure to implement any provision of the approved Stormwater Management Site Plan, O&M Agreement, or O&M Plan.

(2) A violation of any provision of this Ordinance or any other applicable law, ordinance, rule, or regulation relating to the regulated activity.

(3) The creation of any condition or the commission of any act during the regulated activity which constitutes or creates a hazard, pollution, or endangers health, safety, or welfare of the public or the property of another.

B. A suspended approval or permit may be reinstated by the Township when:

(1) The Township, or its agents, employees, or professionals, have inspected and approved the corrections, abatements, or other remedies resolving the condition(s) that caused the violation(s) resulting in the suspension.

(2) The Township is satisfied that the violation(s) has or have been corrected such that a recurrence of the condition(s) that cause the violation(s) is unlikely.

C. Any permit or approval that has been revoked by the Township shall not be

reinstated. Such revocation of a permit or approval shall not preclude an Applicant from applying for a new permit or approval pursuant to this Ordinance.

D. If, upon the determination by the Township, in its sole and absolute discretion, any non-compliance or other violation presents no immediate danger to health, safety, or welfare of the public or the property of another, the Township may provide a limited time period for an Applicant or Landowner to cure the violation. In such an instance, the Township shall provide the Applicant, Landowner, or the Landowner's designee, a written notice of the violation and the time period allowed for the Applicant, Landowner, or the Landowner's designee to cure the violation (the "Cure Period"). Should the Applicant, Landowner, or the Landowner's designee fail to cure the violation within the Cure Period, the Township may revoke or suspend any, or all, applicable approvals and permits pertaining to any provision of this Ordinance.

#### **§ 805. Public Nuisance.**

A. The violation of any provision of this Ordinance is hereby deemed a public nuisance.

B. All such penalties shall be deemed cumulative and shall not prevent the Township from pursuing any and all remedies available to it at law or in equity. Each day that a violation continues shall constitute a separate violation.

#### **§ 806. Penalties.**

A. Any person who violates or permits a violation of this Ordinance shall, upon conviction in a summary proceeding brought before a Magisterial District Judge under the Pennsylvania Rules of Criminal Procedure, be guilty of a summary offense and shall be punishable by a fine of not more than \$1,000 plus the costs of prosecution. In default of payment thereof, the defendant may be sentenced to imprisonment for a term not exceeding 90-days. Each day or portion thereof that such violation continues or is permitted to continue shall constitute a separate offense, and each section of this Ordinance that is violated shall also constitute a separate offense and penalties shall be cumulative.

B. In addition, the Township, through its Solicitor, may institute injunctive, mandamus, or any other appropriate action or proceeding at law or in equity for the enforcement of this Ordinance. Any court of competent jurisdiction shall have the right to issue restraining orders, temporary or permanent injunctions, writs of mandamus, or other appropriate forms of extraordinary remedy or relief.

C. Each day that a violation continues shall constitute a separate violation and may result in additional penalties.

#### **§ 807. Appeals.**

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

B. Any person aggrieved by any decision of the West Pottsgrove Township Board of

Commissioners may appeal to the Court of Common Pleas of Montgomery County within 30-days of that Board of Commissioners' decision.

## ARTICLE IX – REFERENCES

### § 901. References.

- 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 online at: <https://www.nrcs.usda.gov/wps/portal/nrcs/detailfull/national/water/manage/hydrology/?cid=stelprdb1043063>.
- U.S. Department of Agriculture, Natural Resources Conservation Service. 1986. Technical Release 55: Urban Hydrology for Small Watersheds, 2nd Edition. Washington, D.C. Available online at: [https://www.nrcs.usda.gov/Internet/FSE\\_DOCUMENTS/stelprdb1044171.pdf](https://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb1044171.pdf).
- Pennsylvania Department of Environmental Protection. No. 363-0300-002 (December 2006). Pennsylvania Stormwater Best Management Practices Manual. Harrisburg, PA. Available online at: <http://www.depgreenport.state.pa.us/elibrary/GetFolder?FolderID=4673>.
- Pennsylvania Department of Environmental Protection. No. 363-2134-008 (March 31, 2012). Erosion and Sediment Pollution Control Program Manual. Harrisburg, PA. Available online at: <http://www.depgreenport.state.pa.us/elibrary/GetFolder?FolderID=4680>.
- U.S. Department of Commerce, National Oceanic and Atmospheric Administration (NOAA), National Weather Service (NWS), Hydrometeorological Design Studies Center. (2004-2006) Precipitation-Frequency Atlas of the United States, Atlas 14, Volume 2, Version 3.0: Delaware, District of Columbia, Illinois, Indiana, Kentucky, Maryland, New Jersey, North Carolina, Ohio, Pennsylvania, South Carolina, Tennessee, Virginia, West Virginia. Silver Spring, MD, as amended, revised, and updated. Available online at: [https://www.weather.gov/media/owp/oh/hdsc/docs/Atlas14\\_Volume2.pdf](https://www.weather.gov/media/owp/oh/hdsc/docs/Atlas14_Volume2.pdf). Current Data may be obtained from: <https://hdsc.nws.noaa.gov/hdsc/pfds/>.

**ARTICLE X –EFFECTIVE DATE, ENACTMENT, AND ORDINATION**

**§ 1001. Effective Date.**

This Ordinance, and all of its terms and provisions, shall become effective immediately.

**§ 1002. Enactment and Ordination.**

*ENACTED AND ORDAINED* into law this 21<sup>ST</sup> of DECEMBER, 2012 by the  
Board of Commissioners of the Township of West Pottsgrove, Montgomery County,  
Pennsylvania.

Stephen Miller  
Stephen Miller, President, Board of Commissioners

ATTEST: Courtney Harris  
Courtney Harris, Township Secretary

**WEST POTTS GROVE TOWNSHIP  
CHAPTER 21 – STORMWATER MANAGEMENT ORDINANCE**

**APPENDIX A**

**STORMWATER OPERATION & MAINTENANCE  
AND PROJECT IMPROVEMENT AGREEMENT**

**THIS AGREEMENT**, made and entered into this \_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_, by and between \_\_\_\_\_ (hereinafter the “Landowner”), of \_\_\_\_\_ (landowners current address), and the Township of West Pottsgrove, Montgomery County, Pennsylvania (hereinafter the “Township”);

**WITNESSETH:**

**RECITALS**, the Recitals are incorporated herein by reference as if fully set forth in the body of this Agreement.

**WHEREAS**, the Township enacted and ordained the West Pottsgrove Township Stormwater Management Ordinance for the purposes of promoting the health, safety, and welfare within West Pottsgrove Township and its watershed by regulating all activities that may affect stormwater runoff, including land development and earth disturbance activity, within the Township; and

**WHEREAS**, the Landowner is the owner of certain real property as recorded by deed in the land records of the office of the Recorder of Deeds of Montgomery County, Pennsylvania in Deed Book \_\_\_\_\_, Page \_\_\_\_\_, referred to as Tax Parcel Number(s) \_\_\_\_\_, having Instrument Number \_\_\_\_\_, and as further described as being located at the address of \_\_\_\_\_ (hereinafter the “Property”); and

**WHEREAS**, the Landowner is proceeding to develop, construct improvements, and or otherwise engage in activities governed by the West Pottsgrove Township Stormwater Management Ordinance at the Property; and

**WHEREAS**, the Stormwater Management Site Plan(s) (hereinafter the “SWM Plans”) and the Stormwater Management Operation and Maintenance Plan(s) (hereinafter the “O&M Plans”) for the Property identified herein, which SWM Plans and O&M Plans are attached hereto as **Exhibits “A” and “B”**, respectively, and made part hereof, as approved by the Township, provides for management of stormwater within the confines of the Property through the use of Stormwater Management Facilities and BMPs, as defined herein; and

**WHEREAS**, the Township, and the Landowner, their successors, and assigns, agree that the health, safety, and welfare of the residents of the Township and the protection and maintenance of water quality of the watersheds within the Township require that the on-site Stormwater Management Facilities and BMPs be constructed and maintained on the Property; and

Last Revised: 08/16/2022



**WHEREAS**, the Township requires, through the implementation of the West Pottsgrove Township Stormwater Management Ordinance, that Stormwater Management Facilities and BMPs as required by said SWM Plans and O&M Plans be constructed and adequately operated and maintained by the Landowner, its successors, and assigns, in perpetuity; and

**WHEREAS**, the Township requires the posting of financial security to ensure completion of the required project improvements, including the Stormwater Management Facilities and BMPs, and the submission of post-construction As-Built Plans prepared by a Pennsylvania Professional Land Surveyor or Professional Engineer; and

**WHEREAS**, the term “Landowner” used herein shall include the above-named Landowner, its successors, and/or assigns and the heirs, administrators, executors, successors, and/or assigns, whether or not such future owners have signed this Agreement; and

**WHEREAS**, the term “Stormwater Management Facilities” used herein shall include any structure, natural or man-made, that, due to its condition, design, or construction, conveys, stores or otherwise affects stormwater runoff. Typical stormwater management facilities include, but are not limited to, detention and retention basins, open channels, storm sewers, pipes, inlets, and infiltration facilities; and

**WHEREAS**, the term Best Management Practices (“BMPs”) used herein shall include 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 the Township’s Stormwater Management Ordinance. Stormwater BMPs are commonly grouped into one of two (2) broad categories or measures: “structural” or “non-structural.” As referred to herein, 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 measures, bioretention, wet ponds, permeable paving, grassed swales, riparian or forested buffers, sand filters, detention basins, and manufactured devices. Structural stormwater BMPs are permanent appurtenances to the Property.

**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 Stormwater Management Facilities and BMPs (hereinafter the “Stormwater Improvements”) for the Property identified herein in accordance with the West Pottsgrove Township Stormwater Management Ordinance, the SWM Plans, and the O&M Plans, which plans, as approved by the Township, and attached hereto as **Exhibits “A” and “B”**, respectively, all of which Stormwater Improvements shall be constructed by, and at the sole expense of, the Landowner.

2. The Landowner shall maintain all of the Stormwater Improvements in good working condition, acceptable to the Township so that they always perform their design functions in accordance with the provisions of the SWM Plans included as **Exhibit "A"**, or as otherwise required in writing by the Township.

3. The Landowner shall operate and maintain the Stormwater Improvements in good working order and in accordance with the specific operation and maintenance requirements noted on the approved O&M Plan included as **Exhibit "B"**, or as otherwise required in writing by the Township.

4. The Landowner hereby grants and conveys to the Township an easement in gross over the entirety of the Property, in perpetuity, for access, at such limited times as the Township reasonably deems necessary, to inspect Stormwater Management Facilities, BMPs, erosion and sedimentation management facilities, and other improvements. The purpose of the inspection is to ensure safe and proper function of the Stormwater Improvements and the condition of all adjacent areas; all pursuant to the provisions of the Township Stormwater Management Ordinance. The Township shall have the right, but not the obligation, to conduct such inspections. When inspections are conducted, the Township shall give the Landowner copies of the inspection report including any findings and evaluations.

5. The Landowner, or the Landowner's Professional Engineer, shall inspect the Stormwater Management Facilities and BMPs installed under this Ordinance according to the following frequencies, at a minimum, to ensure the Stormwater Improvements continue to function as intended:

*(Select from the following, based on the project site's relevant criteria: (Criteria 1) – Development by an individual homeowner, on a single lot, with stormwater management facilities and BMPs located entirely within their property boundaries, and which only serve their individual property; or (Criteria 2) Any other type of Development)*

*(Criteria 1)*

Within 30-days following receipt of the Township's written request for inspection unless a greater period of time is granted by the Township.

*Or (Criteria 2)*

- Annually for the first 5-years after the construction of the stormwater facilities.
- Once every 3-years thereafter.
- During or immediately following the cessation of a 10-year or greater storm event.

Within 30-days following receipt of the Township's written request for inspection unless a greater period of time is granted by the Township.

Inspections shall be conducted during or immediately following precipitation events. A written inspection report (hereinafter the "Landowner Inspection Report") with photos shall be prepared to document each inspection. The Landowner Inspection Report shall contain the date and time of the inspection, the individual(s) who completed the inspection, the location of all stormwater management facilities, BMPs, or other structures inspected, observations on performance, and recommendations for improving performance, if applicable. Landowner Inspection Reports shall be submitted to the Township within 30-days following completion of the inspection. The Township shall have the right, but not the obligation, to track the required written Landowner Inspection Reports.

6. If the Landowner fails to produce a requested Landowner Inspection Report, the Township may enter the Property, perform an inspection of the Stormwater Improvements, and prepare an inspection report (hereinafter the "Township Inspection Report"). When inspections are conducted by the Township, the Township shall give the Landowner copies of the Township Inspection Report with findings and evaluations. The Landowner shall reimburse the Township within 30-days of receiving an invoice thereof, for all reasonable and necessary costs incurred by the Township hereunder. If not paid within said 30-day period, the Township may proceed to recover same through proceedings in law or equity, or by any other means or proceeding available to the Township and/or authorized under the provisions of the First Class Township Code.

7. The Landowner shall perform maintenance in accordance with the maintenance schedule within the O&M Plan attached to this Agreement as **Exhibit "B"**.

8. In the event the Landowner fails to operate and maintain the Stormwater Improvements in accordance with the O&M Plan, the Township or its employees, agents, representatives, delegates, or designees may enter upon the Property and take whatever action is deemed necessary to maintain or repair the Stormwater Improvements. It is expressly understood and agreed that the Township is under no obligation to maintain or repair the Stormwater Improvements, and in no event shall this Agreement be construed to impose any such obligation upon the Township.

9. In the event the Township, pursuant to this Agreement, performs work or expends any funds in the performance of said work for labor, use of equipment, supplies, materials, and other related expenses due to the Landowner's failure to perform such work, the Landowner shall reimburse the Township, within 30-days of receipt of an invoice thereof, for all reasonable and necessary costs incurred by the Township hereunder. If not paid within said 30-day period, the Township may proceed to recover same through proceedings in law or equity, or by any other means or proceeding available to the Township and/or authorized under the provisions of the First Class Township Code.

10. The intent and purpose of this Agreement is to ensure the proper maintenance of the Stormwater Improvements 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 on, or emanating from, the Property.

11. The Landowner shall indemnify and release the Township from all damages, accidents, casualties, occurrences, or claims which might arise or be asserted against the Township or its employees, agents, representatives, delegates, or designees from the construction, presence, existence, or maintenance of the Stormwater Improvements by the Landowner or Township.

12. In the event a claim is asserted against the Township, its employees, agents, representatives, delegates, or designees the Township shall promptly notify the Landowner, who shall defend the Township, its employees, agents, representatives, delegates, or designees at its own expense, against any suit based on such claim. If any judgment or claims against the Township, its employees, agents, representatives, delegates, or designees shall be awarded, the Landowner shall pay all costs and expenses in connection therewith. The Township, in its sole and absolute discretion, may require the Landowner to provide a general liability insurance policy in an amount deemed sufficient by the Township naming the Township as an additional insured.

13. In the event of an emergency or the occurrence of special or unusual circumstances or situations, the Township may enter the Property if the Landowner is not immediately available, without notification or identification, to inspect and perform any necessary maintenance and/or repairs, if needed, when the public's health, safety, or welfare is in jeopardy. Otherwise, the Township shall notify the Landowner of any inspection, maintenance, or repair to be undertaken at least five (5) calendar days prior to the commencement of any such activity.

14. The Landowner acknowledges that the Stormwater Improvements are permanent fixtures that cannot be altered or removed; and the Landowner shall not place any structure, fill, landscaping, or vegetation into a stormwater BMP or within a conservation easement which would limit or alter the function of the BMP, unless a revised plan is submitted and approved by the Township. Such revised plan shall be recorded with an amended or restated, as applicable, Stormwater Operation and Maintenance and Project Improvement Agreement, prior to the implementation of any alterations approved by the revised plan.

15. To ensure completion of all of the required Stormwater Improvements, the Landowner has, contemporaneously with or prior to execution of this Agreement, provided the Township with financial security in the form of a \_\_\_\_\_ *<enter the form of security, e.g., cash deposit, irrevocable letter of credit, etc.>* (hereinafter the "Financial Security"). Landowner shall, at their own cost and expense, complete the construction and installation of the Stormwater Improvements included on the SWM Plans in accordance with the requirements of the Township Engineer. The total amount of Financial Security provided is **<Enter the written total amount in dollars>** (\$ ##,###.##), which Financial Security includes **<Enter the written total amount in dollars>** (\$ ##,###.##) for the construction observation, final inspection, and administration costs of the Township Engineer. A copy of the Township Engineer's estimated cost for the Stormwater Improvements is attached hereto as **Exhibit "C"**.

16. **Fees and Costs.**

(a) The Landowner shall pay to the Township the sum of **<Enter the written total amount in dollars>** (\$ ##,###.##), representing reimbursement to the Township for the economic impact the Stormwater Improvements will cause to municipal facilities and services.

Payment thereof shall be separate and distinct from the funds provided for in the any escrow account for the benefit of Landowner and shall be paid at the time of its application for a building permit.

(b) The Landowner agrees to pay all expenses incurred by the Township for the services of the Township Solicitor including, without limitation, the preparation and/or review of this Agreement, deeds, or other documents of title, releases if required, easements, rights-of-way, or any other legal documents required to carry out the terms of this Agreement and the requirements of any applicable Township Ordinances. The Landowner shall also pay the fees and costs charged by the Township, including those for the Township Engineer, in accordance with the Township's most-recently adopted fee resolution and all other applicable Township Ordinances.

17. Before proceeding with the construction or installation of any of the Stormwater Improvements, the Landowner shall provide at least seventy-two (72) hours advance notice to the Township Engineer so that arrangements can be made for the inspection of the work as it progresses.

18. When the Landowner has completed the construction and installation of the Stormwater Improvements, the Landowner shall notify the Township in writing of their completion and shall send a copy thereof to the Township Engineer. The Township shall approve or reject said improvements upon the recommendation of the Township Engineer. Rejection shall be accompanied by a written statement indicating the reason(s) therefor. The Township shall authorize the release of funds, whether in the form of partial, total, or final releases, from the Financial Security upon recommendation of the Township Engineer and after payment of all outstanding invoices owed to the Township.

19. Before the Township issues a Use and Occupancy Permit for the Property, the Landowner shall submit a set of As-Built Plans, prepared and signed by a registered Professional Land Surveyor and/or Professional Engineer. The As-Built Plans shall include all items required by Section 407 of the Township Stormwater Management Ordinance, and any other information that may be deemed necessary by the Township, or the Township Engineer, which shall be consistent with what is shown on the SWM Plans approved by the Township.

20. This Agreement shall be recorded at the office of the Recorder of Deeds for Montgomery County, Pennsylvania and shall constitute a covenant running with the Property, and/or an equitable servitude, in perpetuity and shall be binding upon the Landowner.

21. The provisions of this Agreement shall be binding upon the Landowner, as well as the heirs, administrators, executors, successors, and/or assigns of the Property, and any newly vested lots associated with the Property, in perpetuity. The Landowner agrees to provide a copy of this Stormwater Operation and Maintenance and Project Improvements Agreement to its successors and/or assigns and agrees to incorporate a reference to the terms of this Agreement in any future deed of conveyance. The failure of the Landowner to perform any act required by this paragraph shall not impair the validity of the Agreement, limit its enforceability in any way, nor impair any portion of the O&M Plan requirements or responsibilities.

***IN WITNESS WHEREOF***, and intending to be legally bound hereby, the parties hereto, by and through their authorized representatives, have executed this Agreement the day and year first above written.

**LANDOWNERS:**

By: (Print) \_\_\_\_\_

(Signature) \_\_\_\_\_

Owner

By: (Print) \_\_\_\_\_

(Signature) \_\_\_\_\_

Owner

**ATTEST:**

(Print) \_\_\_\_\_

(Signature) \_\_\_\_\_

Witness

(Date) \_\_\_\_\_

**WEST POTTS GROVE TOWNSHIP**

By: (Print) \_\_\_\_\_

(Signature) \_\_\_\_\_

President, Board of Commissioners

**ATTEST:**

(Print) \_\_\_\_\_

(Signature) \_\_\_\_\_

Township Secretary

(Date) \_\_\_\_\_

COMMONWEALTH OF PENNSYLVANIA

:  
:  
:

SS

COUNTY OF MONTGOMERY

On this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_, before me, a Notary Public in and for the County of Montgomery, Commonwealth of Pennsylvania, personally appeared \_\_\_\_\_ and \_\_\_\_\_, who acknowledged themselves to be the \_\_\_\_\_ and \_\_\_\_\_, respectively, of \_\_\_\_\_, that they are the persons whose names are subscribed to the foregoing instrument, and acknowledged that they executed the same for the purposes therein contained, and desire the same be recorded.

**IN WITNESS WHEREOF**, I have hereunto set my hand and official seal.

\_\_\_\_\_  
Notary Public

COMMONWEALTH OF PENNSYLVANIA

:  
:  
:

SS

COUNTY OF MONTGOMERY

On this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_, before me, a Notary Public, personally appeared \_\_\_\_\_ (President, Board of Commissioners) and \_\_\_\_\_ (Township Secretary), who acknowledged themselves to be the President of the Board of Commissioners and the Township Secretary of the Township of West Pottsgrove, Montgomery County, respectively, that they are the persons whose names are subscribed to the foregoing instrument, and acknowledged that they executed the same for the purposes therein contained, and desire the same be recorded.

**IN WITNESS WHEREOF**, I have hereunto set my hand and official seal.

\_\_\_\_\_  
Notary Public

**WEST POTTS GROVE TOWNSHIP  
CHAPTER 21 – STORMWATER MANAGEMENT ORDINANCE**

**APPENDIX B**

**STORMWATER DESIGN CRITERIA**

Table B-1, Runoff Curve Numbers (“CN”)

Table B-2, Rational Runoff Coefficients (“c”)

Table B-3, Manning Roughness Coefficients (“n”)



**Table B-2. Runoff Curve Numbers**  
**Source: NRCS (SCS) TR-55**

Land Use Description		Hydrologic Soil Group			
		A	B	C	D
Open space		44	65	77	82
Orchard		44	65	77	82
Meadow		30	58	71	78
Agriculture		59	71	79	83
Forest		36	60	73	79
Commercial	(85% impervious)	89	92	94	95
Industrial	(72% impervious)	81	88	91	93
Institutional	(50% impervious)	71	82	88	90
Residential					
<b>Average lot size</b>	<b>% Impervious</b>				
1/8-acre or less*	65	77	85	90	92
1/8- to 1/3-acre	34	59	74	82	87
1/3- to 1-acre	23	53	69	80	85
1- to 4-acres	12	46	66	78	82
Farmstead		59	74	82	86
Smooth surfaces (concrete, asphalt, gravel or bare compacted soil)		98	98	98	98
Water		98	98	98	98
Forest/mining mix		75	75	75	75

\* Includes multifamily housing unless justified lower density can be provided.

**NOTE:** Existing site conditions of bare earth or fallow shall be considered as meadow when choosing a CN value. Existing conditions should be assumed to be meadow in good condition, unless the actual existing conditions result in a lower runoff curve number, in which case the lower number will be used.

**Table B-3. Rational Runoff Coefficients (AMC II)**

Land Use Description		Hydrologic Soil Group			
		A	B	C	D
Cultivated land:					
Without conservation treatment		0.49	0.67	0.81	0.88
With conservation treatment		0.27	0.43	0.61	0.67
Pasture or range land:					
Poor condition		0.38	0.63	0.78	0.84
Good conditions		—*	0.25	0.51	0.65
Meadow: good conditions		—*	—*	0.44	0.61
Wood or forest land:					
Thin stand, poor cover, no mulch		—*	0.34	0.59	0.70
Good cover		—*	—*	0.45	0.59
Open spaces, lawns, parks, golf courses, cemeteries:					
Good conditions: grass cover on 75% or more of the area		—*	0.25	0.51	0.65
Fair conditions: grass cover on 50% to 75% of the area		—*	0.45	0.63	0.74
Commercial and business areas (85% impervious)		0.84	0.90	0.93	0.96
Industrial districts (72% impervious)		0.67	0.81	0.88	0.92
Residential:					
<b>Average Lot Size</b>	<b>Average % Impervious</b>				
1/8-acre or less	65	0.59	0.76	0.86	0.90
1/4-acre	38	0.25	0.49	0.67	0.78
1/3-acre	30	—*	0.49	0.67	0.78
1/2-acre	25	—*	0.45	0.65	0.76
1-acre	20	—*	0.41	0.63	0.74
Paved parking lots, roofs, driveways, etc.		0.99	0.99	0.99	0.99
Streets and roads:					
Paved with curbs and storm sewers		0.99	0.99	0.99	0.99
Gravel		0.57	0.76	0.84	0.88
Dirt		0.49	0.69	0.80	0.84

**NOTES:**

1. Values are based on NRCS/SCS definitions and are average values.
2. Values indicated by “—\*” should be determined by the Qualified Professional based on site characteristics.
3. Source: New Jersey Department of Environmental Protection, Technical Manual for Stream Encroachment, August 1984, revised 1995.

**Table B-4. Roughness Coefficients for Overland Flow and Channel Flows**  
**Source: U.S. Army Corps of Engineers, HEC-1 Users' Manual**

**Roughness Coefficients (Manning's "n") for Overland Flow**

<b>Surface Description</b>	<b>Value of "n"</b>
Dense growth	0.4 to 0.5
Pasture	0.3 to 0.4
Lawns	0.2 to 0.3
Bluegrass sod	0.2 to 0.5
Short grass prairie	0.1 to 0.2
Sparse vegetation	0.05 to 0.13
Bare clay-loam soil (eroded)	0.01 to 0.03
Concrete/asphalt:	
Very shallow depths (less than 1/4 inch)	0.10 to 0.15
Small depths (1/4 inch to several inches)	0.05 to 0.10

**Roughness Coefficients (Manning's "n") for Channel Flow**

<b>Reach Description</b>	<b>Value of "n"</b>
Natural stream, clean, straight; no rifts or pools	0.03
Natural stream, clean, winding; some pools or shoals	0.04
Natural stream, winding, pools, shoals; stony with some weeds	0.05
Natural stream, sluggish; deep pools and weeds	0.07
Natural stream or swale; very weedy or with timber underbrush	0.10
Concrete pipe, culvert, or channel	0.012
Corrugated metal pipe	0.012 to 0.027 <sup>1</sup>
High Density Polyethylene ("HDPE") Pipe:	
Corrugated	0.021 to 0.029 <sup>2</sup>
Smooth-lined	0.012 to 0.020 <sup>2</sup>

**NOTES:**

1. Depending upon type, coating, and diameter of the CMP.
2. Values recommended by the American Concrete Pipe Association; check manufacturer's recommended value.

**WEST POTTS GROVE TOWNSHIP  
CHAPTER 21 – STORMWATER MANAGEMENT ORDINANCE**

**APPENDIX C**

**SIMPLIFIED APPROACH TO STORMWATER MANAGEMENT  
FOR SMALL PROJECTS**

## **APPENDIX C.1**

### **APPLICABILITY, SUBMITTAL AND APPROVAL REQUIREMENTS**

#### **A. Applicability.**

(1) Small projects 1,500- to 3,000-square feet of Proposed Impervious Surfaces (as defined in this Stormwater Management Ordinance) and with less than 10,000-square feet of proposed Earth Disturbance (as defined in this Ordinance) may apply the “Simplified Approach to Stormwater Management for Small Projects” (hereinafter the “Simplified Approach”).

(2) Only projects that meet the aforementioned area thresholds as specified in the Township’s Stormwater Management Ordinance may use this Simplified Approach. Sketch plans may be submitted for review by the Township in lieu of formal Stormwater Management Site Plans; however, these projects are still required to address water quality and infiltration requirements as outlined in this Simplified Approach.

(3) Any project with more than 3,000-square feet of Proposed Impervious Surface or more than 10,000-square feet of proposed Earth Disturbance CANNOT apply this Simplified Approach.

(4) The Applicant should first review the planned project with the Code Enforcement Officer and/or the Township Engineer prior to initiating the Simplified Approach to confirm the following:

(a) That the proposed project is not otherwise exempt from the stormwater management control and the Stormwater Management Site Plan requirements of the Township’s Stormwater Management Ordinance;

(b) That the proposed project is eligible to use this Simplified Approach;

(c) To determine which components of the proposed project shall be included in the calculation of impervious surface area(s); and,

(d) Whether any local conditions are known to the Township Engineer that would preclude the use of any of the techniques included in this Simplified Approach.

**B. Submittal and Approval Requirements.** The use by an Applicant of the Simplified Approach requires:

(1) The Applicant to submit the following to the Township for review and approval prior to beginning any regulated activities:

(a) A Simplified Stormwater Management Site Plan (i.e., a sketch plan) and accompanying Worksheet; and

(b) A completed, signed, and notarized “Simplified Approach – Stormwater Operation and Maintenance and Project Improvement Agreement.”

(2) The first 1-inch of rainfall runoff from Proposed Impervious Surfaces shall be captured and infiltrated on the Applicant’s property.

(3) The Township Solicitor shall record the “Simplified Approach – Stormwater Operation and Maintenance and Project Improvement Agreement,” at the expense of the Landowner at the office of the Recorder of Deeds of Montgomery County, Pennsylvania after approval and execution by the Township.

(4) A final inspection may be conducted by the Township after completion of the construction and installation of any required stormwater management facilities, BMPs, or structures.

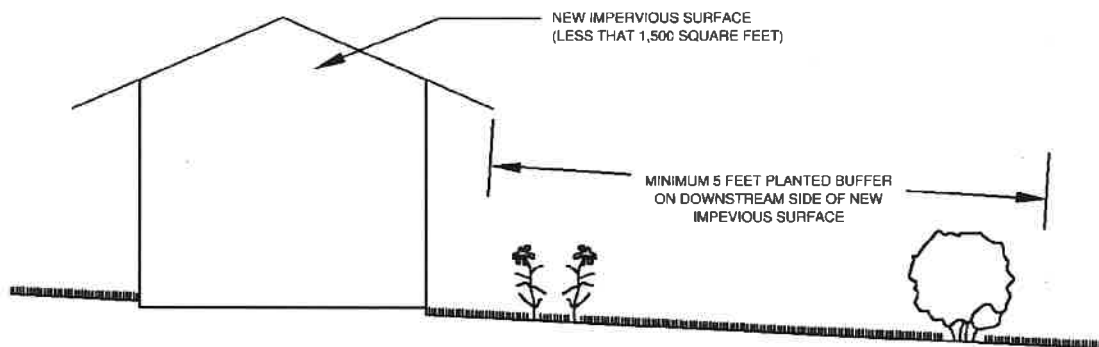
## APPENDIX C.2

### **SIMPLIFIED APPROACH TO STORMWATER MANAGEMENT FOR SMALL PROJECTS**

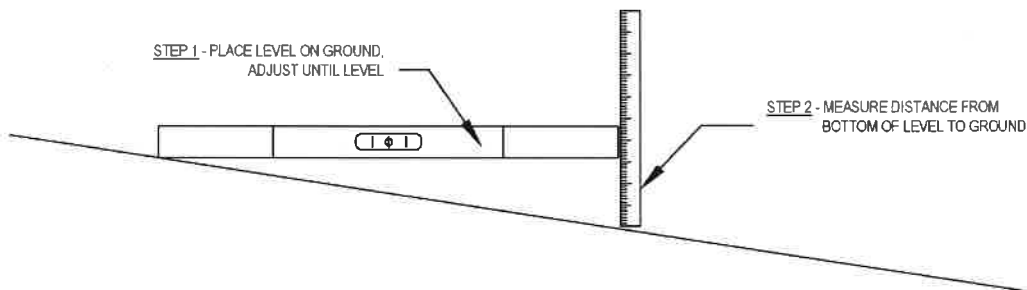
A. For new Impervious Areas less than 1,500-square feet, the following are required:

(1) **Buffer Strip.** The Applicant shall provide buffer areas on the downstream side of any new impervious surfaces (e.g., patios, decks, sheds, etc.) where the runoff discharges as a sheet flow (i.e., roof leaders or other pipes *are not* part of the new construction). The buffer areas should be at least 5-feet in width (See **Figure 1**) and the downhill slope shall not be greater than 10% (See **Figure 2** for instructions on calculating slope). The buffer can be a mix of grass, shrubs, and trees. If buffer areas cannot be provided for the entire length of the impervious surfaces, install an infiltration system or combination of infiltration systems noted in this Appendix C and divert surface runoff from the impervious surfaces to this facility.

**Figure 1: Buffer Strip Configuration**



**Figure 2: Measuring Ground Slope**

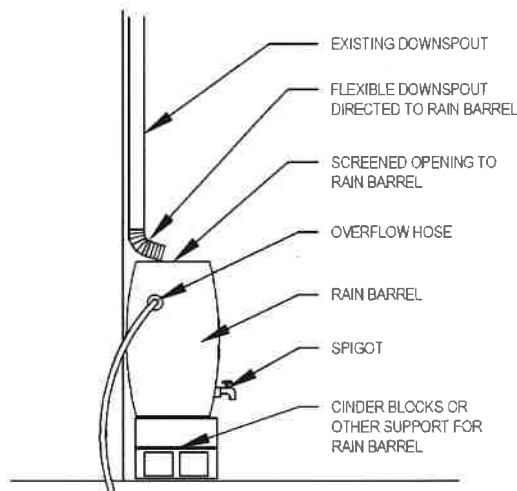


To measure ground slope, place a level on the ground and adjust until level. Next measure the distance from the bottom of the level to the ground. The slope is found by the following equation:

$$\text{Slope (\%)} = \left( \frac{\text{Distance from bottom of level to ground}}{\text{Length of level}} \right) \times 100$$

(2) **Rain Barrels.** Rain Barrels and similar devices have been used for centuries to capture storm water from the roofs of buildings, and in many parts of the world these systems serve as a primary water supply source. The reuse of stormwater for potable needs is not advised without water treatment. These systems can reduce potable water needs for uses such as irrigation while also reducing stormwater discharges. Although Rain Barrels do not store large volumes of water, they can be used to control stormwater from very small areas or as a supplement to other management practices discussed in this Appendix.

**Figure 6: Typical Rain Barrel Configuration**



### **Rain Barrel Sizing:**

STEP 1 – Determine Area of Total New Impervious Surfaces (“A”) in square feet

STEP 2 – Determine Required Recharge (Infiltration) Volume (“Rev”)

To infiltrate 1-inch of rainfall per square foot of impervious area:

$$\text{Rev (cu. ft.)} = 1.0 \text{ (in. rainfall)} \times \left( \frac{A \text{ (sq. ft.)}}{12 \text{ (in./sq. ft.)}} \right)$$

STEP 3 – Determine the appropriate size of the Rain Barrel

$$\text{Barrel Volume (gallons)} = \left( \frac{\text{Rev (cu. ft.)}}{0.5} \right) \times 7.48 \text{ gallons/cu. ft.}$$

**Note:** The “Rev” is divided by 0.5 as a safety factor to account for the fact that the Rain Barrel may not be entirely empty at the start of a storm event.



**Example:**

STEP 1 – Determine Area of Total New Impervious Surfaces in square feet.

Project Area New Impervious Surfaces = 40 square feet

STEP 2 – Determine Required Recharge (Infiltration) Volume (“Rev”)

$$Rev (cu. ft.) = 1.0 (in. rainfall) \times \left( \frac{40 (sq. ft.)}{12 (in./sq. ft.)} \right)$$

$$Rev = 3.3 \text{ cubic feet}$$

STEP 3 – Determine the appropriate size of the Rain Barrel

$$Barrel Volume (gallons) = \left( \frac{3.3 (cu. ft.)}{0.5} \right) \times 7.48 \text{ gallons/cu. ft.}$$

$$Barrel Volume = 49.4 \text{ gallons (possibly a 55 – gallon drum)}$$

**Maintenance Issues:**

Properly designed and installed Rain Barrels require some regular maintenance to function properly:

- Flush barrels to remove sediment. Brush the inside surfaces and thoroughly disinfect the barrel with a bio-degradable, eco-friendly disinfectant.
- Winter concern: DO NOT allow water to freeze in devices. Empty the Rain Barrel entirely of water before it freezes.

B. For new Impervious Areas 1500-square feet to 3000-square feet, select an infiltration system or combination of infiltration systems noted in this Appendix and divert surface runoff from the impervious surfaces to this facility(ies). It should be noted that any infiltration facility shall be located no closer than 10-feet from a building or property line:

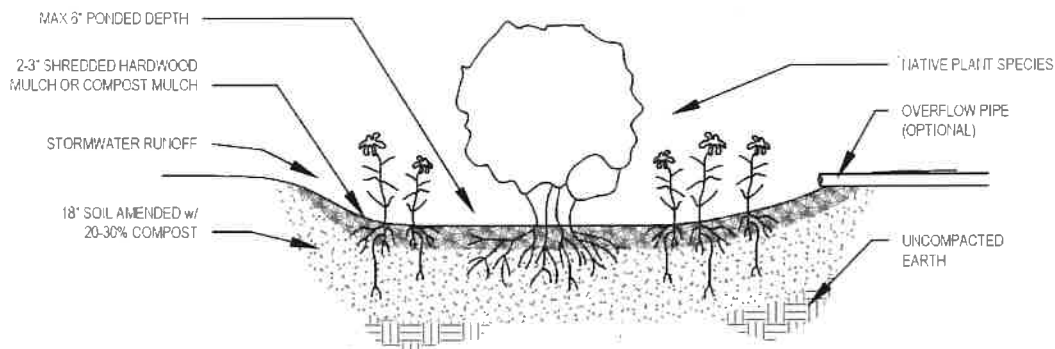
(1) **Rain Gardens.** Rain Gardens, also referred to as bioretention, are a method of treating relatively small volumes of stormwater by allowing water to pond in a surface depression. Native species are planted within the depression to improve water quality as well as aesthetics. Water quality improvements are achieved through filtration and settling of particles through a layer of mulch and through infiltration into the surrounding soil. Plant life also contributes to pollutant uptake and improvement of water quality. Construction of a rain garden should be performed after all other areas of the site are stabilized to avoid clogging. During construction, activities that cause compaction of the subgrade soil should be avoided, and construction should be performed in these areas with only light machinery. Additional resources on rain gardens can be found online:

[www.raingardens.org/docs/rain\\_garden\\_factsheet.pdf](http://www.raingardens.org/docs/rain_garden_factsheet.pdf)

<http://www.dnr.state.wi.us/org/water/wm/dsfm/shore/documents/rgmanual.pdf>

[http://www.dof.virginia.gov/mgt/resources/pub-Rain-Garden-Tech-Guide\\_2008-05.pdf](http://www.dof.virginia.gov/mgt/resources/pub-Rain-Garden-Tech-Guide_2008-05.pdf)

**Figure 3: Typical Rain Garden Configuration**



### **Rain Garden Sizing:**

STEP 1 – Determine Area of Total New Impervious Surfaces (“A”) in square feet

STEP 2 – Determine Required Recharge (Infiltration) Volume (“Rev”)

To infiltrate 1-inch of rainfall per square foot of impervious area:

$$Rev (cu. ft.) = 1.0 (in. rainfall) \times \left( \frac{A (sq. ft.)}{12 (in./sq. ft.)} \right)$$

STEP 3 – Determine the surface area required for the Rain Garden

$$Surface Area (sq. ft.) = \frac{Rev (cu. ft.)}{Desired Pond Depth (ft.)}$$

### **Example:**

STEP 1 – Determine Area of Total New Impervious Surfaces

Project Area Total New Impervious Surfaces = 1500 square feet

STEP 2 – Determine Required Recharge (Infiltration) Volume (“Rev”)

$$Rev (cu. ft.) = 1.0 (in. rainfall) \times \left( \frac{1500 (sq. ft.)}{12 (in./sq. ft.)} \right)$$

$$Rev = 125 \text{ cubic feet}$$

STEP 3 – Determine the surface area required for the Rain Garden

Suppose a ponded depth of 0.5 feet (i.e., the maximum ponded depth) is desired:

$$\text{Surface Area (sq. ft.)} = \frac{125 \text{ (cu. ft)}}{0.5 \text{ (ft.)}}$$

$$\text{Surface Area} = 250 \text{ square feet}$$

In this example, a rain garden 10-feet wide x 25-feet long x 0.5-feet deep would provide the desired infiltration surface area.

### **Construction Issues:**

Several issues should be addressed during construction of a rain garden to ensure its proper function:

- A percolation test should be performed prior to construction to determine the suitability of the preferred site for infiltration. Percolation test instructions can be found at the end of this Appendix.
- Do not allow sediment to wash back into the Rain Garden bed area during construction. This can clog the bottom layer and limit infiltration capacity.
- Avoid compaction of the bottom. This can limit the infiltration capacity.
- An overflow pipe can be used to direct excess water to a particular location. If an overflow pipe is used, it should be placed at the top of the depression, such that water is still allowed to pond in the rain garden.
- Plants used in the rain garden should be tolerant of both wet and dry conditions, as well as be suitable for the preferred location's unique light and soil conditions. Plant selection guidance can be found in the internet links listed above.

### **Maintenance Issues:**

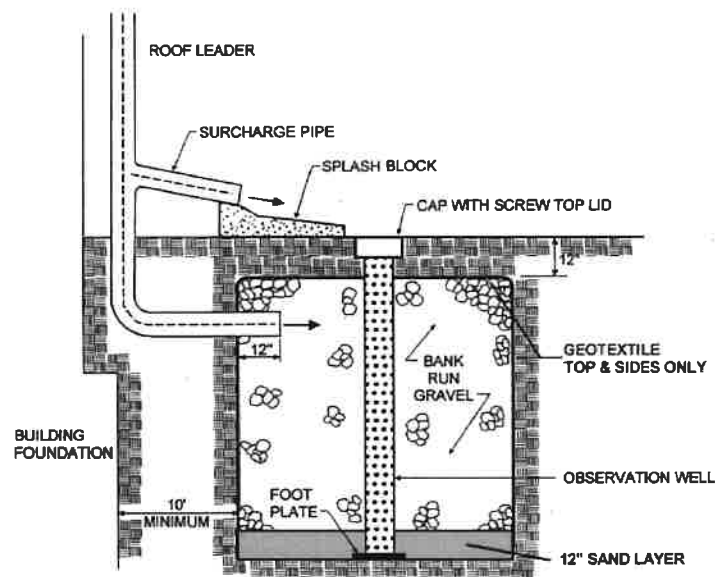
Properly designed and installed Rain Gardens require some regular maintenance:

- While vegetation is being established watering, pruning, and weeding may be required.
- Dead plant material should also be removed every year. Perennial plantings may be cut down at the end of the growing season.
- Mulch should be re-spread when erosion is evident and be replenished as needed and the entire area may require mulch replacement every 2- to 3-years.
- Rain Gardens should be inspected at least twice per year for sediment buildup, erosion, vegetative conditions, or any other conditions that negatively impact the functionality of the system.
- During periods of extended drought, rain gardens may require watering.
- Trees and shrubs should be inspected twice per year to evaluate health.

(2) **Dry Wells.** Dry wells are effective methods of infiltrating runoff from roof leaders. These facilities should be located a minimum of 10-feet from any building foundation to avoid seepage problems. A dry well can be either a structural, prefabricated chamber or an excavated pit filled with clean aggregate. Construction of a dry well should be performed after all other areas of the site are stabilized to avoid clogging. During construction, compaction of the subgrade soil should be avoided, and construction should be performed with only light machinery. The total depth of dry wells in excess of 3 ½-feet should be avoided. The clean aggregate fill should be an average of 1.5- to 2.5-inches in diameter.

**Figure 4: Typical Dry Well Configuration**

Source: Maryland Stormwater Design Manual



**Note:** Acceptable geotextiles include Mirafi 140N, Amoco 4547, Geotex 451 or approved equal. Bank run gravel should be 1.5" to 2.5" in diameter (AASHTO #2 stone is preferable).

### **Dry Well Sizing:**

STEP 1 – Determine Area of Total New Impervious Surfaces ("A") in square feet

STEP 2 – Determine Required Recharge (Infiltration) Volume ("Rev")

To infiltrate 1-inch of rainfall per square foot of impervious area:

$$Rev (cu. ft.) = 1.0 (in. rainfall) \times \left( \frac{A (sq. ft.)}{12 (in./sq. ft.)} \right)$$

STEP 3 – Determine the surface area required for the Dry Well

$$\text{Surface Area (sq. ft.)} = \frac{(\text{Rev (cu. ft.)} \div 0.4)}{\text{Desired Dry Well Bed Depth (ft.)}}$$

**Note:** Rev is divided by 0.4 to account for the void space in the stone bed.

**Example:**

STEP 1 – Determine Area of Total New Impervious Surfaces

Project Area Total New Impervious Surfaces = 1500 square feet

STEP 2 – Determine Required Recharge (Infiltration) Volume (“Rev”)

$$\text{Rev (cu. ft.)} = 1.0 (\text{in. rainfall}) \times \left( \frac{1500 (\text{sq. ft.})}{12 (\text{in./sq. ft.})} \right)$$

$$\text{Rev} = 125 \text{ cubic feet}$$

STEP 3 – Determine the surface area required for the Dry Well

Suppose a Dry Well bed depth of 3-feet is desired:

$$\text{Surface Area (sq. ft.)} = \frac{125 (\text{cu. ft.}) \div 0.4}{3 (\text{ft.})}$$

$$\text{Surface Area (sq. ft.)} = \frac{313 (\text{cu. ft.})}{3 (\text{ft.})}$$

$$\text{Surface Area} = 105 \text{ square feet}$$

In this example a Dry Well 7-feet wide x 15-feet long x 3-feet deep would provide the desired infiltration surface area.

**Construction Issues:**

Several issues should be addressed during construction of a Dry Well to ensure its proper function:

- A percolation test should be performed to determine the suitability of the preferred site for infiltration. Percolation test instructions can be found at the end of this Appendix.
- Do not allow sediment to wash back into the Dry Well bed area during construction. This can clog the bottom layer and limit infiltration capacity.
- Avoid compaction of the bottom. This can limit the infiltration capacity.
- An observation well should be constructed of perforated pipe such that the level of water in the well is the same as the level of water in the bed.
- Geotextile should overlap a minimum of 16-inches at any seams.

### **Maintenance Issues:**

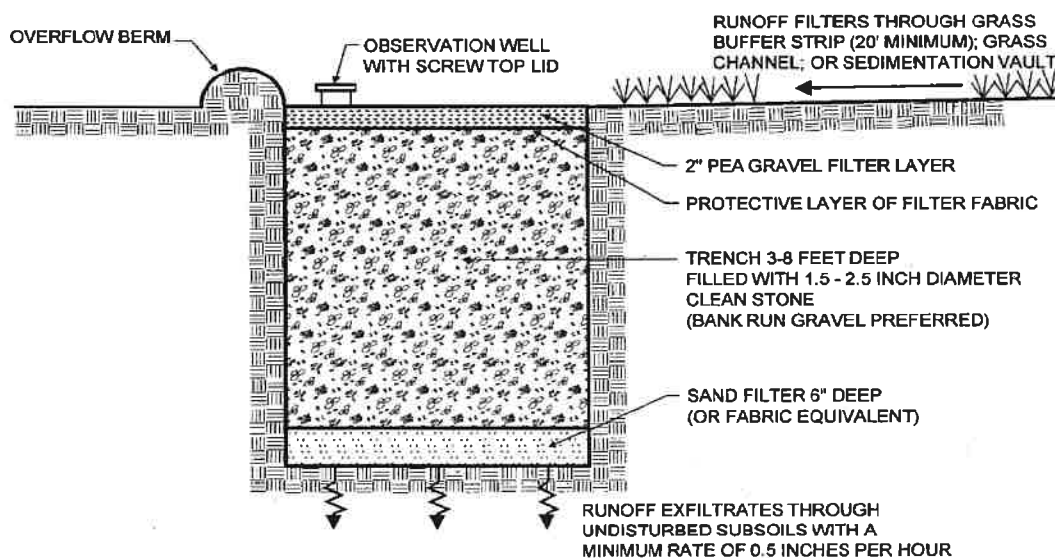
As with all infiltration practices, Dry Wells require regular and effective maintenance to ensure prolonged functioning. The following represent minimum maintenance requirements for Dry Wells:

- Inspect Dry Wells at least quarterly and after every storm event exceeding 1-inch.
- Dispose of sediment, debris/trash, and any other waste material removed from a Dry Well in compliance with local, state, and federal waste regulations.
- Monitor drain-down times to ensure the Dry Well drains within 72-hours. If slow drainage persists, the system may need replacing.
- Regularly clean out gutters and inspect connections to the Dry Well.
- Replace any filter screen that intercepts roof runoff.
- Clean out any intermediate sump box annually.

(3) **Infiltration Trenches.** An Infiltration Trench is a long, narrow, rock-filled trench with no outlet that receives stormwater runoff. Runoff is stored in the void space between the stones and infiltrates through the bottom and into the soil matrix. Infiltration Trenches perform well for the removal of fine sediment and associated pollutants. Pretreatment of stormwater runoff using buffer strips, swales, or detention basins prior to its entry into the Infiltration Trench is important for limiting amounts of coarse sediment entering the trench, which sediment can clog the void spaces and render the trench ineffective. Construction of an Infiltration Trench should be performed after all other areas of the site are stabilized to avoid clogging. During construction, compaction of the subgrade soil should be avoided, and construction should be performed with only light machinery.

**Figure 5: Typical Infiltration Trench Configuration**

Source: Maryland Stormwater Design Manual



**Note:** Acceptable filter fabrics include Mirafi 140N, Amoco 4547, Geotex 451 or approved equal. Clean stone should be AASHTO #2 stone.

### **Infiltration Trench Sizing:**

STEP 1 – Determine Area of Total New Impervious Surfaces (“A”) in square feet

STEP 2 – Determine Required Recharge (Infiltration) Volume (“Rev”)

To infiltrate 1-inch of rainfall per square foot of impervious area:

$$Rev (cu. ft.) = 1.0 (in. rainfall) \times \left( \frac{A (sq. ft.)}{12 (in./sq. ft.)} \right)$$

STEP 3 – Determine the surface area required for the Infiltration Trench

$$Surface Area (sq. ft.) = \frac{(Rev (cu. ft.) \div 0.4)}{Desired Infiltration Trench Bed Depth (ft.)}$$

**Note:** Rev is divided by 0.4 to account for the void space in the stone bed.

### **Example:**

STEP 1 – Determine Area of Total New Impervious Surfaces

Project Area Total New Impervious Surfaces = 2500 square feet

STEP 2 – Determine Required Recharge (Infiltration) Volume (“Rev”)

$$Rev (cu. ft.) = 1.0 (in. rainfall) \times \left( \frac{2500 (sq. ft.)}{12 (in./sq. ft.)} \right)$$

$$Rev = 208.3 \text{ cubic feet}$$

STEP 3 – Determine the surface area required for the Infiltration Trench

Suppose an Infiltration Trench bed depth of 3-feet is desired:

$$Surface Area (sq. ft.) = \frac{209 (cu. ft.) \div 0.4}{3 (ft.)}$$

$$Surface Area (sq. ft.) = \frac{523 (cu. ft.)}{3 (ft.)}$$

$$Surface Area = 174 \text{ square feet}$$

In this example an Infiltration Trench 5-feet wide x 35-feet long x 3-feet deep would provide the desired infiltration surface area.

### **Construction Issues:**

Several issues should be addressed during construction of an Infiltration Trench to ensure its proper function:

- A percolation test should be performed prior to construction to determine the suitability of the preferred site for infiltration. Percolation test instructions can be found at the end of this Appendix.
- Do not allow sediment to wash back into the Infiltration Trench bed area during construction. This can clog the bottom layer and limit infiltration capacity.
- Avoid compaction of the bottom. This can limit the infiltration capacity.
- An observation well should be constructed of perforated pipe such that the level of water in the well is the same as the level of water in the Infiltration Trench bed.
- Filter fabric should overlap a minimum of 16-inches at any seams.

### **Maintenance Issues:**

As with all infiltration practices, Infiltration Trenches require regular and effective maintenance to ensure prolonged functioning. The following represent minimum maintenance requirements for Infiltration Trenches:

- The filter layer should be inspected and cleaned at least twice each year.
- Monitor drain-down times to ensure the Infiltration Trench drains within 72-hours. If slow drainage persists, the system may need replacing.
- Monitor any filters or buffers prior to the Infiltration Trench to ensure they are not clogged and continue to remove sediment as designed.

C. **Percolation Test Procedure.** The following procedure will aid in determining the infiltration rate of the soil at the proposed location for an infiltration practice discussed in the prior sections. The infiltration rate determines how quickly water will drain from the infiltration practice. ***It is not recommended that infiltration practices be constructed in soils with an infiltration rate less than 0.1-inches per hour.***

(1) Dig a hole 6-inches in diameter and 8-inches deep at the location of the proposed infiltration practice.

(2) Fill the hole with water to a depth of 6-inches and wait 30-minutes.

(3) Refill the hole to a depth of 6-inches and wait 30-minutes.

(4) If, after the second filling and 30-minute wait interval, the hole is empty use a reading interval of 10-minutes for the following steps. If the hole still has water present, use a reading interval of 30-minutes for the following steps.

(5) Refill the hole to a depth of 6-inches.



(6) At each reading interval (either 10-minutes or 30-minutes, as determined during Step #4), record the measurement of the water level drop within the hole in inches. Refill the hole to a depth of 6-inches after each reading interval.

(7) Continue performing reading intervals until eight (8) readings are recorded or until the water level drop stabilizes (whichever comes first). The water level drop has stabilized when there is a difference of ¼-inch or less between the highest and lowest readings of the last four (4) consecutive readings.

(8) The percolation rate is the final reading taken.

(9) Determine the reduction factor from your final reading:

<b>Final Reading (in./hr.)</b>	<b>Reduction Factor</b>
0.0 – 0.2	3.0
0.2 – 1.5	2.9
> 1.6	2.6

(10) Determine the infiltration rate:

$$\text{Infiltration Rate (in./hr.)} = \frac{\text{Percolation Rate (in./hr.)}}{\text{Reduction Factor}}$$

### APPENDIX C.3

#### SIMPLIFIED APPROACH – STORMWATER OPERATION AND MAINTENANCE AND PROJECT IMPROVEMENT AGREEMENT

**THIS AGREEMENT**, made and entered into this \_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_, by and between \_\_\_\_\_ (hereinafter the “Landowner”), of \_\_\_\_\_ (landowners current address), and the Township of West Pottsgrove, Montgomery County, Pennsylvania (hereinafter the “Township”);

#### WITNESSETH:

**RECITALS**, the Recitals are incorporated herein by reference as if fully set forth in the body of this Agreement.

**WHEREAS**, the Township enacted and ordained the West Pottsgrove Township Stormwater Management Ordinance for the purposes of promoting the health, safety, and welfare within West Pottsgrove Township and its watershed by regulating all activities that may affect stormwater runoff, including land development and earth disturbance activity, within the Township; and

**WHEREAS**, the Landowner is the owner of certain real property as recorded by deed in the land records of the office of the Recorder of Deeds of Montgomery County, Pennsylvania in Deed Book \_\_\_\_\_, Page \_\_\_\_\_, referred to as Tax Parcel Number(s) \_\_\_\_\_, having Instrument Number \_\_\_\_\_, and as further described as being located at the address of \_\_\_\_\_ (hereinafter the “Property”); and

**WHEREAS**, the Landowner is proceeding to develop, construct improvements, and or otherwise engage in activities governed by the West Pottsgrove Township Stormwater Management Ordinance at the Property with less than 3,000-square feet of new impervious surface utilizing the Simplified Approach as approved by the Township; and

**WHEREAS**, the Stormwater Management Simplified Approach Plan(s) and Simplified Approach Worksheets (hereinafter referred to as the “Simplified Approach Plans”) for the Property identified herein, which Simplified Approach Plans are attached hereto as **Exhibit “A”** and made part hereof, as approved by the Township, provides for management of stormwater within the confines of the Property through the use of Stormwater Management Facilities and BMPs, as defined herein; and

**WHEREAS**, the Township, and the Landowner, their successors, and assigns, agree that the health, safety, and welfare of the residents of the Township and the protection and maintenance of water quality of the watersheds within the Township require that the on-site Stormwater Management Facilities and BMPs be constructed and maintained on the Property; and

**WHEREAS**, the Township requires, through the implementation of the West Pottsgrove Township Stormwater Management Ordinance, that Stormwater Management Facilities and BMPs as required by said Simplified Approach Plans be constructed and adequately operated and maintained by the Landowner, by the Landowner, its successors, and assigns, in perpetuity; and

**WHEREAS**, the term “Landowner” used herein shall include the above-named Landowner, its successors, and/or assigns and the heirs, administrators, executors, successors, and/or assigns, whether or not such future owners have signed this Agreement; and

**WHEREAS**, the term “Stormwater Management Facilities” used herein shall include any structure, natural or man-made, that, due to its condition, design, or construction, conveys, stores or otherwise affects stormwater runoff. Typical stormwater management facilities include, but are not limited to, detention and retention basins, open channels, storm sewers, pipes, inlets, and infiltration facilities; and

**WHEREAS**, the term Best Management Practices (“BMPs”) used herein shall include 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 the Township’s Stormwater Management Ordinance. Stormwater BMPs are commonly grouped into one of two (2) broad categories or measures: “structural” or “non-structural.” As referred to herein, 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 measures, bioretention, wet ponds, permeable paving, grassed swales, riparian or forested buffers, sand filters, detention basins, and manufactured devices. Structural stormwater BMPs are permanent appurtenances to the Property.

**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 Stormwater Management Facilities and BMPs (hereinafter the “Stormwater Improvements”) for the Property identified herein in accordance with the West Pottsgrove Township Stormwater Management Ordinance, the Simplified Approach Plans, as approved by the Township, and attached hereto as **Exhibit “A”**, all of which Stormwater Improvements shall be constructed by, and at the sole expense of, the Landowner.

(2) The Landowner shall maintain all of the Stormwater Improvements in good working condition, acceptable to the Township so that they always perform their design functions in accordance with the provisions of the Simplified Approach Plans included as **Exhibit “A”**, or as otherwise required in writing by the Township or as defined below for the identified Simplified Approach BMPs:

(a) Buffer Strips:

- (i) Maintain vegetation within the buffer strip.
- (ii) Construction of structures other than fencing, shall be prohibited.

(b) Rain Barrels:

(i) Rain Barrels and cisterns shall be cleared of debris quarterly and after any significant storm to ensure that stormwater from gutters can enter the Rain Barrel.

(ii) Gutters that directly convey stormwater Rain Barrels shall be cleared of trash and debris at least quarterly and after any significant rainfall event.

(iii) Rain Barrels shall be routinely emptied in their entirety to allow for the capture and storage of additional stormwater.

(iv) Overflow outlets from Rain Barrels shall be kept free and clear of debris.

(v) Rain Barrels that are damaged shall be fixed or replaced within two (2) weeks.

(c) Rain Gardens:

(i) Any debris (e.g., leaves, sticks, trash, etc.) blocking flow from reaching a Rain Garden, shall be routinely removed.

(ii) Pruning and weeding are required as needed and shall include the removal of invasive species, especially while vegetation is being established for a Rain Garden.

(iii) Mulch cover shall be maintained in a Rain Garden by resspreading or replacement as needed to prevent erosion, reduce weed growth, and assist with plant survival; however, said maintenance shall not restrict the infiltration of stormwater.

(iv) At least twice each year, the Landowner shall inspect the Rain Garden for sediment buildup, ground cover, and vegetative conditions and perform all necessary maintenance.

(v) Watering shall be performed as needed, especially during periods of extended dry weather and drought, subject to any applicable drought restrictions.

(vi) Trees and shrubs in a Rain Garden shall be inspected at least twice each year by the Landowner to evaluate their health and shall be replaced as and when necessary.

(d) Dry Wells:

(i) Dry Wells shall be inspected by the Landowner at least quarterly and after significant rainfalls. Debris, trash, sediment, or any other waste material shall be removed and disposed in compliance with local, state, and federal waste regulations.

(ii) Gutters shall be regularly cleaned out and inspected to ensure that proper connections are maintained to facilitate the effectiveness of the Dry Well.

(iii) The filter screen for downspouts or roof gutters which convey stormwater it to the Dry Well shall be cleaned and replaced as necessary.

(iv) Dry wells that are damaged shall be fixed or replaced within two (2) weeks.

(v) If an intermediate sump box exists as part of a conveyance leading to a Dry Well, it shall be cleaned out annually.

(e) Infiltration Trenches:

(i) At least twice each year, and after any significant rainfall event, the Landowner shall inspect the Infiltration Trench and remove any accumulated debris, sediment, or invasive vegetation.

(ii) Vegetation along the surface of an Infiltration Trench shall be maintained in good condition, and any bare spots shall be revegetated as soon as possible.

(iii) Vehicles shall not be parked or driven on or over an Infiltration Trench, and care shall be taken to avoid excessive compaction by mowers, tractors, machines, or similar equipment.

(iv) Any debris (e.g., leaves, sticks, trash, etc.) blocking flow from reaching an Infiltration Trench shall be routinely removed.

(3) The Landowner hereby grants and conveys to the Township an easement in gross over the entirety of the Property, in perpetuity, for access, at such limited times as the Township reasonably deems necessary, to inspect Stormwater Management Facilities, BMPs, erosion and sedimentation management facilities, and other improvements. The purpose of the inspection is to ensure safe and proper function of the Stormwater Improvements and the condition of all adjacent areas, all pursuant to the provisions of the Township Stormwater Management Ordinance. The Township shall have the right, but not the obligation, to conduct such inspections. When inspections are conducted, the Township shall give the Landowner copies of the inspection report including any findings and evaluations.

(4) The Landowner, or the Landowner's Professional Engineer, shall inspect the Stormwater Management Facilities and BMPs installed under this Ordinance according to the following frequencies, at a minimum, to ensure the Stormwater Improvements continue to function as intended:

*(Select from the following, based on the project site's relevant criteria: (Criteria 1) – Development by an individual homeowner, on a single lot, with stormwater management facilities and BMPs located entirely within their property boundaries, and which only serve their individual property; or (Criteria 2) Any other type of Development)*

*(Criteria 1)*

Within 30-days following receipt of the Township's written request for inspection unless a greater period of time is granted by the Township.

*Or (Criteria 2)*

- Annually for the first 5-years after the construction of the stormwater facilities.
- Once every 3-years thereafter.

- During or immediately following the cessation of a 10-year or greater storm event.

Within 30-days following receipt of the Township's written request for inspection unless a greater period of time is granted by the Township.

Inspections shall be conducted during or immediately following precipitation events. A written inspection report (hereinafter the "Landowner Inspection Report") with photos shall be prepared to document each inspection. The Landowner Inspection Report shall contain the date and time of the inspection, the individual(s) who completed the inspection, the location of all stormwater management facilities, BMPs, or other structures inspected, observations on performance, and recommendations for improving performance, if applicable. Landowner Inspection Reports shall be submitted to the Township within 30-days following completion of the inspection. The Township shall have the right, but not the obligation, to track the required written Landowner Inspection Reports.

(5) If the Landowner fails to produce a requested Landowner Inspection Report, the Township may enter the Property, perform an inspection of the Stormwater Improvements, and prepare an inspection report (hereinafter the "Township Inspection Report"). When inspections are conducted by the Township, the Township shall give the Landowner copies of the Township Inspection Report with findings and evaluations. The Landowner shall reimburse the Township within 30-days of receiving an invoice thereof, for all reasonable and necessary costs incurred by the Township hereunder. If not paid within said 30-day period, the Township may proceed to recover same through proceedings in law or equity, or by any other means or proceeding available to the Township and/or authorized under the provisions of the First Class Township Code.

(6) The Landowner shall perform maintenance in accordance with the maintenance schedule within the Simplified Approach Plans attached to this Agreement as **Exhibit "B"**.

(7) In the event the Landowner fails to operate and maintain the Stormwater Improvements in accordance with the Simplified Approach Plans, the Township or its employees, agents, representatives, delegates, or designees may enter upon the Property and take whatever action is deemed necessary to maintain or repair the Stormwater Improvements. It is expressly understood and agreed that the Township is under no obligation to maintain or repair the Stormwater Improvements, and in no event shall this Agreement be construed to impose any such obligation upon the Township.

(8) In the event the Township, pursuant to this Agreement, performs work or expends any funds in the performance of said work for labor, use of equipment, supplies, materials, and other related expenses due to the Landowner's failure to perform such work, the Landowner shall reimburse the Township, within 30-days of receipt of an invoice thereof, for all reasonable and necessary costs incurred by the Township hereunder. If not paid within said 30-day period, the Township may proceed to recover same through proceedings in law or equity, or by any other means or proceeding available to the Township and/or authorized under the provisions of the First Class Township Code.

(9) The intent and purpose of this Agreement is to ensure the proper maintenance of the Stormwater Improvements 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 on, or emanating from, the Property.

(10) The Landowner shall indemnify and release the Township from all damages, accidents, casualties, occurrences, or claims which might arise or be asserted against the Township or its employees, agents, representatives, delegates, or designees from the construction, presence, existence, or maintenance of the Stormwater Improvements by the Landowner or Township.

(11) In the event a claim is asserted against the Township, its employees, agents, representatives, delegates, or designees the Township shall promptly notify the Landowner, who shall defend the Township, its employees, agents, representatives, delegates, or designees at its own expense, against any suit based on such claim. If any judgment or claims against the Township, its employees, agents, representatives, delegates, or designees shall be awarded, the Landowner shall pay all costs and expenses in connection therewith. The Township, in its sole and absolute discretion, may require the Landowner to provide a general liability insurance policy in an amount deemed sufficient by the Township naming the Township as an additional insured.

(12) In the event of an emergency or the occurrence of special or unusual circumstances or situations, the Township may enter the Property if the Landowner is not immediately available, without notification or identification, to inspect and perform any necessary maintenance and/or repairs, if needed, when the public's health, safety, or welfare is in jeopardy. Otherwise, the Township shall notify the Landowner of any inspection, maintenance, or repair to be undertaken at least five (5) calendar days prior to the commencement of any such activity.

(13) The Landowner acknowledges that the Stormwater Improvements are permanent fixtures that cannot be altered or removed; and the Landowner shall not place any structure, fill, landscaping, or vegetation into a stormwater BMP or within a conservation easement which would limit or alter the function of the BMP, unless a revised plan is submitted and approved by the Township. Such revised Simplified Approach plan shall be recorded with an amended or restated, as applicable, Simplified Approach – Stormwater Operation and Maintenance and Project Improvement Agreement, prior to the implementation of any alterations approved by the revised Simplified Approach plan.

(14) Before proceeding with the construction or installation of any of the Stormwater Improvements, the Landowner shall provide at least seventy-two (72) hours advance notice to the Township Engineer so that arrangements can be made for the inspection of the work as it progresses.

(15) When the Landowner has completed the construction and installation of the Stormwater Improvements, the Landowner shall notify the Township in writing of their completion and shall send a copy thereof to the Township Engineer. The Township shall approve or reject said improvements upon the recommendation of the Township Engineer. Rejection shall be accompanied by a written statement indicating the reason(s) therefor. The Township shall authorize the release of any escrowed funds, if applicable, whether in the form of partial, total, or

final releases, upon recommendation of the Township Engineer and after payment of all outstanding invoices owed to the Township.

(16) Before the Township issues a Use and Occupancy Permit for the Property, the Landowner shall submit a set of As-Built Plans, prepared and signed by a registered Professional Land Surveyor and/or Professional Engineer. The As-Built Plans shall include all items required by Section 407 of the Township Stormwater Management Ordinance, and any other information that may be deemed necessary by the Township, or the Township Engineer, which shall be consistent with what is shown on the SWM Plans approved by the Township.

(17) This Agreement shall be recorded at the office of the Recorder of Deeds for Montgomery County, Pennsylvania and shall constitute a covenant running with the Property, and/or an equitable servitude, in perpetuity and shall be binding upon the Landowner.

(18) The provisions of this Agreement shall be binding upon the Landowner, as well as the heirs, administrators, executors, successors, and/or assigns of the Property, and any newly vested lots associated with the Property, in perpetuity. The Landowner agrees to provide a copy of this Simplified Approach – Stormwater Operation and Maintenance and Project Improvements Agreement to its successors and/or assigns and agrees to incorporate a reference to the terms of this Agreement in any future deed of conveyance. The failure of the Landowner to perform any act required by this paragraph shall not impair the validity of the Agreement, limit its enforceability in any way, nor impair any portion of the Simplified Approach Plans requirements or responsibilities.

***SIGNATURES ON FOLLOWING PAGE***



***IN WITNESS WHEREOF***, and intending to be legally bound hereby, the parties hereto, by and through their authorized representatives, have executed this Agreement the day and year first above written.

**LANDOWNERS:**

By: (Print) \_\_\_\_\_

(Signature) \_\_\_\_\_  
Owner

By: (Print) \_\_\_\_\_

(Signature) \_\_\_\_\_  
Owner

**ATTEST:**

(Print) \_\_\_\_\_

(Signature) \_\_\_\_\_  
Witness

(Date) \_\_\_\_\_

**WEST POTTS GROVE TOWNSHIP**

By: (Print) \_\_\_\_\_

(Signature) \_\_\_\_\_  
President, Board of Commissioners

**ATTEST:**

(Print) \_\_\_\_\_

(Signature) \_\_\_\_\_  
Township Secretary

(Date) \_\_\_\_\_