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**PART 1**  
**CONNECTIONS**

**§26-101. Definitions.**

The following words, terms and phrases used in this Part shall be defined and construed as follows:

**AUTHORITY** — the water authority supplying service to the area, either Perkasio Borough Authority or North Penn Water Authority.

**BUSINESS** — commercial, industrial and professional activity.

**CONSUMER** — a person, partnership, association or corporation and shall mean anyone to whom water is supplied by the authority, whether as owner or tenant.

**EQUIVALENT DWELLING UNIT** — a habitation intended for occupancy by a single family.

**NEW CONSTRUCTION** — construction pursuant to a valid building permit issued subsequent to date of enactment hereof.

**PROPERTY** –

- (1) A building or enclosure occupied as a single dwelling unit business.
- (2) A combination of buildings in a common enclosure occupied as a single dwelling or business.
- (3) One side of a double house with a solid vertical partition wall occupied as a single dwelling unit.
- (4) Each dwelling unit, business or profession in addition to the first dwelling unit, business or profession occupying the same building or enclosure, regardless of whether or not any additional plumbing facilities are existing with respect to such dwelling units, businesses or professions in addition to those installed or existing in the first year thereof; provided, however, that during the first year following the date upon which newly constructed or reconstructed commonly owned multiple dwelling, business or professional unit in addition to the first such unit shall be considered as property for purposes of this Part only upon its having been rented for occupancy. Upon the expiration of such first year, such additional dwelling, business or professional unit shall be considered a property hereunder, regardless of whether or not it has been so rented.

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WATER SYSTEM — all the facilities of the authorities for the supplying of water to consumers.

(Ord. 112, 7/19/1988, §1)

### **§26-102. Water Supply Connections.**

All buildings requiring water service located within 150 feet of the right-of-way of a public water main shall be required to make connection to said public water main and pay applicable connection fees and rental rates to the Authority having ownership of the public water main in the following instances:

- A. All new construction requiring water supply.
- B. All existing structures wherein the structure is enlarged or changed in use to a new use to require increased water capacity. This does not include residential additions which do not increase the number of dwelling units.

(Ord. 112, 7/19/1988, §2)

### **§26-103. Water Conservation Requirements.**

Water saving fixtures and devices shall be required in all new construction regardless of public or private water supply pursuant to the following specifications:

- A. Water Closets Operated by Flush Tanks. The water consumption of water closets operated by flush tanks shall not exceed an average of 3 1/2 gallons per flush cycle over a range of test pressures from 20 to 80 psig or a maximum of 4 gallons per flush cycle at any one test pressure. The fixture shall perform in accordance with the flushing test requirements cited in the ANSI 112.19.2 Vitreous China Plumbing Fixtures standard.
- B. Showerhead discharge rates shall not exceed 2 3/4 gallons of water per minute over a range of test pressure from 20 to 80 psig. The fixture shall perform in accordance with the test requirements cited in the ANSI 112.18.1 Finished Rough Brass Plumbing Fixture Fittings standard.
- C. Sink and Lavatory Faucets.
  - (1) Kitchen sink faucet discharge rates shall not exceed 2 3/4 gallons of water per minute over a range of test pressure from 20 to 80 psig. The fixture shall perform in accordance with the test requirements cited in the ANSI 112.18.1 Finished Rough Brass Plumbing Fixture Fittings standard.

- (2) Residential lavatory sink faucet discharge rates shall not exceed 2 3/4 gallons of water per minute over a range of test pressures from 20 to 80 psig. The fixture shall perform in accordance with the test requirements cited in the ANSI 112.18.1 Finished Rough Brass Plumbing Fixture Fittings standard.
- D. Urinals. Urinal discharge rates shall not exceed 1 1/2 gallons of water per flush cycle over a range of test pressures from 20 to 80 psig. The fixture shall perform in accordance with the test requirements of ANSI 112.19.6.
- E. Pressure Reducing Valve. Where connection is made to public water facilities and service water pressure to a building is expected to exceed 60 psi, a water pressure reducing valve with strainer shall be installed just downstream of the building's main valve so as to be accessible. The valve shall provide for pressure adjustment within the range of 50 to 60 psi. The valve shall conform to the requirements of product standard ASSE 1003. Exemptions to this Section are service lines to sill cocks, outside hydrants and main supply risers to buildings where pressure from the mains does not exceed 60 psi at the fixture branches or at individual fixtures.

(Ord. 112, 7/19/1988, §3)

**§26-104. Well Certification.**

- 1. Where private water supply is to be installed for new construction, certification as to capacity and quality is required prior to issuance of an East Rockhill Township building permit for the structure serviced. Certification shall not be required where an existing well is redrilled or a new well installed due to insufficient well yield at an existing single-family residence.
  - A. The well yield shall be determined by a pumping test of not less than four hours duration conducted at a rate of not less than 150% of the intended long-term withdrawal from the well. The four hour test shall be conducted at a constant pumping rate that should not deviate greater than +/- 5% during the test.
  - B. In the event the well does not yield a minimum of six gpm, the proposed water system shall be designed to be able to provide sufficient storage via over-size tanks and/or storage in the well bone for the length of time it would take for the expected peak demand to empty a standard pressure tank being supplied by a well pumping six gpm.
  - C. All well drillers shall, upon completion of the well, provide the Township with a copy of the report submitted to the Commonwealth of Pennsylvania and sufficient data and documentation to verify compliance with subsections (A) and (B) above.

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- D. At a minimum, the sample of the water produced shall be subjected to examination by a State certified water laboratory for the presence of the following contaminants and certified to be potable.
  - (1) Coliforms.
  - (2) pH.
  - (3) Iron.
  - (4) Nitrates
  - (5) Total dissolved solids.
  - (6) TCE, PCE and 1-1-1 trichlorethane.
  - (7) Detergents.
  - (8) Benzene, toluene, xylene.
- 2. A minimum of three water samples shall be collected during the pump test for analysis:
  - A. 30 minutes after commencement of the pump test.
  - B. 2 hours after commencement.
  - C. 10 minutes prior to the end of the test.

(Ord. 112, 7/19/1988, §4)

### **§26-105. Well Construction.**

All wells shall be provided with a watertight casing. The minimum length of the casing to be 40 feet or 10 feet into bedrock, whichever is greater. All joints between sections of casing shall be made by continuous welding. Where a pump section or discharge pipes enter or leave a well through the side of the casing, the circle of contact shall be watertight. All casings shall extend at least 18 inches above final grade. The space between the earth and outside of the casing shall be filled with cement grout to a distance of at least six feet below the ground surface.

(Ord. 112, 7/19/1988, §5)

**§26-106. Withdrawals in Excess of 10,000 Gallons.**

All private wells with a 30 day average daily withdraw rate in excess of 10,000 gallons shall register their well with the Delaware Basin Commission and shall provide the Township with copies of all correspondence, applications and required submissions and/or reports to the Delaware River Basin Commission.

(Ord. 112, 7/19/1988, §6)

**§26-107. Permit Required.**

1. Prior to commencement of well drilling operation, owner shall be required to make application to, and receive approval from, East Rockhill Township.
2. Issuance of a permit to drill well shall not be made until payment of a permit fee in the amount established by resolution of the Board of Supervisors.

(Ord. 112, 7/19/1988, §7)

**§26-108. Penalties.**

Any person, firm or corporation who shall violate any provision of this Part, upon conviction thereof in an action brought before a district justice in the manner provided for the enforcement of summary offenses under the Pennsylvania Rules of Criminal Procedure, shall be sentenced to pay a fine of not more than \$1,000 plus costs and, in default of payment of said fine and costs, to a term of imprisonment not to exceed 90 days. Each day that a violation of this Part continues or each Section of this Part which shall be found to have been violated shall constitute a separate offense.

(Ord. 112, 7/19/1988; as added by Ord. 192, 4/18/2000)

**§26-109. Liability.**

No responsibility or liability for the construction of any well shall be deemed to be placed upon the Township of East Rockhill or its officers, agents or employees by virtue of the terms of this Part or otherwise.

(Ord. 112, 7/19/1988; as added by Ord. 192, 4/18/2000)



**PART 2**

**PUBLIC WATER SERVICE**

**§26-201. Definitions.**

For the purposes of this Part, the following words and phrases shall have the meanings herein indicated:

**BUILDING SERVICE** — extension from the water system of any structure to the lateral of a main.

**DEVELOPMENT** — construction of one or more buildings, dwelling units or other structures on one or more parcels of land or any use of property or structures thereon for purposes requiring public water, such as a golf course, park, or swimming pool.

**IMPROVED PROPERTY** — any property within the Township of East Rockhill's Water District upon which there is erected a structure intended for continuous or periodic habitation, occupancy or use by human beings or animals.

**INDUSTRIAL ESTABLISHMENT** — any improved property located within the East Rockhill Water District and used or intended for use, wholly or in part, for the manufacturing, processing, cleaning, laundering or assembling of any product, commodity or article.

**MAIN** — any pipe or conduit constituting a part of the water system used or usable for water distribution purposes.

**OWNER** — any person vested with ownership, legal or equitable, sole or partial, of any improved property.

**PERSON** — any individual, partnership, company, association, society, trust, corporation, municipality, municipal authority or other group or entity.

**SERVICE LATERAL** —

- A. Part of the water system extending from a main to the curblineline or, if there shall be no curblineline, extending to the property line; or
- B. If no such lateral shall be provided, "lateral" shall mean that portion of, or place in, a main which is provided for connection of any building service.

**WATER DISTRICT** — the area within the Township, as defined in §26-204 of this Part, in which the provisions of this Part apply.

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WATER SYSTEM — all facilities, as of any particular time, for production, transmission, storage and distribution of water in the Township of East Rockhill owned, operated and maintained by the Perkasio Borough Water Authority ("PBA").

(Ord. 245, 2/17/2009)

### **§26-202. Use of Public Water System.**

1. The owner of any improved property within the Water District and abutting upon the water system may, in accordance with §26-205 of this Part, connect such improved property to the water system upon approval by East Rockhill Township and subject to the rules and regulations of the PBA. For property owners within the Water District and abutting the water system who have private wells as of the effective date of this Part, the connection to the water system is not mandatory and shall be on a voluntary basis, unless connection to the public water system is required by the Township and/or the Pennsylvania Department of Environmental Protection ("PADEP") because of health, safety and/or welfare concerns as set forth in §26-206 of this Part. Connection to the water system shall be mandatory to new Development that qualifies for mandatory connection under §26-205 of this Part.
2. Those properties required to connect to the public water system shall connect such improved property with the water system within 60 days after notice from the Township, or its designate, to make such connection. Such notice may be given or served at any time after a main is in place which can deliver water to the particular property. Such notice shall be given or served upon the owner in accordance with the law. The Township, and/or PBA with the Township's approval, after the 60 days' notice and a failure to connect, may construct such connection and collect from such owner the costs and expenses thereof in any manner permitted by law.
3. Those industries and farms which have their own supply of water for uses other than human consumption may continue to use their own private water supply for that purpose, provided that any wells or water supply shall not be interconnected with the water system.

(Ord. 245, 2/17/2009)

### **§26-203. Building Mains and Extensions.**

1. Water mains shall be constructed in such a manner so as to make adequate water service available to each lot, building, structure or dwelling within the Water District. In addition to complying with all Township requirements, all construction of building mains and extensions shall be performed in accordance with the terms of any agreements required by the PBA and shall comply with the design standards,

specifications, rules and regulations of the PBA and the Township now in effect or hereafter amended.

2. All costs and expenses of construction of a building service and all costs and expenses of connection of a building service to the water system shall be borne by the owner of the improved property to be connected, unless otherwise agreed to by the PBA; and such owner shall indemnify and shall save harmless the Township of East Rockhill from all loss or damage that may occur directly or indirectly as a result of construction of a building main or of connection of a building main to the water system.
3. All mains and service laterals terminating either at the curblineline or property line with a curb stop shall be designed and built in accordance with plans and specifications approved by the PBA and the Township. Connections from the curb stop to the building shall be made by the property owner or his designee and shall be constructed of materials and in accordance with specifications approved by the PBA and the Township. There shall be no fittings between the curb stop and the building unless approved by the PBA and the Township. Grouping of more than one improved property on one building service shall not be permitted, except under special circumstances and for good cause shown and only after permission from the Township and the PBA is received in writing. All service lines from the curb stop to the building shall be inspected by the PBA.

(Ord. 245, 2/17/2009)

#### **§26-204. Water District.**

The Township of East Rockhill hereby establishes a Water District for the purpose of providing water service to the improved and unimproved properties requesting to receive and/or required to receive such water service and located within the Water District. The Water District shall encompass that area of East Rockhill Township as more specifically identified in the shaded areas of yellow (Bethlehem Pike service area), blue (existing water lines) and green (future water extension) on the Water Service Area Map attached hereto and incorporated herein as Exhibit A,<sup>1</sup> and the Perkasio Borough Authority shall act as East Rockhill Township's designated agent within said Water District in the implementation and for the purposes of this Part. The provisions of this Part shall not apply to areas which are within East Rockhill Township but outside of this Water District, unless otherwise stated herein. Additional areas may be added to this Water District from time to time by separate resolution of the Board of Supervisors.

(Ord. 245, 2/17/2009)

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<sup>1</sup> Editor's Note: Exhibit A is on file in the Township offices.

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### **§26-205. Water District Regulations and Connections.**

1. For property owners within the Water District and abutting the water system who have private wells as of the effective date of this Part, connection to the water system is not mandatory and shall be on a voluntary basis, unless connection to the public water system is required by the Township and/or PADEP because of health, safety and/or welfare concerns as set forth in §26-206 of this Part.
2. Any new development within the Water District, excluding additions and/or renovations to structures that have private wells as of the effective date of this Part, and abutting the water system with a proposed new structure within 150 feet of the right-of-way of the main of the water system shall be required to connect to the water system in accordance with this Part. The Township Board of Supervisors may also require new development beyond 150 feet and/or not abutting the water system to connect to the water system as part of the subdivision and land development process if the Township Board of Supervisors deems it appropriate.
3. Upon request by an owner for public water service, or submission of any plan for new development in the Water District that includes a request for public water service, or where the proposed development or plan is required by the Township to have public water, the PBA shall be notified of such request or application at the time such application or request is submitted to the Township, whether by building permit application or subdivision and land development application or general request. The PBA shall advise the Township within 45 days of receipt of such notice of a request for public water service whether it is able to and/or will furnish water service to the property owner or development requesting said connection. If the PBA agrees to provide public water service to such property owner, the Township shall require, as a condition of approval of the application or request, that the PBA be the water service provider for the owner of the development making the request.
4. Any property owner obtaining water service from the PBA shall pay all applicable tapping and connection fees, water rates and other charges to the PBA in accordance with the rules and regulations of the PBA now in effect or hereinafter enacted, unless otherwise agreed to by the PBA.

(Ord. 245, 2/17/2009)

### **§26-206. Health, Safety and Welfare Concerns.**

1. In the event of a health, safety and/or welfare concern, the Township may adopt a resolution making the connection to the water system mandatory for an identified property. The Township, with PBA's approval, may require a property owner abutting the water system within the Water District or outside the Water District to connect to the water system when the Township determines that the connection is necessary to resolve a public health, safety and/or welfare concern.

2. In situations where public water is extended at the request of the Township by the PBA to address issues that are a threat to public health, safety and welfare, the Township will require all occupied properties fronting the public water extension that are the subject of such a threat to public health, safety and welfare to connect to the said water system, subject to the provisions in this Part, and when deemed in the best interest of the public, have their private wells properly sealed and abandoned.
3. If the owner of any improved property abutting upon the water system is directed by the Township, with PBA's approval, to connect to the water system due to a threat to public health, safety and/or welfare, the Township, and/or the PBA with the Township's approval, after 60 days' notice and failure to connect, may construct such connection and collect from such owner the costs and expenses thereof in any manner permitted by law.

(Ord. 245, 2/17/2009)

**§26-207. Penalties.**

Any person, firm or corporation who shall violate any provision of this Part shall, upon conviction thereof, be subject to pay a fine of no more than \$1,000, and, in default of payment, to imprisonment for a term not to exceed 30 days. Each day that a violation of this Part continues shall constitute a separate offense.

(Ord. 245, 2/17/2009)



**PART 3**

**STORMWATER MANAGEMENT**

**A. General Provisions.**

**§26-301. Statement of Findings.**

The Board of Supervisors of the Township finds that:

- A. Inadequate management of accelerated stormwater runoff resulting from development throughout a watershed increases flood flows and velocities, contributes to erosion and sedimentation, degrades water quality, overtaxes the carrying capacity of existing streams and storm sewers, greatly increases the cost of public facilities to convey and manage stormwater, undermines floodplain management and flood reduction efforts in upstream and downstream communities, reduces groundwater recharge and threatens public health and safety.
- B. A comprehensive program of stormwater management, including reasonable regulation of development and activities causing accelerated erosion, is fundamental to the public health, safety, welfare, and the protection of the people of the Township and all the people of the Commonwealth, their resources and the environment.
- C. 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 nonstructural project design, minimizing impervious surfaces and sprawl, avoiding sensitive areas (i.e., stream buffers, floodplains, steep slopes), and designing to topography and soils to maintain the natural hydrologic regime.

(Ord. 199, 9/17/2002, §101; as amended by Ord. 210, 4/11/2005, Art. I)

**§26-302. Purpose.**

The purpose of this comprehensive stormwater management Part is to promote health, safety and welfare within East Rockhill Township by minimizing the damages described in §26-301(A) of this Part through provisions designed to:

- A. Promote alternative project designs and layouts that minimize impacts to surface and groundwater.
- B. Promote nonstructural best management practices.

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- C. Minimize increases in stormwater volume.
- D. Minimize impervious surfaces.
- E. Manage accelerated runoff and erosion and sedimentation problems at their source by regulating activities that cause these problems.
- F. Utilize and preserve the existing natural drainage systems.
- G. Maintain the predevelopment volume of groundwater recharge and prevent degradation of groundwater quality.
- H. Maintain the predevelopment peak and volume of stormwater runoff and prevent degradation of surface water quality.
- I. Minimize nonpoint source pollutant loadings to the ground and surface waters.
- J. Minimize impacts on stream temperatures.
- K. Maintain existing flows and quality of streams and watercourses in the Township and the Commonwealth.
- L. Preserve and restore the flood-carrying capacity of streams.
- M. Provide proper maintenance of all permanent stormwater management facilities that are constructed in the Township.
- N. Provide performance standards and design criteria for watershed-wide stormwater management and planning.

(Ord. 199, 9/17/2002, §102; as amended by Ord. 210, 4/11/2005, Art. II)

### **§26-303. Statutory Authority.**

The Township is empowered to regulate land use activities that affect runoff by the authority of the Act of October 4, 1978, 32 P.S., P.L. 864 (Act 167) §680.1 et seq., as amended, the “Storm Water Management Act”; and by the authority of Pennsylvania Municipalities Planning Code, Act 247 of 1968, as amended by Act 170 of 1988, as further amended by Act 209 of 1990 and Act 131 of 1992, 53 P.S. §10101.

(Ord. 199, 9/17/2002, §103)

**§26-304. Applicability.**

1. This Part shall apply to all areas of the Township that are located within the Neshaminy Creek Watershed, Tohickon Creek Watershed or Delaware River (South) Watershed as delineated in Appendix E which is hereby adopted as part of this Part.
2. This Part shall apply to temporary and permanent stormwater management facilities constructed as part of any of the regulated activities listed in this Section. Stormwater management and erosion and sedimentation control during construction activities which are specifically not regulated by this Part shall continue to be regulated under existing laws and ordinances.
3. This Part contains only the stormwater management performance standards and design criteria that are necessary or desirable from a watershed-wide perspective. Stormwater management design criteria (e.g., inlet spacing, inlet type, collection system design and details, outlet structure design, etc.) shall continue to be regulated by applicable ordinances.
4. The following activities are defined as “regulated activities” and shall be regulated by this Part except as exempted by §26-305 of this Part:
  - A. Land development.
  - B. Subdivision.
  - C. Construction of new or additional impervious surfaces (driveways, parking lots, etc.) which exceed 1,000 square feet in area.
  - D. Construction of new buildings or additions to existing buildings which exceed 1,000 square feet in area.
  - E. Diversion or piping of any natural or manmade stream channel.
  - F. Installation of stormwater management facilities or appurtenances thereto.
  - G. Temporary storage of impervious or pervious material (rock, soil, etc.) where ground contact exceeds 5% of the lot area or 5,000 square feet (whichever is less), and where the material is placed on slopes exceeding 8%.

(Ord. 199, 9/17/2002, §104)

**§26-305. Exemptions.**

1. Any regulated activity that meets the following exception criteria may be exempt from the requirements of §26-323(1) of this Part. This exemption shall not relieve the landowner and/or developer from complying with water quality and ground-

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water recharge standards under §26-323(3) and the special requirements under §26- 328(18) for areas within Exceptional Value and High Quality subwatersheds. Further this exemption shall not relieve the applicant from implementing such measures as are necessary to protect health, safety and property. These criteria shall apply to the total development even if development is to take place in phases. The date of adoption of this Part shall be the starting point from which to consider tracts as “parent tracts” in which future subdivisions and respective impervious area computations shall be cumulatively considered. Exemption shall not relieve the applicant from implementing such measures as are necessary to protect health, safety and property.

### **Stormwater Management Exemption Criteria**

<b>Total Parcel Size</b>	<b>Minimum Distance (ft.)*</b>	<b>Impervious Area Exemption (sq. ft.) (Maximum)</b>
0 – 0.5 acre	10 ft.	1,200 sq. ft.
> 0.5 – 1 acre	50 ft.	2,500 sq. ft.
> 1 – 2 acres	100 ft.	4,000 sq. ft.
> 2 – 5 acres	250 ft.	5,000 sq. ft.
> 5 acres	500 ft.	7,500 sq. ft.

\* The minimum setback distance is measured between the proposed impervious area (excluding driveway access) and/or stormwater control/structure discharge point to the downslope property boundary. In lieu of meeting the minimum distance criteria, the applicant may provide documentation from a registered professional engineer in the Commonwealth of Pennsylvania that the increased flows from the site leaves the site in the same manner as the predevelopment condition, and that there will be no adverse effects to properties along the path of flow(s), or that the increased flow(s) will reach a natural watercourse or an existing stormwater management structure before adversely affecting any property along the path of the flow(s).

2. The Township, upon request by the applicant, may grant an exemption from the provisions of this Part for a project qualifying under §26-305(1). If an exemption is granted, the Township shall require the developer to pay a fee in an amount established by separate resolution of the Board of Supervisors to the Municipal Stormwater Management Capital Fund.

(Ord. 199, 9/17/2002, §105)

### **§26-306. Compatibility With Other Ordinance Requirements.**

Approvals issued pursuant to this Part do not relieve the applicant of the responsibility to secure required permits for approvals for activities regulated by any other applicable code, rule, act or ordinance.

(Ord. 199, 9/17/2002, §108)

**B. Definitions.**

**§26-311. Definitions.**

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

- A. Words used in the present tense include the future tense; the singular number includes the plural, and the plural number includes the singular; words of masculine gender include feminine gender; and words of feminine gender include masculine gender.
- B. The word “includes” or “including” shall not limit the term to the specific example but is intended to extend its meaning to all other instances of like kind and character.
- C. The word “person” includes an individual, firm, association, organization, partnership, trust, company, corporation or any other similar entity.
- D. The words “shall” and “must” are mandatory; the words “may” and “should” are permissive.
- E. The words “used” or “occupied” include the words “intended,” “designed,” “maintained,” or “arranged to be used,” “occupied” or “maintained.”

**ACCELERATED EROSION** — the removal of the surface of the land through the combined action of man’s activity and the natural processes of a rate greater than would occur because of the natural process alone.

**AGRICULTURAL ACTIVITIES** — the work of producing crops and raising livestock including tillage, plowing, disking, harrowing, pasturing and installation of conservation measures. Construction of new buildings or impervious area is not considered an agricultural activity.

**ALLUVIAL SOILS (FLOODPLAIN SOILS)** — areas subject to periodic flooding and listed in the Soil Survey of Bucks and Philadelphia Counties, Pennsylvania, U.S. Department of Agriculture Soil Conservation Service as being “on, or in, the floodplain” or subject to flooding. The following soil types are alluvial and/or floodplain soils:

Alluvial land

Alton gravely loam, flooded

## WATER

Bowmansville silt loam

Hatboro silt loam

Marsh

Pope loam

Rowland silt loam

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

**APPLICANT** — a landowner or developer who has filed an application for approval to engage in any regulated activities as defined in §26-304 of this Part.

**AS-BUILT DRAWINGS** — those maintained by the contractor as he constructs the project and upon which he documents 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 engineer at the completion of the project.

**BANKFULL** — the channel at the top of bank or point where water begins to overflow onto a floodplain.

**BASE FLOW** — the portion of stream flow that is sustained by groundwater discharge.

**BIORETENTION** — a stormwater retention area which utilizes woody and herbaceous plants and soils to remove pollutants before infiltration occurs.

**BMP (BEST MANAGEMENT PRACTICE)** — stormwater structures, facilities and techniques to control, maintain or improve the quantity and quality of surface runoff. The PA Handbook of BMPs for Developing Areas and the Maryland Stormwater Design Manual may be referenced for specific BMP practices.

**CHANNEL EROSION** — the widening, deepening and headward cutting of channels and waterways, due to erosion caused by moderate to large floods.

**CISTERN** — an underground reservoir or tank for storing rainwater.

**CONSERVATION DISTRICT** — bucks Conservation District.

**COUNTY** — bucks County.

**CULVERT** — a pipe, conduit or similar structure including appurtenant works which conveys surface water 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.

**DEP** — the Pennsylvania Department of Environmental Protection.

**DEPARTMENT** — the Pennsylvania Department of Environmental Protection.

**DESIGN PROFESSIONAL (QUALIFIED)** — a Pennsylvania Registered Professional Engineer, Registered Landscape Architect, or a Registered Professional Land Surveyor trained to develop stormwater management plans.

**DESIGN STORM** — the magnitude and temporal distribution of precipitation from a storm event measured in probability of occurrence (e.g., 50 year storm) and duration (e.g., 24 hours), used in the design and evaluation of stormwater management systems.

**DESIGNEE** — the agent of the governing body involved with the administration, review or enforcement of any provisions of this Part by contract or memorandum of understanding.

**DETENTION BASIN** — an impoundment structure designed to manage stormwater runoff by temporarily storing the runoff and releasing it at a predetermined rate.

**DETENTION DISTRICT** — those subareas in which some type of detention is required to meet the plan requirements and goals of Act 167.

**DEVELOPER** — a person, partnership, association, corporation or other entity, or any responsible person therein or agent thereof, that undertakes any regulated activity of this Part.

**DEVELOPMENT** — any manmade change to improved or unimproved real estate including, but not limited to, the construction or placement of buildings or other structures, mobile homes, streets and other paving, utilities, mining, dredging, filling, grading, excavation or drilling operations and the subdivision of land.

**DEVELOPMENT PLAN** — the provisions for development including a planned residential development, a plat of subdivision, all covenants relating to use, location and bulk of buildings and other structures, intensity of use or density of development, streets, ways and parking facilities, common open space and public facilities. The phrase “provisions of development plan” when used in this Part shall mean the written and graphic materials referred to in this definition.

**DEVELOPMENT SITE** — the specific tract of land for which a regulated activity is proposed.

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**DIFFUSED DRAINAGE DISCHARGE** — drainage discharge not confined to a single point location or channel, such as sheet flow or shallow concentrated flow.

**DISTURBED AREAS** — unstabilized land area where art earth disturbance activity is occurring or has occurred.

**DOWNSLOPE PROPERTY LINE** — that portion of the property line of the lot, tract or parcels of land being developed located such that all overland or pipe flow from the site would be directed toward it.

**DOWNSTREAM HYDRAULIC CAPACITY ANALYSIS** — any downstream capacity hydraulic analysis conducted in accordance with this Part shall use the following criteria for determining adequacy for accepting increased peak flow rates:

- (1) Natural or manmade channels or swales must be able to convey the increased rate of runoff associated with a 2-year return period event within their banks at velocities consistent with protection of the channels from erosion. Acceptable velocities shall be based upon criteria included in the DEP Erosion and Sediment Pollution Control Program Manual.
- (2) Natural or manmade channels or swales must be able to convey the increased 25-year return period rate of runoff without creating any hazard to persons or property.
- (3) Culverts, bridges, storm sewers or any other facilities which must pass or convey flows from the tributary area must be designed in accordance with DEP, Chapter 105 regulations (if applicable) and, at a minimum, pass the increased 25-year return period rate of runoff.
- (4) No new channels or conveyance facilities shall be authorized by this language.

**DRAINAGE CONVEYANCE FACILITY** — a stormwater management facility designed to transmit stormwater runoff which shall include streams, channels, swales, pipes, conduits, culverts, storm sewers, etc.

**DRAINAGE EASEMENT** — a right granted by a landowner to a grantee, allowing the use of private land for stormwater management purposes.

**EARTH DISTURBANCE** — a construction or other human activity which disturbs the surface of land, including, but not limited to, clearing and grubbing, grading, excavations, 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.

**EMERGENCY SPILLWAY** — a conveyance area that is used to pass peak discharge greater than the maximum design storm controlled by the stormwater facility.

**ENGINEER** — a licensed professional civil engineer registered by the Commonwealth of Pennsylvania.

**EROSION** — the movement of soil particles by the action of water, wind, ice or other natural forces.

**EROSION AND SEDIMENT POLLUTION CONTROL PLAN** — a plan which is designed to minimize accelerated erosion and sedimentation.

**EXCEPTIONAL VALUE WATERS** — surface waters of high quality which satisfy Pennsylvania Code Title 25 Environmental Protection, Chapter 93 Water Quality Standards, §93.4b(b) (relating to antidegradation).

**EXISTING CONDITIONS** — the initial condition of a project site prior to the proposed construction. Farm field, disturbed earth or undeveloped cover conditions of a site or portions of a site used for modeling purposes, shall be considered “meadow” unless the natural groundcover generates lower curve numbers or Rational “C” value, such as forested land. Existing manmade impervious surfaces shall be considered as “meadow” when developing “cover complex” calculations.

**FLOOD** — a general but temporary condition of partial or complete inundation of normally dry land areas from the overflow of streams, rivers and other waters of this Commonwealth.

**FLOODPLAIN** — those areas of East Rockhill Township which are subject to the 100-year flood, as identified in the Flood Insurance Study (FIS) dated May 18, 1999, and the accompanying maps prepared for the Township by the Federal Emergency Management Agency (FEMA), or most recent revision thereof; and also those areas along streams, ponds or lakes not identified within the Flood Insurance Study which are inundated by the 100-year recurrence internal flood.

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

**FOREST MANAGEMENT/TIMBER OPERATIONS** — planning and activities necessary for the management of forest land. These include timber inventory and preparation of forest management plans, silvicultural treatment, cutting budgets, logging road design and construction, timber harvesting, site preparation and reforestation.

## WATER

**FREEBOARD** — a vertical distance between the elevation of the design high-water and the top of a dam, levee, tank, basin or diversion ridge. The space is required as a safety margin in a pond or basin.

**GRADE** — the slope of a street, other public way, land area, drainage facility or pipe specified in percent.

**GRASSED WATERWAY** — a natural or constructed waterway, usually broad and shallow, covered with erosion-resistant grasses, used to conduct surface water from cropland.

**GROUNDWATER RECHARGE** — replenishment of natural underground water supplies.

**HEC-HMS** — the US Army Corps of Engineers, Hydrologic Engineering Center (HEC) – Hydrologic Modeling System (HMS).

**HIGH QUALITY WATERS** — surface waters having quality which exceeds levels necessary to support propagation of fish, shellfish, and wildlife and recreation in and on the water by satisfying Pennsylvania Code Title 25 Environmental Protection, Chapter 93, Water Quality Standards, §93.4b(a).

**HYDROLOGIC REGIME (NATURAL)** — the hydrologic cycle or balance that sustains quality and quantity of stormwater, baseflow, storage, and groundwater supplies under the natural conditions.

**HYDRIC SOIL** — a soil that is saturated, flooded, or ponded long enough during the growing season to develop an aerobic condition in the upper part.

**HYDROLOGIC SOIL GROUP** — a classification of soils by the Natural Resources Conservation Service, formerly the Soil Conservation Service, into four runoff potential groups. The groups range from A soils, which are very permeable and produce little runoff, to D soils, which are not very permeable and produce much more runoff.

**HYETOGRAPH** — 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 surfaces are those surfaces which do not absorb precipitation and surface water. All buildings, parking areas, driveways, roads, sidewalks, swimming pools and any areas containing concrete, asphalt, packed stone, compacted soils or other equivalent surfaces shall be considered impervious within this definition. In addition, other areas determined by the Township Engineer to be impervious within the meaning of this definition will be classified as impervious surfaces.

**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 within or very close proximity to urban areas. The development relies on existing infrastructure and does not require an extension of water, sewer or other public utilities.

**INFILTRATION STRUCTURES** — a structure designed to direct runoff into the ground (e.g., french drains, seepage pits, seepage trench, biofiltration swale).

**INLET** — a surface connection to a closed drain. A structure at the diversion end of a conduit. The upstream end of any structure through which water may flow.

**LAND DEVELOPMENT** — any of the following activities:

- (1) The improvement of one or two or more contiguous lots, tracts or parcels of land for any purpose involving:
  - (a) A group of two or more residential or nonresidential buildings, whether purposed initially or cumulatively, or a single nonresidential building on a lot or lots regardless of the number of occupants or tenure; or
  - (b) The division or allocation of land or space, whether initially or cumulatively, between or among two or more existing or prospective occupants by means of, or for the purpose of streets, common areas, leaseholds, condominiums, building groups or other features.
- (2) A subdivision of land.
- (3) “Land development” does not include development which involves:
  - (a) The conversion of an existing single-family detached dwelling or single-family semidetached dwelling into not more than three residential units, unless such units are intended to be a condominium;
  - (b) The addition of a residential accessory building, including farm building, on a lot or lots subordinate to an existing principal building; or
  - (c) The addition or conversion of buildings or rides within the confines of an enterprise which would be considered an amusement park. For the purposes of this subsection, an amusement park is defined as a tract or area used principally as a location for permanent amusement structures or rides. This exclusion shall not apply to newly acquired acreage by an amusement park until initial plans for the expanded area have been approved by the proper authorities.

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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.

LIMITING ZONE — a soil horizon or condition in the soil profile or underlying strata which includes one of the following:

- (1) A seasonal high water table, whether perched or regional, determined by direct observation of the water table or indicated by soil mottling.
- (2) 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.
- (3) A rock formation, other stratum or soil condition which is so slowly permeable that it effectively limits downward passage of effluent.

MAIN STEM (MAIN CHANNEL) — any stream segment or other runoff conveyance facility used as a reach in the watershed hydrologic model.

MANNING EQUATION (MANNING FORMULA) — a method for calculation of velocity of flow (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.

MUNICIPAL ENGINEER — a professional engineer licensed as such in the Commonwealth of Pennsylvania and appointed by the Township pursuant to Article V of Second Class Township Code.

MUNICIPALITY — east Rockhill Township, Bucks County, Pennsylvania.

NONPOINT SOURCE POLLUTION — pollution that enters a watery body from diffuse origins in the watershed and does not result from discernible, confined or discrete conveyances.

NRCS — Natural Resource Conservation Service (previously SCS).

OPEN CHANNEL — a drainage element in which stormwater flows with an open surface. Open channels include, but shall not be limited to, natural and manmade drainageways, swales, streams, ditches, canals and pipes flowing partly full.

OUTFALL — point where water flows from a conduit, stream or drain.

OUTLET — points of water disposal from a stream, river, lake, tidewater or artificial drain.

**PARENT TRACT** — the parcel of land from which a land development or subdivision originates as of the date of adoption of the original Stormwater Management Ordinance on May 22, 2000 (Ordinance No. 2000-5).

**PARKING LOT STORAGE** — involves 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.

**PENN STATE RUNOFF MODEL (CALIBRATED)** — the computer-based hydrologic modeling technique adapted to the watershed for the Act 167 Plan. The model has been “calibrated” to reflect actual recorded flow values by adjoining key model input parameters.

**PIPE** — a culvert, closed conduit or similar structure (including appurtenances) that conveys stormwater.

**PLANNING COMMISSION** — the Planning Commission of East Rockhill Township.

**PMF (PROBABLE MAXIMUM FLOOD)** — the flood that may be expected from the most severe combination of critical meteorologic and hydrologic conditions that are reasonably possible in any area. The PMF is derived from the probable maximum precipitation (PMP) as determined on the basis of data obtained from the National Oceanographic and Atmospheric Administration (NOAA).

**PRETREATMENT** — techniques employed in stormwater BMPs to provide storage or filtering to help trap coarse materials and other pollutants before they enter the system.

**RATIONAL FORMULA** — a rainfall-runoff relation used to estimate peak flow.

**RECHARGE AREA** — undisturbed surface area or depression where stormwater collects, and a portion of which infiltrates and replenishes the underground and groundwater.

**RECHARGE VOLUME** — a calculated volume of stormwater runoff from impervious areas which is required to be infiltrated at a site and may be achieved through use of structural or nonstructural BMPs.

**REGULATED ACTIVITIES** — any activity to which this Part is applicable pursuant to §26-304 of this Part.

**RELEASE RATE** — the percentage of predevelopment peak rate of runoff from a site or subarea to which the postdevelopment peak rate of runoff must be reduced to protect downstream areas.

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**RETENTION BASIN** — a basin designed to retain stormwater runoff so that a permanent pool is established.

**RETURN PERIOD** — the average interval, in years, within which a storm event of a given magnitude can be expected to recur. For example, the 25-year return period rainfall would be expected to recur on the average once every 25 years.

**RISER** — a vertical pipe extending from the bottom of a pond that is used to control the discharge rate from the pond for a specified design storm.

**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 land surface.

**SEDIMENT BASIN** — a barrier, dam, or retention or detention basin located and designed to retain rock, sand, gravel, silt or other material transported by 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 this Part.

**SEDIMENTATION** — the process by which mineral or organic matter is accumulated or deposited by the movement of 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.

**SHEET FLOW** — runoff that flows over the ground surface as a thin, even layer, not concentrated in a channel.

**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).

**SOIL GROUP, HYDROLOGIC** — a classification of soils by the NRCS into four runoff potential groups. The groups range from A soils, which are very permeable and produce little runoff, to D soils, which are not very permeable and produce much more runoff.

**SPILLWAY** — a depression in the embankment of a pond or basin which is used to pass peak discharge greater than the maximum design storm controlled by the pond.

**STORAGE INDICATION METHOD** — a reservoir routing procedure based on solution of the continuity equation (inflow minus outflow equals the change in storage) with outflow defined as a function of storage volume and depth.

**STORM FREQUENCY** — the number of times that a given storm event occurs or is exceeded on the average in a stated period of years. See “return period.”

**STORM SEWER** — a system of pipes and/or open channels that convey intercepted runoff and stormwater from other sources, but excludes domestic sewage and industrial wastes.

**STORMWATER** — the total amount of precipitation reaching the ground surface.

**STORMWATER MANAGEMENT FACILITY** — any structure, natural or man-made, that, due to its condition, design or construction, conveys, stores or otherwise affects stormwater runoff. Typical stormwater management facilities include, but are not limited to, detention and retention basins, open channels, storm sewers, pipes and infiltration structures.

**STORMWATER MANAGEMENT PERMIT** — a permit issued by the Township Board of Supervisors after the drainage plan has been approved. Said permit is issued prior to or with the final Township approval.

**STORMWATER MANAGEMENT PLAN** — the plan for managing stormwater runoff within the Township adopted as required by the Act of October 4, 1978, P.L. 864 (Act 167).

**STORMWATER MANAGEMENT SITE PLAN** — the plan prepared by the developer or his engineer indicating how stormwater runoff will be managed at the particular site of interest according to this Part.

**STREAM ENCLOSURE** — a bridge, culvert or other structure in excess of 100 feet in length upstream to downstream which encloses a regulated water of this Commonwealth.

**SUBAREA** — the smallest drainage unit of a watershed for which stormwater management criteria have been established in the stormwater management 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, transfer of ownership or building or lot development; provided, however, that the subdivision by lease of land for agricultural purposes into parcels of more than 10 acres, not involving any new street or easement of access or any residential dwellings, shall be exempt.

**SWALE** — a low-lying stretch of land which gathers or carries surface water runoff.

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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 the watershed to a point of interest within the watershed. This time is the combined total of overland flow time and flow time in pipes or channels, if any.

VOLUMETRIC RUNOFF COEFFICIENT — a variable indicative of stormwater runoff volume and dependent on the impervious coverage for a site.

WATER QUALITY VOLUME — a calculated volume of stormwater runoff from impervious areas which is required to be captured and treated at a site and may be achieved through use of the structural or nonstructural BMPs. Numerically, the water quality volume is a product of the volumetric runoff coefficient, the site area and a depth of rainfall of one inch.

WATERCOURSE — an intermittent or perennial stream of water, river, brook, creek or swale identified on USGS or SCS mapping; and/or delineated waters of the Commonwealth.

WATERS OF THE COMMONWEALTH — any and all rivers, streams, creeks, rivulets, ditches, watercourses, storm sewers, lakes, dammed water, wetlands, ponds, springs and all other bodies or channels of conveyance of surface and underground water, or parts thereof, whether natural or artificial, within or on the boundaries of this Commonwealth.

WETLAND — those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions, including swamps, marshes, bogs, ferns and similar areas.

WETLAND DELINEATION — the process by which wetland limits are determined. Wetlands must be delineated by a qualified specialist according to the 1989 Federal Manuals (as amended) for the Delineation of Jurisdictional Wetlands (whichever is greater) or according to any subsequent Federal or State regulation. Qualified specialist shall include those persons being certified professional soil scientists as registered with Registry of Certified Professionals in Agronomy Crops and Soils (ARCPACS); or as contained on consultant’s list of Pennsylvania Association of Professional Soil Scientists (PAPSS); or as registered with National Society of Consulting Soil Scientists (NSCSS); or as certified by State and/or Federal certification programs; or by a qualified biologist/ecologist.

(Ord. 199, 9/17/2002, Art. II; as amended by Ord. 210, 4/11/2005, Art. III)

**C. Stormwater Management.****§26-321. General Requirements.**

1. All regulated activities in the Township which do not fall under the exemption criteria shown in §26-305 of this Part shall submit a stormwater management plan consistent with this Part to the Township for review. These criteria shall apply to the total proposed development even if development is to take place in stages. Impervious cover shall include, but not be limited to, any roof, parking or driveway areas and any new streets and sidewalks. Any areas designed to be gravel or crushed stone shall be assumed to be impervious.
2. Stormwater drainage systems shall be provided in order to permit unimpeded flow along natural watercourses, except as modified by stormwater management facilities to encourage infiltration, groundwater recharge and improved water quality.
3. Existing points of concentrated drainage that discharge onto adjacent property shall not be altered without written approval of the affected property owner(s) and shall be subject to any applicable discharge criteria specified in this Part.
4. Areas of existing sheet flow discharge shall be maintained wherever possible. If sheet flow is proposed to be concentrated and discharged onto adjacent property, the developer must document 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; and submit written approval from the affected adjacent property owner(s).
5. For all subdivision and land development applications, the tributary area discharging drainage to any location along the site property boundary shall not increase by more than 25% over the predevelopment condition without written approval from the adjacent affected property owner(s).
6. Where a development site is traversed by watercourses, drainage easements shall be provided conforming to the line of such watercourses. The width of the easement shall be adequate to provide for the unimpeded flow of stormwater runoff from the 100-year storm event. Terms of the easement shall prohibit excavation, the placing of fill or structures, and any alterations that may adversely affect the flow of stormwater within any portion of the easement. Periodic maintenance of the easement shall be required by the landowner to ensure proper runoff conveyance.
7. When it can be shown that, due to topographic conditions, natural drainageways on the site cannot adequately provide for drainage, open channels may be constructed conforming substantially to the line and grade of such natural drainageways. Work within natural drainageways shall be subject to approval by PA DEP through the joint permit application process or, where deemed appropriate by PA DEP, through the general permit process.

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8. Any stormwater management facilities regulated by this Part that would be located in or adjacent to waters of the Commonwealth or wetlands shall be subject to approval by PA DEP through the joint permit application process or, where deemed appropriate by PA DEP, the general permit process. When there is a question whether wetlands may be involved, it is the responsibility of the developer or his agent to show that the land in question cannot be classified as wetlands, otherwise approval to work in the area must be obtained from PA DEP.
9. Any stormwater management facilities regulated by this Part that would be located on State highway rights-of-way, or discharge stormwater to facilities located within a State highway right-of-way, shall be subject to approval by the Pennsylvania Department of Transportation (PADOT).
10. Minimizing site disturbance and impervious surface, and infiltrating stormwater runoff through seepage beds, infiltration trenches, etc., are encouraged, where soil conditions permit, to reduce the size or eliminate the need for retention/detention facilities.
11. Roof drains and sump pumps shall discharge to a natural watercourse, drainage swale, or stormwater easement. Roof drains and sump pumps shall not be connected to a storm sewer or street drainage structure unless designed as part of a stormwater management facility. In no case shall roof drains or sump pumps be connected to a sanitary sewer.
12. Whenever a watercourse is located within a development site, it shall remain open in the natural state and location and shall not be piped, impeded or altered (except for road crossings). It is the responsibility of the developer to stabilize existing eroded stream/channel banks.
13. Special requirements for watersheds draining to high quality (HQ) and exceptional value (EV) waters: The temperature and quality of water and streams that have been declared as exceptional value and high quality are to be maintained as defined in Chapter 93, Water Quality Standards, Title 25 Pennsylvania Department of Environmental Protection Rules and Regulations. Temperature sensitive BMPs and stormwater conveyance systems are to be used and designed with storage pool areas and supply outflow channels, and shaded with trees. This will require modification of berms for permanent ponds and the relaxation of restrictions on planting vegetation within the facilities, provided that capacity for volumes and rate control is maintained. At a minimum, the southern half of pond shorelines shall be planted with shade or canopy trees within 10 feet of the pond shoreline. In conjunction with this requirement, the maximum slope allowed on the berm area to be planted is 10 to 1. This will lessen the destabilization of berm soils due to root growth. A long-term maintenance schedule and management plan for the thermal control BMPs is to be established and recorded for all development sites.

14. All stormwater runoff shall be pretreated for water quality prior to discharge to surface or groundwater as required by §26-325 of this Part.

(Ord. 199, 9/17/2002, §301; as amended by Ord. 210, 4/11/2005, Art. IV-V)

**§26-322. Stormwater Management Districts – Peak Rate Control.**

1. Mapping of Stormwater Runoff Peak Rate Districts. In order to implement the provisions of this Part, the Tohickon Creek Watershed Stormwater Management Plan and Perkiomen Creek Watershed Stormwater Management Plan, East Rockhill Township is hereby divided into stormwater runoff peak rate districts consistent with the plan. The boundaries of the districts are indicated on the runoff peak rate district map that is available for inspection at the Township building. A large-scale boundary map is included as Appendix E for reference.
2. The exact location of the stormwater runoff peak rate district boundary as it applies to a given development site shall be determined by mapping the boundaries using the 2-foot or 5-foot topographic contours provided as part of the stormwater management plan developed for the site in accordance with the Subdivision and Land Development Ordinance [Chapter 22]. The district boundaries as originally drawn coincide with topographic divides or, in certain instances, are drawn from the intersection of the watercourse or a potential flow obstruction to the topographic divide consistent with topography. The locations determined on the stormwater management plan shall be reviewed and verified by the Township Engineer.
3. Description of Tohickon Creek Watershed Stormwater Runoff Hydrologic Peak Rate Districts.
  - A. Conditional No Detention Districts. Subareas identified on the official sub-basin map available for inspection at the Township Office. Included in this district are 2, 3, 8-10, 18, 20, 21, 42, 43, 52, 54, 56, 57, 59, 61, 62, 67, 70-73, 76, 77, 81-83. These subareas may discharge postdevelopment runoff without detention facilities without adversely affecting the total watershed peak flow. These areas are located adjacent to the Tohickon Creek and Lake Nockamixon, which is capable of absorbing undetained runoff without affecting the watershed level control. In certain instances, the conveyance capabilities of the local receiving facilities may not be adequate to safely transport the increased peak flows from undetained runoff. In these cases, the developer shall assure that 100% release rate control is applied to the particular receiving stream(s), and/or the developer may provide increased capacity of those receiving facilities in order to insure safe passage of any undetained runoff.
  - B. One Hundred Percent Release Rate District. Subareas included in this district are 4-7, 1-17, 19, 22-28, 31-34, 41, 44-51, 53, 55, 58, 60, 63, 64, 66, 68, 69, 74, 75, 84-98, 101, 109, 111-114, 116, 118, 119, 121-126. These subareas

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are not expected to incur a great deal of development growth due to location, topography, soils or a combination of all three factors. Also, the location in the watershed of these subareas is of minor importance in supporting the overall watershed level runoff control. Therefore, these areas are allowed to release development runoff at a rate that does not exceed the existing rates of runoff.

- C. **Ninety Percent Release Rate District.** Subareas included in this district are 30, 35-40, 226. These areas are located in developing areas that have adequate drainage capacity in the receiving waterways. A slight amount of reduction is necessary to preserve this integrity of the receiving waterways and increase water quality of the receiving waterways, at the request of the local municipality.
  - D. **Seventy-five Percent Release Rate District.** Subareas included in this district are 78-80, 99, 100, 102-108, 110, 115, 117, 120. Certain subareas require the control of stormwater runoff to a portion of the existing runoff equal to 75%. These areas are located in upper reaches of the watershed, specifically, areas around Quakertown Borough and Richlandtown Township which are projected to incur significant development impacts and have existing inadequate storm conveyance facilities. Some of these areas are expected to incur a relatively major increase in development pressure, while some areas may not see much development at all. In order to assure uniform watershed-level runoff control; however, the assignment of this release rate on a widespread basis will uniformly restrict the future runoff in a fashion that favors no particular subwatershed.
4. For the purposes of implementing the provisions of the East Branch Perkiomen Creek Watershed Stormwater Management Plan, Management District "B" design storm proposed conditions shall be controlled to design storm existing conditions as follows:

<b>Design Storm Proposed Conditions</b>	<b>to</b>	<b>Design Storm Existing Conditions</b>
2-year		1-year
5-year		5-year
10-year		10-year
25-year		25-year
100-year		100-year

(Ord. 199, 9/17/2002, §302; as amended by Ord. 210, 4/11/2005, Art. VI)

**§26-323. Stormwater Management Implementation Provisions (Performance Standards and Best Management Practices).**

1. General Standards.
  - A. Postdevelopment stormwater runoff volume being discharged from any regulated activity shall not exceed predevelopment stormwater runoff volume being discharged for up to the 2-year frequency rainfall. If the applicant's professional engineer can demonstrate to the satisfaction of the Township that due to existing soil, bedrock, water table or other conditions on the parcel, that such a standard is not achievable on the site (all or in part), the standard contained in subsection (C) below shall apply.
  - B. General. Proposed conditions peak rates of runoff from any regulated activity shall meet the peak release rates of runoff prior to development for the design storms specified on the Stormwater Management District Watershed Map (Chapter 26, Appendix E) and §26-322, of this Part.
  - C. If it is determined to the satisfaction of the Township that the volume standard set forth in subsection (1)(A) above cannot be achieved, then the peak rate standards are modified so that postdevelopment peak rate discharges from the site for all storms up to the 10-year storm must be equal to or less than 75% of the design peak rates permitted within §26-322.
2. District Boundaries. The boundaries of the stormwater management districts are shown on an official map, which is available for inspection at the Township office. A copy of the official map at a reduced scale is included in the Appendix E of this Part. The exact location of stormwater management district boundaries as they apply to a given development site shall be determined by mapping the boundaries using topographic contours at an appropriate level of detail, but in no case less than 2-foot intervals (or 5-foot intervals as applicable). This information shall be provided as part of the stormwater management plan.
3. Sites Located in More Than One District. For a proposed development site located within two or more release category subareas, the peak discharge rate from any subarea shall be the predevelopment peak discharge for that subarea multiplied by the applicable release rate. The calculated peak discharges shall apply regardless of whether the grading plan changes the drainage area by subarea.
4. Offsite Areas. Offsite areas that drain through a proposed development site are not subject to release rate criteria when determining allowable peak runoff rates or volume reduction. However, onsite drainage facilities shall be designed to safely convey offsite flows through the development site.
5. Site Areas. Where the site area to be impacted by a proposed development activity differs significantly from the total site area as determined by the Township, the Township may, but is not required to, permit only the proposed impact area to be subject to the release rate criteria.

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6. Stormwater Conveyance Corridor Protection (Riparian Corridor Preservation and Vegetation). Runoff from developed areas of the site including, but not limited to, areas of impervious surface shall be managed through a series of riparian corridor vegetation facilities whenever possible. This will be accomplished in a manner satisfactory to the Township, utilizing the Pennsylvania Handbook of Best Management Practices for Developing Areas, 1998, Riparian Forested Buffer, and the priority goal of the riparian vegetation will be the reduction of thermal impacts on stormwater runoff associated with impervious areas, with a secondary goal being the protection of capacity of existing stormwater conveyance channels. These goals will be achieved through the use of design criteria in §26-328(16) of this Part, and shall be in addition to any other Township ordinance provisions.
7. Regional Detention Alternatives. For certain areas within the study area, it may be more cost-effective to provide one control facility for more than one development site than to provide an individual control facility for each development site. The initiative and funding for any regional runoff control alternatives are the responsibility of prospective developers. The design of any regional control basins must incorporate reasonable development of the entire upstream watershed. The peak outflow of a regional basin would be determined on a case-by-case basis using the hydrologic model of the watershed consistent with protection of the downstream watershed areas. "Hydrologic model" refers to the calibrated model as developed for the stormwater management plan.
8. Downstream Hydraulic Capacity Analysis. Any downstream capacity hydraulic analysis conducted in accordance with this Part shall use the following criteria for determining adequacy for accepting increased peak flow rates:
  - A. Natural or manmade channels or swales must be able to convey the increased runoff associated with a 2-year return period event within their banks at velocities consistent with protection of the channels from erosion. Acceptable velocities shall be based upon criteria included in the DEP Erosion and Sediment Pollution Control Program Manual.
  - B. Natural or manmade channels or swales must be able to convey the increased 25-year return period runoff without creating any hazard to persons or property.
  - C. Culverts, bridges, storm sewers or any other facilities which must pass or convey flows from the tributary area must be designed in accordance with DEP, Chapter 105 regulations (if applicable) and, at a minimum, pass the increased 25-year return period runoff.

(Ord. 199, 9/17/2002, §303; as amended by Ord. 210, 4/11/2005, Art. VII-VIII)

**§26-324. Nonstructural Project Design (Sequencing to Minimize Stormwater Impacts).**

1. The design of all regulated activities shall include the following steps in sequence to minimize stormwater impacts.
  - A. The applicant is required to find practicable alternatives to the surface discharge of stormwater, the creation of impervious surfaces, and the degradation of Waters of the Commonwealth, and must maintain as much as possible the natural hydrologic regime of the site.
  - B. An alternative is practicable if it is available and capable of being completed after considering cost, existing technology, and logistics in light of overall project purposes, and other Township requirements.
  - C. All practicable alternatives to the discharge of stormwater are presumed to have less adverse impact on quantity and quality of waters of the Commonwealth unless otherwise demonstrated.
  
2. The applicant shall demonstrate that regulated activities are designed in the following sequence to minimize the increases in stormwater runoff and impacts to water quality:
  - A. Prepare an Existing Resource and Site Analysis Map (ERSAM), showing environmentally sensitive areas including, but not limited to, steep slopes, ponds, lakes, streams, wetlands, hydric soils, vernal pools, floodplains, stream buffer zones, hydrologic soil groups A, B, C and D, any existing recharge areas and any other requirements outlined in the Subdivision and Land Development Ordinance [Chapter 22].
  - B. Prepare a draft project layout avoiding sensitive areas identified in subsection (2)(A) and minimizing total site earth disturbance as much as possible. The ratio of disturbed area to the entire site area and measures taken to minimize earth disturbance shall be included in the ERSAM.
  - C. Identify site-specific existing conditions drainage areas, discharge points, recharge areas, and hydrologic soil groups A and B.
  - D. Evaluate Nonstructural Stormwater Management Alternatives (See Appendix B, Table B-6).
    - (1) Minimize earth disturbance.
    - (2) Minimize impervious surfaces.
    - (3) Break up large impervious surfaces.
  - E. Satisfy water quality objective (§26-325).

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- F. Satisfy groundwater recharge (infiltration) objective (§26-326) and provide for stormwater treatment prior to infiltration.
- G. Satisfy stream bank erosion protection objective (§26-327).
- H. Determine the management district within which the site is located (Appendix E) and conduct a predevelopment runoff analysis.
- I. Prepare final project design to maintain predevelopment drainage areas and discharge points, to minimize earth disturbance and impervious surfaces, to reduce runoff to the maximum extent possible, and to minimize the use of surface or point discharges.
- J. Conduct a proposed conditions runoff analysis based on the final design and to meet the release rate and in turn the overbank flow and extreme event requirements (§26-327).
- K. Manage any remaining runoff through treatment prior to discharge, as part of detention, bioretention, direct discharge or other structural control.

(Ord. 210, 4/11/2005, Art. X)

### **§26-325. Water Quality.**

1. In addition to the performance standards and design criteria requirements of this Part, adequate storage and treatment facilities must be provided to capture and treat stormwater runoff from developed or disturbed areas. The recharge volume computed under §26-326 may be a component of the water quality volume if the applicant chooses to manage both components in a single facility. If the recharge volume is less than the water quality volume, the remaining water quality volume may be captured and treated by methods other than recharge/infiltration BMPs. The required water quality volume (WQv) is the storage capacity needed to capture and to treat a portion of stormwater runoff from the developed areas of the site produced from 90% of the average annual rainfall (P). The following calculation formula is to be used to determine the water quality storage volume, (WQv), in acre-feet of storage:

**Equation: 305.1**

$$WQ_v = [(P)(R_v)(A)]/12$$

WQ<sub>v</sub> = Water Quality Volume (acre-feet).

P = Rainfall Amount equal to 90% of events producing this rainfall (in).

A = Area of the project contributing to the water quality BMP (acres).

R<sub>v</sub> = 0.05 + 0.009(I) where I is the percent of the area that is impervious surface (impervious area/A\*100)

The P value for the five PennDOT rainfall regions is shown in Figure A-2 in Appendix A of this Part.

2. Design of BMPs used for water quality control shall be in accordance with design specifications outlined in the Pennsylvania Handbook of Best Management Practices for Developing Areas or other applicable manuals. The following factors must be considered when evaluating the suitability of BMPs used to control water quality at a given development site:
  - A. Total contributing drainage area.
  - B. Permeability and infiltration rate of the site soils.
  - C. Slope and depth to bedrock.
  - D. Seasonal high water table.
  - E. Proximity to building foundations and wellheads.
  - F. Erodibility of soils.
  - G. Land availability and configuration of the topography.
  - H. Peak discharge and required volume control.
  - I. Streambank erosion.
  - J. Efficiency of the BMPs to mitigate potential water quality problems.
  - K. Volume of runoff that will be effectively treated.
  - L. Nature of the pollutant being removed.
  - M. Maintenance requirements.

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- N. Creation/protection of aquatic and wildlife habitat.
  - O. Recreational value.
  - P. Enhancement of aesthetic and property value.
3. To accomplish the above, the applicant shall submit original and innovative designs for review. Such designs may achieve the water quality objectives through a combination of BMPs (Best Management Practices).

(Ord. 210, 4/11/2005, Art. XI)

### **§26-326. Groundwater Recharge (Infiltration).**

1. Infiltration BMPs shall meet the following minimum requirements:
  - A. Where site/soil conditions are suitable, regulated activities must 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 subsections (1)(C)(1) or (1)(C)(2).
  - B. 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 and have the following characteristics:
    - (1) A minimum depth of 24 inches between the bottom of the BMP and the limiting zone.
    - (2) An infiltration and/or percolation rate sufficient to accept the additional stormwater load and drain completed as determined by field tests conducted by the applicant's design professional.
    - (3) The recharge facility shall be capable of completely infiltrating the recharge volume within four days (96 hours).
    - (4) Pretreatment shall be provided prior to infiltration.
    - (5) 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.
  - C. Recharge volume (Re) shall be computed by first obtaining the infiltration requirement using methods in either subsection (1)(C)(1) or (1)(C)(2) then multiplying by the total proposed impervious area. The overall required re-

charge volume for a site is computed by multiplying total impervious area by the infiltration requirement.

- (1) NRCS Curve Number equation. The following criteria shall apply.

The NRCS runoff shall be utilized to calculate infiltration requirements (P) in inches.

**Equation: 306.1**

For zero runoff:  $P = I \text{ (Infiltration)} = (200/CN) - 2$

Where:  $P = I =$  infiltration requirement (inches).

CN = SCS(NRCS) curve number of the existing conditions contributing to the recharge facility.

This equation can be displayed graphically in, and the infiltration requirement can also be determined from Figure 306-1.

The recharge volume ( $Re_v$ ) required would therefore be computed as:

**Equation: 306.2**

$Re_v = I * \text{impervious area (SF)}/12 = \text{Cubic Feet (CF)}$

- (2) Annual Recharge Water Budget Approach. It has been determined that infiltrating 0.6 inches of runoff from the impervious areas will aid in maintaining the hydrologic regime of the watershed. If the goals of §26-326(1)(C)(1) cannot be achieved, then 0.6 inches of rainfall shall be infiltrated from all impervious areas, up to an existing site conditions curve number of 77. Above a curve number of 77, Equation 306.1 or the curve in Figure 306. I should be used to determine the infiltration requirement.

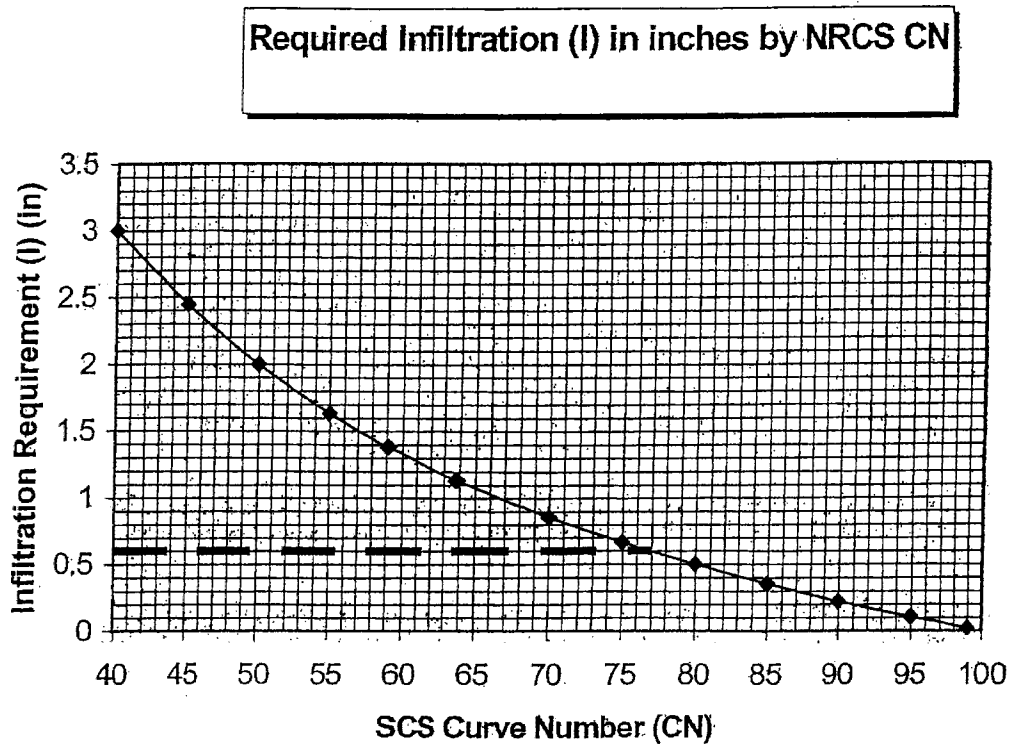
Where:  $I = 0.6$  inches.

The recharge volume ( $Re_v$ ) required would therefore be computed as:

$Re_v = I * \text{percent impervious area (SF)}/12 = (CF)$

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.

Figure 306.I. Infiltration Requirement Based upon NRCS Curve Number.



2. The general process for designing the infiltration BMP shall be:
  - A. A detached soils evaluation of the project site shall be required to determine the suitability of recharge facilities. The evaluation shall be performed by a qualified applicant and, at a minimum, address soil permeability, depth of bedrock, and subgrade stability.
  - B. Analyze hydrologic soil groups as well as natural and manmade features within the watershed to determine general areas of suitability for infiltration stability.
  - C. Provide field tests, such as double ring infiltration tests at the level of the proposed infiltration surface to determine the appropriate hydraulic conductivity rate.
  - D. Design the infiltration structure for the required storm volume based on field determined capacity at the level of the proposed infiltration surface.
  - E. Where the recharge volume requirement cannot be physically accomplished due to the results of the field soils testing, supporting documentation, and justification must be submitted with the drainage plan.
  - F. If on-lot infiltration structures are proposed, it must demonstrate that the soils are conducive to infiltrate on the lots identified.

3. Extreme caution shall be exercised where infiltration is proposed in geologically susceptible limestone areas. Extreme caution shall also be exercised where salt or chloride would be a pollutant since soils do little to filter this pollutant and it may contaminate the groundwater. Extreme caution shall be exercised where infiltration is proposed in source water protection areas. The qualified design professional shall evaluate the possibility of groundwater contamination from the proposed infiltration/recharge facility and perform a hydrogeologic justification study if necessary. The infiltration requirement in high quality/exceptional value waters shall be subject to DEP's Title 25: Chapter 93 Antidegradation Regulations. The municipality may require the installation of an impermeable liner in BMP and/or detention basins where the possibility of groundwater contamination exists. A detailed hydrogeologic investigation may be required by the municipality.
4. The plan must include safeguards against groundwater contamination for uses which may cause groundwater contamination, should there be a mishap or spill.
5. Recharge/infiltration facilities shall be used in conjunction with other innovative or traditional BMPs, stormwater control facilities, and nonstructural stormwater management alternatives.

(Ord. 210, 4/11/2005, Art. XII)

#### **§26-327. Stream Bank Erosion Requirements.**

1. In addition to the water quality volume, to minimize the impact of stormwater runoff on downstream stream bank erosion, a BMP must be designed to detain the proposed conditions 2-year, 24-hour design storm to the existing conditions 1-year flow using the SCS Type II distribution. Additionally, provisions shall be made (such as adding a small orifice at the bottom of the outlet structure) so that the proposed conditions 1-year storm takes a minimum 24-hours to drain from the facility from a point where the maximum volume of water from the 1-year storm is captured (i.e., the maximum water surface elevation is achieved in the facility).
2. Release of water may begin at the start of the storm (i.e., the invert of the water quality orifice is at the invert of the facility). The design of the facility shall minimize clogging and sedimentation. Orifices smaller than 3 inches in diameter are not recommended. However, if the design engineer can verify that the smaller orifice is protected from clogging by use of trash racks, etc., smaller orifices may be permitted. Trash racks are required for any primary orifice.

(Ord. 210, 4/11/2005, Art. XIII)

**§26-328. Design Criteria for Stormwater Management Facilities and Best Management Practices.**

1. Increased stormwater runoff which may result from regulated activities listed in §26-304 shall be controlled by permanent stormwater runoff control measures that will provide the required standards within Part 3C. The methods of stormwater control or best management practices (BMPs) which may be used to meet the required standards are described in this Part and are the preferred methods of controlling stormwater runoff. Additional design criteria are included in these descriptions. The choice of BMPs is not limited to the ones appearing in this Part; however, any selected BMP must meet or exceed the runoff peak rate requirements of this Part for the applicable hydrologic district.
2. Any stormwater facility located on State highway rights-of-way shall be subject to approval by the Pennsylvania Department of Transportation.
3. Any stormwater management facility designed to store runoff and requiring a berm or earthen embankment required or regulated by this Part shall be designed to provide an emergency spillway to handle flow up to and including the 100-year postdevelopment conditions. The height of embankment must be set as to provide a minimum 1.0 foot of freeboard above the maximum pool elevation computed when the facility functions for the 100-year postdevelopment inflow.
4. Emergency spillways discharging over embankment fill shall be constructed of reinforced concrete checker blocks to protect the berm against erosion. The checker block lining shall extend to the toe of the fill slope on the outside of the berm, and shall extend to an elevation three feet below the spillway crest on the inside of the berm.
5. Vegetated spillways may be utilized for spillways constructed entirely on undisturbed ground (i.e., not discharging over fill) if the designer can demonstrate that flow velocities through the spillways will not cause erosion of the spillway. A dense cover of vegetation shall be rapidly established in such spillways by sodding or seeding with a geotextile anchor. Such a vegetated spillway must be stabilized before runoff is directed to the basin.
6. Should any stormwater management facility require a dam safety permit under PA DEP Chapter 105, the facility shall be designed in accordance with Chapter 105 and meet the regulations of Chapter 105 concerning dam safety which may be required to pass storms larger than 100-year event.
7. Stormwater management facility outlet piping shall be Class II reinforced O-ring concrete pipe. A minimum of one concrete antiseep collar shall be required. Pre-cast collars shall have a minimum thickness of eight inches; field poured collars shall have a minimum thickness of 12 inches. Collars may not be installed within two feet of pipe joints. Collars must be designed to project a minimum of two feet around the perimeter of the pipe. Maximum collar spacing is 14 times the design projection around the perimeter.

8. Berms shall be constructed in accordance with requirements specified in Appendix A.
9. No stone gabion baskets may be used in the construction of stormwater management facilities.
10. Retention/Detention Basins.
  - A. Pipe outlet shall permit complete drainage of all detained water, unless the stormwater management facility is designed as a retention basin/pond or provides for stormwater renovation with constructed wetlands.
  - B. When a detention basin is not designed as a stormwater management constructed wetland, the stormwater management facility shall be planted with low maintenance grass or substitute satisfactory to the Township.
  - C. All detention basin bottoms intended to be maintained as lawn (i.e., recreational fields) shall be designed with minimum grade of 2%. As an alternative, the detention basin may be designed with a minimum grade of 1% with underdrains to ensure complete drainage.
  - D. To minimize the visual impact of detention basins, the detention basin shall be designed to avoid the need for safety fencing. To meet this requirement, basins shall be designed to the following specifications:
    - (1) Maximum depth of detained runoff shall be 24 inches for a 2-year or 10-year storm event.
    - (2) Maximum depth of detained runoff shall be 36 inches for a 100-year storm event.
    - (3) Interior slopes shall not be steeper than a ratio of 4:1 horizontal to vertical.
    - (4) Poned water shall never exceed a depth of 24 inches for more than four hours. Depths and slopes may be exceeded by permission of the Township on a case-by-case basis if lot runoff, topography and/or existing downstream systems make the required pond area unreasonably large. In such case, fence and landscape screens will be required.
  - E. An access ramp of 10:1, 10 feet wide, shall be provided to allow maintenance equipment to reach the basin floor. The ramp shall coincide with the required gate if fencing is needed.
  - F. When required by the Township, fencing shall provide a suitable barrier at least four feet in height of material approved by the Township, such as split rail fencing with wire backing. Access to the basin shall be provided by a

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gate or gates having a total opening of at least 10 feet at such location(s) as to permit ready access to the detention basin with maintenance equipment.

### G. Landscaping.

- (1) The perimeter berms and embankments of retention/detention basins, including wet ponds and artificial wetland stormwater management facilities, shall be designed to create a natural appearance and reduce future maintenance requirements. Landscaping shall include a mixture of native tall grasses and perennial plants, ground cover, shrubs and trees to eliminate the necessity of periodic mowing.
- (2) Artificial wetland basins shall be designed pursuant to requirements of the Pennsylvania Handbook of Best Management Practices for developing areas. Plant material and arrangement shall be subject to approval of the Township. (Refer Appendix C – Plant Lists for Wetland Management)
- (3) The perimeter of the retention/detention basin shall be landscaped with a mixture of deciduous trees, evergreens and shrubs arranged in an informal manner. Retention basin (wet ponds) and artificial wetland basin landscaping shall be designed to create a “natural” appearance. Minimum plant material shall include the following per 100 linear feet of basin perimeter measured at the 100-year reoccurrence stormwater elevation:
  - (a) Three evergreen trees (minimum height four feet).
  - (b) Two deciduous trees (minimum caliper 2-1/2 inches).
  - (c) Five shrubs (minimum height three feet).

Retention/detention basin landscaping design is subject to approval by the Township.

- H. Retaining walls shall not be specified for use within the 100-year water surface elevation area of any detention/retention facility or as part of any embankment or cut slope that is appurtenant to the construction of a detention/retention facility.
- I. The developer shall provide written assurance, satisfactory to the Township, that the retention/detention basin will be properly maintained. Such assurances shall be in a form to act as a covenant that will run with the land, and shall provide Township maintenance at the cost of the landowner in case of default, and further provide for assessment of costs and penalties in case of default.

J. As an alternate to the above subsection, the Township may, at their own option, assume responsibility of the basin and may accept dedication of the basin by the developer. If the retention/detention basin is dedicated or offered to the Township for long-term maintenance, the following regulations shall apply:

- (1) The dedicated area shall include the entire ponded area for the 100-year storm event and the outside slope at the berm.
- (2) The dedicated area shall not be considered part of the open space and recreation land required elsewhere in the Subdivision and Land Development Ordinance [Chapter 22] and Zoning Ordinance [Chapter 27].
- (3) If fencing is necessary, the basin design shall provide a level area (2% slope) eight feet in width on both the inside and outside of the fence, along the entire length of the fence, for proper access by Township maintenance equipment. The total width of this generally level area shall be at least 16 feet.
- (4) The developer shall provide for the special financial burden the Township will be accepting if the Township accepts the detention basin maintenance. To help mitigate this future financial burden, the developer shall contribute to the Township a cash payment in the amount of \$15,000 per acre, on a pro rata basis, for any detention/retention basin site or area dedicated to the Township and being accepted by the Township. The detention/retention basin site area is measured to the outside limit of grading necessary to construct the basin and basin berm. The minimum contribution for any basin, regardless of size, shall be \$7,500. This requirement may be modified by a resolution of the Township, from time to time, to reflect actual long-term costs of detention basin maintenance in the Township.

K. Basin Berm Construction Requirements.

- (1) Site preparation. Areas under the embankment and any structural works shall be cleared, grubbed, and the topsoil stripped to remove the trees, vegetation, roots or other objectionable material. In order to facilitate clean-out and restoration, the pool area will be cleared of all brush and excess trees.
- (2) Cut-off trench. A cut-off trench will be excavated along the centerline dam on earth fill embankments. The minimum depth shall be two feet. The cut-off trench shall extend up both abutments to the riser crest elevation. The minimum bottom width shall be eight feet but wide enough to permit operation of compaction equipment. The side slopes shall be no steeper than 1:1. Compaction requirements shall be

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the same as those for the embankment. The trench shall be kept free from standing water during the backfilling operations.

(3) Embankment.

- (a) The fill material shall be taken from the selected borrow areas. It shall be free of roots, wood vegetation, oversized stones, rocks or other objectionable material. Areas on which fill is to be placed shall be scarified prior to placement of fill
- (b) The fill material should contain sufficient moisture so that it can be formed by hand into a ball without crumbling. If water can be squeezed out of the ball, it is too wet for proper compaction.
- (c) Fill material will be placed in 6 inch to 8 inch layers and shall be continuous over the entire length of the fill. Fill material must be compacted to a minimum of 95% of modified proctor density as established by ASTM D-1557. Compaction testing by a certified soils engineer/geologist must be completed as directed by the Township Engineer to verify adequate compaction has been achieved.

- 11. Any facilities that constitute water obstructions (e.g., culverts, bridges, outfalls or stream enclosures), and any work involving wetlands as directed in PA DEP Chapter 105 regulations (as amended or replaced from time to time by PA DEP), shall be designed in accordance with Chapter 105 and will require a permit from PA DEP. Any other drainage conveyance facility that doesn't fall under Chapter 105 regulations must be able to convey, without damage to the drainage structure or roadway, runoff from the 25-year design storm with a minimum 1.0 foot of freeboard measured below the lowest point along the top of the roadway. Roadway crossings located within designated floodplain areas must be able to convey runoff from a 100-year design storm with a minimum 1.0-foot of freeboard measured below the lowest point along surface of the roadway. Any facility that constitutes a dam as defined in PA DEP Chapter 105 regulations may require a permit under dam safety regulations. Any facility located within a PA DOT right-of-way must meet PA DOT minimum design standards and permit submission requirements.
- 12. Any drainage conveyance facility and/or channel that does not fall under Chapter 105 regulations must be able to convey, without damage to the drainage structure or roadway, runoff from the 25-year design storm. Conveyance facilities to or exiting from stormwater management facilities shall be designed to convey the design flow to or from that structure. Roadway crossings located within designated floodplain areas must be able to convey runoff from a 100-year design storm. Any facility located within a PA DOT right-of-way must meet PA DOT minimum design standards and permit submission requirements.

13. Adequate erosion protection shall be provided along all open channels, and at all points of discharge.
14. Except for drainage at roadway stream crossings, pipe or artificial swale discharge shall be set back 75 feet from a receiving waterway, and the pipe discharge shall be diffused or spread out to reduce and eliminate high-velocity discharges to the impacted ground surface. The conveyance mechanism shall minimize disturbance and velocity of discharge.
15. All infiltration devices and groundwater recharge facilities shall be designed to completely drain all water in three days subsequent to any storm event.
16. Riparian Corridor Preservation. The area up to 75 feet from top of streambank on either side of a stream shall be planted in accordance with Zone 1 and Zone 2 buffer planting requirements as depicted in Pennsylvania Handbook of Best Management Practices for Developing Areas, 1998, Riparian Forested Buffer. (Refer Appendix B) Zone 1 will comprise, at a minimum, the first 15 feet from top of bank, with Zone 2 comprising the remaining 60 feet. This replanting is not required along streambank areas which receive overland or shallow flow from upstream, undisturbed, meadow or other existing pervious surfaces.
17. All developments which create impervious surface shall provide capacity for and treatment of the water quality volume and recharge volume, unless exempt from applicability under §26-304.
18. Special Requirements for Areas Falling Within Defined Exceptional Value and High-Quality Subwatersheds. The temperature and quality of water and streams that have been declared as exceptional value or high quality is to be maintained as defined in Chapter 93, "Water Quality Standards," Title 25 of Pennsylvania Department of Environmental Protection Rules and Regulations. Temperature-sensitive BMPs and stormwater conveyance systems are to be used and designed with storage pool areas and supply outflow channels, and shaded with trees. This will require the modification of berms for permanent ponds. At a minimum, the southern half of pond shorelines shall be planted with shade or canopy trees within 10 feet of the pond shoreline. In conjunction with this requirement, the maximum slope allowed on the berm area to be planted is 10 to one to lessen the destabilization of berm soils due to root growth.
19. Developers shall utilize BMPs to provide for additional water quality improvement and groundwater recharge. In evaluating potential stormwater BMPs, the order of preference is as follows:
  - A. Infiltration BMPs.
  - B. Flow attenuation methods (e.g. vegetated open swales and natural depressions).
  - C. Artificial wetlands, bioretention structures and wet ponds.

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- D. Minimum first flush detention or dual-purpose detention (where appropriate).

Infiltration BMPs shall be utilized unless the applicant can demonstrate use of infiltration techniques is not feasible due to site conditions based upon site-specific soil testing. Vegetated swales, wetlands or artificial wetlands and bioretention structures shall be utilized wherever possible if infiltration BMPs are deemed unfeasible. BMP techniques can and should be used in conjunction with each other (e.g., vegetated swales with infiltration or retention facilities).

- A. Infiltration Best Management Practices (BMPs). Infiltration devices shall be selected based upon suitability of soils and site conditions. Soil infiltration tests shall be performed on all sites to determine suitability of the site for infiltration BMPs. Testing shall include evaluation of selected soil horizons by soil probes, deep pits and/or percolation measurements. The soil infiltration rate of discharge from the infiltration area being used in the proposed design shall be based on these measurements. Infiltration BMPs shall be designed in accordance with the design criteria and specifications in §5 of the Pennsylvania Handbook of Best Management Practices for Developing Areas (1998) and shall meet the following minimum requirements:

- (1) Infiltration BMPs intended to receive runoff from residential uses shall be constructed on soils which have the following characteristics:
  - (a) Infiltration BMPs shall be constructed on soils with a minimum depth of 24 inches between the intended bottom of the facility and the seasonal high water table and/or bedrock (limiting zone).
  - (b) Infiltration BMPs intended to receive rooftop runoff shall include appropriate measures such as leaf traps and cleanouts to prevent clogging by vegetation.
- (2) Infiltration BMPs intended to receive runoff from nonresidential uses shall be constructed on soils that have the following characteristics:
  - (a) A minimum depth of 48 inches between the intended bottom of the facility and the seasonal high water table and/or bedrock (limiting zones).
  - (b) Infiltration rate and percolation rate of greater than 0.2 inches/hour.
- (3) Where direct discharge is permitted under the requirements of §26-322, infiltration BMPs shall be designed to provide adequate storage to accommodate the postdevelopment first flush design storm (one year 24 storm) volume with outlet and overflow controls to convey

runoff larger than the first flush design storm volume safely to a natural outfall.

- (4) In areas where runoff release rates are specified under the requirements of §26-322, regardless of the specified release rate percentage, if infiltration BMPs are intended, they shall be designed to, as a minimum:
  - (a) Provide adequate storage to accommodate the volume of runoff calculated as the difference between the predevelopment runoff volume and postdevelopment runoff volume based on the 100-year design storm.
  - (b) Control the postdevelopment peak rate of runoff to the predevelopment peak rate of runoff for all design storms identified in §26-323(1)(B) of this Part.
  - (c) Provide an overflow or spillway that safely permits the passing of runoff greater than that occurring during the 100-year design storm.

B. Noninfiltration Facilities Used As Best Management Practices (BMPs). All facilities shall be designed in accordance to the design criteria and specifications in the Pennsylvania Handbook of Best Management Practices for Developing Areas (1998). This design shall be in particular coordination with §8, Descriptions of Selected Best Management Practices.

C. Artificial Wetlands, Wet Ponds and Bioretention Structures.

- (1) Wet pond BMPs shall meet the following requirements:
  - (a) Wet ponds shall be constructed on hydric or wet soils and/or soils which have an infiltration rate of less than 0.2 inches/hour.
  - (b) A minimum drainage area of five acres shall be directed to the pond unless a source of recharge is utilized such as a natural spring or well.
  - (c) The length of the pond between the inflow and outlet points shall be maximized. In addition, an irregular shoreline shall be provided. By maximizing the flow length through the pond and providing an irregular shoreline, the greatest water quality benefit will be achieved by minimizing “short circuiting” of runoff flowing through the pond.
  - (d) A shallow forebay shall be provided adjacent to all inflow areas. The forebay shall be planted as a marsh with emergent wetland vegetation. The forebay serves to enhance sediment trapping

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and pollutant removal, as well as concentrating accumulated sediment in an area where it can be readily removed.

- (e) All wet ponds shall be designed with public safety as a primary concern. An aquatic safety bench shall be provided around the perimeter of the permanent pool. The depth of the bench shall be a maximum of one foot for a width of at least three feet. A 3:1 slope shall lead from the edge of the safety bench toward the deep water portion of the pond. At least 15 feet of 3:1 slope shall be provided from the edge of the safety bench. Slopes in the remainder of the pond below the permanent pool elevation shall be a maximum of 2:1.
- (f) The perimeter slope above the permanent pool shall have a maximum slope of 4:1 for a distance of at least 20 feet. The remaining areas above the permanent pool shall have a maximum slope of 3:1.
- (g) Wet ponds shall have a deep water zone to encourage gravity settling of suspended fines, and prevent stagnation and possible eutrophication.
- (h) Wet ponds shall be capable of being substantially drained by gravity flow. Where possible, wet ponds shall be equipped with a manually operated drain that can be secured against unauthorized operation.
- (i) A planting plan shall be developed for the wet pond, showing all proposed aquatic, emergent and upland plantings.
- (j) Wet ponds shall be designed to discourage use by Canada geese. Techniques employed shall include the following:
  - 1) Elimination of straight shorelines, islands and peninsulas.
  - 2) Placement of walking paths (where applicable) along the shoreline.
  - 3) Placement of grassed areas (i.e., playing fields) at least 450 feet from the water surface.
  - 4) Vegetative barriers.
  - 5) Rock barriers.
  - 6) Installation of tall trees within 10 feet of the water surface.

7) Use of ground covers not palatable to Canada geese.

(2) Artificial wetland BMPs shall meet the following requirements:

- (a) Artificial wetlands shall be constructed on hydric or wet soils and/or soils which have an infiltration rate of less than 0.2 inches/hour.
- (b) Runoff entering artificial wetlands shall be filtered through a sediment removal device before entering the wetland.
- (c) A planting plan shall be developed for the artificial wetland showing all proposed aquatic, emergent and upland plantings. The planting plan shall be developed to provide a diversity of species resulting in a dense stand of wetland vegetation.
- (d) At least 75% of the surface area of the wetland shall be developed as a shallow water emergent wetland, with a water depth of less than 12 inches. The remainder shall be constructed as open water with depths between two feet and four feet.

D. Minimum First Flush Detention/Dual Purpose BMPs.

(1) Minimum first flush detention/dual purpose detention basin BMPs shall be designed to meet the following requirements:

- (a) Postdevelopment runoff from a “water quality storm” (a 1-year, 24-hour event) shall be released over a minimum period of 24 hours.
- (b) Two stage basins shall be utilized where first flush detention will be employed for water quality and conventional detention used for peak rate control of storms exceeding the 1-year, 24-hour event.
- (c) Two-stage basins shall be constructed so that the lower part of the basin is graded to detain stormwater from the “water quality storm,” and the remainder of the basin graded as a flat overbank area to provide storage only for the larger, less frequent storm events. The overbank area is encouraged to be developed as an active or passive recreational area.
- (d) The area inundated by the “water quality storm” is encouraged to be maintained as a wetland environment, which will increase the water quality benefits of the first flush/dual purpose detention basin, and will prevent the need for mowing of a frequently saturated area.

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20. All stormwater control facility designs shall conform to the applicable standards and specifications of the following governmental and institutional agencies:
  - A. American Society of Testing and Materials (ASTM)
  - B. Asphalt Institute (AI)
  - C. Bucks Conservation District (BCD)
  - D. Federal Highway Administration (FHWA)
  - E. National Crushed Stone Association (NCSA)
  - F. National Sand and Gravel Association (NSGA)
  - G. Pennsylvania Department of Environmental Protection (PADEP)
  - H. Pennsylvania Department of Transportation (PADOT)
  - I. U.S. Department of Agriculture, Natural Resources Conservation Service, Pennsylvania (USDA, NRCS, PA)
21. If special geological hazards or soil conditions, such as carbonate derived soils, are identified on the site, the developer's professional engineer shall consider the effect of proposed stormwater management measures on these conditions. In such cases, the Township shall require an in-depth report by a registered professional geologist.
22. The design of all stormwater management facilities shall incorporate sound engineering principles and practices. Guidelines established by the Pennsylvania Handbook of Best Management Practices for Developing Areas (1998) shall be utilized in determining stormwater management facility design except where specifically modified by this or other Township ordinance. The Township shall reserve the right to disapprove any design that would result in the occupancy or continuation of an adverse hydrologic or hydraulic condition within the watershed.

(Ord. 199, 9/17/2002, §304; as amended by Ord. 210, 4/11/2005, Art. XIV-XVI)

### **§26-329. Calculation Methodology.**

Stormwater runoff from all development sites shall be calculated using either the rational method or a soil-cover complex methodology.

- A. Any stormwater runoff calculations shall use generally accepted calculation technique that is based on the NRCS soil-cover complex method. Table 3-2 summarizes acceptable computation methods. Method must be selected by

the applicant based on the individual limitations and suitability of each method for a particular site. The rational method may be used to estimate peak discharges from drainage areas that contain less than 200 acres. The rational method is recommended for drainage areas under 100 acres.

**Table 3-2 Acceptable Computation Methodologies For Stormwater Management Plans**

<b>METHOD</b>	<b>METHOD DEVELOPED BY</b>	<b>APPLICABILITY</b>
TR-20 (or commercial computer package based on TR-20).	USDA NRCS	Applicable where use of full hydrology computer model is desirable or necessary
TR-55 (or commercial computer package based on TR-55)	USDA NRCS	Applicable for land development plans within limitations described in TR-55
HEC-1, HEC-HMS	US Army Corps of Engineers	Applicable where use of full hydrologic computer model is desirable or necessary
PSRM	Penn 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 computer package based on rational method)	Emil Kuichling (1889)	For sites less than 200 acres, or as approved by the municipal engineer.
Other methods	Varies	Other computation methodologies approved by the municipal engineer.

- B. All calculations consistent with this Part using the soilcover complex method shall use the appropriate design rainfall depths for the various return period storms according to the region for which they are located as presented in Table A-1 in Appendix A of this Part. If a hydrologic computer model such as HEC-1 or HEC-HMS is used for stormwater runoff calculations, the duration of rainfall shall be 24 hours. The SCS 'S' curve shown in Figure A-1, Appendix A of this Part shall be used for the rainfall distribution.
- 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 A-2 in Appendix A of Ordinance. For the purposes of existing conditions flow rate determination for all subdivision and land development applications, undeveloped land and existing impervious surfaces shall be considered as

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meadow in good condition, unless the natural ground cover generates a lower curve number of rational 'C' value (i.e., forest), as listed in Table A-2 or A-3 in Appendix A of this Part.

- 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 design storm curves from PA Department of Transportation Design Rainfall Curves (1986) (Figure A-2). 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 or replaced from time to time by NRCS). Times of concentration for channel and pipe flow shall be computed using Manning's equation.
- E. Runoff curve numbers (CN) for both existing and proposed conditions to be used in the soil cover complex method shall be obtained from Table A-2 in Appendix A of this Part.
- F. Runoff coefficients (c) for both existing and proposed conditions for use in the rational method shall be obtained from Table A-3 in Appendix A of this Part.
- G. Where uniform flow is anticipated, the Manning 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 A-4 in Appendix A of this Part. Outlet structures for stormwater management facilities shall be designed to meet the performance standards of this Part using any generally accepted hydraulic analysis technique or method.
- H. The design of any stormwater management facilities intended to meet the performance standards of this Part shall be verified by routing the design storm hydrograph through these facilities using the Storage Indication Method. For drainage areas greater than 20 acres in size, the design storm hydrograph shall be computed using a calculation method that produces a full hydrograph. The Township may approve the use of any generally accepted full hydrograph approximation technique that shall use a total runoff volume that is consistent with the volume from a method that produces a full hydrograph.
- I. The Township has the authority to require that computed existing runoff rates be reconciled with field observations and conditions. If the design professional engineer can substantiate through actual physical calibration that more appropriate runoff and time-of-concentration values should be utilized at a particular site, then appropriate variations may be made upon review and recommendations of the Township Engineer. Calibration shall require detailed gauge and rainfall data for the particular site in question.

(Ord. 199, 9/17/2002, §305; as amended by Ord. 210, 4/11/2005, Art. XVII)

**§26-330. Erosion and Sediment Control During Regulated Earth Disturbance Activities.**

1. Whenever vegetation and topography are to be disturbed, such activity must be in conformance with Chapter 102, Title 25, Rules and Regulations, Part 1, Commonwealth of Pennsylvania, Department of Environmental Protection, Subpart C, protection of Natural Resources, Article II, Water Resources, Chapter 102, "Erosion Control", and in accordance with the Bucks County Conservation District and the standards and specifications of the Municipality.
2. No regulated earth disturbance activities within the Municipality shall commence until approval by the Municipality of an erosion and sediment control plan for construction activities.
3. PADEP has regulations that require an erosion and sediment control plan for any earth disturbance activity of 5,000 square feet or more, under 25 PA Code §102.4(b).
4. In addition, under 25 PA Code Chapter 92, a PADEP "NPDES Construction Activities" permit is required for regulated earth disturbance activities.
5. Evidence of any necessary permit(s) for regulated earth disturbance activities from the appropriate PADEP regional office or County Conservation District must be submitted to the municipality.
6. A copy of the erosion and sediment control plan and any required permit, as required by PADEP regulations shall be available at the project site at all times.
7. Additional erosion and sedimentation control design standards and criteria that must be applied where infiltration BMPs are proposed include the following:
  - A. Areas proposed for infiltration BMPs shall be protected from sedimentation and compaction during the construction phase so as to maintain their maximum infiltration capacity.
  - B. Infiltration BMPs shall not be constructed nor receive runoff until the entire contributory drainage area to the infiltration BMP has received final stabilization.
8. Peak discharges and discharge volumes from the site shall comply with the appropriate sections above, with the following additions:
  - A. For purposes of calculating required detention storage during land disturbance, peak discharge volumes shall be calculated based upon the runoff coefficients for bare soils during the maximum period and extent of disturbance which shall be clearing, indicated on the development plan. Controls shall insure that the difference in volume and rate of peak discharges before

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disturbance and during shall not exceed those peak discharges and discharge volumes required in Section 26-323 of this Part. Detention storage during the period of land disturbance and prior to establishment of permanent cover may require additional facilities on a temporary basis. Such measures shall be located so as to preserve the natural soil infiltration capacities of the planned infiltration bed areas.

- B. Wherever soils, topography, cut and fill or grading requirements, or other conditions suggest substantial erosion potential during land disturbance, the Township may require that the entire volume of all storms up to a two-year storm from the disturbed areas be retained on site and that special sediment trapping facilities (such as check dams, etc.) be installed.
9. Areas of the site to remain undisturbed shall be protected from encroachment by construction equipment/vehicles to maintain the existing infiltration characteristics of the soil.

### **§26-330.1. Water Quality Requirements After Regulated Earth Disturbance Activities Are Complete.**

1. No regulated earth disturbance activities within the Municipality shall commence until approval by the Municipality of a plan which demonstrates compliance with state water quality requirements after construction is complete.
2. The BMPs must be designed, implemented, and maintained to meet state water quality requirements, and any other more stringent requirements as determined by the Municipality.
3. To control postconstruction stormwater impacts from regulated earth disturbance activities, state water quality requirements may be met by BMPs, including site design, which provide for replication of preconstruction stormwater infiltration and runoff conditions, so that postconstruction stormwater discharges do not degrade the physical, chemical or biological characteristics of receiving waters. As described in the PADEP Comprehensive Stormwater Management Policy (#392-0300-002, September 28, 2002), this may be achieved by the following:
  - A. Infiltration. Replication of preconstruction stormwater infiltration conditions.
  - B. Treatment. Use of water quality treatment BMPs to filter out the chemical and physical pollutants from the stormwater runoff, and
  - C. Streambank and Streambed Protection. Management of volume and rate of postconstruction stormwater discharges to prevent physical degradation of receiving waters (e.g., from scouring).

4. PADEP has regulations that require municipalities to ensure design, implementation, and maintenance of best management practices (BMPs) that control runoff from new development from new development and redevelopment after regulated earth disturbance activities are complete. These requirements include the need to implement postconstruction stormwater BMPs with assurance of long-term operations and maintenance of those BMPs.
5. Evidence of any necessary permit(s) for regulated earth disturbance activities from the appropriate PADEP regional office must be submitted to the Municipality.
6. BMP operations and maintenance requirements are described in Part 3, Subpart D of this Part.

(Ord. 199, 9/17/2002, §306; as amended by Ord. 219, 3/21/2006, Art. 1, 2)

#### **D. Stormwater Management Plan Requirements.**

##### **§26-331. General Requirements.**

For any of the activities regulated by this Part, the final approval of subdivision and/or land development plans, the issuance of any building or occupancy permit or the commencement of any land disturbance activity may not proceed until the property owner or developer or his/her agent has received written approval of a drainage plan from the Township.

(Ord. 199, 9/17/2002, §401)

##### **§26-332. Stormwater Management Plan Contents.**

The stormwater management plan shall consist of all applicable calculations, maps and plans. A note on the maps shall refer to the associated computations and erosion and sedimentation control plan by title and date. The cover sheet of the computations and erosion and sedimentation control plan shall refer to the associated maps by title and date. All stormwater management plan materials shall be submitted to the Township in a format that is clear, concise, legible, neat and well organized; otherwise, the stormwater management plan shall be disapproved and returned to the applicant. The following items shall be included in the stormwater management plan:

- A. A feasibility analysis that evaluates the potential application of infiltration, flow attenuation, bioretention, or wetland or wet pond BMPs must be submitted with the stormwater management plans required in this Subpart for those developments not intending the use of such facilities. This analysis shall provide:

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- (1) A general assessment of the anticipated additional runoff based on the design storm and postdevelopment condition and utilizing the calculation procedures required in §26-329
- (2) Indication of drainage areas on the development site resulting in impervious, pervious and rooftop runoff.
- (3) Indication of type of land use (residential, nonresidential) generating the impervious surface runoff.
- (4) Delineation of soils on the site from the SCS, Soil Survey of Bucks and Philadelphia Counties and onsite soil study. Soil study shall be conducted by a soil scientist and shall include sufficient probes/deep holes to evaluate application of BMPs.
- (5) Indication of soils generally suitable for infiltration and/or wet pond/artificial wetland BMPs as shown in the table entitled: General Soil Suitability for Infiltration, Wet Pond and Artificial Wetland Best Management Practices With Consideration to Runoff Point of Origin and Land Use Type, including specification of those soils requiring modification.
- (6) Calculated acreage of suitable soils for infiltration BMPs and wet pond or artificial wetland BMPs and percentage of suitable soils based on total site acreage.
- (7) Calculated acreage of suitable soils for infiltration BMPs and wet pond or artificial wetland BMPs made unavailable due to proposed development layout and justification that alternative development layout which would reduce impact on suitable soil availability is unfeasible.
- (8) Analysis of potential infiltration or wet pond artificial wetland BMPs which could be implemented to manage the projected postdevelopment runoff with consideration of suitable soil availability runoff point and type of land use (subsections (2) and (3) above) and the general design standards and maintenance issues included in this Part including an indication of how most postdevelopment runoff can be managed by these BMPs (e.g. the entire postdevelopment runoff or partial amount of runoff expressed as a percentage).
- (9) Rationale for the decision to not proceed with implementation of infiltration BMPs or wet pond or artificial wetland BMPs such as excessive cost of implementation, insufficient soil suitability and development constraints.

The feasibility analysis must allow the Township to review the general soil characteristics of a site and the proposed development for that site and de-

termine if infiltration BMPs or wet pond or artificial wetland BMPs could have been more thoroughly pursued for use by the developer. The information required in the analysis is detailed enough to determine the potential applicability of these BMPs for a proposed development, but general enough not to force a developer into incurring excessive cost associated with conducting laborious field and/or laboratory soil testing for a site which ultimately may not be suitable for infiltration or wet pond or artificial wetland BMP implementation. However, with the requirements for conducting a feasibility analysis, developers will be aware that they are expected to use these BMPs wherever possible and are required to provide adequate justification if these BMPs are not to be implemented. Essentially, all developers will be conducting feasibility analysis since such analysis would become the preliminary step in evaluating the potential for implementation of these mandatory BMPs where possible. Developers for those sites that are determined to be generally suitable from these analysis (taking into consideration the areal extent of suitable soils necessary to accommodate an infiltration or wet pond or wetland BMP for the type and size of development proposed) are required to conduct the detailed soil testing and other feasibility testing required in other sections of this Part which contain the description and additional design criteria of these BMPs.

- B. A detailed geologic evaluation of the project site shall be performed to determine the suitability of recharge facilities. The evaluation shall be performed by a qualified geologist and/or soil scientist, and a minimum, address soil permeability, depth to bedrock, susceptibility to sinkhole formation and subgrade stability.
- C. Whenever a stormwater management facility will be located in an area underlain by limestone, a geological evaluation of the proposed location shall be conducted to determine susceptibility to sinkhole formations. The design of all facilities over limestone formations shall include measures to prevent groundwater contamination and, where necessary, sinkhole formation. Soils used for the construction of basins shall have low-erodibility factors ("K" factors). Installation of an impermeable liner shall be required in detention basins. It shall be the developer's responsibility to verify if the site is underlain by limestone. The following note shall be attached to all stormwater management plans and signed and sealed by the developer's professional engineer:
 

"I, \_\_\_\_\_, certify that the proposed detention basin (circle one) is/is not underlain by limestone."
- D. General.
  - (1) General description of project.

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- (2) General description of permanent stormwater management techniques, including construction specifications of the materials to be used for stormwater management facilities.
  - (3) Complete hydrologic, hydraulic and structural computations for all stormwater management facilities.
- E. Map(s) of the project area shall be submitted on 24-inch x 36-inch sheets and shall be prepared in a form that meets the requirements for recording at the offices of the Recorder of Deeds of Bucks County. The contents of the maps(s) shall include, but not be limited to:
- (1) The location of the project relative to highways, municipalities or other identifiable landmarks.
  - (2) Existing contours at intervals of two feet. In areas of steep slopes (greater than 25%), 5-foot contours may be used.
  - (3) Existing streams, lakes, ponds or other bodies of water within the project area.
  - (4) Other physical features including flood hazard boundaries, sinkholes, streams, existing drainage courses, wetlands, areas of natural vegetation to be preserved and the total extent of the upstream area draining through the site.
  - (5) The locations of all existing and proposed utilities, sanitary sewers and water lines located on the site and/or within 50 feet of property lines.
  - (6) An overlay showing soil names and boundaries. This overlay shall include a table on the map showing the recharge capabilities of each soil represented onsite in inches per hour and describe their recharge or infiltration capabilities.
  - (7) Proposed changes to the land surface and vegetative cover, including the type and amount of impervious area that would be added.
  - (8) Proposed structures, roads, paved areas and buildings. Where pervious pavement is proposed for parking lots, recreational facilities, non-dedicated streets or other areas, pavement construction specifications shall be noted on the plan.
  - (9) Final contours at intervals at two feet. In areas of steep slopes (greater than 25%), 5-foot contour intervals may be used.

- (10) The name of the development, the name and address of the owner of the property, and the name of the individual or firm preparing the plan.
- (11) The date of submission.
- (12) A graphic and written scale of one inch equals no more than 50 feet. For tracts of 20 acres or more, the scale may be one inch equals no more than 100 feet.
- (13) A North arrow.
- (14) The total tract boundary and size with distances marked to the nearest foot and bearings to the nearest degree.
- (15) Existing and proposed land use(s).
- (16) A key map showing all existing manmade features beyond the property boundary that may be affected by the project.
- (17) Horizontal and vertical profiles of all open channels, including hydraulic capacity.
- (18) Overland drainage paths.
- (19) A 20-foot wide access easement around all stormwater management facilities that would provide ingress to and egress from a public right-of-way.
- (20) A note on the plan indicating the location and responsibility for maintenance of stormwater management facilities that would be located offsite. All offsite facilities shall meet the performance standards and design criteria specified in this Part.
- (21) A construction detail of any improvements made to sinkholes and the location of all notes to be posted, as specified in this Part.
- (22) A statement, signed by the landowner, acknowledging the stormwater management system to be a permanent fixture that can be altered or removed only after approval of a revised plan by the Township, which shall be recorded with the record plan and which shall be applicable to all future landowners.
- (23) The location of all erosion and sedimentation control facilities.
- (24) The following signature block for the design engineer.

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(Design engineer), on this date (date of signature), has reviewed and hereby certify that the stormwater management plan meets all design standards and criteria of East Rockhill Township Watershed Act 167 Stormwater Management Ordinance.

### F. Supplemental Information.

- (1) A written description of the following information shall be submitted.
  - (a) The overall stormwater management concept for the project.
  - (b) Stormwater runoff computations as specified in this Part.
  - (c) Stormwater management techniques to be applied both during and after development.
  - (d) Expected project time schedule.
- (2) A soil erosion and sedimentation control plan, where applicable, including all reviews and approvals, as required by PADEP and/or Bucks Conservation District.
- (3) A geologic assessment of the effects of runoff on sinkholes as specified in this Part.
- (4) The effect of the project (in terms of runoff volume and peak flow) on adjacent properties and on any existing Township stormwater collection system that may receive runoff from the project site.
- (5) A declaration of adequacy and highway occupancy permit from the PADOT District Office when utilization of a PADOT storm drainage system is proposed.

### G. Stormwater Management Facilities.

- (1) All stormwater management facilities must be located on a plan and described in detail.
- (2) When groundwater recharge methods such as seepage pits, beds or trenches are used, the locations of existing and proposed septic tank infiltration areas, and wells must be shown. A separation distance of no less than 20 feet shall be provided between any septic system and any facility used for stormwater management.
- (3) All calculations, assumptions and criteria used in the design of the stormwater management facilities must be shown. If multiple facilities are proposed in conjunction with each other, such as infiltration best management practices with vegetation based management prac-

tices, a summary narrative shall be included describing any sequence and how the facilities are meant to function with each other to manage stormwater runoff.

(Ord. 199, 9/17/2002, §402; as amended by Ord. 210, 4/11/2005, Art. XVIII, XIX)

**§26-333. Plan Submission.**

For all activities regulated by this Part, the steps below shall be followed for submission. For any activities that require a PADEP joint permit application and regulated under Chapter 105 (Dam Safety and Waterway Management) or Chapter 106 (Floodplain Management) of PADEP's Rules and Regulations, require a PADOT highway occupancy permit or require any other permit under applicable local, State or Federal regulations, the permit(s) shall be part of the plan.

- A. The stormwater management plan shall be submitted by the developer as part of the preliminary plan submission for the regulated activity.
- B. A minimum of three copies of the stormwater management plan shall be submitted.
- C. Distribution of the stormwater management plan will be as follows:
  - (1) One copy to the Township accompanied by the requisite Township review fee, as specified in this Part.
  - (2) Two copies to the Township Engineer.

(Ord. 199, 9/17/2002, §403)

**§26-334. Stormwater Management Plan Review.**

1. The Township Engineer shall review the stormwater management plan for consistency with the adopted Watershed Act 167 Stormwater Management Plan and applicable Township ordinances. The Township shall require receipt of a complete plan, as specified in this Part.
2. The Township Engineer shall review the stormwater management plan for any subdivision or land development against the Subdivision and Land Development Ordinance [Chapter 22] provisions not superseded by this Part.
3. For activities regulated by this Part, the Township Engineer shall notify the Township in writing, within 45 calendar days of receipt, whether the stormwater management plan is consistent with the adopted Watershed Act 167 Stormwater Management Plan. A copy of the Township Engineer's review letter shall be forwarded to the developer.

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4. Any disapproved stormwater management plan may be revised by the developer and resubmitted consistent with this Part.
5. For regulated activities specified in §§26-304(4)(C) and (D) of this Part, the Township Engineer shall notify the Township Building Permit Officer in writing, within a time frame consistent with the Building Code [Chapter 5] and/or Subdivision and Land Development Ordinance [Chapter 22], whether the stormwater management plan is consistent with the adopted Watershed Act 167 Stormwater Management Plan and forward a copy of the review letter to the developer. Any disapproved stormwater management plan may be revised by the developer and resubmitted consistent with this Part.
6. The Township shall not approve any subdivision or land development for regulated activities specified in §§26-304(4)(A) and (B) of this Part if the stormwater management plan has been found to be inconsistent with the adopted Watershed Act 167 Stormwater Management Plan. All required permits from PADEP must be obtained prior to, or as a requirement of, final approval.
7. The Township Building Permit Office shall not issue a building permit for any regulated activity specified in §26-304 of this Part if the stormwater management plan has been found to be inconsistent with the adopted Watershed Act 167 Stormwater Management Plan, as determined by the Township Engineer, or without considering the comments of the Township Engineer. All required permits from PADEP must be obtained prior to issuance of a building permit.
8. The developer shall be responsible for completing an “as-built survey” of all stormwater management facilities included in the approved stormwater management plan. The as-built survey and an explanation of any discrepancies with the design plans shall be submitted to the Township Engineer for review. In no case shall the Township approve the as-built survey until the Township receives a copy of an approved declaration of adequacy, highway occupancy permit from the PA-DOT District Office and any applicable permits from PADEP.
9. The Township’s approval of a stormwater management plan shall be valid for a period not to exceed two years. If stormwater management facilities included in the approved stormwater management plan have not been constructed, or if an as-built survey of these facilities has not been approved within this 2-year time period, then the Township may consider the stormwater management plan disapproved and may revoke any and all permits. Stormwater management plans that are considered disapproved by the Township shall be resubmitted in accordance with §26-336 of this Part.

(Ord. 199, 9/17/2002, §404)

**§26-335. Modification of Plans.**

1. A modification to a submitted stormwater management plan for a development site that involves a change in stormwater management facilities or techniques, or that involves the relocation or redesign of stormwater management facilities, or that is necessary because soil or other conditions are not as stated on the stormwater management plan as determined by the Township Engineer, shall require a resubmission of the modified stormwater management plan consistent with §26-333 of this Part and be subject to review as specified in §26-334 of this Part.
2. A modification to an already approved or disapproved drainage plan shall be submitted to the Township, accompanied by the applicable review. A modification to a stormwater management plan for which a formal action has not been taken by the Township shall be submitted to the Township, accompanied by the applicable Township review fee.

(Ord. 199, 9/17/2002, §405)

**§26-336. Resubmission of Disapproved Stormwater Management Plans.**

A disapproved stormwater management plan may be resubmitted, with the revisions addressing the Township Engineer's concerns documented in writing, to the Township Engineer in accordance with §26-334 of this Part and be subject to review as specified in §26-335 of this Part. The applicable Township review fee must accompany a resubmission of a disapproved stormwater management plan.

(Ord. 199, 9/17/2002, §406)

**E. Inspections.**

**§26-341. Schedule of Inspections.**

1. The Township Engineer or his assignee shall inspect all phases of the installation of the permanent stormwater management facilities.
2. During any stage of the work, if the Township Engineer determines that temporary or permanent erosion and sedimentation control or stormwater management facilities are not being installed in accordance with the approved stormwater management plan, the Township shall revoke any existing permits until a revised stormwater management plan is submitted and approved, as specified in this Part.

(Ord. 199, 9/17/2002, §501)

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### **F. Fees and Expenses.**

#### **§26-351. Stormwater Management Plan Review Fee.**

The Township shall establish a review fee schedule by resolution of the Board of Supervisors to defray review costs incurred by the Township, any outside review agencies or entities necessary to review submitted plans and the Township Engineer. The Township shall periodically update the review fee schedule to ensure that review costs are adequately reimbursed. The applicant shall pay all fees.

(Ord. 199, 9/17/2002, §601)

#### **§26-352. Expenses Covered by Fees.**

The fees required by this Part shall, at a minimum, cover the following:

- A. Administrative costs.
- B. Review of the stormwater management plan by the Township and the Township Engineer.
- C. Site inspections by the Township staff and/or Township Engineer.
- D. Inspection of stormwater management facilities and stormwater management improvements during construction.
- E. Final inspection upon completion of the stormwater management facilities and stormwater management improvements presented in the stormwater management plan.
- F. Any additional work required to enforce any permit provisions regulated by this Part, correct violations and ensure proper completion of stipulated remedial actions.

(Ord. 199, 9/17/2002, §602)

### **G. Prohibitions.**

#### **§26-361. Prohibited Discharges.**

1. No persons shall allow, or cause to allow, stormwater discharges into the Municipality's separate storm sewer system which are not composed entirely of stormwater, except (1) as provided in subsection (2) below, and (2) discharges allowed under a state or federal permit.
2. Discharges which may be allowed, based on a finding by the Municipality that the

discharge(s) do not significantly contribute to pollution to surface waters of the Commonwealth, are:

- A. Discharges from fire fighting activities.
  - B. Potable water sources including dechlorinated waterline and fire hydrant flushings.
  - C. Irrigation drainage.
  - D. Routine external building washdown (which does not use detergents or other compounds).
  - E. Air conditioning condensate.
  - F. Water from individual residential car washing.
  - G. Springs.
  - H. Water from crawl space pumps.
  - I. Uncontaminated water from foundation or from footing drains.
  - J. Flows from riparian habitats and wetlands.
  - K. Lawn watering.
  - L. Pavement wash waters where spills or leaks of toxic or hazardous materials have not occurred (unless all spill material has been removed) and where detergents are not used.
  - M. Dechlorinated swimming pool discharges.
  - N. Uncontaminated groundwater.
3. In the event the Municipality determines that any of the discharges identified in subsection (2) significantly contribute to pollution of waters of the Commonwealth, or is so notified by PADEP, the Municipality will notify the responsible person to cease the discharge.
  4. Upon notice provided by the Municipality under subsection (3), the discharger will have a reasonable time, as determined by the Municipality, to cease the discharge consistent with the degree of pollution caused by the discharge.
  5. Nothing in this Section shall affect a discharger's responsibilities under state law.

(Ord. 219, 3/21/2006, Art. 4)

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### **§26-362. Prohibited Connections.**

The following connections are prohibited, except as provided in §26-361(2) above:

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

(Ord. 219, 3/21/2006, Art. 5)

### **§26-363. Roof Drains.**

1. Roof drains shall not be connected to streets, sanitary or storm sewers, or roadside ditches, except as provided in §26-321(11).
2. Roof drains shall discharge to infiltration areas or vegetative BMPs where possible.

(Ord. 219, 3/21/2006, Art. 6)

### **§26-364. Alteration of BMPs.**

1. No person shall modify, remove, fill, landscape or alter any existing stormwater BMP, unless it is part of an approved maintenance program, without the written approval of the Municipality.
2. No person shall place any structure, fill, landscaping or vegetation into a stormwater BMP or within a drainage easement, which would limit or alter the functioning of the BMP, without the written approval of the Municipality.

(Ord. 219, 3/21/2006, Art. 7)

## **H. Maintenance Responsibility.**

### **§26-371. Performance Guarantee.**

The applicant shall provide a financial guarantee to the Township for the timely installation and proper construction of all stormwater management controls as required by the approved stormwater management plan and this Part equal to the full construction

cost of the required controls plus construction contingency and construction inspection costs.

(Ord. 199, 9/17/2002, §701; as amended by Ord. 219, 3/21/2006, Art. 3)

**§26-372. Maintenance Responsibilities.**

1. The stormwater management plan for the development site shall contain an operation and maintenance plan prepared by the design engineer. The operation and maintenance plan shall outline required routine maintenance actions and schedules necessary to insure proper operation of the facility(ies).
2. The stormwater management plan for the development site shall establish responsibilities for the continuing operation and maintenance of all proposed stormwater control facilities, consistent with the following principles:
  - A. If a development consists of structures or lots that are to be separately owned and in which streets, sewers and other public improvements are to be dedicated to the Township, stormwater control facilities may also be dedicated to and maintained by the Township, if accepted by the Township.
  - B. If a development site is to be maintained in a single ownership or if sewers and other public improvements are to be privately owned and maintained, then the ownership and maintenance of stormwater control facilities shall be the responsibility of the owner or private management entity.
3. The Board of Supervisors, upon recommendation of the Township Engineer, shall make the final determination on the continuing maintenance responsibilities prior to final approval of the stormwater management plan. The Board of Supervisors reserves the right to accept the ownership and operating responsibility for any or all of the stormwater management controls.

(Ord. 199, 9/17/2002, §7021; as amended by Ord. 219, 3/21/2006, Art. 3)

**§26-373. Maintenance Agreement for Privately Owned Stormwater Facilities.**

1. Prior to final approval of the site's stormwater management plan, the applicant shall sign and record a maintenance agreement approved by the Township Solicitor covering all stormwater control facilities that are to be privately owned. A sample agreement is contained in Appendix F of this Part.
2. Other items may be included in the agreement where determined necessary to guarantee the satisfactory maintenance of all facilities. The maintenance agreement shall be subject to review and approval of the Township.

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(Ord. 199, 9/17/2002, §703; as amended by Ord. 210, 4/11/2005, Art. XX; and by Ord. 219, 3/21/2006, Art. 3)

### **§26-374. Township Stormwater Maintenance Fund.**

1. Persons installing stormwater management facilities and best management practices shall be required to pay a specified amount to the Township Stormwater Maintenance Fund to help defray costs of periodic inspections and maintenance expenses. The amount of the deposit shall be determined as follows:
  - A. If the stormwater management facilities and best management practices is to be privately owned and maintained, the deposit shall cover the estimated cost of periodic inspections performed by the Township for a period of 10 years, as established by separate resolution of the Board of Supervisors.
  - B. If the stormwater management facilities and best management practices is to be owned and maintained by the Township, the deposit shall cover the estimated costs for maintenance and inspections for 10 years. The Township engineer will establish the estimated costs upon review of information submitted by the applicant.
  - C. The amount of the deposit to the fund shall be converted to present worth of the annual series values. The Township engineer shall determine the present worth equivalents, which shall be subject to the approval of the governing body.
2. If a storage facility is proposed that also serves as a recreation facility (e.g., ball field, pond), the Township may, but is not required to, reduce or waive the amount of the maintenance fund deposit based upon the value of the land for public recreation purpose.

(Ord. 199, 9/17/2002, §704; as amended by Ord. 210, 4/11/2005, Art. XXI; and by Ord. 219, 3/21/2006, Art. 3)

### **I. Enforcement and Penalties.**

#### **§26-381. Right-of-Entry.**

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

(Ord. 199, 9/17/2002, §801; as amended by Ord. 219, 3/21/2006, Art. 3)

**§26-382. Notification.**

In the event that a person fails to comply with the requirements of this Part, or fails to conform to the requirements of any permit issued hereunder, the Township shall provide written notification of the violation. Such notification shall set forth the nature of the violation(s) and establish a time limit for correction of these violations(s). Failure to comply within the time specified shall subject such person to the penalty provision of this Part. All such penalties shall be deemed cumulative. In addition, the Township may pursue any and all other remedies. It shall be the responsibility of the owner of the real property on which any regulated activity is proposed to occur, is occurring or has occurred, to comply with the terms and conditions of this Part. In the case where the violation poses an immediate threat to the health, safety, and welfare of the community, no notice under this Section shall be required.

(Ord. 199, 9/17/2002, §802; as amended by Ord. 210, 4/11/2005, Art. XXII; and by Ord. 219, 3/21/2006, Art. 3)

**§26-383. Enforcement.**

The Board of Supervisors is hereby authorized and directed to enforce all of the provisions of this Part. All inspections regarding compliance with the drainage plan shall be the responsibility of the Township Engineer or other qualified persons designated by the Township as directed by the Board of Supervisors.

- A. A set of design plans approved by the Township shall be on file at the site throughout the duration of the construction activity. Periodic inspections may be made by the Township or designee during construction.
- B. Adherence to Approved Plan. It shall be unlawful for any person, firm or corporation to undertake any regulated activity under §26-304 on any property except as provided for in the approved stormwater management plan and pursuant to the requirements of this Part. It shall be unlawful to alter or remove any control structure required by the stormwater management plan pursuant to this Part or to allow the property to remain in a condition which does not conform to the approved stormwater management plan.
- C. At the completion of the project, and as a prerequisite for the release of the performance guarantee, the owner or his representatives shall:
  - (1) Provide a certification of completion from a professional engineer verifying that all permanent facilities have been constructed according to the plans and specifications and approved revisions thereto.
  - (2) Provide one reproducible and two paper prints of as-built drawings.

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- D. After receipt of the certification by the Township, a final inspection shall be conducted by the Board of Supervisors or its designee to certify compliance with this Part.
- E. Prior to revocation or suspension of a permit, the Board of Supervisors will schedule a hearing to discuss the noncompliance if there is no immediate danger to life, public health or property.
- F. Suspension and Revocation of Permits.
  - (1) Any permit issued under this Part may be suspended or revoked by the Board of Supervisors for:
    - (a) Noncompliance with, or failure to, implement any provision of the permit.
    - (b) A violation of any provision of this Part or any other applicable law, ordinance, rule or regulation relating to the project.
    - (c) The creation of any condition or the commission of any act during construction or development which constitutes or creates a hazard or nuisance, pollution or which endangers the life or property of others, or as outlined in this Part.
  - (2) A suspended permit shall be reinstated by the Board of Supervisors when:
    - (a) The Township Engineer or his designee has inspected and approved the corrections to the stormwater management and erosion and sediment pollution control measure(s), or the elimination of the hazard or nuisance, and/or;
    - (b) The Board of Supervisors is satisfied that the violation of the ordinance, law, or rule and regulation has been corrected.
    - (c) A permit that has been revoked by the Board of Supervisors cannot be reinstated. The applicant may apply for a new permit under the procedures outlined in this Part.
- G. Occupancy Permit. An occupancy permit shall not be issued unless the certification of compliance pursuant to §26-383(D) has been secured. The occupancy permit shall be required for each lot owner and/or developer for all subdivisions and land developments in the Township.

(Ord. 199, 9/17/2002, §803)

**§26-384. Public Nuisance.**

1. The violation of any provision of this Part is hereby deemed a public nuisance.
2. Each day that a violation continues shall constitute a separate violation.
3. Whenever the Municipality finds that a person has violated a prohibition or failed to meet a requirement of this Part, the Municipality may order compliance by written notice to the responsible person. Such notice may require without limitation:
  - A. The performance of monitoring, analyses and reporting;
  - B. The elimination of prohibited discharges;
  - C. Cessation of any violating discharges, practices, or operations;
  - D. The abatement or remediation of stormwater pollution or contamination hazards and the restoration of any affected property;
  - E. Payment of a fine to cover administrative and remediation costs;
  - F. The implementation of stormwater BMPs; and
  - G. Operation and maintenance of stormwater BMPs.
4. Failure to comply within the time specified shall also subject such person to the penalty provisions of this Part. All such penalties shall be deemed cumulative and shall not prevent the Municipality from pursuing any and all other remedies available in law or equity.

(Ord. 199, 9/17/2002, §804; as amended by Ord. 219, 3/21/2006, Art. 3-8)

**§26-385. Penalties.**

Any person, partnership or corporation who or which has violated or permitted the violation of the provisions of this Part shall, upon being found liable therefor in a civil enforcement proceeding commenced by the Township, pay a judgment of not more than \$500 plus all court costs, including reasonable attorneys fees incurred by the Township as a result thereof. Each day that a violation continues shall constitute a separate violation.

(Ord. 199, 9/17/2002, §805; as amended by Ord. 219, 3/21/2006, Art. 3)

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### **§26-386. Appeals.**

1. Appeals from the determination of the Township or its designee, or from the determination of the Township Engineer in the administration of this Part as it relates to stormwater management of a project not involving a subdivision or land development shall be made to the Zoning Hearing Board within 30 days of that determination or decision.
2. Appeals from the determination of the Township or its designee, and appeals from the determination of the Township Engineer in the administration of this Part insofar as it relates to an application for subdivision or land development shall be made to the Board of Supervisors within 30 days of that determination or decision.
3. Any person aggrieved by any decision of the Zoning Hearing Board or the Board of Supervisors may appeal to the Bucks County Court of Common Pleas within 30 days of the decision of the Zoning Hearing Board or the Board of Supervisors.

(Ord. 199, 9/17/2002, §806; as amended by Ord. 219, 3/21/2006, Art. 3)

**PART 4**

**WATER USE RESTRICTION PLAN**

**§26-401. Purpose.**

This local water use restriction plan is intended to establish measures for essential conservation of water resources and to provide for equitable distribution of limited water supplies in order to balance demand and limited available supplies and to assure that sufficient water is available to preserve public health and safety within East Rockhill Township.

(Ord. 243, 11/18/2008)

**§26-402. Scope.**

This plan shall apply to all users of water in East Rockhill Township and to all residents of East Rockhill Township who own, maintain and/or use private wells as their source of water and to all residents of East Rockhill Township who are serviced by public water suppliers such as the Perkasio Borough Authority.

(Ord. 243, 11/18/2008)

**§26-403. Declaration of Drought Emergency.**

Once the Emergency Management Coordinator of East Rockhill Township, or other designated representative from the Township, advises the Board of Supervisors that a drought emergency or other water shortage exists, the Board of Supervisors may, at its next regularly scheduled meeting, declare an emergency and adopt a resolution which provides for the implementation of a drought emergency and the prohibition of nonessential water uses as set forth in this Part, and shall indicate the effective date of said prohibitions. When the Emergency Management Coordinator of East Rockhill Township, or other designated representative from the Township, determines that the drought emergency or other water shortage has ended, the Board of Supervisors may, by resolution adopted at its regularly scheduled meeting, terminate the water use restrictions and prohibitions on the date set forth in said resolution.

(Ord. 243, 11/18/2008)

**§26-404. Water Use Restrictions; Prohibited Nonessential Water Uses.**

1. The following nonessential uses of water shall be banned by resolution of the Board of Supervisors of East Rockhill Township in the event of a drought emergency in accordance with the provisions listed below:

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- A. The use of water for watering lawns, except:
- (1) Water may be applied to grass areas as part of a sewage or stormwater treatment system utilizing spray irrigation.
  - (2) Water may be applied at the minimum rate necessary to maintain grass tennis courts to the extent that sources of water other than fresh water adequate to supply needs are not available or feasible to use.
  - (3) Water may be used at the minimum rate necessary to establish and maintain newly seeded and sodded grass areas when applied between the hours of 5:00 p.m. and 9:00 a.m. by means of a bucket, can or hand-held hose equipped with an automatic shut-off nozzle.
  - (4) Water may be used at the minimum rate necessary to establish and maintain newly seeded or sodded nonresidential grass areas exceeding 10,000 square feet when applied between the hours of 5:00 p.m. and 9:00 a.m. by any means designed and operated to assure effective conservation of the water.
- B. The use of fresh water for irrigation and watering of outdoor gardens, landscaped areas, trees, shrubs and other outdoor plants by means of other than a bucket, pail or hand-held hose equipped with an automatic shut-off nozzle, when applied between the hours of 5:00 p.m. and 9:00 a.m., except:
- (1) Fresh water may be used for agricultural irrigation for the production of food and fiber, the maintenance of livestock and poultry, or the production of nursery stock.
  - (2) Fresh water may be applied by means of a hand-held container or hand-held hose equipped with an automatic shut-off nozzle at the minimum rate necessary to establish and maintain newly planted gardens, trees, shrubs or other outdoor plants. Sources of water other than fresh water should be used where available.
  - (3) Fresh water may be used by commercial nurseries at the minimum rate necessary to maintain stock only to the extent that sources of water other than fresh water adequate to supply needs are not available or feasible to use.
  - (4) Fresh water may be used by arboretums and public gardens of national, state or regional significance at the minimum rate necessary to preserve specimens to the extent that sources of water other than fresh water adequate to supply needs are not available or feasible to use.

- (5) Fresh water may be used at the minimum rate necessary to implement revegetation following earthmoving, where such revegetation is required pursuant to an approved erosion and sedimentation control plan adopted pursuant to state law or regulation, to the extent that sources of water other than fresh water adequate to supply needs are not available or feasible to use. Revegetation use shall comply with all applicable best conservation management practices of such revegetation as prescribed by the Pennsylvania Department of Environmental Protection and the Bucks County Conservation District.
- C. The use of fresh water for watering any portion of golf courses, except for tees and greens, for which water may be applied between the hours of 5:00 p.m. and 9:00 a.m.
  - D. The use of any water for washing paved surfaces such as streets, roads, sidewalks, driveways, garages, parking areas, tennis courts and patios, except:
    - (1) Water may be used for prewashing in preparation of asphalt street or driveway recoating and sealing.
    - (2) Water may be used at the minimum rate necessary for the maintenance of tennis courts composed of clay or similar materials by means of a hand-held hose equipped with an automatic shut-off nozzle.
    - (3) Water may be used at the minimum rate necessary for sanitation of the premises of eating and drinking places.
  - E. The use of any water for ornamental purposes, including fountains, artificial waterfalls, and reflecting pools.
  - F. The use of any water for washing or cleaning of mobile equipment, including automobiles, trucks, trailers and boats, except:
    - (1) Water may be used by commercial car washers equipped with facilities that recycle water or with timed water-dispensing equipment which restricts flow to three gallons per minute.
    - (2) Water may be used for cleaning of construction, public transportation or government vehicles where necessary to preserve the proper functioning of the vehicle.
  - G. The serving of water in restaurants, clubs or eating places unless specifically requested by the individual.
  - H. The use of water to fill and top off swimming pools, except water may be used for the following:

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- (1) To fill and top off public swimming pools and residential pools serving 25 or more dwelling units, if the pools have filtration equipment allowing for continued use and recycling of water over the swimming season.
  - (2) To fill and top off swimming pools operated by health-care facilities used in connection with patient care and rehabilitation.
  - (3) To fill and top off other pools in accordance with the following requirements:
    - (a) The pool may be filled or topped off only if approved by the public water supply system from which the water is withdrawn. If water is obtained from other sources, permission from the owner of the source is required.
    - (b) Pools shall have filtration equipment allowing for continued use and recycling of the water over the swimming season.
2. Exemption from the ban on nonessential uses may be granted by the Pennsylvania Emergency Management Council in accordance with established procedures within the Commonwealth of Pennsylvania.
  3. In addition to prohibited uses, all water consumers will be encouraged to save water on a voluntary basis.

(Ord. 243, 11/18/2008)

### **§26-405. Public Water; Drought Plans.**

East Rockhill Township residents that receive their water from a public water supplier, such as the Perkasio Borough Authority, shall comply with their supplier's applicable drought plan, in addition to the requirements and restrictions set forth in this Part, if a drought emergency is declared by the East Rockhill Township Board of Supervisors. In the event that there is a conflict between this Part and a public water supplier's drought plan, the more-restrictive provision shall govern.

(Ord. 243, 11/18/2008)

### **§26-406. Violations and Penalties.**

Any person, firm or corporation violating any of the provisions of this Part shall, upon conviction thereof, be subject to a penalty not exceeding \$300, together with costs of prosecution and/or imprisonment for a term not exceeding 30 days.

(Ord. 243, 11/18/2008)