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PART 1  
CONNECTIONS

**§ 26-101. Definitions. [Ord. 112, 7/19/1988, § 1]**

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.

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

**§ 26-102. Water Supply Connections. [Ord. 112, 7/19/1988, § 2]**

1. 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.

**§ 26-103. Water Conservation Requirements. [Ord. 112, 7/19/1988, § 3]**

1. 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 four 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.

**§ 26-104. Well Certification. [Ord. 112, 7/19/1988, § 4]**

- 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 oversize 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.
  - 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. Thirty minutes after commencement of the pump test.
    - B. Two hours after commencement.
    - C. Ten minutes prior to the end of the test.

**§ 26-105. Well Construction. [Ord. 112, 7/19/1988, § 5]**

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.

**§ 26-106. Withdrawals in Excess of 10,000 Gallons. [Ord. 112, 7/19/1988, § 6]**

All private wells with a thirty-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.

**§ 26-107. Permit Required. [Ord. 112, 7/19/1988, § 7]**

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.

**§ 26-108. Penalties. [Ord. 112, 7/19/1988; as added by Ord. 192, 4/18/2000]**

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.

**§ 26-109. Liability. [Ord. 112, 7/19/1988; as added by Ord. 192, 4/18/2000]**

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.



## PART 2

**PUBLIC WATER SERVICE****§ 26-201. Definitions. [Ord. 245, 2/17/2009]**

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.

**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").

**§ 26-202. Use of Public Water System. [Ord. 245, 2/17/2009]**

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.

**§ 26-203. Building Mains and Extensions. [Ord. 245, 2/17/2009]**

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 curblines 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.

**§ 26-204. Water District. [Ord. 245, 2/17/2009]**

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.

**§ 26-205. Water District Regulations and Connections. [Ord. 245, 2/17/2009]**

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

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

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.

**§ 26-206. Health, Safety and Welfare Concerns. [Ord. 245, 2/17/2009]**

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.

**§ 26-207. Penalties. [Ord. 245, 2/17/2009]**

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.



## PART 3

**STORMWATER MANAGEMENT****A. General Provisions.****§ 26-301. Statement of Findings. [Ord. 273, 12/17/2013]**

1. The governing body of the municipality 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 municipality and all the people of the commonwealth, their resources, and the environment.
  - C. Stormwater is an important resource. Through project design, impacts from stormwater runoff can be minimized to maintain the natural hydrologic regime and sustain high water quality, groundwater recharge, stream base flow, 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.
  - D. Federal and state regulations require the municipality to obtain a permit for discharges from its municipal separate storm sewer system (MS4) and to implement a program of stormwater controls.
  - E. Stormwater is an important resource. **[Added by Ord. 276, 10/21/2014]**

**§ 26-302. Purpose. [Ord. 273, 12/17/2013]**

1. The purpose of this comprehensive stormwater management Part 3 is to promote health, safety, and welfare within East Rockhill Township by

minimizing the damages described in § 26-301A of this Part 3 through provisions designed to:

- A. Promote alternative project designs and layouts that minimize impacts to surface water and groundwater.
- B. Promote nonstructural best management practices.
- 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 non-point-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 municipality and the commonwealth, including prevention of accelerated erosion, scour, aggradation and degradation.
- 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 municipality.
- N. Provide performance standards and design criteria for watershed-wide stormwater management and planning.
- O. Meet NPDES MS4 permit requirements.
- P. Meet state water quality requirements.
- Q. Reduce accelerated erosion, scour, aggradation, and degradation.  
**[Added by Ord. 276, 10/21/2014]**

**§ 26-303. Statutory Authority. [Ord. 273, 12/17/2013]**

The municipality is empowered to regulate land use activities that affect runoff by the authority of the Act of October 4, 1978, P.L. 864 (Act 167), 32 P.S. § 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 et seq.

**§ 26-304. Applicability; Regulated Activities. [Ord. 273, 12/17/2013]**

1. This Part 3 shall apply to all areas of the municipality that are located within Tohickon Creek or East Branch Perkiomen Creek Watershed as delineated in Appendix E, which is hereby adopted as part of this Part 3.<sup>2</sup>
2. This Part 3 shall apply to temporary and permanent stormwater management facilities constructed as part of any of the regulated activities listed in this section, and all activities related to proper operation and maintenance of all stormwater management facilities and BMPs, and all activities that may contribute nonstormwater discharges to the municipality's regulated small MS4. 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. **[Amended by Ord. 276, 10/21/2014]**
3. This Part 3 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 3, except as exempted by § 26-305 of this Part 3:
  - A. Land development.
  - B. Subdivision.
  - C. Construction of new, or reconstruction of, or addition of new impervious or semi-impervious surfaces (e.g., driveways, parking lots, roads, etc.), except for reconstruction of roads where there is no increase in impervious surface, and/or construction of new buildings or additions to existing buildings.
  - D. Redevelopment.
  - E. Diversion piping or encroachments in any natural or man-made stream channel.

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<sup>2</sup>Editor's Note: Appendix E is included as an attachment to this chapter.

- F. Installation of stormwater management facilities, nonstructural and structural stormwater management best management practices (BMPs) 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%.

**§ 26-305. Exemptions. [Ord. 273, 12/17/2013]**

1. Exemptions from any provision permitted by this section shall not relieve the applicant from all other requirements of this Part 3.
  - A. General Exemptions. The following land use activities are exempt from stormwater management peak rate and plan requirements of this Part 3. On all sites where a cumulative area of less than 1,000 square feet of impervious surface since the adoption date of this Part 3 is proposed, the applicant is exempt from stormwater management plan submission requirements of § 26-312 of this Part 3 and Stormwater Management Capital Fund contribution.
    - (1) Use of land for gardening for home consumption.
    - (2) Agricultural activity when operated in accordance with a conservation plan, nutrient management plan, or erosion and sedimentation control plan approved by the Bucks County Conservation District, including activities such as growing crops, rotating crops, the tilling of soil, and grazing animals. Installation of new, or expansion of existing, farmsteads, animal housing, waste storage, production areas, or other areas having impervious surfaces shall be subject to the provisions of this Part 3 unless exempt pursuant to § 26-305, Subsection 1C.
    - (3) Forest management operations following the Department of Environmental Protection's management practices contained in its publication "Soil Erosion and Sedimentation Control Guidelines for Forestry" and operating under an E&S plan approved by the Bucks County Conservation District and which have zoning permit approval from East Rockhill Township.
    - (4) Public road replacement, replacement paving, repaving and/or maintenance.
    - (5) Any aspect of BMP maintenance to an existing SWM facility made in accordance with plans and specifications approved by the Township.

- (6) Lot line adjustment subdivisions when there is no proposed increase in the amount of impervious surface.

B. All regulated activities as described in § 26-304 of this Part 3 shall comply with the stormwater management requirements hereof except those activities listed in the "Stormwater Management Peak Rate Exemption Criteria" table. Those activities listed in "Stormwater Management Peak Rate Exemption Criteria" table are, to the extent stated herein, exempt from peak rate control provisions of § 26-313; however, if located within a high quality or exceptional value watershed (as may be designated by PADEP), are subject to compliance with water quality requirements of § 26-316 and groundwater recharge requirements of § 26-317. Groundwater recharge and water quality requirements may be addressed with nonstructural stormwater management BMPs as detailed in Appendix H.<sup>3</sup> These requirements shall apply to the total development even if development is to take place in phases. The starting point from which to consider tracts as "parent tracts" is September 17, 2002 (the date of adoption of Ordinance No. 199). All impervious surface area constructed on or after the date of adoption of this Part 3 shall be considered cumulatively. Impervious surface existing on the "parent tract" prior to the date of adoption of this Part 3 shall not be considered in cumulative impervious area calculations for exemption purposes. An exemption shall not relieve the applicant from implementing such stormwater control measures and erosion control measures as are necessary to protect health, safety, and property.

**Table 26-305.1 and Table 26-305.2, Stormwater Management Peak Rate Exemption Criteria**

- (1) Regulated activities included within § 26-304 are exempt from peak rate control requirements of § 26-313 where the amount of impervious surface and proposed location on a parcel conforms to the following tables:

**Table 26-305.1**

<b>Total Parcel Area (acres)</b>	<b>Maximum Impervious Surface Area (square feet)</b>
<0.5	1,200
0.5 to 1.0	2,500
>1.0 to 2.0	4,000
>2.0 to 5.0	5,000
>5.0	7,500

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<sup>3</sup>Editor's Note: Appendix H is included as an attachment to this chapter.

**Table 26-305.2**

The maximum amount of the impervious surface area permitted pursuant to Table 26-305.1 within a setback (excluding driveway access) measured from the downslope property boundary shall conform to the following table:

<b>Setback* (feet)</b>	<b>Maximum Impervious Surface Area Permitted Within the Setback (square feet)</b>
10	None permitted
20	1,000
50	2,500
100	4,000
200	5,000
500	7,500

**NOTES:**

\* The minimum setback distance is measured between the proposed impervious area (excluding driveway access) and/or the stormwater control/structure discharge point to the downslope property boundary. The maximum allowable impervious surface area is the amount of impervious surface area permitted within the setback distance. For example, a total of 4,000 square feet of impervious surface is permitted within the setback of 100 feet, of which none is permitted within the setback of 10 feet, not more than 1,000 square feet is permitted within the setback of 20 feet, and not more than 2,500 square feet is permitted within the setback of 50 feet.

In lieu of meeting the minimum distance criteria, the applicant may provide documentation from a design professional that the increased flows from the site leave the site in the same manner as the predevelopment condition and that there will be no adverse affects to properties along the path of flow(s). The Township may require the above-referenced documentation on any site, including a site meeting the minimum distance or parcel size criteria when deemed necessary at the sole discretion of the Township.

- (2) Construction or reconstruction of buildings or additions to existing buildings or other impervious surface (activities regulated pursuant to § 26-304) are exempt where the following conditions are met:
  - (a) An area of impervious surface is removed from the site equal to, or in excess of, the proposed impervious surface area.
  - (b) The area where existing impervious surface is removed pursuant to Subsection 1B(2)(a) above must be restored

with a minimum of 12 inches of topsoil and stabilized pervious ground cover.

- C. Simplified Procedure for Single Residential Lots (which do not meet peak rate exception criteria of § 26-305, Subsection 1B). Construction projects on existing single residential dwelling lots which result in less than 2,500 square feet cumulative (from the date of this Part 3) of new impervious area (including the building footprint, driveway, sidewalks, swimming pools, patios, and parking areas) and less than 5,000 square feet of earth disturbance that do not meet exemption criteria of § 26-305, Subsection 1B, may utilize the simplified procedure within Appendix G to meet requirements of Part 3 and are not required to submit formal stormwater management plans to the Township; however, a plot plan and design worksheets consistent with Appendix G must be submitted for Township review.<sup>4</sup> This procedure may not be utilized for a proposed subdivision or land development.
- D. Additional Exemption Criteria.
- (1) Exemption responsibilities. An exemption shall not relieve the applicant from implementing such measures as are necessary to protect the public health, safety, and property.
  - (2) Drainage problems. Where drainage problems are documented or known to exist downstream of, or are expected from, the proposed activity, the Township may deny an exemption.
  - (3) HQ/EV Streams. An exemption shall not relieve the applicant from meeting the special requirements for watersheds draining to high quality (HQ) or exceptional value (EV) waters (if designated by PADEP) contained in § 26-312, Subsection 13, of this Part 3.
- E. The municipality, upon request by the applicant, may grant an exemption from the provisions of this Part 3 for a project qualifying under § 26-305, Subsection 1B. If an exemption is granted, the municipality 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. **{Amended by Ord. 276, 10/21/2014}**
- F. All applicants seeking an exemption of stormwater management peak rate requirements based upon criteria contained in § 26-305, Subsection 1B, shall, at a minimum, submit the following documentation for review:
- (1) Three copies of the completed Township stormwater management application form.

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<sup>4</sup>Editor's Note: Appendix G is included as an attachment to this chapter.

- (2) Stormwater management review fee and escrow, as established by separate resolution of the Board of Supervisors.
- (3) Three copies of a plot plan for the parcel, which is the subject of the exemption application, containing, at a minimum, the following information:
  - (a) Property boundaries and area of the site, based on deed information, or field survey.
  - (b) Location map identifying the site relative to streets and other parcels in the vicinity of the site.
  - (c) Location of significant natural and existing man-made features, including wetlands, watercourses, woodlands, steep slopes, structures, parking areas, driveways, utilities, wells, and septic systems within 200 feet of proposed impervious surface, regardless of the location of the property boundary.
  - (d) Location and dimensions of existing and proposed impervious surface and other improvements, with setbacks drawn to relate the location of same to property lines, streets, and existing features.
  - (e) North arrow.
  - (f) Plan scale, as applicable.
  - (g) Information regarding existing/proposed topography and drainage patterns, within 200 feet of proposed impervious surface based on field survey, USGS mapping, and/or field observation.
  - (h) Other information deemed necessary by the Township Engineer to determine compliance with exemption criteria contained in § 26-305, Subsection 1B.

**§ 26-306. through § 26-307. (Reserved) [Ord. 273, 12/17/2013]**

**§ 26-308. Compatibility With Other Requirements. [Ord. 273, 12/17/2013]**

Approvals issued pursuant to this Part 3 do not relieve the applicant of the responsibility to secure required permits or approvals for activities regulated by any other applicable code, rule, act, or ordinance.

**§ 26-309. Adherence to Approved Plan. [Ord. 273, 12/17/2013]**

1. It shall be unlawful for any person to undertake any regulated activity on any property except as provided for in the approved stormwater management plan and pursuant to the requirements of this Part 3. It shall be unlawful to alter or remove any BMP required by the stormwater management plan pursuant to this Part 3 or to allow the property to remain in a condition which does not conform to the approved stormwater management plan.
2. Any permit or authorization issued or approved based on false, misleading or erroneous information provided by an applicant is void without the necessity of any proceedings for revocation. Any work undertaken or use established pursuant to such permit or other authorization is unlawful. No action may be taken by a board, agency or employee of the municipality purporting to validate such a violation. **[Added by Ord. 276, 10/21/2014]**

**§ 26-310. Modifications. [Ord. 273, 12/17/2013]**

The Board of Supervisors may grant a modification of the requirements of one or more provisions of this Part 3 if the literal enforcement will exact undue hardship because of peculiar conditions pertaining to the land in question, provided that such modification will not be contrary to the public interest and that the purpose and intent of Part 3 is observed.

**B. Terminology.****§ 26-311. Interpretation; Definitions. [Ord. 273, 12/17/2013]**

1. For the purposes of this Part 3, 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."

2. As used in this Part 3, the following terms shall have the meanings indicated:

**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 ACTIVITY** — Activities associated with agriculture, such as agricultural cultivation, agricultural operation, and animal heavy use areas. This includes the work of producing crops, including tillage, land clearing, plowing, disking, harrowing, planting, harvesting crops or the pasturing and raising of livestock 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, United States 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
- 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 3.

**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)** — Activities, facilities, measures or procedures used to manage stormwater impacts from land development, to protect and maintain water quality and groundwater recharge and to otherwise meet the purposes of this Part 3. Stormwater BMPs are commonly grouped into one or two broad categories or measures: "structural" or "nonstructural." In this Part 3, nonstructural BMPs or measures refer to operation and/or behavior-related practices that attempt to minimize the contact of pollutants with stormwater runoff, whereas structural BMPs or measures are those that consist of a physical device or practice that is installed to capture and treat stormwater runoff. Structural BMPs include, but are not limited to, a wide variety of practices and devices, from largescale retention ponds and constructed wetlands to small-scale underground treatment systems, infiltration facilities, filter strips, low-impact design, bioretention, wet ponds, permeable paving, grassed swales, riparian or forested buffers, sand filters, detention basins, and manufactured devices. Structural stormwater BMPs are permanent appurtenances to the project site.

**BMP MANUAL** — Pennsylvania Best Management Practices Manual, December 2006, as amended.

**CHANNEL** — An open drainage feature through which stormwater flows. Channels include, but shall not be limited to, natural and man-made watercourses, swales, streams, ditches, canals, and pipes that convey continuously or periodically flowing water.

**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.

**CURVE NUMBER (CN) VALUE USED IN THE SOIL COVER COMPLEX METHOD** — A measure of the percentage of precipitation which is expected to run off from the watershed and is a function of the soil, vegetative cover, and tillage method.

**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., fifty-year storm) and duration (e.g., 24 hours), used in the design and evaluation of stormwater management systems. Also see "return period."

**DESIGNEE** — The agent of the governing body involved with the administration, review, or enforcement of any provisions of this Part 3 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 3.

**DEVELOPMENT** — Any man-made 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 3 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.

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

**DISCHARGE** —

- (1) (Verb) To release water from a project, site, aquifer, drainage basin or other point of interest.
- (2) (Noun) The rate and volume of flow of water, such as in a stream, generally expressed in cubic feet per second (CFS).

**DISCONNECTED IMPERVIOUS AREA (DIA)** — An impervious surface that is disconnected from any stormwater drainage or conveyance system and is redirected or directed to a pervious area, which allows for infiltration, filtration, and increased time of concentration.

**DISTURBED AREAS** — Unstabilized land area where an 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 3 shall use the following criteria for determining adequacy for accepting increased peak flow rates:

- (1) Natural or man-made channels or swales must be able to convey the increased rate of runoff associated with a two-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 man-made channels or swales must be able to convey the increased twenty-five-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 twenty-five-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.

**DRAINAGE PERMIT** — A permit issued by the Township governing body after the drainage plan has been approved. Said permit is issued prior to or with the final Borough approval.

**DRAINAGE PLAN** — The documentation of the stormwater management system, if any, to be used for a given development site, the contents of which are established in § 26-326.<sup>5</sup>

**EARTH DISTURBANCE ACTIVITY** — 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, building construction, 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.

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<sup>5</sup>Editor's Note: For stormwater management plan contents, see § 26-325.

**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 man-made 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 one-hundred-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 one-hundred-year reoccurrence internal flood.

**FLOODWAY** — The channel of the watercourse and those portions of the adjoining floodplains that are reasonably required to carry and discharge the one-hundred-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 one-hundred-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 forestland. 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.

**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** —

- (1) (Noun) A slope usually of a street, other public way, land area, drainage facility or pipe specified in percent.

- (2) (Verb) To finish the surface of a roadbed, top of embankment or bottom of excavation, and general grading of property.

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 United States 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).

HOT SPOT — An area where land use or activity generates highly contaminated runoff, with concentrations of pollutants in excess of those typically found in stormwater. Typical pollutant loadings in stormwater may be found in Chapter 8, Section 6, of the Pennsylvania Stormwater Best Management Practices Manual, Pennsylvania Department of Environmental Protection (PADEP), No. 363-0300-002 (2006). More information concerning hot spots may be found in Appendix J of this Part 3.<sup>6</sup>

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

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

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<sup>6</sup>Editor's Note: Appendix J is included as an attachment to this chapter.

**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 (AREA)** — Those surfaces that prevent infiltration of water into the ground. 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 in 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** — Movement of surface water into the soil, where it is absorbed by plant roots, evaporated into the atmosphere or percolated downward to recharge groundwater.

**INFILTRATION STRUCTURES** — A 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.

**INVERT** — The inside bottom of a culvert or other conduit.

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

**LAND DEVELOPMENT** — 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.

**LAND/EARTH DISTURBANCE** — Any activity involving the 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 is effectively limits downward passage of effluent.

**LOW-IMPACT DEVELOPMENT (LID) PRACTICES** — Practices that will minimize proposed conditions' runoff rates and volumes, which will minimize the need for artificial conveyance and storage facilities.

**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 the 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.

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

**NRCS** — Natural Resources 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 man-made drainageways, swales, streams, ditches, canals, and pipes flowing partly full.

**OUTFALL** — "Point source" as described in 40 CFR 122.2 at the point where the municipality's storm sewer system discharges to surface waters of the commonwealth.

**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 September 17, 2002 (Ordinance No. 199) and/or the existing impervious surface area of a tract of land as of the above date.

**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 Oceanic 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.

**PROJECT SITE** — The specific area of land where any regulated activities in the municipality are planned, conducted, or maintained.

**QUALIFIED PERSON OR QUALIFIED PROFESSIONAL** — Any person licensed by the Pennsylvania Department of State or otherwise qualified by law to perform the work required by this Part 3.

**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.

**REDEVELOPMENT** — Development or modification of real estate which was subject to a previously approved subdivision or land development plan.

**REGULATED ACTIVITY** — Any activity that may affect stormwater runoff and any activities that may contribute nonstormwater discharges to a regulated small MS4. **[Amended by Ord. 276, 10/21/2014]**

**REGULATED EARTH DISTURBANCE ACTIVITY** — Activity involving earth disturbance subject to regulation under 25 Pa. Code Chapter 92,<sup>7</sup> 25 Pa. Code Chapter 102 or the Clean Streams Law.

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

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

**RETENTION VOLUME/REMOVED RUNOFF** — The volume of runoff that is captured and not released directly into the surface waters of the commonwealth during or after a storm event.

**RETURN PERIOD** — The average interval, in years, within which a storm event of a given magnitude can be expected to recur. For example, the twenty-five-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.

**ROAD MAINTENANCE** — Earth disturbance activities within the existing road cross section, such as grading and repairing existing unpaved road surfaces, cutting road banks, cleaning or clearing drainage ditches and other similar activities.

**ROOF DRAINS** — A drainage conduit or pipe that collects water runoff from a roof and leads it away from a structure.

**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

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<sup>7</sup>Editor's Note: Chapter 92 of the Pa. Code was reserved 10-8-2010. See now 25 Pa. Code Chapter 92a.

the failure to design, construct, implement or maintain control measures and control facilities in accordance with the requirements of this Part 3.

**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.

**STATE WATER QUALITY REQUIREMENTS** — The regulatory requirements to protect, maintain, reclaim, and restore water quality under Title 25 of the Pennsylvania Code and the Clean Streams Law.

**STORAGE INDICATION METHOD** — A reservoir routing procedure 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** — Drainage runoff from the surface of the land resulting from precipitation or snow or ice melt.

**STORMWATER MANAGEMENT FACILITY** — Any structure, natural or man-made, that, due to its condition, design, or construction, conveys, stores, or otherwise affects stormwater runoff. 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 governing body after the drainage plan has been approved. Said permit is issued prior to or with the final Township approval.

**STORMWATER MANAGEMENT PLAN** — The plans for managing stormwater runoff within the Township adopted as required by the Act of October 4, 1978, P.L. 864 (Act 167), as amended, and known as the "Storm Water Management Act," including Perkiomen Creek watershed and Tohickon Creek watershed plans as adopted by Bucks County.

**STORMWATER MANAGEMENT SITE PLAN (SWM SITE PLAN)** — The plan prepared by the developer or his engineer indicating how stormwater runoff will be managed at the development site according to this Part 3.

**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.

**SWM** — Refer to "stormwater management facility."

**TIMBER OPERATIONS** — Refer to "forest management/timber operations."

**TIME OF CONCENTRATION (TC)** — 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.

**TOP OF BANK** — Highest point of elevation in a stream channel cross section at which a rising water level just begins to flow out of the channel and over the floodplain.

**TOWNSHIP** — Refer to "municipality."

**TRIBUTARY AREA** — The portion of a watershed that contributes runoff to a particular point in that watershed.

**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 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, impoundments, ditches, watercourses, storm sewers, lakes, dammed water, wetlands, ponds, springs, and all other bodies or channels of conveyance of surface and underground water, or parts thereof, whether natural or artificial, within or on the boundaries of this commonwealth.

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

**WETLAND** — Those areas that are inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions, including swamps, marshes, bogs, 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 the 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 the National Society of Consulting

Soil Scientists (NSCSS) or as certified by state and/or federal certification programs; or by a qualified biologist/ecologist.

### **C. Stormwater Management.**

#### **§ 26-312. General Requirements. [Ord. 273, 12/17/2013]**

1. All regulated activities in the municipality which do not fall under the exemption criteria shown in § 26-305 of this Part 3 shall submit a stormwater management plan consistent with this Part 3, Title 25 of the Pennsylvania Code, and the Clean Streams Law to the municipality for review and approval. These criteria shall apply to the total proposed development even if development is to take place in stages. Impervious surface 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 designed 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 3.
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 one-hundred-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 PADEP through the joint permit application process or, where deemed appropriate by PADEP, through the general permit process.
8. Any stormwater management facilities regulated by this Part 3 that will be located in or adjacent to waters of the commonwealth or wetlands shall be subject to approval by PADEP through the joint permit application process or, where deemed appropriate by PADEP, 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 PADEP.
9. Any stormwater management facilities regulated by this Part 3 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 (PennDOT).
10. Low-impact development methods should be used to minimize site disturbance and impervious surface. Infiltration of stormwater runoff through seepage beds, infiltration trenches, etc., is 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 10:1. 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 water or groundwater as required by § 26-316 of this Part 3.
15. The applicant shall provide adequate documentation to permit review of any alternate stormwater BMPs not addressed by this Part 3. The municipality may obtain PADEP assistance to evaluate and approve alternative control measures.

**§ 26-313. Stormwater Management Districts. [Ord. 273, 12/17/2013]**

1. Mapping of Stormwater Runoff Peak Rate Districts. In order to implement the provisions of this Part 3, 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 municipal building. A large-scale boundary map is included as Appendix E for reference.<sup>8</sup>
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 two-foot or five-foot topographic contours provided as part of the stormwater management plan developed for the site in accordance with the Subdivision and Land Development Ordinance.<sup>9</sup> 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 Municipal Engineer.
3. Description of Tohickon Creek Watershed Stormwater Runoff Hydrologic Peak Rate Districts within East Rockhill Township.
  - A. Direct Discharge (Conditional No Detention) District (subareas included in this district are 2, 3, 8-10, 18, 20, 42, 43, 52, 54, 56, 57, 59, 61, 62, 67, 70-73, 76, 77, 81-83). These subareas may discharge post-development 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

<sup>8</sup>Editor's Note: Appendix E is included as an attachment to this chapter.

<sup>9</sup>Editor's Note: See Ch. 22, Subdivision and Land Development.

watershed level control. In certain instances, the conveyance capabilities of the local receiving facilities and adjoining properties may not be adequate to safely transport the increased peak flows from undetained runoff. In these cases, the developer shall assure that one-hundred-percent release rate control is applied, and/or the developer may provide increased capacity of those receiving facilities in order to ensure safe passage of any undetained runoff, if approved by the Township.

- B. One Hundred Percent Release Rate District (subareas included in this district are 4-7, 11-17, 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 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. 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, design storm proposed conditions shall be controlled to design storm existing conditions as follows:

A. Management District A.

<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

B. Management District B.

<b>Design Storm Proposed Conditions</b>	<b>to</b>	<b>Design Storm Existing Conditions</b>
2-year		1-year
5-year		2-year
10-year		5-year
25-year		10-year
100-year		50-year

**§ 26-314. Stormwater Management District Implementation Provisions (Performance Standards). [Ord. 273, 12/17/2013]**

1. General.
  - A. 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 Appendix E) and § 26-313 of Part 3.
  - B. Post-development rates of runoff from any regulated activity shall not exceed the peak release rates of runoff prior to development for the design storms specified in watershed stormwater management plan, § 26-313 of Part 3, and using rainfall depths given in Figure A-1, Appendix A, of this Part 3.<sup>10</sup>
2. District Boundaries. The boundaries of the stormwater management districts are shown on a Watershed Map, which is available for inspection at the municipal office. A copy of the Watershed Map at a reduced scale is included in the Appendix E of this Part 3. 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 two-foot intervals (or five-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. Off-Site Areas. Off-site areas that drain through a proposed development site are not subject to release rate criteria when determining allowable peak

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<sup>10</sup>Editor's Note: Appendix A is included as an attachment to this chapter.

runoff rates or volume reduction. However, on-site drainage facilities shall be designed to safely convey off-site 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 municipality, the municipality may, but is not required to, permit only the proposed impact area to be subject to the release rate criteria.
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 municipality, 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 § 26-319, Subsection 20, of this Part 3 and shall be in addition to any other municipal 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 3 shall use the following criteria for determining adequacy for accepting increased peak flow rates:
  - A. Natural or man-made channels or swales must be able to convey the increased runoff associated with a two-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 man-made channels or swales must be able to convey the increased one-hundred-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 one-hundred-year return period runoff.

**§ 26-315. Nonstructural Project Design. [Ord. 273, 12/17/2013]**

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.
  - B. Prepare a draft project layout avoiding sensitive areas identified in Subsection 2A 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 (refer to Appendix H).<sup>11</sup>

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<sup>11</sup>Editor's Note: Appendix H is included as an attachment to this chapter.

- (1) Minimize earth disturbance.
  - (2) Minimize impervious surfaces.
  - (3) Break up large impervious surfaces.
- E. Satisfy water quality objective (§ 26-316).
- F. Satisfy groundwater recharge (infiltration) objective (§ 26-317) and provide for stormwater treatment prior to infiltration.
- G. Satisfy stream bank erosion protection objective (§ 26-318).
- 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 (§ 26-318).
- K. Manage any remaining runoff through treatment prior to discharge, as part of detention, bioretention, direct discharge or other structural control.

**§ 26-316. Water Quality. [Ord. 273, 12/17/2013]**

1. The project plan shall specify permanent stormwater BMPs to be implemented, operated, and maintained to meet water quality requirements. Because water quality requirements vary depending on the "uses" of the water bodies in the watershed, a framework methodology is provided here.
2. In order to protect and maintain water quality, additional stormwater runoff created by the development project must be captured, stored, and treated. In addition, post-construction stormwater infiltration of runoff must replicate preconstruction infiltration of runoff to the maximum extent possible; in high-quality and exceptional value watershed, special requirements may apply.
3. The volume of additional stormwater runoff to be captured, stored, and treated is called the water quality volume (WQ<sub>v</sub>).

**Equation: 26-316.1**

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

Where:

- WQ<sub>v</sub> = Water quality volume (acre-feet).
- P = Rainfall amount equal to 90% of events producing this rainfall (inches).
- A = Area of the project contributing to the water quality BMP (acres).
- R<sub>v</sub> =  $0.05 + 0.009(1)$  where 1 is the percent of the area that is impervious surface (impervious area/A \* 100)

P = Rainfall depth in inches, using the "ninety-percent storm": the volume of rainfall for 90% of the storm events which produce runoff in the watershed annually. For PennDOT Region 5, the current P value is 2.04 inches.

In special protection watersheds, as described in 25 Pa. Code Chapter 93, this volume is required to remain on site through infiltration and other methods, to protect water quality. Guidance can be obtained from PADEP.

4. 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. Stream bank 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.
  - N. Creation/protection of aquatic and wildlife habitat.

- O. Recreational value.
- P. Enhancement of aesthetic and property value.

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).

- 5. The applicant may, subject to approval of East Rockhill Township, use any of the following nonstructural stormwater credits, generally described in the following table, in computing the required water quality volume:

<b>Stormwater Credit</b>	<b>Description</b>
Natural area conservation	Conservation of natural areas such as forest, wetlands, or other sensitive areas in a protected easement thereby retaining their predevelopment hydrologic and water quality characteristics. Using this credit, a designer may subtract conservation areas from total site area when computing the required water quality volume.
Vegetated roof	Credit may be given for water quality and volume benefits for vegetated roof covers where vegetation is grown on, and completely covers, an otherwise flat or pitched roof (less than or equal to 30° slope).
Disconnection of roof-top runoff	Credit may be given when rooftop runoff is disconnected and then directed over a pervious area where it may either infiltrate into the soil or filter over it. Credit is typically obtained by grading the site to promote overland flow or by providing bioretention on single-family residential lots. If a rooftop area is adequately disconnected, the impervious area may be deducted from the total impervious cover.
Disconnection of nonrooftop runoff	Credit may be given for practices that disconnect surface impervious cover by directing it to pervious areas where it is either infiltrated or filtered through the soil. As with rooftop runoff, the impervious area may be deducted from the total impervious cover, thereby reducing the required water quality volume.
Stream buffer credit	Credit may be given when a stream buffer effectively treats stormwater runoff. Effective treatment constitutes capturing runoff from pervious and impervious areas adjacent to the buffer and treating the runoff through overland flow across a grass or forested area. Areas treated in this manner may be deducted from total site area when computing the required water quality volume.

<b>Stormwater Credit</b>	<b>Description</b>
Grass channel (open section roads)	Credit may be given when open grass channels are used to reduce the volume of runoff and pollutants during smaller storms. If designed according to appropriate criteria, these channels may meet water quality criteria for certain types of residential development.
Environmentally sensitive rural development	Credit may be given when a group of environmental site design techniques are applied to low-density or rural residential development. This credit eliminates the need for structural practices to address water quality volume.

For design and applicability of nonstructural BMPs, refer to Chapter 5 of the "Pennsylvania Stormwater Management Practices Manual," December 2006, as amended. For the nonstructural BMPs proposed, the applicant shall utilize and submit appropriate checklists included in Chapter 8, Section 8.8, of the "Pennsylvania Stormwater Best Management Practices Manual," December 2006, as amended (refer Appendix H) to demonstrate that the BMPs are applicable to the project and to determine the amount of volume or peak rate credit is applicable.

6. The volume and rate of any stormwater discharges allowed under this Part 3 must be managed to prevent the physical degradation of receiving waters, such as by stream bank scour and erosion. If a detention facility is proposed which is part of the BMPs approved for the project, the facility(ies) must be designed to provide for a twenty-four-hour extended detention of the one-year, twenty-four-hour storm event (i.e., the stormwater runoff will be released over a minimum 24 hours for the one-year, twenty-four-hour storm event from the time of peak inflow to zero outflow).

**§ 26-317. Groundwater Recharge. [Ord. 273, 12/17/2013]**

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 Subsection 1A(2)(a) or (b).
    - (1) 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:

- (a) A minimum depth of 24 inches between the bottom of the BMP and the limiting zone.
  - (b) 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.
  - (c) The recharge facility shall be capable of completely infiltrating the recharge volume within four days (96 hours).
  - (d) Pretreatment shall be provided prior to infiltration.
  - (e) 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.
- (2) Recharge volume (Re) shall be computed by first obtaining the infiltration requirement using methods in either Subsection 1A(2)(a) or (b) then multiplying by the total proposed impervious area. The overall required recharge volume for a site is computed by multiplying total impervious area by the infiltration requirement.
- (a) NRCS Curve Number Equation. The following criteria shall apply. The NRCS runoff shall be utilized to calculate infiltration requirements (P) in inches.

**Equation: 26-317.1**

**For zero runoff:  $P=I$  (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 26-317.1.

The recharge volume (Re<sub>v</sub>) required would therefore be computed as:

**Equation: 26-317.2**

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

- (b) Annual Recharge Water Budget Approach. It has been determined that infiltrating 0.6 inch of runoff from the impervious areas will aid in maintaining the hydrologic regime of the watershed. If the goals of Subsection 1A(2)(a), cannot be achieved, then 0.6 inch 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 26-317.1 or the curve in Figure 26-317.1 should be used to determine the infiltration requirement.

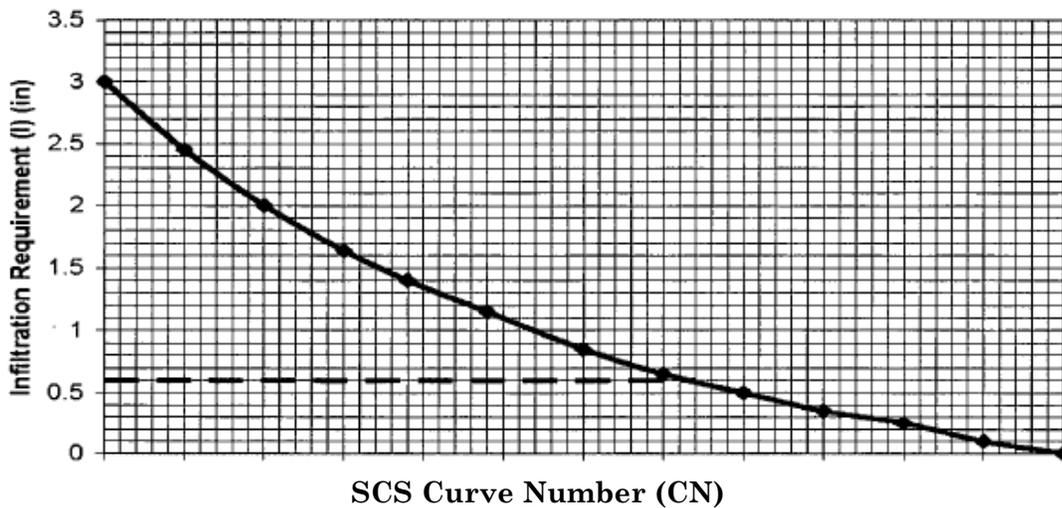
Where: I = 0.6 inch.

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

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

- B. 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.

**Required Infiltration (I) in Inches by NRCS CN**



**Figure 26-317.1**

- 2. The general process for designing the infiltration BMP shall be: 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.
- A. Analyze hydrologic soil groups as well as natural and man-made features within the watershed to determine general areas of suitability for infiltration stability.
  - B. Provide field tests, such as double ring infiltration tests at the level of the proposed infiltration surface to determine the appropriate hydraulic conductivity rate.
  - C. Design the infiltration structure for the required storm volume based on field-determined capacity at the level of the proposed infiltration surface.
  - D. Where the recharge volume requirement cannot be physically accomplished due to the results of the field soils testing, supporting documentation and justification must be submitted with the drainage plan.
  - E. 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.

**§ 26-318. Stream Bank Erosion Requirements. [Ord. 273, 12/17/2013]**

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 two-year, twenty-four-hour design storm to the existing conditions one-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 one-year storm takes a minimum 24 hours to drain from the facility from a point where the maximum volume of water from the one-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 three 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.

**§ 26-319. Design Criteria for Stormwater Management Facilities and Best Management Practices. [Ord. 273, 12/17/2013]**

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 Subpart C. The methods of stormwater control or best management practices (BMPs) which may be used to meet the required standards are described in this Part 3 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 3; however, any selected BMP must meet or exceed the runoff peak rate requirements of this Part 3 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. Collection System Standards.
  - A. Curb Inlets. Curb inlets shall be located at curb tangents on the uphill side of street intersections and at intervals along the curblineline to control the maximum amount of encroachment of runoff on the roadway pavement so that same does not exceed a width of four feet during the design storm event. Design and location of curb inlets shall be approved by the Township.
  - B. Pipe Materials. All storm sewer piping shall be Class III reinforced concrete pipe, except when pipe class and strength is required to be

increased in accordance with PennDOT Specifications. Piping shall be saw-cut at ends, as needed, and not hammered or broken. All pipe joints and lift holes must be mortared except where designed for infiltration.

- C. Minimum Pipe Size. Minimum pipe diameter shall be 18 inches (or an equivalent flow area of 1.76 square feet).
- D. Inlet and Manhole Construction. Inlet and manhole castings and concrete construction shall be equivalent to PennDOT Design Standards. Manholes shall be equipped with open grate lids. All inlet grates shall be "bicycle safe" heavy-duty structural steel. All storm sewer inlets must be identified with a storm drain marker. Storm drain markers shall be stainless steel affixed to the inlet hood with adhesive, rivets or bolts. (The marker may be bolted to the grate in off-road locations.) The marker shall have a minimum diameter of 3 1/2 inches and include "No Dumping - Drains to Waterway" and a fish symbol. Alternate designs/sizes may be used if approved by the Township.
- E. Open-end pipes must be fitted with concrete endwalls or wing walls in accordance with PennDOT Standards.
- F. Flow Velocity. Stormwater collection systems shall be designed to produce a minimum velocity of 3.0 feet per second when flowing full. The maximum permissible velocity shall be 15.0 feet per second. Pipe slopes shall not be less than 0.50%.
- G. Inlets and manholes shall be spaced at intervals not exceeding 300 feet and shall be located wherever branches are connected or sizes are changed and wherever there is a change in alignment or grade. For drainage lines of at least 36 inches diameter, inlets and manholes may be spaced at intervals not exceeding 400 feet.
- H. Storm sewer bedding/backfill requirements shall conform to the construction details in Appendix L.<sup>12</sup>
- I. Inlets shall be located to intercept concentrated runoff prior to discharge over public/private rights-of-way, sidewalks, streets, and driveways.
- J. The capacity of all Type "C" inlets shall be based on a maximum surface flow to the inlets of 4.0 cfs, calculated based on the one-hundred-year frequency design storm event. The maximum flow to Type "C" inlets located in low points (such as sag vertical curves) shall include the overland flow directed to the inlet as well as all bypass runoff from upstream inlets. The bypass flow from upstream inlets shall be calculated using inlet efficiency curves included in PennDOT

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<sup>12</sup>Editor's Note: Appendix L is included as an attachment to this chapter.

Design Manual Part 2, latest edition. If the surface flow to an inlet exceeds 4.0 cfs, additional inlets shall be provided upstream of the inlet to intercept the excessive surface flow. A Type "C" inlet at a low point of a paved area may be designed to accept a maximum of six cubic feet per second (cfs). Type "M" shall be designed to accept a maximum surface flow of six cfs based on the one-hundred-year frequency design storm event, unless otherwise approved by the Township. Double inlets will not be permitted where additional pipe and inlets can be placed upstream to intercept excessive surface flow. A maximum of 12 cfs shall be permitted to be collected by a Type "M" inlet located in an isolated pervious area, provided that the designer can verify that such an inlet would not cause stormwater to accumulate on any adjacent public or private property, outside of an associated storm sewer easement, and that the depth of the accumulated stormwater would not exceed 12 inches.

- K. A minimum drop of two inches shall be provided between the inlet and outlet pipe invert elevations within all inlets and manholes. When varying pipe sizes enter an inlet or manhole, the elevation of crown of all pipes shall be matched.
- L. Stormwater pipes shall have a minimum depth of cover of 12 inches (including over the bell) or as designated by the American Concrete Pipe Association (whichever is greater), and in no case shall any part of the pipe project into the road subbase or curb. Where cover is restricted, equivalent pipe arches may be specified in lieu of circular pipe.
- M. The capacity of all stormwater pipes shall be calculated utilizing the Manning Equation for open channel flow as applied to closed conduit flow. The Manning's roughness coefficient shall be 0.13 for all concrete pipe. In cases where pressure flow may occur, the hydraulic grade line shall be calculated throughout the storm sewer system to verify that at least one foot of free-board will be provided in all inlets and manholes for the design storm event.
- N. Culverts shall be designed based on procedures contained in Hydraulic Design of Highway Culverts, HDS No. 5, U.S. Department of Transportation, Federal Highway Administration. Where pressure flow is anticipated in storm sewer pipes (non-open channel flow), the applicant's designer shall be required to calculate the elevation of the hydraulic grade line through the storm sewer system. Wherever the hydraulic grade line elevation exceeds the pipe crown elevation for the design flow, pipes with watertight joints must be specified.
- O. Storm sewer structures (i.e., endwalls, inlets, and sections, etc.) may not be located on top of or within 10 feet of electric, communication, water, sanitary sewer, or gas services and/or mains, unless approval is

received from the Township and the authority or utility having jurisdiction over same.

- P. Stormwater pipes must be oriented at right angles to electric, water, sanitary sewer, and gas utilities when crossing above or beneath same. Crossing angles of less than 90° will only be permitted at the discretion of the Township. When skewed crossings are permitted, interior angles between alignment of the storm sewer pipe and utility shall not be less than 45°. Vertical and horizontal design of storm sewer must be linear.
  - Q. Roadway underdrain is required along both sides of all proposed roadways, existing roadways proposed to be widened, and within existing or proposed roadside swales as directed by the Township.
  - R. Where a public storm sewer system is not located within a right-of-way, or dedicated public property, a twenty-foot-wide easement shall be established to encompass the storm sewer system. For multiple pipes or utilities, the width of the easement shall be a minimum of 30 feet.
  - S. A minimum of one foot of freeboard, between the inlet grate and the design flow elevation, shall be provided in all storm sewer systems (inlets and manholes) for the one-hundred-year-frequency design storm event.
4. Open Swales and Gutters. Open swales shall be designed on the basis of Manning's Formula as indicated for collection systems with the following considerations:
- A. Roughness Coefficient. The roughness coefficient shall be 0.040 for earth swales.
  - B. Bank Slopes. Slopes for swale banks shall not be steeper than one vertical to four horizontal.
  - C. Flow Velocity. The maximum velocity of flow as determined by Manning's Equation shall not exceed the allowable velocities as shown in the following table for the specific type of material, unless otherwise approved by the Township and the Bucks County Conservation District:

NOTE: Source of the following design criteria is the Pennsylvania Department of Environmental Protection, Bureau of Soil and Water Conservation Publication, Erosion and Sediment Control Program Manual.

**Allowable Velocity**

<b>Material</b>	<b>Velocity [feet per second (fps)]</b>
Well-established grass on good soil	
Short pliant bladed grass	4.0 to 5.0
Bunch grass: soil exposed	2.0 to 3.0
Stiff stemmed grass	3.0 to 4.0
Earth without vegetation	
Fine sand or silt	1.0
Ordinary firm loam	2.0 to 3.0
Stiff clay	3.0 to 5.0
Clay and gravel	4.0 to 5.0
Coarse gravel	4.0 to 5.0
Soft shale	5.0 to 6.0
Shoulders	
Earth	(as defined above)
Stabilized	6.0
Paved	10.0 to 15.0

- D. Swales shall be stabilized with biodegradable erosion control matting to permit establishment of permanent vegetation. Swales shall be of such shape and size to effectively contain the one-hundred-year Rational Method design storm and to conform to all other specifications of the Township.
- E. To minimize sheet flow of stormwater across lots located on the lower side of roads or streets, and to divert flow away from building areas, the cross section of the street as constructed shall provide for parallel ditches or swales or curb on the lower side which shall discharge only at drainage easements, unless otherwise approved by the Township.
- F. Gutters and swales adjacent to road paving shall be permitted to carry a maximum flow of four cubic feet per second prior to discharge away from the street surface, unless it is proven to the satisfaction of the Township by engineering calculations that the road slopes or other factors would allow higher gutter or swale capacity.
- G. Flows larger than those permitted in gutters and roadside swales may be conveyed in swales outside the required road right-of-way in separate drainage easements or may be conveyed in pipes or culverts inside or outside the required road right-of-way.
- H. Existing and proposed swales shall be provided with underdrains as deemed necessary by the Township should overland seepage result in

potential maintenance problems. Underdrains must discharge into a natural drainage channel or stormwater management system.

- I. Where drainage swales are used to divert surface waters away from buildings, they shall be sodded, landscaped, or otherwise protected as required and shall be of a slope, shape, and size conforming with the requirements of the Township. Concentration of surface water runoff shall be permitted only in swales, watercourses, retention or detention basins, bioretention areas, or other areas designed to meet the objectives of this Part.
5. Bridge and Culvert Design. Any proposed bridge or culvert to convey flow within a perennial or intermittent stream shall be designed in accordance with the following principles:
- A. Culverts and bridges shall be designed with an open bottom to maintain natural sediment transport and bed roughness, avoiding acceleration of water velocity above the natural (preexisting) condition. Rock (riprap) lining (native material if possible) shall be installed within the culvert as needed to prevent erosion within the structure. Approximate top of rock lining must be at the level of the existing stream bottom so as to maintain normal water level and unimpeded movement of native animal species.
  - B. Bottom of opening shall be designed, at a minimum, to match the bankfull channel condition in terms of width and depth. The cross-sectional area of the bankfull channel (measured at a reference location upstream of the structure) shall be matched with area in the crossing structure.
  - C. Above the bankfull elevation, the width shall increase a minimum of 30% to disperse the energy of higher flow volumes and avoid undermining of the supporting structure by secondary currents.
  - D. The total cross-sectional area of the structure opening must be equal to or greater than the flood-prone area (cross-sectional stream area at a depth of twice the maximum bankfull depth, measured at a reference location upstream of the structure). The flood-prone area is approximately equal to the area flooded by a fifty-year return flood.
  - E. All bridges, culverts, and drainage channels shall be designed to convey a flow rate equal to a one-hundred-year, twenty-four-hour storm (refer to Appendix A, Figure A-1).<sup>13</sup> All bridges and culverts shall be designed to convey the one-hundred-year design storm without increasing the extent and depth of the one-hundred-year floodplain.
6. Storm Sewer Design.

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<sup>13</sup>Editor's Note: Appendix A is included as an attachment to this chapter.

- A. Design Flow Rate. The storm sewer system shall be designed to carry the one-hundred-year-frequency design storm peak flow rate. The drainage area and runoff coefficient to each inlet shall be indicated on the stormwater management plan. The one-hundred-year flow rate shall be determined by the Rational Method formula:

$$Q = CIA$$

Where:

- Q = Peak runoff rate measured in cubic feet per second (cfs).  
 C = Runoff coefficient. The coefficient of stormwater runoff includes many variables, such as ground slope, ground cover, shape of drainage area, etc.  
 I = Intensity: average rainfall intensity in inches per hour for a time equal to the time of concentration (in/hr).  
 A = Area: drainage area in acres (ac).

Appropriate values for the rainfall intensity can be found in Appendix A, Figure A-2.

- B. Consideration shall be given to future land use changes in the drainage area in selecting the Rational ("C") coefficient. For drainage areas containing several different types of ground cover, a weighted value of "C" shall be used.
- C. In determining the peak flow rate to individual storm sewer inlets (or other collection structures), the time of concentration method (as referenced in § 26-320) shall be used for inlet drainage areas in excess of one acre, unless otherwise approved by the Township. For inlet drainage areas less than one acre, a five-minute time of concentration shall be used unless otherwise approved by the Township.
- D. In determining the required design flow rate through a storm sewer piping system, if a five-minute time of concentration (storm duration) results in a pipe size exceeding a thirty-inch-diameter pipe (or equivalent flow area of 4.9 square feet), the time of concentration approach (as defined herein) shall be used in determining storm duration.
- E. Overflow System. An overflow system shall be provided to carry all bypass flow and/or flow in excess of storm sewer design capacity to the detention basin (or other approved outlet point) when the capacity of the storm sewer system is exceeded. Stormwater runoff will not be permitted to surcharge from storm sewer structures.
7. Grading and Drainage.

- A. After completion of rough grading, a minimum of eight inches of topsoil or the existing depth of topsoil encountered on the site (whichever is greater) shall be returned to remaining disturbed areas prior to final grading and seeding.
- B. Lots shall be graded to secure proper drainage away from buildings and to prevent the collection of stormwater in pools. Minimum two-percent slopes shall be maintained away from and around all structures. Separation between the top of foundation wall (or slab) shall comply with Township Construction Code requirements.
- C. Construction. The developer shall construct and/or install such drainage structures and/or pipe which are necessary to prevent erosion damage and to satisfactorily carry off such surface waters to the nearest practical street, storm drain or natural watercourse.
- D. Excavation. No excavation shall be made with a cut face steeper in slope than (4:1 = 25%), except under one or more of the following conditions:
- (1) The fill is located so that settlement, sliding, or erosion will not result in property damage or be a hazard to adjoining property, streets, alleys or buildings.
  - (2) A written statement from a professional civil engineer, licensed in the Commonwealth of Pennsylvania and experienced in erosion control, certifying the site has been inspected and that the proposed deviation from the slope specified above will not endanger any property or result in property damage, is submitted to and approved by the Township Engineer.
  - (3) A concrete, segmental block, or stone masonry wall, constructed in accordance with requirements of the Township Zoning Ordinance (Chapter 27) and Construction Code is provided to support the face of the excavation.
- E. Fill. No fill shall be made which creates any exposed surface steeper in slope than (4:1 = 25%), except under one or more of the following conditions:
- (1) The fill is located so that settlement, sliding, or erosion will not result in property damage or be a hazard to adjoining property, streets, alleys, or buildings.
  - (2) A written statement from a professional civil engineer, licensed in the Commonwealth of Pennsylvania and experienced in erosion control, certifying the site has been inspected and that the proposed deviation from the slope specified above will not

endanger any property or result in property damage, is submitted to and approved by the Township.

- (3) A concrete, segmental block, or stone masonry wall, constructed in accordance with Township requirements, is provided to support the face of the excavation.
- F. Slopes and Fences. The top or bottom edge of slopes shall be a minimum of five feet from property or right-of-way lines of streets or alleys, in order to permit the normal rounding of the edge without encroaching on the abutting property. Where walls or slopes (steeper than two horizontal to one vertical) are approved under the criteria in this Part and are five feet or more in height, a protective fence conforming to Township construction codes shall be required at the top of the wall (or bank).
- G. Cleanup. All lots must be kept free of any debris or nuisances whatsoever during construction.
- H. Design of erosion and sedimentation control facilities (particularly stormwater/sediment basins) shall incorporate best management practices as defined herein.
- I. Cut and fill operations shall be kept to a minimum. Wherever feasible, natural vegetation shall be retained, protected, and supplemented. Cut and fills shall not endanger or otherwise adversely impact adjoining property.
- J. No grading equipment shall be permitted to be loaded and/or unloaded on a public street, and no grading equipment shall be permitted to travel on or across a public street unless licensed for operation on public thoroughfares.
- K. Grading equipment shall not be permitted to intermittent and perennial streams. Temporary crossing shall only be permitted where application is made, and approval is received, from the Pennsylvania Department of Environmental Protection (where applicable), the Bucks County Conservation District, and Plumstead Township.
- L. Design of energy dissipation for high-volume and/or high-velocity discharge from storm sewer pipes and channels shall be in accordance with Hydraulic Engineering Circular No. 14, "Hydraulic Design of Energy Dissipaters for Culverts and Channels," as published by the Department of Transportation, FHA, when deemed necessary by the Township, and as approved by the Bucks County Conservation District.
- M. To control the dissemination of mud and dirt onto public roads and driveways, tire cleaning areas constructed of AASHTO No. 1 stone

(underlain by geotextile structural fabric), at least 50 feet in length shall be installed at each point of access to the site and individual lots (upon construction of internal streets in a binder condition). When deemed necessary by the Township, washing stations shall also be set up at every construction entrance in order to wash mud and dirt from exiting vehicles. Appropriate measures must be taken to control runoff from such locations. The developer shall be responsible for the placement of appropriate signage identifying construction entrances and washing stations. Construction entrances shall be maintained by the developer during construction, as determined by the Township.

- N. During construction activities, necessary measures for dust control shall be exercised, including the application of water to higher-traffic areas of the site.
  - O. In the event any mud and/or debris is transported from the site onto a public roadway, the debris shall be removed immediately and the roadway swept and/or washed as deemed necessary by the Township at the owner's expense.
  - P. Adequate provision shall be made to prevent surface water from damaging the cut face of excavation and the sloping surfaces of fills.
8. Any stormwater management facility designed to store runoff and requiring a berm or earthen embankment required or regulated by this Part 3 shall be designed to provide an emergency spillway to handle flow up to and including the one-hundred-year post-development 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 one-hundred-year post-development inflow.
  9. 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.
  10. 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.
  11. Should any stormwater management facility require a dam safety permit under PADEP 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 one-hundred-year event.

12. Stormwater management facility outlet piping shall be Class III reinforced O-ring concrete pipe. A minimum of one concrete antiseep collar shall be required. Precast 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.
13. No stone gabion baskets may be used in the construction of stormwater management facilities.
14. 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 a minimum grade of 2%.
  - 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 two-year or ten-year storm event.
    - (2) Maximum depth of detained runoff shall be 36 inches for a one-hundred-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 (concrete posts with wood rails or all vinyl) with wire backing. Access to the basin shall be provided by a 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 to Appendix C, Plant Lists for Wetland Management.)<sup>14</sup>
  - (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 one-hundred-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 municipality. Preservation of existing vegetation surrounding the facility may be considered in lieu of some or all required landscaping plantings.
- H. Retaining walls shall not be specified for use within the one-hundred-year water surface elevation area of any detention/retention facility or

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<sup>14</sup>Editor's Note: Appendix C is included as an attachment to this chapter.

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 its 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 one-hundred-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 and Zoning Ordinance.<sup>15</sup>
  - (3) If fencing is necessary, the basin design shall provide a level area (two-percent 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.

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<sup>15</sup>Editor's Note: See Chapters 22 and 27, respectively.

- (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 cleanout and restoration, the pool area will be cleared of all brush and excess trees.
  - (2) Cutoff Trench. A cutoff trench will be excavated along the center-line dam on earth fill embankments. The minimum depth shall be two feet. The cutoff 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 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 six-inch to eight-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.
15. Any facilities that constitute water obstructions (e.g., culverts, bridges, outfalls, or stream enclosures), and any work involving wetlands as directed in PADEP Chapter 105 regulations (as amended or replaced from time to time by PADEP), shall be designed in accordance with Chapter 105 and will require a permit from PADEP. Any other drainage conveyance facility that does not fall under Chapter 105 regulations must be able to convey, without damage to the drainage structure or roadway, runoff from the one-hundred-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 one-

hundred-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 PADEP Chapter 105 regulations may require a permit under dam safety regulations. Any facility located within a PADOT right of way must meet PADOT minimum design standards and permit submission requirements.

16. 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 one-hundred-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 one-hundred-year design storm. Any facility located within a PADOT right-of-way must meet PADOT minimum design standards and permit submission requirements.
17. Adequate erosion protection shall be provided along all open channels and at all points of discharge.
18. 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.
19. All infiltration devices and groundwater recharge facilities shall be designed to completely drain all water in three days subsequent to any storm event.
20. Riparian Corridor Preservation.
  - A. All disturbance of land adjacent to a perennial or intermittent river, stream or creek or lake, pond or reservoir shall comply with the regulations promulgated by the Pennsylvania Department of Environmental Protection (PADEP) at 25 Pa Code § 102.14, effective November 19, 2010, as amended. The obligation of the applicant to establish a riparian buffer in compliance with the regulations set forth at 25 Pa. Code Chapter 102 shall not, for the purposes of this Part 3, be limited to disturbances greater than one acre but shall apply to all earth disturbances.
  - B. Width, revegetation, maintenance, and protection of riparian buffers shall be as specified in the above PADEP regulations for special protection and other than special protection waters and shall be so detailed on the appropriate plan sheets. For the purposes of this Part 3, a minimum one-hundred-foot-wide riparian buffer shall be required to be established along all other than special protection waters. Riparian buffers must be identified on all stormwater management plans.

21. 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.
22. 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.
23. 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:
  1. Infiltration BMPs.
  2. Flow attenuation methods (e.g., vegetated open swales and natural depressions).
  3. Artificial wetlands, bioretention structures, and wetponds.
  4. 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 Section 5 of the Pennsylvania Handbook of Best Management Practices for

Developing Areas (1998), as amended and updated, and shall meet the following minimum requirements:

- (1) 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).
  - (2) Infiltration BMPs intended to receive rooftop runoff shall include appropriate measures such as leaf traps and cleanouts to prevent clogging by vegetation.
  - (3) Where direct discharge is permitted under the requirements of § 26-313, infiltration BMPs shall be designed to provide adequate storage to accommodate the post-development first flush design storm (one-year twenty-four-hour 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 § 26-313, 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 post-development runoff volume based on the one-hundred-year design storm.
    - (b) Control the post-development peak rate of runoff to the predevelopment peak rate of runoff for all design storms identified in § 26-314A of this Part 3.
    - (c) Provide an overflow or spillway that safely permits the passing of runoff greater than that occurring during the one-hundred-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 Section 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 inch/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 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 inch/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) Post-development runoff from a "water quality storm" (a one-year, twenty-four-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 one-year, twenty-four-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 encourage 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.
24. 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).
25. 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 municipality shall require an in-depth report by a registered professional geologist.

- 26. 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), as amended, shall be utilized in determining stormwater management facility design, except where specifically modified by this or other municipal ordinance. The municipality 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.

**§ 26-320. Calculation Methodology. [Ord. 273, 12/17/2013]**

- 1. 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 26-320.1 summarizes acceptable computation methods. The 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 26-320.1**

**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	U.S. 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

**Table 26-320.1  
Acceptable Computation Methodologies for Stormwater Management Plans**

<b>Method</b>	<b>Method Developed by</b>	<b>Applicability</b>
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 3 using the Soil Cover Complex Method shall use the appropriate design rainfall depths for the various return period storms according to National Oceanic and Atmospheric Administration (NOAA) Atlas 14 rain data corresponding to the Doylestown rain gauge. The SCS Type 11 rainfall curve from NOAA is found on Figure A-1 in Appendix A of this Part 3.<sup>16</sup> This data may also be directly retrieved from the NOAA Atlas 14 website: [hdsc.nws.noaa.gov/hdsc/pfds/orb/pa\\_pfds.html](http://hdsc.nws.noaa.gov/hdsc/pfds/orb/pa_pfds.html). If a hydrologic computer model such as PSRM or HEC-1/HEC-HMS is used for stormwater runoff calculations, the duration of rainfall shall be 24 hours.
- 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-3 in Appendix A of Part 3. For the purposes of existing conditions flow rate determination for applications, undeveloped land and existing impervious surfaces shall be considered as "meadow" in good condition, unless the natural ground cover generates a lower curve number or rational "C" value (i.e., forest), as listed in table in Appendix A of this Part 3. Wooded areas shall use a ground cover of "woods in good condition." An area shall be considered wooded if there is a contiguous canopy of trees existing over an area of 1/4 acre or more.
- D. All calculations using the Rational Method shall use rainfall intensities consistent with appropriate times of concentration for overland flow and return periods from NOAA Atlas 14, Volume 2, Version 2.1 (Table A-1). 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.

<sup>16</sup>Editor's Note: Appendix A is included as an attachment to this chapter.

- E. Runoff curve numbers (CN) for both existing and proposed conditions to be used in the Soil Cover Complex Method shall be obtained from Appendix A of this Part 3.
- F. Runoff coefficients (c) for both existing and proposed conditions for use in the Rational Method shall be obtained from Appendix A of this Part 3.
- 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 3. Outlet structures for stormwater management facilities shall be designed to meet the performance standards of this Part 3 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 3 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 municipality 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 municipality 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 Municipal Engineer. Calibration shall require detailed gauge and rainfall data for the particular site in question.
- J. All stormwater runoff calculations/reports and design of stormwater management facilities shall be prepared by a registered professional engineer licensed in the Commonwealth of Pennsylvania.

**§ 26-321. Erosion and Sediment Control During Regulated Earth Disturbance Activities. [Ord. 273, 12/17/2013]**

- 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 and Sediment 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). The Bucks County Conservation District must be consulted regarding requirements for plan submission.
4. In addition, under 25 Pa. Code Chapter 92,<sup>17</sup> 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 disturbance and during shall not exceed those peak discharges and discharge volumes required in § 26-314 of this Part 3. Detention storage during the period of land disturbance and prior to establishment of permanent cover may

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<sup>17</sup>Editor's Note: Chapter 92 of the Pa. Code was reserved 10-8-2010. See now 25 Pa. Code Chapter 92a.

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.

**§ 26-322. Water Quality Requirements After Regulated Earth Disturbance Activities Are Complete. [Ord. 273, 12/17/2013]**

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 post-construction 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 post-construction stormwater discharges do not degrade the physical, chemical or biological characteristics of receiving waters. As described in the PADEP Comprehensive Stormwater Management Policy (No. 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. Stream Bank and Streambed Protection: management of volume and rate of post-construction 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 and redevelopment after regulated

earth disturbance activities are complete. These requirements include the need to implement post-construction 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 Subpart D of this Part 3.

**§ 26-323. Other Requirements. [Ord. 273, 12/17/2013]**

1. Hot Spots.
  - A. Use of infiltration BMPs is prohibited on hot spot land use areas. Examples of hot spots are listed in Part 3 Appendix J.<sup>18</sup>
  - B. Stormwater runoff from hot spot land uses shall be pretreated. In no case may the same BMP be employed consecutively to meet this requirement. Guidance regarding acceptable methods of pretreatment is located in Appendix J.
2. West Nile Guidance Requirements. All wet basin designs shall incorporate biologic controls consistent with the West Nile Guidance found in Appendix K.<sup>19</sup>

**D. Stormwater Management Plan Requirements.**

**§ 26-324. General Requirement. [Ord. 273, 12/17/2013]**

For any of the activities regulated by this Part 3, 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 stormwater management plan from the municipality.

**§ 26-325. Stormwater Management Plan Contents. [Ord. 273, 12/17/2013]**

1. 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 municipality in a format that is clear, concise, legible, neat, and well organized; otherwise, the

<sup>18</sup>Editor's Note: Appendix J is included as an attachment to this chapter.

<sup>19</sup>Editor's Note: Appendix K is included as an attachment to this chapter.

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, wetland, or wet pond BMPs must be submitted with the stormwater management plans required in Subpart D, including those developments not intending the use of such facilities.

(1) This analysis shall provide:

- (a) A general assessment of the anticipated additional runoff based on the design storm and post-development condition and utilizing the calculation procedures required in § 26-316;
- (b) Indication of drainage areas on the development site resulting in impervious, pervious, and rooftop runoff;
- (c) Indication of type of land use (residential, nonresidential) generating the impervious surface runoff;
- (d) Delineation of soils on the site from the USDA, NRCS Web Soil Survey and on-site soil study. The soil study shall be conducted by a soil scientist and shall include sufficient probes/deep holes to evaluate application of BMPs;
- (e) 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 modifications;
- (f) 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;
- (g) 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;
- (h) Analysis of potential infiltration or wet pond or artificial wetland BMPs which could be implemented to manage

the projected post-development runoff with consideration of suitable soil availability runoff point of and type of land use [Subsection A(1)(b) and (c) above] and the general design standards and maintenance issues included in this Part 3, including an indication of how most post-development runoff can be managed by these BMPs (e.g., the entire post-development runoff or partial amount of runoff expressed as a percentage); and

- (i) 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.
- (2) The feasibility analysis must allow the municipality to review the general soil characteristics of a site and the proposed development for that site and determine 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 analyses (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 3 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, at minimum, address soil permeability, depth to bedrock, susceptibility to sinkhole formation, and subgrade stability.

## C. General.

- (1) General description of project.
- (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.

## D. Map(s) of the project area shall be submitted on twenty-four-inch by thirty-six-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%), five-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 waterlines 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 on site 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, nondedicated 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%), five-foot contour intervals may be used.
- (10) The name of the development, tax parcel number(s), 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 man-made 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 and path utilized to determine time of concentration.
- (19) A twenty-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 off site. All off-site facilities shall meet the performance standards and design criteria specified in this Part 3.
- (21) A construction detail of any improvements made to sinkholes and the location of all notes to be posted, as specified in this Part 3.
- (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:

(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.

E. 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 3.
  - (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 3.
- (4) The effect of the project (in terms of runoff volume and peak flow) on adjacent properties and on any existing municipal 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.

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

**§ 26-326. Plan Submission. [Ord. 273, 12/17/2013]**

1. For all activities regulated by this Part 3, 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 municipality accompanied by the requisite municipal review fee, as specified in this Part 3.
    - (2) Two copies to the Municipal Engineer.

**§ 26-327. Stormwater Management Plan Review. [Ord. 273, 12/17/2013]**

1. The Municipal Engineer shall review the stormwater management plan for consistency with the adopted Watershed Act 167 Stormwater Management Plan and applicable municipal ordinances. The municipality shall require receipt of a complete plan, as specified in this Part 3.
2. The Municipal Engineer shall review the stormwater management plan for any subdivision or land development against the Subdivision and Land Development Ordinance provisions not superseded by this Part 3.
3. For activities regulated by this Part 3, the Municipal Engineer shall notify the municipality 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 Municipal Engineer's review letter shall be forwarded to the developer.

4. Any disapproved stormwater management plans may be revised by the developer and resubmitted consistent with this Part 3.
5. For regulated activities specified in § 26-304C and D of this Part 3, the Municipal Engineer shall notify the Municipal Building Permit Officer in writing, within a time frame consistent with the Building Code and/or Subdivision and Land Development Ordinance, 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 3.
6. The municipality shall not approve any subdivision or land development for regulated activities specified in § 26-304A and B of this Part 3 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 Municipal Building Permit Office shall not issue a building permit for any regulated activity specified in § 26-304 of this Part 3 if the stormwater management plan has been found to be inconsistent with the adopted Watershed Act 167 Stormwater Management Plan, as determined by the Municipal Engineer, or without considering the comments of the Municipal 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 Municipal Engineer for review. In no case shall the municipality approve the as-built survey until the municipality receives a copy of an approved declaration of adequacy, highway occupancy permit from the PADOT District Office, and any applicable permits from PADEP.
9. The municipality'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 two-year time period, then the municipality may consider the stormwater management plan disapproved and may revoke any and all permits. Stormwater management plans that are considered disapproved by the municipality shall be resubmitted in accordance with § 26-329 of this Part 3.

**§ 26-328. Modification of Plans. [Ord. 273, 12/17/2013]**

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 Municipal Engineer, shall require a resubmission of the modified stormwater management plan consistent with § 26-326 of this Part 3 and be subject to review as specified in § 26-327 of this Part 3.
2. A modification to an already approved or disapproved stormwater management plan shall be submitted to the municipality, accompanied by the applicable review. A modification to a stormwater management plan for which a formal action has not been taken by the municipality shall be submitted to the municipality, accompanied by the applicable municipal review fee.

**§ 26-329. Resubmission of Disapproved Stormwater Management Plans. [Ord. 273, 12/17/2013]**

A disapproved stormwater management plan may be resubmitted, with the revisions addressing the Municipal Engineer's concerns documented in writing, to the Municipal Engineer in accordance with § 26-326 of this Part 3 and be subject to review as specified in § 26-327 of this Part 3. The applicable municipal review fee must accompany a resubmission of a disapproved stormwater management plan.

**§ 26-330. Retention of Plans at Project Site. [Ord. 273, 12/17/2013]**

A set of design plans approved by the Township shall be on file at the site throughout the duration of the development activity. Periodic inspections may be made by the Township or designee during development activities.

**§ 26-331. Certification of Completion. [Ord. 273, 12/17/2013]**

1. At the completion of the project, and as a prerequisite for the release of the performance guarantee under § 26-343, the owner or his representatives shall:
  - A. Contact the Township Engineer to request inspection of the site for completion of stormwater management facilities and compliance with the approved plans and specifications.
  - B. Provide a set of as-built drawings as required pursuant to the Township Building Code and/or Subdivision and Land Development Ordinance.

**§ 26-332. Occupancy Permit. [Ord. 273, 12/17/2013]**

No occupancy permit for any new structure on the site shall be issued unless the stormwater management facilities approved for the lot have been installed and found satisfactory to the Township Engineer.

**E. Inspections.****§ 26-333. Schedule of Inspections. [Ord. 273, 12/17/2013]**

1. The Municipal 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 Municipal 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 municipality shall revoke any existing permits until a revised stormwater management plan is submitted and approved, as specified in this Part 3.

**§ 26-334. Right of Entry. [Ord. 273, 12/17/2013]**

1. During construction, duly authorized representatives of the Township may enter at reasonable times upon any property within the Township to inspect the implementation, condition, or operation and maintenance of the stormwater BMPs, or to verify that construction activity is in compliance with this Part 3.
2. BMP owners and operators shall allow persons working on behalf of the Township ready access to all parts of the premises for the purposes of determining compliance with this Part 3.
3. Persons working on behalf of the Township shall have the right to temporarily locate on any BMP in the Township such devices as are necessary to conduct monitoring and/or sampling of the facility's stormwater discharge.
4. Unreasonable delays in allowing the inspector access to a BMP are a violation of this Part 3.

**F. Fees and Expenses.****§ 26-335. Municipality Stormwater Management Plan Review Fee. [Ord. 273, 12/17/2013]**

The municipality shall establish a review fee schedule by resolution of the governing body to defray review costs incurred by the municipality, any outside review agencies or entities necessary to review submitted plans, and the Municipal

Engineer. The municipality shall periodically update the review fee schedule to ensure that review costs are adequately reimbursed. The applicant shall pay all fees.

**§ 26-336. Expenses Covered by Fees. [Ord. 273, 12/17/2013]**

1. The fees required by this Part 3 shall, at a minimum, cover the following:
  - A. Administrative costs.
  - B. Review of the stormwater management plan by the municipality and the Municipal Engineer, including meeting with applicant.
  - C. Site inspections by the municipal staff and/or Municipal 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 3, correct violations, and ensure proper completion of stipulated remedial actions.
  - G. Preparation and recording of an operation and maintenance agreement or any other similar documents.

**§ 26-337. Itemization of Cost. [Ord. 273, 12/17/2013]**

Expenses incurred by the Township and charged to the applicant pursuant to § 26-336 of this Part 3 shall be itemized. A copy of the itemized costs will be provided by the Township to the applicant upon request.

**G. Prohibitions.**

**§ 26-338. Prohibited Discharges. [Ord. 273, 12/17/2013]**

1. No persons shall allow or cause to allow stormwater or nonstormwater discharges into the municipality's separate storm sewer system or into any waters of the commonwealth which are not composed entirely of stormwater except: **[Amended by Ord. 276, 10/21/2014]**
  - A. As provided in Subsection 2 below; and
  - B. Discharges allowed under a state or federal permit.

2. Discharges which may be allowed, based on a finding by the municipality or PADEP that the discharge(s) do not significantly contribute to pollution to surface waters of the commonwealth, are:
  - A. Discharges from firefighting 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 infiltration [as defined at 40 CFR 35.2005 (20)]. **[Added by Ord. 276, 10/21/2014]**
  - O. Uncontaminated pumped groundwater. **[Added by Ord. 276, 10/21/2014<sup>20</sup>]**
  - P. Uncontaminated groundwater (infiltration or pumped).
  - Q. Diverted stream flow.
  - R. Rising groundwater.
3. In the event the municipality determines that any of the discharges identified in Subsection 2 significantly contribute to pollution of waters of

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<sup>20</sup>Editor's Note: Due to an additional subsection in this ordinance, former Subsections O and P were redesignated as Subsections P and Q, respectively.

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.

**§ 26-339. Prohibited Connections. [Ord. 273, 12/17/2013]**

1. The following connections are prohibited, except as provided in § 26-338, Subsection 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.

**§ 26-340. Roof Drains. [Ord. 273, 12/17/2013]**

1. Roof drains shall not be connected to streets, sanitary or storm sewers, or roadside ditches, except as provided in § 26-312, Subsection 11.
2. Roof drains shall discharge to infiltration areas or vegetative BMPs where possible.

**§ 26-341. Alteration of BMPs. [Ord. 273, 12/17/2013]**

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.

**§ 26-342. Waste Disposal Prohibitions. [Ord. 273, 12/17/2013]**

No person shall throw, deposit, leave, maintain, keep, or permit to be thrown, deposited, left, or maintained, in or upon any public or private property, driveway,

parking area, street, alley, sidewalk, or other component of the Township's separate storm sewer system, any refuse, rubbish, garbage, litter, or other discarded or abandoned objects, articles, and accumulations, so that the same may cause or contribute to pollution. Wastes deposited in streets in proper waste receptacles for the purposes of collection are exempted from this prohibition.

#### **H. Maintenance Responsibilities.**

##### **§ 26-343. Performance Guarantee. [Ord. 273, 12/17/2013]**

The applicant shall provide a financial guarantee to the municipality for the timely installation and proper construction of all stormwater management controls as required by the approved stormwater management plan and this Part 3 equal to the full construction cost of the required controls plus construction contingency and construction inspection costs.

##### **§ 26-344. Maintenance Responsibilities. [Ord. 273, 12/17/2013]**

1. The stormwater management plan for the development site shall contain a BMP operation and maintenance plan (BMP O&M) 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 BMPs and shall be subject to review and approval of the Township.
2. The (BMP O&M) 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 municipality, stormwater control facilities may also be dedicated to and maintained by the municipality, if accepted by the municipality.
  - 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 stormwater facility and BMP O&M plan shall include the following:
  - A. A description of how each stormwater facility and BMP will be operated and maintained, and the identity and contact information associated with the person(s) responsible for O&M.
  - B. The name of the project site, name and address of the owner of the property, and name of the individual or firm preparing the plan.

- C. A statement, signed by the facility owner, acknowledging that the stormwater facilities and BMPs are fixtures that can be altered or removed only after approval by the municipality.
4. Facilities, areas, or structures used as BMPs shall be enumerated as permanent real estate appurtenances and recorded as deed restrictions or conservation easements that run with the land.
5. Stormwater management BMPs, operation and maintenance plans, and agreements shall be recorded as restrictive covenants that run with the land. **[Amended by Ord. 276, 10/21/2014]**
6. The governing body, upon recommendation of the Municipal Engineer, shall make the final determination on the continuing maintenance responsibilities prior to final approval of the stormwater management plan. The governing body reserves the right to accept the ownership and operating responsibility for any or all of the stormwater management controls. The right of the Township to accept ownership in the future shall be stated in the maintenance agreement (refer to § 26-346).

**§ 26-345. Municipal Review of Stormwater Facilities and BMP Operations and Maintenance (O&M) Plan. [Ord. 273, 12/17/2013]**

1. The Township shall review the stormwater facilities and BMP O&M plan for consistency with the purposes and requirements of this Part 3 and any permits issued by PADEP.
2. The Township shall notify the applicant in writing whether the stormwater facilities and BMP O&M plan is approved.
3. The Township shall require a "record drawing" of all stormwater facilities and BMPs.

**§ 26-346. Maintenance Agreement for Privately Owned Stormwater Facilities. [Ord. 273, 12/17/2013]**

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 3.<sup>21</sup>
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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<sup>21</sup>Editor's Note: Appendix F is included as an attachment to this chapter.

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

**§ 26-347. Stormwater Management Easements. [Ord. 273, 12/17/2013]**

1. Stormwater management easements shall be provided by the property owner if necessary for 1) access for facility inspections and maintenance, or 2) preservation of stormwater runoff conveyance, infiltration, and detention areas and facilities, including flood routes for the one-hundred-year storm event. The purpose of the easement shall be specified in the maintenance agreement signed by the property owner.
2. Stormwater management easements are required for all areas used for off-site stormwater control, unless a waiver is granted by the Township.
3. Easements shall be recorded with the Bucks County Recorder of Deeds prior to issuance of a building permit or recordation of a subdivision or land development plan.

**§ 26-348. Municipal Stormwater Maintenance Fund. [Ord. 273, 12/17/2013]**

1. If stormwater BMPs are accepted by the Township for dedication, persons installing stormwater BMPs 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 cover the estimated costs for BMP maintenance and inspections required pursuant to § 26-349 for 10 years. The Township Engineer will establish the estimated costs upon review of information submitted by the applicant.
2. If stormwater BMPs are to be privately owned and maintained, the applicant shall pay an amount to the Township Stormwater Maintenance Fund, as established by separate resolution, to help defray the costs of periodic inspection by the Township.
3. A financial deposit to the Township Stormwater Management Fund shall be required to be paid by the developer to help defray costs of periodic inspections and maintenance expenses associated with all stormwater management facilities, storm sewer, culverts, and other such improvements to be constructed within the right-of-way of public roadways, that are to be maintained by the Township after dedication. The deposit shall cover the estimated cost for maintenance and inspections for 10 years.
4. If a storage facility is proposed that also serves as a recreation facility (e.g., ball field, pond), the municipality 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.

**§ 26-349. Post-Construction Maintenance Inspections. [Ord. 273, 12/17/2013]**

1. BMPs shall be inspected by the landowner/developer or responsible entity (including the Township Engineer for dedicated BMPs) on the following basis:
  - A. Twelve months after completion of the facility and acceptance by the Township.
  - B. At least once every three years thereafter,
  - C. During or immediately after the cessation of a one-hundred-year or greater storm event.
2. The entity conducting the inspection shall submit a report to the Township regarding necessary repairs, if any.

**I. Enforcement and Penalties.****§ 26-350. Right of Entry. [Ord. 273, 12/17/2013]**

Upon presentation of proper credentials, duly authorized representatives of the municipality may enter at reasonable times upon any property within the municipality to inspect the condition of the stormwater structures and facilities in regard to any aspect regulated by this Part 3.

**§ 26-351. Notification. [Ord. 273, 12/17/2013]**

In the event that a person fails to comply with the requirements of this Part 3 or fails to conform to the requirements of any permit issued hereunder, the municipality shall provide written notification of the violation. Such notification shall set forth the nature of the violation(s) and establish a time (30 days) limit for correction of the(se) violation(s). Failure to comply within the time specified shall subject such person to the penalty provision of this Part 3. All such penalties shall be deemed cumulative. In addition, the municipality 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 3. 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.

**§ 26-352. Enforcement. [Ord. 273, 12/17/2013]**

1. The governing body is hereby authorized and directed to enforce all of the provisions of this Part 3. All inspections regarding compliance with the stormwater management plan shall be the responsibility of the Municipal Engineer or other qualified persons designated by the municipality as directed by the Board of Supervisors.

- A. A set of design plans approved by the municipality shall be on file at the site throughout the duration of the construction activity. Periodic inspections may be made by the municipality 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 3. It shall be unlawful to alter or remove any control structure required by the stormwater management plan pursuant to this Part 3 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.
- D. After receipt of the certification by the municipality, a final inspection shall be conducted by the governing body or its designee to certify compliance with this Part 3.
- E. Prior to revocation or suspension of a permit, the governing body 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 3 may be suspended or revoked by the governing body for:
    - (a) Noncompliance with or failure to implement any provision of the permit.
    - (b) A violation of any provision of this Part 3 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 Subpart I of this Part 3.

- (2) A suspended permit shall be reinstated by the governing body when:
    - (a) The Municipal 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 governing body is satisfied that the violation of the ordinance, law, or rule and regulation has been corrected.
  - (3) A permit that has been revoked by the governing body cannot be reinstated. The applicant may apply for a new permit under the procedures outlined in this Part 3.
- G. **Occupancy Permit.** An occupancy permit shall not be issued unless the certification of compliance pursuant to § 26-331 of this Part 3 has been secured. The occupancy permit shall be required for each lot owner and/or developer for all subdivisions and land developments in the municipality.

**§ 26-353. Public Nuisance. [Ord. 273, 12/17/2013]**

1. The violation of any provision of this Part 3 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 3, 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 3. 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.

**§ 26-354. Violations and Penalties. [Ord. 273, 12/17/2013]**

Any person, partnership or corporation who or which has violated or permitted the violation of the provisions of this Part 3 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.

**§ 26-355. Appeals. [Ord. 273, 12/17/2013]**

1. Appeals from the determination of the Township staff or from the determination of the Township Engineer in the administration of this Part 3 as it relates to stormwater management of a project not involving a subdivision or land development shall be made to the Board of Supervisors within 30 days of that determination or decision.
2. Any person aggrieved by a decision of the Board of Supervisors may appeal to the Bucks County Court of Common Pleas within 30 days of the decision of the Board of Supervisors.

**J. Miscellaneous Provisions.**

**§ 26-356. Repealer. [Ord. 273, 12/17/2013]**

This Part 3 shall amend and replace Chapter 26, Part 3, of the Code of Ordinances of East Rockhill in its entirety. Any ordinance or ordinance provision of the municipality inconsistent with any of the provisions of this Part 3 is hereby repealed to the extent of the inconsistency only.

**§ 26-357. Severability. [Ord. 273, 12/17/2013]**

Should any section or provision of this Part 3 be declared invalid by a court of competent jurisdiction, such decision shall not affect the validity of any of the remaining provisions of this Part 3.



## PART 4

**WATER USE RESTRICTION PLAN****§ 26-401. Purpose. [Ord. 243, 11/18/2008]**

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.

**§ 26-402. Scope. [Ord. 243, 11/18/2008]**

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.

**§ 26-403. Declaration of Drought Emergency. [Ord. 243, 11/18/2008]**

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.

**§ 26-404. Water Use Restrictions; Prohibited Nonessential Water Uses. [Ord. 243, 11/18/2008]**

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:
  - 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:
  - (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.

**§ 26-405. Public Water; Drought Plans. [Ord. 243, 11/18/2008]**

East Rockhill Township residents that receive their water from a public water supplier, such as the Perkasie 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.

**§ 26-406. Violations and Penalties. [Ord. 243, 11/18/2008]**

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.