

**EPHRATA TOWNSHIP
STORM WATER MANAGEMENT
ORDINANCE**

ADOPTED May 6, 2014



**OFFICE
265 AKRON ROAD
EPHRATA, PA 17522
(717) 733-1044**

**Prepared by:
RETTEWSM**

THIS PAGE LEFT INTENTIONALLY BLANK

| | | |
|-------------------|---|----|
| ARTICLE V | MAINTENANCE | |
| | SECTION 501 – RESPONSIBILITIES OF DEVELOPERS AND LANDOWNERS | 44 |
| | SECTION 502 – OPERATION AND MAINTENANCE AGREEMENTS | 44 |
| | SECTION 503 – MAINTENANCE RESPONSIBILITIES..... | 45 |
| | SECTION 504 – INSPECTION | 46 |
| | SECTION 505 – PROHIBITED DISCHARGES | 46 |
| | | |
| ARTICLE VI | ADMINISTRATION | |
| | SECTION 601 – RIGHT-OF-ENTRY | 48 |
| | SECTION 602 – ENFORCEMENT | 48 |
| | SECTION 603 – REMEDIES | 48 |
| | SECTION 604 – PENALTIES..... | 49 |
| | SECTION 605 – APPEALS..... | 50 |
| | SECTION 606 - CONSTRUCTION..... | 50 |
| | SECTION 607 – EFFECTIVE DATE | 50 |

Appendix

**ARTICLE I
GENERAL PROVISIONS**

**TOWNSHIP OF EPHRATA
Lancaster County, Pennsylvania**

ORDINANCE No. _____

AN ORDINANCE OF THE TOWNSHIP OF EPHRATA, COUNTY OF LANCASTER, COMMONWEALTH OF PENNSYLVANIA, REPEALING THE TOWNSHIP'S CURRENT STORMWATER ORDINANCE AS AMENDED AND ENACTING AND ORDAINING THIS ORDINANCE IN ITS PLACE IN CONFORMANCE WITH PENNSYLVANIA STORM WATER MANAGEMENT ACT NO 167 OF OCTOBER 4, 1978 (P.L. 864); AND THE 2ND CLASS TOWNSHIP CODE, ACT OF MAY 1, 1933 (P.L. 103, NO.69) REENACTED AND AMENDED JULY 10, 1947 (P.L. 1481, NO567) AS AMENDED AND IN ORDER TO IMPLEMENT THE MANDATED TERMS AND CONDITIONS OF LANCASTER COUNTY'S AGREEMENT WITH THE PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION, CONTAINING GENERAL PROVISIONS, DEFINING CERTAIN TERMS, PLAN REQUIREMENTS, DESIGN STANDARDS, AND PROVIDING FOR THE ADMINISTRATION OF THE ORDINANCE INCLUDING POTENTIAL PENALTIES, FILING FEES, REVIEW FEES, AND ASSESSING CHARGES RELATING TO STORMWATER MANAGEMENT FACILITIES.

BE AND IT IS HEREBY ORDAINED AND ENACTED by the Board of Supervisors of Ephrata Township, Lancaster County, Pennsylvania, as follows:

Section 101 TITLE

This Ordinance shall be known as the Ephrata Township Storm Water Management Ordinance of 2014.

Section 102 PURPOSE AND LEGISLATIVE INTENT

The purpose of this Ordinance is to:

1. The purposes of this Ordinance are:
 - A. To promote the general health, safety, and welfare of the community;
 - B. To regulate the modification of the natural terrain and alterations of existing drainage from land disturbances, new subdivisions, and new land developments in order to control erosion and sedimentation of soils and preserve stream channels and water quality;
 - C. To meet NPDES MS4 permit requirements;
 - D. To manage accelerated runoff and erosion and sedimentation problems at their source by regulating activities that cause these problems;
 - E. To provide procedures and standards for proper operation and maintenance of storm water management BMPs;
 - F. To provide design, construction and maintenance, and storm drainage facilities for controlling storm water, erosion, and sedimentation and maintaining the quality of the watersheds within the Township;
 - G. Meet legal water quality requirements under state law, including regulations in Chapter 93 to protect, maintain, reclaim, and restore the existing and designated uses of the waters of this Commonwealth;
 - H. Preserve the existing natural drainage systems as much as possible;

- I. Maintain recharge of groundwater to prevent degradation of surface and groundwater quality and to otherwise protect water resources;
 - J. Provide performance standards and design criteria for watershed-wide storm water management and planning; and,
 - K. Prevent scour and erosion of stream banks and streambeds.
2. In the enactment of this Ordinance, it is the legislative intent of the Board of Supervisors to implement the policies set forth in various statutes of the state and federal governments, including but not limited to the Pennsylvania Clean Streams Law, Act of June 22, 1937, P.L. 1987, as amended, 35 P.S. Section 691.1 et seq.; the Pennsylvania Storm Water Management Act, Act of October 4, 1978, P.L. 864, No. 167, as amended, 32 P.S. Section 680.1 et seq.; the Pennsylvania Scenic Rivers Act, Act of December 5, 1972, P.L. 1277, No. 283, 32 P.S. Section 820.21 et seq.; and the Federal Water Pollution Control Act, commonly known as the Clean Water Act, 33 U.S.C. Section 1251 et seq.
 3. In the enactment of this Ordinance, it is the further intent of the Board of Supervisors to: ensure consistency and compliance with the recommendations for quantity and quality controls, that are found in “Blueprints An Integrated Water Resources Plan for Lancaster County”, including the “Countywide Act 167 Plan” dated April 2013; to encourage the recharge of groundwater, where appropriate, within the Township; to preserve and restore the flood carrying capacity of streams within the Township, and to maintain existing flows and quality of streams within the Township.

Section 103 FINDINGS

1. Federal and state regulations require this municipality to obtain a permit for discharges from its MS4 and to implement a program of storm water controls.
2. Inadequate maintenance of storm water best management practices (BMPs) causes loss of water quality, flooding, and other problems.
3. A program of reasonable regulation of connections and discharges to municipal storm water management facilities will be beneficial.
4. Storm water is an important resource, which provides groundwater recharge for water supplies and base flow of streams, which also protects and maintains surface water quality.
5. Inadequate management of accelerated storm water runoff resulting from development throughout a watershed increases flood flows and velocities, contributes to erosion and sedimentation, overtaxes the carrying capacity of existing streams and storm sewers, greatly increases the cost of public facilities to convey and manage storm water, undermines floodplain management and flood reduction efforts in upstream and downstream communities, reduces groundwater recharge, and threatens public health and safety.
6. A comprehensive program of storm water management, including reasonable regulation of development and activities causing accelerated erosion, is fundamental to the public health, safety, welfare, and the protection of the people of the Township and all the people of the Commonwealth, their resources, and the environment.

Section 104 ADOPTION - AUTHORITY - APPLICABILITY

The Board of Supervisors of Ephrata Township pursuant to the Pennsylvania Storm Water Management Act, Act No. 167 of October 4, 1978 (P.L. 864), and the Second Class Township Code, Act of May 1, 1933 (P.L. 103, No. 69), reenacted and amended July 10, 1947 (P.L. 1481, No. 567), as amended, hereby enacts and ordains this Ordinance as the Ephrata Township Storm Water Ordinance. This Ordinance shall apply to Land Disturbances, activities related to proper operation and maintenance of storm water management facilities and BMPs and activities that may contribute non-storm water discharges to the Township's regulated small MS4.

Section 105 ABROGATION AND GREATER RESTRICTIONS

This Ordinance supersedes any provisions currently in effect with respect to Storm Water Management and Erosion Control. However, all other ordinances and regulations shall remain in full force and effect to the extent that those provisions are more restrictive.

Section 106 MUNICIPAL LIABILITY

The degree of storm water management sought by the provisions of this Ordinance is considered reasonable for regulatory purposes. The issuance of permits by Ephrata Township, its officers, or employees shall not be deemed to relieve the developer of responsibility, if any such responsibility exists, to those adversely affected by the drainage of water. Further, the municipality through the issuance of a permit assumes no responsibility to either the developer or the adjoining landowner affected by the drainage of water. Township approvals issued under this Ordinance do not satisfy approval requirements under other laws.

Section 107 ERRONEOUS PERMIT

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

Section 108 REPEALER

Any resolution, ordinance, or part of any resolution or ordinance inconsistent herewith any amendments thereof are hereby repealed to the extent of the inconsistency only.

Section 109 SEVERABILITY

Should any section, subsection, or provision of this Ordinance be declared invalid by a court of competent jurisdiction, such decision shall not affect the validity of the Ordinance as a whole, or of any part thereof.

Section 110 RIGHT-OF-ENTRY

Upon presentation of proper credentials, duly authorized representatives of Ephrata Township may enter at reasonable times upon any property within the municipality to investigate or ascertain the condition of the subject property in regard to any aspect regulated by this Ordinance.

The landowner shall grant to the Township, or its agents, access to the site of the work at all times, while under construction, for the purpose of inspecting the work.

Section 111 COMPATIBILITY WITH OTHER ORDINANCE REQUIREMENTS

Approvals issued pursuant to this Ordinance 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.

**ARTICLE II
DEFINITIONS**

Section 201 DEFINITIONS

Unless otherwise stated, the following words shall for the purpose of this Ordinance, have the meaning herein indicated. Words in the present tense include the future tense. Words in singular include the plural and words in the plural include the singular.

The masculine gender includes the feminine gender and the neuter. The word "person" includes a partnership, corporation, association, trust, estate, or any other legally recognized entity as well as an individual and the officers of any corporation and the members of any partnership. The word "shall" is to be interpreted as mandatory; the word "may" is directory. References to codes, ordinances, resolutions, plans, maps, governmental bodies, commissions or agencies, or officials are to codes, ordinances, resolutions, plans, maps, governmental bodies, commissions or agencies, or officials of Ephrata Township, Lancaster County Conservation District or the Commonwealth of Pennsylvania as in effect or office from time to time including amendments thereto or revisions or successors thereof, unless the text indicates another reference is intended.

1. Accelerated Erosion: The removal of the surface of land through the combined action of man's activities and the natural processes at a rate greater than would occur because of the natural process alone.
2. Act 167 Plan: The “Cocalico Creek Watershed Act 167 Storm Water Management Plan” and the “Conestoga River Watershed Act 167 Storm Water Management Plan.”
3. Agricultural Activity: The use of land exclusively for the cultivation of soil, the production of crops or livestock, or the science of forestry in accordance with recognized soil management or conservation practices; also land which has been diverted from agricultural use by an active federal farm program, provided the land has a conservation cover of grass, legume, trees, or wildlife shrubs. Construction of new buildings or impervious areas is not considered an agricultural activity.
4. Applicant: A landowner and/or Developer, as herein defined, or agent of the landowner, who has filed an application to the municipality for approval to engage in any regulated activity at a development site located within the municipality.
5. Best Management Practice (BMP): Activities, facilities, control measures, planning or procedures used to minimize accelerated erosion and sedimentation and manage storm water to protect, maintain, reclaim, and restore the quality of waters and the existing and designated uses of waters within this Commonwealth before, during and after earth disturbance activities. Storm water BMPs are commonly grouped into one (1) of two (2) broad categories or measures: "non-structural" or "structural". "Non-structural" BMPs are measures referred to as operational and/or behavior-related practices that attempt to minimize storm water runoff generation resulting from an alteration of the land surface or the contact of pollutants with storm water runoff, whereas "structural" BMPs are measures that consist of a physical device or practice that is installed to capture and treat storm water runoff. "Structural" BMPs include, but are not limited to, a wide variety of practices and devices, from large-scale wet 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" storm water BMPs are permanent appurtenances to the project site. BMP Manual: The Pennsylvania Storm Water Best Management Practices Manual of December 2006, or most recent version thereof.

6. Carbonate Geology: Limestone or dolomite, as shown on the Geologic Map of Pennsylvania 1980 as amended, published by the Pennsylvania Department of Environmental protection, Bureau of Topographic and Geological Survey.
7. Channel: A natural or artificial watercourse with a definite bed and banks which confine and conduct continuously or periodically flowing water.
8. Chapter 102: Chapter 102 of the regulations of PADEP, 25 Pa. Code Sect. 102.1 et seq.
9. Chapter 105: Chapter 105 of the regulations of PADEP, 25 Pa. Code Sect. 105.1 et seq.
10. Chapter 106: Chapter 106 of the regulations of PADEP, 25 Pa. Code Sect. 106.1 et seq.
11. Code Enforcement Officer: The person appointed by the Board of Supervisors of the Township to administer and enforce the provisions of this Ordinance.
12. Conservation District: A conservation district, as defined in Section 3(c) of the Conservation District Law (3 P. S. § 851(c)) that has the authority under a delegation agreement executed with DEP to administer and enforce all or a portion of the regulations promulgated under 25 Pa. Code 102.
13. Culvert: A structure with appurtenant works which carries a watercourse under or through an embankment or fill.
14. Dedication: The deliberate appropriation of property by its owner for general public use.
15. DEP also PA DEP or PADEP: The Pennsylvania Department of Environmental Protection or any agency successor to the Pennsylvania Department of Environmental Protection.
16. Design Storm: The magnitude of precipitation from a storm event measured in probability of occurrence (e.g., 10-year storm) and duration (e.g., 24-hour), and used in computing storm water management control systems.
17. Detention Basin: A vegetated basin designed to drain completely after storing runoff only for a given storm event and releasing it at a predetermined rate. Also known as a dry pond.
18. Detention Volume: The volume of runoff that is captured and released into the waters of this Commonwealth at a controlled rate.
19. Development: Any man-made change to improved or unimproved real estate, including but not limited to buildings or other structures, mining, dredging, filling, grading, paving, logging, excavation, or drilling operations.
20. Developer: Any landowner, agent of such landowner, or tenant with the permission of such landowner, who makes or causes to be made a subdivision of land or a land development, or other activities covered by this Ordinance.
21. Drainage Easement: A right granted by a landowner to a grantee, allowing the use of private land for storm water management purposes.
22. Ephemeral Stream: A water conveyance that lacks substrates associated with flowing waters and flows only in direct response to precipitation in the immediate watershed or in response to

melting snow pack and which is always above the local water table. Typically a broad draw or swale with undefined bed and banks.

23. Energy Dissipater: A device used to slow the velocity of storm water, particularly at points of concentrated discharge such as pipe outlets.
24. Erosion: The removal of soil particles by the action of water, wind, ice, or other geological agents.
25. Erosion and Sediment Pollution Control Plan: A plan which is designed to minimize accelerated erosion and sedimentation.
26. Existing Conditions: The initial condition of a project site prior to the proposed regulated activity. If the initial condition of the site is not forested or undeveloped land, the land use shall be considered as "meadow" unless the natural land cover is documented to generate lower Curve Numbers or Rational "C" Coefficients, such as forested lands.
27. Facility Depth: For above ground detention/retention/BMP facilities, the facility depth is defined to be the depth between the bottom invert of the lowest orifice and the invert of the spillway. If there is no spillway, the top of the berm shall be used. For basins with no orifices or outlet structure, the bottom elevation of the basin shall be used.
28. Flood Plain: Any area susceptible to being inundated by water from natural sources and as specified in the Township Flood Plain Ordinance.
29. Forest Management/Timber Operations: Planning and activities necessary for the management of forest land. These include conducting a timber inventory and preparation of forest management plans, silvicultural treatment, cutting budgets, logging road design and construction, timber harvesting, site preparation and reforestation.
30. Freeboard: A vertical distance between the 100-year design elevation of the water surface at the emergency spillway, in a condition that assumes the primary outlet(s) are blocked, and the top of a dam, levee, tank, basin, berm, or diversion ridge.
31. Frequency: The probability or chance that a given storm event/flood will be equaled or exceeded in a given year.
32. Grassed Waterway: A man-made drainage way of parabolic or trapezoidal cross-section shaped to required dimensions and vegetated for safe disposal of runoff. (Also known as a swale.)
33. Groundwater Recharge: Replenishment of existing natural underground water supplies.
34. Holding Pond: A retention or detention pond.
35. Hydrologic Soil Group (HSG): Infiltration rates of soils vary widely and are affected by subsurface permeability as well as surface intake rates. Soils are classified into four HSGs (A, B, C, and D) according to their minimum infiltration rate, which is obtained for bare soil after prolonged wetting. The NRCS defines the four groups and provides a list of most of the soils in the United States and their group classification. The soils in the area of the development site may be identified from a soil survey report that can be obtained from local NRCS offices or conservation district offices. Soils become less pervious as the HSG varies from A to D.
36. Impervious Surface: A surface which prevents the percolation of water into the ground. All structures, buildings, parking areas, driveways, roads, streets, sidewalks, decks, and any areas of concrete, asphalt, packed stone, and compacted soil shall be considered impervious surface if

they prevent infiltration. The water surface area of a swimming pool is not considered an impervious surface.

37. Intermittent Stream: A body of water flowing in a channel or bed composed primarily of substrates associated with flowing water, which, during periods of the year, is below the local water table and obtains its flow from both surface runoff and groundwater discharges.

38. Land Development:

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

B. A subdivision of land.

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

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

40. Land Disturbance: Any use involving the installation of ground cover, grading, filling or excavation of land; or the erection of a dwelling or other principal structure; or the modification, removal, filling, or alteration of an existing storm water management facility or drainage easement. Land disturbances shall be classified as follows:

A. Major Land Disturbance:

- 1) Any land disturbance not classified as a minor land disturbance; or
- 2) Any use involving the diversion or piping of any natural or manmade watercourse or existing drainage pattern; or
- 3) Any use involving the installation of ground cover, grading, filling, excavation, or destruction of woodland in excess of ten thousand (10,000) square feet, except for agricultural activity when operated in accordance with a Farm Conservation Plan approved by the Lancaster County Conservation District; or
- 4) Any non-residential development including but not limited to commercial, industrial, and institutional development; or
- 5) The submission of a Subdivision or Land Development Plan.

B. Minor Land Disturbance:

- 1) The use of land for any single-family residential purpose on an existing lot of record including subdivided lots or land developments approved under a Major Land Disturbance; provided that:
 - a) The use is not within a flood plain area; and

- b) No diversion or piping of any natural or man-made watercourse or existing drainage pattern is involved; and
 - c) Such use does not involve the removal of ground cover, grading, filling, or excavation of more than ten thousand (10,000) square feet, except for agricultural activity.
 - i. The date of the adoption of this Ordinance shall be the starting point from which the maximum ten thousand (10,000) square feet of disturbed area shall be cumulatively considered.
 - 2) The use of land for any single-family residential purpose on an existing lot of record including subdivided lots or land developments approved under a Major Land Disturbance; provided that:
 - a) The use is not within a flood plain area; and
 - b) No diversion or piping of any natural or man-made watercourse or existing drainage pattern is involved; and
 - c) Such use does not involve the removal of ground cover, grading, filling, or excavation of more than ten thousand (10,000) square feet, except for the agricultural activity.
- 41. Limiting Zone: A rock formation, other stratum, or soil condition which is so slowly permeable that it effectively limits downward passage of effluent. Seasonal high water tables, whether perched or regional, also constitute a limiting zone.
- 42. Lineament: A fracture on the order of tens of kilometers long usually extending to the basement below, or the lowest level of, sedimentary rock.
- 43. Municipal Separate Storm Sewer: A conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, manmade channels, or storm drains), which is all of the following: (1) owned or operated by a state, city, town, borough, township, county, district, association or other public body (created under state law) having jurisdiction over disposal of sewage, industrial wastes, storm water or other wastes; (2) designed or used for collecting or conveying storm water; (3) not a combined sewer; and (4) not part of a Publicly Owned Treatment Works as defined at 40 CFR § 122.2.
- 44. Municipal Separate Storm Sewer System (MS4): All separate storm sewers that are defined as “large” or “medium” or “small” municipal separate storm sewer systems pursuant to 40 CFR § 122.26(b)(18), or designated as regulated under 40 CFR § 122.26(a)(1)(v).
- 45. Municipality: The Township of Ephrata, Lancaster County, Pennsylvania.
- 46. Natural Watercourse: A natural watercourse or channel (not man-made) with a definite bed and banks which confine and conduct continuously or periodically flowing water.
- 47. NOAA Atlas 14: Precipitation-Frequency Atlas of the United States, Atlas 14, Volume 2, US Department of Commerce, National Oceanic and Atmospheric Administration, National Weather Service, Hydrometeorological Design Studies Center, Silver Spring, Maryland (2004). NOAA's Atlas 14 can be accessed at Internet address: <http://hdsc.nws.noaa.gov/hdsc/pfds/>.
- 48. NPDES: National Pollution Discharge Elimination System, the federal government’s system for issuance of permits under the Clean Water Act, which is delegated to DEP in Pennsylvania.

49. NRCS: USDA Natural Resources Conservation Service (previously SCS).
50. On-Site Storm Water Management: The control of runoff to allow water falling on a given site to be absorbed or detained on-site to the extent that after development the peak rate of discharge leaving the site is no greater than if the site had remained undeveloped.
51. Outfall: (i) Point where water flows from a conduit, stream, or drain; (ii) "Point Source" as described in 40 CFR § 122.2 at the point where the Township storm sewer system discharges to surface Waters of this Commonwealth.
52. Peak Discharge: The maximum rate of flow of water at a given point and time resulting from a specified storm event.
53. Pipe: A culvert, closed conduit, or similar structure (including appurtenances) that conveys storm water.
54. Project Site: An area of land under land disturbance or development and within the jurisdiction of this Ordinance.
55. Qualified Person: Any person licensed by the Pennsylvania Department of State or otherwise qualified by law to perform the work required by this Ordinance.
56. Rate Control: Storm water management controls used to manage the peak flows for the purposes of channel protection and flood mitigation.
57. Rational Formula (Rational Method): A rainfall-runoff relation used to estimate peak flow.
58. Record Drawings: Set of prints of the original facilities showing those changes made during the construction process.
59. Redevelopment: Any physical improvement to a previously developed lot that involves earthmoving, removal, or addition of impervious surfaces.
60. Retention Pond: A pond containing a permanent pool of water designed to store runoff for a given storm event and release it at a predetermined rate.
61. Retention Volume/Removed Runoff: The volume of runoff that is captured and not released directly into the surface waters of this Commonwealth during or after a storm event.
62. Return Period: The average interval, in years, within which a storm event of a given magnitude can be expected to occur one time. For example, the 25-year return period rainfall would be expected to occur on average once every 25 years; or stated in another way, the probability of a 25-year storm occurring in any one year is 0.04 (i.e., a 4% chance).
63. Runoff: Any part of precipitation that flows over the land surface.
64. Sediment Basin: A temporary dam or barrier constructed across a waterway or at other suitable locations to intercept the runoff and to trap and retain the sediment.
65. Small Project: Regulated activities that, measured on a cumulative basis from May 6, 2014, create additional impervious areas of 1,000 sq. ft. or less or involve removal of ground cover, grading, filling or excavation of an area less than 5,000 sq. ft. and do not involve the alteration of storm water facilities or watercourses.
66. State Water Quality Requirements: The regulatory requirements to protect, maintain, reclaim, and restore water quality under Title 25 of the Pennsylvania Code, the Clean Streams Law and the Clean Water Act.

67. Storage: A volume above or below ground that is available to hold storm water.
68. Storm Event: A storm of a specific duration, intensity, and frequency.
69. Storm Sewer: A system of pipes, conduits, swales, or other similar structures including appurtenant works which carries intercepted runoff, and other drainage, but excludes domestic sewage and industrial wastes.
70. Storm Water: Drainage runoff from the surface of the land resulting from precipitation or snow or ice melt.
71. Storm Water Management: A program of controls and measures including BMPs designed to regulate the quantity and quality of storm water runoff from a development while promoting the protection and conservation of groundwaters and groundwater recharge.
72. Storm Water Management Best Management Practices (SWM BMP): See BMPs.
73. Storm Water Management Facilities: Those controls and measures used to affect a storm water management program, including BMPs.
74. Storm Water Management Operation and Maintenance Plan (O & M Plan): A plan, including a narrative, to ensure proper functioning of the storm water management facilities in accordance with Article V of this Ordinance.
75. Storm Water Management Plan: The Lancaster County Act 167 Watershed Storm Water Management Plan, "Blueprints", for managing storm water runoff adopted by the county of Lancaster as required by the Act of October 4, 1978, P.L. 864, (Act 167), as amended, and known as the "Storm Water Management Act." Also, by reference, the Cocalico Creek Watershed Act 167 Storm Water Management Plan.
76. Storm Water Management Site Plan (SWM Site Plan): The Plan prepared by the Developer or his representative indicating how storm water runoff will be managed at a particular development site according to this Ordinance.
77. Street: A highway, road, avenue, lane, or alley, whether publicly or privately owned, which includes an impervious surface cartway.
78. Subdivision: The division or redivision of a lot, tract, or parcel of land by any means into two or more lots, tracts, parcels or other divisions of land including changes in existing lot lines for the purpose, whether immediate or future, of lease, partition by the court for distribution to heirs or devisees, transfer of ownership, or building or lot development.
79. Township: The Township of Ephrata, Lancaster County, Pennsylvania.
80. USDA: United States Department of Agriculture.
81. Watercourse: A permanent or intermittent stream, river, brook, creek, run, channel, swale, pond, lake, or other body of water, whether natural or manmade, for gathering or carrying surface water.
82. Watershed: The entire region or area drained by a watercourse.
83. Waters of this Commonwealth: Any and all rivers, streams, creeks, rivulets, impoundments, ditches, watercourses, storm sewers, lakes, dammed water, wetlands, ponds, springs, and all other bodies or channels of conveyance of surface and underground water, or parts thereof, whether natural or artificial, within or on the boundaries of Pennsylvania.

84. Wetlands: Area inundated or saturated by surface or groundwater at a frequency and duration sufficient to support a prevalence of vegetation adapted for life in saturated soil conditions. Includes swamps, marshes, and bogs. Wetlands can be very effective in the removal of pollutants from storm water runoff.

**ARTICLE III
PLAN REQUIREMENTS**

Section 301 GENERAL REQUIREMENTS

For any land development regulated by this Ordinance, the final approval of subdivision and/or land development plans or the commencement of any land disturbance may not proceed until the Property Owner or Developer or his/her agent has received approval of a Storm Water Management Site Plan from the Township.

Section 302 EXEMPTIONS

The following activities are specifically exempt from the plan requirements of this Ordinance. The date of the adoption of this Ordinance shall be the starting point from which new impervious area shall be cumulatively considered.

1. Use of land for gardening and landscaping of the property, when performed as an accessory use to the primary use of the property is specifically exempt from the plan requirements of this Ordinance.
2. As of the effective date of this Ordinance, lands improved with existing structures may be exempted for an additional one thousand (1,000) square feet of impervious surface or five thousand (5,000) square feet of earth disturbance in all Zoning Districts provided that flows from the site after development leave the site in the same manner as the pre-development condition and there are no adverse effects on adjacent properties.
3. Agricultural activities are exempt from the requirements of this Ordinance except for Section 302.6, when operated in accordance with a conservation plan, nutrient management plan, or erosion and sedimentation control plan approved by the Lancaster County Conservation District.
4. Forest management and timber operations are exempt from the requirements of this Ordinance except for Section 302.5 provided the activities are performed according to the requirements of Chapter 102.
5. Activities on lands which have a prior approved Storm Water Management Plan, which was approved prior to the adoption of this Ordinance and which, in the opinion of the Township following consultation with the Township Engineer, adequately manages storm water resulting from the proposed activities, are exempt from the requirements of this Ordinance that may conflict with the requirements of the Storm Water Management Ordinance in effect at the time of the approval of the prior approved Storm Water Management Plan.
6. The municipality may deny or revoke any exemption pursuant to this Section at any time for any project that the municipality believes may pose a threat to public health, safety, property or the environment.

Section 303 PLAN CONTENTS - MINOR LAND DISTURBANCE

The Minor Land Disturbance Plan shall include a general plan of the lot configuration, existing and proposed building location, grading, storm water management facilities, and erosion and sedimentation control facilities.

Although the plan need not demonstrate literal compliance with all provisions of plan requirements within Section 304 and the Design Standards of Article IV, the plan must demonstrate that the proposed activity will comply with the intent of this Ordinance as outlined within Section 102.

The Code Enforcement Officer may require additional information or invoke any section of this Ordinance deemed necessary to adequately demonstrate compliance with the intent of this Ordinance. The requirements of the Code Enforcement Officer may be appealed to the Board of Supervisors in accordance with Section 603 of this Ordinance.

Section 304 PLAN CONTENTS - MAJOR LAND DISTURBANCE

All activities regulated by Section 104 of this Ordinance, and not exempted by Section 302, shall prepare a Storm Water Management Site Plan. The Storm Water Management Site Plan shall consist of all applicable calculations, maps and plans, including all plans, reports, and correspondence with the Lancaster County Conservation District. A note on the maps shall refer to the associated computations and Erosion and Sedimentation Pollution Control Plan by title and date. The cover sheet of the computations and Erosion and Sedimentation Pollution Control Plan shall refer to the associated maps by title and date. All Storm Water Management Site Plan materials shall be submitted to the Ephrata Township in a format that is clear, concise, legible, neat and well organized. The following items shall be included as part of the Storm Water Management Site Plan:

1. The Following General Information:
 - A. The proposed name or identifying title of the project.
 - B. Name of the municipality or municipalities in which the project is located, including the location of any municipal boundaries if located within the vicinity of the tract.
 - C. The name and address of the owner of the tract (or his authorized agent), the developer of the project, and the firm that prepared the plans.
 - D. Total acreage of the project site and the tract of land on which the project site is located.
 - E. Plan date, date of latest revision, north point, graphic scale, and written scale. All plans shall be drawn at a common engineering scale.
 - F. A location map, for the purpose of locating the project site to be developed, at a minimum scale of two thousand (2,000) feet to the inch, showing the relation of the tract to adjoining property and to all streets and Township boundaries existing within one thousand (1,000) feet of any part of the tract of land that is proposed to be developed.
 - G. The Storm Water Management Site Plan shall include an Ownership and Maintenance (O&M) Plan for all existing and proposed storm water management facilities and BMPs. This Plan shall address long-term ownership and responsibilities for O&M as well as schedules for O&M activities. All such agreements shall be duly recorded in the Office of the Recorder Deeds and shall constitute a binding permanent covenant upon the

property, superior to all liens of record and not subordinate to any easement or restriction that would interfere with its provisions and the implementation thereof.

- H. Provisions for permanent access or maintenance easements for all existing and proposed physical Storm Water Management facilities and BMPs, such as ponds and infiltration structures, as necessary to implement the Operation and Maintenance (O&M) Plan. All such agreements shall be duly recorded in the Office of the Recorder Deeds and shall constitute a binding permanent covenant upon the property, superior to all liens of record and not subordinate to any easement or restriction that would interfere with its provisions and the implementation thereof.
- I. A minimum twenty (20) foot wide access easement around all Storm Water Management facilities that would provide ingress from and egress to a public right-of-way. Easements shall be provided to allow for the collection and discharge of water, the inspection, maintenance, repair and reconstruction of the drainage facilities, and the passage of machinery for work. Ephrata Township may require additional easement width for facility installations at a depth greater than ten (10) feet.
- J. The Storm Water Management Site Plan shall include a note on the plan informing the owner that the Ephrata Township shall have the right of entry for the purposes of inspecting all storm water conveyance, treatment, or storage facilities.
- K. A soil Erosion and Sedimentation Pollution Control Plan, including all reviews and approvals, as required by DEP or the Lancaster County Conservation District shall be provided to the municipality prior to final plan approval.
- L. For any activities that require a DEP Joint Permit Application and are regulated under Chapter 105 or Chapter 106, require a PennDOT Highway Occupancy Permit, or require any other permit under applicable state or federal regulations, the permit(s) shall be part of the Storm Water Management Site Plan and must be obtained prior to final plan approval.
- M. A modification to a submitted Storm Water Management Site Plan that involves a change in storm water management BMPs or techniques, or that involves the relocation or redesign of storm water management BMPs, or that is necessary because soil or other conditions are not as stated on the Storm Water Management Site Plan as determined by the municipality shall require a resubmission of a modified Storm Water Management Site Plan in accordance with this Article.
- N. Certificate, signed and sealed by an individual registered in the Commonwealth of Pennsylvania and qualified to perform such duties, indicating compliance with the provisions of this Ordinance. See form of certificate in Appendix No. 6.
- O. It shall be the developer's responsibility to verify if the development is underlain by carbonate geology. See form of certificate in Appendix No. 7.
- P. Certificate for approval by the Board of Supervisors. , when the application is not in conjunction with the submittal of a subdivision and/or Land Development Plan. See form of certificate in Appendix No. 5.

2. The Following Existing Features:

- A. Tract boundaries showing distances, bearings, and curve data, as located by field survey or by deed plotting.
- B. Existing topographical data. This information shall be provided by field survey of contour lines.

- C. Contour lines shall be provided at a maximum of two (2) foot vertical intervals for slopes of four (4) percent or less, and at a maximum of five (5) foot vertical intervals for more steeply sloping land. Additionally, the benchmark and the datum used shall also be indicated.
- D. The names of all adjacent landowners; both adjoining and across existing rights-of-way along with plan book record numbers of all previously plans for adjacent properties, the names of all proposed or existing developments immediately adjacent, and the locations and dimensions of any streets or easements shown thereon.
- E. The names, locations, and dimensions of all existing streets, railroads, watercourses, drainage facilities, flood plains, and other significant features within two hundred (200) feet of any part of the tract proposed to be developed and the location of all buildings and approximate location of all tree masses within the tract.
- F. Soil types as designated by the USDA SCS Soil Survey of Lancaster County.
- G. Designation of limits of on-site watershed areas, including a map which shows the off-site watershed areas.

3. The Following Proposed Features:

- A. The proposed land use, the number of lots and dwelling units and the extent of commercial, industrial, or other nonresidential uses.
- B. The locations and dimensions of all proposed streets, parks, playgrounds, and other public areas; sewer and water facilities; lot lines and building locations, and parking compounds and other impervious and semi-pervious surfaces.
- C. The proposed changes to land surface and vegetative cover including areas to be cut or filled.
- D. Proposed topographical data. This information shall be provided by contour lines. Contour lines shall be provided at a maximum of two (2) foot vertical intervals for slopes of four (4) percent or less, and at a maximum of five (5) foot vertical intervals for more steeply sloping land.
- E. Plans and profiles of all proposed storm water management facilities including vertical and horizontal alignment, size, and type of material. This information shall be of the quality required for the construction of all facilities.
- F. For all basins which hold two (2) acre-feet or more of water and have an embankment that is eight (8) feet or more in height, soil structure and characteristics shall be provided. Plans and data shall be prepared by a registered professional engineer. These submissions shall provide design solutions for frost-heave potential, shrink-swell potential, soil bearing strength, water infiltration, soil settling characteristics, fill and back-filling procedures, and soil treatment techniques as required to protect the improvements for adjacent structures.
- G. The type, location, and extent of all temporary and permanent erosion and sedimentation control measures shall be shown on an erosion and sedimentation control plan that conforms to the requirements of the Soil Erosion and Sedimentation Control Manual of the Pennsylvania Department of Environmental Protection and which shall be submitted to the Lancaster County Conservation District for review.

- H. Data concerning subsoil and rock foundation conditions and the physical properties of the materials entering into the construction of all BMPs.
 - I. A note on the plan indicating that the design separation between finished floor elevations and the 100-year storm water surface level will need to be verified following construction.
 - J. A note on the plan indicating that no alteration to swales, or basins, or placement of structures shall be permitted within easements.
 - K. A note on the plan indicating any area that is not to be offered for dedication along with a statement that the Township is not responsible for maintenance of any area not dedicated to and accepted for public use
4. Written hydraulic report and erosion and sedimentation narrative including or prepared in accordance with the following:
- A. Storm water runoff calculations for both pre-development and post-development conditions for peak discharge and pollutant removal.
 - B. An erosion and sedimentation control plan narrative that conforms to the requirements of the Soil Erosion and Sedimentation Control Manual of the Pennsylvania Department of Environmental Protection and provides a description of all erosion and sedimentation control measures, temporary as well as permanent, including the staging of earth-moving activities, sufficient in detail to clearly indicate their function.
 - C. For all proposed detention basins and retention basins, and temporary sedimentation basins, the documentation shall include a plotting or tabulations of storage volumes with corresponding water surface elevations and the outflow rates for those water surfaces.
 - D. For all proposed detention basins and retention basins, and temporary sediment basins, documentation shall set forth the design hydrology, and the short-cut routing method or a method of equal caliber acceptable to the Township Engineer, utilized to determine the function of the basin.
5. A detailed schedule of inspections during construction, as generally outlined as follows, which is tailored for the site under consideration:
- A. The Township shall inspect all phases of the installation of any temporary or permanent Storm Water Management facilities during construction. The developer shall pay the cost of any such inspection. The developer shall provide at least twenty-four (24) hours notice prior to the start of construction of any improvements that are subject to inspection. All inspections of completed items shall be requested, in writing, at least forty-eight (48) hours in advance of the inspection time and date.
 - B. It is generally required that the following phases of site construction have mandatory inspection. This general list of phases may be amended by mutual agreement of the Township and developer when the site requires special construction procedures. The inspection schedule must be shown on the approved Storm Water Management Site Plan.

- C. General Site Construction
 - 1) Upon completion of preliminary site preparation including stripping of vegetation, stockpiling of topsoil and construction of temporary erosion and sedimentation control devices.
 - 2) Upon completion of rough grading, but prior to placing topsoil, permanent drainage, or other site development improvements and ground covers.
 - 3) During the construction of permanent storm water management and BMP facilities.
 - 4) Upon the final completion of permanent storm water management and BMP facilities, including the establishment of ground covers and plantings.
 - 5) After review of the as-built drawings, required by Section 311, but prior to final release of the financial security for completion of final grading, vegetative controls required by the BMP standards, or other site restoration work.
 - D. In addition to the above outlined observations, additional observations will be made at the request of the developer for reduction of financial securities. Random observations should be made at the frequency desired by the Township. At the time of any of the above listed observations, all ongoing construction (i.e. storm drainage, sanitary sewer, water, erosion control, etc.) should also be checked for compliance with the approved plans and the findings reported. Since the above inspections are mandatory, it is recommended that requests for reduction of financial security be submitted to coincide with the above inspections.
6. Description of an ownership and maintenance program, in a recordable form, that clearly sets forth the ownership and maintenance responsibilities for all temporary and permanent storm water management facilities, including the following:
- A. Description of the method and extent of the maintenance requirements.
 - B. When maintained by a private entity, identification of an individual, corporation, association, or other entity responsible for ownership and maintenance
 - C. When maintained by a private entity, a copy of the legally binding document which provides that the Township shall have the right to:
 - 1) Inspect the facilities at any time.
 - 2) Require the private entity to take corrective measures and assign the private entity reasonable time periods for any necessary action.
 - 3) Authorize maintenance to be done and lien the cost of the work against the properties of the private entity responsible for maintenance.
 - D. Establishment of suitable easements for access to storm water management facilities.
 - E. Annual written reporting to the Township by all owners of NPDES-required BMPS.
 - F. This document shall be recorded by the applicant in the Lancaster County Recorder of Deeds Office prior to issuance of a permit.
7. Where development of any kind is proposed in areas of carbonate geology, the applicant shall provide detailed geologic evaluation in accordance with Section 403.

8. A Pennsylvania Department of Transportation Highway Occupancy Permit for any storm water management facility proposed within the right-of-way of a state road, including a reciprocal maintenance agreement between the applicant and the Township for the proposed storm water management facilities.
9. Receipt of appropriate state and federal permits for all activities in or along any bodies of water, waters of the U.S., or wetlands.
10. Receipt of approvals or permits from the appropriate agency for the Erosion and Sedimentation Control Plan, including all plans, reports, and notice of approval by the Lancaster County Conservation District.

Section 305 APPLICATION PROCEDURE

An application for a Storm Water Management Permit may be submitted to the Code Enforcement Officer or the Board of Supervisors on any business day. In the event that a question arises as to whether a proposed activity requires a Storm Water Management Permit, the landowner or developer may request that the Code Enforcement Officer determine whether the proposed activity constitutes a land disturbance as defined in Article II, and if so, whether such activity is exempted from obtaining a permit under Section 302 of this Ordinance. The landowner or developer shall furnish the Code Enforcement Officer with such information as the Code Enforcement Officer may deem necessary to determine whether the proposed activity constitutes a land disturbance. A decision of the Code Enforcement Officer may be appealed to the Board of Supervisors in accordance with Section 307 herein.

1. Ephrata Township shall not approve any Storm Water Management Site Plan that is deficient in meeting the requirements of this Ordinance. At its sole discretion and in accordance with this Article, when a Storm Water Management Site Plan is found to be deficient, Ephrata Township may either disapprove the submission and require a resubmission, or in the case of minor deficiencies, Ephrata Township may accept submission of revisions.
2. In the case of a Major Land Disturbance, and at the direction of the Board of Supervisors, the Code Enforcement Officer shall, within ninety (90) days from the municipal receipt of an application, issue a permit or disapprove the application and transmit the decision in writing to the applicant.
3. The Code Enforcement Officer may review an application for a Minor Land Disturbance with the Township Engineer, Township Solicitor, the Lancaster County Conservation District, and other municipal officials in order to determine approval, conditional approval, or disapproval of the application within ninety (90) days from the municipal receipt of an application.
4. Failure of the Township to render a decision and communicate it as prescribed above shall be deemed an approval unless the time period is extended by the applicant.
5. A notice of disapproval shall cite the reasons for disapproval.

Section 306 APPLICATION REQUIREMENTS

1. Minor Land Disturbance: An application for a Storm Water Management Permit for a minor land disturbance shall include the following items:
 - A. One (1) completed copy of the Application for a Storm Water Management Permit, Minor Land Disturbance.
 - B. Two (2) copies of the Storm Water Management Plan prepared in accordance with Section 303 of this Ordinance.
 - C. Permit fee in accordance with the fee schedule adopted by resolution of the Board of Supervisors of Ephrata Township.
 - D. Deposit account for engineering costs incurred by the Township in accordance with the fee schedule adopted by resolution of the Board of Supervisors of Ephrata Township.
 - E. Performance Bond, when applicable, in accordance with Section 309 of this Ordinance.

2. Major Land Disturbance: An application for a Storm Water Management Permit for a major land disturbance shall include the following items:
 - A. One (1) completed copy of the Application for a Storm Water Management Permit, Major Land Disturbance.
 - B. Three (3) copies of the Storm Water Management Plan prepared in accordance with Section 304 of this Ordinance.
 - C. Permit fee in accordance with the fee schedule adopted by resolution of the Board of Supervisors of Ephrata Township.
 - D. Deposit account for engineering costs incurred by the Township in accordance with the fee schedule adopted by resolution of the Board of Supervisors of Ephrata Township.
 - E. Performance bond, when applicable, in accordance with Section 309 of this Ordinance.
 - F. Liability Insurance, when applicable, in accordance with Section 310 of this Ordinance.

3. Resubmission of Disapproved Storm Water Management Site Plan: A disapproved Storm Water Management Site Plan may be resubmitted, with the revisions addressing the municipality's concerns, to the municipality in accordance with this Article. The applicable review fee must accompany a resubmission of a disapproved Storm Water Management Site Plan.

Section 307 WAIVER AND APPEAL PROCEDURE

The provisions of this Ordinance are intended as minimum standards for the protection of the public health, safety, and welfare. The Board of Supervisors of Ephrata Township may grant a waiver from literal compliance with mandatory provisions of the Ordinance not related to water quality if the applicant can demonstrate either (1) that compliance would cause undue hardship as it applies to a particular property, or (2) that an alternative proposal will allow for equal or better results. Additionally, the Board of Supervisors of Ephrata Township may hear and decide appeals where it is alleged that the Code Enforcement Officer has failed to follow prescribed procedures or has misinterpreted or misapplied any provisions of the Ordinance.

The approval of the waiver or appeal shall not have the effect of making null and void the intent and purpose of the Ordinance. In the approval of a waiver or appeal, the Board of Supervisors of Ephrata Township may impose such conditions as will, in its judgment, secure substantially the objectives of the standards and requirements of the Ordinance.

Ephrata Township may, after consultation with DEP, approve measures for meeting the state water quality requirements other than those in this Ordinance, provided that they meet the minimum requirements of, and do not conflict with, state law including, but not limited to, the Clean Streams Law. Ephrata Township shall maintain a record of consultations with DEP pursuant to this paragraph. Where an NPDES permit for storm water discharges associated with construction activities is required, issuance of an NPDES permit shall constitute satisfaction of consultation with DEP.

Where a written Erosion and Sediment Control Plan associated with earth disturbance of 5,000 square feet to one acre is required, review of the written Erosion and Sediment Control Plan shall constitute satisfaction of consultation with DEP.

The approval of the waiver or appeal shall not have the effect of making null and void the intent and purpose of the Ordinance. In the approval of a waiver or appeal, the Board of Supervisors of Ephrata Township may impose such conditions as will, in its judgment, secure substantially the objectives of the standards and requirements of the Ordinance.

1. Application Procedures (Waiver-Appeal): All requests for waivers or appeals shall be processed in accordance with the following:
 - A. A request for a waiver or appeal shall be submitted to the Code Enforcement Officer. The request shall be made in writing and identify (1) the specific section of the Ordinance or decision which is requested for waiver or appeal, (2) the proposed alternative to the requirement, when applicable, and (3) justifications for an approval of the waiver or appeal.
 - B. The Code Enforcement Officer shall (1) schedule the request for consideration by the Board of Supervisors of Ephrata Township at a public meeting within forty-five (45) days of receipt, and (2) provide adequate notice to the applicant and any other involved parties of the meeting at which consideration of the request is scheduled.
 - C. The Board of Supervisors of Ephrata Township shall, following the consideration of the request, take such public action as it shall deem advisable and notify all parties involved of the action. Such notice shall cite the findings and reasons for the deposition of the waiver or appeal. Failure of the Board of Supervisors of Ephrata Township to render a decision and communicate it as prescribed above shall be deemed an approval unless the time period is extended by the applicant.

Section 308 EXPIRATION OF A STORM WATER MANAGEMENT PERMIT

All Storm Water Management Permits shall expire twelve (12) months from the date of issuance unless an extension of time is approved. An extension of an unexpired Storm Water Management Permit shall be issued by the Code Enforcement Officer following the submission of a written request if, in the opinion of the Code Enforcement Officer, the subject property or affected surrounding area has not been altered in a manner which requires alteration to the Storm Water Management Plan.

The refusal of an extension of time shall cite the reasons for such refusal.

A Storm Water Management Permit shall not expire while a request for an extension is pending.

Section 309 FINANCIAL SECURITY

1. The Code Enforcement Officer shall, prior to issuing a Storm Water Management Permit, require a financial security estimate, financial security agreement and financial security to be posted for the timely installation and proper construction of all storm water management controls as required by the approved Storm Water Management Site Plan and this Ordinance in accordance with the provisions of the Pennsylvania Municipalities Planning Code, in accordance with provisions outlined by Section 309.2 of this Ordinance.
2. Where required, the developer shall file with the Board of Supervisors of Ephrata Township financial security in an amount sufficient to cover the costs and installation of the storm water management facilities, including any inspection fees reasonably expected to be incurred by the Township.
3. Without limitation as to other types of financial security which Ephrata Township may approve, which approval shall not be unreasonably withheld, federal or Commonwealth chartered lending institution irrevocable letters of credit and restrictive or escrow accounts shall be deemed acceptable financial security.
4. Such financial security shall be posted with a bonding company or federal or Commonwealth chartered lending institution chosen by the developer, provided said bonding company or lending institution is authorized to conduct such business within the Commonwealth.
5. Such bond, or other security, shall provide for, and secure to the public, completion of the storm water management facilities within one (1) year of the date fixed on the permit for such facilities. The amount of financial security shall be equal to one hundred ten (110) percent of the cost of the required facilities for which financial security is to be posted.
6. The amount of financial security required shall be based upon an estimate of the cost of completion of the required improvements, submitted by an applicant or developer and prepared by a professional engineer licensed as such in this Commonwealth and certified by such engineer to be a fair and reasonable estimate of such cost. The Township, upon the recommendation of the Township Municipal Engineer, may refuse to accept such estimate for good cause shown. If the applicant or developer and the Township are unable to agree upon an estimate, then the estimate shall be recalculated and recertified by another professional engineer licensed as such in this Commonwealth and chosen mutually by the Township and

applicant or developer. The estimate certified by the third engineer shall be presumed fair and reasonable and shall be the final estimate. In the event that a third engineer is so chosen, fees for the services of said engineer shall be paid equally by the Township and the applicant or developer.

Section 310 LIABILITY INSURANCE

If, in the opinion of the Board of Supervisors based upon a report of the Township Engineer, the nature of the work is such that it may create a hazard to human life, or endanger adjoining property or streets, then the Board of Supervisors shall, before issuing the Permit, require that the applicant file a certificate of insurance showing that there exists insurance against claims for damage, including damage to Ephrata Township, by surface water flow which has been altered on the site. The liability insurance shall be to the amount prescribed by the municipality in accordance with the nature of risks involved and include the municipality as an additional insured. Such insurance shall be written by a company licensed to do business in the Commonwealth.

Section 311 STORM WATER SITE PLAN AS-BUILT PLAN/RELEASE OF FINANCIAL SECURITY

1. At the completion of the project, and as a prerequisite for the release of the Financial Security, the Applicant shall provide a certificate of completion and a Storm Water Management Site As-Built Plan signed by the Applicant's qualified licensed professional verifying that all permanent Storm Water Management BMPs have been constructed and are functioning in accordance with the requirements of the approved Storm Water Management Site Plan and specifications. The requirements for the as-built plan shall be developed by the professional responsible for the preparation of the Storm Water Management Site Plan.
2. The as-built plan requirements shall be submitted to the Township for review and approval during the preparation of the Storm Water Management Site Plan.
3. The as-built plan requirements shall be shown on the approved Storm Water Management Site Plan.
4. In addition to any requirements required by the Township's subdivision and land development ordinance, the as-built plan shall include the following:
 - A. The actual horizontal and vertical location of all storm water management facilities including material, type, size, slope and size of storm drainage pipes and swales and their location in reference to any accompanying easements.
 - B. The actual horizontal and vertical location and cross section(s) of all designed swales and their location in reference to any accompanying easements.
 - C. Actual location of floodplain by elevation and/or dimension from property line(s).
 - D. Above Ground and Subsurface Storage Facilities:
 - 1) Actual contours of the storm water management facility.
 - 2) Actual outlet structure details including type, size and inverts of outlet pipes.
 - 3) Actual elevation of the embankment and emergency spillway.

- 4) A table showing the stage/storage/discharge curve for the constructed conditions.
 - 5) A table providing a comparison of the approved design vs. the as-built discharge rates from all storm water management facilities.
 - E. Actual horizontal and vertical location of cartway centerline versus right-of-way centerline.
 - F. The coordinates for the GIS compatible electronic copy shall be based on the PA South Zone State Plane Coordinate System (NAD83 for horizontal and NAVD88 for vertical).
5. Prior to the final release of the financial security, the developer shall provide the Township with two (2) paper copies, and one (1) GIS compatible electronic copy of the Storm Water Site As-built Plan.
 6. After receipt of the Storm Water Site As-built Plan and certification of completion, a final inspection shall be conducted by the Township Engineer or other person designated by the Township to certify compliance with this Ordinance.
 7. Where an NPDES permit was required as part of the Storm Water Management Site Plan, evidence of the NPDES permit's executed "Notice of Termination" shall be provided by the developer prior to final release of the financial security.
 8. When a digital submission of a record drawing is required, all coordinates as depicted on the plan shall be based on the PA South Zone State Plane Coordinate System (NAD83 for horizontal and NAVD88 for vertical).

**ARTICLE IV
DESIGN STANDARDS**

Section 401 GENERAL DESIGN RECOMMENDATIONS

1. In the interest of (1) reducing the total area of impervious surface, (2) preserving existing features which are critical to storm water management, and (3) reducing the concentration of storm water flow, the design should consider alternate design concepts and the flexibility provided by the waiver process.
2. Maximum use should be made of the existing on-site natural and man-made storm water management facilities.
3. Innovative storm water management and recharge facilities shall be used whenever and wherever feasible or necessary to protect adjoining properties; to control the volume of water leaving the site; to remove pollutants from runoff leaving the site; or to provide for recharge of ground water supplies. Such facilities may include rooftop storage, dry-wells, cisterns, diversion structures, aeration of lawns, holding tanks, infiltration systems, stream channel storage, in line storage in storm sewers, and grading patterns. Applications including such facilities shall be accompanied by detailed engineering plans and performance capabilities for review by the Township.

Section 402 GENERAL DESIGN REQUIREMENTS

1. All Storm Water Management Site Plans shall be designed and certified by individuals registered in the Commonwealth of Pennsylvania and qualified to perform such duties.
2. Modifications of the provisions of this Ordinance shall be as specified in Section 307.
3. Storm Water Management Site Plans approved by the municipality shall be on site throughout the duration of the regulated activity.
4. Impervious areas:
 - A. The measurement of impervious area shall apply to the total proposed development even if development is to take place in stages or phases.
 - B. For development taking place in stages or phases, the entire development plan must be used in determining conformance with this Ordinance.
 - C. Any areas designed to initially be gravel or crushed stone shall be assumed to be impervious.
 - D. Existing impervious areas that are not being altered by the proposed regulated activity shall not be subject to the volume controls in Section 407 and the peak rate controls of Section 402.10.
5. All storm water runoff flowing over the project site shall be considered in the design of the storm water management facilities.
6. Storm water management facilities located within or affecting the floodplain of any watercourse shall also be subject to the requirements of the Ephrata Township Flood Plain Regulations, as

amended, or any future Ordinances, regulating construction and development within areas of the Township subject to flooding.

7. Storm water runoff from a project site shall flow directly into a natural watercourse or into an existing storm sewer system. If neither of these is available, the applicant shall obtain an easement from the downstream landowner to allow the runoff discharge from the 25-year storm to be conveyed to a natural watercourse or existing storm sewer system. Where the downstream owner will not grant such an easement, the runoff from the applicant's site shall flow onto the adjacent property in a manner similar to the runoff characteristics of the pre-development flow. Where such an easement is granted, the 25- through 100-year discharge from the basin shall flow onto the adjacent property in a manner similar to the runoff characteristics of the pre-development flow.
8. Storm water management facilities shall be provided so that the peak rates of runoff for storm water originating on the project site must meet the following conditions, for all watersheds within the site:
 - A. The 2, 10, 25, 50, and 100-year post-development peak flow must be less than or equal to 50% of the calculated 2, 10, 25, 50, and 100-year pre-development peak flows, except where the post-development hydrograph does not exceed the pre-development hydrograph at all points in time for all design storms.
 - B. Runoff can be managed regionally, by one or more developers, either onsite or off-site. The design and release rate shall be consistent with "the Plan." Groundwater recharge and water quality must be addressed in this option.
 - C. Infiltration - Developers and/or landowners are encouraged to provide infiltration facilities or utilize other techniques which will allow the post-development hydrograph to match the pre-existing hydrograph, along all parts of the hydrograph for the site. To match the pre-development hydrograph, the post development peak rate must be less than or equal to the pre-development peak rate, and the post development runoff volume must be less than or equal to the pre-development volume for the same storm event. A shift in hydrograph peak time of up to five minutes and a rate variation of up to 5% at a given time may be allowable to account for the timing effect of BMPs used to manage the peak rate and runoff volume. "Volume Control" volumes as given in Section 407 above may be used as part of this option.
 - D. Infiltration BMPs, to the extent practicable, should be spread out, made as shallow as practicable, and located to maximize use of natural on-site infiltration features while still meeting the other requirements of this Ordinance.
 - E. Infiltration BMPs intended to receive runoff from developed areas shall be selected based on suitability of soils and site conditions and shall be constructed on soils that have the following characteristics:
 - 1) A minimum depth of 24 inches between the bottom of the facility and the limiting zone, unless it is demonstrated to the satisfaction of the Township that the selected BMP has design criteria which allow for a smaller separation.
 - 2) A stabilized infiltration rate sufficient to accept the additional storm water load and drain completely as determined by field tests conducted by the Applicant's professional designer. The stabilized infiltration rate is to be determined in the same location and within the same soil horizon as the bottom of the infiltration

facility. The stabilized infiltration rate is to be determined as specified in the BMP Manual.

- F. Areas proposed for infiltration BMPs shall be protected from sedimentation and compaction during the construction phase to maintain maximum infiltration capacity. Staging of earthmoving activities and selection of construction equipment should consider this protection.
 - G. Infiltration BMPs receiving runoff from disturbed areas shall be protected to prevent sedimentation of the facility until the entire contributory drainage area to the infiltration BMP has achieved final stabilization. Infiltration BMP facilities contaminated with sediment may need to be repaired or replaced at the sole discretion of the Township.
9. For all regulated earth disturbance activities, erosion and sediment control BMPs shall be designed, implemented, operated, and maintained during the regulated earth disturbance activities (e.g., during construction) to meet the purposes and requirements of this Ordinance and to meet all requirements under Title 25 of the Pennsylvania Code, the Clean Streams Law, and the Storm Water Management Act.
 10. To the maximum extent practicable, incorporate the techniques for Low Impact Development Practices described in the BMP Manual.
 11. No outlet structure from a detention basin or swale shall discharge directly onto any publicly used Township, state or private road but shall discharge into a culvert under or along the road.
 12. Any storm water management facilities regulated by this Ordinance that will be located on, or discharged onto State Highway rights-of-way shall be subject to approval by PennDOT.
 13. Storm water BMPs shall be located, designed, and constructed in accordance with the latest technical guidance published by PADEP, provided they are accompanied by detailed engineering plans and performance capabilities and supporting site specific soils, geology, runoff and groundwater and infiltration rate data to verify proposed designs. Additional guidance from other sources may be accepted at the discretion of the Township Engineer (a pre-application meeting is suggested).
 14. The design storm volumes and precipitation intensities to be used in the analysis of peak rates of discharge shall be as required in Section 403.
 15. When Plan applications are submitted in sections, and if temporary facilities are required for construction of a section, such facilities shall be included in the submitted plans. In the event temporary measures cannot adequately handle the storm water runoff, the main outfall line shall be included as part of the construction of the proposed section.
 16. Consideration shall be given to the relationship of the subject property to the drainage pattern of the watershed.

17. Storm water shall not be transferred from one watershed to another, unless (1) the water-sheds are sub-watersheds of a common watershed which join together within the perimeter of the property, or (2) the effect of the transfer does not alter the peak discharge onto adjacent lands.
18. A concentrated discharge of storm water to an adjacent property shall be within an existing watercourse or within an easement created for the conveyance of storm water.

Section 403 CARBONATE GEOLOGY

1. Where development of any kind is proposed in areas of carbonate geology, the applicant shall provide detailed geologic evaluation consisting of a carbonate hazard assessment and a remediation plan. This evaluation shall be prepared and signed/sealed by either a qualified Pennsylvania licensed geotechnical engineer or geologist with experience in carbonate geology assessment and sinkhole remediation. At a minimum, this evaluation must include the following:
 - A. Storm water runoff calculations for both pre-development and post-development conditions for peak discharge and pollutant removal.
 - B. Review of historical photos for carbonate features.
 - C. A fracture trace analysis using available aerial photographs.
 - D. Documentation of a site field view to field-verify observed and suspect carbonate solution features.
 - E. An appropriate geophysical survey of suspect areas (with emphasis on those areas of proposed construction and within ten feet of those areas), delineated by photo and field reviews, using micro-gravity surveys, ground-penetrating radar, or an alternate method acceptable to the Township Engineer.
 - F. Backhoe probes of suspect features.
 - G. A plot of all observed and suspect carbonate features on the base mapping of the site prepared for the development plan, at a scale of 1 inch equals 50 feet, with a larger scale plot of complex features at a scale of one inch equals 20 feet.
 - H. A specific commentary on the suitability of the carbonate portions of the site to be developed as proposed.
 - I. An evaluation of soil permeability, depth to bedrock, susceptibility to sinkhole formation, and subgrade stability to determine the design parameters of recharge facilities.
 - J. A report presenting findings, conclusions and recommendations of the investigation. Must include specifications for sinkhole mitigation during construction, and methods to reduce sinkhole development during construction.
 - K. Any recommendations involving construction techniques must be incorporated into the development construction drawing notes and details.
2. In areas of carbonate geology; a registered professional geologist shall certify the following:
 - A. Unless an alternate detention basin design that specifically addresses carbonate geology is submitted to the Township for review and which is prepared by a geologist or

geotechnical engineer licensed in the Commonwealth of Pennsylvania, no storm water facilities shall be placed in, over, or immediately adjacent to the following features:

- 1) Sinkholes,
 - 2) Closed depressions,
 - 3) Lineaments in carbonate areas,
 - 4) Fracture traces,
 - 5) Caverns,
 - 6) Intermittent streams,
 - 7) Ephemeral streams, and
 - 8) Bedrock pinnacles (surface or subsurface).
- B. Storm water management basins shall not be located closer than one hundred (100) feet from the rim of sinkholes or closed depressions, nor within one hundred (100) feet from disappearing streams; nor shall these basins be located closer than fifty (50) feet from lineaments or fracture traces; nor shall these basins be located closer than twenty-five (25) feet from surface or identified subsurface pinnacles.
- C. Storm water resulting from subdivision and/or land development activities shall not be discharged into sinkholes.

Section 404 SINKHOLE REMEDIATION

Much of Ephrata Township is underlain by carbonate bedrock, which creates conditions readily suited for sinkhole development. Sinkholes can occur naturally, but are more likely to develop with the disturbance of the ground by construction. It is the intent of this Section to provide some guidance for the remediation of sinkholes which develop. It is important, before attempting to remediate a sinkhole, that an experienced professional geologist or geotechnical engineer be consulted as to potential cause and the most effective alternative method for sinkhole repair. This is especially important if the site is intended to be used for development of any kind. If the sinkhole is unstable and endangering a roadway, building or other such infrastructure, investigation and stabilization shall be undertaken without delay. The procedures taken to investigate the sinkhole shall be at the judgment of the professional. The location, intended or existing use of the site, and complexity (depth, size, multiple openings) of the sinkhole will in large part be the deciding factors as to what methods of investigation may be used.

1. When sinkholes are encountered before, during, or after construction, the landowner or the landowner's representative is responsible for adhering to the following:
 - A. Assume immediate and full responsibility for securing the site to ensure the safety and welfare of all persons, structures, utilities and property.
 - B. Within 24 hours, notify Ephrata Township of the sinkhole and engage a Pennsylvania licensed geotechnical engineer or geologist who is experienced in sinkhole remediation to evaluate the sinkhole and recommend a method of repair.
 - C. Engage and coordinate qualified contractors for the repair of the sinkhole. Prior to starting work, provide Ephrata Township with a minimum of 24 hours of advance notice.

- D. Repair the sinkhole under the supervision of a Pennsylvania licensed geotechnical engineer or geologist who is experienced in sinkhole remediation.
 - E. Provide a letter or report from the supervising geotechnical engineer or geologist that documents the on-site findings during excavation and the repair methods employed.
 - F. Pay for all costs related to the repair of the sinkhole, including costs for contractors, materials, professional oversight, Ephrata Township expenses (including engineering, legal and related consultation), property damage, and any other costs related to the sinkhole.
 - G. Should the landowner or the landowner's representative fail to adhere to the steps outlined above, Ephrata Township may require that the landowner and/or the landowner's representative verify, through re-excavation and re-repair (or other means determined by Ephrata Township), that the sinkhole was satisfactorily repaired.
2. The following is a general procedure to be used in remediating a sinkhole. The actual procedure to be used shall be determined by an experienced professional geotechnical engineer or geologist:
- A. Carefully excavate the sinkhole using an excavator in an attempt to expose the throat (opening into the bedrock) and the surrounding bedrock, which is usually pinnacled.
 - B. If the throat is exposed, clean away any loose rock and soil and close the throat with concrete, flowable fill, or sand cement grout, depending on its diameter.
 - C. If the soil removed in the exploratory phase of work is clayey or cohesive, it can be used to backfill the excavation in eight (8) inch compacted lifts to the original grade.
 - D. If the throat is not found, it may be desirable to flood the excavation with water and allow the water to expose the throat as it drains from the excavation.
 - E. If the throat is not exposed and bedrock is sporadic in the excavation or not present at all, remove any loose soil and/or rock fragments, compact the soil, and line the excavation with Geotextile fabric material.
 - F. Backfill the excavation with the excavated soil (if it is cohesive) or AASHTO 2A modified stone, compacted in eight (8) inch lifts and bring the backfill to grade or bottom elevation of topsoil. If the excavated material is not cohesive, (i.e., silty or sandy), do not use for backfill.
 - G. Direct surface water away from the sinkhole location.
3. If/when the sinkhole is excavated and the excavation has partial bedrock exposed, no throat, and the soil is silty (no cohesiveness), a procedure similar to the following should be followed. The actual procedure to be used shall be determined by an experienced professional geotechnical engineer or geologist:
- A. Remove the silty soil as much as possible.
 - B. Construct an inverted rock filter.
 - 1) Line the excavation with Geotextile material.
 - 2) Carefully place PennDOT # 3 or #4 stone in the bottom of the excavation on top of the Geotextile material.
 - 3) Bring the #3 or #4 stone to an elevation approximately 1/2 to 2/3 of the depth of excavation.

- 4) Place AASHTO 2B stone, or, if the excavation is relatively shallow (<10 feet deep), AASHTO 2A modified stone, over the #3 or #4 stone backfill and bring to within twelve (12) to eighteen (18) inches of grade in compacted twelve (12) inch lifts.
 - C. Place clayey or cohesive soil over the 2B or 2A- modified stone and bring excavation to grade in eight (8) inch compacted lifts.
 - D. Direct surface water away from the sinkhole location.
4. The remediation of a sinkhole is the type of disclosure that shall be disclosed to a purchaser or potential purchaser of the real estate.

Section 405 METHODS FOR CALCULATION OF RUNOFF

- 1. Runoff calculations for on-site storm water facilities shall be based upon the following methods:
 - A. Modified Rational Method. This method may be used for design of all collection, conveyance, and storage facilities when drainage areas are less than one hundred (100) acres or where times of concentration are less than 60 minutes. Extreme caution should be used by the Qualified Person if the watershed has more than one (1) main drainage channel, if the watershed is divided so that hydrologic properties are significantly different in one (1) watershed versus the other, if the time of concentration exceeds sixty (60) minutes, or if storm water runoff volume is an important factor. The combination of Modified Rational Method hydrographs based on timing shall be prohibited.
 - B. SCS TR-55 Tabular Hydrograph Method (1986, or latest revision). This method is recommended and preferred for design of conveyance and storage facilities when drainage areas are greater than 60 acres. This method is recommended for design of storm water management facilities where storm water runoff volume must be taken into consideration.
 - C. Any other method must be approved by the Township.
- 2. Criteria and assumptions to be used in the determination of storm water runoff and design of storm water management facilities are as follows:
 - A. Runoff coefficients shall be based on the land use coefficients listed in Appendices No. 5 and 6 of this Ordinance and in conjunction with the criteria outlined by Section 403.3 of this Ordinance.
 - B. Times of concentration shall be based on the following design parameters:
 - 1) Overland flow: The maximum length for each reach of overland flow before concentrated swale and/or sheet flow develops is three hundred (300) feet. The nomograph in Appendix No. 4 shall be used for determination of the times of concentration.
 - 2) Concentrated flows: At points where overland flows concentrate in field depressions, swales, gutters, curbs, or pipe collection systems, the time of concentration between these design points shall be based upon Manning's

Equation and/or acceptable engineering design standards as determined by the Township Engineer.

- C. If the Rational Method is used, the NOAA Atlas 14 data (see item “D” below) shall be used to determine the rainfall intensity in inches per hour based on the information for the 5 through 60 minute duration storm events.
 - D. If the SCS Method (also known as Soil-Cover-Complex Method) is used, the design storm volumes to be used in the analysis of peak rates of discharge shall be obtained from the Precipitation-Frequency Atlas of the United States, Atlas 14, Volume 2, Version 3.0, U.S. Department of Commerce, National Oceanic and Atmospheric Administration (NOAA), National Weather Service, Hydro-meteorological Design Studies Center, Silver Spring, Maryland. NOAA’s Atlas 14 can be accessed at the following: http://hdsc.nws.noaa.gov/hdsc/pfds/orb/pa_pfds.html
 - 1) Provide the rainfall used for the 2, 10, 25, 50, and 100 year 24 hour storm events. Rainfall values vary throughout the county depending on location.
 - 2) Provide the location (longitude and latitude) or a description of the location for which the rainfall applies.
 - 3) If rainfalls from more than one (1) location are used, provide the methodology by which the design rainfall was calculated.
 - E. If the SCS method is used, Antecedent Moisture Condition 1 is to be used in areas of carbonate geology, and Antecedent Moisture Condition 2 is to be used in all other areas. A type II distribution shall be used in all areas.
 - F. Hydrographs shall be obtained from NRCS methods such as TR-55, TR20, or from use of the “modified” or “unit hydrograph” rational methods. If “modified” or “unit hydrograph” rational methods are used, the ascending leg of the hydrograph shall have a time of three times the time of concentration ($3xT_c$) and the descending leg shall have a time of 7 times the time of concentration ($7xT_c$) to approximate an SCS type II hydrograph.
 - G. Use of other criteria, assumptions, references, calculation methods, and/or computer modeling may be utilized, provided detailed design information and programming with references are submitted and approved by the Township.
3. For the purpose of determining pre- and post-development runoff coefficients, the following criteria shall be used:
- A. Pre-development runoff coefficients for all areas within the site boundaries shall be based on a good grass cover unless portions of the site contain wooded areas. When the site contains wooded areas, runoff coefficients shall be based on forest/woodland cover.
 - B. Off-site land use conditions used to determine storm flows for the pre-and post-development comparison shall be based on existing land uses assuming summer or good conditions.
 - C. Off-site land use conditions used to determine storm flows for collection and conveyance facilities shall be based on existing land uses assuming winter or poor conditions.

Section 406 DESIGN STANDARDS - ABOVE GROUND STORAGE FACILITIES

1. Above ground storage facilities shall consist of all storm water facilities which store, infiltrate/evaporate/transpire, clean or otherwise affect storm water runoff and the top of which is exposed to the natural environment. Above ground storage facilities shall be located above the finished ground elevation. Above ground storage facilities do not include storm water management facilities designed for conveyance or cisterns.
2. Facilities with a facility depth greater than eight feet (8 feet) shall not be permitted in or adjacent to residential areas.
3. Above ground storage facilities shall comply with the design criteria in the following table:

| Above-ground storage facility design criteria | | | |
|--|-------------------------|-------------------------|----------------------------|
| | Facility Depth | | |
| | Less than 2 feet | 2 feet to 8 feet | Greater than 8 feet |
| (a) Embankment Geometry | | | |
| [1] Top width (minimum) | 2 feet | 5 feet | 8 feet |
| [2] Interior side slope (maximum) | 2 : 1 | 3 : 1 | 5 : 1 |
| [3] Exterior side slope (maximum) | 2 : 1 | 3 : 1 | 3 : 1 |
| (b) Embankment construction | | | |
| [1] Key trench | Not required | Required | Required |
| [2] Pipe collar | Not required | Required | Required |
| [3] Compaction density | Not required | Required | Required |
| (c) Internal Construction | | | |
| [1] Dewatering feature | N/A | Required | Required |
| [2] Pretreatment elements | Not required* | Required | Required |
| (d) Outlet Structure | | | |
| [1] Pipe size (minimum) | 6 inches | 12 inches | 15 inches |
| [2] Pipe material | SLHDPE, PVC, RCP | SLHDPE, RCP | RCP |
| [3] Anticlogging devices | Required | Required | Required |
| [4] Antivortex design | Not required | Required | Required |
| [5] Watertight joints in piping? | No | Yes | Yes |
| (e) Spillway Requirements | | | |
| [1] Spillway freeboard (minimum) | 3 inches | 6 inches | 12 inches |
| [2] Width (minimum) | Not required | 10 feet | 20 feet |
| [3] Width (maximum) | Not required | 50 feet | 50 feet |
| [4] Spillway channel design | Not required | Required | Required |
| [5] Routing of 100 year storm | Permitted | Permitted | Permitted |

4. All basins shall be structurally sound and shall be constructed of sound and durable materials. The completed structure and the foundation of all basins shall be stable under all probable conditions of operation and shall be capable of discharging the peak discharge of a post-development 100-year storm event through the emergency spillway facilities, in a condition that assumes the primary outlet(s) are blocked, which will not damage the integrity of the facility or the downstream drainage areas. Use of the spillway to convey flows greater than the 50-year design storm shall be permitted.
5. An easement shall be provided from the basin spillway outfall to a natural or artificial watercourse.
6. The effect on downstream areas if the basin embankment fails shall be considered in the design of all basins. The basin shall be designed to minimize the potential damage caused by such failure of the embankment.
7. The maximum depth of water for basins without restricted access shall not exceed six (6) feet unless approved by modification by the Board. Access to basins with a maximum depth of water greater than six (6) feet shall be restricted by fencing that will discourage access.
8. Basins without restricted access shall have impoundment areas with side slopes no greater than five (5) horizontal to one (1) vertical. Access to basins with a depth of water greater than eighteen (18) inches with steeper side slopes shall be restricted by fencing that will discourage access.
9. Normally dry, open top, storage facilities shall completely drain the volume control storage over a period of time not less than 24 hours and not more than 72 hours from the end of the design storm. However, any infiltration at such facilities is exempt from the minimum 24 hour standard, i.e. may infiltrate in a shorter period of time.
10. Normally dry, open top, storage facilities shall completely drain the rate control storage over a period of time less than or equal to 24 hours from the peak 100 year water surface design elevation.
11. All outlet structures and emergency spillways shall include a satisfactory means of dissipating the energy of flow at its outlet to assure conveyance of flow without endangering the safety and integrity of the basin and the downstream drainage area.
12. An impervious core/key trench, when required, shall consist of a cutoff trench (below existing grade) and a core trench (above existing grade). A key trench may not be required wherever it can be shown that another design feature, such as the use of an impermeable liner, accomplishes the same purpose. Materials used for the core shall conform to the Unified Soil Classification GC, SC, CH, or CL and must have at least 30% passing the No. 200 sieve.
 - A. The dimensions of the core shall provide a minimum trench depth of two (2) feet below existing grade, minimum width of four (4) feet and side slope of 1H:1V or flatter.
 - B. The core should extend up both abutments to the 10 year water surface elevation or six (6) inches below the emergency spillway elevation, whichever is lower.

- C. The core shall extend four (4) feet below any pipe penetrations through the impervious core. The core shall be installed along or parallel to the centerline of the embankment.
 - D. Compaction requirements shall be the same as those for the embankment to assure maximum density and minimum permeability.
13. All pipe collars, when required, shall be designed in accordance with Chapter 7 of the DEP E&S Manual. The material shall consist of concrete or otherwise non-degradable material around the outfall barrel and shall be watertight.
 14. When required, embankments shall be compacted to 95% standard proctor.
 15. The embankment fill material shall be free of roots, stumps, wood, rubbish, stones greater than six (6) inches, frozen or other objectionable materials.
 16. The minimum freeboard shall be provided above the design elevation of the water surface at the emergency spillway.
 17. Wherever possible, basins shall have a non-uniform (naturalistic) shape, rather than a geometric design in the form of a square or rectangle.
 18. The minimum bottom slope of facilities not designed for infiltration shall be one percent (1%). A flatter slope may be used if an equivalent dewatering mechanism is provided.
 19. When required, dewatering shall be provided through the use of underdrain, surface device, or alternate approved by the Township Engineer. If the facility is to be used for infiltration, the dewatering device should be capable of being disconnected and only be made operational if the basin is not dewatering within the required timeframe.
 20. When required, pretreatment elements shall consist of forebays, or alternate approved by the Township Engineer, to keep silt to a smaller portion of the facility for ease of maintenance.
 21. Within basins designed for infiltration, existing native vegetation shall be preserved, if possible. For existing unvegetated areas or for infiltration basins that require excavation, a planting plan shall be prepared in accordance with this Ordinance and the BMP Manual which is designed to promote infiltration.
 22. All discharge control devices with appurtenances shall be made of reinforced concrete and stainless steel. Bolts/fasteners shall be stainless steel.
 23. For facilities with a depth less than two (2) feet, no outlet structure shall be required.
 24. Appropriate easements to enclose and permit access to all above ground facilities shall be provided.
 25. Minimum floor elevations for all structures that would be affected by a basin, other temporary impoundments, or open conveyance systems where ponding may occur shall be two (2) feet above the 100-year water surface. If basement or underground facilities are proposed, detailed

calculations addressing the effects of storm water ponding on the structure and water-proofing and/or flood-proofing design information shall be submitted for approval.

Section 407 DESIGN STANDARDS - COLLECTION AND CONVEYANCE FACILITIES

1. The design of storm water management collection and conveyance facilities that service drainage areas within the site shall be based upon a twenty-five (25) year storm frequency event. Storm water management facilities that convey off-site storm water through the site must be designed to convey a fifty (50) year event.
2. All developments must also include design provisions that allow for the overland conveyance of the post-development 100-year storm flows through the site without damage to any private or public property.
3. When the design of the overall Storm Water Management Site Plan requires a transfer of watershed, as outlined by Section 402.21 of this Ordinance, the design shall illustrate that the facilities utilized to accomplish the transfer can safely convey the 100-year storm event.
4. The capacities of the pipes, gutters, inlets, culverts, outlet structures, and swales shall consider all possible hydraulic conditions. The following minimum design standards have been established by the Township.
 - A. For grass swales and roadside gutters, two (2) design considerations shall be met: the first shall consider channel velocity and stability based upon a low degree of retardance ("n" of .03); the second shall consider channel capacity based upon a high degree of retardance ("n" of .05).
 - B. The "n" factors to be used for paved or rip-rap swales or gutters shall be based on accepted engineering design practices.
 - C. The following chart shall be used to determine the "n" factors for corrugated pipe:

"n" Factors

| Pipe Diameter (inches) | Helical | | Annular | |
|---------------------------|----------|----------|----------|----------|
| | Capacity | Velocity | Capacity | Velocity |
| Up to 18 | .017 | .014 | .026 | .024 |
| 21 through 30 | .021 | .017 | .026 | .021 |
| Larger than 30 | .026 | .019 | .026 | .019 |

- D. The "n" factor for concrete or any other smooth pipe shall be 0.010 for velocity and 0.013 for capacity.
- E. The velocity to be used in the design of any piped storm water conveyance system shall be based on the maximum velocity obtainable. The capacity shall be based upon full flow conditions.
- F. Inlets, culverts, and basin discharge systems shall be designed for the worst case condition. Inlet capacity shall be based on design data provided by the manufacturers and accepted by the Township Engineer. If acceptable information is not available, inlets in non-ponding areas shall be designed for a maximum capacity of four (4) cubic feet per second (cfs). Where ponding occurs, inlet capacity shall be based on accepted

engineering design practices. Culvert design shall consider either inlet/outlet control or a combination of hydraulic losses through the system, whichever is greater. Basin discharge systems shall be designed to the same standards as culverts. If it cannot be readily determined which hydraulic condition controls, the basin discharge rate shall be based on the highest possible discharge rating curve with the basin capacity sized to store the excessive storm runoff based on the lowest possible discharge rating curve.

5. Inlets shall be along the curb line and are not permitted along the curb radius at an intersection.
6. Manholes and inlets, when proposed, shall not be spaced more than six hundred (600) feet apart. Additionally, manholes shall be placed at points of abrupt changes in the horizontal or vertical direction of storm sewers. Inlets shall be substituted for manholes where they will serve a useful purpose.
7. Curves in pipes or box culverts without an inlet or manhole are prohibited. Tee joints, elbows, and wyes are also prohibited.
8. All storm sewer pipes, culverts, manholes, inlets, endwalls, and endsections proposed within the public right-of-way shall be constructed in accordance with Pennsylvania Department of Transportation, Publication No. 408, as amended.
9. Storm sewer pipes, culverts, manholes, inlets, endwalls, and endsections proposed for dedication or located along streets shall conform to the requirements of the Pennsylvania Department of Transportation, Bureau of Design, Standards for Roadway Construction, Publication No. 72M, in effect at the time the design is submitted, as modified by Ephrata Township.
10. Inlets, junction boxes, or manholes greater than five (5) feet in depth shall be equipped with non-aluminum ladder rungs and shall be detailed on the Storm Water Management Site Plan.
11. All inlets placed along existing and proposed curbed streets shall include PennDOT Type "C" top units or approved equivalent and all inlets placed in paved areas shall have heavy duty bicycle-safe grating consistent with PennDOT Publication No. 72M, latest edition. A note to this effect shall be added to the Storm Water Management Site Plan or inlet details therein
12. Where storm sewers exceed 15 percent slope, properly spaced concrete anchors will be used.
13. Storm water roof drains and pipes, wherever possible shall discharge water into a storm water runoff dispersion and infiltration control device and not into storm sewers or street gutters.
14. All storm sewer crossings of streets shall be perpendicular to the street centerline unless otherwise approved by the Township Engineer.
15. All storm pipe, other than culverts for existing channels, which discharge from residential lots to a street or from a street to residential lots shall extend from the street right-of-way a minimum distance of two thirds the length of the longest adjacent lot dimension.

16. The proposed storm water discharge at the perimeter of the site shall not be beyond the capacity of any existing, immediately contiguous, storm water management facility into which it flows.
17. Storm pipes which discharge to a detention or retention basin shall be located as to outlet directly to the basin floor.
18. Endwalls and endsections shall be used where storm water runoff enters or leaves the storm sewer horizontally from a natural or manmade channel.
19. Storm facilities not located within a public right-of-way shall be completely enclosed within an easement.
20. Material consistency and placement depths for storm sewer pipe backfill shall be (at a minimum) per all applicable pipe manufacturer's recommendations, further providing it should be free of large (not exceeding 6 inches in any dimension) objectionable or detritus material.
21. Within the public street right-of-way, the gutter spread based on the 25-year storm shall be no greater than one half of the travel lane and have a maximum depth of three (3) inches at the curb line. A parking lane shall not be considered as part of the travel lane. In the absence of pavement markings separating a travel lane from the parking lane, the parking lane shall be assumed to be seven (7) feet wide if parking is permitted on the street.
22. Where the connecting pipe has a diameter twenty-four (24) inches or greater, headwalls and endwalls shall be provided with a protective barrier device to prevent entry to the storm sewer pipe by unauthorized persons. Such protection devices shall be designed to be removable for cleaning.
23. In addition to the material requirements in this section, culverts designed to convey Waters of the Commonwealth may be constructed with either a corrugated metal arch or a precast concrete culvert.

24. Conveyance facilities shall comply with the design criteria in the following table:

| Conveyance facility design criteria | | | |
|---|--|---|---|
| Location | Within public street right-of-way | Outside public street right-of-way | |
| Loading | All | Vehicular loading | Non-vehicular loading |
| (a) Pipe design | | | |
| [1] Material | SLHDPE, RCP | PVC, SLHDPE, RCP | PVC, SLHDPE, RCP |
| [2] Slope (minimum) | 0.5% | 0.5% | 0.5% |
| [3] Cover | 1 foot to bottom of paving | 1 foot to bottom of paving | 1 foot to surface |
| [4] Diameter (minimum) | 15 inches | 15 inches | 8 inches |
| [5] Street crossing angle | 75° to 90° | N/A | N/A |
| [6] Access/maintenance port frequency (maximum) | 400 feet | 400 feet | 600 feet |
| (b) Inlet design | | | |
| [1] Material | Concrete | Concrete | N/A |
| [2] Grate depression | N/A | N/A | N/A |
| (c) Manhole design | | | |
| [1] Material | Concrete | Concrete | Concrete |
| (d) Swale design | | | |
| [1] Freeboard (minimum) | 6 inches | N/A | 6 inches |
| [2] Velocity (maximum) | Stability check | N/A | Stability check |
| [3] Slope (minimum) | 2% | N/A | 2% |
| [4] Side slopes (residential area) | 4 : 1 max | N/A | 4 : 1 max |
| [5] Side slopes (non-residential area) | 4 : 1 max | N/A | 3 : 1 max |
| [6] Bottom width to flow depth ratio | 12 : 1 | N/A | 12 : 1 |
| (e) Outlet design | | | |
| [1] End treatment | Headwall/endwall | N/A | Headwall/ endwall or flared end section |
| [2] Energy dissipater | Required | N/A | Required |

Section 408 DESIGN STANDARDS - EROSION AND SEDIMENTATION CONTROL

1. The applicant must comply with the Erosion Control Rules and Regulations of Title 25 Rules and Regulations, Part I. Department of Environmental Protection, Subpart C. Protection of Natural Resources, Article II. Water Resources, Chapter 102, Erosion Control, as amended from time-to-time.
2. The design plan and construction schedule shall incorporate measures to minimize soil erosion and sedimentation.
3. The following principles shall be applied to the design plan and construction schedule to minimize soil erosion and sedimentation.
 - A. Erosion and Sedimentation Controls designed in conformance with the Department of Environmental Protection Erosion and Sedimentation Pollution Control Program Manual shall be implemented during the construction and post-construction periods to minimize soil erosion and prevent sediment from entering streams, lakes, etc.
 - B. Whenever feasible, natural vegetation shall be retained and protected.
 - C. The extent of the disturbed area and the duration of its exposure shall be kept to a minimum. Stockpiles to remain in place longer than twenty (20) days shall be seeded.
 - D. It shall be the contractor's responsibility during construction to prevent soil pollution to neighboring property, public streets, and streams.
 - E. Soil dropped from construction equipment and sedimentation shall be immediately removed from roads, public and private property, and streams.
 - F. Drainage provisions shall accommodate the storm water runoff both during and after construction.
 - G. Soil erosion and sedimentation facilities shall be installed prior to any on-site earth disturbance.
4. The maximum swale, gutter, or curb velocity of storm water runoff shall be maintained at levels which result in a stable condition both during and after construction. The following are considered characteristics of a stable condition:
 - A. It neither aggrades nor degrades beyond tolerable limits.
 - B. The channel banks do not erode to the extent that the channel cross section is changed appreciably.
 - C. Sediment bars do not develop.
 - D. Erosion does not occur around culverts and bridges or elsewhere.
 - E. Gullies do not form or enlarge due to uncontrolled storm water runoff.
5. Grass lined channels shall be considered stable if the calculated velocity does not exceed the allowable velocities shown below:
 - A. Three (3) feet per second where only sparse vegetation can be established and maintained because of shade or soil condition.
 - B. Four (4) feet per second where normal growing conditions exist and vegetation is to be established by seeding.

- C. Five (5) feet per second where a dense, vigorous sod can be quickly established or where water can be temporarily diverted during establishment of vegetation. Netting and mulch or other equivalent methods for establishing vegetation shall be used.
 - D. Six (6) feet per second where there exists a well-established sod of good quality.
6. Where swale bends occur, the allowable velocities listed above shall be divided by the following factors:
- | | | |
|----|---------------------------------|------|
| A. | Swale bends 0 to 30 degrees | 1.50 |
| B. | Swale bends 30 to 60 degrees | 1.75 |
| C. | Swale bends 60 to 90 degrees | 2.00 |
| D. | Swale bends 90 degrees and over | 2.50 |
7. These calculated grass-lined channel flows may be exceeded if the designer can provide supportive design criteria that is approved by the Township Engineer as proof of erosion prevention.
8. Where the velocity of storm water runoff exceeds the allowable velocity, erosion protection must be provided.
9. The method of erosion protection proposed must be supported by the appropriate design information and/or references.
10. Flow velocities from any storm sewer may not result in a deflection of the receiving channel.
11. Energy dissipaters shall be placed at the outlets of all storm sewer pipes, culverts, and bridges where flow velocities exceed maximum permitted channel velocities.

Section 409 DESIGN STANDARDS - VOLUME CONTROL

1. Storm water runoff volume controls shall be implemented using the *following method*:
- A. less than the 2-year 24-hour storm event.
 - B. For modeling purposes:
 - 1) Existing (pre-development) non forested pervious areas must be considered meadow in good condition.
 - 2) 20% of existing impervious area, when present, shall be considered meadow in good condition in the model for existing conditions.
 - 3) The maximum loading ratio for volume control facilities shall be as follows:
 - a) In carbonate geology areas, 3:1 impervious drainage area to infiltration area and 5:1 total drainage area to infiltration area.
 - b) In non-carbonate geology areas, 5:1 impervious drainage area to infiltration area and 8:1 total drainage area to infiltration area.

2. Any portion of the volume control storage that meets the following conditions may also be used as rate control storage;
 - A. Volume control storage that depends on infiltration and is designed according to the infiltration standards in Section 402.13.
 - B. The volume control storage which will be used for rate control is that storage which is available within 24 hours from the end of the design storm based on the stabilized infiltration rate and/or the evapo-transpiration rate.
3. Volume Control BMPs shall be designed in accordance with the BMP Manual. All applicable worksheets from the BMP Manual shall be used when establishing Volume Controls.
4. Actual field infiltration tests at the location of the proposed elevation of the storm water BMPs are required when five thousand (5,000) square feet or greater of new impervious surface is added. Infiltration test shall be conducted in accordance with BMP Manual.
5. Ephrata Township shall be notified twenty four (24)-hours prior to infiltration tests being conducted as to provide an opportunity for the Township to witness the tests.

Section 410 DESIGN STANDARDS - SUBSURFACE STORAGE FACILITIES

1. Subsurface storage facilities shall consist of all storm water facilities which store, infiltrate/evaporate/transpire, clean or otherwise affect storm water runoff and the top of which is not exposed to the natural environment. Subsurface storage facilities shall be located below the finished ground elevation. Subsurface storage facilities shall not include storm water management facilities designed for conveyance.
2. Subsurface storage facilities shall comply with the design criteria in the following table:

| Subsurface storage facility design criteria | | |
|--|---------------------------------|-------------------------------------|
| | Facility Type | |
| | Infiltration and Storage | Storage without Infiltration |
| (a) Facility Geometry | | |
| [1] Depth from surface (maximum) | 2 feet less than limiting zone | N/A |
| [2] Loading ratio (maximum) | Per BMP Manual* | N/A |
| (b) Distribution System Requirements | | |
| [1] Pipe size (minimum) | 4 inches | 4 inches |
| [2] Pretreatment | Required | Required |
| [3] Loading/balancing | Required | Not required |
| [4] Observation/access ports | Required | Required |

3. The facility shall be designed to provide a method to eliminate solids, sediment, and other debris from entering the subsurface facility.

4. The facility shall be designed to provide a means of evenly distributing the flow across the surface of the facility to be used for infiltration.
5. Clean-out and access for monitoring the facility shall be provided as follows:
 - A. For facilities with the bottom less than five (5) feet below the average grade of the ground surface, a clean-out shall be an acceptable observation port.
 - B. For facilities with the bottom five (5) feet or more below the average grade of the ground surface, a manhole or other means acceptable to the Township shall be provided for access to and monitoring of the facility. The number of access points shall be sufficient to flush or otherwise clean out the system.
6. Distribution system piping shall be PVC, SLHDPE, or RCP.
7. The stone used for infiltration beds shall be clean washed, uniformly graded coarse aggregate (AASHTO No. 3 or equivalent approved by the Township). The void ratio for design shall be assumed to be 0.4.
8. Material consistency and placement depths for backfill shall be (at a minimum) as follows:
 - A. In accordance with all applicable pipe manufacturer's recommendations.
 - B. Free of large (not exceeding 6 inches in any dimension) objectionable or detritus material.
 - C. Select non-aggregate material should be indigenous to the surrounding soil material for non-vehicular areas.
 - D. Backfill within vehicular areas shall comply with this section unless otherwise specified in the Ephrata Township Subdivision and Land Development Ordinance.
9. Non-woven geotextiles shall be placed on the sides and top of subsurface infiltration facilities. No geotextiles shall be placed on the bottom of subsurface infiltration facilities.
10. When located under pavement, the top of the subsurface facility shall be a minimum of three (3) inches below the bottom of pavement subbase. Where located under vegetative cover, the top of the subsurface facility shall be a minimum of 12 inches below the surface elevation or as required to establish vegetation.
11. Subsurface facilities shall be designed to safely convey and/or bypass flows from storms exceeding the design storm.

**ARTICLE V
MAINTENANCE**

Section 501 RESPONSIBILITIES OF DEVELOPERS AND LANDOWNERS

1. The municipality shall make the final determination on the continuing maintenance responsibilities prior to final approval of the Storm Water Management Site Plan. The municipality may accept dedication of such facilities as part of the requirements for approval of the Storm Water Management Site Plan. Such a requirement is not an indication that the municipality will accept the facilities. The municipality reserves the right to accept or reject the ownership and operating responsibility for any portion of the storm water management controls.
2. Facilities, areas, or structures used as storm water management BMPs shall be enumerated as permanent real estate appurtenances and recorded as deed restrictions or conservation easements that run with the land.
3. Storm water management facilities existing on the effective date of this Ordinance, which have not been accepted by Ephrata Township or for which maintenance responsibility has not been assumed by a private entity such as a homeowners' association shall be maintained by the individual landowners. Such maintenance shall include at a minimum those items set forth in Section 503. If Ephrata Township determines at any time that any permanent storm water management facility has been eliminated, altered, blocked through the erection of structures or the deposit of materials, or improperly maintained, the condition constitutes a nuisance and Ephrata Township shall notify the landowner of corrective measures that are required, and provide for a reasonable period of time, not to exceed 30 days, within which the landowner shall take such corrective action. If the landowner does not take the required corrective action, Ephrata Township may either perform the work or contract for the performance of the work and bill the landowner for the cost of the work plus a penalty of 10% of the cost of the work. If such bill is not paid by the landowner within 30 days, Ephrata Township may file a municipal claim against the property upon which the work was performed in accordance with the applicable laws. Ephrata Township shall have the right to choose among the remedies and may use one or more remedies concurrently.

Section 502 OPERATION AND MAINTENANCE AGREEMENTS

1. Prior to final approval of the development site's Storm Water Management Site Plan, the record owner of the Development Site shall sign and record an O&M agreement covering all storm water control facilities that are to be privately owned. The agreement shall stipulate that:
 - A. The landowner, successor and assigns shall maintain all facilities in good working order in accordance with the approved maintenance schedule and shall keep all facilities in a safe and attractive manner.
 - B. The landowner shall convey to Ephrata Township easements and/or rights-of-way to assure access for periodic inspections by Ephrata Township and maintenance, if required.
 - C. The owner shall keep on file with Ephrata Township the name, address and telephone number of the person or company responsible for maintenance activities; in the event

of a change, new information will be submitted to Ephrata Township within ten (10) days of the change.

- D. In the case Condominium and Planned Communities, separate agreements will be entered and be in legal form capable of being enforced against the common elements and the ownership interests of the individual units or properties, as the case may be, so that Ephrata Township has the ability to force compliance with the provisions of such agreements and to assess the cost against all owners so that the municipality does not incur out of pocket expenses.
 - E. The owner is responsible for operation and maintenance (O&M) of the storm water management BMPs. If the owner fails to adhere to the O&M Agreement, the municipality may perform the services required and charge the owner appropriate fees. Nonpayment of fees may result in a lien against the property.
 - F. Where the NPDES permit for the project requires that BMPs be installed, annual written reporting of the inspection and maintenance of those BMPs shall be included in the agreement.
 - G. Where drainage facilities are approved within a State Highway, a perpetual agreement or bond shall be required of the developer for maintenance of said facilities.
 - H. No person shall modify, remove, fill, landscape, or alter any storm water management BMPs, facilities, areas, or structures without the written approval of the municipality.
 - I. No person shall place any structure, fill, landscaping or vegetation into a storm water management facility or within a drainage easement that will limit or alter the functioning of the facility or easement in any manner.
2. Ephrata Township owned and maintained storm water management facilities are exempt from the requirement to sign and record an O&M agreement.

SECTION 503 MAINTENANCE RESPONSIBILITIES

Maintenance of storm water management facilities shall include, but not be limited to, the following:

- 1. Regular inspection of the storm water management facilities to assure proper implementation of BMPS, maintenance and care.
- 2. All pipes, swales and detention facilities shall be kept free of any debris or other obstruction and in original design condition.
- 3. Removal of silt from all structures including but not limited to grass waterways, pipes, detention or retention basins, infiltration structures, or BMPs, and thus reducing their capacity to convey or store water.
- 4. Mowing grass areas as necessary to maintain adequate growth and to control weeds. Chemical weed control may be used to maintain the specified planting (i.e. grass, wetlands plants, etc.) if federal, state and local laws and regulations are met.

5. Liming and fertilizing vegetated channels and other areas based on the results of soil testing and in accordance with the specifications in the PA DEP Erosion and Sedimentation Pollution Control Program Manual or the Penn State Agronomy Guide, latest editions.
6. Re-establishment of vegetation by seeding and mulching or sodding of scoured areas or areas where vegetation has not been successfully established. Selection of seed mixtures shall be subject to approval by Ephrata Township.
7. Where the NPDES permit for the project requires that BMPs be installed, annual written reporting of the inspection and maintenance of those BMPs.

Section 504 INSPECTION

1. Ephrata Township, in conformance with Section 601, shall inspect all phases of the installation of any temporary or permanent storm water management facilities. The inspections shall be per the schedule provided on the Storm Water Management Site Plan. The developer shall be responsible to reimburse Ephrata Township for all expenses related to inspections.
2. Storm water management BMPs shall be inspected by the landowner, or the owner's designee (including the municipality for dedicated and owned facilities), according to the following list of minimum frequencies:
 - A. Annually for the first 5 years.
 - B. Once every 3 years thereafter.
 - C. During or immediately after the cessation of a 10-year or greater storm.
 - D. Those BMPs related to an NPDES permit shall be inspected to the Post Construction Storm Water Management Plan, with annual written reports provided to the Township.

Section 505 PROHIBITED DISCHARGES AND CONNECTIONS

1. The following connections are prohibited, except as provided in Section 507.3 below.
 - A. Any drain or conveyance, whether on the surface or subsurface, that allows any non-storm water discharge including sewage, process wastewater, and wash water to enter a separate storm sewer system, or Waters of this Commonwealth, 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 Township.
2. No person shall allow, or cause to allow, discharges into surface Waters of this Commonwealth which are not composed entirely of storm water, except (1) as provided in Section 507.3 below and (2) discharges allowed under a state or federal permit.

3. The following discharges are authorized unless they are determined to be significant contributors of pollution to the Waters of this Commonwealth:

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

4. In the event that the Township or DEP determines that any of the discharges identified in Section 507.3 above significantly contribute to pollution of the Waters of this Commonwealth, the Township or DEP will notify the responsible person(s) to cease the discharge.

**ARTICLE VI
ADMINISTRATION**

SECTION 601 RIGHT-OF-ENTRY

Upon presentation of proper credentials, duly authorized representatives of Ephrata Township may enter at reasonable times upon any property within Ephrata Township to investigate or ascertain the condition of the subject property in regard to any aspect regulated by this Ordinance.

SECTION 602 ENFORCEMENT

1. It shall be unlawful for a person to undertake any regulated activity except as provided in an approved Storm Water Management Site Plan, unless specifically exempted in Section 302.
2. It shall be unlawful to violate Section 502.1.H of this Ordinance.
3. Inspections regarding compliance with the Storm Water Management Site Plan are a responsibility of the municipality.

Section 603 REMEDIES

Any person, partnership, or corporation engaged in a land disturbance, as defined in this Ordinance, shall implement such measures consistent with the Storm Water Management Permit and this Ordinance. Any land disturbance conducted in violation of this Ordinance or the Storm Water Management Permit is hereby declared a public nuisance. In the event of a violation, Ephrata Township may initiate the following actions:

1. Revocation of a Storm Water Management Permit: Based upon a report from the Township Engineer that the existing site condition or further construction is likely to endanger property or create hazardous conditions, the Code Enforcement Officer may:
 - A. Revoke a permit.
 - B. Require protective measures to be taken and assign a reasonable time period for the necessary action.
 - C. Authorize protective measures to be done and lien all cost of the work against the property on which work is required. A permit which has been revoked cannot be reinstated. The applicant may apply for a new permit in accordance with the processing procedures in Article III.
2. Notification of Suspension or Revocation of a Storm Water Management Permit: In the event of a suspension or revocation of a Storm Water Management Permit, the Code Enforcement Officer shall provide written notification, by certified mail, of the violation to the landowner at the landowner's last known address. Such notification shall.
 - A. Cite the specific violation, describe the requirements which have not been met, and cite the provisions of the Ordinance relied upon.
 - B. Identify the specific protective measures to be taken.
 - C. Assign a reasonable time period necessary for action or in the case of revocation, identify if Ephrata Township has authorized protective measures to be performed at cost to the landowner.

- D. Identify the right of the landowner to request a hearing before the Board of Supervisors of Ephrata Township if aggrieved by the suspension or revocation.
3. Suspension of a Storm Water Management Permit: Any permit issued under this Ordinance may be suspended by the Code Enforcement Officer based upon:
 - A. The noncompliance with, or failure to implement, any provision of the Storm Water Management Site Plan, or
 - B. A violation of any provision of this Ordinance relating to the project, or
 - C. The creation of any condition or the commission of any act during construction which constitutes or creates a hazard or nuisance or which endangers the life or property of others.
 4. Under the suspension of a permit, only such work as the Code Enforcement Officer so authorized may proceed.
 - A. This work shall be limited to that which is necessary to correct the violation.
 - B. A suspended permit shall be reinstated by the Code Enforcement Officer when the Code Enforcement Officer and Township Engineer have inspected and approved the corrections to the storm water management facilities or the elimination of the hazard or nuisance.
 5. Civil Remedies: Suits to restrain, prevent, or abate a violation of this Ordinance may be instituted in equity or at law by Ephrata Township. Such proceedings in equity or law may be initiated before any court of competent jurisdiction. In cases of emergency where, in the opinion of the court, the circumstances of the case require immediate abatement of the unlawful conduct, the court may, in its decree, fix a reasonable time during which the person responsible for the unlawful conduct shall correct or abate the same. The expense of such proceedings shall be recoverable from the violator in such manner as may now or hereafter be provided by law.

Section 604 PENALTIES

Any person who shall violate any of the provisions of this Ordinance, or who shall fail to comply with any written notice from Ephrata Township which describes a condition of noncompliance, shall be guilty of a summary offense, and upon conviction thereof, shall be subject to a fine payable to Ephrata Township of not more than \$600 or less than \$100 for each violation, recoverable with cost. In default of payment of the fine, such person shall be liable to imprisonment for not more than thirty (30) days. A new and separate violation shall be deemed to be committed for each day after receipt of the aforesaid notice that such violation exists.

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

Section 605 APPEALS

Any person aggrieved by any action of the Township Engineer or the Code Enforcement Officer in the administration of this Ordinance may appeal such determination by filing an appeal, in writing, within ten (10) days after such determination to the Board of Supervisors pursuant to Section 306 herein and the Local Agency Law, 2 Pa. C.S. Section 551 et seq. The Board of Supervisors shall conduct such appeal in accordance with the requirements of the Local Agency Law, and any appeal from the determination of the Board of Supervisors shall be made in accordance with the Local Agency Law and other applicable Pennsylvania statutes.

Section 606 CONSTRUCTION

Nothing in this Ordinance shall be construed to affect any suit or proceeding pending in any court, or any court, or any rights acquired or liability incurred, or any permit issued, or any cause or causes of action existing under the Zoning Ordinance of Ephrata Township prior to the enactment of this Ordinance.

Section 607 EFFECTIVE DATE

This Ordinance shall take effect and be in force five (5) days after its enactment by the Supervisors of the Township of Ephrata, as provided by law.

DULY ORDAINED AND ENACTED by the Supervisors of the Township of Ephrata, Lancaster County, Pennsylvania, on the 6th day of May, 2014, in lawful session duly assembled.

TOWNSHIP OF EPHRATA

By: _____

Chairman,
Board of Supervisors

Attest: _____

Secretary

[TOWNSHIP SEAL]