Chapter 23

Stormwater Management

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Part 1

General Provisions

§23-101. Statement of Findings.

The Borough Council finds that:

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

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

C. Stormwater is an important water resource, which provides groundwater recharge for water supplies and base flow of streams, which also protects and maintains surface water quality.

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

E. Public education on the control of pollution from stormwater is an essential component in successfully addressing stormwater.

F. Non-stormwater discharges to municipal separate storm sewer systems can contribute to pollution of waters of the Commonwealth by the Municipality.

(*Ord. 2011-4*, 10/3/2011, §101)

§23-102. Purpose.

The purpose of this Chapter is to promote the public health, safety and welfare by minimizing the damages described in §23-101.A of this Chapter by provisions designed to:

A. Control accelerated erosion and sedimentation problems at their source by regulating activities which cause such problems.

B. Utilize and preserve the desirable existing natural drainage systems.

C. Encourage groundwater recharge and prevent degradation of groundwater quality.

D. Maintain the existing flows and quality of streams and watercourses in the Borough and the Commonwealth.

E. Preserve and restore the flood carrying capacity of streams.

F. Provide for proper operation and maintenance of all permanent stormwater management facilities which are constructed in the Borough.

G. Provide performance standards and design criteria for watershed-wide stormwater management and planning.

H. Provide review procedures and performance standards for stormwater planning and management.

I. Manage stormwater impacts close to the runoff source in a manner which requires a minimum of structures and relies on natural processes.

J. Provide a mechanism to identify controls necessary to meet the NPDES permit requirements.

K. Implement an illegal discharge detection and elimination program to address non-stormwater discharges into the Municipality's separate storm sewer system.

(*Ord. 2011-4*, 10/3/2011, §102)

§23-103. Statutory Authority (Attorneys to Verify).

The Borough Council, pursuant to authority granted by the Pennsylvania Storm Water Management Act, Act of October 4, 1978, P.L. 864, No. 167, as amended ("Act 167"), the Pennsylvania Municipalities Planning Code, Act of July 31, 1968, Act of July 31, 1968, P.L. 805, No. 247, re-enacted and amended by Act 170 of 1988, as amended ("MPC"), hereby enacts and ordains this Chapter as the "Lewisberry Borough Stormwater Management Ordinance."

(*Ord. 2011-4*, 10/3/2011, §103)

§23-104. Short Title.

This Chapter shall be known and may be cited as *Ord. 2011-4*, the "Lewisberry Borough Stormwater Management Ordinance."

(*Ord. 2011-4*, 10/3/2011, §104)

§23-105. Applicability.

1. This Chapter shall apply to all areas of the Borough.

2. This Chapter shall only apply to permanent stormwater management facilities (as defined herein) constructed as part of any of the activities listed in this Section. Stormwater management and erosion and sedimentation control during construction activities are not regulated by this Chapter, but shall continue to be regulated under existing laws and regulations.

3. The provisions, regulations, limitations and restrictions of this Chapter governing design, installation and maintenance of stormwater management facilities and preparation, submission and review of stormwater management site plans shall apply to all of the following activities defined collectively as "regulated activities," unless specifically exempted by §23-302 herein:

A. Development of any kind where the Subdivision Ordinance [Chapter 22] requires filing a subdivision or land development plan.

B. Any land disturbance.

C. Outdoor storage, including storage of material (rock, soil, etc.) where ground contact is equal to or exceeds 5,000 square feet or where material is placed either on slopes exceeding 8 percent, floodplains, or in drainageways.

D. Construction of new or additional impervious or semi-pervious surfaces (included, but not limited to, concrete, asphalt, stoned surfaces, surfaces using pavers, wooden surfaces).

E. Construction of new buildings or additions to existing buildings.

F. Diversion or piping of any natural or man-made stream channel.

G. Installation or modification of stormwater management facilities and/or appurtenances thereto.

H. Any disturbance to land that, in the opinion of the Borough, is critical in terms of protection of steep slopes, wetlands and other environmentally sensitive features and in terms of protection of adjoining properties.

I. Any other activities where the Borough determines that said activities may affect any existing watercourse's stormwater management facilities, or stormwater drainage patterns.

In determining whether such activity constitutes a regulated activity, the limitations shall apply to the entire lot existing on the effective date of this Chapter whether or not such activity is conducted in phases or sections.

(*Ord. 2011-4*, 10/3/2011, §105)

Part 2

Definitions

§23-201. Definitions; Word Usage.

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

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

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

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

D. The words "shall," "required" and "must" are mandatory; the words "may" and "should" are permissive.

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

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

Accelerated erosion–the removal of the surface of the land through the combined action of man's activities and natural processes at a rate greater than would occur because of the natural processes alone.

Act 167–as defined in §23-103 hereof.

Applicant–the person or persons submitting a stormwater management site plan to the Borough for consideration.

BMP (best management practice)–stormwater structures, facilities, and techniques designed or used to maintain or improve the quality of water and surface runoff while acting to neutralize increased runoff volume caused by development activity. BMP's may be structural (basins, infiltration structures), nonstructural (vegetated filter strips, buffers) or managerial techniques (maintenance practices) that may be used singly or in combination intending to improve water quality.

BMP Manual–Pennsylvania *Stormwater Best Management Practices Manual*, DEP Document # 363-0300-002, effective date December 30, 2006, as amended and updated from time to time.

Borough–Lewisberry Borough, located in York County, Pennsylvania.

Borough Code–the Code of Lewisberry Borough, as amended or reenacted.

Borough Engineer–the Engineer of the Borough appointed pursuant to authority granted by the Borough Code.

Cistern–an underground reservoir or tank for storing rainwater.

Clean Water Act–the Federal Water Pollution Control Act, 33 U.S.C. §1251 *et seq*., as amended.

Conservation District–the York County Conservation District, which district is as defined in §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, Chapter 102, or any successor agency thereto.

Conservation plan–a plan for erosion and sediment control applicable to agricultural activities as defined in 25 Pa.Code §102.4.

Construction and material specifications–the construction and material specifications adopted by the Borough and amended from time to time.

Culvert–a structure with appurtenant works which carries surface water through an obstruction.

DEP–the Pennsylvania Department of Environmental Protection or any successor agency thereto.

Design storm–the magnitude of precipitation from a storm event measured in probability of occurrence (e.g., 100-year storm) and duration (e.g., 24-hour), and used in computing stormwater management control systems.

Detention basin–a basin designed to retard stormwater runoff by temporarily storing the runoff and releasing it at a predetermined rate. A detention basin can be designed to drain completely after a storm event, or it can be designed to contain a permanent pool of water.

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

Developer–a person, or any combination of persons, or agent thereof, that undertakes, owns, maintains or has responsibility for any proposed or existing regulated activity. "Developer" as used herein shall include also the owner who shall have joint and several responsibility for adherence to the provisions of this Chapter.

Development–any man-made change to improved or unimproved real estate, including, but not limited to, buildings or other structures, the subdivision of land, the placement of mobile or prefabricated structures, streets and other paving, utilities, filling, grading, excavation, mining, dredging or the like.

Disconnected impervious area (DIA)–an impervious or impermeable surface that is disconnected from any stormwater management facility or drainage conveyance facility and is redirected or directed to a pervious area, which allows for infiltration, filtration, and increased time of concentration as specified in Appendix 23-A ("Disconnected Impervious Area") of this Chapter.

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

Downslope property line–that portion of the property line of the lot, tract, or parcels of land being developed located such that a portion or all stormwater runoff from the development site would be directed towards it.

Drainage conveyance facility–a stormwater management facility designed to

transmit stormwater runoff and shall include streams, channels, swales, pipes, conduits, culverts, storm sewers, etc.

Drainage easement–a right of limited use granted by the owner of real property, as grantor, to a person, as grantee, allowing the use of grantor's property by the grantee for the purpose of stormwater management.

E & S Manual–Erosion and Sediment Pollution Control Manual, DEP Document # 363-2134-008, effective April 15, 2000, as amended and updated from time to time.

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

Erosion–the removal of soil particles by the action of water, wind, ice, snow or other natural forces.

Erosion and sedimentation control plan–a site specific plan consisting of both drawings and a narrative that identifies BMPs to minimize accelerated erosion and sedimentation before, during and after earth disturbance activity.

Existing condition–the dominant land cover during the 5-year period immediately preceding a proposed regulated activity.

FEMA–Federal Emergency Management Agency, or any successor agency.

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

Floodplain–any land area susceptible to inundation by water from any natural source or delineated by applicable Department of Housing and Urban Development, Federal Insurance Administration Flood Hazard Boundary–Mapped as being a special flood hazard area. Also included are areas that comprise Group 13 Soils, as listed in Appendix A of the DEP *Technical Manual for Sewage Enforcement Officers*, as amended or replaced from time to time by DEP.

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

Groundwater recharge–replenishment of existing natural underground water supplies.

Hydrologic Soil Group–infiltration rates of soils vary widely and are affected by subsurface permeability as well as surface intake rates. Soils are classified into four HSGs (A, B, C, and D) according to their minimum infiltration rate, which is obtained for bare soil after prolonged wetting. The NRCS defines the four groups and provides a list of most of the soils in the United States and their group classification. The soils in the area of the development site may be identified from

a soil survey report that can be obtained from local NRCS offices or conservation district offices. Soils become less pervious as the HSG varies from A to D (NRCS 3, 4).

Impervious–any surface or material other than vegetative cover which prevents the percolation of water into the ground. Impervious surfaces and materials shall include, but not be limited to, any roof, parking or driveway, new streets and sidewalks.

Infiltration–the entrance of surface water into the soil, usually at the soil-air interface.

Infiltration structures–a designed improvement which directs runoff into the ground, (e.g., french drains, seepage pits, seepage trench).

Integrated Water Resources Plan (IWRP)–the York County Integrated Water Resources Plan, as amended, which plan includes Act 167 plan elements and requirements.

Joint permit application–the joint application for Pennsylvania water obstruction and encroachment permit and U.S. Army Corps of Engineers §404, permit, or any successor permit or permits thereto.

Land disturbance–any activity involving alteration, construction, mining, timber, harvesting, grubbing, grading, filling, digging or filling of ground, or stripping of vegetation, or any other activity which causes land to be exposed to the danger of erosion.

MPC–as defined in §23-103 hereof.

Municipality–Lewisberry Borough, York County, Pennsylvania.

Npdes–national Pollution Discharge Elimination System permit program administered pursuant to the Clean Water Act.

NRCS–the Natural Resource Conservation Service of the United Stated Department of Agriculture or any successor agency thereto.

O&M–operation and maintenance.

O&M plan–operation and maintenance plan.

Ordinance–the Lewisberry Stormwater Management Ordinance [this Chapter], as amended or reenacted.

Outfall–"point source." The point where the Municipality's storm sewer system discharges to surface waters of the Commonwealth, as described in 40 CFR §122.2.

Owner–the fee simple or equitable titleholder to a lot or tract of land. "Owner" for the purposes of this Chapter shall be determined at the relevant time at which the provisions of this Chapter are applied or enforced.

PCSWMP–post-construction stormwater management site plan.

Peak discharge–the maximum rate of flow of water at a given point and time resulting from a specified storm event.

PennDOT–the Pennsylvania Department of Transportation or any successor agency thereto.

Percolation–the downward movement, under the influence of gravity, of water under hydrostatic pressure through interstices of the soil or rock.

Person–an individual, partnership, public or private association, limited liability company, corporation, firm, trust, estate, municipality, governmental unit, public utility or any other legal entity. "Person" when used herein shall also include the successors, heirs and assigns of such person, the members of a partnership, the officers, agents and servants of a corporation or limited liability company and the officers of a municipality or other governmental unit.

Point source–any discernible, confined and discrete conveyance, including, but not limited to, any pipe, ditch, channel, tunnel or conduit from which stormwater is or may be discharged, as defined in State regulations at 25 Pa.Code §92.1.

Project–the use and all improvements proposed in a land use permit application, building permit application and/or subdivision and land development plan or in any other plan for development.

Project site–the specific tract of land for which a project or development is proposed.

Qualified person–any person licensed by the State of Pennsylvania as a professional engineer or otherwise qualified by law to perform the work required by this Chapter.

Redevelopment–earth disturbance activities on land that has previously been disturbed or developed.

Regulated activity–as defined in §23-105 hereof.

Retention basin–an impoundment in which stormwater is stored and not released during the storm event. Stored water may be released at a predetermined rate from the basin at some time after the end of the storm.

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

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

Riparian Buffer Zone or *RBZ*–as defined in §23-408 hereof.

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

Road maintenance–earth disturbance activities within the existing road cross-section, such as grading and repairing existing unpaved road surfaces, cutting road banks, cleaning or clearing drainage ditches and other similar activities.

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

Sediment–solid material, both mineral and organic, that is in suspension, is being transported, or has been moved from its site of origin by water.

Sediment basin–a barrier, dam, retention or detention basin designed to retain sediment.

Seepage pit / seepage trench–an area of excavated earth filled with loose stone or similar materials and into which surface water is directed for infiltration into the ground.

Semi-pervious–a surface or material such as stone, rock concrete or other

materials which permits some vertical transmission of water.

Separate storm sewer system–a conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels or storm drains) primarily used for collecting and conveying stormwater runoff.

Sheet flow–runoff that flows over the ground surface as a thin, even layer, not concentrated in a channel.

Soil-cover complex method–a method of runoff computation developed by SCS, and found in its publication *Urban Hydrology for Small Watersheds*, Technical Release No. 55, SCS, January 1975.

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

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

Storm frequency–the number of times that a given storm "event" occurs or is exceeded on average in a stated period of years. See also the definition of "return period."

Storm sewer–a system of pipes, conduits, swales or other similar structures which carry intercepted runoff and other drainage, but excludes domestic sewage and industrial wastes.

Stormwater–water which surfaces, slows or collects during and subsequent to a rain, ice or snowfall event.

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

Stormwater management site plan–the plan prepared by the developer indicating how stormwater runoff will be managed in accordance with this Chapter for regulated activity. For all NPDES permitted sites, the stormwater management site plan shall include, and be consistent with, the erosion and sediment control plan as submitted to the Conservation District and/or DEP.

Stream enclosure–a bridge, culvert or other structure in excess of 100 feet in length upstream to downstream which encloses a regulated water of this Commonwealth.

Subdivision–the division or re-division of a lot, tract or parcel of land by any means into two or more lots, tracts, parcels or other divisions of land including changes in existing lot lines for the purpose, whether immediate or future, of lease, transfer of ownership or building or lot development; provided, however, that the division of land for agricultural purposes into parcels of more than 10 acres, not involving any new street or easement of access, shall be excluded from the definition.

Subdivision Ordinance–the Lewisberry Borough Subdivision and Land

Development Ordinance [Chapter 22], as amended or reenacted.

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

Swale–a shallow ditch intended to gather or carry runoff.

Time of concentration (Tc)–the time for surface runoff to travel from the hydraulically most distant point of the watershed to a point of interest within the watershed. This time is the combined total of overland flow time and flow time in pipes or channels, if any.

USDA–United States Department of Agriculture, or any successor agency.

Watercourse–any natural or artificial stream, river, creek, ditch, channel, canal, conduit, culvert, drain, waterway, gully, ravine or wash in which water flows in a definite direction or course, either continuously or intermittently, and has a definite channel, bed and banking and includes any area adjacent thereto subject to the inundation by reason of overflow of floodwater.

Watershed–all the land from which water drains into a particular watercourse.

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

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

Zoning Ordinance–the Lewisberry Borough Zoning Ordinance [Chapter 27], as amended or reenacted.

(*Ord. 2011-4*, 10/3/2011, Art. II)

Part 3

Stormwater Management Plan Requirements

§23-301. General Requirements.

1. It shall be unlawful to commence any regulated activity prior to submission and unconditional approval of a stormwater management site plan, or conditional approval of a stormwater management site plan if proper financial security is posted in accordance with §23-501, under this Chapter.

2. Approval of a stormwater management site plan does not exempt or relieve the developer or any builder or owner from any requirements to submit grading plans to the Borough prior to issuance of a land use or building permit.

3. All construction activity shall be in accordance with the construction and material specifications, Zoning Ordinance [Chapter 27] and Subdivision Ordinance [Chapter 22], as applicable. Deviations from the construction and materials specifications must be noted on the stormwater management site plan and approved by the Township Engineer.

(*Ord. 2011-4*, 10/3/2011, §301)

§23-302. Exemptions.

Any regulated activity that meets the following exemption criteria is exempt from the provisions of this Chapter. These criteria shall apply to the total project even if project is to take place in phases. The date of enactment of this Chapter shall be the starting point from which future development and the respective proposed impervious surface computations shall be cumulatively considered and regulated. Exemption shall not relieve an applicant from implementing such measures as necessary to meet the intent of this Chapter, or compliance with any NPDES permit requirements. Exemption shall not relieve the applicant from implementing such measures as are necessary to protect health, safety, and property. This exemption shall not relieve the applicant from meeting the requirements for water quality and groundwater recharge or special requirements for high quality (HQ) and exceptional value (EV) watersheds.

A. Regulated activities that create cumulative, net impervious areas less than 500 square feet are exempt from the peak rate control and the SWM site plan preparation requirements of this Chapter.

B. Regulated activities that create DIAs equal to or less than 1,000 square feet are exempt from the peak rate control and the stormwater management site plan preparation requirements of this Chapter.

C. Regulated activities that create DIAs greater than 1,000 square feet and equal to or less than 5,000 square feet are exempt only from the peak rate control requirement of this Chapter.

D. Agricultural activities such as growing crops, rotating crops, tilling of soil and grazing animals and other such activities when performed in accordance with a conservation plan or erosion and sedimentation control plan approved by the Conservation District shall be exempt from the rate control and stormwater management site plan provisions of this Chapter. Construction of new buildings or

the addition of impervious area shall not be considered an agricultural activity for purposes of this exemption.

E. Forest management operations, which are following the DEP's management practices, contained in its publication "Soil Erosion and Sedimentation Control Guidelines for Forestry," or any successor publication, and are operating under an erosion and sedimentation control plan approved by the Conservation District shall be exempt from the rate control and stormwater management site plan provisions of this Chapter. Construction of new buildings or the addition of impervious area shall not be considered forest management activity for purposes of this exemption.

F. Domestic gardening and landscaping are exempt from specific approval and permitting under this Chapter so long as those activities are associated with one, and only one, dwelling unit and the activities comply with all other applicable ordinances and statutes.

G. Emergency maintenance work performed for the protection of public health, safety and welfare. A written description of the scope and extent of any emergency work performed shall be submitted to the Borough within 24 hours of the commencement of the activity. If the Borough determines the work is not an emergency, them the work shall cease immediately and the requirements of this Chapter shall be addressed as applicable.

H. Any maintenance to an existing stormwater management system made in accordance with plans and specifications approved as part of an O&M plan or by the Borough Engineer.

I. Exemptions from certain provisions of this Chapter shall not relieve the applicant from the requirements in §23-401.1.J–.S. For all regulated activities that are exempted from stormwater management site plan requirements, the applicant shall submit drawings and calculations in sufficient detail to show existing conditions and proposed improvements.

J. The Borough may deny or revoke any exemption pursuant to this Section at any time for any project that the Municipality determines poses a threat to public health, safety, property or the environment.

(*Ord. 2011-4*, 10/3/2011, §302)

§23-303. Stormwater Management Plan Contents.

1. The stormwater management site plan shall consist of all applicable calculations, maps, and plans. A note on the maps shall refer to the associated computations and erosion and sedimentation control plan by title and date. The cover sheet of the computations and erosion and sedimentation control plan shall refer to the associated maps by title and date. All stormwater management site plan materials shall be submitted to the Borough in a format that is clear, concise, legible, neat, and well organized; otherwise, the stormwater management site plan shall be returned to the applicant as though it were not filed.

2. The following items shall be included in the stormwater management site plan:

A. *General*.

(1) General description of project.

(2) General description of permanent stormwater management facilities, including construction specifications of the materials to be used for such stormwater management facilities.

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

(4) The stormwater management plan shall be signed and sealed by a licensed professional engineer.

B. Map(s) of the project area shall be submitted on 24-inch x 36-inch sheets. The contents of the maps(s) shall include, but not be limited to:

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

(2) Existing contours at intervals of 2 feet. In areas of steep slopes (greater than 15 percent), 5-foot contour intervals may be used.

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

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

(5) The locations of all existing and proposed utilities, sanitary sewers, water lines, on-lot septic systems and water supply wells on-site or within 50 feet of property lines.

(6) An overlay showing soil names, boundaries and hydrologic soil classification.

(7) Proposed changes to the land surface and vegetative cover, including the type and amount of impervious area that would be added.

(8) Proposed structures, roads, paved areas, and buildings.

(9) Final contours at intervals at 2 feet. In areas of steep slopes (greater than 15 percent), 5-foot contour intervals may be used; provided, however, that final contours in any area containing stormwater management facilities may not exceed 2 feet.

(10) The name of the project, the name and address of the developer and owner of the property, and the name of the individual or firm preparing the plan.

(11) The date of submission.

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

(13) A North arrow.

(14) The total tract boundary and size with distances marked to the nearest foot and bearings to the nearest degree.

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

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

(17) Horizontal and vertical profiles of all open channels, including hydraulic capacity.

(18) Overland drainage paths.

(19) A note on the stormwater management site plan indicating the location and responsibility for maintenance of stormwater management facilities that would be located off-site. All off-site facilities shall meet the performance standards and design criteria specified in this Chapter.

(20) A statement, signed by the landowner, acknowledging the stormwater management facilities to be permanent fixtures that can be altered or removed only after approval of a revised plan by the Borough.

(21) The location of all facilities installed or to be constructed and installed pursuant to an erosion and sedimentation control plan for the project.

(22) The location of all groundwater recharge facilities.

C. *Supplemental Information*.

(1) A written description of the following information shall be submitted:

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

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

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

(d) A summary table showing pre-development and controlled and uncontrolled post-development discharge rates for all required designed storms.

(2) An erosion and sedimentation control plan, where applicable, including all reviews and approvals, as required by DEP.

(3) A geologic assessment of the effects of runoff on sinkholes as specified in this Chapter.

(4) The effect of the project (in terms of runoff volumes, water quality and peak flows) on adjacent and downstream properties and on any existing storm sewer that may receive runoff from the project site.

(5) Soil evaluation to justify infiltration site location and results of on-site testing to establish infiltration rates used for design.

D. *Stormwater Management Facilities*.

(1) All stormwater management facilities must be located on a stormwater management site plan and described in detail, including:

(a) Groundwater recharge methods such as seepage pits, beds or trenches. The location of the proposed structure, including a detailed cross-section with construction and material specifications. If these structures are proposed, the locations of septic tank infiltration areas and wells must be shown. Groundwater recharge methods must comply with the additional requirements in subparagraph (2) of this paragraph .D.

(b) Other control devices or methods, such as rooftop storage, semi-pervious paving materials, grass swales, parking lot ponding, vegetated strips, detention or retention basins, storm sewer, etc., including

construction and material specifications.

(c) Cross-sections of any detention or retention basins showing the relationship between the existing topography and the proposed bottom, spillway, top of embankment and the outlet structure and the corresponding proposed finished grade elevations. A detail of the outlet structure shall be provided, including all pertinent construction and material specifications.

(d) A schedule for the installation of the stormwater management facilities. In all cases, the stormwater management facilities must be completed prior to the creation of additional impervious surface.

(2) The following additional requirements apply to all proposed groundwater recharge methods such as seepage pits, beds, trenches, leaching wells and cisterns:

(a) Representative percolation tests must be made throughout the area proposed for development. At least one percolation test must be included in each soil group and at least one percolation test must be conducted for each five lots proposed for development. The percolation test must be sampled at the invert depth of the proposed structure (± 1 vertical foot).

(b) Seepage pits, beds or trenches shall not be permitted for any development without prior approval of the Borough.

(3) All calculations, assumptions, and criteria used in the design of the stormwater management facilities must be shown.

(4) An O&M plan for stormwater management facilities meeting the requirements of this Chapter must be included. The O&M plan must include the ownership of the stormwater management facilities and detail the financial responsibility for any required maintenance.

(5) Provisions deemed adequate by the Borough for permanent access for O&M, as necessary to implement the O&M plan shall be shown on the stormwater management site plan or included with the plan submission as separate easement or maintenance agreements.

(*Ord. 2011-4*, 10/3/2011, §303)

§23-304. Plan Submission.

For all activities regulated by this Chapter, the steps below shall be followed for submission. For any activities that require a joint permit application under [25 Pa.Code,] Chapter 105 (Dam Safety and Waterway Management) or Chapter 106 (Floodplain Management) of the DEP rules and regulations, or require a PennDOT highway occupancy permit, or require any other permit under applicable State or Federal regulations, the proof of application for that permit(s) shall be part of the stormwater management site plan. The stormwater management site plan shall be coordinated with the State and Federal permit process.

A. The stormwater management site plan shall be submitted by the developer or owner as part of any regulated activity defined in §23-105 of this Chapter. All applicable fees shall be paid at the time of submission.

B. Three copies of the stormwater management plan shall be submitted as follows:

(1) One copy to the Borough.

(2) One copy to the Borough Engineer.

(3) One copy to a delegated agent of the York County Planning Commission.

(*Ord. 2011-4*, 10/3/2011, §304)

§23-305. Stormwater Management Plan Review.

1. Stormwater management site plans shall be reviewed by the Borough for consistency with the provisions of this Chapter, and the IWRP.

2. Approval of a stormwater management site plan and waiver requests submitted with an application for approval under the Subdivision Ordinance [Chapter 22] shall be granted or denied by the Borough Council following the recommendation of the Township Engineer. Approval of stormwater management site plans and waiver requests submitted where an application for approval under the Subdivision Ordinance [Chapter 22] is not required shall be granted or denied by the Borough Codes Enforcement Officer with the recommendation of the Township Engineer where deemed necessary. Approval of all other stormwater management site plans and waiver requests shall be granted or denied by the Township Engineer.

3. A written review of the stormwater management site plan will be provided to the Borough by the Borough Engineer, when applicable, outlining the results of the review. The written review shall detail any discrepancies between the stormwater management site plan and this Chapter or the IWRP and any recommendations for the stormwater management site plan to achieve compliance or a waiver request to be granted.

4. For regulated activities that require an NPDES permit, the stormwater management site plan shall not be finally approved until the Borough has been provided a letter of consistency from the Conservation District signifying approval of the E&S plan.

5. No building, zoning or other permits for any regulated activity shall be approved or issued by the Borough if the stormwater management site plan has been disapproved or approved with conditions. In the latter case, the permits may be issued by the Borough at its discretion upon acceptance in writing by the applicant of the conditions to approval.

6. In all cases, the decision of the Borough to approve or disapprove the stormwater management site plan shall be in writing and shall be delivered to the applicant no later than 15 days following the decision. If the stormwater management site plan is approved with conditions, the applicant shall accept or reject the conditions in writing within 30 days following the date of the decision. Failure by an applicant to accept or reject the conditions of approval in writing within 30 days shall automatically rescind the approval.

(*Ord. 2011-4*, 10/3/2011, §305)

§23-306. Revision of Plans.

A revision to a submitted stormwater management site plan for a project site that involves a change in stormwater management facilities or techniques, or that involves the relocation or redesign of stormwater management facilities, or that is necessary because soil or other conditions are not as stated on the stormwater management site plan as determined by the Borough Engineer, shall require a re-submission of the modified stormwater management site plan consistent with §23-304 of this Chapter and be subject to review as specified in §23-305 of this Chapter or a modification to a stormwater management site plan for which a formal action has not been taken by the Borough shall be submitted to the Borough consistent with §23-304 of this Chapter and be subject to review as specified in §23-305 of this Chapter. For NPDES permitted sites, any revised stormwater management site plan shall also be re-submitted to the York County Conservation District for review. A resubmitted stormwater management site plan shall be subject to the requirements of this Chapter as amended through the date of resubmission.

(*Ord. 2011-4*, 10/3/2011, §306)

§23-307. Authorization to Construct and Term of Validity.

The Borough's approval of a stormwater management site plan, when such plan is submitted independent of a subdivision and/or land development plan, authorizes the regulated activities contained in the stormwater management site plan for a maximum term of validity of 5 years following the date of approval. The Borough may, in its sole discretion, specify a different term of validity for any specific stormwater management site plan, particularly if the nature of the proposed stormwater management facilities require more frequent maintenance and/or short-term replacement of certain components. Terms of validity shall commence on the date the Borough signs the approval for an stormwater management site plan. If an approved stormwater management site plan is not completed according to §23-308 within the term of validity, then the Borough may consider the stormwater management site plan approval expired and may revoke any and all permits associated with the stormwater management site plan. Expired stormwater management site plans may be resubmitted for approval, but shall be required to comply with the ordinance then in effect.

(*Ord. 2011-4*, 10/3/2011, §307)

§23-308. As-Built Plans, Completion Certificate, and Final Inspection.

1. The developer shall be responsible for providing as-built plans of all BMPs included in the approved stormwater management site plan. The as-built plans and an explanation of any discrepancies with the construction plans shall be submitted to the Borough.

2. The as-built submission shall include a certification of completion signed by a qualified person verifying that all permanent BMPs have been constructed according to the approved plans and specifications. If any licensed qualified person contributed to the construction plans, then a licensed qualified person must sign the completion certificate.

3. After receipt of the completion certification by the Borough, the Borough may conduct a final inspection to verify compliance with, and accuracy of, the as-built plans. The developer shall be responsible for the cost of final inspection and review of the as-

built plans.

(*Ord. 2011-4*, 10/3/2011, §308)

Part 4

Stormwater Management

§23-401. Design Standards.

1. *General Requirements*.

A. The developer of any project within the Borough, with the exception of those projects exempted from the requirements of this Chapter in §23-302 shall submit an application for and obtain approval of a stormwater management site plan. Although not a requirement of this Chapter, prior to proceeding with stormwater management site plan preparation and submission, the developer is encouraged to request a pre-application meeting with the Borough Engineer and a staff member of the Conservation District to discuss the plan concept and responsibility for submission of required documents and information.

B. When a project is proposed to be developed in phases or sections and the developer submits stormwater management site plans for each section or phase, all proposed temporary facilities required for construction of a section or phase shall be included in the submitted stormwater management site plan for that section.

C. Stormwater management facilities located within or affecting the floodplain or any watercourse shall also be subject to the requirements of the Zoning Ordinance [Chapter 27], any ordinance which regulates construction and development within areas of the Borough subject to flooding, and any other applicable requirements of Act 166, the Pennsylvania Flood Plain Management Act.

D. Runoff from impervious surface areas shall be drained when possible to pervious areas of the project site.

E. Stormwater runoff shall not be transferred from one watershed to another unless the watersheds are sub-watersheds of a common watershed which join together within the perimeter of the project site, or the effect of the transfer does not alter the peak discharge onto downstream lands, or drainage easements from the affected landowners are provided.

F. All stormwater runoff flowing over the project site shall be considered in the design of the stormwater management facilities. This includes existing points of concentrated drainage that discharge onto adjacent property. Existing concentrated drainage shall not be relocated and shall be subject to any applicable discharge criteria specified in this Chapter.

G. Stormwater drainage systems shall be provided in order to permit unimpeded flow along natural watercourses.

H. Stormwater management site plans approved by the Borough shall be on site throughout the duration of the regulated activity.

I. The Borough may, after consultation with DEP, approve measures for meeting the State water quality requirements other than those in this Chapter, provided that they are consistent with the IWRP and meet the minimum requirements of, and do not conflict with, State law including, but not limited to, the Clean Streams Law. The Borough shall maintain a record of consultations with

DEP pursuant to this paragraph.

J. For all regulated activities, erosion and sediment control BMPs shall be designed, implemented, operated, and maintained during the regulated earth disturbance activities, i.e., during construction, to meet the purposes and requirements of this Chapter and to meet all requirements under Title 25 of the Pennsylvania Code and the Clean Streams Law. Various BMPs and their design standards are listed in the *Erosion and Sediment Pollution Control Program Manual* (E&S Manual) 2, No. 363-2134-008 (April 15, 2000), as amended and updated.

K. For all regulated activities, implementation of the volume controls in §23-402.1 is required, unless specifically exempted under subsection .1.I, or exempted by an approved modification request as specified in §23-802 of this Chapter.

L. *Impervious Areas*.

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

(2) For development taking place in phases, all phases of the project must be considered in determining conformance with this Chapter.

(3) For projects that add impervious area to a parcel, the total impervious area on the parcel is subject to the requirements of this Chapter; except that the volume controls §23-402 and the peak rate controls of §23-402 do not need to be retrofitted to existing impervious areas that are not being altered by the proposed regulated activity.

M. Stormwater runoff onto adjacent property shall not be created, increased, decreased, relocated, or otherwise altered without written notification of the adjacent property owner(s). Such stormwater runoff shall be subject to the requirements of this Chapter.

N. All regulated activities shall be conducted in such a way as to:

(1) Protect health, safety, and property.

(2) Meet the water quality goals of this Chapter, as stated in §23-102, "Purpose," by implementing measures to:

(a) Minimize disturbance to floodplains, wetlands, wooded areas, and existing vegetation.

(b) Maintain or extend riparian buffers.

(c) Avoid erosive flow conditions in natural flow pathways.

(d) Minimize thermal impacts to waters of this Commonwealth.

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

(f) Minimize soil disturbance and compaction. Topsoil, if removed, shall be replaced to a minimum depth equal to its depth prior to removal or 4 inches, whichever is greater. Additional topsoil may be required for vegetation other than sod.

(3) To the maximum extent practicable, incorporate the techniques for low

impact development practices described in the BMP manual.

O. The design of all facilities in areas of carbonate geology or karst topography shall include an evaluation of measures to minimize adverse effects, including hydro-geologic studies if required by the Borough.

P. Infiltration structures shall be spread out, made as shallow as practicable, and located to maximize use of natural on-site infiltration features while still meeting the other requirements of this Chapter. In addition, infiltration structure BMPs shall include pretreatment BMPs where appropriate.

Q. All storage facilities, shall completely drain both the volume control and rate control capacities 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 structure at such facility is exempt from the minimum 24-hour standard, i.e., may infiltrate in a shorter period of time, so long as none of the stormwater flowing into the infiltration structure is discharged directly into the surface waters of the Commonwealth. (Inordinately rapid infiltration rates may indicate the presence of large fractures or other conditions for which an additional soil buffer may be required.)

R. The design storm volumes and precipitation intensifies to be used in the analysis of discharge or runoff 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, Hydrometeorological Design Studies Center, Silver Spring, Maryland. NOAA's Atlas 14 can be accessed at: http://hdsc.nws.noaa.gov/hdsc/pfds/.

S. For all regulated activities, BMPs shall be designed, implemented, operated, and maintained to meet the purposes and requirements of this Chapter and to meet all requirements under Title 25 of the Pennsylvania Code, the Clean Streams Law, and the Act 167.

2. *Permanent Stormwater Management Standards*. The developer shall demonstrate by substantial evidence that the stormwater management facilities for the project will meet or exceed all of the following standards:

A. The volume and rate of any stormwater discharges allowed by this Chapter must be managed to prevent the physical degradation of receiving waters, such as streambank scour and erosion. If a detention facility is proposed that is part of the BMPs approved for a project, the facility(ies) must be designed to provide for the 24-hour extended detention of the 2-year, 24-hour storm event (i.e., the stormwater runoff will be released over a minimum of 24 hours for the 2-year, 24-hour storm event).

B. The Borough shall impose the following additional restrictions on stormwater discharges:

(1) When a probable risk to downstream structures or unique natural areas exists or previous (historical) flooding problems could be further aggravated, the Borough shall require developer to further restrict peak discharge.

(2) The Borough shall impose measures to protect against ground or surface water pollution from significant pollution producing sources (so called

"hot spots" including, but not limited to, industrial uses, gas stations, fast food an other commercial uses generating large numbers of vehicle trips, and other uses at the determination of the Borough) or where the nature of the soils or bedrock underlying a stormwater management facility constitutes substantial risk of contamination, such as carbonate areas. The developer shall install special provisions that act to remove pollutant loadings (including, but not limited to, filtration devices like sand peat filters, multiple chamber catch basins and inlets, oil separators and others).

(3) Where groundwater yields are very low or where a groundwater supply already is heavily used or where maintenance of downstream wetlands is a special concern, the Borough shall require that the entire volume of the 2-year, 24-hour design storm from the project site be retained and infiltrated. If substantial irrigation needs are anticipated, portion of stored stormwater may be re-used for irrigation purposes.

(*Ord. 2011-4*, 10/3/2011, §401)

§23-402. Design Criteria.

1. *Volume Controls*. The low impact development practices provided in the BMP manual shall be utilized for all regulated activities to the maximum extent practicable. Water volume controls shall be implemented using the design storm method in paragraph .A or the simplified method in paragraph .B below. For regulated activity areas equal or less than 1 acre that do not require hydrologic routing to design the stormwater management facilities, this Chapter establishes no preference for either methodology; therefore, the applicant may select either methodology with Borough concurrence.

A. The design storm method (CG-1 in the BMP manual) is applicable to any size of regulated activity. This method requires detailed modeling based on site conditions.

(1) The stormwater management plan shall not increase the post-development total runoff volume for all storms equal to or less than the 2-year 24-hour duration precipitation.

(2) For modeling purposes:

(a) Existing (pre-development) non-forested pervious areas must be considered meadow.

(b) Twenty percent of the existing impervious area of a project site, when present, shall be considered meadow in the model for existing conditions.

B. The simplified method (CG-2 in the BMP manual) provided below is independent of site conditions and should be used if the design storm method is not followed. This method is not applicable to regulated activities greater than 1 acre or for projects that require design of stormwater storage facilities.

For new impervious surfaces:

(1) The stormwater management plan shall provide for the capture of at least the first 2 inches of runoff from all new impervious surfaces.

(2) At least the first 1 inch of runoff from new impervious surfaces shall

be permanently removed from the runoff flow, i.e., it shall not be released into the surface waters of this Commonwealth. Removal options for the first 1 inch of runoff include reuse, evaporation, transpiration, and infiltration.

(3) Wherever possible, infiltration structures should be designed to accommodate infiltration of the entire permanently removed runoff; however, in all cases at least the first 0.5 inch of the permanently removed stormwater runoff shall be infiltrated.

2. *Rate Controls*.

A. For computation of pre-development flow rates, 20 percent of the existing impervious area of a project site, when present, shall be considered meadow. Undeveloped land, including disturbed areas, shall be considered as "meadow" in good condition, unless the natural ground cover generates a lower curve number or rational "C" value (i.e., forest), as listed in Table 23-4-1.

B. Post-development flow rates shall not exceed the pre-development flow rates for the 1-, 2-, 5-, 10-, 25-, 50-, and 100-year 24-hour storms. If it is shown that the peak discharge rates indicated by the post-development analysis are less than or equal to the peak discharge rates indicated by the pre-development analysis for 1-, 2-, 5-, 10-, 25-, 50-, and 100-year, 24-hour storms, then the requirements of this Section have been met. Otherwise, the developer shall provide additional controls as necessary to satisfy the peak discharge rate requirement.

3. Infiltration BMPs must be provided for all development to capture all volume from impervious area associated with development for a 2-year, 24-hour Type II SCS rainfall distribution. See requirements specified in §23-405.

4. Off-site areas which drain through a proposed project site are not subject to release rate criteria when determining allowable peak discharge rates. However, on-site drainage facilities shall be designed to safely convey off-site flows through the project site.

5. Any "downstream hydraulic capacity analysis" conducted in accordance with this Chapter shall use the following criteria for determining adequacy for accepting increased peak discharge rates:

A. Natural or man-made channels or swales must be able to convey the increased runoff associated with a 100-year return period event within their banks at velocities consistent with protection of the channels from erosion. Acceptable velocities shall be based upon criteria included in the DEP "Erosion and Sediment Pollution Control Program Manual."

B. Natural or man-made channels or swales must be able to convey increased 100-year return period runoff without creating any hazard to persons or property.

C. Culverts, bridges, storm sewers or any other stormwater management facilities which must pass or convey flows from the tributary area must be designed in accordance with DEP [25 Pa.Code,] Chapter 105, and PennDOT regulations (if applicable) and, at minimum, pass the increased 100-year return period runoff.

6. For certain areas within the Borough, it may be more cost-effective to provide one stormwater management facility for more than one project site than to provide an individual stormwater management facility for each project site. The initiative and funding for any regional runoff control alternatives are the responsibility of prospective

developers. The design of any regional control basins must incorporate reasonable development of the entire upstream watershed. The peak outflow of a regional basin would be determined on a case-by-case basis using the hydrologic model, if available, of the watershed consistent with protection of the downstream watershed areas. Any regional management plan must be a covenant or restriction running with the land that shall be set forth in a recorded agreement approved by the Borough.

(*Ord. 2011-4*, 10/3/2011, §402)

§23-403. Regulation Governing Stormwater Management Facilities.

1. For the purposes of the County Act 167 plan elements, contained within the IWRP, and this Chapter, design policy pertaining to stormwater management facilities for PennDOT roadways and associated facilities is provided in §13.7 (Antidegradation and Post Construction Stormwater Management Policy) of PennDOT Publication No. 13M, *Design Manual*, Part 2 (August 2009), as developed, updated, and amended in consultation with the DEP. As stated in DM-2.13.7.D (Act 167 and municipal ordinances), PennDOT roadways and associated facilities shall be consistent with Act 167 plans. DM-2.13.7.B (Policy on Antidegradation and Post Construction Stormwater Management) was developed as a cooperative effort between PennDOT and DEP. DM-2.13.7.0 (Project Categories) and discusses the anticipated impact on the quality, volume, and rate of stormwater runoff. Where standards in the Act 167 elements of the IWRP and this Chapter are impractical, PennDOT may request assistance from DEP, in consultation with the County, to develop an alternative strategy for meeting State water quality requirements and the goals and objectives of the Act 167 elements within the IWRP. For the purposes of the Act 167 elements in the IWRP and this Chapter, road maintenance activities are regulated under 25 Pa.Code, Chapter 102.

2. Any stormwater management facility (i.e., detention basin) designed to store runoff and requiring a berm or earthen embankment required or regulated by this Chapter shall be designed to provide an emergency spillway to handle flow up to and including the 100-year post-development conditions. The height of embankment must be set as to provide a minimum 1.0 foot of freeboard above the maximum pool elevation computed when the facility functions for the 100-year post-development inflow. Should any stormwater management facility require a dam safety permit under DEP [25 Pa.Code,] Chapter 105, the facility shall be designed in accordance with Chapter 105 concerning dam safety.

3. Any stormwater management facilities regulated by this Chapter that would be located in or adjacent to waters of the Commonwealth or wetlands shall be subject to approval by DEP through the joint permit application process, or, where deemed appropriate by DEP, the applicable general permit process. When there is a question whether wetlands may be involved, it is the responsibility of the developer or his agent to show that the land in question cannot be classified as wetlands, otherwise approval to work in the area must be obtained from DEP.

4. Any drainage conveyance facility and/or channel that does not fall under DEP [Pa.Code,] Chapter 105, regulations, must be able to convey, without damage to the drainage structure or roadway, runoff from the 100-year design storm. Conveyance facilities to or exiting from stormwater management facilities (i.e., detention basins) shall be designed to convey the design flow to or from that structure. Roadway crossings located within designated floodplain areas must be able to convey runoff from a 100-

year design storm. Any facility located within a PennDOT right-of-way must meet PennDOT minimum design standards and permit submission requirements.

5. Storm sewers must be able to convey post-development runoff from a 100-year design storm without surcharging inlets, where appropriate. Any post-development drainage area that does not naturally convey stormwater runoff to a stormwater management facility shall incorporate a storm sewer system capable of collecting and conveying the stormwater runoff during a 100-year design storm to said facilities. A combination of aboveground and overland conveyance will be accepted without creation of hazardous conditions to any person or property.

6. Any earthmoving activities subject to review by the Conservation District must be granted approval of the Conservation District prior to commencing work.

7. The design of all stormwater management facilities shall incorporate good engineering principles and practices. The Borough shall reserve the right to disapprove any design that would result in the occurrence or continuation of adverse hydrologic or hydraulic conditions within the watershed.

8. The existing points of concentrated drainage that discharge onto adjacent property shall be subject to applicable discharge criteria in this Chapter. The volume of runoff may not be increased by more than the volume of the 2-year return period storm unless an analysis is completed that shows adequate facilities are in place to adequately convey post-development flows. The downstream owner(s)' signatures must be included on the stormwater management site plan or a letter of approval acceptable to the Borough must be obtained signifying approval to alter the concentrated drainage where inadequate downstream drainage conveyance facilities exist to convey the concentrated discharge. This requirement shall be limited to owner(s)' less than 500 yards downstream of the concentrated drainage point. The adequacy of downstream drainage conveyance facilities shall be as determined by the Borough Engineer with reference to this Chapter. Should the downstream owner(s)' refuse to accept the altered discharge, the developer must modify the stormwater management site plan so the plan does not increase the drainage area or volume of discharge at the discharge point.

9. Areas of existing diffused drainage discharge shall be subject to any applicable discharge criteria in the general direction of existing discharge, whether proposed to be concentrated or maintained as diffused drainage areas, except as otherwise provided by this Chapter. If diffused flow is proposed to be concentrated and discharged onto adjacent property, the developer must document that adequate downstream drainage conveyance facilities exist to safely transport the concentrated discharge, or otherwise prove that no erosion, sedimentation, flooding or other harm will result from the concentrated discharge. The downstream owner(s)' signatures must be included on the stormwater management site plan or a letter of approval acceptable to the Borough must be obtained signifying approval to alter the concentrated drainage where inadequate downstream drainage conveyance facilities exist to convey the concentrated discharge. This requirement shall be limited to owner(s)' less than 500 yards downstream of the concentrated drainage point. The adequacy of downstream drainage conveyance facilities shall be as determined by the Borough Engineer with reference to this Chapter. Should the downstream owner(s)' refuse to accept the altered discharge, the developer must modify the stormwater management site plan so the plan does not increase the drainage area or volume of discharge at the discharge point.

10. Where a project site is traversed by watercourses, drainage easements shall be provided conforming to the line of such watercourses. The terms of the drainage easement shall prohibit excavation, the placing of fill or structures, and any alterations that may adversely affect the flow of stormwater within any portion of the drainage easement. Also, maintenance, including mowing of vegetation within the drainage easement shall be required, except as approved by the appropriate governing authority.

11. When it can be shown that, due to topographic conditions, natural drainageways on the site cannot adequately provide for drainage, open channels may be constructed conforming substantially to the line and grade of such natural drainageways. Work within natural drainageways shall be subject to approval by DEP through the joint permit application process, or, where deemed appropriate by DEP, through the general permit process.

12. Roof drains must not be connected to streets, sanitary or storm sewers or roadside ditches to promote overland flow and infiltration/percolation of stormwater where advantageous to do so. When it is more advantageous to connect directly to streets or storm sewers, then it shall be permitted on a case by case basis by the Borough. In no case shall roof drains be positioned in a manner that promotes drainage to adjacent structures or onto adjacent properties.

13. Special requirements for areas falling within defined exceptional value and high quality subwatersheds: The temperature and quality of water and streams that have been declared as exceptional value and high quality is to be maintained as defined in Chapter 93, "Water Quality Standards," Title 25 [Pa.Code] of the DEP rules and regulations. Temperature sensitive BMP's and stormwater conveyance systems are to be used and designed with storage pool areas and supply outflow channels and should be shaded with trees. This will require modification of berms for permanent ponds and the relaxation of restrictions on planting vegetation within the facilities, provided that capacity for volumes and rate control is maintained. At a minimum, the southern half on pond shorelines shall be planted with shade or canopy trees within 10 feet of the pond shoreline. In conjunction with this requirement, the maximum slope allowed on the berm area to be planted is 10 to 1. This will lessen the destabilization of berm soils due to root growth. A long term maintenance schedule and management plan for the thermal control BMP's is to be established and recorded for all project sites within defined exceptional value and/or high quality subwatersheds.

14. Outlet control shall be accomplished utilizing (6-inch diameter or 6-inch width minimum) perforations arranged vertically to provide for positive control of runoff. Outlet controls shall also provide for modification of the orifice to a smaller diameter through the use of removable plates or similar devices.

15. Discharges from piping outlets of stormwater management facilities shall be provided with an approved level spreader to convert point discharge back to simulated sheet flow.

16. All detention basins shall have a minimum bottom slope of 2 percent unless infiltration structures are provided. Where infiltration structures are provided an infiltration and/or percolation rate must be sufficient to accept the additional storm load and drain completely as determined by field tests conducted by the owner's professional designer.

17. The permitted depth for detention or retention basins shall be 6 feet, measured

from the bottom of the emergency spillway to the lowest point in the basin.

18. The maximum permitted side slopes for detention or retention basins shall be 4 horizontal to 1 vertical.

19. All stormwater management facilities are considered structures and must comply with applicable building setback requirements as set forth in the Zoning Ordinance [Chapter 27] or other applicable regulations. No part of the discharge structure or piping shall encroach into the setback area.

20. Any stormwater detention/retention facility located in or adjacent to a Residential Zone or Village Center Zone shall be subject to the following fencing requirements:

A. Stormwater facility must be completely surrounded by a fence or wall of not less than 4 feet in height, which shall be so constructed as not to have openings, holes or gaps larger than 2 inches in any dimension (including the distance between horizontal or vertical pickets in a picket fence).

B. All gates or doors opening through such enclosure shall be equipped with a self-closing and self-latching device for keeping the gate or door securely closed at all times.

C. The fences or walls erected shall further comply with all applicable provisions of the Zoning Ordinance [Chapter 27].

21. No stormwater management facilities shall be installed over existing utility mains or services.

22. Plans showing outlet control structures shall contain a drainage easement dedication as follows: "An easement is hereby granted to Lewisberry Borough to access and modify the basin outlet control device at the expense of the developer or owner so as to function within design parameters."

23. In general, inlets shall be spaced such that, based upon the rational method, time-of-concentration (Tc) = 5 minutes and 50-year design storm intensity, the area contributing to the inlet shall not produce a peak discharge of greater than 4 cubic feet per second. Also, inlets shall be spaced so that their efficiency, based upon efficiency curves published by the PennDOT, is not less than 65 percent.

Additional inlets shall be placed at the upper side of driveway/street intersections to prevent stormwater from discharging onto the roadway. Other devices such as high efficiency grates or perforated pipe may be required if conditions warrant.

24. In all cases where drainage is picked up by means of a head wall, and inlet or outlet conditions control, the pipe shall be designed as a culvert. The minimum diameter of culvert shall be 18 inches. The procedure contained in "Hydraulic Engineer Circular," Nos. 5 and 13, as prepared by the U. S. Department of Transportation, Federal Highway Administration, Washington, D.C., shall be used for the design of culverts.

When a pipe or culvert is intended to convey the discharge from a stormwater management facility, its required capacity shall be computed by the rational method and compared to the peak outflow from the stormwater management facility for the 50-year design storm. The greater flow shall govern the design of the pipe or culvert.

(*Ord. 2011-4*, 10/3/2011, §403)

§23-404. Calculation Methodology.

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

A. Any stormwater runoff calculations involving drainage areas greater than 200 acres, including on- and off-site areas, shall use generally accepted calculation technique that is based on the NRCS soil cover complex method. It is assumed that all methods will be selected by the design professional based on the individual limitations and suitability of each method for a particular site.

The Borough may allow the use of the rational method to estimate peak discharges from drainage areas that contain less than 200 acres.

B. The design storm volumes and precipitation intensities to be used in the analysis of discharge or runoff 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, Hydrometeorological Design Studies Center, Silver Spring, Maryland. NOAA's Atlas 14 can be accessed at: http://hdsc.nws.noaa.gov/hdsc/pfds/.

C. For computation of pre-development flow rates, 20 percent of the existing impervious area of a project site, when present, shall be considered meadow. Undeveloped land, including disturbed areas, shall be considered as "meadow" in good condition, unless the natural ground cover generates a lower curve number or rational "C" value (i.e., forest), as listed in Table 23-4-1.

D. Peak discharge computed using the rational method should follow the formula, Q = CIA where:

Q = Peak discharge in cubic feet per second

C = Runoff factor expressed as a percent of the total rainfall

I = Rainfall intensity in inches per hour

A = The drainage area expressed in acres

E. Times-of-concentration for overland flow shall be calculated using the methodology presented in Chapter 3 of *Urban Hydrology for Small Watersheds*, NRCS, TR-55 (as amended or replaced form time to time by NRCS). Time-of-concentration for channel and pipe flow shall be computed using Manning's equation.

F. Runoff curve numbers (CN) for both existing and proposed conditions to be used in the soil cover complex method shall be obtained from Table 23-4-2.

G. Runoff coefficients (c) for both existing and proposed conditions for use in the rational method shall be obtained from Table 23-4-1.

H. Where uniform flow is anticipated, the Manning equation shall be used for hydraulic computations such as the capacity of open channels, pipes, and storm sewers. Values for Manning's roughness coefficient (n) shall be consistent with Table 23-4-3.

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

J. The design of any stormwater detention facilities intended to meet the

performance standards of this Chapter shall be verified by routing the design storm hydrograph through these facilities.

(*Ord. 2011-4*, 10/3/2011, §404)

§23-405. Groundwater Recharge (Infiltration/Recharge/Retention).

1. Maintaining runoff volumes of pre-development conditions requires groundwater recharge of the areas being developed. The applicant shall be responsible to reduce the post-development runoff volume to that of the pre-development, for the 2-year, 24-hour storm event. Design of the infiltration/recharge stormwater management facilities shall incorporate groundwater recharge to compensate for the reduction in the percolation that occurs when the ground surface is converted to an impervious surface. These measures are required unless the applicant can prove the project site is physically incapable of recharge. If physical limitations exist preventing groundwater recharge, runoff volumes must be reduced through another acceptable BMP proposed by the developer's engineer.

2. Infiltration BMPs shall meet the following minimum requirements:

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

(1) A minimum depth of 12 inches between the bottom of the facility and the seasonal high water table and/or bedrock (limiting zones). Limiting zones to be determined by probe hole excavation.

(2) An infiltration and/or percolation rate sufficient to accept the additional stormwater load and drain completely as determined by field tests conducted by the owner's professional designer.

B. The size of the recharge facility shall be calculated by a qualified person in accordance with a stormwater management site plan or based upon the following chart:

SEEPAGE TABLE		
Pere Rate (min./in.)	**Depth of Stone (Feet)**	**Minimum Required Bed Area**
15	2.5	*
30	2.5	
45	3.15	
60	3.15	
75	3.62	
90	3.62	
105	4	
120	4	
135	4	
150	4.25	
165	4.25	
180+	Fails	

ASSUMED DATA: C = 0.95
Rainfall = 6.00 inches
Bed Loading Rate 5:1

* The minimum required bed area is determined by dividing the increase in impervious surface by 5. For example, a 500 sq. ft. increase in impervious surface would have a minimum required bed area of 100 sq. ft.

C. The recharge volume provided at the project site shall be directed to the most permeable soils available.

D. The recharge facility shall be capable of completely infiltrating the impounded water within 48 hours.

3. A detailed soils evaluation of the project site shall be performed to determine the suitability of recharge facilities. The evaluation shall be performed by a qualified professional, and at a minimum, address soil permeability, depth to bedrock, susceptibility to sinkhole formation, and subgrade stability. The general process for designing the infiltration BMP shall be:

A. Site evaluation to determine general areas of suitability for infiltration practices.

B. Provide field test to determine appropriate percolation rate and/or hydraulic conductivity.

C. Design infiltration structure for required storm volume based on all available data.

4. Extreme caution shall be exercised where infiltration is proposed in geologically susceptible areas such as strip mine or limestone areas. Extreme caution shall also be exercised where salt or chloride would be a pollutant since soils do little to filter this pollutant and it may contaminate the groundwater. It is also extremely important that the design professional evaluate the possibility of groundwater contamination from the proposed infiltration/recharge facility and recommend a hydrogeologic justification study be performed, if necessary. Whenever a basin will be located in an area underlain by limestone, a geological evaluation of the proposed location shall be conducted to determine susceptibility to sinkhole formations. The design of all facilities over limestone formations shall include measures to prevent ground water contamination and, where necessary, sinkhole formation. The infiltration requirement in the high quality/exceptional waters shall be subject to the DEP's [25 Pa.Code,] Chapter 93, and antidegradation regulations. The Borough may require the installation of an impermeable liner in detention basins. A detailed hydrogeologic investigations may be required by the Borough.

5. The Borough may require the developer to provide safeguards against groundwater contamination for uses which may cause groundwater contamination, should there be a mishap or spill. It shall be the developer's responsibility to verify if the project site is underlain by limestone. A note shall be included on all stormwater management site plans and signed and sealed by the developer's engineer/surveyor/landscape architect/geologist certifying whether any detention or retention basins are underlain by limestone, i.e.:

"I, _____, certify that the proposed detention/retention basin (circle one) is/is not underlain by limestone."

6. Where porous pavement is permitted for parking lots, recreational facilities,

nondedicated streets, or other areas, pavement construction specifications shall be noted on the stormwater management site plan.

7. Recharge/infiltration facilities may be used in conjunction with other innovative or traditional BMPs, stormwater control facilities, and nonstructural stormwater management alternatives.

(*Ord. 2011-4*, 10/3/2011, §405)

§23-406. Water Quality and Stream Protection.

1. Developed areas will provide adequate storage and treatment facilities necessary to capture and treat stormwater runoff. The recharge volume computed under §23-405 may be a component of the water quality volume. If the recharge volume is less than the water quality volume, the remaining water quality volume may be captured and treated by methods other than recharge/infiltration BMP's.

The water quality volume (WQ_v) is the storage capacity needed to treat stormwater runoff produced by "P" inches of rainfall (90 percent rule) from the developed areas of the project site. The following calculation formula is used to determine the storage volume, WQ_v, in acre-feet of storage:

$$WQ_v = \frac{\left[(P)(R_v)(A)\right]}{12}$$

WQ_v = Water quality volume (acre-ft)

P = Rainfall amount (2-year, 24-hour)

A = Disturbed project area (acre)

R_v = 0.05 + 0.009(I)

I = (Impervious area ÷ total project area) x 100

WQ_v shall be designed as part of a stormwater management facility which incorporates water quality BMP's as a primary benefit of using that facility, in accordance with design specifications contained in the BMP manual. The following factors shall be considered when evaluating the suitability of BMPs used to control water quality at a given project site:

A. Total contributing area.

B. Permeability and infiltration rate of the site soils.

C. Slope and depth to bedrock.

D. Seasonal high water table.

E. Proximity to building foundations and well heads.

F. Erodibility of soils.

G. Land availability and configuration of the topography.

H. Peak discharge and required volume control.

I. The nature of the pollutant being removed.

J. Maintenance requirements.

K. Creation/protection of aquatic and wildlife habitat.

L. Recreational value.

M. Enhancement of aesthetic and property value.

Release of water can begin at the start of the storm (i.e., the invert of the water quality orifice is at the invert of the facility). The design of the facility shall consider and minimize the chances of clogging and sedimentation potential. Orifices smaller than 4 inches in diameter are not recommended.

2. The developer may submit original and innovative designs to the Borough Engineer for review and approval. Such designs may achieve the water quality objectives through a combination of BMPs. Infiltration required in §23-405 should be accounted for in meeting the requirements of subsection .1.

(*Ord. 2011-4*, 10/3/2011, §406)

§23-407. Erosion and Sedimentation Requirements.

1. As required in §23-403.6 of this Chapter, whenever the vegetation and topography are to be disturbed, such activity must be in conformance with Chapter 102, Title 25 [Pa.Code] of the DEP, rules and regulations, Part I, and in accordance with requirements of the Conservation District.

2. It is extremely important that strict erosion and sedimentation control measures be applied surrounding infiltration structure during installation to prevent the infiltrative surfaces from becoming clogged. Additional erosion and sedimentation control design standards and criteria that must be or are recommended to be applied where infiltration BMPs are proposed shall include the following:

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

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

(*Ord. 2011-4*, 10/3/2011, §407)

§23-408. Riparian Buffer Zone (RBZ).

Areas immediately adjacent to the Borough's perennial streams, areas of springs, watercourses where the drainage area to the wetland or watercourse exceeds 75 acres, and areas deemed by the Borough to possess environmental value shall be defined as the "Riparian Buffer Zone" or "RBZ." In the RBZ, special requirements as set forth in this Section shall apply in order to maintain important natural functions. These RBZ requirements are based on both the heightened sensitivity of the RBZ and the potential to negatively impact the stream system when this RBZ is disturbed, as well as the potential of this RBZ to mitigate to the maximum extent the negative effects of development in areas adjacent to the stream system. The RBZ shall include three subzones, Zones 1 through 3, extending landward from the top of the streambank where different requirements are imposed. These RBZs are to be established and protected, as defined below:

A. Zone 1, a 15-foot setback zone, measured from the top of the bank of the watercourse, where no disturbance of vegetation and soil except for construction of roadway structures or conveyance systems in accordance with the design standards

of this Chapter and restoration shall occur, in order to shade the stream with natural vegetation, to provide a source of numerous other organic inputs to the aquatic system, to anchor the streambank and floodplain area, and to consume and otherwise remove nitrogen, sediment, and other substances which can adversely affect stream systems.

B. Zone 2, a managed buffer zone, extending a distance equal to 35 feet outward from Zone 1 or to the 100-year floodplain boundary, whichever is larger, where disturbance of natural vegetative cover shall be limited to selective logging and other activities which minimally disrupt existing tree cover, in accordance with applicable zoning restrictions, and soil mantle, in order to maximize filtering and overall physical removal of particulate-form pollutants from runoff generated upgradient and to promote subsurface vegetative uptake of nitrogen and other nonparticulate elements from stormwater generated upgradient. The developer shall use land within Zone 2 only for those uses authorized within the 100-year floodplain as allowed in the Zoning Ordinance [Chapter 27], even if portions of Zone 2 are located outside of the 100-year floodplain.

C. Zone 3, a zone of 50 feet extending outward from Zone 2; Zone 3 is defined in those cases where upslope areas adjacent to the RBZ are being disturbed during the development process and where direct discharge of stormwater would otherwise occur; Zone 3 must include level spreading devices as necessary to ensure that any directly discharged stormwater flows are properly distributed as sheet flow. Developer shall avoid channelization and point source discharges.

D. An RBZ adjacent to "high quality waters" and "exceptional value waters" designated by DEP shall be subject to the provisions of the most recent edition of DEP's "Special Protection Waters Implementation Handbook." To the extent the Borough and DEP requirements are not consistent, the more restrictive requirements shall apply.

For areas immediately adjacent to the Borough's perennial streams, areas of springs, watercourses where the drainage area to the wetland or watercourse less than 75 acres, the RBZ shall be defined as a zone extending 15 feet outward from the top of the bank(s) of the watercourse. Within this area, no disturbance of vegetation and soil except for construction of roadway structures or conveyance systems in accordance with the design standards of this Chapter and restoration shall occur, in order to shade the stream with natural vegetation, to provide a source of numerous other organic inputs to the aquatic system, to anchor the streambank and floodplain area, and to consume and otherwise remove nitrogen, sediment, and other substances which can adversely affect stream systems.

(*Ord. 2011-4*, 10/3/2011, §408)

Table 23-4-1
Rational Runoff Coefficients
By Hydrologic Soils Group and Overland Slope (%)

	A			B			C			D		
Land Use	**0–2%**	**2–6%**	**6%+**	**0–2%**	**2–6%**	**6%+**	**0–2%**	**2–6%**	**6%+**	**0–2%**	**2–6%**	**6%+**
Cultivated Land	0.08[1] 0.14[2]	0.13 0.18	0.16 0.22	0.11 0.16	0.15 0.21	0.21 0.28	0.14 0.20	0.19 0.25	0.26 0.34	0.18 0.24	0.23 0.29	0.31 0.41
Pasture	0.12 0.15	0.20 0.25	0.30 0.37	0.18 0.23	0.28 0.34	0.37 0.45	0.24 0.30	0.34 0.42	0.44 0.52	0.30 0.37	0.40 0.50	0.50 0.62
Meadow	0.10 0.14	0.16 0.22	0.25 0.30	0.14 0.20	0.22 0.28	0.30 0.37	0.20 0.26	0.28 0.35	0.36 0.44	0.24 0.30	0.30 0.40	0.40 0.50
Forest	0.05 0.08	0.08 0.11	0.11 0.14	0.08 0.10	0.11 0.14	0.14 0.18	0.10 0.12	0.13 0.16	0.16 0.20	0.12 0.15	0.16 0.20	0.20 0.25
Residential												
Lot size ⅛ acre	0.25 0.33	0.28 0.37	0.31 0.40	0.27 0.35	0.30 0.39	0.25 0.44	0.30 0.38	0.33 0.42	0.38 0.49	0.33 0.41	0.36 0.45	0.42 0.54
Lot size ¼ acre	0.22 0.30	0.26 0.34	0.29 0.37	0.24 0.33	0.29 0.37	0.33 0.42	0.27 0.36	0.31 0.40	0.36 0.47	0.30 0.38	0.34 0.42	0.40 0.52
Lot size ⅓ acre	0.19 0.28	0.23 0.32	0.26 0.35	0.22 0.30	0.26 0.35	0.30 0.39	0.25 0.33	0.29 0.38	0.34 0.45	0.28 0.36	0.32 0.40	0.39 0.50
Lot size ½ acre	0.16 0.25	0.20 0.29	0.24 0.32	0.19 0.28	0.23 0.32	0.28 0.36	0.22 0.31	0.27 0.35	0.32 0.42	0.26 0.34	0.30 0.38	0.37 0.48
Lot size 1 acre	0.14 0.22	0.19 0.26	0.22 0.29	0.17 0.24	0.21 0.28	0.26 0.34	0.20 0.28	0.25 0.32	0.31 0.40	0.24 0.31	0.29 0.35	0.35 0.46

[1]Runoff coefficients for storm recurrence intervals less than 25 years.

[2]Runoff coefficients for storm recurrence intervals 25 years or more.

Supp. III; added 12/5/2011

	A			B			C			D		
Land Use	**0–2%**	**2–6%**	**6%+**	**0–2%**	**2–6%**	**6%+**	**0–2%**	**2–6%**	**6%+**	**0–2%**	**2–6%**	**6%+**
Industrial	0.67 0.85	0.68 0.85	0.68 0.86	0.68 0.85	0.68 0.86	0.69 0.86	0.68 0.86	0.69 0.86	0.69 0.87	0.69 0.86	0.69 0.86	0.70 0.88
Commercial	0.71 0.88	0.71 0.88	0.72 0.89	0.71 0.89	0.72 0.89	0.72 0.89	0.72 0.89	0.72 0.89	0.72 0.90	0.72 0.89	0.72 0.89	0.72 0.90
Streets	0.70 0.76	0.71 0.77	0.71 0.79	0.71 0.80	0.72 0.82	0.74 0.84	0.72 0.84	0.73 0.85	0.76 0.89	0.73 0.89	0.75 0.91	0.78 0.95
Open Space	0.05 0.11	0.10 0.16	0.14 0.20	0.08 0.14	0.13 0.19	0.19 0.26	0.12 0.18	0.17 0.23	0.24 0.32	0.16 0.22	0.21 0.27	0.28 0.39
Parking	0.85 0.95	0.86 0.96	0.87 0.97	0.85 0.95	0.86 0.96	0.87 0.97	0.85 0.95	0.86 0.96	0.87 0.97	0.85 0.95	0.86 0.96	0.87 0.97

Source: Rawls, W.J., S.L. Wong and R.H. McCuen, 1981,"Comparison of Urban Flood Frequency Procedures," Preliminary Draft, U.S. Department of Agriculture, Soil Conservation Service, Baltimore, MD.

Table 23-4-2
Runoff Curve Numbers
[From NRCS (SCS) TR-55]

		Hydrologic Soil Group			
Land Use Description		**A**	**B**	**C**	**D**
Open Space		44	65	77	82
Meadow		30[1]	58	71	78
Agricultural		59	71	79	83
Forest		36[1]	60	73	79
Commercial	(85% impervious)	89	92	94	95
Industrial	(72% impervious)	81	88	91	93
Institutional	(50% impervious)	71	82	88	90
Residential					
Average Lot Size	% impervious				
⅛ acre or less[2]	65	77	85	90	92
⅛–⅓ acre	34	59	74	82	87
⅓–1 acre	23	53	69	80	85
1–4 acres	12	46	66	78	82
Farmstead		59	74	82	86
Smooth surfaces (Concrete, asphalt, gravel or bare compacted soil)		98	98	98	98
Water		98	98	98	98
Mining newly graded areas (pervious areas only)		77	86	91	94

NOTE: Site conditions of bare earth or fallow shall be considered as meadow when choosing a CN value for existing undeveloped conditions.

[1]Caution: CN values under 40 may produce erroneous modeling results.

[2]Includes multi-family housing unless justified lower density can be provided.

Table 23-4-3

Roughness Coefficients (Manning's "n") for Overland Flow (U.S. Army Corps of Engineers, HEC-1 Users Manual)

Surface Description	n
Dense Growth	0.4–0.5
Pasture	0.3–0.4
Lawns	0.2–0.3
Bluegrass Sod	0.2–0.5
Short Grass Prairie	0.1–0.2
Sparse Vegetation	0.05–0.13
Bare Clay-Loam Soil (eroded)	0.01–0.03
Concrete/Asphalt - very shallow depths	
(less than ¼ inch)	0.10–0.15
small depths	
(¼ inch to several inches)	0.05–0.10

Roughness Coefficients (Manning's "n") for Sheet Flow (U.S. Soil Conservation Service Technical Release 55)

Surface Description	n
Smooth Surfaces (concrete, asphalt, gravel, or bare soil)	0.011
Fallow (no residue)	0.05
Cultivated Soils:	
Residue Cover Less Than or 20%	0.06
Residue Cover Greater Than 20%	0.17
Grass:	
Short Grass Prairie	0.15
Dense Grasses	0.24
Bermuda Grass	0.41
Range (natural)	0.13
Woods:	
Light Underbrush	0.40
Dense Underbrush	0.80

Part 5

Financial Security, Inspections and Release of Financial Security

§23-501. Financial Security.

The developer shall completely install all stormwater management facilities in accordance with the stormwater management site plan prior to unconditional stormwater management site plan approval unless the developer submits proper financial security. The amount and type of financial security shall meet the requirements of §509 of the MPC.

(*Ord. 2011-4*, 10/3/2011, §501)

§23-502. Schedule of Inspections.

1. The Borough Engineer or his designated agent shall inspect phases of the installation of the permanent stormwater management facilities as deemed appropriate by the Borough Engineer. The developer and/or owner shall be responsible to insure the Borough Engineer or his designated agent are on site to review and inspect all stormwater management facilities at the time of construction. No BMP shall be covered until a final inspection has been conducted by the Borough Engineer or Borough staff to assure adequate construction and structural integrity of any portion of the BMP to be covered.

2. During any stage of the work, if the Borough Engineer determines that the permanent stormwater management facilities are not being installed in accordance with the approved stormwater management site plan, the Borough shall revoke any existing permits until a revised stormwater management site plan is submitted and approved, as specified in this Chapter. The Borough may withhold the issuance of any additional permits or certificates of occupancy until the stormwater management facilities for the project are brought into compliance with the stormwater management site plan or a revised stormwater management site plan is approved.

(*Ord. 2011-4*, 10/3/2011, §502)

§23-503. Release of Financial Security.

1. No work shall be commenced on the installation of stormwater management facilities until unconditional stormwater management plan approval or financial security is posted in an amount and type as required by §509 of the MPC.

2. As work of installing the required stormwater management facilities proceeds, the developer may request the Borough Council to release or authorize to release portions of the financial security. The Borough shall process such requests in accordance with Article V of the MPC.

3. Final completion and full release of financial security shall not occur until the Borough has been supplied with a final "as-built" survey signed by a licensed engineer or surveyor depicting all stormwater management facilities installed for the project.

(*Ord. 2011-4*, 10/3/2011, §503)

Part 6

Fees and Expenses

§23-601. General.

1. The applicant shall reimburse the Borough for all legal and engineering fees incurred in the review of the stormwater management site plan application and supporting documents, review of agreements for maintenance of stormwater management facilities, review of easement agreements, inspection of stormwater management facilities, and any additional costs for enforcement of this Chapter. The Borough shall establish by resolution the rates for all such fees and a deposit requirement at the time of application towards payment of the fees.

2. In the event the applicant disputes the amount of such review fees, the applicant shall, within 10 days of the filing date, notify the Borough that such fees are disputed, in which case the Borough shall not delay or disapprove a stormwater management site plan application due to the applicant's request over disputed fees.

3. In the event the Borough and the applicant cannot agree on the amount of review and/or inspection fees which are reasonable, then the applicant and the Borough shall follow the procedure for dispute resolution set forth in the MPC.

4. Any review fees not paid from escrow shall be paid to the Borough within 30 days from the date of invoice to the applicant. After 30 days any amounts unpaid will collect interest at the rate of 1 percent per month until paid in full. No stormwater management site plan will be finally approved until payment of all review fees.

(*Ord. 2011-4*, 10/3/2011, §601)

Part 7

Operation and Maintenance Responsibilities

§23-701. Purpose.

1. O&M of stormwater management facilities is essential for the proper functioning of the stormwater management facilities and for their proper operation. Failure to properly maintain stormwater management facilities may adversely impact the health and safety of surrounding property owners. It is the intention of the Borough Council to impose regulations to require the permanent maintenance of stormwater management facilities which exist on the effective date of this Chapter and which are installed in the future.

2. Alterations to stormwater management facilities which are not performed in accordance with a revised stormwater management site plan may create unforeseen consequences to surrounding property owners. No alterations to stormwater management facilities will be permitted unless the developer submits a stormwater management site plan as required by this Chapter and meets all of the standards and criteria of this Chapter.

(*Ord. 2011-4*, 10/3/2011, §701)

§23-702. Operation and Maintenance of Stormwater Management Facilities During Development.

1. O&M of stormwater management facilities during development of a project site shall be the responsibility of the developer and owner.

2. The developer and owner shall maintain stormwater management facilities during development of a project site which shall include, but not be limited to:

A. Removal of silt from all stormwater management facilities not utilized for sediment and erosion control measures when 60 percent of capacity is filled with silt; provided, however, that in no case shall the sediment level be permitted to build up higher than 1 foot below the principal outlet crest. At this elevation, clean out shall be performed to restore the original design volume to the basin or other structure. The elevation corresponding to the maximum allowable sediment level shall be determined and stated in the design data as a distance below the top of the riser. The elevation shall be clearly marked on the riser to enable proper maintenance. Sediment basins must be maintained in conformance with [25 Pa.Code,] Chapter 102. All sediment must be removed prior to converting the basin or trap to a permanent stormwater management facility.

B. Periodic maintenance of temporary control stormwater management facilities such as replacement of straw bale dikes, straw filters or similar measures.

C. Establishment or reestablishment of vegetation by seeding and mulching or sodding of scoured areas or areas where vegetation has not successfully been established.

D. Installation of necessary controls to correct unforeseen problems caused by storm events within design frequencies.

E. Removal of all temporary stormwater management facilities upon installation of permanent stormwater management facilities at completion of the development.

(*Ord. 2011-4*, 10/3/2011, §702)

§23-703. Operation and Maintenance of Stormwater Management Facilities upon Completion of a Development.

1. It is the purpose and intent of this Chapter that the Borough shall not become responsible for maintenance and supervision of stormwater management facilities unless such facilities are within public street rights-of-way dedicated to and accepted by the Borough or unless such facilities are specifically accepted by the Borough. The responsibility for stormwater management facility maintenance falls upon the developer of the project site who shall remain responsible for those areas of the project site which are subject to the requirements of this Chapter. This responsibility may be retained or assigned to third persons approved by the Borough as is deemed most acceptable to the developer.

2. It is the intent of this Chapter that the purposes of this Chapter shall be carried out through the exercise of responsibility of private person(s) and, therefore, it is anticipated that stormwater management site plans shall be designed with a view towards stormwater management facilities which can effectively be contained within the tracts to be owned and maintained by private person(s) including homeowners associations. To foster this purpose, stormwater management facilities which will not otherwise become part of Borough property shall whenever possible become the responsibility of the collective property owners benefitted by such stormwater management facilities, including, but not limited to, retention basins, detention basins, sediment basins, energy dissipaters, or grassed watercourses, and the Borough and the owner shall enter into an O&M agreement, which shall be recorded, setting forth such maintenance responsibilities and binding successor owners of the subdivided lots of the project to share the costs associated with maintenance. The O&M agreement shall, at a minimum provide as follows as to the owners, his or their heirs, executors, successors and/or assigns:

A. The owner shall maintain all facilities in accordance with the approved maintenance schedule in the O&M plan, which schedule and plan shall be incorporated in and made part of the O&M agreement.

B. The owner shall convey to the Borough easements to assure access for periodic inspections by the Borough and maintenance, as necessary.

C. The owner shall not modify, alter or relocate any stormwater facilities without the approval of the Borough.

D. The owner shall indemnify the Borough from any and all claims arising from the operation and maintenance of the stormwater facilities.

E. The owner shall be responsible for all costs of inspection, operation and maintenance.

F. The owner shall pay all costs of enforcement or abatement by the Borough, including an express statement granting authority to the Borough to collect such costs by municipal lien on the property.

G. The O&M agreement shall be recorded in the York County Recorder of Deeds Office and shall thereafter be a covenant running with the land and a deed restriction for the benefit of the Borough and its citizens.

H. The owner shall keep on file with the Borough the name, address, and telephone number of the person or company responsible for maintenance activities; in the event of a change, new information shall be submitted by the owner to the Borough within 10 working days of the change.

I. Where costs and maintenance responsibility will not be collectively shared, the Borough may require a perpetual maintenance bond or adequate funds be deposited with the Borough to pay for the costs of future maintenance of the stormwater management facilities.

3. Developers shall include a mandatory note reference to the O&M plan and O&M agreement on the corresponding subdivision and/or land development plan. Persons, including developers, conveying property within a project site to another party which contains any stormwater management facilities shall include a specific deed reference to the O&M agreement affecting such grantee's property.

4. Required maintenance of stormwater management facilities shall include at a minimum the following:

A. Maintaining vegetated channels and other areas according to specifications in the E&S Manual.

B. Reestablishment of vegetation by seeding and mulching or sodding of scoured areas or areas where vegetation has not been successfully established.

C. Mowing as necessary and where permitted to maintain adequate stands or grass and to control weeds.

D. Removal of silt from all permanent structures which trap silt or sediment in order to keep the material from building up in the grass waterways thus reducing their capacity.

E. Regular inspection of the areas in questions to assure proper O&M. BMP's shall be inspected annually for 10 years and immediately after the cessation of a storm event having a 1-year or greater return period. Thereafter, BMP's shall be inspected once every 3 years and immediately after the cessation of a storm event having a 1-year or greater return period. The entity conducting the inspection shall be required to submit a report to the Borough regarding the condition of the facility and recommending necessary repairs, if needed. Any such repairs shall be at the cost of the owner. All inspection records shall be maintained by the owner and shall be made available to the Borough on request.

F. Removal of silt from all permanent drainage structures in order to maintain the design storage volumes. Regular maintenance programs shall be established and maintained.

5. The stormwater management agreement and deed restrictions identified above shall also include notice that in the event the individual property owner should fail to comply with the terms of this Chapter for the maintenance and care of the land in question, the Borough shall have the authority to carry out those duties hereby imposed upon individual property owners. The Borough may, after giving notice to an individual property owner that he is not properly maintaining the areas subject to this Chapter,

and by making demand that such compliance shall be made within the time period set forth in the notification, enter upon said property and take such actions as may be required to bring the area into compliance with this Chapter. The Borough shall further have the right to file a municipal lien against such property for the cost of maintenance work carried out under this Section, plus a penalty of 10 percent of the costs of such work. The Borough shall in addition to the filing of a municipal lien have any other remedies provided by law against any property owner who should fail to comply with the terms of this Chapter.

(*Ord. 2011-4*, 10/3/2011, §703)

§23-704. Maintenance of Stormwater Management Facilities by Private Entity.

In cases where permanent maintenance of stormwater management facilities is to be performed by a private person, such as an owner, developer, homeowners association or a condominium unit owners association, such entity shall be responsible for the maintenance of such facilities and shall enter into a legally binding O&M agreement with the Borough. The O&M agreement shall provide the Borough rights in accordance with §705 of the MPC relating to the maintenance of common open space should the private person fail to adequately maintain the stormwater management facilities. The O&M agreement shall be approved by the Borough Solicitor and shall contain the same minimum requirements as set forth in §23-703.2.

(*Ord. 2011-4*, 10/3/2011, §704)

§23-705. Maintenance of Existing Stormwater Management Facilities.

Stormwater management facilities existing on the effective date of this Chapter on individual lots which have not been accepted by the Borough or for which maintenance responsibility has not been assumed by private entity such as a homeowners association shall be maintained by the individual property owners. Such maintenance shall include at a minimum those items set forth in §23-703 above. If the Borough determines at any time that any permanent stormwater management facility has been eliminated, altered, blocked through the erection of structures or the deposit of materials, or improperly maintained, the Borough may determine that such condition constitutes a public nuisance and shall notify the property owner of corrective measures which are required, and provide for a reasonable period of time, not to exceed 30 days, within which the property owner shall take correction action. If the property owner does not take the required corrective action, the Borough may either perform the work or contract for the performance of the work and, in such event, the Borough shall have the right to file a municipal lien against such property for the cost of the work carried out under this Section, plus a penalty of 10 percent of the costs of such work. The Borough shall in addition to the filing of a municipal lien have any other remedies provided by law against any property owner who should fail to comply with the terms of this Chapter.

(*Ord. 2011-4*, 10/3/2011, §705)

§23-706. Alteration of Stormwater Management Facilities.

No person shall modify, remove, fill, landscape or alter stormwater management facilities which may have been installed on a property unless a stormwater manage-

ment site plan has been approved which authorizes such modification, removal, filling, landscaping or alteration. No person shall place any structure, fill, landscaping or vegetation into a stormwater management facility or within a drainage easement which will limit or alter the functioning of the facility or easement in any manner.

(*Ord. 2011-4*, 10/3/2011, §706)

§23-707. Municipal Stormwater Maintenance Fund.

1. Persons installing stormwater management facilities shall be required to pay a specified amount to a Borough stormwater maintenance fund to help defray the Borough's costs of periodic inspections. The amount of the deposit shall be calculated to cover the cost of periodic inspections performed by the Borough for a period of 10 years, as estimated by the Borough Engineer. After that period of time, inspections will be performed at the expense of the Borough.

2. All money paid to the Borough in this manner shall be kept in an operating reserve fund established as provided by the Borough. Money in such operating reserve fund must be used for inspections and emergency maintenance of stormwater management facilities. Money in such operating reserve fund shall be invested in accordance with the Borough Code.

(*Ord. 2011-4*, 10/3/2011, §707)

Part 8

Administration

§23-801. Right-of-Entry.

1. Upon presentation of proper credentials, duly authorized representatives of the Borough may enter at reasonable times upon any property within the Borough to inspect the condition of stormwater management facilities in regard to any aspect regulated by this Chapter.

2. BMP owners and operators shall allow persons working on behalf of the Municipality ready access to all parts of the premises for the purposes of determining compliance with this Chapter.

3. Persons working on behalf of the Municipality shall have the right to temporarily locate on any BMP in the Municipality such devices as are necessary to conduct monitoring and/or sampling of the discharges from the BMP.

4. Unreasonable delays in allowing the Municipality access to a BMP is a violation of this Part.

5. During any stage of the regulated earth disturbance activities, if the Municipality or its designee determines that any BMPs are not being implemented in accordance with this Chapter, the Municipality may suspend or revoke any existing permits or other approvals until the deficiencies are corrected.

(*Ord. 2011-4*, 10/3/2011, §801)

§23-802. Waivers.

1. The provisions of this Chapter are the minimum standards for the protection of the public welfare.

2. If the developer demonstrates to the satisfaction of the Borough Council that any mandatory provision of this Chapter is unreasonable and causes unique and undue hardship as it applies to his proposed project, the Borough Council may, after consulting with DEP as noted in §23-401.1.I and obtaining comments and recommendations from the Borough Engineer, grant a waiver so that substantial justice may be done and the public interest secured; provided, that such waiver will not have the effect of nullifying the intent and purpose of this Chapter.

3. The developer shall make all requests for waivers in writing and include such requests as a part of the development application. The developer shall state in full the grounds and facts of unreasonableness or hardship on which the request is based, the provision or provisions of the ordinance involved and the minimum waiver necessary. The developer shall state how the requested waiver and developer's proposal shall result in an equal or better means of complying with the intent of this Chapter as stated in Part 1.

4. The Borough Council shall keep a written record of all action on waiver requests.

5. In granting waivers, the Borough Council may impose conditions as will, in its judgment, secure substantially the objectives and standards or requirements so

modified.

6. The developer shall address all of the following in its application for a waiver:

A. The extent of the proposed activity.

B. The magnitude of the anticipated increased stormwater runoff as a result of the activity.

C. The adverse impacts of any anticipated increase in stormwater runoff at the area of discharge from the site of the activity.

D. The physical circumstances or conditions of the project site and any surrounding properties which may be impacted, including drainage characteristics, soil types, shape, location, topography or other physical conditions specific to the site of the activity.

E. The history of stormwater runoff problems in the area which may or will be impacted by the activity.

F. The potential for increased peak flows and/or volumes of stormwater runoff to cause any of the following problems:

(1) Increased flooding or ponding on off-site properties or roadways.

(2) Potential icing conditions.

(3) Erosive conditions due to increased peak flows or volume.

(4) Decreased water quality.

(5) Increased 100-year floodplain levels.

G. Whether stormwater runoff will be diverted to a different watershed to accomplish the goal of no or minimal increase of peak flow from the project site.

(*Ord. 2011-4*, 10/3/2011, §802)

§23-803. Violations.

1. It shall be a violation of this Chapter to commit or permit any other person to commit any of the following acts:

A. To commence regulated activities prior to obtaining unconditional approval of a stormwater management site plan or in violation of the terms or conditions of a stormwater management site plan approved under this Chapter.

B. To install, repair, modify or alter stormwater management facilities prior to obtaining approvals under this Chapter when required, or, in a manner which violates the terms and conditions of any approval issued under this Chapter.

C. To misuse or fail to maintain any stormwater management facility installed upon a property.

D. To construct any improvements upon, grade, fill or take any other action which will impair the proper functioning of any stormwater management facility.

E. To place false information on, or, omit relevant information from an application for approval under this Chapter.

F. To fail to comply with any other provisions of this Chapter.

2. *Prohibited Discharges*.

A. No person in the Municipality shall allow, or cause to allow, stormwater

discharges into the Municipality's separate storm sewer system which are not composed entirely of stormwater, except discharges allowed under a State or Federal permit and as provided in paragraph .B.

B. Discharges which may be allowed, based on a finding by the Municipality that they do not significantly contribute to pollution to surface waters of the Commonwealth, are:

(1) Discharges from firefighting activities.

(2) Uncontaminated water from foundation or from footing drains.

(3) Potable water sources including dechlorinated water line and fire hydrant flushings.

(4) Flows from riparian habitats and wetlands.

(5) Lawn watering.

(6) Irrigation drainage.

(7) Pavement washwaters where spills or leaks of toxic or hazardous materials have not occurred (unless all spill material has been removed) and detergents were not used.

(8) Routine external building washdown (which does not use detergents or other compounds).

(9) Air conditioning condensate.

(10) Water from individual residential car washing.

(11) Dechlorinated swimming pool discharges.

(12) Springs.

(13) Uncontaminated groundwater.

(14) Water from crawl space pumps.

C. In the event that the Municipality determines that any of the discharges identified in paragraph .B significantly contribute to pollution of waters of the Commonwealth, or is so notified by DEP, the Municipality will notify the responsible person to cease the discharge.

D. Upon notice provided by the Municipality under paragraph .C, the discharger will have a reasonable time, as determined by the Municipality, to cease the discharge consistent with the degree of pollution caused by the discharge.

E. Nothing in this Section shall affect a discharger's responsibilities under State law.

3. *Prohibited Connections*.

A. The following connections are prohibited, except as provided in §23-701.2 above:

(1) Drain or conveyance, whether on the surface or subsurface, which allows any non-stormwater discharge, including sewage, process wastewater and wash water, to enter the separate storm sewer system; and any connections to the storm drain system from indoor drains and sinks.

(2) Drain or conveyance connected from a commercial or industrial land use to the separate storm sewer system which has not been documented in

plans, maps, or equivalent records and approved by the Municipality.

(*Ord. 2011-4*, 10/3/2011, §803)

§23-804. Enforcement.

1. The violation of any provision of this Chapter is hereby deemed a public nuisance. The Borough is hereby authorized to enter upon private property and take all measures necessary to abate a deemed public nuisance, including attorney fees, under this Chapter. It shall be unlawful for any person, owner, agent or person in possession of any premises to refuse to allow the Borough or designated contractor to enter upon the premises for the purposes set forth above. The costs incurred by the Borough to abate a public nuisance, including attorney fees, shall be a special assessment against the property and shall constitute a municipal lien on the property for the amount of the assessment plus a penalty of 10 percent of the assessment.

2. Any person who violates any provision of this Chapter shall commit a summary offense, and shall, upon being found guilty by a magisterial district judge, after hearing, pay a fine not to exceed $1,000, together with all attorneys' fees and court costs as permitted by law. In default of payment thereof, the defendant may be sentenced to imprisonment for a term not exceeding 90 days. Each day or portion thereof of violation, and each Section of this Chapter which is violated, shall constitute a separate offense, which shall be subject to prosecution as such. For purpose of this Section, the Borough Council of Lewisberry hereby appoints the Borough Manager, Secretary, Zoning Officer, Building Code Official, Permit Officer or Codes Enforcement Officer as authorized representatives, any one of whom may commerce and pursue enforcement proceedings pursuant to this Section. The Borough Solicitor shall assume charge of prosecution of any such enforcement proceedings.

3. The Borough may also institute any other actions, suits or remedies available at law or in equity to restrain, prevent, or abate a violation of this Chapter. Such proceedings 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, including attorney fees, shall be recoverable from the violator in such manner as may now or hereafter be provided by law.

(*Ord. 2011-4*, 10/3/2011, §804)

§23-805. Revocation or Suspension of Permits; Occupancy Permits.

1. Suspension and revocation of stormwater management site plan approvals shall be in accordance with the following:

A. Any approval issued under this Chapter may be suspended or revoked by the Borough for:

(1) Noncompliance with or failure to implement any provision of the stormwater management site plan.

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

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

B. A suspended stormwater management site plan shall be reinstated by the Borough when:

(1) The Borough Engineer or his designee has inspected and approved the corrections to the stormwater management facilities and/or erosion and sediment control measure(s), or the elimination of the hazard or nuisance.

(2) The Borough is satisfied that the violation of the ordinance, law, or rule and regulation has been corrected.

C. A stormwater management site plan approval which has been revoked by the Borough cannot be reinstated. The applicant may apply for a new permit under the procedures outlined in this Chapter.

2. No building or occupancy permits shall be issued for any structure or improvement on any lot or lots within a project during the pendency of any enforcement action under this Chapter commenced against the project or the developer of the project.

(*Ord. 2011-4*, 10/3/2011, §805)

§23-806. Notification of Noncompliance.

Any activity conducted pursuant to a stormwater management site plan approved by Borough shall be performed in strict compliance with the provisions of the plan. Violations shall be treated in the following manner:

A. Any noncompliance with the provisions of the stormwater management plan that is identified by the Borough Engineer, the code enforcement officer, zoning officer or other designee of the Borough in the course of inspections as specified in this Chapter shall be remedied by the developer according to the terms in this Chapter.

B. If at any time work does not conform to the approved stormwater management site plan, including all conditions and specifications and modifications thereof, the Borough Engineer, Code Enforcement Officer or Zoning Officer shall issue a written notice to comply to the developer. Such notice shall set forth the nature of corrections required and the time within which corrections shall be made. Upon failure to comply within the time specified, the developer shall be considered in violation of this Chapter, and the Borough shall issue a cease and desist order on all work on the project site, including any building or other construction, until corrections are made. If corrections are not undertaken within a specified time or the developer violates the cease and desist order: (1) penalties shall be imposed and/or (2) the work shall be completed by the Borough and the costs charged to the developer.

(*Ord. 2011-4*, 10/3/2011, §806)

§23-807. Compatibility with Other Permit and Ordinance Requirements.

1. Approvals issued pursuant to this Chapter do not relieve the developer of the responsibility to comply with or secure required permits or approvals for activities regulated by any other applicable resolution, ordinance, code, rule, regulation or laws

(Federal, State, and local). If more stringent requirements concerning regulation of stormwater or erosion and sedimentation control are contained in the other regulations, the more stringent regulations shall apply.

2. All stormwater management facilities and regulated activities must also comply with Chapter 197 [Storm Sewers]. Any violation of Chapter 197 [Storm Sewers] shall also be a violation of this Chapter subject to all remedies available under this Chapter.

(*Ord. 2011-4*, 10/3/2011, §809)

§23-808. Borough Liability.

The making of any administrative decision by the Borough or any of its officials, agents, or employees shall not constitute a representation, guarantee or warranty of any kind by the Borough of the practicability or safety of any proposed structure or use with respect to damage from erosion, sedimentation, stormwater runoff, Flood, or any other matter, and shall create no liability upon or give rise to any cause of action against the Borough and its officials and employees. The Borough Council, by enacting this Chapter, does not waive or limit any immunity granted to the Borough and its officials and employees by the Governmental Immunity Act of October 5, 1980, P.L. 693, No. 142, as amended, 42 Pa.C.S. §8541 *et seq*., and does not assume any liabilities or obligations.

(*Ord. 2011-4*, 10/3/2011, §810)

§23-809. Challenge and Appeals.

1. Appeals from the decision of the Borough Council on a stormwater management site plan governed by this Chapter or the decision on a request for a waiver from the requirements of this Chapter insofar as the same relates to an application for subdivision and/or land development governed by the Subdivision Ordinance [Chapter 22] shall be made in accordance with Article X-A of the MPC.

2. Appeals from the determination of the Zoning Officer, Borough Engineer or other Borough agent in the administration of this Chapter insofar as the same relates to an application for subdivision and/or land development governed by the Subdivision Ordinance [Chapter 22] shall be made in writing to the Borough Council. The appeal shall be subject to the time limitations of §914.1 of the MPC. All appeals shall be accompanied by the appeal fee established by resolution of the Borough Council.

A. The written appeal shall specify the precise action from which the appeal is taken and shall set forth in concise terms the reason for the appeal and any legal authorities supporting the appeal.

B. If the appellant desires a hearing before the Borough Council, the appellant must request a hearing in the written appeal. The appellant shall pay the cost of the stenographer for any such hearing and the cost to transcribe the proceeds of the hearing.

C. If a hearing is requested in writing, the Borough Council shall conduct the hearing at a regular or special public meeting which occurs not less than 60 days after receipt of the written appeal. The hearing shall be conducted in accordance with the provisions of the Local Agency Law, 2 Pa.C..S. §551 *et seq*.

D. The Borough Council shall render a decision on the appeal in accordance with the provisions of the Local Agency Law.

3. Appeals from all other determinations of the Zoning Officer, Borough Engineer or other Borough agent in the administration of this Chapter shall be made in writing to the Borough's Zoning Hearing Board in accordance with the provisions of Article IX of the MPC. The written appeal shall specify the precise action from which the appeal is taken and shall set forth in concise terms the reason for the appeal and any legal authorities supporting the appeal. The appeal shall be subject to the time limitations of §914.1 of the MPC. All appeals filed under this subsection shall be subject to the applicable fees then in effect for zoning hearings.

4. Appeals from enforcement actions brought pursuant to §23-804.2 shall be in accordance with the Pennsylvania Rules of Criminal Procedure.

5. The Borough and developer and/or owner may voluntarily agree to use mediation as an aid in resolving any appeals arising under subsections .1–.3 of this Section. Any such mediation shall be governed by §908.1 of the MPC with the costs of mediation being shared equally by the parties.

(*Ord. 2011-4*, 10/3/2011, §811)

Part 9

References

§23-901. References.

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

2. Pennsylvania Department of Environmental Protection. No. 363-2134-008 (April 15, 2000), as amended and updated. *Erosion and Sediment Control Program Manual*. Harrisburg, PA.

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

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

5. U.S. Department of Commerce, National Oceanic and Atmospheric Administration, National Weather Service, Hydrometeorological Design Studies Center. 2004-2006. *Precipitation-Frequency Atlas of the United States, Atlas 14*, Volume 2, Version 3.0, Silver Spring, Maryland. Internet address: http://hdsc.nws.gov/hdsc/pfds/.

6. Act of July 31, 1968, P.L. 85, No. 247, the Pennsylvania Municipalities Planning Code, as amended.

(*Ord. 2011-4*, 10/3/2011, Art. IX)

APPENDIX 23-A

DISCONNECTED IMPERVIOUS AREA (DIA)

A.1. Rooftop Disconnection

When rooftop down spouts are directed to a pervious area that allows for infiltration, filtration, and increased time of concentration, the rooftop may qualify as completely or partially DIA and a portion of the impervious rooftop area may be excluded from the calculation of total impervious area.

A rooftop is considered to be completely or partially disconnected if it meets the requirements listed below:

- The contributing area of rooftop to each disconnected discharge is 500 square feet or less, and
- The soil, in proximity of the roof water discharge area, is not designated as hydrologic soil group "C&D" or equivalent, and
- The overland flow path from roof water discharge area has a positive slope of five percent (5%) or less.

For designs that meet these requirements, the portion of the roof that may be considered disconnected depends on the length of the overland path as designated in Table B.1.

Table A.1: Partial Rooftop Disconnection

Length of Pervious Flow Path *	**Roof Area Treated as Disconnected**
(ft)	(% of contributing area)
0 —	0
15— 29	20
30— 44	40
45— 59	60
60— 74	80
75 or more	100
* Flow path cannot include impervious surfaces and must be at least 15 feet from any impervious surfaces.	

A.2. Pavement Disconnection

When pavement runoff is directed to a pervious area that allows for infiltration, filtration, and increased time of concentration, the contributing pavement area may qualify as a DIA that may be excluded from the calculation of total impervious area. This applies generally only to

small or narrow pavement structures such as driveways and narrow pathways through otherwise pervious areas, e.g., a walkway or bike path through a park.

Pavement is disconnected if the pavement, or area adjacent to the pavement, meets the requirements below:

- The contributing flow path over impervious area is not more than 75 feet, and
- The length of overland flow is greater than or equal to the contributing length, and
- The soil is not designated as hydrologic soil group "C&D" or equivalent, and
- The slope of the contributing impervious area is five percent (5%) or less, and
- The slope of the overland flow path is five percent (5%) or less.

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

REFERENCE

Philadelphia Water Department. 2006. Stormwater Management Guidance Manual. Section 4.2.2: Integrated Site Design. Philadelphia, PA.

APPENDIX 23-B

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

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

WITNESSETH

WHEREAS, the Landowner is the owner of certain real property as recorded by the deed in the land records _____ County, Pennsylvania, Deed Book _____ at Page _____, (hereinafter "Property").

WHEREAS, the Landowner is proceeding to build and develop the Property; and

WHEREAS, the SWM BMP Operation and Maintenance (O&M) Plan approved by the Municipality (hereinafter referred to as the "O&M Plan") for the property identified herein, which is attached hereto as Appendix A and made part hereof, as approved by the Municipality, provided for management of stormwater within the confines of the Property through the use of BMPs; and

WHEREAS, the Municipality, and the Landowner, his successors and assigns, agree that the health, safety, and welfare of the residents of the Municipality and the protection and maintenance of water quality require that on-site SWM BMPs be constructed and maintained on the Property; and

WHEREAS, the Municipality requires, through the implementation of the SWM Site Plan, that SWM BMPs as required by said SWM Site Plan and the Municipal Stormwater Management Ordinance be constructed and adequately operated and maintained by the Landowner, successors, and assigns.

NOW, THEREFORE, in consideration of the forgoing promises, the mutual covenants contained herein, and the following terms and conditions, the parties hereto agree as follows:

1. The Landowner shall construct the BMPs in accordance with the plans and specifications identified in the SWM Site Plan.

2. The Landowner shall operate and maintain the BMPs as shown on the SWM Plan in good working order in accordance with the specific operation and maintenance requirements noted on the approved O&M Plan.

3. The Landowner hereby grants permission to the Municipalities, its authorized agents and employees, to enter upon the property, at reasonable times and upon presentation of proper credentials, to inspect the BMPs whenever necessary. Whenever possible, the Municipality shall notify the Landowner prior to entering the property.

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

5. In the event the Municipality, pursuant to this Agreement, performs work of any nature, or expends any funds in performance of said work for labor, use of equipment, supplies, materials, and the like, the Landowner shall reimburse the Municipality for all expenses materials, and the like, the Landowner shall reimburse the Municipality for all expenses (direct and indirect) incurred within ten (10) days of receipt of invoice from the Municipality.

6. The intent and purpose of this Agreement is to ensure the proper maintenance of the onsite BMPS by the Landowner; provided, however, that this Agreement shall not be deemed to created or effect any additional liability of any party for damage alleged to result from or be caused by stormwater runoff.

7. The Landowner, its executors, administrators, assigns, and other successors in interests, shall release the Municipality from all damages, accidents, casualties, occurrences, or claims which might arise or be asserted against said employees and representatives from the construction, presence, existence, or maintenance of the BMP(s) by the Landowner or Municipality.

8. The Municipality may inspect the BMPs at a minimum of once every three (3) years to ensure their continued functioning. Optionally, at its sole discretion, the Municipality may inspect the BMPs at more or less frequent intervals.

This agreement shall be recorded at the Office of the Recorder of Deeds of York County, Pennsylvania, and shall constitute a covenant running with the Property and/or equitable servitude, and shall be binding on the Landowner, his administrators, executors, assigns, heirs, and any other successors in interests, in perpetuity.

ATTEST:

WITNESS the following signatures and seals:

(SEAL) For the Municipality:

For the Landowner:

ATTEST:

_____ (City, Borough, Township)
County of York, Pennsylvania
I, _____, a Notary Public in and for the county and state aforesaid, whose commission expires on the _____ day of ___, 20__, do hereby certify that

_____
Whose name(s) is/are signed to the foregoing Agreement bearing date of the _____ day of _____, 20___ has acknowledged the same before me in my said county and state.

GIVEN UNDER MY HAND THIS _____ day of _____, 20____.

_____ _____
NOTARY PUBLIC **(SEAL)**