TOWNSHIP OF CONESTOGA

Lancaster County, Pennsylvania

ORDINANCE NO. 2014-01

AN ORDINANCE TO ESTABLISH COMPREHENSIVE REGULATIONS FOR STORM WATER MANAGEMENT TO IMPLEMENT THE LANCASTER COUNTY ACT 167 STORM WATER MANAGEMENT PLAN.

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

(DRAFT NO. 1 08-20-13)

(DRAFT NO. 2 01-14-14)

(DRAFT NO. 3 02-07-14)

DRAFT NO. 4 03-06-14

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ARTICLE I
GENERAL PROVISIONS

Section 101. Short Title

This Ordinance shall be known and may be cited as the "Conestoga Township Stormwater Management Ordinance."

Section 102. Statement of Findings

The Board of Supervisors of Conestoga Township finds that:

A. Inadequate management of accelerated stormwater runoff resulting from development throughout a watershed increases flood flows and velocities, contributes to erosion and sedimentation, overtaxes the carrying capacity of existing streams and storm sewers, greatly increases the cost of public facilities to convey and manage stormwater, undermines floodplain management and flood control efforts in downstream communities, reduces groundwater recharge, threatens public health and safety, and increases nonpoint source pollution of water resources.

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

C. 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 Municipal Separate Storm Sewer Systems (MS4) under the National Pollutant Discharge Elimination System (NPDES).

E. Riparian forest buffers enhance water quality by filtering pollutants in runoff, providing light control and temperature moderation, processing pollutants, increasing infiltration and providing channel and shoreline stability thus decreasing erosion (DEP Riparian Forest Buffer Guidance, November 27, 2010).

Section 103. Purpose

The purpose of this Ordinance is to promote health, safety, and welfare by minimizing the harms and maximizing the benefits described in Section 102 of this Ordinance through provisions designed to:

A. Meet legal water quality requirements under state law, including regulations at 25 Pa. Code Chapter 93 to protect, maintain, reclaim, and restore the existing and designated uses of the waters of this Commonwealth.

B. Preserve the natural drainage systems as much as practicable.

C. Manage stormwater runoff close to the source.

D. Provide procedures and performance standards for stormwater planning and management.

E. Maintain groundwater recharge to prevent degradation of surface and groundwater quality and to otherwise protect water resources.

F. Prevent scour and erosion of stream banks and streambeds.

G. Provide proper Operation and Maintenance of all Stormwater Management Best Management Practices (SWM BMPs) that are implemented within the Township.

H. Provide standards to meet NPDES permit requirements.

I. Promote stormwater runoff prevention through the use of nonstructural Best Management Practices (BMPs).

J. Provide a regulatory environment that supports the proportion, density and intensity of development called for in the comprehensive plan; allow for creative methods of improving water quality and managing stormwater runoff; and promote a regional approach to water resource management.

K. Help preserve and protect exceptional natural resources, and conserve and restore natural resource systems.

L. Promote stormwater management practices that emphasize infiltration, evaporation, and transpiration.

Section 104. Statutory Authority

A. Primary Authority:

Conestoga Township is empowered to regulate these activities by the authority of the Act of October 4, 1978, P.L. 864 (Act 167), 32 P.S. Section 680.1, et seq., as amended, the "Stormwater Management Act" and Act 394 of 1937, as amended, 35 P.S. Section 691.1 et seq. the Pennsylvania Clean Streams Law. Conestoga Township also is empowered to regulate land use activities that affect stormwater impacts by the authority of the Act of May 1, 1933, P. L. 103, No. 69, as reannacted and amended by the Act of November 9, 1995, P.L. 350, No,. 60, as amended.

B. Secondary Authority:

Conestoga Township also is empowered to regulate land use activities that affect runoff by the authority of the Act of July 31, 1968, P.L. 805, No. 247, The Pennsylvania Municipalities Planning Code, as amended.

Section 105. Applicability

The provisions, regulations, limitations, and restrictions of this ordinance shall apply to regulated activities, as defined in this Ordinance.

Section 106. Repeals and Continuation of Prior Regulations.

A. Except as otherwise required by law, this Ordinance is intended as a continuation of, and not a repeal of, existing regulations governing the subject matter. To the extent that this Ordinance restates regulations contained in ordinances previously enacted by the Conestoga Township Board of Supervisors, this Ordinance shall be considered a restatement and not a repeal of such regulations. It is the specific intent of the Conestoga Township Board of Supervisors that all provisions of this Ordinance shall be considered in full force and effect as of the date such regulations were initially enacted. All ordinances or parts of ordinances inconsistent with the provisions of this Ordinance are hereby repealed. It is expressly provided that the provisions of this Ordinance shall not affect any act done, contract executed or liability incurred prior to its effective date, or affect any suit or prosecution pending or to be instituted to enforce any rights, rule, regulation or ordinance, or part thereof, or to punish any violation which occurred under any prior storm water regulation or ordinance. In the event any violation has occurred under any prior storm water regulation or ordinance of Conestoga Township, prosecution may be initiated against the alleged offender pursuant to the provisions of said prior storm water regulation or ordinance, and the provisions and penalties provided in said prior stormwater regulation or ordinance shall remain effective as to said violation.

B. Any Plan (hereinafter defined) pending at the time of the effective date of this Ordinance shall be allowed to proceed with revisions, finalization and implementation in accordance with any Ordinance in effect prior hereto.

Section 107. Severability

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

Section 108. Compatibility with Other Ordinance Requirements

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

Section 109. Erroneous Permit

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

Section 110. Municipal Liability.

Except as specifically provided by the Storm Water Management Act, the making of any administrative decision by Conestoga Township or any of its officials or employees shall not constitute a representation, guarantee or warranty of any kind by Conestoga Township of the practicability or safety of any proposed structure or use with respect to damage from erosion, sedimentation, storm water runoff, flood, or any other matter, and shall create no liability upon or give rise to any cause of action against Conestoga Township and its officials and employees. Conestoga Township, by enacting and amending this Ordinance, does not waive or limit any immunity granted to Conestoga Township and its officials and employees by the Governmental Immunity Act, 42 Pa. C.S. §8541 et seq., and does not assume any liabilities or obligations.

Section 111. Duty of Persons Engaged in the Development of Land

Notwithstanding any provision(s) of this Ordinance, including exemptions, any landowner or any person engaged in the alteration or development of land which may affect stormwater runoff characteristics shall implement such measures as are reasonably necessary to prevent injury to health, safety, or other property. Such measures also shall include actions as are required to manage the rate, volume, direction, and quality of resulting stormwater runoff in a manner which otherwise adequately protects health, property, and water quality.

Section 112. Financial Security

A. A financial security (bond, restricted account or letter of credit) for stormwater related improvements shall be supplied by the Developer in conjunction with the subdivision/land development approval, or in conjunction with the SWM Site Plan approval if no subdivision/land development plan is required.

B. The applicant shall provide a financial security to the Township for the timely installation and proper construction of all SWM Facilities, including E&S BMPS, as required by the approved SWM Site Plan and this ordinance and, as applicable, in accordance with the provisions of Sections 509, 510, and 511 of the MPC.

C. As the work of installing the required SWM Facilities proceeds, the party posting the financial security may request the Board of Supervisors to release or authorize the release, from time to time, such portions of the financial security necessary for payment to the contractor or contractors performing the work. Any such requests shall be in writing addressed to the Conestoga Township Board of Supervisors, and the Board of Supervisors shall have 45 days from receipt of such request within which to allow the Township Engineer to certify, in writing, to the Board of Supervisors that such portion of the work upon the SWM Facilities has been completed in accordance with the approved SWM Site Plan. Upon such certification the Board of Supervisors shall authorize release by the bonding company or lending institution of an amount as estimated by the Township Engineer fairly representing the value of the SWM Facilities completed. The Board of Supervisors may, prior to final release at the time of completion and certification by its Engineer, require retention of 10% of the estimated cost of the aforesaid SWM Facilities.

D. In the event that any SWM Facilities which may be required have not been installed as provided in the approved SWM Site Plan the Board of Supervisors of Conestoga Township is hereby granted the power to enforce any corporate bond, or other security by appropriate legal and equitable remedies. If proceeds of such bond, or other security are insufficient to pay the cost of installing or making repairs or corrections to all the SWM Facilities covered by said security, the Board of Supervisors may, at its option, install part of such SWM Facilities and may institute appropriate legal or equitable action to recover the monies necessary to complete the remainder of the SWM Facilities. All of the proceeds, whether resulting from the security or from any legal or equitable action brought against the Developer, or both, shall be used solely for the installation of the SWM Facilities covered by such security, and not for any other purpose.

ARTICLE II
DEFINITIONS OF TERMS

Section 201. Interpretation and Word Usage

The language set forth in the text of this Ordinance shall be interpreted in accordance with the following rules of construction:

A. Words used or defined in one tense or form shall include other tenses or derivative forms.

B. Words in the singular number shall include the plural number, and words in the plural number shall include the singular number.

C. The masculine gender shall include the feminine and neuter. The feminine gender shall include the masculine and neuter. The neuter gender shall include the masculine and feminine.

D. The word "person" includes individuals, firms, partnerships, joint ventures, trusts, trustees, estates, corporations, associations and any other similar entities.

E. The word "Lot" includes the words "plot", "Tract", and "Parcel".

F. The words "shall," "must" and "will" are mandatory in nature and establish an obligation or duty to comply with the particular provision. The words "may" and "should" are permissive.

G. The time, within which any act required by this Ordinance is to be performed, shall be computed by excluding the first day and including the last day. However, if the last day is a Saturday or Sunday or a holiday declared by the United States Congress or the Pennsylvania General Assembly, it shall also be excluded. The word "day" shall mean a calendar day, unless otherwise indicated.

H. Any words not defined in this Ordinance or in Section 107 of the MPC shall be construed as defined in standard dictionary usage.

I. References to officially adopted regulations, standards, or publications of DEP or other governmental agencies shall include the regulation, publication, or standard in effect on the date when a SWM Site Plan is first filed. It is the intent of the Board of Supervisors in enacting this Section to incorporate such changes to statutes, regulations, and publications to the extent authorized by 1 Pa. C.S. § 1937.

Section 202. Definitions of Terms

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

Access Easement – A right granted by a landowner to a grantee, allowing entry for the purpose of inspecting, maintaining and repairing SWM Facilities.

Act 167 Plan – A plan prepared under the authority of the Stormwater Management Act.

Agricultural Activity – Activities associated with agriculture such as agricultural cultivation, agricultural operation, and animal heavy use areas. This includes the work of producing crops and raising livestock including tillage, land clearing, plowing, disking, harrowing, planting, harvesting crops, or pasturing and raising of livestock and installation of Conservation Practices. Construction of new buildings or impervious areas is not considered an agricultural activity.

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

Animal Heavy Use Areas – A barnyard, feedlot, loafing area, exercise lot, or other similar area on an agricultural operation where due to the concentration of animals, it is not possible to establish and maintain vegetative cover of a density capable of minimizing accelerated erosion and sedimentation by usual planting methods. The term does not include entrances, pathways and walkways between areas where animals are housed or kept in concentration.

Applicable Subdivision Regulations – the Subdivision and Land Development Ordinance governing subdivisions and land developments within the Township which is effective on the date the SWM Site Plan is filed with the Township.

Applicant - A Landowner and/or Developer, as hereinafter defined, including his heirs, successors and assigns, who has filed an application to the township for approval to engage in any regulated activity at a Development Site located within the Township.

BMP (Best Management Practice) - Activities, facilities, control measures, planning or procedures used to minimize accelerated erosion and sedimentation and manage stormwater to protect, maintain, reclaim, and restore the quality of waters and the existing and designated uses of waters within this Commonwealth before, during and after earth disturbance activities[1]. See also Non-structural BMP and Structural BMP.

BMP Manual – The Pennsylvania Stormwater Best Management Practices Manual.

Board of Supervisors – The governing body of the Township.

Building – Any enclosed or open structure, other than a boundary wall or fence, occupying more than four (4) square feet of area and/or having a roof supported by columns, piers, or walls.

Carbonate Geology - Limestone or dolomite bedrock. Carbonate geology is often associated with karst topography.

Certificate of Completion – Documentation verifying that all permanent SWM facilities have been constructed according to the plans and specifications and approved revisions thereto.

Chapter 102 – 25 Pa. Code Chapter 102, Erosion and Sediment Control.

Chapter 105 – 25 Pa. Code, Chapter 105, Dam Safety and Waterway Management.

Chapter 106 – 25 Pa. Code, Chapter 106, Floodplain Management.

Cistern - A reservoir or tank for storing rainwater.

Clean Water Act – the 1972 Amendments to the Federal Water Pollution Control Act, P.L. 92-500 of 1972, 33 U.S.C. §1251 et seq.

Conservation District – The Lancaster County Conservation District or any agency successor thereto.

Conservation Plan – A plan written by an NRCS certified planner that identifies Conservation Practices and includes site specific BMPs for agricultural plowing or tilling activities and Animal Heavy Use Areas.

Conservation Practices – Practices installed on agricultural lands to improve farmland, soil and/or water quality which have been identified in a current Conservation Plan.

Conveyance – (n) Any structure that carries a flow. (v) The ability of a pipe, culvert, swale or similar facility to carry the peak flow from the design storm.

Culvert - A structure with appurtenant works which can convey a stream under or through an embankment or fill.

DCNR – The Pennsylvania Department of Conservation and Natural Resources or any agency successor thereto.

DEP also PA DEP or PADEP – The Pennsylvania Department of Environmental Protection or any agency successor thereto.

Design Storm - The magnitude and temporal distribution of precipitation from a storm event measured in probability of occurrence (e.g., a 5-year storm) and duration (e.g., 24-hours), used in the design and evaluation of SWM systems.

Detention Basin - An impoundment structure designed to manage stormwater runoff by temporarily storing the runoff and releasing it at a controlled rate.

Developer - A person who undertakes any Regulated Activity of this Ordinance.

Development Site (Site) - The specific area of land where regulated activities in the township are planned, conducted or maintained.

Disappearing Stream - A stream in an area underlain by limestone or dolomite that flows underground for a portion of its length.

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

Drainage Easement - Rights to occupy and use another person's real property for the installation and operation of stormwater management facilities, or for the maintenance of natural drainageways to preserve and maintain a channel for the flow of stormwater therein, or to safeguard health, safety, property, and facilities.

E&S – Erosion and Sediment.

E&S Manual – the DEP Erosion and Sediment Pollution Control Manual, No. 363-2134-008.

E&S Plan (also Erosion and Sediment 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 activities.

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; land development; agricultural plowing or tilling; operation of animal heavy use areas; timber harvesting activities; road maintenance activities; oil and gas activities; well drilling; mineral extraction; building construction; and the moving, depositing, stockpiling, or storing of soil, rock, or earth materials.

Environmentally Sensitive Area - shallow bedrock (located within 6 feet of ground surface), wetlands, Natural Heritage Areas and other areas designated as Conservation or Preservation in ***Greenscapes***, the Green Infrastructure Element of the County Comprehensive Plan, where encroachment by land development or land disturbance results in degradation of the natural resource.

Erosion - The natural process by which the surface of the land is worn away by water, wind, or chemical action. See also, "Accelerated Erosion" as defined above.

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

FEMA - the Federal Emergency Management Agency or any agency successor thereto.

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.

Flood Fringe – That portion of the floodplain outside of the floodway.

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, the area of inundation that functions as a storage or holding area for floodwater to a width required to contain a base flood of which there is a one percent (1%) chance of

occurrence in any given year. The floodplain contains both the floodway and the flood fringe.

Floodplain Management Act - Act of October 4, 1978, P.L. 851, No. 166, as amended 32 P.S. Section 679.101 et seq.

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

Forest Management/Timber Operations - Planning and activities necessary for the management of forest land. These include conducting a timber inventory and preparation of forest management plans, silvicultural treatment, cutting budgets, logging road design and construction, timber harvesting, site preparation and reforestation.

Frequency - The probability or chance that a given storm event/flood will be equaled or exceeded in a given year.

Grade – (n.) A slope, usually of a road, channel or natural ground specified in percent and shown on plans as specified herein. (v.) to finish the surface of a roadbed, top of embankment or bottom of excavation.

Groundwater Recharge - The process by which water from above the ground surface is added to the saturated zone of an aquifer, either directly or indirectly.

Hydrologic Soil Group (HSG) – Refers to soils grouped according to their runoff-producing characteristics by NRCS. There are four (4) runoff potential groups ranging from A to D.

A. (Low runoff potential) Soils having high infiltration rates even when thoroughly wetted and consisting chiefly of deep, well to excessively drained sands or gravels. These soils have a high rate of water transmission (greater than 0.30 inches/hour).

B. Soils having moderate infiltration rates when thoroughly wetted and consisting chiefly of moderately deep to deep, moderately well-to-well drained soils with moderately fine to moderately coarse textures. These soils have a moderate rate of water transmission (from 0.15 to 0.30 inches/hour).

C. Soils having slow infiltration rates when thoroughly wetted and consisting chiefly of soils with a layer that impedes downward movement of water, or soils with moderately fine to fine texture. These soils have a slow rate of water transmission (from 0.05 to 0.15 inches/hour).

D. (High runoff potential) Soils having very slow infiltration rates when thoroughly wetted and consisting chiefly of clay soils with a high swelling potential, soils with

a permanent high water table, soils with a clay pan or clay layer at or near the surface, and shallow soils over nearly impervious material. These soils have a very slow rate of water transmission (from 0 to 0.05 inches/hour).

Impervious Surface (Impervious Area) – Surfaces which prevent the infiltration of water into the ground. All structures, buildings, parking areas, driveways, roads, streets, sidewalks, decks, and any areas of concrete, asphalt, packed stone, and compacted soil shall be considered impervious surface if they prevent infiltration.

Impoundment - A retention or detention facility designed to retain stormwater runoff and infiltrate it into the ground (in the case of a retention basin) or release it at a controlled rate (in the case of a detention basin).

Infiltration Structures - A structure designed to direct runoff into the ground (e.g. french drains, seepage pits, seepage trench, rain gardens, vegetated swales, pervious paving, infiltration basins, etc.).

Inlet - A surface connection to a closed drain. The upstream end of any structure through which water may flow.

Intermittent – A natural, transient body or conveyance of water that exists for a relatively long time, but for weeks or months of the year is below the local water table and obtains its flow from both surface runoff and groundwater discharges.

Invasive Vegetation (Invasives) – Plants which grow quickly and aggressively, spreading, and displacing other plants. Invasives typically are introduced into a region far from their native habitat. See Invasive Plants in Pennsylvania by the Department of Conservation and Natural Resources.

Karst - A type of topography or landscape characterized by features including but not limited to surface depressions, sinkholes, rock pinnacles/uneven bedrock surface, underground drainage, and caves. Karst is formed on carbonate rocks, such as limestone or dolomite.

Land Development - Any of the following activities meeting the definition of land development in the applicable subdivision regulations.

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

Limiting Zone - A rock formation, other stratum, or soil condition which is so slowly permeable that it effectively limits downward passage of effluent[12]. Season high water tables, whether perched or regional also constitute a limiting zone.

Lineament - A linear feature in a landscape which is an expression of an underlying geological structure such as a fault.

Manning's Equation - An equation for calculation of velocity of flow (e.g. feet per second) and flow rate (e.g. cubic feet per second) in open channels based upon channel shape, roughness, depth of flow and slope. Manning's Equation assumes steady, gradually varied flow.

Maximum Extent Practicable (MEP) – Applies when the applicant demonstrates to the Township's satisfaction that the performance standard is not achievable. The applicant shall take into account the best available technology, cost effectiveness, geographic features, and other competing interests such as protection of human safety and welfare, protection of endangered and threatened resources, and preservation of historic properties in making the assertion that the performance standard cannot be met and that a different means of control is appropriate.

MPC - The Pennsylvania Municipalities Planning Code, Act of 1968, P.L. 805, No. 247, as reenacted and amended, 53 P.S. Section 10101 et seq.

Municipal Separate Storm Sewer – A conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, manmade channels, or storm drains), which is all of the following: (1) owned or operated by a state, city, town, borough, township, county, district, association or other public body (created under state law) having jurisdiction over disposal of sewage, industrial wastes, stormwater or other wastes; (2) designed or used for collecting or conveying stormwater; (3) not a combined sewer; and (4) not part of a Publicly Owned Treatment Works as defined at 40 CFR § 122.2.

Municipal Separate Storm Sewer System (MS4): All separate storm sewers that are defined as "large" or "medium" or "small" municipal separate storm sewer systems pursuant to 40 CFR §§ 122.26(b)(18), or designated as regulated under 40 CFR § 122.26(a)(1)(v).

NRCS - Natural Resources Conservation Service (previously Soil Conservation Service, or SCS) or any agency successor thereto.

National Pollution Discharge Elimination System (NPDES) – A permit issued under 25 Pa. Code Chapter 92a (relating to National Pollutant Discharge Elimination System permitting, monitoring and compliance) for the discharge or potential discharge of pollutants from a point source to surface waters.

Native Vegetation – Plant species that have evolved or are indigenous to a specific geographical area. These plants are adapted to local soil and weather conditions as well as pests and diseases.

Natural Drainageway - An existing channel for water runoff that was formed by natural processes.

Natural Ground Cover – Ground cover which mimics the infiltration characteristics of predominant hydrologic soil group found at the site.

Nonpoint Source Pollution - Any source of water pollution that does not meet the legal definition of "point source" in section 502(14) of the Clean Water Act.

Non-structural BMPs – Planning and design approaches, operational and/or behavior-related practices which minimize stormwater runoff generation resulting from an alteration of the land surface or limit contact of pollutants with stormwater runoff.

Open Channel - A drainage element in which stormwater flows with an open surface. Open channels include, but shall not be limited to, natural and man-made drainage ways, swales, streams, ditches, canals, and pipes flowing partly full. Open channels may include closed conduits so long as the flow is not under pressure.

Outfall - Point where water flows from a conduit, stream, pipe, or drain.

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

PennDOT - The Pennsylvania Department of Transportation or any agency successor thereto.

Pervious Area - Any material / surface that allows water to pass through at a rate equal to or greater than Natural Ground Cover.

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

Plans - The SWM and erosion and sediment control plans and narratives.

Planning Commission - The planning commission of Conestoga Township, Lancaster County, Pennsylvania.

Process Wastewater - Water that comes in contact with any raw material, product, by-product, or waste during any production or industrial process.

Qualified Person - Any person licensed by the Pennsylvania Department of State or otherwise qualified by law to perform the work required by this Ordinance.

Rate Control - SWM controls used to manage the peak flows for the purposes of channel protection and flood mitigation.

Rational Formula (Rational Method) - A rainfall-runoff relation used to estimate peak flow.

Redevelopment – Any physical improvement to a previously developed lot that involves earthmoving, removal, or addition of impervious surfaces.

Regional Stormwater Management Plan – A plan to manage stormwater runoff from an area larger than a single Development Site. A Regional Stormwater Management Plan could include two adjacent parcels, an entire watershed, or some defined area in

between. Regional Stormwater Management Plans can be prepared for new development, or as a retrofit to manage runoff from already developed areas.

Regulated Activities - Activities, including Earth Disturbance Activities that involve the alteration or development of land in a manner that may affect stormwater runoff. Regulated activities shall include, but not be limited to:

- Land Development subject to the requirements of the Applicable Subdivision Regulations;
- Removal of ground cover, grading, filling or excavation;
- Construction of new or additional impervious or semi-impervious surfaces (driveways, parking lots, etc.), and associated improvements;
- Construction of new buildings or additions to existing buildings;
- Installation or alteration of stormwater management facilities and appurtenances thereto;
- Diversion or piping of any watercourse; and,
- Any other regulated activities where the Township determines that said activities may affect any existing watercourse's SWM Facilities, or stormwater drainage patterns.

Retention Basin - A SWM Facility that includes a permanent pool for water quality treatment and additional capacity above the permanent pool for temporary runoff storage.

Riparian – Pertaining to a stream, river or other watercourse. Also, plant communities occurring in association with any spring, lake, river, stream or creek through which waters flow at least periodically.

Riparian Buffer – A BMP that is an area of permanent vegetation along a watercourse.

Riparian Corridor – A narrow strip of land, centered on a stream or river that includes the floodplain as well as related riparian habitats adjacent to the floodplain.

Riparian Corridor Easement – An easement created for the purpose of protecting and preserving a Riparian Corridor.

Riparian Forest Buffer – A type of Riparian Buffer that consists of permanent vegetation that is predominantly native trees, shrubs and forbs along a watercourse that is maintained in a natural state or sustainably managed to protect and enhance water quality, stabilize stream channels and banks, and separate land use activities from surface waters.

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

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

SCS - U.S. Department of Agriculture, Soil Conservation Service (now known as NRCS).

Sediment – Soils or other materials transported by stormwater as a product of erosion.

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

Sediment Pollution - The placement, discharge or any other introduction of sediment into the waters of the Commonwealth occurring from the failure to design, construct, implement or maintain control measures and control facilities in accordance with the requirements of this Ordinance.

Sedimentation - The action or process of forming or depositing sediment in Waters of this Commonwealth.

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

Semi-impervious / Semi-pervious surface - A surface which prevents some infiltration of water into the ground.

Sheet Flow - Runoff which flows over the ground surface as a thin, even layer, not concentrated in a channel.

Small Project – Regulated activities that, measured on a cumulative basis from the date of enactment of this Ordinance, create new impervious areas of more than 1,000 sq. ft. and less than 5,000 sq. ft. or involve Earth Disturbance Activity of an area less than 5,000 sq. ft. and do not involve the alteration of stormwater facilities or watercourses.

Small Storm Event – A storm having a frequency of recurrence of once every two (2) years or smaller.

Soil-Cover Complex Method - A method of runoff computation developed by the SCS (now NRCS) that is based on relating soil type and land use/cover to a runoff parameter called Curve Number (CN). For more information, see "Urban Hydrology for Small WATERSHEDS", Second edition, Technical Release No. 55, SCS, June 1986 (or most current edition).

Soil Group, Hydrologic - See "Hydrologic Soil Group".

State Water Quality Requirements - The regulatory requirements to protect, maintain, reclaim, and restore water quality under Title 25 of the Pennsylvania Code, the Clean Streams Law and the Clean Water Act.

Storage – A volume above or below ground that is available to hold stormwater.

Storm event - A storm of a specific duration, intensity, and frequency.

Storm Sewer - A system of pipes and/or open channels designed to convey stormwater.

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

Stormwater Management Act - Act of October 4, 1978, P.L. 864, No. 167, as amended, 32 P.S. Section 680.1 et seq.

Stormwater Management Best Management Practices (SWM BMP) – See **BMPs**.

Stormwater Management Facility (SWM Facility) - Any structure, natural or man-made, that, due to its condition, design, or construction, conveys, stores, infiltrates/evaporates/transpires, cleans or otherwise affects stormwater runoff. Typical SWM facilities include, but are not limited to, detention and retention basins, open channels, watercourses, road gutters, swales, storm sewers, pipes, BMPs, and infiltration structures.

Stormwater Management Operation and Maintenance Plan (O & M Plan) – A plan, including a narrative, to ensure proper functioning of the SWM facilities in accordance with Article VI of this Ordinance.

Stormwater Management Site Plan (SWM Site Plan) - The Plan prepared by the Developer or his representative indicating how stormwater runoff will be managed at a particular development site according to this Ordinance.

Stream – A watercourse.

Structural BMPs – Physical devices and practices that capture and treat stormwater runoff. Structural stormwater BMPs are permanent appurtenances to the Development Site.

Structure – Any man-made object having an ascertainable stationary location on or in land or water, whether or not affixed to the land.

Subdivision – Any activity meeting the definition of subdivision in the MPC.

Swale - A low lying stretch of land which gathers or carries surface water runoff.

SWM – Stormwater Management.

SWM Site Plan – A Stormwater Management Site Plan.

Timber Operations - See Forest Management.

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

Top of streambank – First substantial break in slope between the edge of the bed of the stream and the surrounding terrain. The top of streambank can either be a natural or constructed (that is, road or railroad grade) feature, lying generally parallel to the watercourse.

Treatment Train – The sequencing of structural Best Management Practices to achieve optimal flow management and pollutant removal from urban stormwater.

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

Volume Control - SWM controls, or BMPs, used to remove a predetermined amount of runoff or the increase in volume between the pre- and post-development design storm.

Watercourse - A channel or conveyance of surface water having defined bed and banks, whether natural or artificial, with perennial or intermittent flow.

Watershed - The entire region or area drained by a watercourse.

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

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

Woodland – Land predominantly covered with trees and shrubs. Without limiting the foregoing, Woodlands include all land areas of 10,000 square feet or greater, supporting at least 100 trees per acre, so that either (i) at least 50 trees are two inches or greater in diameter at breast height, (DBH); or (ii) 50 trees are at least 12 feet in height.

ARTICLE III
STORMWATER MANAGEMENT STANDARDS

Section 301. General Requirements

A. Preparation of a SWM Site Plan is required for all regulated activities, unless preparation and submission of the SWM Site Plan is specifically exempted by Section 502 or the activity qualifies as a Small Project.

B. No regulated activities shall commence until the township issues unconditional written approval of a SWM Site Plan or Stormwater Permit unless such conditions have been granted as waivers/modifications in accordance with Section 905.B.

C. SWM Site Plans approved by the township, in accordance with Section 505, shall be on site throughout the duration of the regulated activity.

D. For all regulated activities, post-construction BMPs shall be designed, implemented, operated, and maintained to meet the purposes, design standards and requirements of this Ordinance and to meet all requirements under Chapter 102 of Title 25 of the Pennsylvania Code and the Clean Streams Law. Various BMPs and their design standards are listed in the BMP Manual. The issuance of a NPDES permit for the Development Site by DEP shall be deemed a determination by DEP that proposed post-construction BMPs meet DEP and EPA requirements. Where an NPDES permit for stormwater discharges associated with construction activities is required, issuance of an NPDES permit shall constitute satisfaction of consultation with DEP.

E. For all regulated activities, erosion and sediment control and stormwater management BMPs shall be designed, implemented, operated, and maintained to meet the purposes, and requirements of this Ordinance and to meet all requirements under Title 25 of the Pennsylvania Code and the Clean Streams Law. Various BMPs and their design standards are listed in the E&S Manual, and the BMP Manual. The approval of an erosion and sedimentation control plan by the Conservation District for the Development Site shall be deemed a determination by the Conservation District that the proposed erosion and sedimentation control BMPs meets Chapter 102 of Title 25 of the Pennsylvania Code and the Clean Streams Act requirements.

F. Developers have the option to propose a Regional Stormwater Management Plan or participate in a Regional Stormwater Management Plan developed by others. A Regional Stormwater Management Plan may include offsite volume and rate control, as appropriate and supported by a detailed design approved by the Township in accordance with Section 301.D. A Regional Stormwater Management Plan must meet all of the volume and rate control standards required by this Ordinance for the area defined by the Regional Stormwater Management Plan, but not necessarily for each individual Development Site. Appropriate agreements must be established to ensure the requirements of this ordinance and the requirements of the Regional Stormwater Management Plan are met.

G. Unless prohibited by the Conestoga Township Zoning Ordinance or any Ordinance which regulates construction and development within the areas of Conestoga Township subject to flooding, and any other applicable requirements of the Floodplain Management Act,

stormwater management facilities located in the floodplain are permitted when designed and constructed in accordance with the provisions of the BMP Manual, regulatory requirements and the requirements of this ordinance.

H. Impervious areas:

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

2. For development taking place in stages or phases, the entire development plan must be used in determining conformance with this Ordinance.

3. Any areas designed to initially be gravel or crushed stone shall be assumed to be impervious.

I. All regulated activities shall include such measures as necessary to:

1. Protect health, safety, and property;

2. Meet the water quality goals of this Ordinance by implementing measures to:

a. Protect and/or improve the function of floodplains, wetlands, and wooded areas.

b. Protect and/or improve native plant communities including those within the riparian corridor.

c. Protect and/or improve natural drainageways from erosion.

d. Minimize thermal impacts to waters of this Commonwealth.

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

3. Meet all the design standards of Sections 307 unless the applicant has obtained a modification of a design standard under Section 905.

J. The design of all stormwater management facilities over karst shall include an evaluation of measures to minimize adverse effects.

K. Infiltration BMPs 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 Ordinance. Infiltration BMPs shall include pretreatment BMPs unless shown to be unnecessary.

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

1. A minimum depth of 24 inches between the bottom of the facility and the limiting zone, unless it is demonstrated to the satisfaction of the Township that the selected BMP has design criteria which allow for a smaller separation.
2. A stabilized infiltration rate sufficient to accept the additional stormwater load and drain completely as determined by field tests conducted by the Applicant's professional designer.
    a. The stabilized infiltration rate is to be determined in the same location and within the same soil horizon as the bottom of the infiltration facility.
    b. The stabilized infiltration rate is to be determined as specified in the BMP Manual.

M. The calculation methodology to be used in the analysis of volume and peak rates of discharge shall be as required in Section 305.

N. A planting plan is required for all vegetated stormwater BMPs.

1. Native or Naturalized/Non-invasive Vegetation suitable to the soil and hydrologic conditions of the Development Site shall be used unless otherwise specified in the BMP Manual.
2. Invasive Vegetation may not be included in any planting schedule.
3. The limit of existing, native vegetation to remain shall be delineated on the plan along with proposed construction protection measures.
4. Prior to construction, a tree protection zone shall be delineated at the Dripline of the tree canopy. All trees scheduled to remain during construction shall be marked; however, where groups of trees exist, only the tress on the outside edge need to be marked. A 48 inch high snow fence or 48 inch high construction fence mounted on steel posts located 8 feet on center shall be placed along the tree protection boundary. No construction, storage of material, temporary parking, pollution of soil, or regrading shall occur within the tree protection zone.
5. All planting shall be performed in conformance with good nursery and landscape practice. Plant materials shall conform to the standards recommended by the American Association of Nurseryman, Inc. in the American Standard of Nursery Stock.
    a. Planting designs are encouraged to share planting space for optimal root growth whenever possible.
    b. No staking or wiring of trees shall be allowed without a maintenance note for the stake and/or wire removal within one year of planting.

O. Areas proposed for infiltration BMPs shall be protected from sedimentation and compaction during the construction phase to maintain maximum infiltration capacity. Staging of earthmoving activities and selection of construction equipment should consider this protection.

P. Infiltration BMPs shall not be constructed nor receive runoff from disturbed areas until the entire contributory drainage area to the infiltration BMP has achieved final stabilization.

Q. A minimum ten (10) foot wide access easement shall be provided for all stormwater facilities with tributary areas equal or greater than 1000 sq. ft. and not located within a public right-of-way. Easements shall provide for ingress and egress to a public right-of-way.

R. Drainage easements shall be provided where the conveyance, treatment, or storage of stormwater, either existing or proposed, is identified on the SWM Site Plan. Drainage easements shall be provided to contain and convey the 100-year frequency flood.

S. The Township may require additional stormwater control measures for stormwater discharges to special management areas including but not limited to:
   1. Water bodies listed as "impaired" on Pennsylvania's Clean Water Act 303(d/305(b) Integrated List.
   2. Any water body or watershed with an approved Total Maximum Daily Load (TMDL).
   3. Critical areas with sensitive resources (e.g., state designated special protection waters, cold water fisheries, carbonate or other groundwater recharge areas highly vulnerable to contamination, drainage areas to water supply reservoirs, source water protection zones, etc.)
   4. Release rates listed in the latest edition of "Blueprints, the Water Resources Element of the Lancaster County Comprehensive Plan (Act 247 and 167).

T. Roof drains and sump pumps shall be tributary to infiltration or vegetative BMPs. Use of catchment facilities for the purpose of reuse is also permitted.

U. Non-structural BMPs shall be utilized for all regulated activities unless the applicant demonstrates specific and objective reasons why non-structural BMPs cannot be used and additionally meets all requirements of Section 905 for the granting of a modification.

Section 302. Volume Controls

Volume control BMPs are intended to maintain existing hydrologic conditions for small storm events by promoting groundwater recharge and/or evapotranspiration as described in this section. Runoff volume controls shall be implemented using the *Design Storm Method* described in Subsection A below, or through continuous modeling approaches or other means as described in the BMP Manual. Small Projects may use the method described in Subsection B to design volume control BMPs.

A. The *Design Storm Method* is applicable to any size of regulated activity. This method requires detailed modeling based on site conditions.

   1. Do not increase the post development total runoff volume for all storms equal to or less than the 2-year 24-hour storm event.

2. For modeling purposes:

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

   b. When the existing project site contains impervious area, twenty percent (20%) of existing impervious area to be disturbed shall be considered meadow in good condition in the model for existing conditions.

   c. The maximum loading ratio for volume control facilities in Karst areas shall be 3:1 impervious drainage area to infiltration area and 5:1 total drainage area to infiltration area. The maximum loading ratio for volume control facilities in non-Karst areas shall be 5:1 impervious drainage area to infiltration area and 8:1 total drainage area to infiltration area. A higher ratio may be approved by the township if justification is provided. Hydraulic depth may be used as an alternative to an area based loading ratio if the design hydraulic depth is shown to be less than the depth that could result from the maximum area loading ratio

B. Volume Control for Small Projects

   1. At least the first one inch (1") of runoff from new impervious surfaces or an equivalent volume shall be permanently removed from the runoff flow – i.e. it shall not be released into the surface Waters of this Commonwealth. Removal options include reuse, evaporation, transpiration and infiltration.

C. A detailed geologic evaluation of the Development Site shall be performed in areas of carbonate geology to determine the design parameters of recharge facilities. A report shall be prepared in accordance with Section 405.A of this Ordinance.

D. Storage facilities, including normally dry, open top facilities, shall completely drain the volume control storage over a period of time not less than 24 hours and not more than 72 hours from the end of the design storm. Any designed infiltration at such facilities is exempt from the minimum 24 hour standard, i.e. may infiltrate in a shorter period of time, provided that none of this water will be discharged into Waters of this Commonwealth.

E. Any portion of the volume control storage that meets all of the following criteria may also be used as rate control storage:

   1. Volume control storage that depends on infiltration is designed according to the infiltration standards in Section 301.

   2. The volume control storage which will be used for rate control is that storage which is available within 24 hours from the end of the design storm based on the stabilized infiltration rate and/or the evapo-transpiration rate.

F. Volume control storage facilities designed to infiltrate shall avoid the least permeable Hydrologic Soil Group(s) at the Development Site.

Section 303. Rate Controls

Rate control for large storms, up to the 100-year event, is essential to protect against immediate downstream erosion and flooding.

A. Match Pre-development Hydrograph.

Applicants shall provide infiltration facilities or utilize other techniques which will allow the post-development 100 year hydrograph to match the pre-development 100 year hydrograph, along all parts of the hydrograph, for the Development Site. To match the pre-development hydrograph, the post development peak rate must be less than or equal to the pre-development peak rate, and the post development runoff volume must be less than or equal to the pre-development volume for the same storm event. A shift in hydrograph peak time of up to five minutes and a rate variation of up to 5% at a given time may be allowable to account for the timing affect of BMPs used to manage the peak rate and runoff volume. "Volume Control" volumes as given in Section 302 above may be used as part of this option.

B. Where the pre-development hydrograph cannot be matched, one of the following shall apply:

1. For areas not covered by a release rate map from an approved Act 167 Plan:

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

   * A 24 hour SCS type II storm or an IDF Curve Rational Method storm. See Table III-1 in Section 305.

2. For areas covered by a release rate map from an approved Act 167 Plan:

   For the 2, 10, 25, 50, and 100-year storm events*, the post development peak discharge rates will follow the applicable approved release rate maps.

   *A 24 hour SCS type II storm or an IDF Curve Rational Method storm. See Table III-1 in Section 305.

C. Normally dry, open top, storage facilities shall completely drain the rate control storage over a period of time less than or equal to 24 hours from the peak 100 year water surface design elevation.

D. A variety of BMPs should be employed and tailored to suit the Development Site. The following is a partial listing of BMPs which can be utilized in SWM systems for rate control where appropriate:

1. Decreased impervious surface coverage
2. Routed flow over grass
3. Grassed channels and vegetated strips.
4. Bio-retention areas (rain gardens)
5. Concrete lattice block or permeable surfaces
6. Seepage pits, seepage trenches or other infiltration structures
7. Rooftop detention
8. Parking lot detention
9. Cisterns and underground reservoirs
10. Amended soils
11. Retention basins
12. Detention basins
13. Other methods as may be found in the BMP Manual.

E. Small Projects are not required to provide for Rate Control.

Section 304. Stormwater Management Performance Standards

A. Runoff from impervious areas shall be drained to pervious areas within the Development Site, unless the site has 85% or more impervious cover and is a Redevelopment[10], in which case the portion of the site that discharges to pervious areas shall be maximized.

B. Stormwater runoff from a Development Site to an adjacent property shall flow directly into a natural drainageway, watercourse, or into an existing storm sewer system, or onto adjacent properties in a manner similar to the runoff characteristics of the pre-development flow.

C. Stormwater flows onto adjacent property shall not be created, increased, decreased, relocated, or otherwise altered without written notification of the adjacent property owner(s) by the developer. Such stormwater flows shall be subject to the requirements of this Ordinance, including the establishment of a drainage easement. Copies of all such notifications shall be included in SWM Site Plan submissions.

D. Existing on-site natural and man-made SWM Facilities shall be used to the maximum extent practicable.

E. Stormwater runoff shall not be transferred from one sub-watershed to another unless they are sub-watersheds of a common watershed that join together within the perimeter of the Development Site and the effect of the transfer does not alter the peak discharge onto adjacent lands.

F. Minimum floor elevations for all structures that would be affected by a basin, other temporary impoundments, or open conveyance systems where ponding may occur shall be two (2) feet above the 100-year water surface elevation. If basement or underground facilities are proposed, detailed calculations addressing the effects of stormwater ponding on the structure and water-proofing and/or flood-proofing design information shall be submitted for approval.

G. All stormwater conveyance facilities (excluding detention, retention, and wetland basin outfall structures) shall be designed to convey a 25 year storm event*. All stormwater conveyance facilities (excluding detention, retention, and wetland basin outfall structures) conveying water originating from offsite shall be designed to convey a 50 year storm event*. Safe conveyance of the 100-year runoff event* to appropriate peak rate control BMPs must be demonstrated in the design.

   * A 24 hour SCS Type II storm or an IDF Curve Rational Method storm.

H. Erosion protection shall be provided along all open channels, and at all points of discharge. Flow velocities from any storm sewer may not result in erosion of the receiving channel.

Section 305. Calculation Methodology

A. Any stormwater runoff calculations involving drainage areas greater than 200 acres and time of concentration (Tc) greater than 60 minutes, including on- and off-site areas, shall use generally accepted calculation techniques based on the NRCS soil-cover complex method.

B. Stormwater runoff from all Development Sites shall be calculated using either the modified rational method, a soil-cover-complex methodology, or other method acceptable to the Township. Table III-1 summarizes acceptable computation methods. 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 Development Site.

TABLE III-1 ACCEPTABLE COMPUTATION METHODOLOGIES FOR STORMWATER MANAGEMENT PLANS		
METHOD	METHOD DEVELOPED BY	APPLICABILITY
TR-20 (or commercial computer package based on TR-20)	USDA NRCS	Applicable where use of full hydrology computer model is desirable or necessary.
WinTR-55 (or commercial computer package based on TR-55)	USDA NRCS	Applicable for land development plans within limitations described in TR-55.
HEC-1 / HEC-HMS	US Army Corps of Engineers	Applicable where use of full hydrologic computer model is desirable or necessary.
Rational Method (or commercial computer package based on Rational Method)	Emil Kuichling (1889)	For development sites less than 200 acres, Tc<60 min. or as approved by the Township.
EFH2	USDA NRCS	Applicable in rural and undeveloped areas subject to the Program Limits.
Other Methods	Varies	Other methodologies approved by the Township.

C. Rainfall Values:

Soil Cover Complex Method – The Soil Conservation Service Type II, 24-hour rainfall distribution shall be used in conjunction with rainfall depths form NOAA Atlas 14 or consistent with the following:

Return Interval (year)	24-hr rainfall total (Inches)
1	2.40
2	2.90
10	4.36
25	5.43
50	6.38
100	7.48

Rational Method - The National Oceanic and Atmospheric Administration (NOAA) Atlas 14 data (see item "B" above) or PennDOT Publication 584 "PennDOT Drainage Manual," 2008 Edition, or latest, shall be used to determine the rainfall intensity in inches per hour based on the information for the 5 through 60 minute duration storm events.

D. Hydrographs may be obtained from NRCS methods such as TR-55, TR20, or from use of the "modified" or "unit hydrograph" rational methods. If "modified" or "unit hydrograph" rational methods are used, the ascending leg of the hydrograph shall have a length equal to three times the time of concentration (3xTc) and the descending leg shall have a length equal to 7 times the time of concentration (7xTc) to approximate an SCS Type II hydrograph.[11]

E. Runoff calculations shall include a hydrologic and hydraulic analysis indicating volume and velocities of flow and the grades, sizes, and capacities of water carrying structures, sediment basins, retention and detention structures and sufficient design information to construct such facilities. Runoff calculations shall also indicate both pre-development and post-development rates for peak discharge of stormwater runoff from all discharge points.

F. For the purpose of calculating pre-development peak discharges, all runoff coefficients, both on-site and off-site, shall be based on actual land use assuming summer or good land conditions. Post-development runoff coefficients for off-site discharges used to design conveyance facilities shall be based on actual land use assuming winter or poor land conditions.

G. Criteria and assumptions to be used in the determination of stormwater runoff and design of management facilities are as follows:

1. Runoff coefficients shall be based on the information contained in Appendix B-1 and B-2 if the actual land use is listed in those Appendices. If the actual land use is not listed in these Appendices, runoff coefficients shall be chosen from other published documentation, and a copy of said documentation shall be submitted with the SWM Site Plan.

2. A sample worksheet for calculating Tc is provided in Appendix B-4. Times of concentration (Tc) shall be based on the following design parameters:

   a. Sheet flow: The maximum length for each reach of sheet or overland flow before shallow concentrated or open channel flow develops is one hundred fifty (150) feet. Flow lengths greater than one hundred (100) feet shall be justified based on the actual conditions at each Development Site. Sheet flow may be determined using the nomograph in Appendix B-3, or the Manning's kinematic solution shown in the Sheet Flow section of Worksheet No. 1 in Appendix B-4.

   b. Shallow concentrated flow: Travel time for shallow concentrated flow shall be determined using Figure 3-1 from TR-55, Urban Hydrology for small watersheds, as shown in Appendix B-5.

   c. Open Channel flows: At points where sheet and shallow concentrated flows concentrate in field depressions, swales, gutters, curbs, or pipe collection systems, the travel times to downstream end of the Development Site between these design points shall be based upon Manning's Equation and/or acceptable

engineering design standards as determined by the Township Engineer.

3. The developer may use stormwater credits for Non-Structural BMPs in accordance with the BMP Manual. The allowable reduction will be determined by the Township.

4. Peak rate control is not required for off-site runoff. Off-site runoff may be by-passed around the site provided all other discharge requirements are met. If offsite runoff is routed through rate control facilities, runoff coefficients for off-site discharges used to design those rate control facilities shall be based on actual land use assuming winter or poor land conditions.

H. Times of Concentration shall be calculated based on the methodology recommended in the respective model used. Times of Concentration for channel and pipe flow shall be computed using Manning's equation. Supporting documentation and calculations must be submitted for review and approval.

Section 306. Riparian Corridors

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

B. Except as otherwise required by Chapter 102, the Riparian Corridor Easement shall be measured to be the greater of the limit of the 100 year floodplain or 35 feet from the top of streambank (on each side).

C. Minimum Management Requirements for Riparian Corridors.

1. Existing native vegetation shall be protected and maintained within the Riparian Corridor Easement.
2. Whenever practicable invasive vegetation shall be actively removed and the Riparian Corridor Easement shall be planted with native trees, shrubs and other vegetation to create a diverse native plant community appropriate to the intended ecological context of the site.

D. The Riparian Corridor Easement shall be enforceable by the township and shall be recorded in the Lancaster County Recorder of Deeds Office, so that it shall run with the land and and shall limit the use of the property located therein.

E. Any permitted use within the Riparian Corridor Easement shall be conducted in a manner that will maintain the extent of the existing one-hundred-year floodplain, improve or maintain the stream stability, and preserve and protect the ecological function of the floodplain.

F. The following conditions shall apply when public and/or private recreation trails are permitted within Riparian Corridors:
   1. Trails shall be for non-motorized use only.
   2. Trails shall be designed to have the least impact on native plant species and other sensitive environmental features.

G. Septic drainfields and sewage disposal systems shall not be permitted within the Riparian Corridor Easement and shall comply with setback requirements established under 25 Pa Code Chapter 73.

Section 307. Stormwater Management Facility Design Standards

A. Above ground storage facilities. Above ground storage facilities consist of all stormwater facilities which store, infiltrate/evaporate/transpire, clean or otherwise affect stormwater runoff and the top of which is exposed to the natural environment. Above ground storage facilities are located above the finished ground elevation. Above ground storage facilities do not include stormwater management facilities designed for conveyance or cisterns.

   (1) Design criteria. Above ground storage facilities shall comply with the design criteria in the following table:

Above-ground storage facility design criteria			
	Facility Depth		
	Less than 2 feet	2 feet to 8 feet	Greater than 8 feet
(a) Embankment Geometry			
[1] Top width (minimum)	2 feet	5 feet	8 feet
[2] Interior side slope (maximum)	2 : 1	3 : 1	5 : 1
[3] Exterior side slope (maximum)	2 : 1	3 : 1	3 : 1
(b) Embankment construction			
[1] Key trench	Not required	Required	Required
[2] Pipe collar	Not required	Required	Required
[3] Compaction density	Not required	Required	Required
(c) Internal Construction			
[1] Dewatering feature	N/A	Required	Required
[2] Pretreatment elements	Not required*	Required	Required
(d) Outlet Structure			
[1] Pipe size (minimum)	6 inches	12 inches	15 inches
[2] Pipe material	SLHDPE, PVC, RCP	SLHDPE, RCP	RCP
[3] Anticlogging devices	Required	Required	Required
[4] Antivortex design	Not required	Required	Required

[5] Watertight joints in piping?	No	Yes	Yes
(e) Spillway Requirements			
[1] Spillway freeboard (minimum)	Not required	3 inches	6 inches
[2] Width (minimum)	Not required	10 feet	20 feet
[3] Width (maximum)	Not required	50 feet	50 feet
[4] Spillway channel design	Not required	Required	Required
[5] Routing of 100 year storm	Permitted	Permitted	Permitted

*Pretreatment required for infiltration BMPs unless shown to be unnecessary.

N/A = Not applicable

SLHDPE = Smooth lined high density polyethylene pipe; PVC = Polyvinyl chloride;
RCP = Reinforced concrete pipe

(2) Facility depth.

(a) For the purposes of the design criteria, the facility depth is defined to be the depth between the bottom invert of the lowest orifice and the invert of the spillway. If there is no spillway, the top of the berm shall be used. For basins with no orifices or outlet structure, the bottom elevation of the basin shall be used.

(b) Facilities with a facility depth greater than eight feet (8 feet) shall not be permitted in residential areas.

(c) Facilities with a facility depth greater than 15 feet require a dam permit from DEP.

(3) Embankment construction.

(a) Impervious core/key trench. An impervious core/key trench, when required, shall consist of a cutoff trench (below existing grade) and a core trench (above existing grade). A key trench may not be required wherever it can be shown that another design feature, such as the use of an impermeable liner, accomplishes the same purpose.

[1] Materials. Materials used for the core shall conform to the Unified Soil Classification GC, SC, CH, or CL and must have at least 30% passing the No. 200 sieve.

[2] Dimensions.

[a] The dimensions of the core shall provide a minimum trench depth of two (2) feet below existing grade, minimum width of four (4) feet and side slope of 1H:1V or flatter.

[b] The core should extend up both abutments to the 10 year water surface elevation or six (6) inches below the emergency spillway elevation, whichever is lower.

[c] The core shall extend four (4) feet below any pipe penetrations through the impervious core. The core shall be installed along or parallel to the centerline of the embankment.

[3] Compaction.

[a] Compaction requirements shall be the same as those for the embankment to assure maximum density and minimum permeability.

[b] The core shall be constructed concurrently with the outer shell of the embankment.

[c] The trench shall be dewatered during backfilling and compaction operations.

(b) Pipe collars. All pipe collars, when required, shall be designed in accordance with Chapter 7 of the E&S Manual. The material shall consist of concrete or otherwise non-degradable material around the outfall barrel and shall be watertight.

(c) Embankment fill material. The embankment fill material shall be taken from an appropriate borrow area which shall be free of roots, stumps, wood, rubbish, stones greater than 6 inches, frozen or other objectionable materials.

(d) Embankment compaction. When required, embankments shall be compacted by sheepsfoot or pad roller. The loose lift thickness shall be nine (9) inches or less, depending on roller size, and the maximum particle size is six (6) inches or less (two-thirds of the lift thickness). Five passes of the compaction equipment over the entire surface of each lift is required. Embankment compaction to visible non-movement is also required.

(4) Internal construction.

(a) Bottom slope. The minimum bottom slope of facilities not designed for infiltration shall be one percent (1%). A flatter slope may be used if an equivalent dewatering mechanism is provided.

(b) Dewatering features. When required, dewatering shall be provided through the use of underdrain, surface device, or alternate approved by the Conestoga Township Engineer. If the facility is to be used for infiltration, the dewatering device should be capable of being disconnected and only be made operational if the basin is not dewatering within the required timeframe.

(c) Pretreatment elements. When required, pretreatment elements shall consist of forebays, or alternate approved by the Conestoga Township Engineer, to keep silt to a smaller portion of the facility for ease of maintenance.

(d) Infiltration basins. Within basins designed for infiltration, existing native vegetation shall be preserved, if possible. For existing unvegetated areas or for infiltration basins that require excavation, a planting plan shall be prepared in accordance with § 301.N and the BMP Manual which is designed to promote infiltration.

(5) Outlet configuration.

(a) For facilities with a depth of two (2) feet or greater, a type D-W endwall or riser box outlet structure shall be provided.

(b) For facilities with a depth less than two (2) feet, no outlet structure is required.

(c) All discharge control devices with appurtenances shall be made of reinforced concrete and stainless steel. Bolts/fasteners shall be stainless steel.

(6) Spillway.

(a) Material. The spillway shall be designed to provide a non-erosive, stable condition when the project is completed.

(b) Non-emergency use. Use of the spillway to convey flows greater than the 50-year design storm is permitted.

(c) Emergency use. The spillway shall be designed to convey the 100-year peak inflow.

(d) When required, freeboard shall be measured from the top of the water surface elevation for emergency use.

(7) Breach analysis. Conestoga Township may require a breach analysis based on site-specific conditions and concern of threat for downstream property. When required, the breach analysis shall be conducted in accordance with the NRCS methodology, the US Army Corps of Engineers methodology (HEC-1) or other methodologies as approved by Conestoga Township.

B. Subsurface storage facilities. Subsurface storage facilities consist of all SWM Facilities which store, infiltrate/evaporate/transpire, clean or otherwise affect stormwater runoff and the top of which is not exposed to the natural environment. Subsurface facilities are located below the finished ground elevation. Subsurface facilities do not include SWM Facilities designed for conveyance.

(1) Design criteria. Subsurface storage facilities shall comply with the design criteria in the following table:

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

*Unless otherwise determined by professional geologic evaluation.

(2) Distribution system requirements.

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

(b) Loading/balancing. The facility shall be designed to provide a means of evenly balancing the flow across the surface of the facility to be used for infiltration.

(c) Observation/access ports.

[1] For facilities with the bottom less than five (5) feet below the average grade of the ground surface, a clean-out shall be an acceptable observation port.

[2] For facilities with the bottom five (5) feet or more below the average grade of the ground surface, a manhole or other means acceptable to Conestoga Township shall be provided for access to and monitoring of the facility.

[3] The number of access points shall be sufficient to flush or otherwise clean out the system.

(3) Materials.

(a) Pipe material. Distribution system piping may be PVC, SLHDPE, or RCP.

(b) Stone for infiltration beds. The stone used for infiltration beds shall be clean washed, uniformly graded coarse aggregate (AASHTO No. 3 or equivalent approved by the Conestoga Township). The void ratio for design shall be assumed to be 0.4.

(c) Backfill material. Material consistency and placement depths for backfill shall be (at a minimum) per all applicable pipe manufacturer's recommendations, further providing it should be free of large (not exceeding 6 inches in any dimension) objectionable or detritus material. Select non-aggregate material should be indigenous to the surrounding soil material for non-vehicular areas. Backfill within vehicular areas shall comply with this section unless otherwise specified in the Conestoga Township Road Ordinance or Applicable Subdivision Regulations. Furthermore, if the design concept includes the migration of runoff through the backfill to reach the infiltration facility, the material shall be well drained, free of excess clay or clay like materials and generally uniform in gradation.

(d) Lining material. Non-woven geotextiles shall be placed on the sides and top of subsurface infiltration facilities. No geotextiles shall be placed on the bottom of subsurface infiltration facilities.

(4) Cover.

(a) When located under pavement, the top of the subsurface facility shall be a minimum of three (3) inches below the bottom of pavement subbase.

(b) Where located under vegetative cover, the top of the subsurface facility shall be a minimum of 12 inches below the surface elevation or as required to establish vegetation.

(5) Subsurface facilities shall be designed to safely convey and/or bypass flows from storms exceeding the design storm.

C. Conveyance Facilities. Conveyance facilities consist of all SWM Facilities which carry flow, which may be located either above or below the finished grade. Conveyance facilities do not include SWM Facilities which store, infiltrate/evaporate/transpire, or clean stormwater runoff.

(1) Design criteria. Conveyance facilities shall comply with the design criteria in the following table:

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

N/A = Not applicable or no criteria specified
SLHDPE = Smooth lined high density polyethylene pipe; PVC = Polyvinyl chloride;
RCP = Reinforced concrete pipe

(2) Conveyance pipes, culverts, manholes, inlets and endwalls within the public street right-of-way or proposed for dedication shall conform to the requirements of PennDOT Standards for Roadway Construction, Publication No. 72M. Conveyance pipes, culverts, manholes, inlets and endwalls which are otherwise subject to vehicular loading shall be designed for the HS-25 loading condition.

(3) Conveyance pipes.

(a) Backfill requirements. Backfill material. Material consistency and placement depths for backfill shall be (at a minimum) per all applicable pipe manufacturer's recommendations, further providing it should be free of large (not exceeding 6 inches in any dimension) objectionable or detritus material. Select non-aggregate material should be indigenous to the surrounding soil material for non-vehicular areas. Backfill within vehicular areas shall comply with this section unless otherwise specified in the Conestoga Township road/street or Applicable Subdivision Regulations.

(b) Inlets or manholes shall be placed at all points of changes in the horizontal or vertical directions of conveyance pipes. Curved pipe sections are prohibited.

(c) Access/maintenance ports. An access/maintenance port is required may either be an inlet or manhole.

(d) Watertight joints shall be provided where pipe sections are joined, except for perforated pipe installed as pavement base drain.

(e) The street crossing angle shall be measured between the pipe centerline and the street centerline.

(f) Elliptical pipe of an equivalent cross-sectional area may be substituted in lieu of circular pipe where cover or utility conflict conditions exist.

(g) The roughness coefficient (Manning "n" values) used for conveyance pipe capacity calculations should be determined in accordance with PennDOT Publication 584, *PennDOT Drainage Manual,* or per the manufacturer's specifications.

(4) Inlets.

(a) All pipes must enter inlets completely through one of the sides. No corner entry of pipes is permitted.

(b) Within the public street right-of-way, the gutter spread based on the 25-year storm shall be no greater than one half of the travel lane and have a maximum depth of three inches (3 inches) at the curb line. A parking lane shall not be considered as part of the travel lane. In the absence of pavement markings separating a travel lane from the parking lane, the parking lane shall be assumed to be seven feet (7 feet) wide if parking is permitted on the street.

(c) Flow depth within intersections. Within intersections of streets, the maximum depth of flow shall be one and one-half inches (1 ½ inches) based on the 25-year storm.

(d) Curbed streets.

[1] Inlets in streets shall be located along the curb line.

[2] Top units shall be PennDOT Type "C". The hood shall be aligned with the adjacent curb height.

(e) All inlets placed in paved areas shall have heavy duty bicycle-safe grating consistent with PennDOT Publication 72M, latest edition. A note to this effect shall be added to the SWM Site Plan or inlet details therein.

(f) Inlets, junction boxes, or manholes greater than five feet (5 feet) in depth shall be equipped with ladder rungs and shall be detailed on the SWM Site Plan.

(5) Swales.

(a) A swale shall be considered as any man-made ditch designed to convey stormwater directly to another SWM Facility or surface waters.

(b) Inlets within swales shall have PennDOT Type "M" top units or equivalent approved by the Conestoga Township engineer.

(c) Swale capacities and velocities shall be computed using the Manning equation using the following design parameters:

[1] Vegetated swales.

[a] The first condition shall consider swale stability based upon a low degree of retardance ("n" = 0.03);

[b] The second condition shall consider swale capacity based upon a higher degree of retardance ("n" = 0.05); and

[c] All vegetated swales shall have a minimum slope of 1% unless otherwise approved by the Conestoga Township Engineer.

[2] The "n" factors to be used for paved or riprap swales or gutters shall be based upon accepted engineering design practices, as approved by the Conestoga Township Engineer.

(d) All swales shall be designed to maximize infiltration and concentrate low flows to minimize siltation and meandering, unless geotechnical conditions do not permit infiltration.

(6) Culverts. In addition to the material requirements in this section, culverts designed to convey Waters of the Commonwealth may be constructed with either a corrugated metal arch or a precast concrete culvert.

(7) Level spreaders.

(a) Shall discharge at existing grade onto undisturbed vegetation.

(b) Discharge at a depth not exceeding 3.0 inches for a 50-year, 24-hour design storm.

(8) Energy dissipaters. Energy dissipaters shall be designed in accordance with the requirements in the E&S Manual.

(9) End treatments.

(a) Where the connecting pipe has a diameter 18 inches or greater, headwalls and endwalls shall be provided with a protective barrier device to prevent entry of the storm sewer pipe by unauthorized persons. Such protection devices shall be designed to be removable for cleaning.

(b) Headwalls and endwalls shall be constructed of concrete.

(c) Flared end sections shall be of the same material as the connecting pipe and be designed for the size of the connecting pipe.

D. SWM Facilities which qualify as a dam per DEP regulations or facilities deemed a potential threat to the life, safety or welfare of the general public shall be subject to the following requirements:

(1) SWM Facilities which qualify as a dam per DEP regulation shall obtain the required permit through DEP and design the SWM Facility in accordance with DEP standards.

(2) Additional requirements and analysis may be required by the Township to prove that the proposed SWM Facility has been designed to limit the potential risk to the life, safety or welfare of the general public.

ARTICLE IV
STORMWATER MANAGEMENT SITE PLAN REQUIREMENTS

Section 401. General Plan Requirements

A. The SWM Site Plan shall consist of a narrative and all applicable calculations, maps, plans and supplemental information necessary to demonstrate compliance with this Ordinance.

B. All landowners of land included in the SWM Site Plan shall be required to execute all applications and final documents.

C. All SWM Site Plans shall be prepared by a Qualified Person.

D. Where the regulated activity constitutes subdivision or land development as hereinabove defined, the SWM Site Plan shall be submitted with and form an integral part of the plans required under the applicable Subdivision and Land Development Ordinance.

Section 402. Drafting Standards

A. The Plan should be clearly and legibly drawn.

B. If the Plan is prepared in two (2) or more drawing sheets, a key map showing the location of the sheets and a match line shall be placed on each sheet.

C. Each sheet shall be numbered to show the relationship to the total number of sheets in the Plan (e.g. Sheet 1 of 5).

D. Drawings or maps of the project area shall be drawn at 1" = 50' or larger scale (i.e. 1" = 40', 1" = 30', etc.) and shall be submitted on 24-inch x 36-inch sheets.

E. SWM Site Plans shall be prepared in a form that meets the requirements for recording for the Office of the Recorder of Deeds of Lancaster County.

F. The total Development Site boundary and size with distances marked to the nearest foot and bearings to the nearest degree

Section 403. SWM Site Plan Information

The following items shall be included in the SWM Site Plan:

A. The date of the SWM Site Plan and latest revision, graphic scale, written scale and North arrow.

B. The name of the development, the name and address of the owner of the property, and the name of the individual or firm preparing the Plan.

C. The file or project number assigned by the firm that prepared the Plan.

D. A statement, signed by the landowner, acknowledging the SWM Facilities to be permanent fixtures that cannot be altered or removed unless a revised Plan is approved by the Township.

E. The following signature block for the Townhip:

Conestoga Township SWM Site Plan Approval Certification

At a meeting on _____, 20____, the Conestoga Township Board of Supervisors approved this project, and all conditions have been met. This approval includes the complete set of plans and information that are filed with the Township in File No. _____, based upon its conformity with the standards of the Conestoga Township Storm Water Management Ordinance.

_____ _____

_____ _____

_____ _____

F. For SWM facilities located off-site,
   1. A note on the Plan referencing a recorded Stormwater Operation and Maintenance (O&M) Agreement that indicates the location and responsibility for maintenance of the off-site facilities.
   2. All off-site SWM Facilities shall meet the performance standards specified in this Ordinance.

G. A note informing the owner that the Township shall have the right of entry for the purposes of inspecting all stormwater conveyance, treatment, or storage facilities.

H. A location map, drawn to a scale of a minimum of one inch equals two thousand feet (1" = 2,000'), relating the Plan to municipal boundaries, at least two (2) intersections of road centerline or other identifiable landmarks.

I. Existing Features
   1. In areas of disturbance, contours at intervals of one (1) or two (2) feet. In areas of steep slopes (greater than 15 percent) and areas undisturbed, five-foot contour intervals may be used.
   2. The locations of all existing utilities (including on lot disposal systems and wells), sanitary sewers, and water lines and associated easements.
   3. Physical features including flood hazard boundaries, wetlands, sinkholes, streams, lakes, ponds and other waterbodies, existing drainage courses, karst features, areas of native vegetation including trees greater than 6" diameter at breast height,

woodlands, other environmentally sensitive areas and the total extent of the upstream area draining through the Development Site

4. An overlay showing soil names and boundaries
5. All existing man-made features within two hundred (200) feet of the Development Site boundary.

J. Proposed Features

1. Changes to the land surface and vegetative cover, including final proposed contours at intervals of one (1) or two (2) feet in areas of disturbance. In areas of steep slopes (greater than 15 percent) and areas undisturbed, five-foot contour intervals may be used.
2. Proposed structures, roads, paved areas, buildings and other impervious and semi-impervious areas
3. The location of any proposed on-lot disposal systems, replacement drainfield easements, and water supply wells.
4. A note indicating existing and proposed land use(s)
5. Plan and profile drawings of all proposed SWM Facilities, including BMPs, drainage structures, pipes, open channels, and swales.
6. Where pervious pavement is to be installed, pavement material and construction specifications shall be included
7. The location of all existing and proposed easements, including drainage easements, access easements and riparian corridor easements.
8. A planting plan shall be provided for all vegetated BMPs in accordance with Section 301.N.

K. The location of all E&S control facilities.

Section 404. Additional Information

A. General description of the Development Site, including a description of existing natural and hydrologic features and any environmentally sensitive areas.

B. General description of the overall SWM concept for the project, including a description of permanent SWM techniques, non-structural BMPs to be employed and construction specifications of the materials to be used for structural SWM Facilities. The narrative shall include a description of any treatment trains and how the Facilities are meant to function with each other to manage stormwater runoff.

C. The effect of the project (in terms of runoff volumes, water quality and peak flows) on adjacent properties and on any existing municipal SWM Facilities that may receive runoff from the Development Site.

D. Complete hydrologic, hydraulic, and structural computations for all SWM Facilities.

E. Expected project time schedule.

Section 405. Supplemental Information

A. In areas of carbonate geology, a detailed geologic evaluation prepared by a registered Professional Geologist (PG) must be submitted as part of the SWM Site Plan. The report shall include, but not be limited to the following:

1. The location of the following karst features;

   a. sinkholes
   b. closed depressions
   c. lineaments in carbonate areas
   d. fracture traces
   e. caverns
   f. intermittent lakes
   g. ephemeral disappearing streams
   h. bedrock pinnacles (surface or subsurface)

2. A plan for remediation of any identified karst features.

3. Impacts of SWM Facilities on adjacent karst features, and impacts of karst features on adjacent SWM Facilities.

B. An E&S Plan, including all approvals, as required by Chapter 102, shall be provided to the township prior to unconditional final plan approval.

C. For any activities that require a DEP Joint Permit Application and are regulated under Chapter 105 or Chapter 106, require a Penn DOT Highway Occupancy Permit, or require any other permit under applicable state or federal regulations, the permit(s) shall be part of the SWM Site Plan and must be obtained prior to unconditional final plan approval.

D. An Operation and Maintenance (O&M) Plan that addresses the requirements of Section 603.

ARTICLE V
PLAN PROCESSING PROCEDURES

Section 501. Small Projects

A. Anyone proposing a Small Project, shall submit Three (3) copies of the Small Project Application to Conestoga Township.

B. A complete Small Project Application shall include:
   1. Small Project Application Form (Appendix A)
   2. Small Project Sketch Plan including the following:
      a. Name and address of landowner (and/or) developer
      b. Date of Small Project Application submission.
      c. Name of individual and/or firm that prepared the sketch if different than the landowner and/or developer
      d. Location and square footage of proposed impervious area or land disturbance
      e. Approximate footprint and location of all structures on adjacent properties if located within 50 feet of the proposed impervious area or land disturbance
      f. Approximate location of existing stormwater management facilities if present
      g. Location and description of proposed stormwater management facilities
      h. Direction of proposed stormwater discharge (e.g. with arrows)
      i. Scale and north arrow
   3. Filing fee (in accordance with the Township's current fee schedule).

C. The Small Project Application shall be submitted in a format that is clear, concise, legible, neat and well organized.

Section 502. Exemptions from Plan Submission Requirements

A. The following regulated activities are specifically exempt from the SWM Site Plan preparation and submission requirements articulated in Section 301.A and Articles IV and V of this Ordinance:

   1. Agricultural activity (see definitions) provided the activities are performed according to the requirements of Chapter 102.

   2. Forest management and timber operations (see definitions) provided the activities are performed according to the requirements of Chapter 102.

   3. Conservation Practices being installed as part of the implementation of a Conservation Plan written by an NRCS certified planner.

   4. The installation of 1,000 or fewer square feet of Impervious Surface coverage proposed after the effective date of this Ordinance; provided that the activities meet the criteria of Section 502.C below and are conducted in accordance with all requirements of this Ordinance.

   5. Domestic landscape and/or vegetable gardening.

B. The Township may deny or revoke any exemption pursuant to this Section at any time for any project that the Township believes may pose a threat to public health, safety, property or the environment.

C. An Applicant proposing the cumulative installation of 1,000 square feet or less of Impervious Surface coverage may be exempt from the design, plan submittal, and processing requirements of Articles III, IV, and V of this Ordinance if the proposal meets the criteria in the Section 502.C. No person or activity is exempted from compliance with Section 605 and Articles VII, VIII, and IX of this Ordinance.

1. Any Applicant desiring exemption from design, plan submission, and plan processing requirements shall complete an application for exemption in the form set forth in Appendix D and pay any applicable filing fee.

2. The Applicant for exemption under this Section 502.C shall provide the township with all information necessary for the township to determine that:

   a. There shall be no disturbance of land within Floodplains, Wetlands, Environmentally Sensitive Areas, Riparian Forest Buffers.
   b. No Impervious Surface coverage shall be installed and no grading or excavation shall be conducted within any existing drainage or Stormwater easement created by or shown on any recorded plan.
   c. The Applicant shall minimize soil disturbance, take steps to minimize Erosion during construction activity, and promptly reclaim all disturbed areas with topsoil and vegetation.
   d. The Applicant shall take steps that Runoff be directed to Pervious Areas on the subject property. No Runoff shall be directed onto an abutting street or neighboring property.
   e. The proposed Impervious Surface shall not adversely impact any existing known problem areas or downstream property owners or the quality of Runoff entering any Municipal Separate Storm Sewer system.
   f. The Applicant shall comply with the erosion and sediment control requirements of Chapter 102 and the proposed Impervious Surface shall not create accelerated Erosion and Sedimentation.

3. If the proposed activity does not meet all of the criteria set forth in Section 502.C.2 above, the Applicant shall follow the Small Project processing procedure in Section 501.

4. No Applicant and no activity is exempt from complying with any state or federal requirements applicable if the subject property is located in a High Quality (HQ) or Exceptional Value (EV) watershed.

5. No Applicant and no activity shall violate or cause to be violated: the Federal Clean Water Act or any regulation issued thereunder, an NPDES permit, any recorded Stormwater Management or Operations and Maintenance Agreement, or any requirement applicable to a Municipal Separate Storm Sewer System.

Section 503. Pre-Application Meeting

Applicants are encouraged to schedule a pre-application meeting to review the overall stormwater management concept with the Conestoga Township staff/engineer. The pre-application meeting is not mandatory and shall not constitute formal filing of a plan with the Township. Topics discussed may include the following;

- Available geological maps, plans and other available data.
- Findings of the site analysis including identification of any environmentally sensitive areas, wellhead protection areas, riparian corridors, hydrologic soil groups, existing natural drainageways, karst features, areas conducive to infiltration to be utilized for volume control, etc.
- Results of infiltration tests.
- Applicable Subdivision Regulations and/or Zoning Ordinance provisions.
- The conceptual project layout, including proposed structural and non-structural BMPs.

Section 504. Stormwater Management Site Plan Submission

A. When a SWM Site Plan is required, the Applicant shall submit the following to the Township:
   1. Ten (10) copies of the SWM Site Plan prepared in accordance with the requirements of Article IV of this Ordinance.
   2. Two (2) copies of all supplemental data.
   3. A filing fee in accordance with Conestoga Township's current fee schedule.

B. The SWM Site Plan shall be submitted in a format that is clear, concise, legible, neat and well organized.

C. The Applicant is responsible for submitting plans to any other agencies such as the Lancaster County Planning Commission, Lancaster County Conservation District, PennDOT, DEP, etc. when permits from these agencies are required. Final approval shall be conditioned upon the Applicant obtaining all necessary permits.

D. Incomplete submissions as determined by the Township or its designee, shall be returned to the Applicant within 7 days, along with a statement that the submission is incomplete, and stating the deficiencies found. Otherwise, the application shall be deemed accepted for filing as of the date of submission. Acceptance of the application shall not, however, constitute an approval of the plan or a waiver of any deficiencies or irregularities. The Applicant may appeal the Township's decision not to accept a particular application in accordance with Section 805 of this Ordinance.

E. At its sole discretion and in accordance with this Article, when a SWM Site Plan is found to be deficient, the Township may either disapprove the submission and require

a resubmission, or in the case of minor deficiencies, the Township may accept submission of revisions.

Section 505. Municipal Review

A. When the regulated activity constitutes a Subdivision or Land Development, the SWM Site Plan and Subdivision/Land Development Plan shall be processed concurrently according to the plan processing procedure outlined in the Applicable Subdivision Regulations.

B. When the regulated activity constitutes a Small Project, the Township shall review and take action on the Small Project Application within fifteen (15) days of filing.

C. When the regulated activity does not constitute a Subdivision or Land Development or Small Project the Township Engineer shall review the SWM Site Plan for conformance with the provisions of this ordinance.

D. Following receipt of the Township Engineer's report and within ninety (90) days following the date of the first regular meeting of the Board of Supervisors after the date the application is filed, the Board of Supervisors will schedule the SWM Site Plan application for action at a regularly scheduled Public Meeting.

E. Within fifteen (15) days of the meeting at which the SWM Site Plan application is acted upon by the Board of Supervisors, written notice of the Board of Supervisor's action shall be sent to the following individuals:

1. Landowner or his agent.
2. Applicant.
3. Firm that prepared the Plan.
4. Lancaster County Planning Commission.
5. Lancaster County Conservation District.

F. If the Township disapproves the SWM Site Plan, the township will state the reasons for the disapproval in writing. The Township also may approve the SWM Site Plan with conditions and, if so, shall provide the acceptable conditions for approval in writing. Such conditional approval shall be contingent upon the Applicant's written acceptance of the conditions.

Section 506. Revision of Plans

A. Revisions to a SWM Site Plan after submission but before Township action shall require a re-submission of the modified SWM Site Plan consistent with Section 504 of this Ordinance and be subject to review as specified in Section 505 of this Ordinance.

B. For the purposes of review deadlines, each resubmission required under Section 506.A (after submission but before approval) shall constitute a new submission for the purposes of time limits as set forth in the MPC and this ordinance.

C. Any substantial revisions to a SWM Site Plan after approval shall be submitted as a new plan to the Township, accompanied by the applicable Review Fee.

Section 507. Authorization to Construct and Term of Validity

Approval of a SWM Site Plan shall be valid for a period not to exceed 5 years. This time period shall commence on the date that the Township approves the SWM Site Plan. If a Certificate of Completion as required by Section 508 of this Ordinance has not been submitted within the specified time period, then the Township may consider the SWM Site Plan disapproved and may revoke any and all permits issued by the Township. SWM Site Plans that are considered disapproved by the Township may be resubmitted in accordance with Section 504 of this Ordinance.

Section 508. Certificate of Completion

A. At the completion of the project, and as prerequisite for the release of the Financial Security, the applicant shall provide Certification of Completion from an Engineer, Landscape Architect, Surveyor or other qualified person verifying that all permanent SWM facilities have been constructed according to the Plans and specifications and approved revisions thereto.

B. Upon receipt of the Certificate of Completion, and prior to release of the remaining Financial Security the Township shall conduct a final inspection to certify compliance with this Ordinance.

Section 509. Plan Recordation

A. Upon completion of the plan improvements the applicant shall submit an As-Built Plan for recordation in the Office of the Recorder of Deeds. The As-Built Plan must show the final design specifications for all stormwater management facilities and be sealed by a registered professional engineer. When a digital submission of an As-Built Plan is required, all coordinates as depicted on the plan shall be based on the PA South Zone State Plane Coordinate System (NAD83 for horizontal and NAVD88 for vertical).

B. Concurrently with the recordation of the As-Built Plan, the applicant shall submit the SWM Site Plan for recordation in the Office of the Recorder of Deeds, unless the Site Plan has already been recorded.

ARTICLE VI
OPERATION AND MAINTENANCE (O&M)

Section 601. Responsibilities of Developers and Landowners

A. The Landowner, successor and assigns shall maintain all SWM Facilities in good working order in accordance with the approved O & M Plan.

B. The Landowner shall convey to the Township easements to assure access for inspections and maintenance, if required.

C. The Landowner shall keep on file with the Township the name, address and telephone number of the person or company responsible for maintenance activities; in the event of a change, new information will be submitted to the Township within ten (10) days of the change.

D. Enumerate permanent SWM Facilities as permanent real estate appurtenances and record as deed restrictions or easements that run with the land.

E. The record owner of the Development Site shall sign and record an Operation and Maintenance (O&M) Agreement covering all SWM Facilities, including riparian buffers and riparian forest buffers, which are to be privately owned. Said agreement, designated as Appendix C, is attached and made part hereto. The O&M Plan and Agreement shall be recorded as a restrictive covenant agreement that runs with the land.

Section 602. Operation and Maintenance Agreements

A. The Operation and Maintenance Agreement shall be subject to the review and approval of the Township solicitor and Board of Supervisors.

B. The Township is exempt from the requirement to sign and record an O&M agreement.

Section 603. Operation and Maintenance (O&M) Plan Contents

A. The O&M Plan shall clearly establish the operation and maintenance necessary to ensure the proper functioning of all temporary and permanent stormwater management facilities and erosion and sedimentation control facilities.

B. The following shall be addressed in the O&M Plan:
   1. Description of maintenance requirements, including, but not limited to, the following:
      a. Regular inspection of the SWM Facilities. To assure proper implementation of BMPs, maintenance and care SWM BMPs should be inspected by a qualified person, which may include the Landowner, or the Landowner's designee, according to the following minimum frequencies:
         i. Annually for the first 5 years.

ii. Once every 3 years thereafter.
iii. During or immediately after the cessation of a 10-year or greater storm.
iv. As specified in the O&M Agreement pursuant to Section 602.

b. All pipes, swales and detention facilities shall be kept free of any debris or other obstruction and in original design condition.
c. Removal of silt from all permanent structures which trap silt or sediment in order to keep the material from building up in grass waterways, pipes, detention or retention basins, infiltration structures, or BMPs, and thus reducing their capacity to convey or store water.
d. Re-establishment of vegetation of scoured areas or areas where vegetation has not been successfully established. Selection of seed mixtures shall be subject to approval by the Township.

2. Riparian forest buffer management plan prepared in accordance with Chapter 102 §14(b)(4) if required.

3. Identification of a responsible individual, corporation, association or other entity for ownership and maintenance of both temporary and permanent SWM and erosion and sedimentation control facilities.

4. Establishment of suitable easements for access to all facilities.

Section 604. Maintenance of Facilities Accepted by the Township

A. The Township reserves the right to accept or reject any proposal to dedicate ownership and operating responsibility of any SWM Facilities to the township.

B. If SWM Facilities are accepted by the Township for dedication, the landowner/developer shall be required to pay a specified amount to the Township Stormwater Maintenance Fund to defray costs of periodic inspections and maintenance expenses. This fee shall be provided to the Township prior to unconditional plan approval. The amount of the deposit shall be determined as follows subject to the approval of the Board of Supervisors:

1. The deposit shall cover the estimated costs for maintenance and inspections for twenty-five (25) years. The Township will establish the estimated costs according to the O&M requirements outlined in the approved O&M Plan.

2. The amount of the deposit to the fund shall be converted to present worth of the annual series values.

3. If a storage facility is proposed that also serves as a recreation facility (e.g. ballfield, lake), the Township may reduce or waive the amount of the maintenance fund deposit based upon the value of the land for public recreation purpose.

C. Maintenance shall be conducted as necessary to provide for the continued functioning of the facility. Costs of inspections, maintenance and repairs are recoverable from the Township Stormwater Maintenance Fund.

Section 605. Maintenance of Existing Facilities / BMPs

SWM Facilities existing on the effective date of this Ordinance, which have not been accepted by the Township or for which maintenance responsibility has not been assumed by a private entity such as a homeowners' association shall be maintained by the individual Landowners. Such maintenance shall include at a minimum those items set forth in Section 603.B.1 above. If the Township determines at any time that any permanent SWM facility has been eliminated, altered, blocked through the erection of structures or the deposit of materials, or improperly maintained, the condition constitutes a nuisance and the Township shall notify the Landowner of corrective measures that are required, and provide for a reasonable period of time, not to exceed 30 days, within which the Landowner shall take such corrective action. If the Landowner does not take the required corrective action, the Township may either perform the work or contract for the performance of the work and bill the Landowner for the cost of the work plus a penalty of 10% of the cost of the work. If such bill is not paid by the Landowner within 30 days, the Township may file a municipal claim against the property upon which the work was performed in accordance with the applicable laws. The Township shall have the right to choose among the remedies and may use one or more remedies concurrently.

ARTICLE VII
FEES AND EXPENSES

Section 701. General

The Township may include all costs incurred in the fees charged to an Applicant.

Section 702. Expenses Covered by Fees

The fees may include, but not be limited to, costs for the following:

A. Administrative and clerical costs.

B. Review of the SWM Site Plan.

C. Review of the Stormwater Operation and Maintenance Plan and Stormwater Agreement by the Township Solicitor/Staff.

D. Inspections.

E. Any additional work required to enforce any provisions of this Ordinance, correct violations, and assure proper completion of stipulated remedial actions.

ARTICLE VIII
PROHIBITIONS

Section 801. Prohibited Discharges and Connections

A. The following connections are prohibited, except as provided in Section 801.D below.

1. Any drain or conveyance, whether on the surface or subsurface, that allows any non-stormwater discharge including sewage, process wastewater, and wash water to enter a municipal separate storm sewer (if applicable), or waters of this Commonwealth, and any connections to the storm sewer from indoor drains and sinks; and

2. Any drain or conveyance connected from a commercial or industrial land use to the municipal separate storm sewer (if applicable) which has not been documented in plans, maps, or equivalent records, and approved by the Township.

B. No person shall allow, or cause to allow, discharges into surface waters of this Commonwealth which are not composed entirely of stormwater, except (1) as provided in Section 801.D below and (2) discharges allowed under a state or federal permit.

C. No person shall place any structure, fill, landscaping or vegetation into a SWM Facility or within a drainage easement that will limit or diminish the functioning of the SWM Facility in any manner.

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

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

E. In the event that the Township or DEP determines that any of the discharges identified in Section 801.D above significantly contribute to pollution of the waters of this Commonwealth, the Township or DEP will notify the responsible person(s) to cease the discharge.

Section 802. Alteration of SWM BMPs

No person shall modify, remove, fill, landscape, or alter any SWM BMPs, facilities, areas, or structures without the written approval of the Township.

ARTICLE IX
ENFORCEMENT AND PENALTIES

Section 901. Right-of-Entry

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

Section 902. Enforcement

The Board of Supervisors is hereby authorized and directed to enforce all of the provisions of this ordinance.

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

   1. Noncompliance with or failure to implement any provision of the approved SWM Site Plan or O&M Agreement.

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

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

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

   1. The Township has inspected and approved the corrections to the violation that caused the suspension;

   2. The Township is satisfied that the violation has been corrected.

Section 903. Violations and Penalties

A. Any person who or which has violated any provisions of this Ordinance, shall, upon a judicial determination thereof, be subject to civil judgment for each such violation of not less than Two Hundred and 00/100 dollars ($200.00), or more than One Thousand and 00/100 dollars ($1000.00), for each violation, recoverable with costs. Each day that a violation occurs shall constitute a separate offense. All fines shall be paid to Conestoga Township.

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

Section 904. Appeals

A. Any person aggrieved by any administrative action of Conestoga Township may appeal to the Conestoga Township Board of Supervisors within 30 days of that action. Any such appeal shall be governed by the procedures of Article V of the Local Agency Law, 2 Pa. C.S.A. 501 et seq.

B. Any person aggrieved by any decision of Conestoga Township Board of Supervisors may appeal to the Lancaster County Court of Common Pleas, in accordance with Article VII of Local Agency Law, 2 Pa. C.S.A. 701 et seq. the Local Agency Law, within 30 days of that decision.

Section 905. Modification of Ordinance Provisions

A. The provisions of this Ordinance not relating to water quality are intended as minimum standards for the protection of the public health, safety, and welfare. The Township reserves the right to modify or to extend them conditionally in individual cases as may be necessary in the public interest; provided, however, that such variation shall not have the effect of nullifying the intent and purpose of this Ordinance, and that the applicant shows that to the satisfaction of the Township that the applicable regulation is unreasonable, or will cause undue hardship, or that an alternative proposal will allow for equal or better results. The list of such modifications, along with an explanation of and justification for each modification, shall be included on the plan. This section does not apply during an enforcement action.

B. In granting waivers/modifications for provisions of this Ordinance not relating to water quality, the Board of Supervisors may impose such conditions as will, in its judgment, secure substantially the objectives of the standards and requirements of this Ordinance.

ARTICLE X
REFERENCES

1. 25 Pennsylvania Code, Chapter 102 Erosion and Sediment Control

2. Minnesota Pollution Control Agency

3. Code of Federal Regulations – Title 44: Emergency Management and Assistance, §9.4 Definitions

4. *25 Pa.Code Chapter 105*

5. Based on definition in Wisconsin Department of Natural Resources Administrative Rule NR 151.006.

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

7. City of Jacksonville website, http://www3.coj.net/Departments/CityFees/Glossary.aspx

8. Lancaster County Model Subdivision and Land Development Ordinance.

9. Pennsylvania Department of Environmental Protection. No. 363-2134-008 (March 2012), as amended and updated. *Erosion and Sediment Pollution Control Program Manual.* Harrisburg, PA.

10. CSN Technical Bulletin No. 5, Stormwater Design for High Intensity Redevelopment Projects in the Chesapeake Bay Watershed, version 2.0. Chesapeake Stormwater Network, January 5, 2011 – page 43.

11. "Penn State Urban Hydrology Model User Manual" by Thomas A. Seybert, PE, David F. Kibler, PE, and Elizabeth I. White, PE, August 1993 page 70 and VT/PSUHM help screen.

12. 25 Pa. Code, Chapter 71 Administration of Sewage Facilities Planning Program, § 71.1

DULY ORDAINED AND ENACTED this _____ day of _____, 20___, by the Board of Supervisors of the Township of Conestoga, Lancaster County, Pennsylvania, in lawful session duly assembled.

TOWNSHIP OF CONESTOGA
Lancaster County, Pennsylvania

Attest:_____
By:_____
(Assistant) Secretary (Vice) Chairman
Board of Supervisors

[TOWNSHP SEAL]

APPENDIX A
SMALL PROJECT APPLICATION

File Number_____ Date Received _____

Submitted Fees $_____ Approval of Application Date _____

Project Street Address: _____

Project Name: _____

Owner's Name and Address: _____

Phone# / Fax# / Email: _____

Please list the date of any previous Small Project Applications for the subject property:

_____

Proposed Activity:

[ ] Removal of ground cover, grading, filling or excavation of an area less than 5,000 square feet

Total area of land disturbance: _____ sq. ft.

Type of Regulated Activity (check all that apply):

[ ] Removal of ground cover
[ ] Grading
[ ] Filling
[ ] Excavation
[ ] Other earth disturbance activity (please describe)

_____

[ ] Addition of Impervious Surface (more than 1,000 SF but less than 5,000 SF)

Type of new impervious surface: [ ] driveway, [ ] shed, [ ] garage, [ ] deck, [ ] walkway,

[ ] other (describe) _____

Total new impervious surface proposed for construction: _____ sq. ft.

Are you removing existing impervious as part of this project?

[ ] No
[ ] Yes – Total area of existing Impervious to be removed _____ sq. ft.

Check all items below that will be impacted by the project:

_____Mature trees
_____Sinkholes
_____Water wells
_____Septic drainfields
_____Alternate septic drainfields
_____Creeks, streams, wetlands, or ponds
_____Existing stormwater management facility (basin, swale, etc.)
_____Easements

Small Project Application Pg. 2

Total runoff volume to be permanently removed/managed on site from attached calculation worksheet:_____ gallons or _____ cubic feet

Proposed Stormwater Management Controls (Best Management Practice):

_____ Rain Garden
_____ Infiltration Trench
_____ Cistern
_____ Rain Barrel
_____ Other (describe) _____

Sketch

Provide a sketch of the proposed additional impervious area or land disturbance. Include the following on the sketch:

- Property boundary
- Location and approximate footprint of existing structures (buildings, patios, driveways, etc.)
- Approximate location of any of the following features which will be impacted by the project:
  - Mature trees
  - Sinkholes
  - Water wells
  - Septic drainfields
  - Alternate septic drainfields
  - Creeks, streams, wetlands, ponds
  - Existing stormwater management facilities (basins, swales, etc.)
- Location and approximate footprint of proposed impervious area or land disturbance.
- Approximate footprint and location of all structures on adjacent properties if located within fifty feet (50') of the proposed impervious area or land disturbance
- Location and description of proposed stormwater management facilities (e.g. rain gardens, swales, rain barrels, etc.)
- Direction of proposed stormwater discharge (e.g. with arrows)
- Scale and north arrow

Person/Firm to be completing work: _____
Phone# / Fax# / Email: _____

Name of Person Submitting this Application: _____
Signature: _____
Date: _____

Small Project Application Calculation Worksheet

The applicant may use the following to calculate the amount of runoff which must be managed in accordance with Section 302.B of this Ordinance.

Project Name: _____

Owner Name: _____

Proposed Additional Impervious Area: _____ square feet

Impervious Area Calculations

Calculate the amount of runoff to be permanently removed (managed on site through reuse, evaporation, transpiration or infiltration):

Additional impervious area ÷ 12 = Permanently Removed Runoff Volume (PRV)

_____ square feet of additional impervious ÷ 12 = _____cubic feet PRV
_____ cubic feet x 7.48 gallons per cubic feet = _____ gallons PRV

EXAMPLE

Small Project Application Calculation Worksheet

Project Name: Jane Doe (20 x 45' garage)

Owner Name: Jane Doe

Proposed Additional Impervious Area: 900 square feet

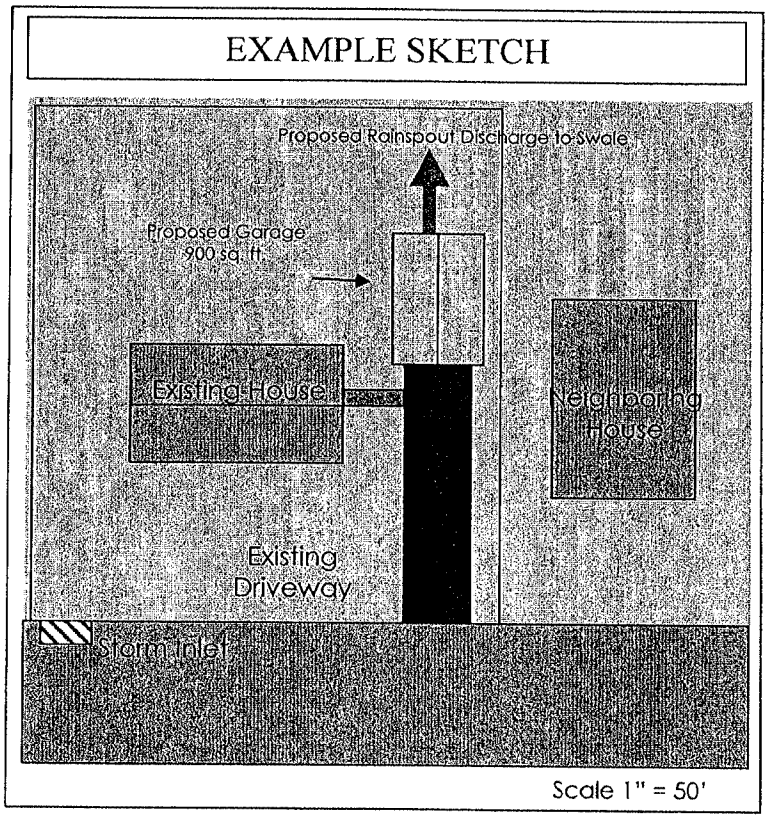
Impervious Area Calculations

Calculate the amount of runoff to be permanently removed (managed on site through reuse, evaporation, transpiration or infiltration) using the following formula:

Additional impervious area ÷ 12 = Permanently Removed Runoff Volume (PRV)

900 square feet of additional impervious ÷ 12 = 75 cubic feet PRV

75 cubic feet x 7.48 gallons per cubic feet = 561 gallons PRV



APPENDIX NO. B-1

RUNOFF COEFFICIENTS "C" FOR
RATIONAL FORMULA

TABLE 5.2
Runoff Coefficients for the Rational Equation

LAND USE	A Soils[1]			B Soils[1]			C Soils[1]			D Soils[1]		
	< 2%	2 - 6%	>6%	< 2%	2 - 6%	>6%	< 2%	2 - 6%	>6%	< 2%	2 - 6%	>6%
Cultivated land	0.08	0.13	0.16	0.11	0.15	0.21	0.14	0.19	0.26	0.18	0.23	0.31
Pasture	0.12	0.20	0.30	0.18	0.28	0.37	0.24	0.34	0.44	0.30	0.40	0.50
Meadow	0.10	0.16	0.25	0.14	0.22	0.30	0.20	0.28	0.36	0.24	0.30	0.40
Forest	0.05	0.08	0.11	0.08	0.11	0.14	0.10	0.13	0.16	0.12	0.16	0.20
Residential lot size 1/8 acre	0.25	0.28	0.31	0.27	0.30	0.35	0.30	0.33	0.38	0.33	0.36	0.42
Residential lot size 1/4 acre	0.22	0.26	0.29	0.24	0.29	0.33	0.27	0.31	0.36	0.30	0.34	0.40
Residential lot size 1/3 acre	0.19	0.23	0.26	0.22	0.26	0.30	0.25	0.29	0.34	0.28	0.32	0.39
Residential lot size 1/2 acre	0.16	0.20	0.24	0.19	0.23	0.28	0.22	0.27	0.32	0.26	0.30	0.37
Residential lot size 1 acre	0.14	0.19	0.22	0.17	0.21	0.26	0.20	0.25	0.31	0.24	0.29	0.35
Industrial	0.67	0.68	0.68	0.68	0.68	0.69	0.68	0.68	0.69	0.69	0.69	0.70
Commercial	0.71	0.71	0.72	0.71	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72
Streets	0.70	0.71	0.72	0.71	0.72	0.74	0.72	0.73	0.76	0.73	0.75	0.78
Open Space	0.05	0.10	0.14	0.08	0.13	0.19	0.12	0.17	0.24	0.15	0.21	0.28
Parking	0.85	0.86	0.87	0.85	0.86	0.87	0.85	0.86	0.87	0.85	0.86	0.87
Construction Sites - Bare packed soil, smooth	0.30	0.35	.040	0.35	.040	0.45	0.40	0.45	0.50	0.50	0.55	0.60
Construction Sites - Bare packed soil, rough	.020	0.25	0.30	0.25	0.30	0.35	0.30	0.35	0.40	0.40	0.45	0.50

Adapted from McCuen, R.H., Hydrologic Analysis and Design (2004)

1. According to the USDA NRCS Hydrologic Soils Classification System

APPENDIX NO. B-2

RUNOFF CURVE NUMBERS "CN" FOR SCS METHOD

Cover description		Curve numbers for hydrologic soil group			
Cover type and hydrologic condition	Average percent impervious area [2]	A	B	C	D
Fully developed urban areas (vegetation established)					
Open space (lawns, parks, golf courses, cemeteries, etc.) [3]:					
Poor condition (grass cover < 50%)		68	79	86	89
Fair condition (grass cover 50% to 75%)		49	69	79	84
Good condition (grass cover > 75%)		39	61	74	80
Impervious areas:					
Paved parking lots, roofs, driveways, etc. (excluding right-of-way)		98	98	98	98
Streets and roads:					
Paved; curbs and storm sewers (excluding right-of-way)		98	98	98	98
Paved; open ditches (including right-of-way)		83	89	92	93
Gravel (including right-of-way)		76	85	89	91
Dirt (including right-of-way)		72	82	87	89
Western desert urban areas:					
Natural desert landscaping (pervious areas only) [4]		63	77	85	88
Artificial desert landscaping (impervious weed barrier, desert shrub with 1- to 2-inch sand or gravel mulch and basin borders)		96	96	96	96
Urban districts:					
Commercial and business	85	89	92	94	95
Industrial	72	81	88	91	93
Residential districts by average lot size:					
1/8 acre or less (town houses)	65	77	85	90	92
1/4 acre	38	61	75	83	87
1/3 acre	30	57	72	81	86
1/2 acre	25	54	70	80	85
1 acre	20	51	68	79	84
2 acres	12	46	65	77	82
Developing urban areas					
Newly graded areas (pervious areas only, no vegetation) [5]		77	86	91	94
Idle lands (CN's are determined using cover types similar to those in table 2-2c).					

[1] Average runoff condition, and $I_a = 0.2S$.

[2] The average percent impervious area shown was used to develop the composite CN's. Other assumptions are as follows: impervious areas are directly connected to the drainage system, impervious areas have a CN of 98, and pervious areas are considered equivalent to open space in good hydrologic condition. CN's for other combinations of conditions may be computed using figure 2-3 or 2-4.

[3] CN's shown are equivalent to those of pasture. Composite CN's may be computed for other combinations of open space cover type.

[4] Composite CN's for natural desert landscaping should be computed using figures 2-3 or 2-4 based on the impervious area percentage (CN = 98) and the pervious area CN. The pervious area CN's are assumed equivalent to desert shrub in poor hydrologic condition.

[5] Composite CN's to use for the design of temporary measures during grading and construction should be computed using figure 2-3 or 2-4 based on the degree of development (impervious area percentage) and the CN's for the newly graded pervious areas.

Cover description			Curve numbers for hydrologic soil group			
Cover type	Treatment [2]	Hydrologic condition [3]	A	B	C	D
Fallow	Bare soil	—	77	86	91	94
	Crop residue cover (CR)	Poor	76	85	90	93
		Good	74	83	88	90
Row crops	Straight row (SR)	Poor	72	81	88	91
		Good	67	78	85	89
	SR + CR	Poor	71	80	87	90
		Good	64	75	82	85
	Contoured (C)	Poor	70	79	84	88
		Good	65	75	82	86
	C + CR	Poor	69	78	83	87
		Good	64	74	81	85
	Contoured & terraced (C&T)	Poor	66	74	80	82
		Good	62	71	78	81
	C&T+ CR	Poor	65	73	79	81
		Good	61	70	77	80
Small grain	SR	Poor	65	76	84	88
		Good	63	75	83	87
	SR + CR	Poor	64	75	83	86
		Good	60	72	80	84
	C	Poor	63	74	82	85
		Good	61	73	81	84
	C + CR	Poor	62	73	81	84
		Good	60	72	80	83
	C&T	Poor	61	72	79	82
		Good	59	70	78	81
	C&T+ CR	Poor	60	71	78	81
		Good	58	69	77	80
Close-seeded or broadcast legumes or rotation meadow	SR	Poor	66	77	85	89
		Good	58	72	81	85
	C	Poor	64	75	83	85
		Good	55	69	78	83
	C&T	Poor	63	73	80	83
		Good	51	67	76	80

[1] Average runoff condition, and I_a=0.2S

[2] Crop residue cover applies only if residue is on at least 5% of the surface throughout the year.

[3] Hydraulic condition is based on combination factors that affect infiltration and runoff, including (a) density and canopy of vegetative areas, (b) amount of year-round cover, (c) amount of grass or close-seeded legumes, (d) percent of residue cover on the land surface (good ≥ 20%), and (e) degree of surface roughness.

Poor: Factors impair infiltration and tend to increase runoff.

Good: Factors encourage average and better than average infiltration and tend to decrease runoff.

Table 2-2c Runoff curve numbers for other agricultural lands [1]

Cover description		Curve numbers for hydrologic soil group			
Cover type	Hydrologic condition	A	B	C	D
Pasture, grassland, or range—continuous forage for grazing. [2]	Poor	68	79	86	89
	Fair	49	69	79	84
	Good	39	61	74	80
Meadow—continuous grass, protected from grazing and generally mowed for hay.	—	30	58	71	78
Brush—brush-weed-grass mixture with brush the major element. [3]	Poor	48	67	77	83
	Fair	35	56	70	77
	Good	30 [4]	48	65	73
Woods—grass combination (orchard or tree farm). [5]	Poor	57	73	82	86
	Fair	43	65	76	82
	Good	32	58	72	79
Woods. [6]	Poor	45	66	77	83
	Fair	36	60	73	79
	Good	30 [4]	55	70	77
Farmsteads—buildings, lanes, driveways, and surrounding lots.	—	59	74	82	86

1 Average runoff condition, and $I_a = 0.2S$.
2 *Poor:* <50%) ground cover or heavily grazed with no mulch.
Fair: 50 to 75% ground cover and not heavily grazed.
Good: > 75% ground cover and lightly or only occasionally grazed.
3 *Poor:* <50% ground cover.
Fair: 50 to 75% ground cover.
Good: >75% ground cover.
4 Actual curve number is less than 30; use CN = 30 for runoff computations.
5 CN's shown were computed for areas with 50% woods and 50% grass (pasture) cover. Other combinations of conditions may be computed from the CN's for woods and pasture.
6 *Poor:* Forest litter, small trees, and brush are destroyed by heavy grazing or regular burning.
Fair: Woods are grazed but not burned, and some forest litter covers the soil.
Good: Woods are protected from grazing, and litter and brush adequately cover the soil.

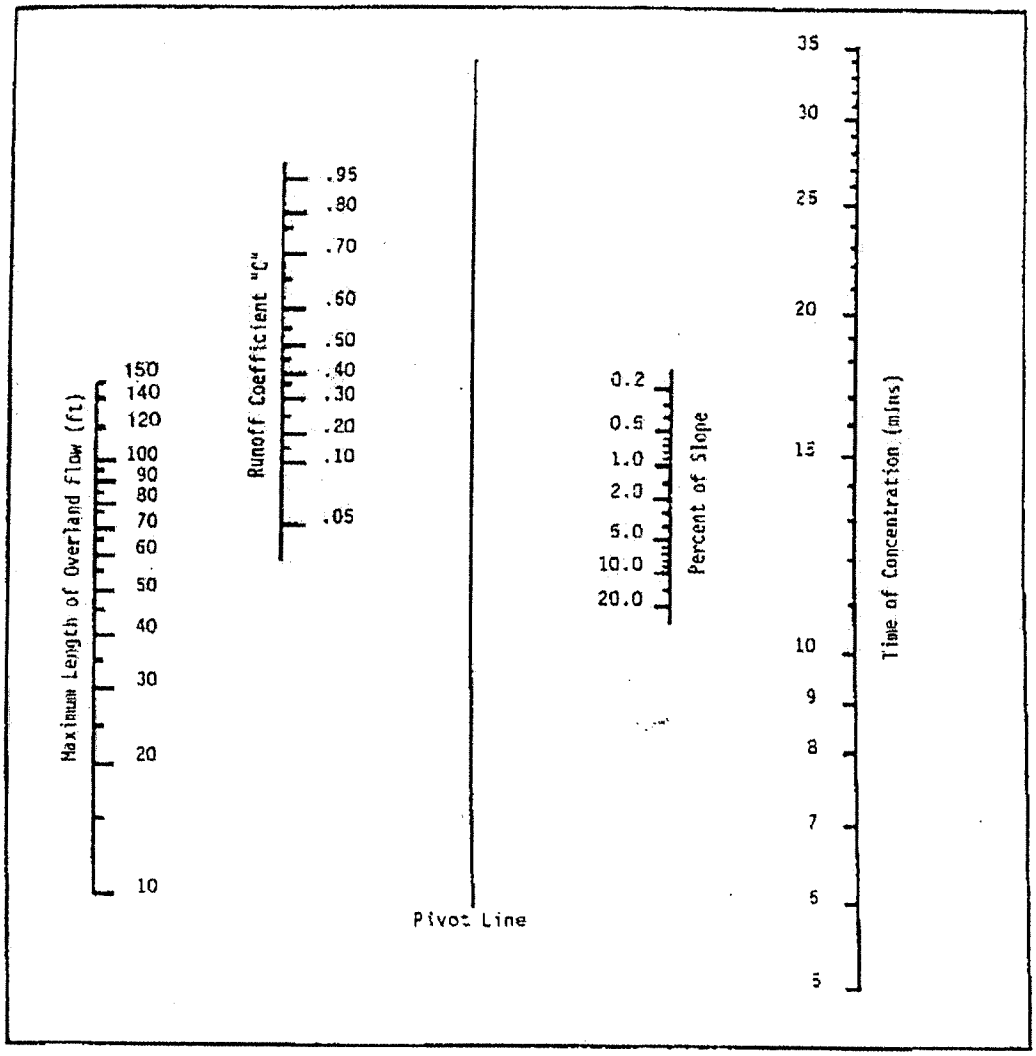
Cover description		Curve numbers for hydrologic soil group			
Cover type	Hydrologic condition 2/	A 3/	B	C	D
Herbaceous—mixture of grass, weeds, and low-growing brush, with brush the minor element.	Poor		80	87	93
	Fair		71	81	89
	Good		62	74	85
Oak-aspen—mountain brush mixture of oak brush, aspen, mountain mahogany, bitter brush, maple, and other brush.	Poor		66	74	79
	Fair		48	57	63
	Good		30	41	48
Pinyon-juniper—pinyon, juniper, or both; grass understory.	Poor		75	85	89
	Fair		58	73	80
	Good		41	61	71
Sagebrush with grass understory.	Poor		67	80	85
	Fair		51	63	70
	Good		35	47	55
Desert shrub—major plants include saltbush, greasewood, creosotebush, blackbrush, bursage, palo verde, mesquite, and cactus.	Poor	63	77	85	88
	Fair	55	72	81	86
	Good	49	68	79	84

1 Average runoff condition, and I_a, = 0.2S. For range in humid regions, use table 2-2c.
2 Poor: <30% ground cover (litter, grass, and brush overstory).
Fair: 30 to 70% ground cover.
Good: > 70% ground cover.
3 Curve numbers for group A have been developed only for desert shrub.

APPENDIX NO. B-3

NOMOGRAPH FOR DETERMINING SHEET FLOW

(for use with the Rational Method)



APPENDIX NO. B-4

Worksheet #1: Time of concentration (T_c) or travel time (T_t)

Project _____ By _____ Date _____

Location _____ Checked _____ Date _____

Circle one: Present Developed _____

Circle one: T_c T_t through subarea _____

NOTES: Space for as many as two segments per flow type can be used for each worksheet.

Include a map, schematic, or description of flow segments.

Sheet flow (Applicable to T_c only)	Segment ID				
1. Surface description (table 3-1)					
2. Manning's roughness coeff., n (table 3-1)					
3. Flow length, L (total L ≤ **150 ft) ft					
4. Two-yr 24-hr rainfall, P_2 in					
5. Land slope, s ft/ft					
6. $T_t = \frac{0.007\,(nL)^{0.8}}{P_2^{0.5}\,s^{0.4}}$ Compute T_t hr		+		=	

Shallow concentrated flow	Segment ID				
7. Surface description (paved or unpaved)					
8. Flow length, L ft					
9. Watercourse slope, s ft/ft					
10. Average velocity, V (figure 3-1) ft/s					
11. $T_t = \frac{L}{3600\,V}$ Compute T_t hr		+		=	

Channel flow	Segment ID				
12. Cross sectional flow area, a ft^2					
13. Wetted perimeter, P_w ft					
14. Hydraulic radius, $r = \frac{a}{P_w}$ Compute r ft					
15. Channel slope, s ft/ft					
16. Manning's roughness coeff., n					
17. $V = \frac{1.49\,r^{2/3}\,s^{1/2}}{n}$ Compute V ft/s					
18. Flow length, L ft					
19. $T_t = \frac{L}{3600V}$ Compute T_t hr		+		=	
20. Watershed or subarea T_c or T_t (add T_t in steps 6, 11, and 19) hr					

*Table 3-1 per latest TR-55, Urban Hydrology for Small Watershed

**150' sheet flow length per latest TR-55 revision

APPENDIX NO. B-5

AVERAGE VELOCITIES FOR ESTIMATING TRAVEL TIME FOR SHALLOW CONCENTRATED FLOW

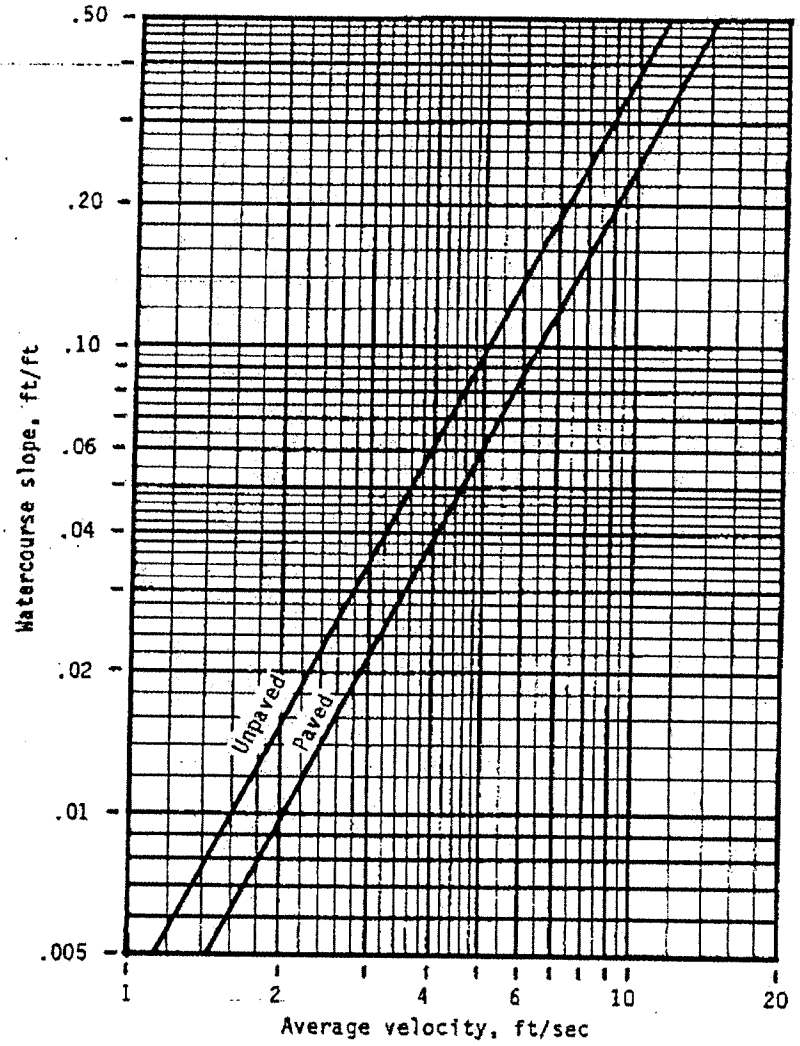


Figure 3-1.—Average velocities for estimating travel time for shallow concentrated flow.

Prepared By: _____
_____
_____
_____

Return To: Same
Parcel ID # _____

APPENDIX C

STORM WATER MANAGEMENT AGREEMENT AND DECLARATION OF EASEMENT

THIS AGREEMENT AND DECLARATION OF EASEMENT made this _____ day of __, 20_, by and between _____, a _____ with a mailing address at _____ (hereinafter whether singular or plural referred to as the "Grantor"), and **CONESTOGA TOWNSHIP**, Lancaster County, Pennsylvania, a municipal corporation duly organized under the laws of the Commonwealth of Pennsylvania, with its municipal office located at 3959 Main Street, Conestoga, Pennsylvania (hereinafter referred to as the "Township@).

BACKGROUND

Grantor is the owner of premises located _____, in the Township of Conestoga, Lancaster County, Pennsylvania, as more specifically described in a deed recorded in Deed or Record Book _____, Volume _____, Page _____, or at Document No. _____ in the Office of the Recorder of Deeds in and for Lancaster County, Pennsylvania, and as shown on the NAME OF PLAN _____, prepared by _____, Drawing No. _____, dated , last revised _____ (hereinafter referred to as the "Premises").

Prior to beginning construction on any subdivision or land development or regulated activity as defined in the Conestoga Township Storm Water Management Ordinance, Grantor is required, under the Conestoga Township Subdivision and Land Development Ordinance and the Conestoga Township Storm Water Management Ordinance (collectively referred to as the "Ordinance"), to file a plan with the Conestoga Township Board of Supervisors. Pursuant to the Ordinance, Grantor must include storm water management data in its subdivision and/or land development application. The Ordinance requires that Grantor's plan reflect and/or be accompanied with supporting documentation which identifies the ownership of, and the method of administering and maintaining, all permanent storm water management facilities. Drainage courses, swales, grassed waterways, storm water inlets, pipes, conduits, detention basins, retention basins, infiltration structures, and other storm water management facilities, including Best Management Practices facilities ("BMPs"), shall be included under the term "storm water management facilities" in this Agreement and Declaration of Easement.

The purpose of this Agreement and Declaration of Easement is to describe the ownership and maintenance responsibilities for the storm water facilities which will be installed on the Premises and to impose the ownership and maintenance responsibilities upon Grantor, his heirs, personal representatives and assigns and upon successor owners of the Premises, and set forth the rights of the Township.

NOW, THEREFORE, intending to be legally bound hereby and in consideration of receiving approval of its Storm Water Management Plan (hereinafter referred to as the "Final Plan") from the Board of Supervisors, and in consideration of receiving permits from the Township to develop the Premises, Grantor, for Grantor and the heirs, personal representatives and assigns of Grantor, covenant and declare as follows:

1. The storm water facilities will be owned by Grantor, his heirs, personal representatives, successors and assigns.

2. All drainage courses, swales, storm water inlets, pipes, conduits, detention basins BMPs, and other storm water facilities shall be installed, constructed and maintained by Grantor, his heirs, personal representatives, successors and assigns, in a first-class condition in conformance with the approved Final Plan, including any accompanying storm water management plans and information, and as recorded in the Office of the Recorder of Deeds in and for Lancaster County, and in a manner sufficient to meet or exceed the performance standards and specifications set forth on the approved Final Plan, including any accompanying storm water management plans and information, and as recorded in the Office of the Recorder of Deeds in and for Lancaster County. These responsibilities shall include, but not be limited to, the following:

(a) Liming, fertilizing, seeding and mulching of vegetated channels and all other unstablized soils or areas according to the specifications in the "Erosion and Sediment Pollution Control Manual" published by the Pennsylvania Department of Environmental Protection, the Penn State Agronomy Guide, or such similar accepted standard.

(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 to maintain adequate stands of grass and to control weeds. Chemical weed control may be used if federal, state and local laws and regulations are met. Selection of seed mixtures shall be subject to approval by the Township.

(d) Removal of silt from all permanent structures which trap silt or sediment in order to keep the material from building up in grass waterways, pipes, detention or retention basins, infiltration structures, BMPs, and/or other facilities and thus reducing their capacity.

(e) Removal of silt from all permanent drainage structures, in particular BMPs, in order to maintain the design storage volumes. Regular programs shall be established and maintained.

(f) Regular inspection of the areas in question to assure proper maintenance and care, including but not limited to proper implementation of BMPs. **ADD ANY SPECIFIC INSPECTION REQUIREMENTS IN THE PCSM PLAN.**

(g) Regular maintenance to insure that all pipes, swales and detention facilities shall be kept free of any debris or other obstruction. **ADD ANY SPECIFIC MAINTENANCE REQUIREMENTS IN THE PCSM PLAN.**

(h) Regular maintenance of all facilities designed to improve water quality to insure that such facility function in accordance with their design. **ADD ANY SPECIFIC MAINTENANCE REQUIREMENTS IN THE PCSM PLAN SUCH AS IF APPLICABLE:** Maintenance of the infiltration bed and infiltration system by mowing grass regularly over the infiltration bed; keeping the yard drains and roof drains free of

debris in good repair at all times; flushing the infiltration system using a water hose at the cleanouts once every 90 days to insure the infiltration system is clear of debris; keeping the sumps in the yard inlets and downspout sumps free of debris; and inspecting the infiltration bed four times per year or after each rain event exceeding one inch.

(i) Repair of any subsidence, including subsidence caused by sinkholes.

(j) **IF APPLICABLE:** Replacement of displaced riprap within the outlet energy dissipater immediately after it is displaced, particularly after major storm discharge events.

(k) **IF APPLICABLE:** Vacuum sweeping of areas of porous paving to keep surface free of sediment as needed, typically three to four times per year and maintaining all areas of porous paving free from sealing, surfacing or re-paving with non-porous materials.

(l) **IF APPLICABLE:** Aerate areas of amended soils annually. No impervious surfaces may be places or installed on any area of amended soils.

(m) Removal of trash and debris on a regular basis.

Include a statement that the approved Operations and Maintenance (O&M) Plan is attached as an exhibit if there are any requirements in addition to those in Paragraph 2. Paragraph 2 may be revised to simply incorporate an exhibit if all post construction inspection, operations, and maintenance requirements are included on the exhibit.

Grantor, his heirs, personal representatives, successors and assigns, shall be responsible for performing the foregoing maintenance.

3. Grantor, his personal representatives, heirs, successors and assigns, shall be responsible for maintaining records of all inspections of and maintenance to BMPs and other storm water management facilities. Grantor, his personal representatives, heirs, successors and assigns, shall be responsible to prepare all annual BMP and post construction storm water management facility reports detailing the actual inspection and maintenance activities which are required by the terms of any NPDES permit or other state or federal regulation or requirements and submit such reports to the Township on or before __DATE__ of each calendar year, together with any fee which the Township may impose for the review and processing of such report. It is the responsibility of Grantor to inform successors owners of the Premises or any lot created from the Premises of this reporting requirement. The failure to submit an annual report is a violation of this Agreement. The Township may prepare any required report and recover all costs required to prepare such report from the then-owner of the Premises or any lot created from the Premises, plus a penalty of ten (10%) percent of such costs and may file a municipal claim to secure payment of such costs.

4. Grantor, for himself, his heirs, personal representatives, successors and assigns, agrees that the failure to maintain all drainage courses, swales, storm water inlets, pipes, conduits, detention basins, BMPs, and other storm water management facilities in a first-class condition in

conformance with this Agreement and approved Final Plan, including any accompanying storm water management plans and information, and as recorded in the Office of the Recorder of Deeds in and for Lancaster County, shall constitute a nuisance and shall be abatable by the Township as such.

5. Grantor, for himself, his heirs, personal representatives, successors and assigns, authorizes the Township, at any time and from time to time, by its authorized representatives, to enter upon the Premises to inspect the storm water facilities.

6. The Township may require that Grantor, and assigns or any future owner or occupier of the Premises or any part thereof, take such corrective measures as the Township may deem reasonably necessary to bring the Premises into compliance with this Agreement and with the approved Final Plan, including any accompanying storm water management plans and information, and as recorded in the Office of the Recorder of Deeds in and for Lancaster County.

7. Upon the failure of the owner or occupier of the Premises or any part thereof to comply with the terms of this Storm Water Management Agreement or to take corrective measures following reasonable notice from the Township, the Township, through its authorized representatives, may take such corrective measures as it deems reasonably necessary to bring the Premises into compliance with this Agreement and with the approved Final Plan, including any accompanying storm water management plans and information, and as recorded in the Office of the Recorder of Deeds in and for Lancaster County, including, but not limited to, the removal of any blockage or obstruction from drainage pipes, swales, detention basins, and BMPs, and may charge the cost thereof to Grantor, his heirs, personal representatives, successors and assigns, or any owner of the Premises or any part thereof and, in default of such payment, may cause a municipal lien to be imposed upon the Premises or any part thereof. Any municipal lien filed pursuant to this Agreement shall be in the amount of all costs incurred by the Township, plus a penalty of ten (10%) of such costs, plus the Township's reasonable attorney's fees.

8. The storm water management facilities have been designed to allow a maximum impervious surface coverage

B [if a single lot] of _____ square feet. Any proposal to add additional impervious surface coverage to the Premises will require the submission of a storm water management plan meeting all requirements of applicable regulations in effect at the time such application is filed.

B [if multiple lots with the same coverage] of _____ square feet for each lot to be created from the Premises. If the owner of any lot to be created from the Premises desires to install additional impervious surface coverage, such lot owner must submit an application under the Storm Water Management Ordinance in effect at such time as the application is filed and meet all applicable storm water management regulations.

B [if multiple lots with different coverage limits] as set forth in Exhibit A attached hereto and incorporated herein. If the owner of any lot to be created from the Premises desires to install additional impervious surface coverage beyond that allocated to such lot in Exhibit A, such lot owner must

submit an application under the Storm Water Management Ordinance in effect at such time as the application is filed and meet all applicable storm water management regulations.

9. If ownership or maintenance responsibility of the storm water management facilities is assigned to a home owners' association, condominium unit owners' association, or similar entity, the Township shall be notified. If such association fails to properly maintain the storm water management facilities, the Township shall have the same rights granted to municipalities under Section 705 of the Pennsylvania Municipalities Planning Code, Act of July 31, 1968, P.L. 805, No. 247, with reference to maintenance of common open space, to maintain the storm water management facilities. Any association so formed shall enter into an agreement with the Township recognizing its duties and the Township's rights under this Agreement.

10. Grantor hereby imposes upon the Premises for the benefit of all present and future owners of the Premises or part of the Premises, the Township, and all other property owners affected by the storm water facilities, the perpetual right, privilege and easement for the draining of storm water in and through the drainage courses, swales, storm water inlets, pipes, conduits, detention basins, BMPs, and other storm water facilities depicted on the plan or plans submitted to the Township or hereafter made of record and now or hereafter installed on or constructed upon the Premises and, in addition, easements of access to the storm water facilities.

11. Grantor agrees to indemnify the Township and all of its elected and appointed officials, agents and employees (hereafter collectively referred to as the "Indemnitees") against and hold Indemnitees harmless from any and all liability, loss or damage, including attorneys' fees and costs of investigation and defense, as a result of claims, demands, costs or judgments against Indemnitees which arise as a result of the design, installation, construction or maintenance of the storm water facilities.

12. Grantor's personal liability under this Agreement shall cease at such time as (a) all storm water management facilities have been constructed in accordance with the specifications of the Township Subdivision and Land Development Ordinance, the Township Storm Water Management Ordinance and the approved plans; (b) the storm water management facilities have been inspected and approved by the Township Engineer; (c) all financial security, including any maintenance security, posted by Grantor has been released by the Township; and (d) Grantor has transferred all lots to be created from the Premises to third parties. Notwithstanding the foregoing, Grantor's personal liability shall continue for any violations of this Agreement and Declaration of Easement which occurred during the time that Grantor owned the Premises or any lot created from the Premises or in the event the storm water management facilities were not completed, inspected or approved as set forth in (a) through (c) herein.

13. It is the intent of the parties to this Agreement that personal liability and maintenance obligations shall pass to subsequent title owners upon change in ownership of the Premises or any lot created from the Premises, and such subsequent owners shall assume all personal liability and maintenance obligations for the time period during which they hold title. Personal liability shall remain for any violations of this Agreement and Declaration of Easement which occurred during the period in which an owner held title.

14. The Township may, in addition to the remedies prescribed herein, proceed with any action at law or in equity to bring about compliance with the Township Storm Water Management Ordinance and this Agreement.

15. This Agreement and Declaration of Easement shall be binding upon the Grantor, the successors and assigns of Grantor, and all present and future owners of the Premises or any part thereof and is intended to be recorded in order to give notice to future owners of the Premises of their duties and responsibilities with respect to the storm water facilities. Grantor shall include a specific reference to this Agreement in any deed of conveyance for the Premises or any part thereof.

16. This Agreement and Declaration of Easement may be amended only by written instrument signed on behalf of all owners of the Premises and the Township.

17. When the sense so requires, words of any gender used in this Agreement and Declaration of Easement shall be held to include any other gender, and the words in the singular number shall be held to include the plural, and vice versa.

IN WITNESS WHEREOF, the undersigned have caused this Agreement and Declaration to be executed on the day and year first above written.

CONESTOGA TOWNSHIP
Lancaster County, Pennsylvania

Attest: Kelly A. Ream
By: Kelly A. Ream
(Assistant) Secretary

(Vice) Chairman
Board of Supervisors

[TOWNSHIP SEAL]

(Individual or Husband and Wife Developer)

Witness:

_____

_____(SEAL)
(Signature of Individual)

_____

_____(SEAL)
(Signature of Spouse if Husband and Wife are Co-Developers)

IF APPLICABLE
Trading and doing business as:

_____

(Partnership Developer*)

_____

(Name of Partnership)

Witness:

_____

By:_____(SEAL)
Partner

_____

By:_____(SEAL)
Partner

_____

By:_____(SEAL)
Partner

*All Partners must execute this Agreement

(Corporation Developer)

_____

(Name of Corporation)

ATTEST:

By:_____

By:_____

(Assistant) Secretary (Vice) President

[CORPORATE SEAL]

(Limited Liability Company Landowner***)

(Name of Limited Liability Company)

Witnesses:

_____ By:

Member

_____ By:

Member

_____ By:

Member

***All members must sign.

(TOWNSHIP ACKNOWLEDGMENT)

COMMONWEALTH OF PENNSYLVANIA)
) SS:
COUNTY OF LANCASTER)

On this _____ day of _____, 20___, before me, the undersigned officer, a notary public in and for the aforesaid Commonwealth and County, personally appeared who acknowledged _____self to be (Vice) Chairman of the Board of Supervisors of Conestoga Township, Lancaster County, Pennsylvania, and that he/she, as such officer, being authorized to do so, executed the foregoing Storm Water Management Agreement and Declaration of Easement, for the purposes therein contained, by signing the name of such Township by ____self as such officer.

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

_____

_____

Notary Public

My commission expires:

(INDIVIDUAL OR HUSBAND AND WIFE DEVELOPER ACKNOWLEDGMENT)

COMMONWEALTH OF PENNSYLVANIA)
) SS:
COUNTY OF LANCASTER)

On this the _____ day of _____, 20_____, before me, the subscriber, a notary public in and for the aforesaid Commonwealth and County, came the above-named , known to me, (or satisfactorily proven) to be the person(s) whose name(s) is/are subscribed on the within instrument and acknowledged the foregoing Storm Water Management Agreement and Declaration of Easement to be ____ act and deed and desired the same to be recorded as such.

Witness my hand and notarial seal.

_____

_____

Notary Public

My commission expires:

(PARTNERSHIP DEVELOPER ACKNOWLEDGMENT)

COMMONWEALTH OF PENNSYLVANIA)
) SS:
COUNTY OF LANCASTER)

On this _____ day of _____, 20_____, before me, a notary public, the undersigned officer, personally appeared , who acknowledged themselves to be all of the partners of _____, a partnership, and that they, as such partners, being authorized to do so, executed the foregoing instrument for the purposes therein contained by signing the name of the partnership by themselves as such partners.

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

_____

_____

Notary Public

My commission expires:

(CORPORATE DEVELOPER ACKNOWLEDGMENT)

COMMONWEALTH OF PENNSYLVANIA)
) SS:
COUNTY OF LANCASTER)

On this _____ day of _____, 20_____, before me, a notary public, the undersigned officer, personally appeared _____, who acknowledged ____self to be the _____ of _____, a corporation, and that as such officer being authorized to do so, acknowledged the foregoing instrument for the purpose therein contained, by signing the name of the corporation by _____self as _____.

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

_____

_____

Notary Public

My commission expires:

[LIMITED LIABILITY COMPANY LANDOWNER ACKNOWLEDGMENT]

COMMONWEALTH OF PENNSYLVANIA)
) SS:
COUNTY OF LANCASTER)

On this _____ day of _____, 20_____, before me, the undersigned officer, personally appeared , who acknowledged themselves to be all of the members of _____, a _____ limited liability company, and that they as such members, being authorized to do so, executed the foregoing instrument for the purposes therein contained by signing the name of said limited liability company by themselves as such members.

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

Notary Public

My Commission Expires:

JOINDER BY MORTGAGEE

_____ ("Mortgagee"), as holder of a certain mortgage on the premises of __[NAME OF GRANTOR]_ within Conestoga Township, Lancaster County, Pennsylvania, described in the Deed recorded in recorded in/at _____, in the Office of the Recorder of Deeds in and for Lancaster County, Pennsylvania, which mortgage, in the amount of $_____, dated _____, and recorded at _____ in the Recorder of Deeds Office in and for Lancaster County, Pennsylvania, as well as any other mortgages which Mortgagee may now or hereafter hold on the Premises (all such mortgages hereinafter collectively referred to as the "Mortgages"), joins in, consents to, and expressly approves the grant of easements and other rights and privileges described in the attached Storm Water Management Agreement and Declaration of Easement (the "Agreement").

The Mortgagee, for itself, its successors and assigns (which shall include any assignee of the Mortgages and any purchaser of the Premises at a sale in foreclosure of the Mortgages or otherwise), hereby covenants and agrees that the rights and privileges herein granted with respect to the Premises shall not be terminated or disturbed by reason of any foreclosure or other action which may be instituted by the Mortgagee, its successors and assigns, as a result of any default under the Mortgages or the debt instruments that such Mortgages secure. Mortgagee by consenting to the Agreement shall not by virtue of its interest as Mortgagee be deemed to have undertaken any of the obligations of the Grantor under the Agreement, including but not limited to construction, maintenance, inspection or indemnification.

IN WITNESS WHEREOF, Mortgagee hereby joins in the execution of the Agreement as of this _____ day of _____, 20____.

_____

(Name of Mortgagee)

ATTEST: _____

By:_____

[SEAL]

(MORTGAGEE ACKNOWLEDGMENT)

COMMONWEALTH OF PENNSYLVANIA)
) SS:
COUNTY OF LANCASTER)

On this, the _____ day of _____, 20____, before me, a notary public, the undersigned officer, personally appeared _____, who acknowledged _____self to be the _____ of , a corporation, and that as such officer being authorized to do so, acknowledged the foregoing instrument for the purpose therein contained by signing the name of the Bank by _____self as .

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

_____

_____

Notary Public

My Commission Expires:

CONSENT AND JOINDER OF HOMEOWNERS' ASSOCIATION

The undersigned hereby consents to and joins in the attached Storm Water Management Agreement and Declaration of Easement (the "Agreement"). The undersigned shall maintain all storm water management facilities in accordance with the terms and provisions of the Agreement and in accordance with any separate Declaration of Restrictions. The undersigned specifically agrees that the Township shall have the rights referred to in Paragraph 9 of the Agreement.

IN WITNESS WHEREOF, the undersigned, intending to be legally bound, hereby consents to and joins in the Agreement.

_____

_____

(Name of Homeowners' Association or similar entity)

Attest:_____

By:_____

(Assistant) Secretary (Vice) President

[SEAL]

COMMONWEALTH OF PENNSYLVANIA)
) SS:
COUNTY OF LANCASTER)

On this _____ day of _____, 20____, before me, a notary public, the undersigned officer, personally appeared _____, who acknowledged self to be the _____ of _____, a nonprofit corporation, and that as such officer being authorized to do so, acknowledged the foregoing instrument for the purpose therein contained, by signing the name of the corporation by _____self as .

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

_____

_____

Notary Public
My commission expires:

APPENDIX D
EXEMPTION APPLICATION

Date Received _____ File Number_____ Property Act # _____
Submitted Fees $_____

Project Street Address: _____

Owner's Name: _____

Signature: _____

Phone# / Fax# / Email: _____

Person/Firm to be completing work: _____

Phone# / Fax# / Email: _____

Proposed Activity:

1. After_____ *(Date of ordinance adoption/ to be determined by township)* have you previously added impervious surface on this property?
   [ ] No
   [ ] Yes, Total area of previous impervious surface _____ sq. ft.

2. Are you removing existing impervious surface as part of this project?
   [ ] No
   [ ] Yes, Impervious surface to be removed _____ sq. ft.

3. Addition of impervious surface (1,000 square feet or less)
   - New impervious surface proposed _____ sq. ft.

     Type of new impervious surface: [ ] driveway, [ ] shed, [ ] garage,

     [ ] deck, [ ] walkway, [ ] other (please describe)

     _____

4. Cumulative total impervious surface area added: (1-2+3) _____ sq. ft.
5. Removal of ground cover, grading, filling, or excavation of an area
   - Total area of land disturbance: _____ sq. ft.

     Type of regulated removal activity (check all that apply): [ ] Ground Cover, [ ] Grading, [ ] Filling, [ ] Excavation,

     [ ] Other earth disturbance activity (please describe)

     _____

Check all items below that will be impacted by the project:

[ ] Floodplain
[ ] Wetlands
[ ] Known bedrock within 6 ft of the ground surface
[ ] Riparian Forest Buffer
[ ] Natural water flow paths (creeks, streams, ponds, swales, etc.)
[ ] Existing known stormwater problem areas
[ ] Downstream property owners

Sketch

Provide a sketch of the proposed additional impervious area or land disturbance.

_____
Inspected by: Name/Date

_____
Exemption approval Date

_____
By: Signature

_____
By: Print