

ADAMS TOWNSHIP
COMPREHENSIVE STORMWATER
MANAGEMENT
ORDINANCE
(ORDINANCE NO. 100)

CAMBRIA COUNTY, PENNSYLVANIA
SEPTEMBER 2007

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Prepared for and
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COMPREHENSIVE STORMWATER MANAGEMENT ORDINANCE
ADAMS TOWNSHIP, CAMBRIA COUNTY, PENNSYLVANIA
ORDINANCE NO. 100

Adopted at a public meeting held on October 15, 2007

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ARTICLE I - GENERAL PROVISIONS

Section 101. Short Title

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

Section 102. Statement of Findings

The governing body of the Municipality finds that:

- A. Stormwater runoff from lands modified by human activities threatens public health and safety by causing decreased infiltration of rainwater and increased runoff flows and velocities, which overtax the carrying capacity of existing streams and storm sewers, and greatly increases the cost to the public to manage stormwater.

- B. Inadequate planning and management of stormwater runoff resulting from land development and redevelopment throughout a watershed can also harm surface water resources by changing the natural hydrologic patterns, accelerating stream flows (which increase scour and erosion of stream-beds and stream-banks thereby elevating sedimentation), destroying aquatic habitat and elevating aquatic pollutant concentrations and loadings such as sediments, nutrients, heavy metals and pathogens. Groundwater resources are also impacted through loss of recharge.
- C. A program of stormwater management, including reasonable regulation of land development and redevelopment causing loss of natural infiltration, is fundamental to the public health, safety, welfare, and the protection of the people of the Municipality and all the people of the Commonwealth, their resources, and the environment.
- D. Stormwater can be an important water resource by providing groundwater recharge for water supplies and base flow of streams, which also protects and maintains surface water quality.
- E. Public education on the control of pollution from stormwater is an essential component in successfully addressing stormwater.
- F. Federal and state regulations require certain municipalities to implement a program of stormwater controls. These municipalities are required to obtain a permit for stormwater discharges from their separate storm sewer systems under the National Pollutant Discharge Elimination System (NPDES).
- G. Non-stormwater discharges to municipal separate storm sewer systems can contribute to pollution of waters of the Commonwealth by the Municipality.

Section 103. Purpose

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

- A. Manage stormwater runoff impacts at their source by regulating activities that cause the problems.
- B. Provide review procedures and performance standards for stormwater planning and management.
- C. Utilize and preserve the existing natural drainage systems as much as possible.
- D. Manage stormwater impacts close to the runoff source, which requires a minimum of structures and relies on natural processes.

- E. Focus on infiltration of stormwater, to maintain groundwater recharge, to prevent degradation of surface and groundwater quality and to otherwise protect water resources.
- F. Maintain existing flows and quality of streams and watercourses.
- G. Meet legal water quality requirements under state law, including regulations at 25 Pa. Code Chapter 93.4a to protect and maintain "existing uses" and maintain the level of water quality to support those uses in all streams, and to protect and maintain water quality in "special protection" streams.
- H. Comply with the standards established in the Stormwater Best Management Practices Manual adopted by the Pennsylvania Department of Environmental Protection on 31 December 2006 and all future updates.
- I. Comply with Adams Township's MS-4 requirements as regulated by PA DEP and USEPA.
- J. Comply with the Little Conemaugh River Watershed and Stoneycreek River Watershed Act 167 Stormwater Management Plans as adopted and modified by Cambria County and Adams Township.
- K. Prevent scour and erosion of streambanks and streambeds.
- L. Provide for proper operations and maintenance of all permanent stormwater management BMPs that are implemented in the Municipality.
- M. Provide a mechanism to identify controls compatible with and necessary to meet the NPDES Phase II Permit requirements.
- N. Implement an illegal discharge detection and elimination program to address non-stormwater discharges into the Municipality's separate storm sewer system.

Section 104. Statutory Authority

The Municipality is empowered to regulate land use activities that affect runoff and stormwater impacts by the authority of the Act of October 4, 1978, P.L. 864 (Act 167) as amended, the "Stormwater Management Act", 32 P.S. § 680.1 et seq., provisions of the Pennsylvania Clean Streams Law 35 P.S. § 691.1 et seq., Pennsylvania Sewage Facilities Act, 35 P.S. §750.1 et seq., Pennsylvania Municipalities Planning Code 53 P.S. §10101 et seq. and generally by the provisions of the Second Class Township Code, 53 P.S. §§ 65101 et seq.

Section 105. Applicability

- A. This Ordinance applies to any Regulated Earth Disturbance activities within the Municipality, and all stormwater runoff entering into the Municipality's separate

storm sewer system from lands within the boundaries of the Municipality.

- B. Earth Disturbance activities and associated stormwater management controls are also regulated under existing state law and implementing regulations. This Ordinance shall operate in coordination with those parallel requirements; the requirements of this Ordinance shall be no less restrictive in meeting the purposes of this Ordinance than state law.

Section 106 - Exemptions

Any Regulated Activity that meets the exception criteria in the following table is exempt from the provisions of this Ordinance. These criteria shall apply to the total development even if development is to take place in phases. The adoption date of this Ordinance shall be the starting point from which to consider tracts as "parent tracts" in which future subdivisions and respective impervious area computations shall be cumulatively considered. Impervious areas existing on the "parent tract" prior to adoption of this Ordinance shall not be considered in cumulative impervious area calculations for exemption purposes. Impervious areas include, but are not necessarily limited to building roofs, bituminous or concrete pavement, sidewalk, patios, decks and gravel hardstand. An exemption shall not relieve the applicant from implementing such measures as are necessary to protect health, safety, and property. This exemption shall not relieve the applicant from meeting the MS4 standards included herein and the special requirements for watersheds draining to High Quality (HQ) or Exceptional Value (EV) waters (Section 301L), requirements for water quality (Section 303), groundwater recharge (Section 304), and streambank erosion (Section 305). This exemption does not relieve the developer from the requirements of an NPDES Permit if the total disturbed area exceeds 1.0 acre. An exemption shall not relieve the applicant from providing adequate stormwater management to meet the purpose of this Ordinance; however, drainage plans and calculations will not have to be submitted to the municipality.

Stormwater Management Exemption Criteria

Total Parcel Size	Impervious Area Exemption (sq.ft.)
< ½ acre	4,500 sq. ft.
> ½ acre	6,000 sq. ft.

The exemption criteria is either met or it is not. The impervious area exemption cannot be used as a reduction to impervious areas that are part of larger projects which do not meet the exemption criteria.

Exemptions shall not be granted for residential subdivisions comprised of more than two (2) lots. Developers of residential subdivisions must comply with the requirements of this ordinance for the roadway and changes to the pre-post development runoff coefficients for all individual lots regardless of when the lots are developed. A minimum of 4500 square feet of impervious area shall be assumed for each developed lot with a total size of ½ acre or less and 6000 square feet of impervious area for lots greater than ½ acre. Additionally, developers of subdivisions must forward a copy of the deed covenants requiring each property owner to comply with Section F of this ordinance, "Stormwater Management Requirements for Individual Homeowners."

Section 107. Repealer

Any other ordinance provision(s) or regulation of the Municipality inconsistent with any of the provisions of this Ordinance is hereby repealed to the extent of the inconsistency only.

This ordinance is intended to specifically repeal the stormwater management and control provisions contained in Section 803 of the Adams Township Zoning Ordinance. To the extent that any other portion of the Adams Township Zoning Ordinance or the Adams Township Subdivision and Land Development Ordinance mentions or refers to stormwater permits, management plan, control or the installation of culverts, ditches or earth disturbance, the provisions of this ordinance shall be deemed to apply thereto.

This ordinance shall also be deemed to repeal in toto, the Little Conemaugh River Watershed Stormwater Management Ordinance #92, Section 1503 "Stormwater Management" of the Adams Township Zoning Ordinance and Section 508 "Stormwater Drainage" of the Adams Township Subdivision and Land Development Ordinance.

Section 108. Severability

In the event that any section or provision of this Ordinance is 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 109. Compatibility with Other Requirements

- A. Approvals issued and actions taken under this Ordinance do not relieve the Applicant of the responsibility to secure required permits or approvals for activities regulated by any other code, law, regulation or ordinance. To the extent that this Ordinance imposes more rigorous or stringent requirements for stormwater management, the specific requirements contained in this Ordinance shall be followed.
- B. Nothing in this Ordinance shall be construed to affect any of the Municipality's requirements regarding stormwater matters which do not conflict with the provisions of this Ordinance, such as local stormwater management design criteria (e.g. inlet spacing, inlet type, collection system design and details, outlet structure design, etc.). Conflicting provisions in other municipal ordinances or regulations shall be construed to retain the requirements of this ordinance addressing State Water Quality Requirements.

ARTICLE II - DEFINITIONS

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

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

masculine gender.

- B. The word "includes" or "including" shall not limit the term to the specific example but is intended to extend its meaning to all other instances of like kind and character.
- C. The words "shall" and "must" are mandatory; the words "may" and "should" are permissive.

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

Agricultural Activities - The work of producing crops and raising livestock including tillage, plowing, disking, harrowing, pasturing and installation of conservation measures. Construction of new buildings or impervious area is not considered an agricultural activity.

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

As-built drawings - Those maintained by the Contractor as he constructs the project and upon which he documents the actual locations of the building components and changes to the original contract documents. These, or a copy of same, are turned over to the Engineer at the completion of the project.

Applicant - A landowner or applicant who has filed an application for approval to engage in any Regulated Activities as defined in Section 104 of this Ordinance.

Bankfull - The channel at the top-of-bank or point where water begins to overflow onto a floodplain.

Base Flow - The portion of stream flow that is sustained by ground water discharge.

Bioretention - A storm water retention area which utilizes woody and herbaceous plants and soils to remove pollutants before infiltration occurs.

BMP (Best Management Practice) - Methods, measures or practices to prevent or reduce surface runoff and/or water pollution, including but not limited to, structural and non-structural stormwater management practices and operation and maintenance procedures. See also Non-structured Best Management Practice (BMP).

Buffer - The area of land immediately adjacent to any stream, measured perpendicular to and horizontally from the top-of-bank on both sides of a stream.

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.

Channel Erosion - The widening, deepening, and headward cutting of small channels and waterways, due to erosion caused by moderate to large floods.

Cistern - An underground reservoir or tank for storing rainwater.

Conservation District - The Cambria County Conservation District.

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

Dam - An artificial barrier, together with its appurtenant works, constructed for the purpose of impounding or storing water or another fluid or semifluid, or a refuse bank, fill or structure for highway, railroad or other purposes which does or may impound water or another fluid or semifluid.

DEP - The Pennsylvania Department of Environmental Protection.

Designee - The agent of the Municipal Planning Commission and/or agent of the governing body involved with the administration, review or enforcement of any provisions of this ordinance by contract or memorandum of understanding.

Design Professional (Qualified) - A Pennsylvania Licensed Professional Engineer or Registered Landscape Architect trained to develop stormwater management plans and calculations in accordance with the Commonwealth's Professional Licensing regulations.

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 stormwater management systems.

Detention Basin - An impoundment designed to collect and retard stormwater runoff by temporarily storing the runoff and releasing it at a predetermined rate. Detention basins are designed to drain completely shortly after any given rainfall event and are dry until the next rainfall event.

Detention District - Those subareas in which some type of detention is required to meet the plan requirements and the goals of Act 167.

Developer - A person that seeks to undertake any Regulated Earth Disturbance activities at a project site in the Municipality.

Development - See "Earth Disturbance Activity." The term includes redevelopment.

Development Site - The specific tract of land where any Earth Disturbance activities in the

Municipality are planned, conducted or maintained.

Diffused Drainage Discharge - Drainage discharge not confined to a single point location or channel, such as sheet flow or shallow concentrated flow.

Discharge - To release of water from a project, site, aquifer, drainage basin or other point of interest (verb); The rate and volume of flow of water such as in a stream, generally expressed in cubic feet per second (volume per unit of time) (noun). See also Peak Discharge.

Disturbed Areas - Unstabilized land area where an earth disturbance activity is occurring or has occurred.

Ditch - An artificial waterway for irrigation or stormwater conveyance.

Downslope Property Line - That portion of the property line of the lot, tract, or parcels of land being developed located such that all overland or pipe flow from the site would be directed towards it.

Drainage Conveyance Facility - A Stormwater Management Facility designed to transmit stormwater runoff and shall include streams, channels, swales, pipes, conduits, culverts, storm sewers, etc.

Drainage Easement - A right granted by a landowner to a grantee, allowing the use of private land for stormwater management purposes.

Drainage Permit - A permit issued by the Municipal governing body after the drainage plan has been approved. Said permit is issued prior to or with the final Municipal approval.

Drainage Plan - The documentation of the stormwater management system, to be used for a given development site, the contents of which are established in Section 403.

Earth Disturbance Activity - A construction or other human activity which disturbs the surface of land, including, but not limited to, clearing and grubbing, grading, excavations, embankments, land development, agricultural plowing or tilling, timber harvesting activities, road maintenance activities, mineral extraction, and the moving, depositing, stockpiling, or storing of soil, rock or earth materials.

Emergency Spillway - A conveyance area that is used to pass peak discharge greater than the maximum design storm controlled by the storm water facility.

Encroachment - A structure or activity that changes, expands or diminishes the course, current or cross section of a watercourse, floodway or body of water.

Erosion - The movement of soil particles by the action of water, wind, ice, or other natural forces.

Erosion and Sediment Pollution Control Plan - A plan that is designed to minimize accelerated erosion and sedimentation.

Exceptional Value Waters - Surface waters of high quality which satisfy Pennsylvania Code Title 25 Environmental Protection, Chapter 93 Water Quality Standards, § 93.4b(b) (relating to anti-degradation).

Existing Conditions - The initial condition of a project site prior to the proposed construction. If the initial condition of the site is undeveloped land, the land use shall be considered as "meadow" unless the natural land cover is proven to generate lower curve numbers or Rational "C" value, such as forested lands.

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

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

Floodway - The channel of the watercourse and those portions of the adjoining floodplains, 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 timber inventory and preparation of forest management plans, silvicultural treatment, cutting budgets, logging road design and construction, timber harvesting, site preparation and reforestation.

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

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

Grassed Waterway - A natural or constructed waterway, usually broad and shallow, covered with erosion-resistant grasses, used to conduct surface water.

Groundwater - Water beneath the earth's surface, often between saturated soil and rock that

supplies wells and springs.

Groundwater Recharge - Replenishment of existing natural underground water supplies.

HEC-HMS - The U.S. Army Corps of Engineers, Hydrologic Engineering Center (HEC) - Hydrologic Modeling System (HMS).

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

Hotspots - Areas where land use or activities generate highly contaminated runoff, with concentrations of pollutants in excess of those typically found in stormwater.

Hydrograph - A graph of discharge versus time for a selected point in the drainage system.

Hydrologic Regime (natural) - The hydrologic cycle or balance that sustains quality and quantity of storm water, baseflow, storage, and groundwater supplies under natural conditions.

Hydrologic Soil Group - A classification of soils by the Natural Resources Conservation Service, formerly the Soil Conservation Service, into four runoff potential groups. The groups range from A soils, which are very permeable and produce little runoff, to D soils, which are not very permeable and produce much more runoff.

Impervious Surface - A surface that prevents the percolation of water into the ground such as building rooftops, pavement, sidewalks, driveways and compacted earth or gravel.

Impoundment - A retention or detention basin designed to retain stormwater runoff and release it at a controlled rate.

Infill - Development that occurs on smaller parcels that remain undeveloped but are within or very close proximity to urban areas. The development relies on existing infrastructure and does not require an extension of water, sewer or other public utilities.

Infiltration - Movement of surface water into the soil, where it is absorbed by plant roots, evaporated into the atmosphere, or percolates downward into the soil to recharge groundwater.

Infiltration Structures - A structure designed to direct runoff into the ground (e.g., french drains, seepage pits, seepage trench).

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

Intermittent Stream - A stream that flows only part of the time. Flow generally occurs for several weeks or months in response to seasonal precipitation, due to groundwater discharge.

Land Development - (i) the improvement of one lot or two or more contiguous lots, tracts, or parcels of land for any purpose involving (a) a group of two or more buildings, or (b) the division or allocation of land or space between or among two or more existing or prospective occupants by means of, or for the purpose of streets, common areas, leaseholds, condominiums, building groups, or other features; (ii) any subdivision of land; (iii) development in accordance with Section 503(1.1) of the PA Municipalities Planning Code.

Land Earth Disturbance - Any activity involving grading, tilling, digging, or filling of ground or stripping of vegetation or any other activity that causes an alteration to the natural condition of the land.

Limiting zone - A soil horizon or condition in the soil profile or underlying strata which includes one of the following:

- (i) A seasonal high water table, whether perched or regional, determined by direct observation of the water table or indicated by soil mottling.
- (ii) A rock with open joints, fracture or solution channels, or masses of loose rock fragments, including gravel, with insufficient fine soil to fill the voids between the fragments.
- (iii) A rock formation, other stratum or soil condition which is so slowly permeable that it effectively limits downward passage of effluent.

Lot - A part of a subdivision or a parcel of land used as a building site or intended to be used for building purposes, whether immediate or future, which would not be further subdivided. Whenever a lot is used for a multiple family dwelling or for commercial, institutional or industrial purposes, the lot shall be deemed to have been subdivided into an equivalent number of single family residential lots as determined by estimated sewage flows.

Main Stem (Main Channel) - Any stream segment or other runoff conveyance facility used as a reach in the Little Conemaugh River or Stoneycreek River hydrologic models.

Manning Equation in (Manning formula) - A method for calculation of velocity of flow (e.g., feet per second) and flow rate (e.g., cubic feet per second) in open channels based upon channel shape, roughness, depth of flow and slope. "Open channels" may include closed conduits so long as the flow is not under pressure.

Municipal Engineer - A professional engineer licensed as such in the Commonwealth of Pennsylvania, duly appointed as the engineer for a municipality, planning agency or joint planning commission.

Municipality – Adams Township, Cambria County, Pennsylvania.

Natural Hydrologic Regime (see hydrologic regime)

Natural Recharge Area - Undisturbed surface area or depression where stormwater collects, and a portion of which infiltrates and replenishes the underground and groundwater.

Nonpoint Source Pollution - Pollution that enters a watery body from diffuse origins in the watershed and does not result from confined or discrete conveyances.

Non Stormwater Discharges - Water flowing in stormwater collection facilities, such as pipes or swales, which is not the result of a rainfall event or snowmelt.

Nonstructural Best Management Practice (BMPs) - Methods of controlling stormwater runoff quantity and quality, such as innovative site planning, impervious area and grading reduction, protection of natural depression areas, temporary ponding on site and other techniques.

NPDES - National Pollutant Discharge Elimination System, the federal government's system for issuance of permits under the Clean Water Act, which is delegated to DEP in Pennsylvania.

NRCS - Natural Resource Conservation Service (previously SCS).

Open Channel - A drainage element in which stormwater flows with an open surface. Open channels include, but shall not be limited to, natural and man-made drainageways, swales, streams, ditches, canals, and pipes flowing partly full.

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

Outlet - Points of water disposal from a stream, river, lake, tidewater or artificial drain.

Parent Tract - The parcel of land from which a land development or subdivision originates, determined from the date of municipal adoption of this ordinance.

Parking Lot Storage - Involves the use of impervious parking areas as temporary impoundments with controlled release rates during rainstorms.

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

Person - An individual, partnership, public or private association or corporation, or a governmental unit, public utility or any other legal entity whatsoever which is recognized by law as the subject of rights and duties.

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

Planning Commission - The planning commission of Adams Township.

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

Post Construction - Period after construction where disturbed areas are stabilized, stormwater

controls are in place and functioning and all proposed improvements in the approved land development plan are completed.

PMF - Probable Maximum Flood - The flood that may be expected from the most severe combination of critical meteorological and hydrologic conditions that are reasonably possible in any area. The PMF is derived from the probable maximum precipitation (PMP) as determined based on data obtained from the National Oceanographic and Atmospheric Administration (NOAA).

Predevelopment - Undeveloped/Natural Condition.

Pretreatment - Techniques employed in stormwater BMPs to provide storage or filtering to help trap coarse materials and other pollutants before they enter the system, but not necessarily meet the water quality volume requirements of Section 305.

Project Site - The specific area of land where any Regulated Earth Disturbance activities in the Municipality are planned, conducted or maintained.

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

Recharge - The replenishment of groundwater through the infiltration of rainfall, other surface waters, or land application of water or treated wastewater.

Recharge Area - Undisturbed surface area or depression where stormwater collects, and a portion of which infiltrates and replenishes the underground and groundwater.

Redevelopment - The construction, alteration, or improvement exceeding 5,000 square feet of land disturbance performed on sites where existing land use is commercial, industrial, institutional, or multifamily residential.

Regulated Activities - Actions or proposed actions that have an impact on stormwater runoff and that are specified in Section 104 of this Ordinance.

Regulated Earth Disturbance Activity – Earth disturbance activity of 5,000 square feet or more. This includes earth disturbance on any portion of, part, or during any stage of, a larger common plan of development. Developers may not phase a project for the purpose of avoiding a permit, approval or compliance with this ordinance. In addition to the above defined activities, the following activities are also specifically included:

- A. Land Development
- B. Subdivision
- C. Construction of new or additional impervious or semi-pervious surfaces (driveways, parking lots, etc.)
- D. Construction of new buildings or additions to existing buildings
- E. Diversion or piping of any natural or man-made stream channel
- F. Installation of stormwater management facilities or appurtenances thereto
- G. Mining Operations

H. Construction of timber roads and log landings

Release Rate - The percentage of pre-development peak rate of runoff from a site or subarea to which the post-development peak rate of runoff must be reduced to protect downstream areas.

Retention Basin - An impoundment in which stormwater is stored and not released during the storm event. Stored water may be released from the basin at some time after the end of the storm.

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

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

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

Roof Drains - A drainage conduit or pipe that collects water runoff from a roof and leads it away from the structure.

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

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

SALDO - Subdivision and Land Development Ordinance.

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 process by which mineral or organic matter is accumulated or deposited by the movement of water.

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

Separate Storm Sewer System - A conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels or

storm drains) primarily used for collecting and conveying stormwater runoff.

Shallow Concentrated Flow - Stormwater runoff flowing in shallow, defined ruts prior to entering a defined channel or waterway.

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

Soil-Cover Complex Method - A method of runoff computation developed by the NRCS that is based on relating soil type and land use/cover to a runoff parameter called Curve Number (CN).

Source Water Protection Areas (SWPA) - The zone through which contaminants are likely to migrate and reach a drinking water well or surface water intake.

Special Protection Subwatersheds - Watersheds for which the receiving waters are exceptional value (EV) or high quality (HQ) waters.

Spillway - A conveyance that is used to pass the peak discharge of the maximum design storm controlled by the stormwater facility.

State Water Quality Requirements - As defined under state regulations -- protection of *designated* and *existing* uses (See 25 Pa. Code Chapters 93 and 96)--including:

- A. Each stream segment in Pennsylvania has a "designated use," such as "cold water fishery" or "potable water supply," which are listed in Chapter 93. These uses must be protected and maintained, under state regulations.
- B. "Existing uses" are those attained as of November 1975, regardless whether they have been designated in Chapter 93. Regulated Earth Disturbance activities must be designed to protect and maintain existing uses and maintain the level of water quality necessary to protect those uses in all streams, and to protect and maintain water quality in special protection streams.
- C. Water quality involves the chemical, biological and physical characteristics of surface water bodies. After Regulated Earth Disturbance activities are complete, these characteristics can be impacted by addition of pollutants such as sediment, and changes in habitat through increased flow volumes and/or rates as a result of changes in land surface area from those activities. Therefore, permanent discharges to surface waters must be managed to protect the stream bank, streambed and structural integrity of the waterway, to prevent these impacts.

Storage Indication Method - A reservoir routing procedure based on solution of the continuity equation (inflow minus outflow equals the change in storage) with outflow defined as a function of storage volume and depth.

Storm Frequency - The number of times that a given storm "event" occurs or is exceeded on the average in a stated period of years. See "Return Period".

Storm Sewer - A system of pipes and/or open channels that convey intercepted runoff and

stormwater from other sources, but excludes domestic sewage and industrial wastes.

Stormwater - The surface runoff generated by precipitation reaching the ground surface.

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

Stormwater Management Plan - The plan for managing stormwater runoff in Adams Township.

Stormwater Management Site Plan - The plan prepared by the Applicant or his/her Qualified Design Professional indicating how stormwater runoff will be managed at the particular site of interest according to this Ordinance.

Stream - A natural watercourse.

Stream Buffer - The land area adjacent to each side of a stream, essential to maintaining water quality.

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

Subarea - The smallest drainage unit of a watershed for which stormwater management criteria have been established in the Stormwater Management Plan.

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

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

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

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-Bank - Highest point of elevation in a stream channel cross section at which a rising water level just begins to flow out of the channel and over the floodplain.

Vernal Pond - Seasonal depressional wetlands that are covered by shallow water for variable periods from winter to spring, but may be completely dry for most of the summer and fall.

Watercourse - A stream of water; river; brook; creek; or a channel or ditch for water, whether natural or manmade.

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

Watershed - Region or area drained by a river, watercourse or other body of water, whether natural or artificial.

Well heads - 1. a structure built over a well, 2. the source of water for a well.

Wellhead Protection Area - The surface and subsurface area surrounding a water supply well, well field, spring or infiltration gallery supplying a public water system, through which contaminants are reasonably likely to move toward and reach the water source.

Wet Basin - Pond for urban runoff management that is designed to detain urban runoff and always contains water.

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.

ARTICLE III - STORMWATER MANAGEMENT FOR WATER QUALITY

Section 301. General Requirements for Stormwater Management

- A. All Regulated Earth Disturbance activities within the Municipality shall be designed, implemented, operated and maintained to meet the purposes of this Ordinance, through these two elements:
 - 1. Erosion and Sediment control during the earth disturbance activities (e.g., during construction), and
 - 2. Water quality protection measures after completion of earth disturbance activities (e.g., after construction), including operations and maintenance.

- B. No Regulated Earth Disturbance activities within the Municipality shall commence until the requirements of this Ordinance are met.
- C. Erosion and sediment control during Regulated Earth Disturbance activities shall be addressed as required by Section 303.
- D. Post-construction water quality protection shall be addressed as required by Section 304. Operations and maintenance of permanent stormwater BMPs shall be addressed as required by Article IV.
- E. All Best Management Practices (BMPs) used to meet the requirements of this Ordinance shall conform to the State Water Quality Requirements as depicted in DEP's Stormwater BMP Manual, latest revisions, and any more stringent requirements as determined by the Municipality.
- F. Techniques described in Appendix A (Low Impact Development) of this Ordinance are encouraged, because they reduce the costs of complying with the requirements of this Ordinance and the State Water Quality Requirements.

Section 302. Permit Requirements by Other Government Entities

The following permit requirements may apply to certain Regulated Earth Disturbance activities, and must be met prior to commencement of Regulated Earth Disturbance activities, as applicable:

- A. All Regulated Earth Disturbance activities subject to permit requirements by DEP under regulations at 25 Pa. Code Chapter 102.
- B. Work within natural drainageways subject to permit by DEP under 25 Pa. Code Chapter 105.
- C. Any stormwater management facility that would be located in or adjacent to surface waters of the Commonwealth, including wetlands, subject to permit by DEP under 25 Pa. Code Chapter 105.
- D. Any stormwater management facility that would be located on a State highway right-of-way, or require access from a state highway, shall be subject to approval by the Pennsylvania Department of Transportation (PennDOT).
- E. Culverts, bridges, storm sewers or any other facilities which must pass or convey flows from the tributary area and any facility which may constitute a dam subject to permit by DEP under 25 Pa. Code Chapter 105.

Section 303. Erosion and Sediment Control During Regulated Earth Disturbance Activities

- A. No Regulated Earth Disturbance activities equal to or greater than ½ acre of disturbance shall commence until approval by the Cambria County Conservation District of an Erosion and Sediment Pollution Control Plan or NPDES Phase II Permit for construction activities.
- B. Evidence of any necessary permit(s) or approval(s) for Regulated Earth Disturbance activities from the appropriate DEP regional office or Cambria County Conservation District must be provided to the Adams Township Supervisors. The issuance of an NPDES Permit or Erosion and Sediment Pollution Control Plan approval by the Conservation District satisfies the requirements subsection 303.A.
- C. In addition, under 25 Pa. Code Chapter 92, an NPDES Phase II Permit is required from DEP for Regulated Earth Disturbance activities which exceed one (1) acre of disturbed area and have a point discharge.
- D. DEP has regulations that require an Erosion and Sediment Pollution Control Plan for any earth disturbance activity of 5,000 square feet or more, under 25 Pa. Code § 102.4(b).
- E. A copy of the Erosion and Sediment Pollution Control plan and any permits required by DEP or the Cambria County Conservation District, shall be available at the project site at all times.

Section 304. Water Quality Requirements After Regulated Earth Disturbance Activities Are Complete

- A. No Regulated Earth Disturbance activities within the Municipality shall commence until approval by the Municipality of a plan which demonstrates compliance with State Water Quality Requirements after construction is complete.
- B. The BMPs must be designed, implemented and maintained to meet State Water Quality Requirements, and any other more stringent requirements as determined by the Municipality.
- C. To control post-construction stormwater impacts from Regulated Earth Disturbance activities, State Water Quality Requirements can be met by BMPs, including site design, which provide for replication of pre-construction stormwater infiltration and runoff conditions, so that post-construction stormwater discharges do not degrade the physical, chemical or biological characteristics of the receiving waters. As described in the DEP Comprehensive Stormwater Management Policy (#392-0300-002, September 28, 2002), this may be achieved by the following:
 - 1. Infiltration: replication of pre-construction stormwater infiltration conditions,

2. Treatment: use of water quality treatment BMPs to ensure filtering out of the chemical and physical pollutants from the stormwater runoff, and
 3. Streambank and Streambed Protection: management of volume and rate of post-construction stormwater discharges to prevent physical degradation of receiving waters (e.g., from scouring).
- D. DEP has regulations that require municipalities to ensure design, implementation and maintenance of Best Management Practices ("BMPs") that control runoff from new development and redevelopment after Regulated Earth Disturbance activities are complete. These requirements include the need to implement post-construction stormwater BMPs with assurance of long-term operations and maintenance of those BMPs.
- E. The issuance of an NPDES Construction Permit (or permit coverage under the statewide General Permit (PAG-2)) satisfies the requirements of subsection 304.A. Submit a copy of the NPDES Permit approval letter to the Adams Township Supervisors.
- F. BMP operations and maintenance requirements are described in Article IV of this Ordinance.

Section 305. Stormwater Management Release Rates (rate control requirements)

The post development peak runoff rate must be limited to the max. allowable release rate percentage within each drainage subarea for the 2-, 10-, 25-, and 50-year design storms. The 50-year design storm shall be contained within the detention basin or facility without outletting the emergency spillway. It is the developer/owner/qualified design professional's responsibility to insure that the proposed development site meets the release rate criteria of this Ordinance and does not increase stormwater runoff onto adjacent properties. Allowable release rates for subareas within the Little Conemaugh River Watershed are as shown on the Watershed Map in Appendix D. Release rates for subareas within the Stoneycreek River Watershed are as shown on the Watershed Map in Appendix E (unavailable as of the date of adoption. Release rates of 100% of predevelopment are permissible prior to approval of map and release rates by PADEP, issuance and inclusion herein). The stormwater management facility shall be designed so that the combination of the primary and emergency spillways can safely pass the 100-year design storm without overtopping the top bank while maintaining a 1.0 foot freeboard between the maximum water level and the top of bank.

Section 306. Stormwater Management Release Rate District Implementation Provisions (Performance Standards)

- A. General - Post-development rates of runoff from any regulated activity shall meet the peak release rates of runoff prior to development for the design storms specified on the Stormwater Management Release Rate District Watershed Maps (Ordinance Appendices D and E) and Section 305, of the Ordinance.

- B. Release Rate District Boundaries - The boundaries of the Stormwater Management Districts are shown on the official maps that are available for inspections at the municipal office. Copies of the official maps at a reduced scale are included in the Ordinance Appendices D and E. The exact location of the Stormwater Management District boundaries as they apply to a given development site shall be determined by mapping the boundaries using the two-foot topographic contours (or most accurate data required) provided as part of the Drainage Plan.
- C. Sites Located in More Than 1 District - For a proposed development site located within two or more stormwater management district category subareas, the peak discharge rate shall be the most restrictive (lowest release rate percentage). The calculated peak discharges shall apply regardless of whether the grading plan changes the drainage area by subarea.
- D. Off-Site Areas - Off-site Areas that drain through a proposed development site are not subject to release rate criteria when determining allowable peak runoff rates. However, on-site drainage facilities shall be designed to safely convey off-site flows through the development site.
- E. Site Areas - Where the site area to be impacted by a proposed development activity differs significantly from the total site area, only the proposed impact area utilizing stormwater management measures shall be subject to the Management District Criteria. In other words, unimpacted areas bypassing the stormwater management facilities would not be subject to the Management District Criteria.
- F. "No Harm" Option - For any proposed development site not located in a provisional direct discharge district, the developer has the option of using a less restrictive runoff control (including no detention) if the developer can prove that the post-development hydrographs can match existing conditions hydrographs, or if it can be proved that the post-development conditions will not cause increases in peaks at any point downstream. Proof of "no harm" would have to be shown based upon the following "Downstream Impact Evaluation" which shall include a "downstream hydraulic capacity analysis" consistent with Section 306.G to determine if adequate hydraulic capacity exists. The land developer shall submit to the municipality this evaluation of the impacts due to increased downstream stormwater flows in the watershed.
1. The "Downstream Impact Evaluation" shall include hydrologic and hydraulic calculations necessary to determine the impact of hydrograph timing modifications due to the proposed development upon a dam, highway, structure, natural point of restricted streamflow or any stream channel section, established with the concurrence of the municipality.
 2. The evaluation shall continue downstream until the increase in flow diminishes due to additional flow from tributaries and/or stream attenuation.
 3. The peak flow values to be used for downstream areas for the design return period

storms (2, 5, 10, 25, 50, and 100-year) shall be the values from the calibrated model for the Little Conemaugh River Watershed or Stoneycreek River Watershed as applicable. These flow values can be obtained from the watershed plans.

4. Developer-proposed runoff controls which would generate increased peak flow rates at storm drainage problem areas would, by definition, be precluded from successful attempts to prove "no-harm", except in conjunction with proposed capacity improvements for the problem areas consistent with Section 306.G.
 5. A financial distress shall not constitute grounds for granting a no-harm exemption.
 6. Capacity improvements may be provided as necessary to implement the "no harm" option which proposes specific capacity improvements to provide that a less stringent discharge control would not create any harm downstream.
 7. Any "no harm" justifications shall be submitted by the developer as part of the Drainage Plan submission per Article IV. Complete calculations shall also be submitted.
- G. "Downstream Hydraulic Capacity Analysis" - Any downstream capacity hydraulic analysis conducted in accordance with this Ordinance shall use the following criteria for determining adequacy for accepting increased peak flow rates:
1. Natural or man-made channels or swales must be able to convey the increased runoff associated with a 2-year return period event within their banks at velocities consistent with protection of the channels from erosion. Acceptable velocities shall be based upon criteria included in the DEP *Erosion and Sediment Pollution Control Program Manual*.
 2. Natural or man-made channels or swales must be able to convey increased 25-year return period runoff without creating any hazard to persons or property.
 3. Culverts, bridges, storm sewers or any other facilities which must pass or convey flows from the tributary area must be designed in accordance with DEP Chapter 105 regulations (if applicable) and, at minimum, pass the increased 25-year return period runoff.
- H. Regional Detention Alternatives - For certain areas within the study area, it may be more cost-effective to provide one control facility for more than one development site than to provide an individual control facility for each development site. The initiative and funding for any regional runoff control alternatives are the responsibility of prospective developers. The design of any regional control basins must incorporate reasonable development of the entire upstream watershed. The peak outflow of a regional basin would be determined on a case-by-case basis using the hydrologic model of the watershed consistent with protection of the downstream watershed areas.

Section 307. Design Criteria for Stormwater Management Facilities

- A. Any stormwater facility located on State highway rights-of-way shall be subject to approval by the Pennsylvania Department of Transportation (PennDOT).
- B. Any stormwater management facility (i.e., detention basin) designed to store runoff and requiring a berm or earthen embankment required or regulated by this ordinance shall be designed to provide an emergency spillway to handle flow up to and including the 100-year post-development conditions. The height of embankment must be set as to provide a minimum 1.0 foot of freeboard between the maximum pool elevation computed when the facility functions for the 100-year post-development inflow and the top bank elevation. Should any storm-water management facility require a dam safety permit under PA DEP Chapter 105, the facility shall be designed in accordance with Chapter 105 and meet the regulations of Chapter 105 concerning dam safety which may be required to pass storms larger than 100-year event.
- C. Any facilities that constitute water obstructions (e.g., culverts, bridges, outfalls, or stream enclosures), and any work involving wetlands as directed in PA DEP Chapter 105 regulations (as amended or replaced from time to time by PA DEP), shall be designed in accordance with Chapter 105 and will require a permit from PA DEP. Any other drainage conveyance facility that does not fall under Chapter 105 regulations must be able to convey, without damage to the drainage structure or roadway, runoff from the 25-year design storm with a minimum 1.0 foot of freeboard measured below the lowest point along the top of the roadway. Any facility that constitutes a dam as defined in PA DEP chapter 105 regulations may require a permit under dam safety regulations. Any facility located within a PennDOT right of way must meet PennDOT minimum design standards and permit submission requirements.
- D. Any drainage conveyance facility and/or channel that does not fall under Chapter 105 Regulations, must be able to convey, without damage to the drainage structure or roadway, runoff from the 10-year design storm. Conveyance facilities to or exiting from stormwater management facilities (i.e., detention basins) shall be designed to convey the design flow to or from that structure. Roadway crossings located within designated floodplain areas must be able to convey runoff from a 100-year design storm. Any facility located within a PennDOT right-of-way must meet PennDOT minimum design standards and permit submission requirements.
- E. Storm sewers must be able to convey post-development runoff from a 10-year/5 minute design storm without surcharging inlets, where appropriate. Roadway culverts must be able to convey post-development runoff from a 25-year design storm except as otherwise noted in Item D above (floodplains). Any facility located within a PennDOT right-of-way must meet PennDOT minimum design standards and permit submission requirements.
- F. Adequate erosion protection shall be provided along all open channels, and at all points of discharge.

- G. The design of all stormwater management facilities shall incorporate sound engineering principles and practices. The Municipality shall reserve the right to disapprove any design that would result in the occupancy or continuation of an adverse hydrologic or hydraulic condition within the watershed.

Section 308. Stormwater Management Volume Control (1.0 acre or more of earth disturbance)

All land developments or subdivisions which will immediately or upon completion of all phases disturb 1.0 acre or more of earth shall comply with DEP requirements for volume control as outlined in the Stormwater BMP Manual adopted 31 December 2006 and regulated by an NPDES Phase II Permit. Compliance with Control Guideline 1 (CG-1) or Control Guideline 2 (CG-2) will satisfy the volume control requirement of this section.

Section 309. Calculation Methodology

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

- A. Any stormwater runoff calculations shall use generally accepted calculation technique that is based on the NRCS soil cover complex method or as otherwise noted below. Table 308-1 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 site.

The Municipality will allow the use of the Rational Method to estimate peak discharges from drainage areas that contain less than 100 acres. The Soil Complex Method is recommended for drainage areas greater than 100 acres.

**TABLE 308-1
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.
TR-55 (or commercial computer package based on TR-55)	USDA NRCS	Applicable for land development plans within limitations described in TR-55.
HEC-1 / HEC-HMS	US Army Corps of Engineers	Applicable where use of full hydrologic computer model is desirable or necessary.
		Applicable where use of a

PSRM	Penn State University	hydrologic computer model is desirable or necessary; simpler than TR-20 or HEC-1.
Rational Method (or commercial computer package based on Rational Method)	Emil Kuichling (1889)	For sites less than 100 acres, or as approved by the Municipality and/or Municipal Engineer.
Other Methods	Varies	Other computation methodologies approved by the Municipality and/or Municipal Engineer.

- B. All calculations consistent with this Ordinance using the soil cover complex method shall use the appropriate design rainfall depths for the various return period storms according to the region for which they are located as presented in PA DEP or PennDOT references or other sources acceptable to the Township Engineer. If a hydrologic computer model such as PSRM or HEC-1 is used for stormwater runoff calculations, then the duration of rainfall shall be 24 hours. The Alternating Block Method shall be used for the rainfall distribution.
- C. For the purposes of existing conditions flow rate determination, undeveloped land shall be considered as "meadow" in good condition, unless the natural ground cover generates a lower curve number or Rational 'C' value (i.e., forest).
- D. All calculations using the Rational Method shall use rainfall intensities consistent with appropriate times-of-concentration for overland flow and return periods from the Design Storm Curves from PA Department of Transportation Design Rainfall Curves (1986). Times-of-concentration for overland flow shall be calculated using the methodology presented in Chapter 3 of Urban Hydrology for Small Watersheds, NRCS, TR-55 (as amended or replaced from time to time by NRCS). Times-of-concentration for channel and pipe flow shall be computed using Manning's equation.
- E. Runoff Curve Numbers (CN) for both existing and proposed conditions to be used in the soil cover complex method shall be obtained from PA DEP or PennDOT references or other sources acceptable to the Township Engineer. Utilize the bituminous pavement curve number for all post development gravel surfaces even if the owner has no stated intention of paving these areas.
- F. Runoff coefficients (c) for both existing and proposed conditions for use in the Rational method shall be obtained from references acceptable to the Township Engineer. Utilize the bituminous pavement coefficient for all post development gravel surfaces even if the owner has no stated intention of paving these areas.
- G. Where uniform flow is anticipated, the Manning equation shall be used for hydraulic computations, and to determine the capacity of open channels, pipes, and storm sewers. Values for Manning's roughness coefficient (n) shall be consistent with DEP and

PennDOT references or other sources acceptable to the Township Engineer.

- H. Outlet structures for stormwater management facilities shall be designed to meet the performance standards of this Ordinance using any generally accepted hydraulic analysis technique or method.
- I. The design of any stormwater detention facilities intended to meet the performance standards of this Ordinance shall be verified by routing the design storm hydrograph through these facilities using the Storage-Indication Method. For drainage areas greater than 100 acres in size, the design storm hydrograph shall be computed using a calculation method that produces a full hydrograph. The municipality may approve the use of any generally accepted full hydrograph approximation technique that shall use a total runoff volume that is consistent with the volume from a method that produces a full hydrograph.

ARTICLE IV STORMWATER BMP OPERATIONS AND MAINTENANCE PLAN REQUIREMENTS

Section 401. General Requirements

- A. No Regulated Earth Disturbance activities within the Municipality shall commence until approval by the Municipality of BMP Operations and Maintenance plan which describes how the permanent (e.g., post-construction) stormwater BMPs will be properly operated and maintained. Additionally, the issuance of a building or occupancy permit will not be granted until the owner receives approval of the Stormwater BMP Operations and Maintenance Plan.
- B. Stormwater Management calculations and the BMP Operations and Maintenance Plan shall be prepared by either a professional engineer or a registered landscape architect licensed to practice in the Commonwealth of Pennsylvania. Calculations and drawings shall bear the seal and signature of the qualified design professional.
- C. The following items shall be included in the Stormwater BMP Operations and Maintenance Plan:
 - 1. Map(s) of the project area, in a format that meets the requirements for recording at the offices of the Recorder of Deeds of Cambria County, and shall be submitted to Adams Township on 24-inch x 36-inch sheets. The contents of the maps(s) shall include, but not be limited to:
 - a. Clear identification of the location and nature of permanent stormwater BMPs,
 - b. The location of the project site relative to highways, roads, municipal boundaries or other identifiable landmarks,
 - c. Existing and final contours at intervals of no less than two feet,
 - d. Existing streams, lakes, ponds, or other bodies of water within the project site area,

- e. Other physical features including flood hazard boundaries, wetlands, sinkholes, streams, existing drainage courses, and areas of natural vegetation to be preserved, and soil types,
 - f. The locations of all existing and proposed utilities, sanitary sewers, and water lines within 50 feet of property lines of the project site,
 - g. Proposed final changes to the land surface and vegetative cover, including the type and amount of impervious area that would be added,
 - h. Proposed final structures, roads, paved areas, and buildings, and
 - i. A fifteen-foot wide access easement around all stormwater BMPs that would provide ingress to and egress from a public right-of-way,
 - j. A graphic and written scale of one (1) inch equals no more than fifty (50) feet; for tracks of twenty (20) acres or more, the scale shall be one (1) inch equals no more than one hundred (100) feet. In all cases, the stormwater detention facilities shall be detailed in a clear and satisfactory manner, in the opinion of the municipal engineer, so that the intent can be understood and a contractor can construct it. Enlargement plans may be necessary.
 - k. North arrow.
2. A narrative that describes the methodology for the development of site specific stormwater BMPs. Also identify the project schedule and the effect of the project (in terms of runoff volumes and peak flows) on adjacent properties and on any existing municipal stormwater collection system that may receive runoff from the project site.
 3. A description of how each permanent stormwater BMP will be operated and maintained, and the identity of the person(s) responsible for operations and maintenance during construction and after the site has been stabilized,
 4. The name of the project site, the name and address of the owner of the property, and the name of the individual or firm preparing the Plan, and
 5. A statement, signed and dated by the landowner, acknowledging that the stormwater BMPs are fixtures that can be altered or removed only after approval by the Municipality.

Section 402. Responsibilities for Operations and Maintenance of BMPs

- A. The BMP Operations and Maintenance Plan for the project site shall establish responsibilities for the continuing operation and maintenance of all permanent stormwater BMPs, as follows:
 1. If a Plan includes structures or lots which are to be separately owned and

in which streets, sewers and other public improvements are to be dedicated to the Municipality, stormwater BMPs may also be dedicated to and maintained by the Municipality;

2. If a Plan includes operations and maintenance by a single ownership, or if sewers and other public improvements are to be privately owned and maintained, then the operation and maintenance of stormwater BMPs shall be the responsibility of the owner or private management entity.
- B. The Municipality shall make the final determination on the continuing operations and maintenance responsibilities. The Municipality reserves the right to accept or reject the operations and maintenance responsibility for any or all of the stormwater BMPs.

Section 403. Municipality Review of BMP Operations and Maintenance Plan

- A. The Municipality shall review the BMP Operations and Maintenance Plan for consistency with the purposes and requirements of this ordinance, and any permits issued by DEP.
- B. The Municipality shall notify the Applicant in writing whether the BMP Operations and Maintenance Plan is approved.
- C. The Municipality may require an "As-Built Survey" of all stormwater BMPs, and an explanation of any discrepancies with the Operations and Maintenance Plan.

Section 404. Adherence to Approved BMP Operations and Maintenance Plan

It shall be unlawful to alter or remove any permanent stormwater BMP required by an approved BMP Operations and Maintenance Plan, or to allow the property to remain in a condition which does not conform to an approved BMP Operations and Maintenance Plan, unless an exception is granted in writing by the Municipality.

Section 405. Operations and Maintenance Agreement for Privately Owned Stormwater BMPs

- A. The property owner shall sign an operations and maintenance agreement with the Municipality covering all stormwater BMPs that are to be privately owned. The agreement shall be substantially the same as the agreement in Appendix B of this Ordinance.
- B. Other items may be included in the agreement where determined necessary to guarantee the satisfactory operation and maintenance of all permanent stormwater BMPs. The agreement shall be subject to the review and approval of the Municipality.

Section 406. Stormwater Management Easements

- A. Stormwater management easements are required for all areas used for off-site stormwater control, unless a waiver is granted by the Municipal Engineer.
- B. Stormwater management easements shall be provided by the property owner if necessary for (1) access for inspections and maintenance, or (2) preservation of stormwater runoff conveyance, infiltration, and detention areas and other BMPs, by persons other than the property owner. The purpose of the easement shall be specified in any agreement under Section 405.

Section 407. Recording of Approved BMP Operations and Maintenance Plan and Related Agreements

- A. The owner of any land upon which permanent BMPs will be placed, constructed or implemented, as described in the BMP Operations and Maintenance Plan, shall record the following documents in the Office of the Recorder of Deeds for Cambria County, within thirty (30) days of approval of the BMP Operations Plan by the Municipality:
 - 1. The Operations and Maintenance Plan, or a summary thereof,
 - 2. Operations and Maintenance Agreements under Section 405, and
 - 3. Easements under Section 406.
- B. The Municipality may suspend or revoke any approvals granted for the project site upon discovery of the failure of the owner to comply with this Section.

Section 408. Municipal Stormwater BMP Operation and Maintenance Fund

- A. If stormwater BMPs are accepted by the municipality for dedication, the Municipality may require persons installing stormwater BMPs to pay a specified amount to the Municipal Stormwater BMP Operation and Maintenance Fund, to help defray costs of operations and maintenance activities. The amount may be determined as follows:
 - 1. If the BMP is to be owned and maintained by the Municipality, the amount shall cover the estimated costs for operations and maintenance for ten (10) years, as determined by the Municipality.
 - 2. The amount shall then be converted to present worth of the annual series values.
- B. If a BMP is proposed that also serves as a public recreation facility (e.g. ball field, lake), the Municipality may waive or adjust the amount due accordingly.

Section 409. Modification of Plans

A modification to a submitted Plan for a development site that involves a change in stormwater management facilities or techniques, or that involves the relocation or re-design of stormwater management facilities, or that is necessary because soil or other conditions are not as stated on the Plan as determined by the Municipal Engineer, shall require a resubmission of the modified Plan consistent with Section 401 of this Ordinance and be subject to review as specified in Section 403 of this Ordinance.

A modification to an already approved or disapproved Plan shall be submitted to the Municipality, accompanied by the applicable review fee. A modification to a Plan for which a formal action has not been taken by the Municipality shall be submitted to the Municipality, accompanied by the applicable Municipality Review Fee.

Section 410. Resubmission of Disapproved Plans

A disapproved Plan may be resubmitted, with the revisions addressing the Municipal Engineer's concerns documented in writing addressed, to the Municipal Secretary in accordance with Section 401 of this Ordinance and distributed accordingly and be subject to review as specified in Section 403 of this Ordinance. The applicable Municipality Review Fee must accompany a resubmission of a disapproved Plan.

ARTICLE V-INSPECTIONS AND RIGHT OF ENTRY

Section 501. Inspections

- A. The Municipality or its designee may inspect all phases of the construction, operations, maintenance and any other implementation of stormwater BMPs.
- B. During any stage of the Regulated Earth Disturbance activities, if the Municipality or its designee determines that any BMPs are not being implemented in accordance with this Ordinance, the Municipality may suspend or revoke any existing permits or other approvals until the deficiencies are corrected.

Section 502. Right of Entry

- A. Upon presentation of proper credentials, duly authorized representatives of the Municipality may enter at reasonable times upon any property within the Municipality to inspect the implementation, condition, or operation and maintenance of the stormwater BMPs in regard to any aspect governed by this Ordinance.
- B. BMP owners and operators shall allow persons working on behalf of the Municipality ready access to all parts of the premises for the purposes of determining compliance with this Ordinance.
- C. Persons working on behalf of the Municipality shall have the right to temporarily

locate on any BMP in the Municipality such devices as are necessary to conduct monitoring and/or sampling of the discharges from such BMP.

- D. Unreasonable delays in allowing the Municipality access to a BMP is a violation of this Article.

ARTICLE VI - FEES AND EXPENSES

Section 601. General

The Municipality may by Resolution set and collect a reasonable fee for review of BMP Operations and Maintenance Plans to defray review costs incurred by the Municipality. The Applicant shall pay all such fees. No applicant is exempt from payment of these fees.

Section 602. Expenses Covered by Fees

- A. The fees required by this Ordinance may cover:
 - 1. Administrative/clerical Costs.
 - 2. The review of the stormwater management calculations and BMP Operations and Maintenance Plan by the Municipal Engineer.
 - 3. The site inspections including, but not limited to, pre-construction meetings, inspections during construction of stormwater BMPs, and final inspection upon completion of the stormwater BMPs.
 - 4. Any additional work required to monitor and enforce any provisions of this Ordinance, correct violations, and assure proper completion of stipulated remedial actions.

The municipal engineer's fee will be charged at an hourly rate basis to the applicant at the engineer's customary rate.

In the absence of a set fee or in cases where actual costs incurred exceed the set fee, the applicant shall upon presentation of an invoice from the municipality pay the balance due.

- B. The Municipality may suspend or revoke any approvals granted for the project site upon discovery of the failure of the owner to comply with this Section.

ARTICLE VII- PROHIBITIONS

Section 701. Prohibited Discharges

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

discharges into the Municipality's separate storm sewer system which are not composed entirely of stormwater, except (1) as provided in subsection B below, and (2) discharges allowed under a state or federal permit.

B. The following Discharges may be allowed, based on the finding by the Municipality that the discharge(s) do not significantly contribute to pollution to surface waters of the Commonwealth, are:

- Discharges from fire fighting activities
- Uncontaminated water from foundation or from footing drains
- Potable water sources including dechlorinated water line and fire hydrant flushings
- Flows from riparian habitats and wetlands
- Lawn watering
- Irrigation drainage
- Pavement washwaters where spills or Routine external building washdown (which does not use detergents or other compounds)
- Air conditioning condensate provided that leaks of toxic or hazardous materials have not occurred (unless all spill material has been removed) and where detergents are not used
- Water from individual residential car washing
- Dechlorinated swimming pool discharges
- Springs Uncontaminated groundwater
- Water from crawl space pumps

- C. In the event that the Municipality determines, on a case by case basis, that any of the discharges identified in Subsection B significantly contribute to pollution of waters of the Commonwealth, or is so notified by DEP, the Municipality will notify the responsible person to cease the discharge.
- D. Upon notice provided by the Municipality under subsection C, the discharger will have a reasonable time, as determined by the Municipality, to cease the discharge consistent with the degree of pollution caused by the discharge.
- E. Nothing in this Section shall affect a discharger's responsibilities under state law.

Section 702. Prohibited Connections

- A. The following connections are prohibited, except as provided in Section 701.B above:
 - 1. Any drain or conveyance, whether on the surface or subsurface, which allows any non-storm water discharge including sewage, process wastewater, and wash water, to enter the separate storm sewer system, and any connections to the storm drain system from indoor floor drains and sinks; and
 - 2. Any drain or conveyance connected from a commercial or industrial land use to the separate storm sewer system which has not been documented in plans, maps, or equivalent records, and approved by the Municipality.

Section 703. Roof and foundation drains

- A. Roof and foundation drains shall not be connected to streets, sanitary or storm sewers or roadside ditches, and existing drains shall be discontinued, except as provided in Section 703.B.
- B. The municipality may permit connections of roof/foundation drains directly to streets, storm sewers, or roadside ditches for special circumstances when other options are impractical as determined by the municipal engineer. Such permission shall be granted by permit which shall be for a one year term, and which in the absence of notification from the township shall automatically renew for an additional one year term on each anniversary date.
- C. Roof/foundation drains shall discharge to infiltration areas or vegetative BMPs to the maximum extent practicable.

Section 704. Alteration of BMPs

- A. No person shall modify, remove, fill, landscape or alter any existing stormwater

BMP, unless it is part of an approved maintenance program, without the written approval of the Municipality.

- B. No person shall place any structure, fill, landscaping or vegetation into a stormwater BMP or within a drainage easement, which would limit or alter the functioning of the BMP, without the written approval of the Municipality.

ARTICLE VIII - ENFORCEMENT AND PENALTIES

Section 801. Public Nuisance

- A. The violation of any provision of this ordinance is hereby deemed a Public Nuisance.
- B. Each day that a violation continues shall constitute a separate violation.

Section 802. Enforcement Generally

- A. Whenever the Municipality finds that a person has violated a prohibition or failed to meet a requirement of this Ordinance, the Municipality may order compliance by written notice to the responsible person. Such notice may require without limitation:
 - 1. The performance of monitoring, analyses, and reporting;
 - 2. The elimination of prohibited connections or discharges;
 - 3. Cessation of any violating discharges, practices, or operations;
 - 4. The abatement or remediation of storm water pollution or contamination hazards and the restoration of any affected property;
 - 5. Payment of a fine to cover administrative and remediation costs;
 - 6. The implementation of stormwater BMPs; and
 - 7. Operation and maintenance of stormwater BMPs.
- B. Such notification shall set forth the nature of the violation(s) and establish a time limit for correction of these violations(s). Said notice may further advise that, if applicable, should the violator fail to take the required action within the established deadline, the work will be done by the Municipality or designee and the expense thereof shall be charged to the violator.
- C. Failure to comply within the time specified shall also subject such person to the penalty provisions of this Ordinance. All such penalties shall be deemed cumulative and shall not prevent the Municipality from pursuing any and all other remedies available in law or equity.

Section 803. Suspension and Revocation of Permits and Approvals

- A. Any building, land development or other permit or approval issued by the Municipality may be suspended or revoked by the Municipality for:

1. Non-compliance with or failure to implement any provision of the permit;
 2. A violation of any provision of this Ordinance; or
 3. The creation of any condition or the commission of any act during construction or development which constitutes or creates a hazard or nuisance, pollution or which endangers the life or property of others.
- B. A suspended permit or approval shall be reinstated by the Municipality when:
1. The Municipal Engineer or designee has inspected and approved the corrections to the stormwater BMPs, or the elimination of the hazard or nuisance, and/or;
 2. The Municipality is satisfied that the violation of the Ordinance, law, or rule and regulation has been corrected.

Section 804. Penalties

- A. Any person violating the provisions of this ordinance shall be guilty of a misdemeanor, and upon conviction shall be subject to a fine of not more than \$1000.00 for each violation, recoverable with costs. Each day that the violation continues shall be a separate offense.
- B. In addition, the Municipality, through its solicitor, may institute injunctive, mandamus or any other appropriate action or proceeding at law or in equity for the enforcement of this Ordinance. Any court of competent jurisdiction shall have the right to issue restraining orders, temporary or permanent injunctions, mandamus or other appropriate forms of remedy or relief.

Section 805. Appeals

Any person aggrieved by any action of the Municipality or its designee, relevant the provisions of this ordinance, may appeal to the relevant judicial or administrative body according to law, within the time period allowed.

ENACTED and ORDAINED at a regular meeting of the Adams Township Board of Supervisors on the 15th of October, 2007.

This Ordinance shall take effect in 5 days.

I hereby certify that the foregoing Ordinance was advertised in the Johnstown Tribune Democrat on Sept 29, 2007, a newspaper of general circulation in the municipality and was duly enacted and approved as set forth at a regular meeting of the municipality's governing body held on Oct 15, 2007.

Attest: Diana Baxter (seal) Township Secretary

Appendices

ADAMS TOWNSHIP

CAMBRIA COUNTY, PENNSYLVANIA

ACT 167 Stormwater Management Requirements

**For Individual Homeowners
On Single Family Lots**

PREPARED BY:

BORTON-LAWSON ENGINEERING, INC.

What are the ACT 167 Stormwater Management Requirements?

Pennsylvania ACT 167 was authorized on October 4, 1978 (32 P.S., P.L. 864) and gave Pennsylvania Municipalities the power to regulate activities that affect stormwater runoff, surface and groundwater quantity and quality. Specific stormwater management requirements for the Little Conemaugh River watershed were developed in 1994 by the Cambria County Conservation District and updated in 2004 to include requirements for water quality and groundwater recharge.

Who is affected by these requirements?

The ACT 167 Stormwater Management Requirements affect all NEW development in the Little Conemaugh River watershed. Individual home construction projects on single family lots which result in less than 10,000 square feet of impervious area (including the building footprint, driveway, sidewalks and parking areas) are not required to submit formal drainage plans to the Municipality or County, however they must still address Water Quality and Groundwater Recharge criteria specified in the Little Conemaugh River Watershed Stormwater Ordinance (Ord. Sections 305 and 306).

Do I require professional services to meet these requirements?

This brochure has been developed to assist the individual homeowner in meeting the Water Quality and Groundwater Recharge requirements of the Little Conemaugh River Watershed Stormwater Ordinance. If the guidelines presented in this brochure are followed, the individual homeowner will not require professional services to comply with the Stormwater Management Requirements.

What is required to be sent to the Municipality?

Even though a formal drainage plan is not required for individual lot owners, a brief description of the proposed infiltration facilities, including types of material to be used, total impervious areas and volume calculations as shown above, and a simple sketch plan showing the following information shall be submitted to the municipality prior to construction:

?? Location of proposed structures, driveways or other paved areas with approximate size in sq. feet.

Determination of Recharge Volume

The amount of recharge volume which must be provided can be determined by following the simple steps below. Impervious area calculations should include all areas on the individual lots which are covered by roof area or pavement which would prevent rain from naturally percolating into the ground, including sidewalks, driveways or parking areas. Sidewalks, driveways or patios which are constructed with gravel or turf pavers and will not be blacktopped in the future, need not be included in this calculation.

STEP 1 – Determine Total Impervious Surfaces

House Roof(Front)	12 ft x 48 ft	=	576 sq. ft
House Roof (Rear)	12 ft x 48 ft	=	576 sq. ft.
Driveway	12 ft x 50 ft	=	600 sq. ft.
Parking Pad	12 ft x 12 ft	=	144 sq. ft.
Walkway	6 ft x 20 ft	=	120 sq. ft.

			1,440 sq. ft.

STEP 2 – Determine Require Infiltration Volume using Equation

$Rv = 0.3 \times$ (total impervious area in square feet) = _____ cubic feet of recharge

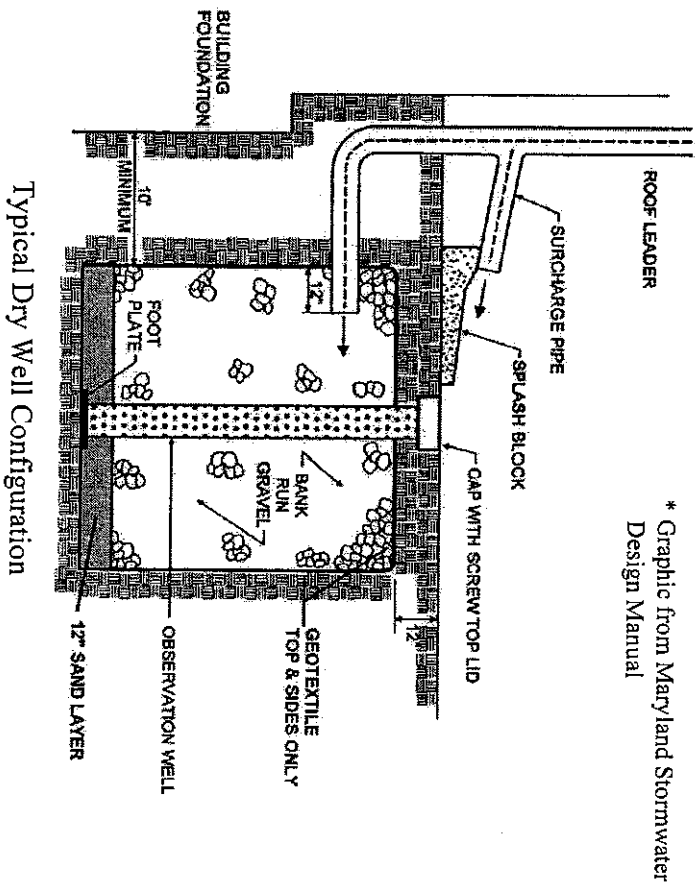
$$Rv = 0.3 \times 1,440 \text{ sq. ft.} = 432 \text{ cu. ft.}$$

STEP 3 – Sizing of Select Infiltration Method

The following pages show several methods of infiltrating stormwater runoff from residential areas. Their appropriateness depends on the amount of infiltration volume required and the amount of land available. More than one method can be implemented on a site, depending on site constraints. Dry wells should be used only for receiving runoff from roof drains. Infiltration trenches are appropriate for receiving runoff from driveways, sidewalk or parking areas. Other methods may be appropriate, but these should be discussed with the municipal engineer prior to installation.

Dry Wells

Dry wells are effective methods of infiltrating runoff from roof leaders. These facilities should be located a minimum of 10 feet from the building foundation to avoid seepage problems. A dry well can be either a structural prefabricated chamber or an excavated pit filled with aggregate. Construction of a dry well should be performed after all other areas of the site are stabilized, to avoid clogging. During construction, compaction of the subgrade soil should be avoided and construction should be performed with only light machinery. Depth of dry wells in excess of 3 1/2 feet should be avoided. Gravel fill should be an average 1.5 - 3.0 inches in diameter. Dry wells should be inspected at least four times annually as well as after large storm events.



Typical Dry Well Configuration

Sample Sizing:

STEP 1 - Determine Total Impervious Surfaces

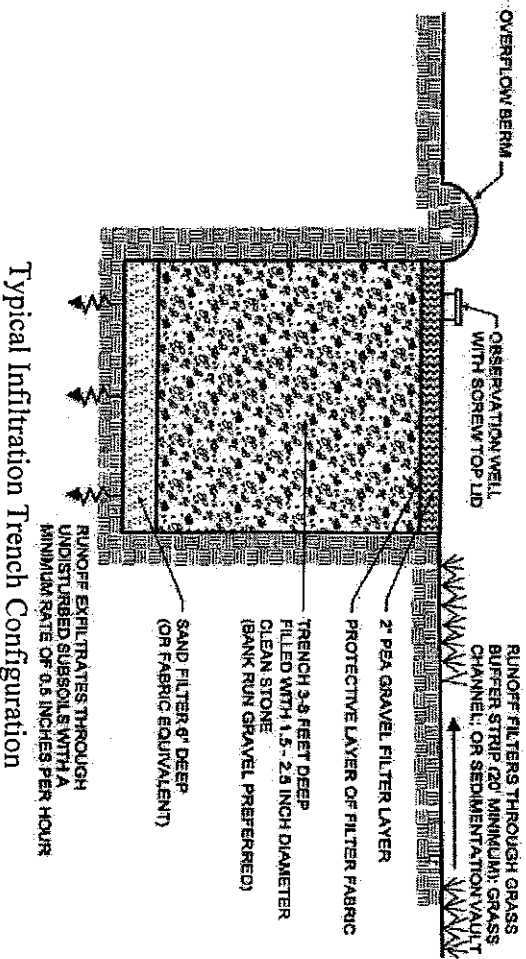
House Roof Area: 12 ft x 48 ft = 576 sq. feet

STEP 2 - Determine Required Infiltration Volume using Equation

Equation 1: $V = I \times A \times D$

Infiltration Trenches

An infiltration trench is a long, narrow, rock-filled trench with no outlet that receives stormwater runoff. Runoff is stored in the void space between the stones and infiltrates through the bottom and into the soil matrix. Infiltration trenches perform well for removal of fine sediment and associated pollutants. Pretreatment using buffer strips, swales, or detention basins is important for limiting amounts of coarse sediment entering the trench which can clog and render the trench ineffective.



Sample Sizing:

STEP 1 – Determine Total Impervious Surfaces

Driveway	12 ft x 50 ft	=	600 sq. ft.
Parking Pad	12 ft x 12 ft	=	144 sq. ft.
Walkway	6 ft x 20 ft	=	120 sq. ft.

			864 sq. ft.

STEP 2 – Determine Require Infiltration Volume using Equation

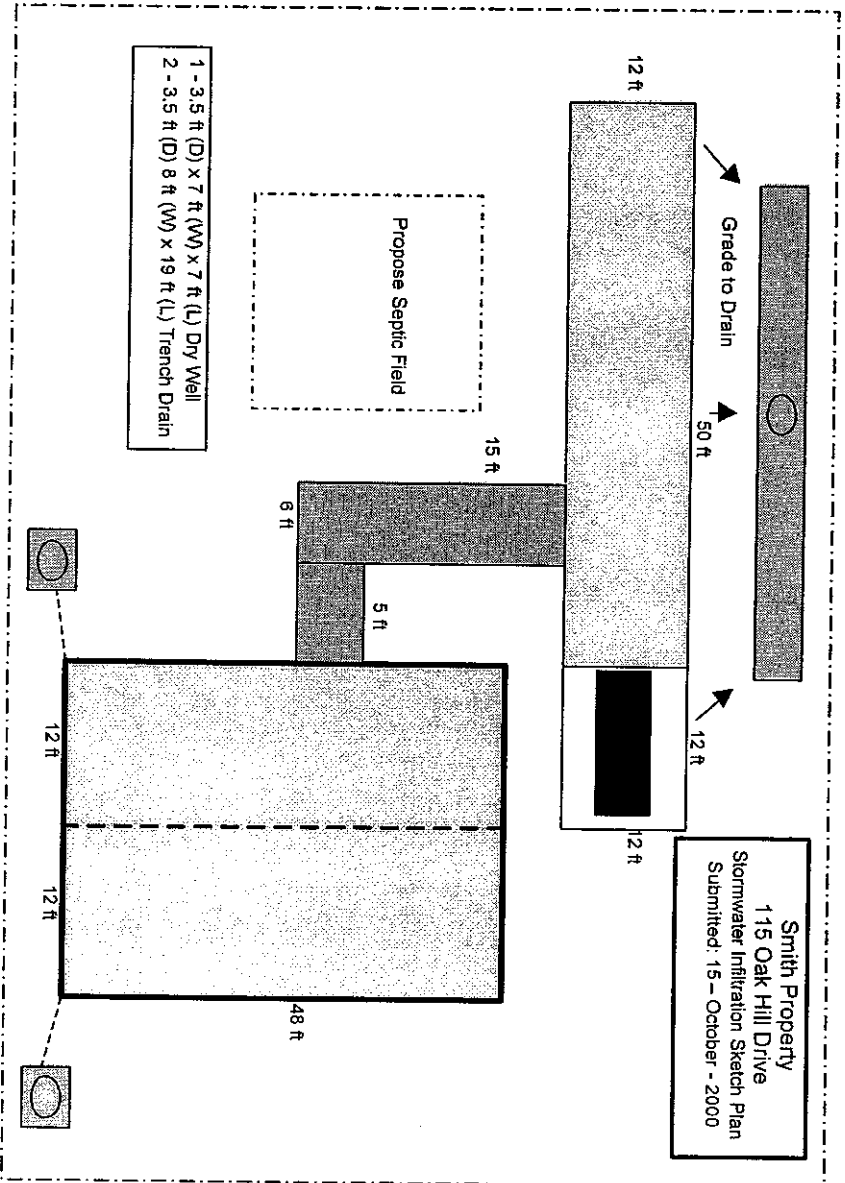
$$0.3 \times 864 \text{ sq. ft.} = 518 \text{ cu. ft.}$$

STEP 3 – Sizing of Select Infiltration Method

$$\text{Volume of facility} = \text{Depth} \times \text{Width} \times \text{Length}$$

$$\text{Set D} = 3.5 \text{ ft. Determine Remained Surface Area of Trench}$$

Sample Site Sketch Plan



Smith Property
 115 Oak Hill Drive
 Stormwater Infiltration Sketch Plan
 Submitted: 15 - October - 2000

- 1 - 3.5 ft (D) x 7 ft (W) x 7 ft (L) Dry Well
- 2 - 3.5 ft (D) x 8 ft (W) x 19 ft (L) Trench Drain

Appendix G
Stormwater Prohibition Discharge Application

**ADAMS TOWNSHIP
125 MARY DRIVE, SIDMAN, PA 15955
PHONE (814) 487-5054 FAX (814) 487-4713**

Application for Discharge to Municipal Separate Storm Sewer System

Date of Application: _____
Applicant's (property owner) Name(s): _____
Address of property to be connected: _____
Tax Map No.: _____
Property description: _____
Description of source of discharge: _____
Description of proposed method of discharge: _____
Have methods been utilized to minimize discharge () Yes () No
Describe mitigation (infiltration, or retention): _____

(attach additional sheets if necessary)
Contact: _____ Phone: _____

Attach SITE PLAN (may be simple sketch if accompanied by exact dimensions)
-Show location of Buildings and property boundaries, parking lots and other physical features location of ditch or storm water pipe and point of connection.

PERMIT CONDITIONS,

Violation Shall Be Treated as a Violation of Storm water Management Ordinance

- There shall be no discharge of pollutants which either singly or in combination with other pollutants or other discharges shall have a significant impact upon waters of the commonwealth.
- There shall be no discharge from any drain or conveyance, whether on the surface or subsurface, which allows any non-storm water discharge including sewage, process wastewater, and wash water, to enter the separate storm sewer system, and any connections to the storm drain system from indoor drains and sinks; ("grey water" is not permitted)(Ordinance No. 132 § 702(A)(1))
- There shall be no discharge of material which could block or obstruct the township separate storm sewer system.
- No regulated discharge shall be constructed in a manner which causes the discharge to run onto any public roadway or thoroughfare and cause an interference to the traveling public through buildup of ice, flooding, erosion or other means.
- The Township shall upon issuance or renewal of a permit for a regulated discharge, impose such additional conditions as may be required to achieve compliance with the Township NPDES MS4 permit or to achieve the purposes of the Stormwater management ordinance. (Ordinance No. 132 § 701(C),(D))

(Over)

CERTIFICATION OF PROPERTY OWNER

I HEREBY CERTIFY THAT I AM THE applicant named herein and that the statements made in the accompanying Application for Discharge to Municipal Separate Storm Sewer System are true and correct to the best of my knowledge information and belief. I verify these statements, knowing the that false statements to public authorities constitute a misdemeanor under the Pennsylvania Crimes Code. I further grant permission to Adams Township to enter unto the above described property, with advance notice by means of a telephone call to the number listed above during normal working hours, for purpose of verifying compliance with the conditions of approval.

NAME: _____ (print)

SIGNATURE: _____

NAME: _____ (print)

SIGNATURE: _____

Examined by Roadmaster: _____ (initials) Date: _____

(For Township Use Only)

Permission for Discharge to Municipal Separate Storm Sewer System is (granted / denied)

If granted describe extent, if different than application: _____

If denied, state reason: _____

Date: _____ By: _____

Adams Township Supervisor, Chairman

Denial of permission to discharge, in whole, or in part, may be appealed to the Adams Township Supervisors, for hearing under local public agency law upon filing of an application for appeal and payment of the appropriate fee, no later than 30 days following the date of this determination.

Permits shall be valid for the calendar year in which they were issued. The owner and user of any regulated discharge shall annually notify the township of the continuation of the discharge and provide a brief statement that the discharge is to be continued in use in the foregoing year.

The Township reserves the right to itself, or require the permittee to immediately plug, block or disconnect the regulated discharge in the event that it is causing or contributing to significant pollution, or is causing or contributing to a safety hazard. The Township reserves the right upon notice at annual renewal of licenses to cause permittee to comply with more stringent requirements which may be imposed upon the township or required by regulatory agencies.

APPENDIX A

LOW IMPACT DEVELOPMENT PRACTICES ALTERNATIVE APPROACH FOR MANAGING STORMWATER RUNOFF

Natural hydrologic conditions may be altered radically by poorly planned development practices, such as introducing unneeded impervious surfaces, destroying existing drainage swales, constructing unnecessary storm sewers, and changing local topography. A traditional drainage approach of development has been to remove runoff from a site as quickly as possible and capture it in a detention basin. This approach leads ultimately to the degradation of water quality as well as expenditure of additional resources for detaining and managing concentrated runoff at some downstream location.

The recommended alternative approach is to promote practices that will minimize post-development runoff rates and volumes, which will minimize needs for artificial conveyance and storage facilities. To simulate pre-development hydrologic conditions, forced infiltration is often necessary to offset the loss of infiltration by creation of impervious surfaces. The ability of the ground to infiltrate depends upon the soil types and its conditions.

Preserving natural hydrologic conditions requires careful alternative site design considerations. Site design practices include preserving natural drainage features, minimizing impervious surface area, reducing the hydraulic connectivity of impervious surfaces, and protecting natural depression storage. A well-designed site will contain a mix of all those features. The following describes various techniques to achieve the alternative approach:

Preserving Natural Drainage Features. Protecting natural drainage features, particularly vegetated drainage swales and channels, is desirable because of their ability to infiltrate and attenuate flows and to filter pollutants. However, this objective is often not accomplished in land development. In fact, commonly held drainage philosophy encourages just the opposite pattern -- streets and adjacent storm sewers typically are located in the natural headwater valleys and swales, thereby replacing natural drainage functions with a completely impervious system. As a result, runoff and pollutants generated from impervious surfaces flow directly into storm sewers with no opportunity for attenuation, infiltration, or filtration. Developments designed to fit site topography also minimizes the amount of grading on site.

Protecting Natural Depression Storage Areas. Depressional storage areas have no surface outlet, or drain very slowly following a storm event. They can be commonly seen as ponded areas in farm fields during the wet season or after large runoff events. Traditional development practices eliminate these depressions by filling or draining, thereby obliterating their ability to reduce surface runoff volumes and trap pollutants. The volume and release-rate characteristics of depressions should be protected in the design of the development site. The depressions can be protected by simply avoiding the depression or by incorporating its storage as additional capacity in required detention facilities.

Avoiding introduction of impervious areas. Careful site planning should consider reducing impervious coverage to the maximum extent possible. Building footprints, sidewalks, driveways and other features producing impervious surfaces should be evaluated to minimize impacts on runoff.

Reducing the Hydraulic Connectivity of Impervious Surfaces. Impervious surfaces are significantly less of a problem if they are not directly connected to an impervious conveyance system (such as storm sewer). Two basic ways to reduce hydraulic connectivity are routing of roof runoff over lawns and reducing the use of storm sewers. Site grading should promote increasing travel time of stormwater runoff, and should help reduce concentration of runoff to a single point in the development.

Routing Roof Runoff Over Lawns. Roof runoff can be easily routed over lawns in most site designs. The practice discourages direct connections of downspouts to storm sewers or parking lots. The practice also discourages sloping driveways and parking lots to the street. By routing roof drains and crowning the driveway to run off to the lawn, the lawn is essentially used as a filter strip.

Reducing the Use of Storm Sewers. By reducing use of storm sewers for draining streets, parking lots, and back yards, the potential for accelerating runoff from the development can be greatly reduced. The practice requires greater use of swales and may not be practical for some development sites, especially if there are concerns for areas that do not drain in a "reasonable" time. The practice requires educating local citizens and public works officials, who expect runoff to disappear shortly after a rainfall event.

Reducing Street Widths. Street widths can be reduced by either eliminating on-street parking or by reducing roadway widths. Municipal planners and traffic designers should encourage narrower neighborhood streets which ultimately could lower maintenance.

Limiting Sidewalks to One Side of the Street. A sidewalk on one side of the street may suffice in low-traffic neighborhoods. The lost sidewalk could be replaced with bicycle/recreational trails that follow back-of-lot lines. Where appropriate, backyard trails should be constructed using pervious materials.

Using Permeable Paving Materials. These materials include permeable interlocking concrete paving blocks or porous bituminous concrete. Such materials should be considered as alternatives to conventional pavement surfaces, especially for low use surfaces such as driveways, overflow parking lots, and emergency access roads.

Reducing Building Setbacks. Reducing building setbacks reduces driveway and entry walks and is most readily accomplished along low-traffic streets where traffic noise is not a problem.

Constructing Cluster Developments. Cluster developments can also reduce the amount of impervious area for a given number of lots. The biggest savings is in street length, which also will reduce costs of the development. Cluster development clusters the construction activity onto less-sensitive areas without substantially affecting the gross density of development.

In summary, a careful consideration of the existing topography and implementation of a combination of the above mentioned techniques may avoid construction of costly stormwater control measures. Other benefits include reduced potential of downstream flooding, water quality degradation of receiving streams/water bodies and enhancement of aesthetics and reduction of development costs. Beneficial results include more stable baseflows in receiving streams, improved groundwater recharge, reduced flood flows, reduced pollutant loads, and reduced costs for conveyance and storage.

APPENDIX B

STORMWATER BEST MANAGEMENT PRACTICES
OPERATIONS AND MAINTENANCE AGREEMENT

THIS AGREEMENT, made and entered into this _____ day of _____, 200__, by and between _____, (hereinafter the "Landowner"), and _____, _____ County, Pennsylvania, (hereinafter "Municipality");
WITNESSETH

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

WHEREAS, the Landowner is proceeding to build and develop the Property; and WHEREAS, the stormwater management BMP Operations and Maintenance Plan approved by the Municipality (hereinafter referred to as the "Plan") for the property identified herein, which is attached hereto as Appendix A and made part hereof, as approved by the Municipality, provides for management of stormwater within the confines of the Property through the use of Best Management Practices (BMP's); and WHEREAS, the Municipality, and the Landowner, his successors and assigns, agree that the health, safety, and welfare of the residents of the Municipality and the protection and maintenance of water quality require that on-site stormwater Best Management Practices be constructed and maintained on the Property; and WHEREAS, for the purposes of this agreement, the following definitions shall apply:

BMP "Best Management Practice;" activities, facilities, designs, measures or procedures used to manage stormwater impacts from land development, to protect and maintain water quality and groundwater recharge and to otherwise meet the purposes of the Municipal Stormwater Management Ordinance, including but not limited to infiltration trenches, seepage pits, filter strips, bioretention, wet ponds, permeable paving, rain gardens, grassed swales, forested buffers, sand filters and detention basins.

Infiltration Trench A BMP surface structure designed, constructed, and maintained for the purpose of providing infiltration or recharge of stormwater into the soil and/or groundwater aquifer,

Seepage Pit An underground BMP structure designed, constructed, and maintained for the purpose of providing infiltration or recharge of stormwater into the soil and/or groundwater aquifer,

Rain Garden A BMP overlain with appropriate mulch and suitable vegetation designed, constructed, and maintained for the purpose of providing infiltration or recharge of stormwater into the soil and/or underground aquifer, and

WHEREAS, the Municipality requires, through the implementation of the Plan, that stormwater management BMP's as required by said Plan and the Municipal Stormwater Management Ordinance be constructed and adequately operated and maintained by the Landowner, his successors and assigns. and

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

1. The BMPs shall be constructed by the Landowner in accordance with the plans and specifications identified in the Plan.
2. The Landowner shall operate and maintain the BMP(s) as shown on the Plan in good working order acceptable to the Municipality and in accordance with the specific maintenance requirements noted on the Plan.
3. The Landowner hereby grants permission to the Municipality, its authorized agents and employees, to enter upon the property, at reasonable times and upon presentation of proper identification, to inspect the BMP(s) whenever it deems necessary. Whenever possible, the Municipality shall notify the Landowner prior to entering the property.
4. In the event the Landowner fails to operate and maintain the BMP(s) as shown on the Plan in good working order acceptable to the Municipality, the Municipality or its representatives may enter upon the Property and take whatever action is deemed necessary to maintain said BMP(s). This provision shall not be construed to allow the Municipality to erect any permanent structure on the land of the Landowner. It is expressly understood and agreed that the Municipality is under no obligation to maintain or repair said facilities, and in no event shall this Agreement be construed to impose any such obligation on the Municipality.
5. In the event the Municipality, pursuant to this Agreement, performs work of any nature, or expends any funds in performance of said work for labor, use of equipment, supplies, materials, and the like, the Landowner shall reimburse the Municipality for all expenses (direct and indirect) incurred within 10 days of receipt of invoice from the Municipality.
6. The intent and purpose of this Agreement is to ensure the proper maintenance of the onsite BMP(s) by the Landowner; provided, however, that this Agreement shall not be deemed to create or effect any additional liability of any party for damage alleged to result from or be caused by stormwater runoff.
7. The Landowner, its executors, administrators, assigns, and other successors in interests, shall release the Municipality's employees and designated representatives from all damages, accidents, casualties, occurrences or claims which might arise or be asserted against said employees and representatives from the construction, presence, existence, or maintenance of the BMP(s) by the Landowner or Municipality. In the event that a claim is asserted against the Municipality, its designated representatives or employees, the Municipality shall promptly notify the Landowner and the Landowner shall defend, at his own expense, any suit based on the claim. If any judgment or claims against the Municipality's employees or designated representatives shall be allowed, the Landowner shall pay all costs and expenses regarding said judgment or claim.
8. The Municipality shall inspect the BMP(s) at a minimum of once every three years to ensure their continued functioning.

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

We place our hands and seals to this agreement intending to be legally bound thereby,

By: Adams Township

Attest: _____(SEAL)

Chairman

By: Land Owner

Witness

Owner (seal)

Witness

Owner (seal)

Witness

Owner (seal)

Witness

Owner (seal)

STATE OF PENNSYLVANIA:

SS.

COUNTY OF _____:

On this, the _____ day of _____, 200____, before me, the undersigned officer, personally appeared _____, _____, and _____ known to me (or satisfactorily proven) to be the persons whose names are subscribed to the within instrument, and acknowledged that they executed the same for the purposes therein contained.

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

My Commission Expires:

_____(SEAL)

Notary Public

ORDINANCE APPENDIX C
DRAINAGE PLAN APPLICATION AND FEE SCHEDULE

(To be attached to the "land subdivision plan or development plan review application or "minor land subdivision plan review application")

Application is hereby made for review of the Stormwater Management Plan and related data as submitted herewith in accordance with the Adams Township Comprehensive Stormwater Management Ordinance.

_____ Final Plan _____ Preliminary Plan

Date of Submission _____ Submission No. _____

1. Name of subdivision or land development _____

2. Name of applicant _____ Telephone No. _____

(if corporation, list the corporation's name and the names of two officers of the corporation)

_____ Officer 1
_____ Officer 2

Address _____
Zip _____

Applicants interest in subdivision or land development
(if other than property owner give owners name and address)

3. Name of property owner _____ Telephone No. _____

Address _____
Zip _____

4. Name of engineer or landscape architect _____ Telephone No. _____

Address _____
Zip _____

5. Type of subdivision or land development proposed:

- | | | |
|--------------------------|-------------------------|------------------------------|
| _____ Single-Family Lots | _____ Townhouses | _____ Commercial (Multi-Lot) |
| _____ Two Family Lots | _____ Garden Apartments | _____ Commercial (One-Lot) |
| _____ Multi-Family Lots | _____ Mobile-Home Park | _____ Industrial (Multi-Lot) |
| _____ Cluster Type Lots | _____ Campground | _____ Industrial (One-Lot) |

_____ Planned Residential _____ Other (_____)
Development

6. Lineal feet of new road proposed? _____ L.F.

7. Area of proposed and existing impervious area on entire tract.

a. Existing (to remain) _____ S.F. _____ % of Property

b. Proposed _____ S.F. _____ % of Property

8. Stormwater

a. Does the peak rate of runoff from proposed conditions exceed that flow which occurred for existing conditions for the designated design storm? _____

b. Design storm utilized (on-site conveyance systems) (24 hr.) _____

No. of Subarea _____

Watershed Name _____

Explain: _____

c. Does the submission and/or district meet the release rate criteria for the applicable subarea? _____

d. Number of subarea(s) from Ordinance Appendix D of the Little Conemaugh River Watershed Stormwater Management Plan. _____

e. Number of subarea(s) from Ordinance Appendix E of the Stoneycreek River Watershed Stormwater Management Plan. _____

f. Type of proposed runoff control _____

g. Does the proposed stormwater control criteria meet the requirement/guidelines of the Stormwater Ordinance? _____

If not, what variances/waivers are requested? _____

Reasons _____

h. Does the plan meet the requirements of Article iii of the Stormwater Ordinance? _____

If not, what variances/waivers are requested? _____

Reasons _____

i. Was TR-55, June 1986 utilized in determining the time of concentration? _____

- j. What hydrologic method was used in the stormwater computations? _____

- k. Is a hydraulic routing through the stormwater control structure submitted? _____

- l. Is a construction schedule or staging attached? _____
- m. Is a recommended maintenance program attached? _____

9. Erosion and Sediment Pollution Control (E&S):

- a. Has the stormwater management and E&S plan, supporting documentation and narrative been submitted to the Cambria County Conservation District? _____
- b. Total area of earth disturbance _____ S.F.

10. Wetlands

- a. Have the wetlands been delineated by someone trained in wetland delineation? _____
- b. Have the wetland boundaries been verified by a state or federal permitting authority? _____
- c. Have the wetland boundaries been surveyed? _____
- d. Total acreage of wetland within the property _____
- e. Total acreage of wetland disturbed _____
- f. Supporting documentation (approval letters, etc.) _____

11. Filing

- a. Has the required fee been submitted? _____
Amount _____
- b. Has the proposed schedule of construction inspection to be performed by the applicant's engineer or landscape architect been submitted? _____

- c. Name of individual who will be making the inspections _____
- d. General comments about stormwater management at development _____

CERTIFICATE OF OWNERSHIP AND ACKNOWLEDGMENT OF APPLICATION:

COMMONWEALTH OF PENNSYLVANIA
COUNTY OF CAMBRIA

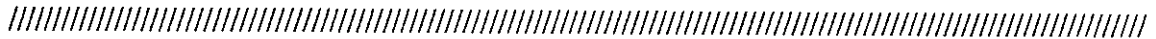
On this the _____ day of _____, 20____, before me, the undersigned officer, personally appeared _____ who being duly sworn, according to law, deposes and says that _____ owners of the property described in this application and that the application was made with _____ knowledge and/or direction and does hereby agree with the said application and to the submission of the same.

_____ Property Owner

My Commission Expires _____ 20____
Notary Public _____

THE UNDERSIGNED HEREBY CERTIFIES THAT TO THE BEST OF HIS KNOWLEDGE AND BELIEF THE INFORMATION AND STATEMENTS GIVEN ABOVE ARE TRUE AND CORRECT.

SIGNATURE OF APPLICANT _____



(Information Below This Line To Be Completed By The Municipality)

Adams Township official submission receipt:

Date complete application received _____ Plan Number _____

Fees _____ date fees paid _____ received by _____

Official submission receipt date _____

Received by _____

Township

**Drainage Plan
Schedule Of Fees**

Subdivision/Land Development name _____ Submittal No. _____

Owner _____ Date _____

Engineer/Landscape Architect _____

1. Copy of the Adams Township Stormwater Management Ordinance (the ordinance may be reviewed at the Adams Township municipal building without cost) \$15.00

2. Filing fee (required with application/initial submission) \$100.00

3. Application reviews including resubmissions, meetings, site visits and inspections completed by the municipal engineer shall be invoiced to the applicant on an hourly basis in accordance with the customary hourly rates charged by the municipal engineer and his/her staff. Typically, the total fee charged by the municipal engineer will range from a few hundred dollars to a few thousand dollars depending on the size and scope of the project and the quality of the submissions. All fees must be paid within thirty (30) days of receipt of each invoice. Failure to make payment within the specified period may result in a rescinding of the approval.

Resolution of the Adams Township Supervisors
No. _____

Relating to Stormwater Management and Permits
For Connection to the MS4, Separate Storm Sewer System

Made this _____ day of September, 2007, at a regularly schedule and duly advertised public meeting of the Adams Township Supervisors, Cambria County.

Whereas, the Township is responsible for the enforcement of the Clean Streams Law, 35 PS § 691.101 et. seq. as it relates to stormwater facilities of residences and businesses throughout the township, and is empowered by the Second Class Township Code, 53 P.S. § 67701 et. seq. and the Pennsylvania Stormwater Management Act (32 P.S. § 680.1 et. seq.) to adopt regulations under its police powers, permitting and regulating all stormwater dischargers and the uses of stormwater facilities including stormwater pipes and ditches and swales in the public right of way and drainage facilities owner or installed by the township, and

Whereas, the Adams Township Supervisors have received an NPDES Permit for Municipal Separate Storm Sewer System (MS4) which, among other responsibilities, requires the Township to prevent pollution of public waters via the stormwater drainage system, and

Whereas, the township has adopted a Comprehensive Stormwater Management Ordinance, No. 100 pursuant to its MS4 NPDES Permit requirements, which identifies, in Section 701, prohibited and conditionally permissible discharges to the separate storm sewer system, to wit:

“Section 701. Prohibited Discharges

- A. No person in the Municipality shall allow, or cause to allow, stormwater discharges into the Municipality’s separate storm sewer system which are not composed entirely of stormwater, except (1) as provided in subsection B below, and (2) discharges allowed under a state or federal permit.
- B. The following Discharges may be allowed, based on the finding by the Municipality that the discharge(s) do not significantly contribute to pollution to surface waters of the Commonwealth, are:
 - 1. Discharges from fire fighting activities
 - 2. Uncontaminated water from foundation or from footing drains
 - 3. Potable water sources including dechlorinated water line and fire hydrant flushings
 - 4. Flows from riparian habitats and wetlands
 - 5. Lawn watering
 - 6. Irrigation drainage
 - 7. Pavement washwaters where spills or routine external building washdown (which does not use detergents or other compounds)
 - 8. Air conditioning condensate provided that leaks of toxic or hazardous materials have not occurred (unless all spill material has been removed) and where

- detergents are not used
9. Water from individual residential car washing
 10. Dechlorinated swimming pool discharges
 11. Springs uncontaminated groundwater
 12. water from crawl space pumps, and

Whereas residences and businesses have requires to make connection to the MS4 separate storm sewer system, with discharges listed in Section 701(b) of the Stormwater Management ordinance, and

The Township finds that subject to reasonable conditions that such connections may be made without significant pollution to surface water of the Commonwealth.

NOT THEREFORE BE IT RESOLVED, on the day set forth above, that the Adams Township, Cambria County Supervisors hereby authorize the issuance of permits for use of the MS4 separate storm sewer system including stormwater pipes and ditches and swales in the public right of way and drainage facilities owned or installed by the township.

Section (1) Definitions

MS 4 Separate Storm Sewer System – shall include the entire township stormwater collection system including stormwater pipes and ditches and swales in the public right of way, and drainage facilities owner or installed by the township.

Person – as used herein shall include any natural person, corporation, business entity, institution, or governmental agency.

Regulated Discharge – a discharge from a residence, business, institution, industry, or other facility as listed in Section 701(b) of the Adams Township Stormwater Management Ordinance No. _____.

Significant Pollution – a degree or level of pollution which has an adverse affect upon the health or vitality of persons, vegetation, wildlife or aquatic lift, or which is subject to regulatory or enforcement action by county, state, or federal agencies either from a single discharge or in cumulative amounts from a number of separate discharges into the MS4 separate storm sewer system.

Section (2) Prohibition and Regulation of Stormwater Connection

- A. No person shall make or continue a regulated discharge to the MS4 separate storm sewer system unless made pursuant to a permit granted by the township and in full compliance with regulations and procedures of the Township established herein, or as a condition of a permit issued under authority of this resolution.
- B. Permission to utilize the Admas Township MS4 separate storm sewer system for regulated discharges shall be made by permit, and subject to the following conditions:
 1. There shall be no discharge of pollutants which either singly or in combination

with other pollutants or other discharges shall have a significant impact upon water of the Commonwealth.

2. Any drain or conveyance, whether on the surface or subsurface, which allows any non-storm water discharge including sewage, process wastewater and washwater, to enter the separate storm sewer system, and any connections to the storm drain system from indoor drains and sinks (Ordinance No. _____ § 702(A)(1)).
3. There shall be no discharge of material which could block or obstruct the MS4 separate storm sewer system.
4. No regulated discharge shall be construction in a manner which causes the discharge to run on any public roadway or thoroughfare and cause an interference to the traveling public through buildup of ice, flooding, erosion, and other means.
5. The Township Manager shall upon issuance or removal of a permit for a regulated discharge, impose such additional conditions as may be required to achieve compliance with the Township NPDES MS4 permit or to achieve the purposes of the Stormwater management ordinance (Ordinance No. ____ § 701(C), (D)).

Section (3) Permit and Fee

- A. The Township Manager or other person as may be designated by the supervisors, may issue permits for regulated discharges to the MS4 separate storm sewer system. Permits shall be issued upon application by as person, upon a township-provided form.
- B. Permits shall be valid for the calendar year in which they were issued.
- C. The owner and user of any regulated discharge shall annually notify the township of the continuation of the discharge and provide a brief statement that the discharge is to be continued in use in the foregoing year. The supervisors shall assess a fee for annual registration of regulated discharges. The Township Secretary shall maintain a record of all regulated discharges in the township. Failure of the any person having or using a regulated discharge to so register within 60 days of January 1, shall be deemed to constitute a waiver of any right to continue the use.
- D. Permits shall be issued under the following express reservation of right by the Township:
 1. The Township reserves the right to itself, or require the permittee to immediately plug, block, or disconnect the regulated discharge in the event that it is causing or contributing to significant pollution, or is causing of contributing to a safety hazard
 2. The Township reserves the right upon notice at annual renewal of licenses to cause permittees to comply with more stringent requirements which may be imposed upon the township by regulatory agencies.

Section (4) Violation

Any person making a regulated discharge to the MS4 separate storm sewer system, without a permit, or in violation of permit conditions, after being informed of the same, shall be deemed to be in violation of Section 701 of the Adams Township Stormwater Management Ordinance No. _

_____ and subject to penalties prescribed in that Ordinance.

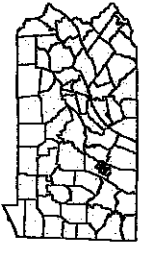
Section (5) Appeal

Any person aggrieved by the failure of the Township Manager to issue or accept renewal of a permit for a regulated discharge to the MS4 separate storm sewer system may appeal such action to the Adams Township Supervisors, by filing a written statement setting forth all grounds for appeal and listing the facts supporting the same, within 30 days of the denial. The supervisors shall promptly investigate, determine the facts of the matter and provide a written response to the person so aggrieved.

Adopted by the Adams Township Supervisors on the day and date set forth above.

I Attest this to be a True and Correct Copy.

Chairman, Adams Township Supervisors (seal)



Release Rate Map

Little Conemaugh River Watershed
Cambria/Blair/Bedford/Somerset Counties, PA

ACT 167
Stormwater Management Plan
Phase II

Appendix D

- Map Legend**
- Waterland Boundary
 - County Boundary
 - Municipal Boundaries
 - Railroads
 - Streams
 - Lakes
 - PA Traffic Routes
 - State Route Ramps
 - U.S. Traffic Route Ramps
 - U.S. Traffic Routes
 - Township Roads
 - Other Roads

Prepared for:
Cambria County Conservation District
401 Candlelight Drive
Suite 221
Ebensburg, PA 15881
(814) 472-2120

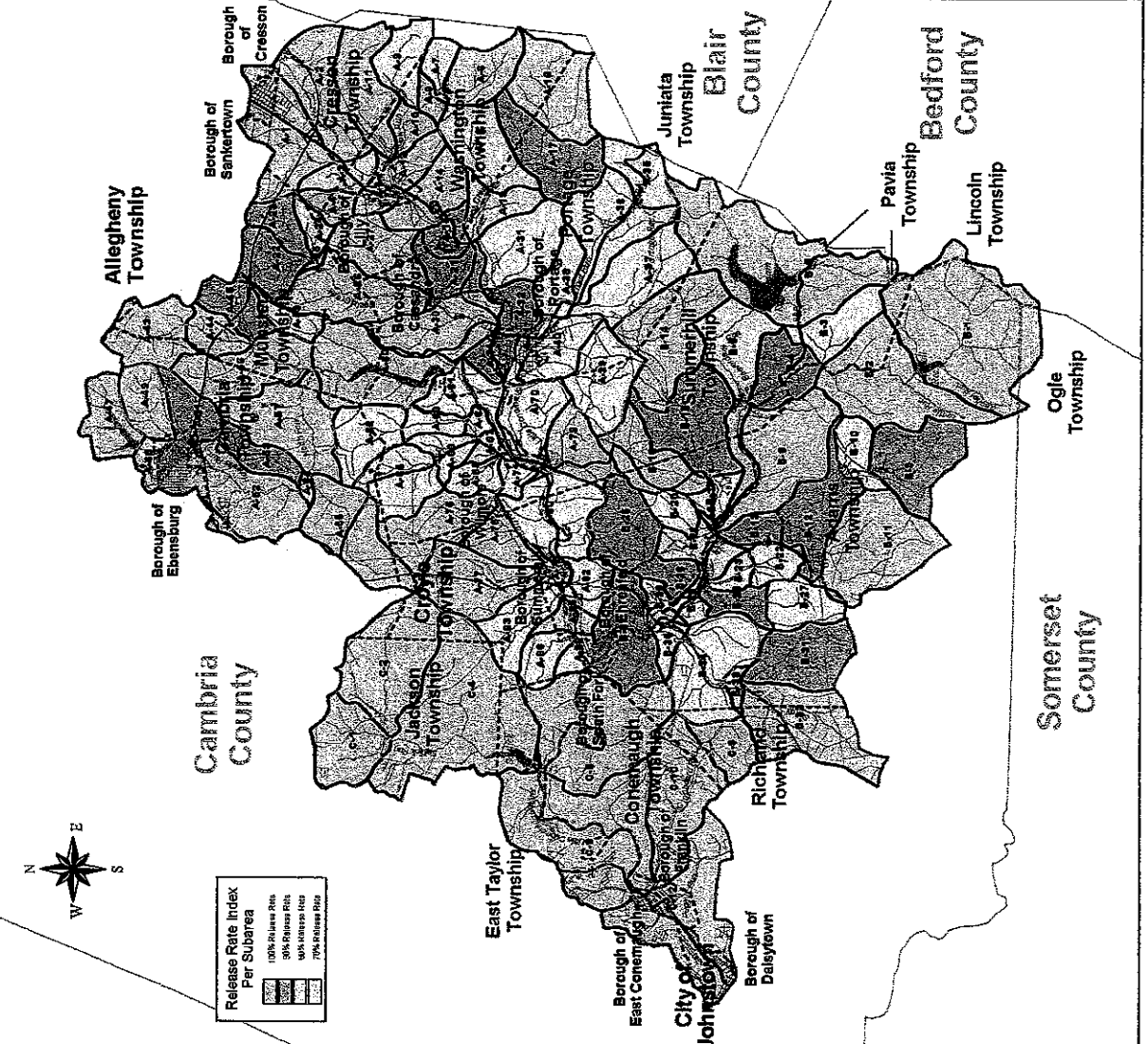
Notes:
Portions of these rates were prepared from existing data sources as listed below. The existing data was utilized for areas requiring purposes only. This data did not include any calculations. Cambria County Conservation District is not responsible for any errors or omissions in this map. The user assumes all responsibility for the use of this data and for any consequences that may result from its use. This map is not a part of the Act 167 Plan to correct all the basins.

Due to the nature of the project, the following areas were not included in the map:
Rochester, Shesapeake, Ferndale
Management District - Birch-Lawson Engineering

Borton Lawson ENGINEERING

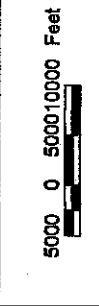
Company Office: 401 Candlelight Drive, Suite 221, Ebensburg, PA 15881
 Phone: (814) 472-2120
 Fax: (814) 472-2121
 Website: www.bortonlawson.com

Prepared By: CGF
 Project Number: 2011-194-00
 Checked By:
 Date: June 2014



SUBAREA	RELEASE RATE	SUBAREA	RELEASE RATE
A-1	100	A-70	70
A-2	100	A-71	70
A-3	80	A-72	70
A-4	100	A-73	100
A-5	100	A-74	100
A-6	100	A-75	100
A-7	70	A-76	100
A-8	70	A-77	100
A-9	70	A-78	70
A-10	100	A-79	70
A-11	100	A-80	70
A-12	100	A-81	70
A-13	70	A-82	70
A-14	70	A-83	70
A-15	80	A-84	80
A-16	100	A-85	80
A-17	100	A-86	70
A-18	80	A-87	70
A-19	80	A-88	70
A-20	70	A-89	70
A-21	80	B-1	100
A-22	70	B-2	100
A-23	80	B-3	70
A-24	80	B-4	80
A-25	80	B-5	80
A-26	70	B-6	100
A-27	100	B-7	70
A-28	100	B-8	100
A-29	70	B-9	80
A-30	70	B-10	70
A-31	100	B-11	100
A-32	80	B-12	80
A-33	80	B-13	80
A-34	80	B-14	100
A-35	70	B-15	80
A-36	70	B-16	70
A-37	70	B-17	70
A-38	70	B-18	70
A-39	70	B-19	70
A-40	70	B-20	70
A-41	70	B-21	80
A-42	70	B-22	70
A-43	100	B-23	70
A-44	100	B-24	80
A-45	80	B-25	80
A-46	100	B-26	70
A-47	100	B-27	50
A-48	100	B-28	70
A-49	100	B-29	70
A-50	100	B-30	80
A-51	80	B-31	80
A-52	100	B-32	100
A-53	80	B-33	70
A-54	80	B-34	70
A-55	70	B-35	70
A-56	100	B-36	80
A-57	100	B-37	80
A-58	100	C-1	100
A-59	80	C-2	100
A-60	100	C-3	100
A-61	70	C-4	100
A-62	70	C-5	100
A-63	70	C-6	100
A-64	70	C-7	100
A-65	70	C-8	100
A-66	70	C-9	100
A-67	70	C-10	100
A-68	70	C-11	100
A-69	70	C-12	100

Note: * indicates "Dummy" subarea used in original model, no release rate assigned.



Appendix E
(This page reserved for the Stoneycreek River Watershed Drainage Release Map)

Appendix F
ACT 167 Stormwater Management Requirements
For Individual Homeowners

