

Chapter 23

Stormwater Management

Part 1 General Provisions

- §23-101. Short Title
- §23-102. Statement of Findings
- §23-103. Purpose
- §23-104. Authority
- §23-105. Applicability
- §23-106. Exemptions
- §23-107. Compatibility with Other Permit Ordinances and Ordinance Requirements
- §23-108. Abrogation and Greater Restriction

Part 2 Definitions

- §23-201. General
- §23-202. Definitions

Part 3 Stormwater Management Requirements

- §23-301. General Requirements
- §23-302. Technical Requirements
- §23-303. Calculation Methodology
- §23-304. Erosion and Sedimentation Requirements
- §23-305. Ground Water Recharge (Infiltration/Recharge/Retention)
- §23-306. Water Quality Requirements
- §23-307. Stream Bank Erosion Requirements

Part 4 Drainage Plan Requirements, Submittal, and Review Procedures

- §23-401. General Requirements
- §23-402. Exemptions
- §23-403. Drainage Plan Content
- §23-404. Plan Submission
- §23-405. Drainage Plan Review and Approval
- §23-406. Modification of Plans
- §23-407. Resubmission of Disapproved Plans

Part 5 Permit Requirements and Procedures

- §23-501. Permit Requirements and Exemptions

- §23-502. Permit Issuance
- §23-503. Modification of Drainage Plans
- §23-504. Stormwater Management Occupancy Permit
- §23-505. Expiration and Renewal
- §23-506. Compliance and Guarantees

**Part 6
Inspections**

- §23-601. Responsibility of Inspections
- §23-602. Cambria Township's Rights

**Part 7
Fees and Expenses**

- §23-701. General
- §23-702. Modifications of Plans
- §23-703. Schedule of Fees
- §23-704. Expenses Covered by Fees

**Part 8
Maintenance Responsibilities**

- §23-801. Maintenance Responsibilities
- §23-802. Maintenance Agreement for Dedicated Stormwater Facilities
- §23-803. Maintenance Agreement for Privately Owned Stormwater Facilities
- §23-804. Municipal Stormwater Maintenance Fund

**Part 9
Enforcement and Penalties**

- §23-901. Right-of-Entry
- §23-902. Notification
- §23-903. Enforcement
- §23-904. Notification
- §23-905. Enforcement Remedies and Penalties
- §23-906. Appeals
- §23-907. Effective Date

**Appendix 23-A
Drainage Plan Permit Application**

**Appendix 23-B
Stormwater Management Occupancy Permit**

**Appendix 23-C
Best Management Practices**

**Appendix 23-D
Little Conemaugh River Watershed Boundary Map**

Appendix 23-E
Summary of Ordinance Requirements and Schedule of Fees

Appendix 23-F
Storm Integrity - Duration Frequency Chart

Part 1**General Provisions****§23-101. Short Title.**

This Chapter shall be known and may be cited as the “Stormwater Management Ordinance” for Cambria Township, and is consistent with the model ordinances established by Cambria County for all municipalities located within the Little Conemaugh River Watershed and the Chest Creek Watershed. The model ordinances for these two watersheds have been modified herein to include those portions of the Township which are outside either the Little Conemaugh or Chest Creek Watersheds. (*Ord. 29B(2)*, 4/14/2003, Art. I)

§23-102. Statement of Findings.

The Board of Supervisors of Cambria Township finds that:

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

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

(*Ord. 29B(2)*, 4/14/2003, §101)

§23-103. Purpose.

The purpose of this Chapter is to:

- A. Promote the general health, welfare, and safety of the community.
- B. Utilize and preserve the existing natural drainage systems.
- C. Manage accelerated runoff/erosion/sedimentation problems at the source, from modifications to natural terrain and the alteration of existing drainage from land developments.
- D. Maintain existing flows and quality of systems and water sources in the Township and Commonwealth.
- E. Preserve and restore the flood carrying capacity of streams.
- F. Provide proper maintenance of all permanent stormwater management facilities that are constructed within the Township.
- G. Provide performance standards and design/construction criteria for watershed-wide stormwater management and planning.

H. Encourage the recharge of groundwater, where appropriate, and prevent the degradation of groundwater quality.

(*Ord. 29B(2)*, 4/14/2003, §102)

§23-104. Authority.

The Stormwater Management Act of October 4, 1978, P.L. 864, No. 167, 32 P.S. §680.1 *et seq.* as amended, the “Stormwater Management Act,” provides for the regulation of land development and stormwater and confers powers of enforcement to the local municipalities.

(*Ord. 29B(2)*, 4/14/2003, §103)

§23-105. Applicability.

1. This Chapter is based on the model ordinances established by Cambria County for the Little Conemaugh River and Chest Creek and has been modified to include all portions of Cambria Township. References to “release rates,” as defined in §23-303 of the Chapter, shall only apply to those areas of the Township which are located within the Little Conemaugh River drainage basin, as delineated on the Watershed Boundary Map provided as Appendix 23-D of this Chapter. For purposes of hydraulic calculations, a release rate value of 100 percent will be assumed for any location within either the Chest Creek or Blacklick Creek Watersheds for the 5, 10, 25, and 100-year storm events. However, any location within Cambria Township, regardless of watershed, will be required to retain the 2-year post-development storm to 1-year pre-development peak discharges.

2. This Chapter shall apply to permanent and temporary stormwater management controls and facilities constructed as part of any of the activities listed in this section. New construction, property improvements, or creation of a subdivision or re-subdivision, meeting the criteria described in this section, shall be required to adhere to the conditions of the Land Development and Subdivision Ordinance [Chapter 22] if the application to the Township is to be acted on after the effective date of this Chapter. Stormwater management and erosion and sediment control during construction specifically not regulated by this Chapter shall apply to those areas of the Township that are located within the Chest Creek Watershed, as delineated in Appendix 23-D which is hereby adopted as part of this Chapter.

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

4. This Chapter contains only the stormwater management performance standards and design criteria that are necessary or desirable from a watershed-wide perspective. Local stormwater management design criteria (e.g., inlet spacing, inlet type, collection system design and details, outlet structure design, etc.) shall continue to be regulated by the applicable Township ordinances or at the Township Engineer’s discretion.

5. The following activities are defined as “regulated activities” and shall be regulated by this Chapter:

- 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.

(Note: “Mining operations” and “deforestation of wooded areas” were removed from this Section.)

6. This Chapter contains only minimum stormwater runoff control criteria and standards which are necessary or desirable from a total watershed perspective. Additional stormwater management design criteria (i.e., inlet spacing, inlet type, collection system details, etc.) which represent sound engineering practice should be regulated as part of the general responsibilities of the Township Engineer.

7. The following activities are defined as negotiated activities and are included within the scope of this Chapter.

- 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 channel.
- F. Installation of stormwater controls and facilities or appurtenances thereto.

(Ord. 29B(2), 4/14/2003, §104)

§23-106. Exemptions.

1. The following activities are specifically exempt from this Chapter:

A. Any regulated activity that meets the exception criteria in the following table is exempt from the provisions of this Chapter. These criteria shall apply to the total development even if development is to take place in phases. The date of the Township ordinance adoption shall be the starting point from which to consider tracts as “parent tracts” in which future subdivision and respective impervious area computations shall be cumulatively considered. 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 requirements for water quality and groundwater recharge, special requirements for high quality (HQ) and exceptional value (EV) watersheds, and of §§23-307 and 23-301.K, respectively.

Stormwater Management Exemption Criteria

Total Parcel Size	Impervious Area Exemption (sq. ft.)
≤ ¼ acre	2,500 sq. ft.

Stormwater Management Exemption Criteria

Total Parcel Size	Impervious Area Exemption (sq. ft.)
> ¼ to 1 acre	5,000 sq. ft.
> 1 to 2 acres	10,000 sq. ft.
> 2 to 5 acres	15,000 sq. ft.
> 5 acres	20,000 sq. ft.

B. Use of land for gardening for residential consumption.

C. Landscaping improvements which do not significantly alter the runoff characteristics.

D. The agricultural activities such as growing crops, rotating crops, filling of soil, and grazing animals and other such activities are specifically exempt from complying with the requirements of the Stormwater Management Act, 32 P.S. §680.1 *et seq.*, when such activities are conducted in accordance with a conservation plan or erosion and sedimentation control plan prepared by the County Conservation District. The construction of buildings, parking lots, or any activity that may result in impervious surface which increase the rate and volume of stormwater runoff shall comply with the requirements of this Chapter.

E. Minor improvements to existing residential (single-family) properties.

2. For the purpose of this Chapter, the creation of more than three lots (irrespective of size) of which new construction of buildings or impervious surfaces could take place at the present or in the future, will be considered to have an impervious surface greater than 10,000 square feet.

(*Ord. 29B(2)*, 4/14/2003, §105)

§23-107. Compatibility with Other Permit Ordinances and Ordinance Requirements.

Permits and approvals issued pursuant to this Chapter do not relieve the applicant of the responsibility to secure required permits or approvals for activities regulated by any other applicable State and local code, rule, act, permit, or ordinance.

(*Ord. 29B(2)*, 4/14/2003, §106)

§23-108. Abrogation and Greater Restriction.

Any ordinance or ordinance provision of the Township inconsistent with any of the provisions of this Chapter is hereby repealed to the extent of the inconsistency only.

(*Ord. 29B(2)*, 4/14/2003, §107)

Part 2**Definitions****§23-201. General.**

For the purpose of this Chapter, any word or term not defined shall be used with a meaning of standard usage.

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

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

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

D. The words “shall” and “must” are mandatory; the words “may” and “should” are permissive.

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

(Ord. 29B(2), 4/14/2003, §201)

§23-202. Definitions.

The following words and phrases shall have, for the purpose of this Chapter, the following meaning:

Accelerated erosion - the removal of the surface of the land through the combined action of mans activity and the natural processes at 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, harrowing, pasturing and the 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.

Applicant - a landowner or developer who has filed an application for approval to engage in any regulated activity as defined in §23-105 of this Chapter.

BMP (best management practices) - stormwater structures, facilities, and techniques to maintain or improve the water quality of surface runoff.

Channel - a natural stream which conveys water; a ditch or open channel excavated to convey water.

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.

County - the County of Cambria, Pennsylvania.

Culvert - a pipe, conduit, or similar enclosed structure including appurtenant works which carries surface or stormwater.

Dam - an artificial barrier, together with its appurtenant works, constructed for the purpose of impounding or storing water or another fluid or semi-fluid; or a refuse bank, fill or structure for highway, railroad, or other purposes which does not impound water or another fluid or semi-fluid.

DEP - the Pennsylvania Department of Environmental Protection.

Designee (designer) - the agent of the Cambria Township Supervisors involved with the administration, review, or enforcement of any provisions of this Chapter by contract or memorandum of understanding.

Design storm - the magnitude of precipitation from a storm event measured in probability of occurrence (e.g., 50-yr. storm) and duration (e.g., 24-hour), and used in computing stormwater management control systems.

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

Developer - a person or persons, partnership, association, corporation or other entity, or any responsible person therein or agent thereof, that undertakes the activities covered by this Chapter.

Development site - the specific tract of land for which a regulated activity is proposed.

Discharge - rate of flow, specifically fluid flow. A volume of fluid flowing from a conduit or channel or being released from detention storage per unit of time. Commonly expressed as cubic feet per second (C.F.S.), million gallons per day (M.G.D.), gallons per minute (G.P.M.), or cubic meters per second (C.M.S.).

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 - interception and removal of excess surface water or groundwater from land by artificial or natural means.

Drainage area - the contributing area to a single drainage basin, expressed in acres, square miles or other units of area; also referred to as a catchment area, watershed or river basin; the area served by a drainage system or by a watercourse receiving storm and surface water.

Drainage basin - the area from which water is carried off by a drainage system; a watershed or catchment area.

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

Drainage plan - the documentation of the stormwater management system, if any, to be used for a given development site, the contents of which are established in §23-403.

Drainage permit - a permit issued by the Township Board of Supervisors after the drainage plan has been approved. Said permit is issued prior to or with the final Township approval.

Dry bottom stormwater storage area (dry bottom basin) - a facility that is designed to be normally dry and contains water only when excess stormwater runoff occurs.

Earth dam - a dam constructed of compacted soil materials.

Earth disturbance - any activity including, but not limited to, construction, mining, timber harvesting and grubbing which alters, disturbs, and exposes the existing land surface.

Effluent - the discharge of outflow of water from ground or subsurface storage.

Embankment (fill) - a bank of earth, rock, or other material constructed above the natural ground surface.

Engineer (Township Engineer) - an experienced, licensed engineer or engineering firm duly appointed as the engineer for local municipalities or the qualified designated reviewing agent.

Erodible - susceptible to erosion.

Erosion - the wearing away of the land surface by running water, wind, ice, or other geological agents, including gravitational creep.

E & S control plan - a plan designed to minimize accelerated erosion and sedimentation, as approved by the Conservation District.

Excavation (cut) - any act by which soil or rock is cut into, dug, quarried, uncovered, removed, displaced, or relocated and shall include the conditions resulting therefrom.

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.

Fee - a charge fixed by the Township to review stormwater management plans.

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

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 highwater and the top of a dam, levee, tank, basin, or diversion ridge. The space is required as a safety margin.

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 from cropland.

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) (calibrated) - the computer-based hydrologic modeling technique adapted to the Chest Creek watershed for the Act 167 Plan. The model has been “calibrated” to reflect actual recorded flow values by adjoining key model input parameters.

Hydrograph - a plot of the discharge of the stream flow, discharge, or runoff versus time.

Impervious surface - a surface which prevents the penetration of water into the ground including roofs, concrete, asphalt, compacted shale, sidewalks, etc. Any areas which may be designed to initially be semi-pervious (e.g., gravel, crushed stone, porous pavement, etc.) shall be impervious areas for the purpose of waiver evaluation.

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

Infiltration - the flow of a liquid into a substance through pores or other openings, connoting flow into a soil in contradistinction to the word, percolation, which connotes flow through a porous substance. The infiltration capacity is expressed in terms of inches per inch.

Infiltration structure - 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.

Invert elevation - the vertical elevation of a pipe or orifice.

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) a subdivision of land.

Land 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.

Main stem (main channel) - any stream segment or other runoff conveyance facility used as a reach in the Little Conemaugh River Watershed hydrologic model.

Manning equation in (manning formula) - a method for the 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.

Mining - the process of the extraction of soil or minerals from the earth, or from waste or stockpiles, or from pits or banks for use off-site of a subdivision, development site or land development.

Municipality - Cambria Township, Cambria County, Pennsylvania. [Ord. 199]

NRCS - Natural Resources Conservation Service (previously SCS).

Nonpoint source pollution - pollution that enters a watery body from diffuse origins in the watershed and does not result from discernible, confined, or discrete conveyances.

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

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

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

Overflow rate - detention basin release rate divided by the surface area of the basin. It can be thought of as an average flow rate through the basin.

Owner - for purposes of this Chapter, owner shall be the permittee.

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 water flow at a given point and time resulting from a storm event.

PSRM - Penn State Runoff Model (calibrated) - the computer-based hydrologic modeling technique adapted to the Little Conemaugh River watershed for the Act 167 Plan. The model has been "calibrated" to reflect actual recorded flow values by adjusting key model input parameters.

Plan - the Little Conemaugh River Watershed and Chest Creek stormwater management control plans (including narrative and exhibits), prepared by the Cambria County Planning Commission. These plans were the basis for this modified Stormwater Ordinance.

Plan administrator - the entity set up specifically to review Act 167 drainage plans, inspect stormwater management structures, and otherwise enforce all

regulations as outlined in this Chapter

Planning Commission - the Planning Commission of Cambria Township.

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

Rational formula - a rainfall-runoff relation used to estimate peak flow.

Regulated activities - actions or proposed actions which impact, stormwater runoff and are governed by this Chapter as specified in §23-105.

Release rate - the percentage of the pre-development peak rate of runoff for a development site to which the post-development peak rate of runoff must be controlled to protect downstream areas. Specific release rate values have been established for locations within the Little Conemaugh River Watershed, as defined on the Watershed Boundary Map. For areas within Cambria Township which are not included on this map, a value of 100 percent will be assumed for the 5, 10, 25, and 100-year storm events.

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 for each 25-year increment observed over a long period of time.

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.

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 - that part of precipitation which flows over the land.

Sediment - soils or other surficial materials transported by surface water as a product of erosion.

Sedimentation - the process by which solid material, both mineral and organic, is accumulated; transported, or deposited by moving wind, water or gravity. Once this matter is deposited (or remains suspended in water), it is usually referred to as "sediment."

Sediment basin - a temporary structure, barrier, dam, retention or detention basin designed to retain sediment, designed and constructed in accordance with 25 Pa.Code, Chapter 102.

Sediment trap - a temporary sediment control device formed by excavation and/or embankments or hay bales to intercept sediment laden runoff and retain the sediment.

Seepage areas - grass-covered areas that infiltrate stormwater runoff and allow particulate contaminants to settle.

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 25 Pa.Code, Chapter 102.

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.

Sheetflow - runoff which 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 USDA-NRCS, and found in its publication *Urban Hydrology for Small Watersheds*, Technical Release No. 55, June 1986, or latest edition.

Soil group, hydrologic - a classification of soils by the Soil Conservation Service into four runoff potential groups. The groups range from A soils, which are very permeable and result in little runoff, to D soils, which are not very permeable and result in much more runoff.

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

Storage indication methods - 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 - statistical procedure involved in interpreting the past of a hydrological event to occurrences of that event in the future. See “return period.”

Storm sewer - a system of pipes or other conduits which carries intercepted surface runoff, street water and other wash waters or drainage, but excludes domestic sewage and industrial wastes.

Stormwater management facility - all structural and nonstructural appurtenances utilized to manage or control stormwater runoff including, but not limited to, detention facilities, swales, diversion channels, streams, culverts, bridges, infiltration facilities, cisterns, and sediment basins.

Stormwater Management Plan - the plan for managing stormwater runoff adopted by a County as required by the Act of October 4, 1978, P.L. 864, (Act 167), and known as the “Stormwater Management Act.”

Stormwater management site plan - the plan prepared by the developer or his representative indicating how stormwater runoff will be managed at the particular site of interest according to this Chapter.

Stormwater runoff - that part of precipitation which flows over the land (surface runoff) excluding that portion which infiltrates or is evapotranspired.

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

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

Subdivision - the division or redivision of a lot, tract, or parcel of land by any means into two or more lots, tracts, parcels, or other divisions of land including changes in existing lot lines for the purpose, whether immediate or future, of lease, transfer of ownership or building or lot development.

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

Terrace - an embankment or combination of an embankment and channel across a slope to control erosion by diverting or storing surface runoff instead of permitting it to flow uninterrupted down the slope.

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.

Township - Cambria Township, Cambria County, Pennsylvania.

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

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.

Wetlands - wetlands are those areas inundated or saturated by surface or ground water at a frequency and duration sufficient to support - and under normal circumstances do support - a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands include swamps, marshes, bogs, and similar areas. A significant natural resource, wetlands serve important functions, relating to fish and wildlife food chain production, habitat, nesting, spawning, rearing and resting sites for protected aquatic and land species; protection of other areas from erosion and sediment pollution, storage areas for storm and flood waters or natural recharge areas where ground and surface water are interconnected; and natural water filtration and purification functions.

(Ord. 29B(2), 4/14/2003, §202; as amended by Ord. 199, 2/9/2009)

Part 3**Stormwater Management Requirements****§23-301. General Requirements.**

1. All stormwater management system designs, plans and/or construction, which do not fall under the exemption criteria shown in §23-106, shall submit a drainage plan consistent with this Chapter to the Township for review. These criteria shall apply to the total proposed development even if the development is to take place in stages. Impervious cover shall include, but not be limited to, any roof, parking or driveway areas and any new streets and sidewalks. Any areas designed to initially be gravel or crushed stone shall be assumed to be impervious for the purposes of comparison to the exemption criteria. In addition, they shall:

A. Limit the peak post-development runoff to the applicable release rate of the predevelopment peak rate of runoff from the 2-, 5- 10-, 25- and 100-year storms. It is the developer/owner/engineer's responsibility to insure that the proposed development site/subdivision meets the release rate criteria of this Chapter and does not increase stormwater runoff onto other properties.

B. Be compatible with the Little Conemaugh River and Chest Creek Stormwater Management Plans, which were used as a basis for this Chapter.

C. Comply with all the requirements of the local ordinances and/or the Pennsylvania Department of Environmental Protection. Should any stormwater management facilities qualify as a dam under 25 Pa.Code, Chapter 105, the facility shall be designed in accordance with Chapter 105 and meet the regulations of Chapter 105 concerning dam safety.

D. Be conducted in such a way as to minimize accelerated erosion and resulting sediment pollution. Measures to control erosion and resulting sediment pollution shall, at a minimum, meet the standards of 25 Pa.Code, Chapter 102 "Erosion and Sediment Pollution Control," and *Erosion and Sediment Pollution Control Manual* (latest edition).

E. Be designed so that the construction of basins within the 100-year floodplain are avoided, where possible, but where unavoidable, the situation shall be examined for its function-ability and supporting documentation submitted to Cambria Township for review and shall be consistent with 25 Pa.Code, Chapter 106 "Flood Plain Management."

F. Comply with all zoning, subdivision and floodplain management regulations at the State or municipal level. The more restrictive regulation(s) supersede(s) all other regulations.

G. Be designed by a person trained and experienced in stormwater management. The design, and installation of the control measures are the responsibility of the developer.

H. Stormwater drainage systems shall be provided in order to permit unimpeded flow along natural watercourses, except as modified by stormwater management facilities or open channels consistent with this Chapter.

I. The existing points of concentrated drainage that discharge onto adjacent property shall not be altered without permission of the altered property owner(s) and shall be subject to any applicable discharge criteria specified in this Chapter.

J. Areas of existing diffused drainage discharge shall be subject to any applicable discharge criteria in the general direction of existing discharge, whether proposed to be concentrated or maintained as diffused drainage areas, except as otherwise provided by this Chapter. If diffused flow is proposed to be concentrated and discharged onto adjacent property, the developer must document that adequate downstream conveyance facilities exist to safely transport the concentrated discharge, or otherwise prove that no erosion, sedimentation, flooding or other harm will result from the concentrated discharge.

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

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

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

N. Any stormwater management facilities regulated by this Chapter that would be located on State highway right-of-way shall be subject to approval by the PennDOT.

O. Minimization of impervious surfaces and infiltration of run-off through seepage beds, infiltration trenches, etc., are encouraged, where soil conditions permit, to reduce the size or eliminate the need for detention facilities.

P. Roof drains must not be connected to streets, sanitary or storm sewers, or roadside ditches to promote overload flow and infiltration/percolation of stormwater where advantages to do so. When it is more advantages to connect directly to streets or storm sewers, then it shall be permitted on a case by case basis by the Township.

Q. Special requirements for areas falling within defined exceptional value and high quality sub-watersheds: The temperature and quality of water and streams that have been declared as exceptional value and high quality is to be maintained as defined in 25 Pa.Code, Chapter 93, "Water Quality Standards." Temperature

sensitive BMPs and stormwater conveyance systems are to be used and designed with storage pool areas and supply outflow channels and should be shaded with trees. This will require modification of berms for permanent ponds and the relaxation of restriction on planting vegetation within the facilities, provided that capacity for volumes and rate control is maintained. At a minimum, the southern half on pond shorelines shall be planted with shade or canopy trees within 10 feet of the pond shoreline. In conjunction with this requirement, the maximum slope allowed on the berm area to be planted is 10 to 1. This will lessen the destabilization of berm soils due to root growth. A long term maintenance schedule and management plan for the thermal control MPS's is to be established and recorded for all development sites.

2. These requirements are in addition to any and all criteria established by the PADEP.

(Ord. 29B(2), 4/14/2003, §301)

§23-302. Technical Requirements.

1. All stormwater management facilities required or regulated by this Chapter shall be designed to meet the performance standards presented within this Chapter.

A. References to “release rates,” as defined in §23-303 of the Chapter, shall only apply to those areas of the Township which are located within the Little Conemaugh River drainage basin, as delineated on the Watershed Boundary Map provided as Appendix 23-D of this Chapter. For purposes of hydraulic calculations, a release rate value of 100 percent will be assumed for any location within either the Chest Creek or Blacklick Creek Watersheds for the 5-, 10-, 25-, and 100-year storm events. However, any location within Cambria Township, regardless of watershed, will be required to retain the 2-year post-development storm to 1-year pre-development peak discharges.

B. In addition to the requirements specified below, the ground water recharge (§23-305), water quality (§23-306), and streambank erosion (§23-307), requirements shall be implemented.

2. The design of any detention facility intended to meet the requirements of this Chapter shall be verified by routing the design storm hydrograph through the proposed facility. As such, use of the Rational Method for detention system facility sizing is unacceptable.

3. “*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 “no harm” would be caused by discharging at a higher runoff rate than that specified by the Plan. The “no harm” option is used when a developer can prove that the post-development hydrographs can match pre-development hydrographs, or if it can be proved that the post-development conditions will not cause increases in peaks at all points 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 subsection .4 to determine if adequate hydraulic capacity exists. The land developer shall submit to the Township this evaluation of the impacts due to increased downstream stormwater flows in the watershed.

A. 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 Township.

B. The evaluation shall continue downstream until the increase in flow diminishes due to additional flow from tributaries and/or stream attenuation.

C. 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 Chest Creek Watershed. These flow values can be obtained from the watershed plan.

D. 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 subsection .4.

E. A financial distress shall not constitute grounds for granting a no-harm exemption.

F. 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.

G. Any “no harm” justifications shall be submitted by the developer as part of the drainage plan submission per Part 4.

4. “Downstream hydraulic capacity analysis” any downstream capacity hydraulic analysis conducted in accordance with this Chapter shall use the following criteria for determining adequacy for accepting increased peak flow rates:

A. Natural or man-made channels or swales must be able to convey the increased runoff associated with a 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*.

B. Natural or man-made channels or swales must be able to convey increased 25-year return period runoff without creating any hazard or persons or property.

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

5. *Regional Detention Alternatives*. For certain areas within the study area, it may be more cost-effective to provide one control facility for more than one development site than to provide an individual control facility for each development site. The initiative and funding for any regional runoff control alternatives are the responsibility of prospective developers. The design of any regional control basins must incorporate reasonable development of the entire upstream watershed. The peak outflow of a regional basin would be determined on a case-by-case basis using the hydrologic model of the watershed consistent with protection of the downstream watershed areas. “Hydrologic model” refers to the calibrated model as developed for the Stormwater

Management Plan.

6. All facilities that require stream encroachment or dam safety permits, as defined in 25 Pa.Code, Chapter 105, regulations (as amended or replaced from time to time by PADEP), shall be designed in accordance with Chapter 105. The definition of “dam” is defined in Chapter 105 regulations. Any roadway crossing including pipes, bridges, storm sewers or any other drainage conveyance facility or any work involving wetlands as described in PADEP Chapter 105 regulations shall be designed in accordance with Chapter 105 regulations and may require a permit from DEP.

7. All calculations using the soil-cover-complex method shall use the NRCS Type II 24-hour rainfall distribution with amounts shown in Figure 23-F-1, Appendix 23-F, attached. (Use the lower portion of the chart for the NRCS method.)

8. Rainfall intensities required for the rational formula shall use rainfall intensities consistent with appropriate times of concentration and return periods and shall be obtained from the “Rainfall-Duration-Frequency Tables for Pennsylvania,” as shown in Table 23-F-1, Appendix 23-F. (Use the upper portion of the chart for the Rational Method.) In the event that a detention facility is proposed for the development, the Rational Method will be deemed unacceptable, since routing of the storm through the detention facility is required.

9. Infiltration/storage structures are promoted throughout the watershed, particularly on the more porous soils (hydrologic soil groups A and B). Of course size limitations and geologic conditions (potential for groundwater contamination) should be carefully examined before proposing infiltration facilities. The criteria in §23-305 shall be consulted in determining the storage potential for infiltration structures. The effects of frozen conditions should also be considered when designing such facilities.

10. *Sites Located in More Than One District.* For a proposed development site located within two or more release category subareas, the peak discharge rate from any subarea shall be the pre-development peak discharge for that subarea multiplied by the applicable release rate. The calculated peak discharges shall apply regardless of whether the grading plan changes the drainage area by subarea. An exception to the above may be granted if discharges from multiple subareas re-combine in proximity to the site. In this case, discharge in any direction may be a 100 percent release rate provided that the overall site discharge meets the weighted average release rate.

11. Any stormwater management facilities located on State highway rights-of-way shall be subject to approval by the PennDOT.

12. The following list of general structural criteria may be used to aid in the design of a proposed stormwater detention basin:

A. The basin is to be sodded or topsoiled and seeded, including the bottom, side slopes, and all earthen dams and embankments.

B. Suitable lining shall be required to all points of inflow to the basin where erosion and scour may occur.

C. The side slopes shall be maximum of 3 feet horizontal to 1 foot vertical, unless the design engineer can provide justification to propose steeper slopes.

D. Basins greater than 3 feet deep shall be fenced.

E. Safety ledges shall be constructed on the side slopes of all detention basins having a permanent pool of water.

F. All stormwater detention facilities shall be designed to provide an emergency overflow which shall pass 100 percent of the 100-year post-development runoff rate. The height of embankment must be set as to provide a minimum 1 foot of freeboard above the maximum pool elevation computed when the facility functions for 100-year post-development inflow. Should any stormwater management facilities qualify as a dam under 25 Pa.Code, Chapter 105, the facility shall be designed in accordance with Chapter 105 and meet the regulations of Chapter 105 concerning dam safety.

G. Outlets shall be designed to function without manual, electric, or mechanical controls where possible.

H. Provide all spillways (primary and emergency) with erosion protection.

I. All earth fill shall be free from brush, roots, and other organic material subject to decomposition.

J. The fill material in all earth darns and embankments shall be compacted to at least 95 percent of the maximum density obtained from compaction tests performed by the appropriate method in ASTM D698.

13. *Off-Site Areas.* Off-site areas that drain through a proposed development site are not subject to release rate criteria when determining allowable peak run-off rates. However, on-site drainage facilities shall be designed to safely convey off-site flows through the development site.

14. Any facilities that constitute water obstructions (e.g., culverts, bridges, outfalls, or stream enclosures), and any work involving wetlands as directed in 25 Pa.Code, Chapter 105, regulations (as amended or replaced from time to time by PADEP), shall be designed in accordance with Chapter 105 and will require a permit from PADEP. Any other drainage conveyance facility that does not fall under Chapter 105 regulations must be able to convey, without damage to the drainage structure or roadway, runoff from the 25-year design storm with a minimum 1 foot of free board measured below the lowest point along the top of the roadway. Roadway crossings located within designated floodplain areas must be able to convey runoff from a 100-year design storm with a minimum 1 foot of freeboard measured below the lowest point along the top of roadway. Any facility that constitutes a dam as defined in PADEP Chapter 105 regulations may require a permit under dam safety regulations. Any facility located within a PennDOT right of way must meet PennDOT minimum design standards and permit submission requirements.

15. Any drainage conveyance facility and/or channel that does not fall under 25 Pa.Code, 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.

16. Storm sewers must be able to convey post-development runoff from a 10-year design storm without surcharging inlets, where appropriate.

17. Adequate erosion protection shall be provided along all open channels, and at

all points of discharge.

18. Infiltration facilities cannot discharge to or be directly hydrologically connected to an underlying deep mine.

19. The design of all stormwater management facilities shall incorporate sound engineering principles and practices. The Plan Administrator shall reserve the right to disapprove any design that would result in the occurrence or perpetuation of an adverse hydrologic or hydraulic condition within the watershed.

(Ord. 29B(2), 4/14/2003, §302)

§23-303. Calculation Methodology.

1. Any stormwater runoff calculations shall use any generally accepted calculation technique that is based on the NRCS soil cover complex or Rational Method. It is assumed that all methods will be selected by the design professional based on the individual limitations and suitability of each method for a particular site.

2. In the event that a detention basin will be incorporated into the Stormwater Management Plan, the Rational Method will not be considered acceptable.

**Acceptable Computation Methodologies
for Stormwater Management Plans**

Method	Method Developed by	Applicability
TR-20 (or commercial package based on TR-20)	USDA SCS	Applicable where use of full hydrology computer model is desirable or necessary.
TR-55 (or commercial computer package based on TR-55)	USDA SCS	Applicable for land development plans within limitations described in TR-55.
HEC-1, HEC-HMS	U.S. Army Corps of Engineers	Applicable where use of full hydrologic computer model is desirable or necessary.
PSRM	Penn State University	Applicable where use of a hydrologic computer model is desirable or necessary; simpler than TR-20 or HEC-1.
Rational Method (or commercial computer package based on Rational Method)	Emil Kuichling (1889)	For sites less than 20 acres, not utilizing a detention basin.
Other Methods	Varies	Other computation methodologies approved by the Plan Administrator and Township Engineer.

3. Precipitation values used for either the NRCS soil-cover-complex or Rational Methods shall be obtained from Figure 23-F-1 in Appendix 23-F.

4. It should be noted that stormwater storage can be provided on or off-site. The possibility for regional or off-site facilities provides increased management flexibility within a watershed. In many areas, the most cost-effective solution may be several developments sharing a joint facility. Municipalities also may benefit from this approach. Joint facilities may maximize development in appropriate areas and provide regional storage through the use of natural or artificial lakes, floodplains, and valleys with steep slopes that are unsuitable for development. However, where off-site storage is to be used, the developer must insure that no flooding or harm will be caused by runoff between the new development and the off-site storage area. This may require the

protection of the stream channel or the construction of a storm sewer to convey runoff to the storage site.

5. For the purposes of pre-development 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).

6. All calculation 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 PennDOT *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. Times of concentration for channel and pipe flow shall be computed using Manning’s equation.

7. Runoff curve numbers (CN) for both existing and proposed conditions to be used in the soil cover complex method shall be obtained from Table 23-F-1, Appendix 23-F.

8. Runoff coefficients (c) for both existing and proposed conditions for use in the Rational Method shall be obtained from Table F-2, Appendix F.

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

10. The design of any stormwater detention facilities intended to meet the performance standards of this Chapter shall be verified by routing the design storm hydrograph through these facilities using the Storage-Indication Method. For drainage areas greater than 200 acres, the design storm hydrograph shall be computed using a calculation method that produces a full hydrograph. The Township may approve the use of any generally accepted full hydrograph approximation technique that shall use total runoff volume that is consistent with the volume from a method that produces a full hydrograph.

11. *Regional Detention Alternatives.* For certain areas within the study area, it may be more cost-effective to provide one control facility for more than one development site than to provide an individual control facility for each development site. The initiative and funding for any regional runoff control alternatives are the responsibility of prospective developers. The design of any regional control basins must incorporate reasonable development of the entire upstream watershed. The peak outflow of a regional basin would be determined on a case-by-case basis using the hydrologic model of the watershed consistent with protection of the downstream watershed areas. Hydrologic model refers to the calibrated model as developed for the Stormwater Management Plan.

12. The release rate percentage provides a standard for the watershed plan to define what measures are reasonably necessary to manage stormwater so as to prevent injury, to persons and property in a watershed.

13. *Procedure for Calculating Stormwater Runoff.*

A. Compute the pre-development runoff hydrograph for the 1-, 5-, 10-, 25-, and 100-year storm events.

B. Compute the post-development runoff hydrograph for the 2-, 5-, 10-, 25- and 100-year events with no stormwater management. (Compare the post-development 2-year peak to the pre-development 1-year peak, the 5-year post- to the 5-year pre-, etc.) If the post-development hydrograph is identical to the pre-development runoff hydrograph in peak discharge and shape, the requirements of this Chapter have been met; otherwise proceed to step C.

C. If site conditions allow, apply on-site stormwater management technique(s) to increase infiltration and reduce impervious surfaces. Recompute the 2-, 5-, 10-, 25-, and 100-year post-development hydrographs. If the peak rates are greater than pre-development rates, stormwater detention will be required.

D. If located with the Little Conemaugh River Watershed: Using the subbase release rate percentage (provided on the watershed map in Appendix 23-D) and the pre-development rate of runoff, multiply to determine the allowable release rates from the detention facility for the 2-, 5-, 10-, 25-, and 100-year events. (If the site is located outside of the Little Conemaugh River Watershed, the release rate for all storms (except the 2-year) is 100 percent of pre-development.

E. Prove by accepted hydraulic methods that the allowable release rates from the detention facilities are being achieved for the 2-, 5-, 10-, 25-, and 100-year events through principal outlet/outlets.

F. Provide all detention facilities with an emergency spillway or emergency overflow outlet with the capacity of safely passing 100 percent of the peak inflow from the 100-year post-development event.

(*Ord. 29B(2)*, 4/14/2003, §303)

§23-304. Erosion and Sedimentation Requirements.

1. Whenever the vegetation and topography are to be disturbed, such activity must be in conformance with 25 Pa.Code, Part I, Commonwealth of Pennsylvania, Department of Environmental Protection, Subpart C, Protection of Natural Resources, Article H, Water Resources, Chapter 102, "Erosion Control," and in accordance with the Cambria County Conservation District.

2. Additional erosion and sedimentation control design standards and criteria that must be or are recommended to be applied where infiltration BMP's are proposed shall include the following:

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

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

(*Ord. 29B(2)*, 4/14/2003, §304)

§23-305. Ground Water Recharge (Infiltration/Recharge/Retention).

1. The ability to retain and maximize the ground water recharge capacity of the area being developed is encouraged. Design of the infiltration/recharge stormwater management facilities shall give consideration to providing ground water recharge to

compensate for the reduction in the percolation that occurs when the ground surface is paved and roofed over. These measures are encouraged, particularly in hydrologic soil groups A and B and should be utilized wherever feasible. Soils used for the construction of basins shall have low-erodibility factors (“IC” factors).

2. Infiltration BMPs shall meet the following minimum requirements:

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

(1) A minimum depth of 48 inches between the bottom of the facility and the seasonal high water table and/or bedrock (limiting zones).

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

B. Infiltration BMPs receiving only roof runoff may be placed in soils having a minimum depth of 24 inches between the bottom of the facility and the limiting zone.

C. The size of the recharge facility shall be based upon the following equation:

$$Re_v = [(S)(R_v)(A)]/12$$

Where:

- Re_v = Recharge Volume (acre-feet)
- S = Soil specific recharge factor (inches)
- R_v = Volumetric runoff coefficient
- A = Site area contributing to the recharge facility (acres)

And: $R_v = 0.05 + 0.009(I)$

Where:

- I = Percent impervious area

And: S shall be obtained based upon hydrologic soil group based upon the table below:

Hydrologic Soil Group	Soil Specific Recharge Factor (S)
A	0.38 inches
B	0.25 inches
C	0.13 inches
D	0.06 inches

If more than one hydrologic soil group (HSG) is present at a site, a composite recharge volume shall be computed based upon the proportion of total site area within each HSG.

D. The recharge volume provided at the site shall be directed to the most permeable HSG available.

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

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

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

A. Analyze hydrologic soil groups as well as natural and man-made features within watershed to determine general areas of suitability for infiltration practices.

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

C. Design infiltration structure for required storm volume based on field determined capacity at the level of the proposed infiltration surface.

4. Extreme caution shall be exercised where infiltration is proposed in geologically susceptible areas such as strip mien or limestone areas. Extreme caution shall also be exercised where salt or chloride would be a pollutant since soils do little to filter this pollutant and it may contaminate the groundwater. It is also extremely important that the design professional evaluate the possibility of groundwater contamination from the proposed infiltration/recharge facility and recommended a hydrogeologic justification study be performed if necessary. Whenever a basin will be located in an area underlain by limestone, a geological evaluation of the proposed location shall be conducted to determine susceptibility to sinkhole formations. The infiltration requirement in the high quality/exceptional waters shall be subject to 25 Pa.Code, Chapter 93, and anti-degradation regulations. The design of all facilities over limestone formations shall include measures to prevent ground water contamination and, where necessary, sinkhole formation. The Township may require the installation of an impermeable liner in detention basins. A detailed hydrogeologic investigation may be required by the Township. It shall be the developer's responsibility to verify if the site is underlain by limestone. The following note shall be attached to all drainage plans and signed and sealed by the developers engineer/surveyor/landscape/architect/geologist:

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

5. The Township may require the developer to provide safeguards against groundwater contamination for uses which may cause groundwater contamination should there be a mishap or spill.

6. Where pervious pavement is permitted for parking lots, recreational facilities, nondedicated streets, or other areas, pavement construction specifications shall be noted on the plan.

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

stormwater management alternatives.

(Ord. 29B(2), 4/14/2003, §305)

§23-306. Water Quality Requirements.

1. In addition to the performance standards and design criteria requirements of this Part, the land developer shall comply with the following water quality requirements of this Part unless otherwise exempted by provisions of this Chapter.

A. Developed areas will provide adequate storage and treatment facilities necessary to capture and treat stormwater runoff. The Recharge Volume computed under §23-307 may be a component of the water quality volume. If the recharge volume is less than the water quality volume, the remaining water quality volume may be captured and treated by methods other than recharge/infiltration BMP's.

B. The water quality volume (WQv) is the storage capacity needed to treat stormwater runoff produced by "P" inch of rainfall (90 percent Rule) from the developed areas of the site (For "P" Values, see Appendix 23-B, Table 23-B-5). The following calculation formula is used to determine the storage volume, WQv, in acre-feet of storage:

$$WQv = [P \cdot 0)(Rv)(a)]/12$$

$$WQv = \text{Water Quality Volume}$$

$$P = \text{Rainfall Amount (90\% of events producing this rainfall) } *$$

$$A = \text{Area in acres}$$

$$Rv = 0.05 + 0.009(I) \text{ where } I \text{ is the impervious surface ratio}$$

* note - for Cambria Township sites, P = 1.95" for PennDOT Region 4.

2. WQv shall be designed as part of a stormwater management facility which incorporates water quality BMP's as a primary benefit of using that facility, in accordance with design specifications contained in *Pennsylvania Handbook of Best Management Practices for Developing Areas*. The following factors shall be considered when evaluating the suitability of BMPs used to control water quality at a given development site:

- A. Total contributing area.
- B. Permeability and infiltration rate of the site soils.
- C. Slope and depth to bedrock.
- D. Seasonal high water table.
- E. Proximity to building foundations and well heads.
- F. Erodibility of soils.
- G. Land availability and configuration of the topography.

3. The following additional factors should be considered when evaluating the suitability of BMPs used to control water quality at a given development site:

- A. Peak discharge and required volume control.
- B. Stream bank erosion.
- C. Efficiency of the BMPs to mitigate potential water quality problems.
- D. The volume of runoff that will be effectively treated.

- E. The nature of the pollutant being removed.
- F. Maintenance requirements.
- G. Creation/protection of aquatic and wildlife habitat.
- H. Recreational value.
- I. Enhancement of aesthetic and property value.

(Ord. 29B(2), 4/14/2003, §306)

§23-307. Stream Bank Erosion Requirements.

Applying the water quality criteria in §23-306 above will also help the stream bank erosion problem. Thus, detaining the 2-year post-development storm to the 1-year pre-development storm and detaining the 1-year post-development storm a minimum of 24 hours would therefore minimize the number of storms causing stream bank erosion. This is the same management criteria that has been recognized to also improve the water quality from stormwater runoff.

(Ord. 29B(2), 4/14/2003, §307)

Part 4

Drainage Plan Requirements, Submittal, and Review Procedures

§23-401. General Requirements.

1. The drainage plan shall be submitted to the Township with the preliminary subdivision and/or land development plan to allow for timely review and inclusion in the final subdivision plan for any revision(s) which may result from the review(s).

2. The applicant shall submit the erosion and sediment pollution control plan directly to the Cambria County Conservation District for review and approval.

3. For any activities regulated by this Chapter, the final approval of subdivision and/or land development plans, the issuance of any building or occupancy permit, or the commencement of any land disturbance activity may not proceed until the property owner or developer or his/her agent has received written approval of a drainage plan from the Township.

(Ord. 29B(2), 4/14/2003, §401)

§23-402. Exemptions.

1. Any regulated activity that meets the exception criteria in the following table is exempt from the provisions of this Chapter. This criteria shall apply to the total development even if development is to take place in phases. The date of the municipal ordinance adoption 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. 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 requirements for water quality and groundwater recharge, special requirements for high quality (HQ) and exceptional value (EV) watersheds, and of §§23-307 and 23-301.K respectively.

Stormwater Management Exemption Criteria	
Total Parcel Size	Impervious Area Exemption (sq. ft.)
≤ ¼ acre	2,500 sq. ft.
> ¼ to 1 acre	5,000 sq. ft.
> 1 to 2 acres	10,000 sq. ft.
> 2 to 5 acres	15,000 sq. ft.
> 5 acres	20,000 sq. ft.

2. Exemptions shall be at the discretion of Township Engineer upon review of site conditions, topography, soils, and other factors as desired appropriate.

(Ord. 29B(2), 4/14/2003, §402)

§23-403. Drainage Plan Content.

The following items shall be included in the plan:

A. Narrative report describing the project and giving the purpose and the engineering assumptions and calculations for control measures and facilities. This report should include, but not limited to the following:

- (1) General description of the project including statement of total impervious area created.
- (2) Brief soil description.
- (3) General description of stormwater management controls.
- (4) Expected project time schedule, including anticipated start and completion dates.
- (5) A proposed schedule of inspections (if available) which will be performed by the applicant's engineer.
- (6) All calculations, assumptions and criteria used in the design of the control measures and structures.
- (7) A maintenance program for all stormwater management and controls for both the construction period and after construction is complete. Include the party responsible for maintenance. This program must include the proposed ownership of the permanent controls and details for financial responsibility for any required maintenance.
- (8) Drainage plan application with fee.
- (9) A copy of the erosion and sedimentation control plan approval letter from the Cambria County Conservation District or PADEP.
- (10) A geologic assessment of the effects of runoff on sinkholes as specified in this Chapter.
- (11) The effect of the project (in terms of runoff volumes and peak flows) on adjacent properties and on any existing Township stormwater collection system that may receive runoff from the project site.
- (12) All deed and plan restrictions, easements, and right-of-way related to stormwater management and facilities.
- (13) Training and experience of person(s) preparing the plan.
- (14) A declaration of adequacy and highway occupancy permit from the PennDOT District Office when utilization of a PennDOT storm drainage system is proposed.

B. Map(s) of the project area shall include, but not be limited to:

- (1) The name of the development, the name and address of the owner of the property, and the name of the individual or firm preparing the plan.
- (2) The locations of the project relative to highways, municipalities or other identifiable landmarks (i.e., U.S.G.S.).
- (3) North arrow and scale (written and graphic) of 1 inch equals no more than 50 feet.
- (4) Existing and proposed contours at intervals of 2 feet; in areas of steep slopes (greater than 15 percent), 5-foot contour intervals may be used.
- (5) Existing streams, lakes, ponds, or other bodies of water within and in

close proximity to the project area.

(6) Easements and adjoining property owners.

(7) Existing structures, roads, paved areas, buildings, flood hazard boundaries, sinkholes, streams, and earth disturbances.

(8) Other physical features including existing drainage swales and areas of natural vegetation to be preserved.

(9) Locations of existing and proposed underground utilities, sewers, and water lines within the property line. When groundwater recharge methods such as seepage pits, beds or trenches are used, the locations of existing and proposed septic tank infiltration areas and wells must be shown.

(10) An overly showing soil types and boundaries.

(11) Proposed changes to land surfaces and vegetative cover, including type and amount of impervious are that would be added.

(12) Limits of disturbed area(s).

(13) Proposed structures including roads, paved areas, and buildings.

(14) Any wetlands as delineated according to the latest acceptable manual and person(s) trained in wetland delineation.

(15) Existing and proposed stormwater management and erosion and sedimentation control structures.

(16) Details/profiles of all proposed stormwater management storage or infiltration control structures.

(17) Drainage area(s) including the total extent of the upstream area extending beyond the site limits.

(18) When groundwater recharge methods such as seepage pits, beds or trenches are used, the locations of infiltration areas must be shown. It is recommended that any up- and down-gradient wells and springs be sampled at least once prior to installation to document pre-infiltration device water quality. Reasonable radius for testing is 500 feet. Also, if infiltration facilities are used they cannot discharge to any underlying deep mine.

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

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

(21) Overland drainage paths.

(22) A 15-foot wide access easement around all stormwater management facilities that would provide ingress to and egress from a public right-of-way.

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

(24) A statement, signed by the landowner, acknowledging the stormwater management system to be a permanent fixture that can be altered or removed only after approval of a revised plan by the Township.

(25) Areas subject to special deed restrictions affecting or affected by stormwater management. Profiles and details of all open channels.

(26) Profiles and details of all open channels proposed.

(27) Plans for construction must be signed and sealed by an engineer registered in the Commonwealth of Pennsylvania and qualified under all applicable State and local laws to perform such duties indicating the compliance of the design of the stormwater management facilities and concepts with the provisions of this Chapter.

(28) Date of submission.

(*Ord. 29B(2), 4/14/2003, §403*)

§23-404. Plan Submission.

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

A. The drainage plan shall be submitted to Cambria Township.

B. The drainage plan shall be accompanied by the requisite fee, as set forth in Part 7 and the Fee Schedule of this Chapter.

C. Four copies of the completed drainage plan must be submitted.

(*Ord. 29B(2), 4/14/2003, §404*)

§23-405. Drainage Plan Review and Approval.

The drainage plan shall be submitted to the Township Supervisors to allow for a timely review.

A. The Township shall distribute one copy of the stormwater management plan to their designated engineer.

B. The Conservation District and the Township’s Engineer shall provide their comments recommending approval or a list of deficiencies.

C. The Township will then issue a drainage occupancy permit or provide a list of deficiencies to the developer for plan resubmission.

D. For regulated activities specified in §23-105 of this Chapter, the Township Engineer shall notify the Township Building Permit Officer in writing, within a time frame consistent with the Township Building Code [Chapter 5, Part 1] and/or Township Subdivision Ordinance [Chapter 22], whether the drainage plan is consistent with the Stormwater Management Plan and forward a copy of the approval/disapproval letter to the developer. Any disapproved drainage plan may be revised by the developer and resubmitted consistent with the Chapter.

E. The Township shall not approve any subdivision or land development for regulated activities specified in §23-105 of this Chapter if the drainage plan has been found to be inconsistent with the Stormwater Management Plan, as

determined by the Township Engineer. All required permits from PADEP must be obtained prior to approval of any subdivision of land development.

F. The Township Building Permit Officer shall not issue a building permit for any regulated activity specified in §23-105 of this Chapter if the drainage plan has been found to be inconsistent with the Stormwater Management Plan, as determined by the Township Engineer, or without considering the comments of the Township Engineer. All required permits from PADEP must be obtained prior to issuance of a building permit.

G. The developer shall be responsible for completing record drawings of all stormwater management facilities included in the approved drainage plan. The record drawings and an explanation of any discrepancies with the design plans shall be submitted to the Township Engineer for final approval. In no case shall the Township approve the record drawings until the Township receives a copy of an approved declaration of adequacy, highway occupancy permit from the PennDOT District Office, and any applicable permits from PADEP.

H. Upon receipt of the final plans, which require all required modifications, the Township Supervisors will issue an approval letter. No work shall be permitted prior to the issuance of this approval letter.

(Ord. 29B(2), 4/14/2003, §405)

§23-406. Modification of Plans.

1. A modification to an approved drainage plan which involves a change in control methods or techniques, or which involves the relocation or redesign of control measures, or which is necessary because soil or other conditions are not as stated on the approved application (as determined by the Township Engineer or its designee) shall require a resubmission for approval pursuant to the procedures contained in §§23-403 and 23-404 of this Chapter.

2. A modification to an already approved or disapproved drainage plan shall be submitted to the Township, accompanied by the applicable review. A modification to a drainage plan for which a formal action has not been taken by the Township shall be submitted to the Township, accompanied by the applicable Township review fee.

(Ord. 29B(2), 4/14/2003, §406)

§23-407. Resubmission of Disapproved Plans.

A disapproved drainage plan may be resubmitted, with the revisions addressing the Township Engineer's concerns documented in writing addressed, to the Township Secretary in accordance with §23-403 of this Chapter and distributed accordingly and be subject to review as specified in §23-404 of this Chapter. The applicable Township review fee must accompany a resubmission of disapproved drainage plan.

(Ord. 29B(2), 4/14/2003, §407)

Part 5**Permit Requirements and Procedures****§23-501. Permit Requirements and Exemptions.**

All subdivision/land development activities as specified in §23-105, except those specifically exempt from drainage plan submittal and review requirements specified in §23-106, shall be conducted only after the issuance of a drainage permit.

(*Ord. 29B(2)*, 4/14/2003, §501)

§23-502. Permit Issuance.

The applicant shall obtain the required drainage permit after obtaining the required drainage plan approval as specified in Part 4 of this Chapter. This drainage permit will be issued by Cambria Township concurrently with final subdivision/land development and building permit approval.

(*Ord. 29B(2)*, 4/14/2003, §502)

§23-503. Modification of Drainage Plans.

A modification to an approved drainage plan, when required under §23-405 of this Chapter, shall require a new drainage permit. The permit shall be issued following approvals of the revised plan.

(*Ord. 29B(2)*, 4/14/2003, §503)

§23-504. Stormwater Management Occupancy Permit.

All drainage occupancy permits required by this Chapter shall be made on forms supplied by the Township provided in Appendix 23-B of this Chapter. The owner/developer shall not occupy the structure until the constructed stormwater management facility has been approved by the Township Supervisors or their Engineer. The drainage occupancy permit shall be issued by the Township following approval of the stormwater management site drainage plan.

(*Ord. 29B(2)*, 4/14/2003, §504)

§23-505. Expiration and Renewal.

1. All drainage permits shall expire 12 months from the date of issuance.
2. A renewal of the expired drainage permit may be issued by the Township following a resubmittal of the drainage permit application form. Additional fees must be paid for the resubmittal of an expired permit.
3. The refusal of the Township to reissue an expired drainage permit shall contain the reasons for such refusal.
 - A. Changes in project site conditions and requirements for the drainage plan may occur over a period of time.
 - B. If the requirements for the drainage plan have changed as determined by the Township, re-application, review, and permit issuance requirements must be

performed pursuant to this Chapter.

(Ord. 29B(2), 4/14/2003, §505)

§23-506. Compliance and Guarantees.

Cambria Township shall require a guarantee bond, or other form of security/surety approved by the Supervisors, from the developer/applicant to assure that the proposed stormwater facility will be installed and constructed in a timely manner. The Township will set the appropriate amount of bond based on the size and type of facility. Subsequent to the successful completion of the installation of the stormwater facility and inspection by the Township's designated engineer and certifying the completion in accordance with the approved plans, the Township may release the guarantee bond.

(Ord. 29B(2), 4/14/2003, §506)

Part 6**Inspections****§23-601. Responsibility of Inspections.**

It is the applicant's engineer's responsibility to make inspections to assure that the facility is being constructed according to the project plans. At completion of construction, the applicant's engineer shall certify construction via a letter to the Township. Following receipt of this certification letter, the Township's Engineer will perform a final inspection and issue a letter to the Township with either additional comments or recommending issuance of the occupancy permit. (See §§23-903.C and .D.)

(Ord. 29B(2), 4/14/2003, §601)

§23-602. Cambria Township's Rights.

If at any stage of the work Cambria Township or its designee determines that the conditions are not as stated or shown in the approved application, the Township may suspend or revoke existing permits until a revised plan is submitted and approved.

(Ord. 29B(2), 4/14/2003, §602)

Part 7**Fees and Expenses****§23-701. General.**

Drainage permit fees are to cover costs of Cambria Township and designated engineer for drainage plan review and permit issuance. No permit to begin any work on the project shall be issued and no reviews performed until the requisite fees have been paid. The submission shall be considered incomplete if the required fees have not been paid.

(Ord. 29B(2), 4/14/2003, §701)

§23-702. Modifications of Plans.

1. If it is determined that a modification to the existing drainage site plan is required under §23-405 of this Chapter, a new drainage permit shall not be issued until the additional fees have been paid by the applicant. The fee associated with the resubmission of a drainage plan is listed on the schedule of fees.

2. If the reviewing agency determines that any stormwater management control facility design is not based on sound engineering practice, the applicant shall be responsible for the construction of any additional facilities and payment of additional fees as set forth in this Chapter.

(Ord. 29B(2), 4/14/2003, §702)

§23-703. Schedule of Fees.

All fees and expenses shall be outlined by resolution of Cambria Township, and included as part of the drainage permit application provided within this Chapter.

(Ord. 29B(2), 4/14/2003, §703)

§23-704. Expenses Covered by Fees.

The fees required by this Chapter shall at a minimum cover:

- A. Administrative costs.
- B. The review of the drainage plan by the Township and the Township Engineer.
- C. The site inspections.
- D. The inspection of stormwater management facilities and drainage improvements during construction.
- E. The final inspection upon completion of the stormwater management facilities and drainage improvements presented in the drainage plan.
- F. Additional work required to enforce permit provisions regulated by this Chapter, correct violations, and assure proper completion of stipulated remedial action.

(Ord. 29B(2), 4/14/2003, §704)

Part 8**Maintenance Responsibilities****§23-801. Maintenance Responsibilities.**

1. The drainage plan for the development site shall contain an operation and maintenance plan prepared by the developer and approved by the Township Engineer. The operation and maintenance plan shall outline required routine maintenance actions and schedules necessary to insure proper operation of the facility(ies).

2. The drainage plan for the development site shall establish responsibilities for the continuing operating and maintenance of all proposed stormwater control facilities, consistent with the following principals:

A. If a development consists of structures or lots which are to be separately owned and in which streets, sewers, and other public improvements are to be dedicated to the Township, stormwater control facilities should also be dedicated to and maintained by the Township.

B. If a development site is to be maintained in a single ownership or if sewers and other public improvements are to be privately owned and maintained, then the ownership and maintenance of stormwater control facilities should be the responsibility of the owner or private management entity.

3. The Board of Supervisors, upon recommendation of the Township Engineer, shall make the final determination on the continuing maintenance responsibilities prior to final approval of the stormwater management plan. The Board of Supervisors reserves the right to accept the ownership and operating responsibility for any or all of the stormwater management controls.

(Ord. 29B(2), 4/14/2003, §801)

§23-802. Maintenance Agreement for Dedicated Stormwater Facilities.

Any stormwater facility which is dedicated to the Township shall comply with the provisions of §23-804.A.2, .A.3, .B and .C.

(Ord. 29B(2), 4/14/2003, §802)

§23-803. Maintenance Agreement for Privately Owned Stormwater Facilities.

NOTE: This provision is an example of one way that a municipality could establish a special fund to finance its maintenance and inspection activities for stormwater retention/detention facilities. It is an optional provision of the Chapter. If a municipality is interested in establishing such a fund, it is recommended that it consult with its Solicitor for legal requirements and procedures.

A. Persons installing stormwater storage facilities shall be required to pay a specified amount to the Township Stormwater Maintenance Fund to help defray costs of periodic inspections and maintenance expenses. The amount of the deposit shall be determined as follows:

(1) If the storage facility is to be privately owned and maintained, the

deposit shall cover the cost of periodic inspections performed by the Township for a period of 10 years, as estimated by the Township Engineer. After that period of time, inspections will be performed at the expense of the Township.

(2) If the storage facility is to be owned and maintained by the Township, the deposit shall cover the estimated costs for maintenance and inspections for 10 years. The Township Engineer will establish the estimated costs utilizing information submitted by the applicant.

(3) The amount of the deposit to the fund shall be converted to present worth of the annual series values. The Township Engineer shall determine the present worth equivalents which shall be subject to the approval of the Board of Supervisors.

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

C. If at some future time a storage facility (whether publicly or privately owned) is eliminated due to the installation of storm sewers or other storage facility, the unused portion of the maintenance fund deposit will be applied to the cost of abandoning the facility and connecting to the storm sewer system or other facility. Any amount of the deposit remaining after the costs of abandonment are paid will be returned to the depositor.

(Ord. 29B(2), 4/14/2003, §803)

§23-804. Municipal Stormwater Maintenance Fund.

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

(Ord. 29B(2), 4/14/2003, §804)

Part 9**Enforcement and Penalties****§23-901. Right-of-Entry.**

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

(Ord. 29B(2), 4/14/2003, §901)

§23-902. Notification.

In the event that a person fails to comply with the requirements of this Chapter, or fails to conform to the requirements of any permit issued hereunder, the Township shall provide written notification of the violation. Such notification shall set forth the nature of the violation(s) and establish a time limit for correction of these violation(s). Failure to comply within the time specified shall subject such person to the penalty provisions of this Chapter. All such penalties shall be deemed cumulative and resort by the Township from pursuing any and all remedies. It shall be the responsibility of the owner of the real property on which any regulated activity is proposed to occur, is occurring, or has occurred, to comply with the terms and conditions of this Chapter.

(Ord. 29B(2), 4/14/2003, §902)

§23-903. Enforcement.

Cambria Township is hereby authorized and directed to enforce all of the provisions of this Chapter.

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

B. It shall be unlawful for any person, firm, or corporation to undertake any regulated activity on any property except as provided for in the approved drainage plan and pursuant to this Chapter. It shall be unlawful to alter or remove any control structure required by the drainage plan pursuant to this Chapter or to allow the property to remain in a condition which does not conform to the approved drainage plan.

C. At the completion of the project and prior to occupying of the site, the owner or his representative shall provide to the Township:

(1) A certification of completion from an engineer or other qualified person verifying that all permanent facilities have been constructed according to the plans and specifications and approved revisions thereto.

(2) A set of as-built drawings (if appropriate).

D. After receipt of the certification of completion by Cambria Township, a final inspection shall be conducted by the Township or its designee to certify compliance with this Chapter.

E. *Occupancy Permit.* An occupancy permit shall not be issued unless the certification of compliance has been secured. The occupancy permit shall be required for each lot owner and/or developer for all subdivisions and land development in the Township.

F. Prior to revocation or suspension of a permit, the Township will schedule a meeting to discuss the noncompliance if there is no immediate damage to life, public health or property.

G. *Suspension and Revocation of Permits.*

(1) Any permit issued under this Chapter may be suspended or revoked by the Township for:

(a) Noncompliance with or failure to implement any provision of the plan.

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

(c) The creation of any condition or the commission of any act during construction or development which constitutes or creates a hazard or nuisance, pollution, or which endangers the life or property of others, or as outlined in Part 9 of this Chapter.

(2) A suspended permit shall be reinstated by Cambria Township when:

(a) The Township, Planning Commission, or their designee have inspected and approved the corrections to the stormwater management measure(s), or the elimination of the hazard or nuisance.

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

(3) A permit which has been revoked by the Township cannot be reinstated. The applicant may apply for a new permit under the procedures outlined in this Chapter.

(Ord. 29B(2), 4/14/2003, §902)

§23-904. Notification.

1. In the event that a person fails to comply with the requirements of this Chapter, or fails to conform to the requirements of any permit issued hereunder, the Township shall provide written notification of the violation. Such notification shall set forth the nature of the violation(s) and establish a time limit for correction of these violation(s). Failure to comply within the time specified shall subject such person to the penalty provisions of this Chapter. All such penalties shall be deemed cumulative and resort by the Township from pursuing any and all remedies. It shall be the responsibility of the owner of the real property on which any regulated activity is proposed to occur, is occurring, or has occurred, to comply with the terms and conditions of this Chapter.

2. As a result of an on-site inspection by the designee of Cambria Township or a majority of the Township Supervisors, if it has been determined that an owner, subdivider, developer, or his agent has failed to comply with the requirements of this Chapter, or fails to conform to the requirements of any permit issued thereunder, the Township or designee shall provide written notification of violation within 10 days of

said on-site inspection. The violation shall be deemed a public nuisance, and the notification shall set forth the nature of the violation(s) and establish a time limit for correction of these violations(s). Upon failure to comply within the time specified, the owner, subdivider, developer or his agent shall be subject to the penalty provisions of this Chapter (§23-905) or other penalty.

3. Each day that the public nuisance violation continues shall be a separate offense. In addition, the Township 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.

(*Ord. 29B(2)*, 4/14/2003, §903)

§23-905. Enforcement Remedies and Penalties.

In case any building, structure, or land is, or is proposed to be, erected, constructed, reconstructed, altered, converted, maintained, or used in violation of this Chapter, Cambria Township or, with the approval of the Township, an officer of the Township, in addition to other remedies, may institute in the name of the Township, any appropriate action or proceeding to prevent, restrain, correct, or abate such building, structure or land, or to prevent, in or about such premises, any act, conduct, business or use constituting a violation.

A. Any person, firm, or corporation who shall violate any provision of this Part, upon conviction thereof in an action brought before a magisterial district judge in the manner provided for the enforcement of summary offenses under the Pennsylvania Rules of Criminal Procedure, shall be sentenced to pay a fine of not more than \$1,000 plus costs and, in default of payment of said fine and costs, to a term of imprisonment not to exceed 90 days. Each day that a violation of this Part continues or each Section of this Part which shall be found to have been violated shall constitute a separate offense. [*Ord. 199*]

B. In addition, the Township, through its Solicitor may institute injunctive, mandamus or any other appropriate action or proceeding at law or in equality for the enforcement of this Chapter. 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.

(*Ord. 29B(2)*, 4/14/2003, §904; as amended by *Ord. 199*, 2/9/2009)

§23-906. Appeals.

1. Any person aggrieved by any action of the Township or its designee may appeal to the Township or Zoning Hearing Board within 30 days of that action.

2. Any person aggrieved by any decision of the Township may appeal to the County Court of Common Pleas in the County where the activity has taken place within 30 days of the municipal decision.

(*Ord. 29B(2)*, 4/14/2003, §905)

§23-907. Effective Date.

This Chapter (which is a supplement to Ordinance No. 29) shall become effective 10 days after the date on which it has been passed by the Township and approved as to form by the Solicitor of the Township. New construction, or creation of a subdivision or resubdivision meeting the criteria described in §23-105, shall be required to adhere to the conditions of the Land Development and Subdivision Ordinance [Chapter 22] if the application to the Township is to be acted on after the effective date of this Chapter. (*Ord. 29B(2)*, 4/14/2003, §906)

Appendix 23-A

Drainage Plan Permit Application

Application is hereby made for review of the stormwater management plan and related data as submitted herewith in accordance with the Cambria Township Stormwater Management Ordinance.

Date of Submission _____

Submission No. _____

Local Board of Supervisors _____ (Name of Township or Borough)

1. Name of Subdivision or Development _____

2. Name of Applicant _____
Telephone Number _____

(If Corporation, list the corporations name and the names of two officers of the Corporation).

Corporation _____

Name _____

Name _____

Telephone No. _____

Address _____

Applicant's interest in subdivision or development _____ (If other than property owner give owners name and address)

3. Name of Property Owner _____

Telephone No. _____

Address _____

4. Name of Engineer _____

Telephone No. _____

Address _____

5. Type of subdivision or development proposed:

_____ Single-family lots

_____ Two-family lots

_____ Multi-family lots

_____ Cluster type lots

_____ Planned residential development

_____ Townhouses

_____ Garden apartments

_____ Mobile home park

_____ Campground

_____ Other (_____)

_____ Commercial (multi-lot)

_____ Commercial (one-lot)

_____ Industrial (multi-lot)

_____ Industrial (one-lot)

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

7. Area of existing and proposed 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 pre-development conditions for the designated design storm?

B. Method of determining runoff rates.

C. Is the proposed runoff reduced to the allowable release rate for the subarea in which the site is located for the 2-, 5-, 10-, 25-, and 100-year design storm?

(Note: The 2-year post peak must be returned to the 1-year pre-development peak)

D. Subarea number from Appendix D of the Little Conemaugh River Watershed Stormwater Management Ordinance, if applicable.

E. Type of proposed runoff control facilities or infiltration measures.

F. Does the proposed stormwater control criteria meet the requirements/guidelines of the stormwater ordinance?

G. Does the plan meet the requirements of Parts 3 and 4 of the Stormwater Ordinance?

H. Is a hydraulic routing through the stormwater control structure submitted?

I. Is a construction schedule or staging attached?

J. Is a recommended maintenance program attached?

K. Who will have the maintenance responsibility of the stormwater control facilities?

9. Erosion and Sedimentation Pollution Control (E & SC)

- A. Has the Erosion and Sedimentation Control Plan been submitted to the Cambria County Conservation District? _____
- B. Total area of earth disturbance _____
- C. Is the Erosion and Sedimentation Pollution Control Plan approval letter attached?

10. Wetlands

- A. Are wetlands encountered on the site? _____
- B. Have the wetlands been delineated by someone trained in wetland delineation?

(If yes, list the names and address of persons delineating the wetlands)
Name: _____
Telephone Number: _____
Address: _____

- C. Have the wetlands been verified by a State or Federal permitting authority?

- D. Have the wetlands been surveyed? _____
- E. Total acreage of wetlands within the property. _____
- F. Additional supporting documentation.

11. Filing

- A. Has the required fee been submitted? _____
Amount _____
- B. Has the proposed Schedule of Construction and Inspections to be performed by the applicant or their engineer been submitted? _____
- C. Name of individual(s) who will be making the inspections _____

12. Additional Comments

13. The Township occupancy permit will not be issued until:
- A. The Township receives a certification of completion letter from the owner's engineer.
 - B. The Township or its designee performs an inspection of the facility and issues a letter agreeing with the certification. The owner shall not occupy the site until the occupancy permit is issued.

Owner Signature

Certificate of Ownership and Acknowledgment of Application

On this the ____day of _____, 199 ____, before me, the undersigned officer, the applicant verifies that this application was made with knowledge and direction of the provisions set forth within the Cambria Township Stormwater Management Ordinance.

Signature of Property Owner Date

Signature of Property Owner Date

Signature of Applicant Date

Signature of Cambria Township Official Date

Information below this Line to Be Completed by Cambria Township Supervisors

Date complete application received _____

Plan Number _____

Fees _____

Date Fees Paid _____

Check Number _____

Received By _____

Appendix 23-B

Stormwater Management Occupancy Permit

(To Be Issued upon Receipt of Certification by the Owner's Engineer,
and Concurrence of Completion by the Township or its Designee.)

Date _____

Plan Number _____

Local Board of Supervisors _____

Property Owner _____

Address _____

Location _____

Type of Use _____

Name of Business (If applicable) _____

Address _____

The applicant attests that he/she has complied with all of the _____ Township ordinances prior to construction of the proposed development.

The applicant's engineer attests that he/she has complied with all of the Township ordinances prior to construction of the proposed development.

The following ordinances have been complied with:

Subdivision Ordinance	YES	NO	DO NOT APPLY
Land Development Ordinance	YES	NO	DO NOT APPLY
Zoning Ordinance	YES	NO	DO NOT APPLY
Building Permit Ordinance	YES	NO	DO NOT APPLY
Stormwater Management Ordinance	YES	NO	DO NOT APPLY
Street and Road Occupancy Permit	YES	NO	DO NOT APPLY

Has the Erosion and Sedimentation Control Plan been approved by the Cambria County Conservation District? YES NO PENDING

Signature of Applicant Date

Signature of Applicant's Engineer Date

Signature of Issuing Agent Date

Appendix 23-C

Best Management Practices

Early stormwater management efforts concentrated on removing the stormwater as quickly as possible by routing the runoff through a storm sewer system. As the development of watersheds in urban areas increased, the effect of simply passing the stormwater runoff downstream became readily apparent. The result was an increase in total flow peak rate, stream velocity, and flow depth which frequently led to flooding. It is now recognized that the most rational and effective approach to controlling runoff is to maintain natural runoff flow characteristics. This can be accomplished by maximizing natural infiltration processed, reducing impervious areas, preserving floodplains, and controlling stormwater runoff peak flows within a watershed.

It will be up to each developer to select the techniques that are most appropriate to the type of project and characteristics of their development site. It is likely that in most situations, a combination of on-site controls will be effective and least costly to the stormwater management system. Selection of the appropriate installation must be based on field conditions, including environmental considerations, soil permeability, ground water table depth and land availability, and must be supported by appropriate justification. The most commonly used local storage/discharge installations include:

- Detention Basins
- Retention Basins
- Infiltration Beds/Leaching Chambers
- Open Channels
- Infiltration Ponds
- Percolation Basins
- Pipe Trenches
- Pervious Pavements
- Rooftop Storage
- Dutch Drains
- Permanent Ponds
- Underground Detention Tanks

Schematics and brief descriptions of numerous installations are located in Section VI of the Little Conemaugh River Watershed Act 167 Stormwater Management Plan.

Appendix 23-D

Little Conemaugh River Watershed Boundary Map

CAMBRIA COUNTY STORMWATER MANAGEMENT PLAN LITTLE CONEMAUGH RIVER WATERSHED DRAINAGE AREAS A, B & C

FIGURE 3

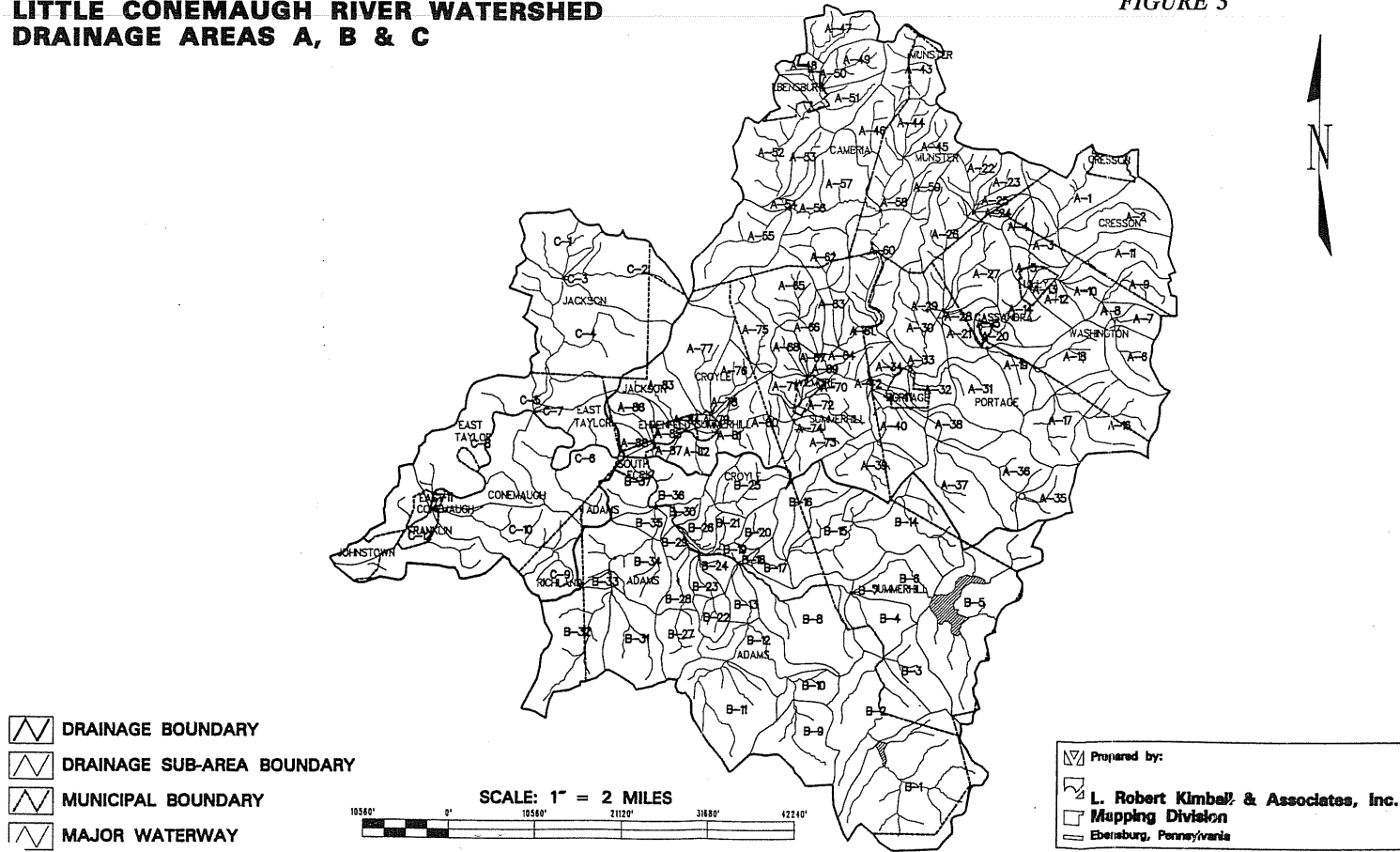


Table III-1

Subarea	Release Rate (%)	Subarea	Release Rate (%)
A-1	100	B-1	100
A-2	100	B-2	100
A-3	80	B-3	70
A-4	100	B-4	90
A-5	80	B-5	100
A-6	100	B-6	80
A-7	70	B-7	*
A-8	100	B-8	100
A-9	70	B-9	90
A-10	100	B-10	70
A-11	100	B-11	100
A-12	100	B-12	90
A-13	*	B-13	90
A-14	100	B-14	100
A-15	90	B-15	90
A-16	100	B-16	100
A-17	90	B-17	70
A-18	80	B-18	70
A-19	80	B-19	*
A-20	*	B-20	70
A-21	90	B-21	80
A-22	90	B-22	70
A-23	90	B-23	70
A-24	80	B-24	*
A-25	70	B-25	90
A-26	100	B-26	90
A-27	100	B-27	70
A-28	*	B-28	90
A-29	70	B-29	70
A-30	100	B-30	80
A-31	70	B-31	90
A-32	90	B-32	100
A-33	*	B-33	70
A-34	90	B-34	70
A-35	70	B-35	70
A-36	70	B-36	*
A-37	70	B-37	90
A-38	70	C-1	100
A-39	70	C-2	100
A-40	70	C-3	*
A-41	70	C-4	100
A-42	70	C-5	100
A-43	100	C-6	100
A-44	100	C-7	100
A-45	90	C-8	100
A-46	100	C-9	100
A-47	100	C-10	100
A-48	80	C-11	*
A-49	100	C-12	100
A-50	*		
A-51	90		
A-52	100		
A-53	90		

Subarea	Release Rate (%)	Subarea	Release Rate (%)
A-54	70		
A-55	100		
A-56	*		
A-57	100		
A-58	*		
A-59	80		
A-60	100		
A-61	70		
A-62	70		
A-63	70		
A-64	70		
A-65	70		
A-66	70		
A-67	70		
A-68	70		
A-69	*		
A-70	70		
A-71	70		
A-72	70		
A-73	100		
A-74	*		
A-75	100		
A-76	100		
A-77	100		
A-78	*		
A-79	70		
A-80	70		
A-81	*		
A-82	70		
A-83	70		
A-84	*		
A-85	80		
A-86	70		
A-87	*		
A-88	70		

Note: * represents a "Dummy Area"

Appendix 23-E

Summary of Ordinance Requirements and Schedule of Fees

The following lists a summary of requirements for a developer's convenience to ensure that the criteria within this Chapter are met.

The developer/owner/engineer shall:

1. Develop a stormwater management site plan ensuring that the provisions specifically stated within Part 3 and 4 of this Chapter are met.
2. The site plan must also meet, but not be limited to, the criteria and provisions set forth within this Chapter.
3. Complete the Drainage Plan Permit Application (an example is provided).
 - A. Sign all applicable sections.
 - B. Circle dollar amounts (1 through 5) on the Schedule of Fees which apply. Total the amount where indicated and submit check for this amount.
4. Submit four copies of completed plan to Cambria Township.
5. Upon completion of the construction, the owner's engineer shall complete a final inspection and submit a Certification Letter, along with "as-built" drawings, indicating that the work has been completed in conformance with the approved Drainage Plan. (An occupancy permit will not be issued until these items are received.)

Schedule of Fees

Stormwater Management Plan Name _____

Submission Number _____

Owner _____

Engineer _____ Date _____

1. Filing Fee @ \$50/submission \$_____

2. Land Use @ \$50/submission \$_____

Residential Subdivisions, Campgrounds, Mobile Home
Parks, Multi-family Dwelling Units, and Special Single-
family Residence. \$

Commercial or Industrial. \$

3. Type of Development and Amount of Impervious Areas Created

Residential

10,000 s.f. - 50,000 s.f. @ \$400/submission \$_____

50,000 s.f. - 100,000 s.f. @ \$550/submission \$_____

100,000 s.f. - 150,000 s.f. @ \$750/submission \$_____

150,000 s.f. and up @ \$1000/submission \$_____

Commercial or Industrial and Other \$

4. Stormwater Control Measures

Detention facilities which require hydraulic routing

@ \$250/Facility \$_____

Infiltration facilities

@ \$250/Facility \$_____

5. Site Inspection (if Township determines necessary)

@ \$200/Inspection \$_____

TOTAL \$_____

All subsequent reviews shall be at 100 percent of the amount of the cost to the Township unless a new application is required as per §23-505 of the Cambria Township Stormwater Management Ordinance [Chapter 23].

Appendix 23-F

Storm Integrity - Duration Frequency Chart

II. Design Storm Estimates for Pennsylvania

Field Manual

of

Pennsylvania Department of Transportation
Storm Intensity-Duration-Frequency Charts

PDT - IDF

Gert Aron

David J. Wall

Elizabeth L. White

Christopher N. Dunn David M. Kotz

Department of Civil Engineering

and

Institute for Research on Land and Water Resources

The Pennsylvania State University

Pennsylvania Department of Transportation

and

Federal Highway Administration

May 1986

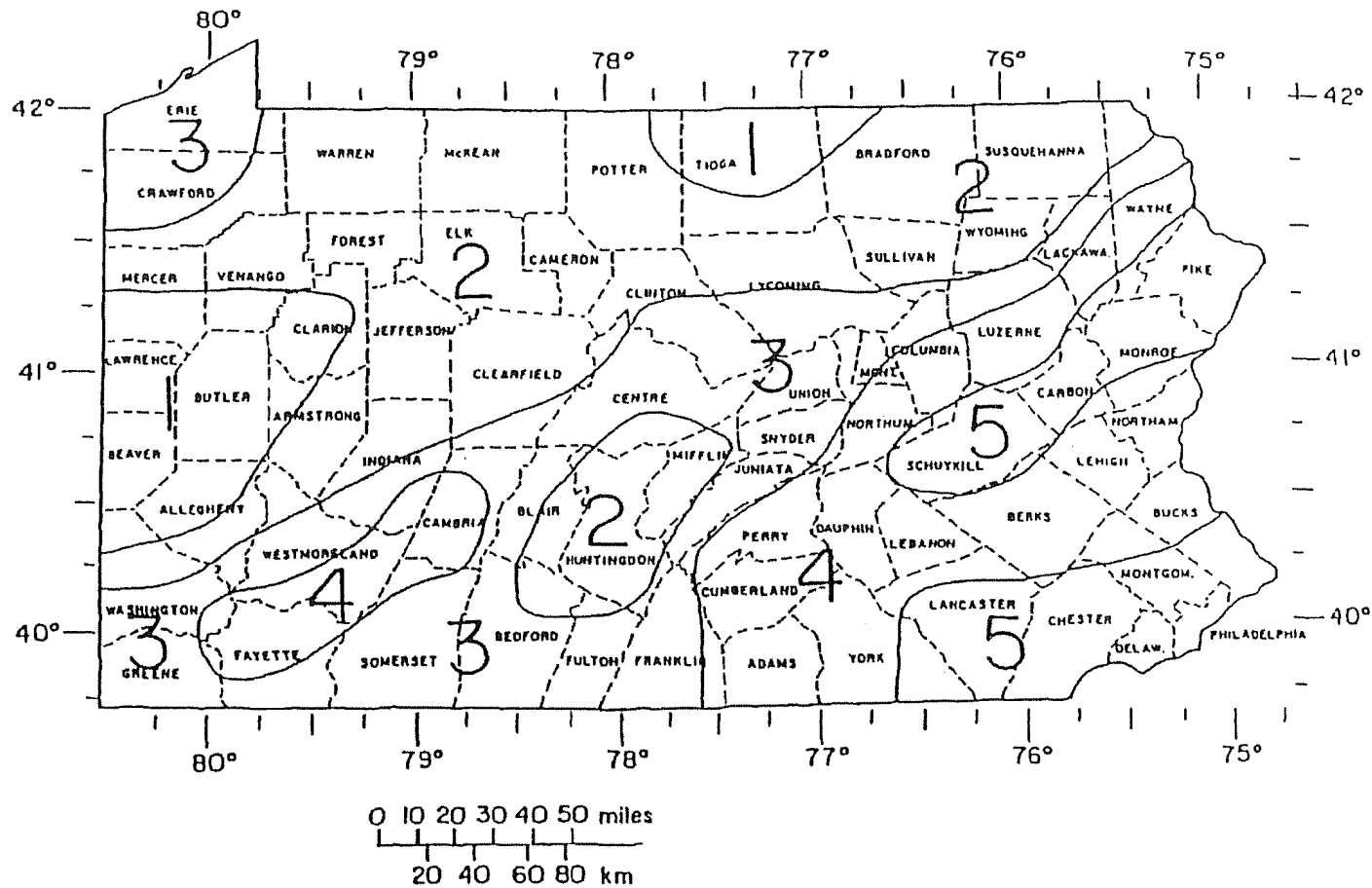


Figure 1 - Delineated regions with uniform rainfall.

Figure 23-F-1 (upper portion for Rational Method, lower for NRCS Method)

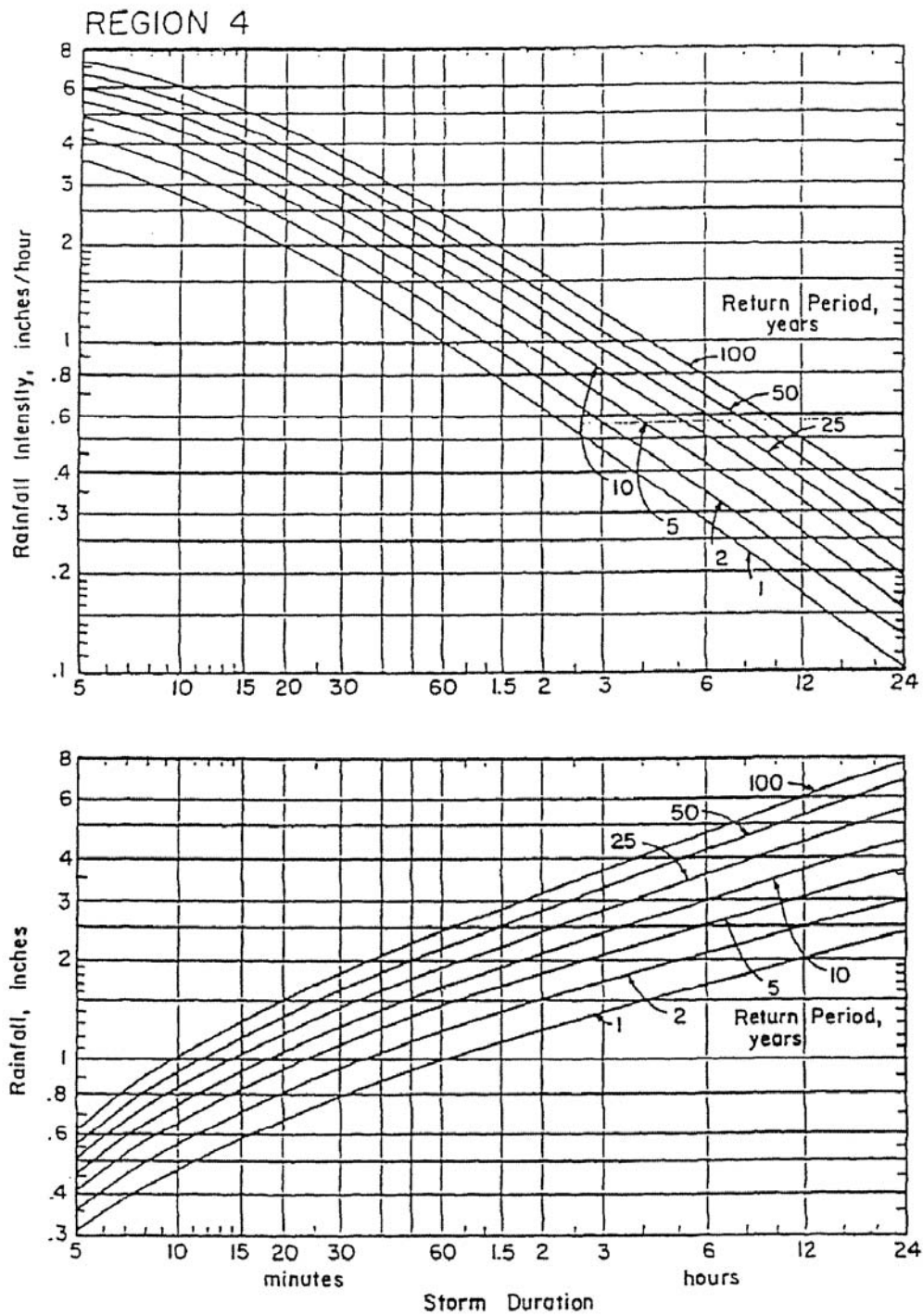


Fig. 5. Design Storm Curves for Region 4.

Table 23-B-2
Runoff Curve Numbers
(From NRCS (SCS) TR-55)

Table 23-F-1 Runoff Curve Numbers

Land Use Description		Hydrologic Soil Group			
		A	B	C	D
Open Space		44	65	77	82
Orchard		44	65	77	82
Meadow		30**	58	71	78
Agricultural		59	71	79	83
Forest		36**	60	73	79
Commercial	(85% impervious)	89	92	94	95
Industrial	(72% impervious)	81	88	91	93
Institutional	(50% impervious)	71	82	88	90
Residential					
Average Lot Size	% impervious				
1/8 acre or less	65	77	85	90	92
1/8 - 1/3 acre	34	59	74	82	87
1/3 - 1 acre	23	53	69	80	85
1 - 4 acres	12	46	66	78	82
Farmstead		59	74	82	86
Smooth surfaces (concrete, asphalt, gravel, or bare compacted soil)		98	98	98	98
Water		98	98	98	98
Mining/newly graded areas (pervious areas only)		84	84	84	84

* Includes multi-family housing unless justified lower density can be provided.

** Caution - CN values under 40 may produce erroneous modeling results.

Note: Existing site conditions of bare earth or fallow shall be considered as meadow when choosing a CN value.

