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**CAMBRIDGE TOWNSHIP**

**STORMWATER MANAGEMENT**  
**ORDINANCE**

**CAMBRIDGE TOWNSHIP**  
**STORMWATER MANAGEMENT ORDINANCE**  
**ORDINANCE NO. 01-2005**

**CAMBRIDGE TOWNSHIP  
STORMWATER MANAGEMENT ORDINANCE  
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**STORMWATER MANAGEMENT ORDINANCE  
CAMBRIDGE TOWNSHIP, CRAWFORD COUNTY, PENNSYLVANIA  
ORDINANCE NO. 01-2005**

**AN ORDINANCE REGULATING THE ACCELERATED RUNOFF OF  
STORMWATER RESULTING FROM LAND DEVELOPMENT;  
DEFINING TERMS; PROVIDING REGULATIONS, REQUIREMENTS  
AND DESIGN STANDARDS; PRESCRIBING PROCEDURES,  
PENALTIES AND VIOLATION.**

**Ordained and Enacted** by the Board of Supervisors of Cambridge Township, Crawford County, Pennsylvania under the provisions of the Pennsylvania Stormwater Management Act (Act 167 of 1978, as amended), the Pennsylvania Municipalities Planning Code (Act 247 of 1968, as amended), and the Second Class Township Code (Act 69 of 1933, as reenacted and amended by Act 60 of 1995).

**ARTICLE I  
GENERAL PROVISIONS.**

Section 101. Title

This Ordinance shall be known and may be cited as the “Cambridge Township Stormwater Ordinance,” and shall be incorporated as an integral part of the Cambridge Township Subdivision and Land Development Ordinance.

Section 102. Statement of Findings

The Board of Supervisors of Cambridge 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 flood plain management and flood control efforts in downstream communities, reduces groundwater recharge, and threatens public health and safety.
- B. A comprehensive program of stormwater management, including reasonable regulation of development and activities causing accelerated erosion, is fundamental to the public health, safety and welfare and the protection of the people of Cambridge Township and all the people of the Commonwealth, their resources and the environment.

### Section 103. Purpose

The purpose of this Ordinance is to promote the public health, safety and welfare by minimizing the damages described in Section 102(A) of this Ordinance by provisions designed to:

- A. Assure safe management of stormwater runoff resulting from land alteration and disturbance activities in accordance with watershed stormwater management plans adopted pursuant to the Pennsylvania Storm Water Management Act (Act 167 of 1978, as amended).
- B. Control accelerated runoff and erosion and sedimentation problems at their source by regulating activities that cause such problems.
- C. Utilize and preserve the existing natural drainage systems, and preserve the flood carrying capacity of streams.
- D. Encourage natural infiltration of rainfall to preserve groundwater supplies and stream flows.
- E. Maintain the existing water quality of streams and watercourses in Cambridge Township and the Commonwealth.
- F. Provide for proper maintenance of all permanent stormwater management structures in Cambridge Township.

### Section 104. Effective Date

This Ordinance shall become effective on October 15, 2005 and shall remain in effect until modified or rescinded by the Cambridge Township Board of Supervisors.

### Section 105. Applicability

The following activities involving alteration or development of land are deemed to have possible effects upon stormwater runoff characteristics and are included within the scope of this Ordinance:

- A. Construction of new or additional impervious or semi-pervious surfaces (driveways, parking lots, rooftops, buildings, etc.).
- B. Land development for commercial, industrial, institutional, residential or similar uses.
- C. Any subdivisions and development of such.
- D. Diversion or piping of any natural or man-made stream channel.

- E. Installation, replacement or substantial repair of stormwater systems or appurtenances thereto.

Section 106. Repealer

This Ordinance shall repeal all other ordinances, or parts thereof, which are contrary or conflict with the provisions of this Ordinance.

Section 107. Severability

Should any section or provision of this Ordinance be declared invalid by a court of competent jurisdiction, such decision shall not affect the validity of this Ordinance as a whole or any other part hereof; the parts or sections remaining shall remain in effect as if the part of the section declared invalid had never been a part of this Ordinance.

Section 108. Liability Disclaimer

- A. Approval or denial of a stormwater management plan or a subdivision plan, land development plan or Township permit application that may include stormwater management requirements, shall not release, acquit or discharge any applicant or its heirs, executors, administrators, representatives, successors and/or assigns of or from any claim, action, caution of action, demand, duty, responsibility, damage, cost or expense which may accrue on account of or in any way grow out of any and all known and unknown, foreseen and unforeseen, injuries, damages or consequences thereof resulting or to result from such approval or denial.
- B. Compliance with the provisions of this Ordinance, as well as compliance with any condition required to be satisfied for approval of a stormwater management plan or a subdivision plan, land development plan or Township permit application that may include stormwater management requirements, shall not release, acquit or discharge any applicant or its heirs, executors, administrators, representatives, successors and/or assigns of or from any claim, action, caution of action, demand, duty, responsibility, damage, cost or expense which may accrue on account of or in any way grow out of any and all known and unknown, foreseen and unforeseen, injuries, damages or consequences thereof resulting or to result from such compliance.
- C. Approval or denial of a stormwater management plan or a subdivision plan, land development plan or Township permit application that may include stormwater management requirements shall not constitute a representation, guaranty or warranty of any kind by the Township or its officers, appointees, servants, employees, administrators, representatives, successors and/or assigns regarding the practicability, safety, success or failure of any such plan or its implementation, whether in part or in whole.
- D. Approval or denial of a stormwater management plan or a subdivision plan, land development plan or Township permit application that may include stormwater management requirements, as well as compliance with the provisions of this Ordinance



or any Township imposed conditions, shall not create and shall not be construed to impose any responsibility, duty or liability upon the Township or its officers, appointees, servants, employees, administrators, representatives, successors and/or assigns which may accrue on account of or in any way grow out of any and all known and unknown, foreseen and unforeseen, injuries, damages or consequences thereof resulting or to result from such approval, denial or compliance.

#### Section 109. Permit Coordination

Permits and approvals issued pursuant to this Ordinance do not relieve the applicant of the responsibility to secure required permits or approvals for activities regulated by any other applicable code, rule, act or ordinance. If more stringent requirements concerning regulation of stormwater or erosion and sedimentation control are contained in the other code, rule, act or ordinance, the more stringent regulation shall apply.

Developers shall coordinate all stormwater management requirements of this Ordinance with requirements of other applicable state and local regulations. Specifically, PA DEP Title 25, Chapter 102, Erosion and Sedimentation Control, Chapter 105, Dam Safety and Waterway Management, and Chapter 106, Floodplain Management, regulate activities which have an impact on stormwater management. Any applications for Chapter 105 management shall be subject to review and comments of Cambridge Township. The municipal notification procedure, as outlined in Act 14, should be used to notify Cambridge Township of all permit applications.

Any facilities that constitute dams, stream enclosures, roadway crossing (including pipes, bridges, storm sewers, or any other drainage conveyance facility), or any work involving wetlands as described in PA DEP Chapter 105 regulations (as amended or replaced from time to time by PA DEP), shall be designed in accordance with Chapter 105 and will require a permit from PA DEP. Any facility located within a PA DOT right-of-way must meet PA DOT minimum design standards and permit submission requirements.

## ARTICLE II DEFINITIONS

### Section 201. General Interpretations

Unless otherwise expressly stated, the following terms shall, for the purposes of this Ordinance, have the meaning indicated: words in the singular include the plural, and the words in the plural include the singular. The word "person" includes a corporation, unincorporated association and a partnership, as well as an individual or any other legal entity. The words "shall" and "will" are mandatory; the word "may" is permissive. An "agency" shall be construed to include its successors and assigns. To the extent they are not substantially, changed as set forth in this Ordinance, the definitions set forth in the Cambridge Township Subdivision and Land Development Ordinance and in the Pennsylvania Municipalities Planning Code, as may be amended and reenacted from time to time, are hereby incorporated into this Ordinance as if fully set forth in length. Words not defined in this Article or in the Cambridge Township Subdivision and Land Development Ordinance or in the Pennsylvania Municipalities Planning Code, as may be amended and reenacted from time to time, shall have the common meaning given to them as expressed in the 1993 10<sup>th</sup> Edition, Merriam Webster's Collegiate Dictionary, a copy of which is located in the Cambridge Township Municipal Building.

### Section 202. Meaning of Words

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

**Act:** The Storm Water Management Act (Act of October 4, 1978, P.L. 864 No. 167; 32 P.S. Sections 680.1 – 680.17, as amended by Act of May 24, 1984, No. 63).

**Agriculture:** Any agriculture use including farming, pasturage, agriculture, horticulture, floriculture, viticulture, and forestry, including the harvesting of timber. It shall include all animal and poultry raising, and husbandry.

**Animal Raising and Care:** Any farming use involving the commercial raising of animals which are utilized to supply food or clothing products, breeding stock, pets, etc. (Which may include animal care); or the commercial care of animals including stables, kennels, animal hospitals, etc.

**Applicant:** A landowner or developer, as hereinafter defined, who has filed an application for development including his heirs, successors and assigns.

**Channel:** A perceptible natural or artificial waterway which periodically or continuously contains moving water or which forms a connecting link between two bodies of water. It has a definite bed and banks which confine the water.

**County:** The County of Crawford, Pennsylvania.

**County Conservation District:** The Crawford County Conservation District.

**County Stormwater Management Plan:** The plan for managing stormwater runoff adopted by Crawford County as required by the Storm Water Management Act.

**Culvert:** A closed conduit for the free passage of surface drainage under a highway, driveway, parking area, railroad, canal or other embankment and/or fill. The term culvert generally refers to a subsurface conduit; however, in certain instances a culvert may be exposed or supported at or above grade.

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

**Design Criteria:**

- (1) Engineering guidelines specifying construction details and materials.
- (2) Objectives, results or limits which must be met by a facility, structure, or process in performance of its intended functions.

**Design Storm:** The amount and time distribution of precipitation from a storm event used in computing runoff. Associated with a particular storm frequency (e.g., 10 year storm event).

**Detention:** The slowing, dampening or attenuating of runoff flows entering the natural drainage pattern of storm drainage system by temporarily holding water within a detention basin or drainage system.

**Detention Pond or Basin:** An area in which surface water runoff is temporarily stored pending its release at a controlled rate.

**Developer:** Any landowner, agent of such landowner or tenant with the permission of such landowner, who makes or causes to be made a subdivision of land or a land development.

**Development:** Any man-made change to improved or unimproved real estate, including but not limited to, buildings or other structures, the placement of mobile homes, streets and other paving, utilities, filling, grading, excavation, mining, dredging, or drilling operations, in the subdivision of land.

**Discharge:** The flow or rate of flow from a canal, conduit, channel or other hydraulic structure.

**Drainage:** The removal of surface water or groundwater from land by drains, grading or other means, and includes control of runoff to minimize erosion and sedimentation during and after construction or development.

**Drainage Area:**

- (1) The area of a drainage basin or watershed, expressed in acres, square miles, or other unit of area. Also called catchment area, watershed, river basin.
- (2) The area served by a sewer system receiving storm and surface water, or by a watercourse.

**Drainage Easement:** The lands required for the installation of storm water sewers or drainage ditches, or required along a natural stream or watercourse for preserving the channel and providing for the flow of water therein to safeguard the public against flood damage. The term "drainage easement" includes and is also intended to mean any right granted by a landowner to a grantee allowing the use of private land for stormwater management purposes.

**Encroachment:** Any structure or activity which in any manner changes, expands or diminishes, the course, current or cross section of any watercourse, floodway or body of water.

**Erosion:** The removal of surface materials by the action of natural elements.

**Erosion Control:** The application of measures to reduce erosion of land surfaces.

**Ground Cover:** Materials covering the ground surface.

**Ground Water:** Subsurface water occupying the saturation zone, from which wells and springs are fed.

**Ground Water Recharge:** Replenishment of ground water naturally by precipitation or runoff or artificially by spreading or injection.

**Impervious:** Not allowing or allowing only with great difficulty the movement of water; impermeable.

**Infiltration:**

- (1) The flow or movement of water through the interstices or pores of a soil or other porous medium.
- (2) The absorption of liquid by the soil.

**Land Development:** Any of the following activities:

- (1) The improvement of on lot or two or more contiguous lots, tracts or parcels of land for any purpose involving;

- (a) a group of two or more residential or non-residential buildings, whether proposed initially or cumulatively, or a single non-residential building on a lot or lots regardless of the number of occupants or tenure; or
  - (b) the division or allocation of land or space, whether initially or cumulatively, between or among two or more existing or prospective occupants by means of, or for the purpose of streets, common areas, leaseholds, condominiums, building groups or other features;
- (2) A subdivision of land;
  - (3) Development in accordance with Section 503 (1.1) of the Pennsylvania Municipalities Planning Code.

For the purpose of this Ordinance, the term "land development" specifically includes the types of development that the Cambridge Township Subdivision and Land Development Ordinance excludes from its definition of "land development".

**Land Disturbance:** Any activity involving the changing, grading, transportation, stripping of vegetation, fill and any other activity which causes land to be exposed to the danger of erosion.

**Maintenance:** The upkeep necessary for efficient operation of physical properties.

**Municipality:** Cambridge Township, Crawford County.

**Natural Stormwater Runoff Regime:** A watershed where natural surface configurations, runoff characteristics and defined drainage conveyances have attained the conditions of equilibrium.

**Outfall:**

- (1) The point, location or structure where drainage discharges from a sewer, drain or other conduit.
- (2) The conduit leading to the ultimate discharge point.

**Outlet Control Structure:** The means of controlling the relationship between the headwater elevation and the discharge, placed at the outlet or downstream end of any structure through which water may flow.

**Peak Flow:** The maximum rate of flow of water at a given location and time.

**Pennsylvania DEP:** Pennsylvania Department of Environmental Protection.

**Performance Standard:** A standard which establishes an end result or outcome which is to be achieved but does not prescribe specific means for achieving it.

**Release Rate Percentage:** The watershed factor determined by comparing the maximum rate of runoff from a sub-basin to the contributing rate of runoff to the watershed peak rate at specific points of interest.

**Retention Pond:** A basin, usually enclosed by artificial dikes, that is used to retard stormwater runoff by temporarily storing the runoff and releasing it at a predetermined rate. See also, detention pond or basin.

**Return Period:** The average interval in years over which an event of a given magnitude can be expected to recur.

**Right-of-Way:** Land dedicated for use as a public street, alley or crosswalk, which may also be used by sewer, water, storm sewer, electric, gas, telephone and cable system(s).

**Runoff:** The surface water discharge or rate of discharge of a given watershed after a fall of rain or snow that does not enter the soil but runs off the surface of the land.

**Runoff Characteristics:** The surface components of any watershed which affect the rate, amount, and direction of stormwater runoff. These may include but are limited to: vegetation, soils, slopes and man-made landscape alterations.

**SCS:** U.S. Department of Agriculture Soil Conservation Service.

**Sediment:** Mineral or organic solid material that is being transported or has been moved from its site of origin by air, water or ice and has come to rest.

**Sedimentation:** The process by which mineral or organic matter is accumulated 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."

**Seepage Pit/Seepage Trench:** An area of excavated earth filled with loose stone or similar material and to which surface water is directed for infiltration into the ground.

**Storage Facility:** See detention pond and retention pond.

**Storm Frequency:** The average interval in years over which a storm event of a given precipitation volume can be expected to occur.

**Storm Sewer:** A sewer that carries intercepted surface runoff, street water and other drainage but excludes domestic sewage and industrial waste.

**Stormwater:** That portion of precipitation which runs over the land.

**Stormwater Collection System:** Natural or man-made structures that collect and transport stormwater through or from a drainage area to the point of final outlet including, but not limited to, any of the following: conduits and appurtenant features, canals, channels, ditches, streams, culverts, streets, and pumping stations.

**Stormwater Management Plan:** A plan for managing stormwater runoff at a specific development site, prepared by the project Developer.

**Subdivision:** The division or redivision of a lot, tract or parcel of land by any means into two or more lots, tracts, parcels or other divisions of land including changes in existing lot lines for the purpose, whether immediate or future, of lease, partition by the court for distribution to heirs or devisees, transfer of ownership or building or lot development: provided, however, that the subdivision by lease of land for agricultural purposes into parcels of more than ten acres, not involving any new street or easement of access or any residential dwelling, shall be exempted.

**Swale:** A low-lying stretch of land characterized as a depression used to carry surface water runoff.

**Township:** The Township of Cambridge, Crawford County, Pennsylvania.

**Township Engineer:** A Professional Engineer licensed as such in Pennsylvania, duly appointed as the Engineer of the Township of Cambridge.

**Watercourse:** Any channel for conveyance of surface water having a defined bed and banks, whether natural or artificial, with perennial or intermittent flow. The term "watercourse" includes and is also intended to mean any permanent, temporary or intermittent stream, river, brook, or creek, or any channel, drain, or ditch for water, whether natural or man-made.

**Watershed:** The entire region or area drained by a river or other body of water whether natural or artificial. A "designated watershed" is an area delineated by the Pennsylvania DEP and approved by the Environmental Quality Board for which counties are required to develop watershed stormwater management plans.

**ARTICLE III**  
**STORMWATER MANAGEMENT REQUIREMENTS**

Section 301. Stormwater Management Districts

- A. For purposes of stormwater management, the municipality of Cambridge Township shall be considered a single stormwater management district.

Section 302. General Standards

- A. No discharge of toxic materials shall be permitted into any stormwater management system. Where required by federal and state regulation, the landowner or developer shall be responsible for obtaining an NPDES permit for stormwater discharges.

Section 303. Watershed Standards

The following standards apply to all watersheds within Cambridge Township.

A. Performance Standards

1. The stormwater performance standards contained in this section are intended to implement the standards and criteria of accepted engineering practices as applied to stormwater management. In the event that a Stormwater Management Plan inclusive of areas of Cambridge Township is adopted and approved by Crawford County in accordance with the Pennsylvania Stormwater Management Act then the standards/criteria of the adopted watershed plan shall govern.

B. Storm Frequencies

1. Stormwater management facilities on all development sites shall control the peak stormwater discharge for the 2-, 10-, 25- and 100-year storm frequencies. The Soil Conservation Service (SCS) 24-hour, Type II Rainfall Distribution shall be used for analyzing stormwater runoff for both pre- and post development conditions. The 24-hour total rainfall for these storm frequencies in the watershed are:

Storm Frequency	Rainfall Depth (inches)
2-year	2.5
10-year	3.6
25-year	4.2
100-year	4.8



### C. Calculation Methods

1. Development Sites: For the purpose of computing peak flow rates and runoff hydrographs from development sites, calculations shall be performed using one of the following methods: SCS publications Technical Release (TR) 20, HEC-1 or Penn State Runoff Model (PSRM). Other computation methods may be used only if specifically approved by the Township Engineer for the particular development.
2. Stormwater Collection/Conveyance Facilities: For the purposes of designing storm sewers, open swales and other stormwater runoff collection and conveyance facilities, the Rational Method or other method specifically approved by the Township Engineer may be utilized. Rainfall intensities for use with the Rational Method shall be obtained from the intensity-duration-frequency curve in Appendix B for the appropriate time of concentration and return period. The Rational, Modified Rational and similar methods shall not be used where timing and volume of runoff are to be determined, including design of detention basins and other storage facilities.
3. Routing of hydrographs through detention/retention facilities for the purpose of designing those facilities shall be accomplished using the Modified-Puls method or other recognized reservoir routing method subject to the approval of the Township Engineer. The effect of water levels in the receiving stream, appropriate to the storm frequency, shall be taken into consideration when developing the outlet works hydraulic capacity and performing the reservoir routing calculations.
4. Predevelopment Conditions: Predevelopment conditions shall be assumed to be those that exist on any site at the time prior to the commencement of development activities. SCS runoff curve numbers selected for use in the calculations shall accurately reflect existing conditions. Calculations shall be submitted showing the curve number selections taking into consideration land use, cover and hydrologic soil group. In general, "good" hydrologic conditions shall be assumed unless documentation is submitted justifying the assumption of "fair" or "poor" conditions.
5. Post Development Conditions: Post development conditions are those that will occur at the completion of all proposed development activities. Where phased development is proposed, post development conditions shall represent the ultimate land use at the completion of all phases. Calculations shall be submitted showing the post development curve number selections taking into consideration the density of the development, amount of impervious surface to be added, changes in land slope, etc. Changes in time of concentration, as applicable, shall be taken into consideration in the calculation of post development runoff.

### D. Release Rate Percentage

1. Definition. The release rate percentage defines the percentage of the pre-development peak rate of runoff that can be discharged from an outfall on the site after development under the 2, 10, and 25 year storm conditions. Under all circumstances,

a 100 percent (100%) release rate percentage shall be applied to the 100 year frequency storm whether or not lower reduced release rate percentages are specified for the 2, 10 and 25 year return frequency storms. The assigned release rate percentage for the 2, 10, and 25 year return period storms shall be 100 percent (100%) throughout the Township.

2. Procedure for Use

- a. Identify the development site location on the watershed map in Appendix A and determine the appropriate release rate. The release rate shall be 100 percent (100%) throughout the Township.
- b. Compute the pre- and post-development runoff hydrographs for each stormwater outfall on the development site using an acceptable calculation method for the 2-, 10-, 25- and 100- year storms. Apply no on-site detention for stormwater management but include any techniques to minimize impervious surfaces and/or increase the time of concentration for stormwater runoff flowing from the development site. If the post-development peak runoff rate and volume are less than or equal to the predevelopment peak runoff rate and volume, then additional stormwater control shall not be required at that outfall.

If the post-development peak runoff rate and/or volume are greater than the predevelopment peak runoff rate and/or volume, then stormwater detention shall be required. The maximum allowable post development discharge rates from the detention facility shall be calculated by multiplying the predevelopment rate of runoff from the 2, 10, and 25 year frequency storm by the subarea release rate percentage and the predevelopment runoff rate from the 100 year storm event by 100 percent.

E. Exception Areas

1. Exceptions to the peak discharge standards will be considered only in the following instance:
  - a. Where the discharge from the development site occurs directly to a properly sized, and designed regional stormwater detention facility.
2. The analyses of regional detention facilities as are necessary to demonstrate their adequacy for the proposed discharges shall be completed by the applicant using methods and procedures as approved by the Township.

**ARTICLE IV**  
**DESIGN CRITERIA FOR STORMWATER MANAGEMENT CONTROLS**

Section 401. General Criteria

- A. Applicants may select runoff control techniques, or a combination of techniques, which are most suitable to control stormwater runoff from the development site. All controls shall be subject to approval of the Township Engineer. The Township Engineer may request specific information on design and/or operating features of the proposed stormwater controls in order to determine their suitability and adequacy in terms of the standards of this Ordinance.
- B. The applicant should consider the effect of the proposed stormwater management techniques on any special soil conditions or geological hazards that may exist on the development site. In the event such conditions are identified on the site, the Township Engineer may require in-depth studies by a competent geotechnical engineer. Not all stormwater control methods may be advisable or allowable at a particular development site.
- C. In developing a stormwater management plan for a particular site, stormwater controls shall be selected according to the following order of preference:
  - 1. minimization of impervious surfaces during site design
  - 2. flow attenuation by use of open vegetated swales and natural depressions.
  - 3. stormwater detention/retention structures
- D. Infiltration practices shall be used to the extent practicable to reduce volume increases and promote groundwater recharge. A combination of successive practices may be used to achieve the applicable minimum control requirements. Justification shall be provided by the applicant for rejecting each of the preferred practices based on actual site conditions.

Section 402. Criteria for Infiltration Systems

- A. Infiltration systems shall be sized and designed based upon local soil and ground water conditions.
- B. Infiltration systems greater than three (3) feet deep shall be located at least ten (10) feet from basement walls.
- C. Infiltration systems shall not be used to handle runoff from commercial or industrial working or parking areas. This prohibition does not extend to roof areas which are demonstrated to be suitably protected from the effects of the commercial/industrial activities.

- D. Infiltration systems may not receive runoff until the entire drainage area to the system has received final stabilization.
- E. The stormwater infiltration facility design shall provide an overflow system with measures to provide a non-erosive velocity of flow along its length and at the outfall.
- F. Infiltration systems shall be designed taking into consideration the following factors: soil permeability; groundwater levels including seasonal variations; potential for clogging the media and groundwater pollution from contaminants in the surface runoff. The design report submitted with the application shall address these factors and document the results of soil and groundwater sampling and testing programs.

#### Section 403. Criteria for Flow Attenuation Facilities

- A. If flow attenuation facilities are employed to assist in the control of peak rates of discharge, their effects must be quantified using the SCS Technical Release (TR) 55 Urban Hydrology for Small Watersheds or other approved method. The effects of the flow attenuation facilities on travel time should be reflected in the calculations.
- B. Flow attenuation facilities such as swales and natural depressions shall be properly graded to ensure positive drainage and avoid prolonged ponding of water.
- C. Swales shall be properly vegetatively stabilized or otherwise lined to prevent erosion.
- D. Swales shall be designed according to the recommendations contained in the Commonwealth of Pennsylvania Erosion and Sediment Pollution Control Program Manual.

#### Section 404. Criteria for Stormwater Detention Facilities

- A. If detention facilities are utilized for the development site, the facility(ies) shall be designed such that post-development peak runoff rates from the developed site are controlled to those rates defined by the subarea release rate percentage for the 2-, 10-, 25- and 100-year storm frequencies.
- B. All detention facilities shall be equipped with outlet structures to provide discharge control for the four (4) designated storm frequencies. Provisions shall also be made to safely pass the post-development 100-year storm runoff without damaging or impairing the continued function of the facilities. A minimum freeboard of 1 foot shall be provided between the maximum computed 100 year return period water surface elevation and the top of the structure. Consideration shall be given to potential clogging of the outlet works when determining the 100-year water level and appropriate freeboard allowance. Auxiliary, overflow spillways shall be provided on facilities where overtopping would result in structure failure and uncontrolled release of water, such as detention basins with earth embankments. All stormwater management facilities regulated by PA DEP Chapter 105 shall be designed in accordance with the applicable PA DEP Chapter 105 criteria.

- C. Shared-storage facilities that provide detention of runoff for more than one development site are encouraged wherever feasible, provided such facilities meet the criteria contained in this section. Runoff from the development sites involved shall be conveyed to the facility in a manner that avoids adverse impacts (such as flooding or erosion) to channels and properties located between the development site and shared-storage facilities.
- D. Multiple use detention facilities, such as wetlands, lakes, ballfields or similar recreational/open space uses are encouraged where feasible, subject to the approval of the Township and compliance with any other applicable rules and regulations.
- E. Other considerations that should be incorporated into the design of the detention facilities include:
  - 1. Inflow and outflow structures shall be designed and constructed to prevent erosion. Bottoms of impoundment type structures should be protected from soil erosion through the use of riprapped lined channels and other appropriate methods.
  - 2. Control and removal of debris in the storage structure and in all inlet or outlet devices shall be a design consideration. Trash rack devices will generally be required at the entrances to all closed piping systems.
  - 3. Inflow and outflow structures, pumping stations, and other structures shall be designed and protected to minimize safety hazards.
  - 4. The water depth at the perimeter of a storage pond should be limited to that which is safe for children. Restriction of access (fence, walls, etc.) may be necessary depending on the location of the facility and the maximum depths of water.
  - 5. Side slopes of embankments for storage of water shall not exceed a ratio of three to one (3:1) horizontal to vertical dimension. Flatter slopes may be required based on embankment seepage and slope stability considerations.
  - 6. Landscaping shall be provided for the facility which harmonizes with the surrounding area.
  - 7. Facilities shall be located to facilitate maintenance, considering the frequency and type of equipment that will be required.
  - 8. Bottoms of detention basins should be graded with sufficient slope to provide positive surface drainage. A minimum slope of 2 percent is desirable in vegetated basin bottoms. A subdrainage system may be required depending on the location of the pond bottom relative to groundwater levels.
  - 9. Fencing shall be provided if required by the Township.

10. All basins shall be designed and constructed with adequate facilities to completely dewater the basin.
11. Piping through embankments shall utilize watertight joint systems and anti-seep collars.

Section 405. Criteria for Collection/Conveyance Facilities

- A. All stormwater runoff collection or conveyance facilities, whether storm sewers or other open or closed channels, shall be designed in accordance with the following basic standards:
  1. All sites shall be graded to provide drainage away from and around the structure in order to prevent any potential flooding damage.
  2. Lots located on the high side of streets shall extend roof, foundation and french drains to the curb line storm sewer, or road ditch, if available. Low side lots shall extend roof, foundation and french drains to a stormwater collection/conveyance/control system or natural watercourse in accordance with the approved stormwater management plan for the development site.
  3. Collection/conveyance facilities should not be installed parallel and close to the top or bottom of an earth embankment to avoid the possibility of erosion and failure of the embankment.
  4. All collection/conveyance facilities shall be designed to convey the 25-year storm peak flow rate from the contributing drainage area and to carry it to the nearest suitable outlet with adequate hydraulic capacity, such as a stormwater control facility, storm sewer or natural watercourse.
  5. Where drainage swales or open channels are used, they shall be suitably lined to prevent erosion and designed to avoid excessive velocities.
  6. Hydraulic design of conveyance facilities shall take into consideration energy losses at structure junctions, inlets, outlets, channel changes, bridges, etc. Water surface profiles shall be computed if required for accurate sizing and determination of energy and hydraulic grade lines.
- B. Wherever storm sewers are proposed to be utilized, they shall comply with the following criteria:
  1. Storm sewers shall be designed to traverse under seeded and planted areas. If constructed within ten (10) feet of road paving, walks or other surfaced areas, drains shall have a narrow trench and maximum compaction of backfill to prevent settlement of the superimposed surface or development.

2. Storm sewers shall be installed after excavating and filling in the area to be traversed is completed, unless the drain is installed in the original ground with a minimum of three (3) feet cover and/or adequate protection during the fill construction.
3. Storm sewer design shall include: (1) cradles when traversing fill areas of indeterminate stability; (2) anchors when gradient exceeds twenty (20) percent; (3) anti-seep collars when installed through earth embankments; and (4) encasement or special backfill requirements when traversing under a paved area.
4. Storm sewers shall be designed to adequately handle the anticipated stormwater flow and be economical to construct and maintain. The minimum pipe size shall be fifteen (15) inches in diameter.
5. Drain pipe, trenching, bedding and backfilling requirements shall conform to the requirements of the Cambridge Township Subdivision and Land Development Ordinance.
6. Storm inlets and structures shall be designed to be adequate, safe, self-cleaning and unobtrusive and consistent with Cambridge Township standards.
7. Approved grates shall be designed for all catch basins, stormwater inlets and other entrance appurtenances. Culvert inlets within public roadside ditches and beneath driveway installations shall generally not require a grate installation unless determined appropriate and necessary by the Township Supervisors.
8. Manholes shall be designed so that the top shall be at finished grade and sloped to conform to the slope of the finished grade.
9. Where a proposed storm sewer connects with an existing storm sewer system, the applicant shall demonstrate that sufficient capacity exists in the downstream system to handle the additional flow.
10. Storm sewer outfalls shall be equipped with energy dissipation devices to prevent erosion and conform with applicable requirements of the Pennsylvania DEP for stream encroachments (Chapter 105 of Pennsylvania DEP Rules and Regulations).

**ARTICLE V**  
**EROSION AND SEDIMENTATION CONTROLS**

Section 501. Erosion and Sedimentation Control Requirements

- A. An erosion/sedimentation plan shall be prepared for each development site in accordance with the Pennsylvania Erosion/Sedimentation Regulations (25 PA Code, Chapter 102) and the standards and guidelines of the County Conservation District.



**ARTICLE VI**  
**MAINTENANCE OF STORMWATER MANAGEMENT CONTROLS**

Section 601. Maintenance Responsibilities

- A. The maintenance plan for stormwater management facilities located on the development site shall establish responsibilities for the continuing operation and maintenance of all proposed stormwater control facilities, consistent with the following principles:
1. If a development consists of structures or lots which are to be separately owned and in which streets, storm sewers and other public improvements are to be dedicated to the Township, stormwater control facilities may, at the direction of the Supervisors, be dedicated to and maintained by the Township.
  2. If a development site is to be maintained in single ownership or if storm 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.
- B. The Township shall make the final determination on the continuing maintenance responsibilities prior to final approval of the stormwater management plan. The Township reserves the right to accept the ownership and operating responsibility for any or all of the stormwater management controls.

Section 602. Maintenance Agreement for Privately Owned Stormwater Facilities

- A. Prior to final approval of the site's stormwater management plan, the applicant and Township shall execute a maintenance agreement covering all stormwater control facilities which are to be privately owned. The maintenance agreement shall be recorded with the final subdivision/land development plan for the site. The agreement shall stipulate that:
1. All facilities shall be maintained in accordance with the approved maintenance schedule and in a safe and attractive manner.
  2. Easements and/or rights-of-way shall be conveyed to the Township to assure access to periodic inspections by the Township and maintenance if required.
  3. The name, address and telephone number of the person or company responsible for maintenance activities shall be filed with the Township. In the event of a change, new information will be submitted to the Township within ten (10) days of the change.
  4. If the facility owner fails to maintain the stormwater control facilities, the Township may perform the necessary maintenance work or corrective work following due notice by the Township to the facility owner to correct the problem(s). The costs for

any such work by the Township will be taken from the bond as provided in Section 1103 of this Ordinance.

Section 603. Municipal Stormwater Maintenance Fund

- A. Developers installing stormwater storage facilities shall be required to pay a specified amount to the Municipal Stormwater Maintenance Fund to help defray the costs of periodic inspections and maintenance expenses. The amount of 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 municipality for a period of twenty (20) years, as estimated by the Township Engineer. After the twenty (20) year period, inspections will be performed at the expense of the municipality.
  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 twenty (20) 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 Township.
- B. If in the future 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.

**ARTICLE VII**  
**STORMWATER PLAN REQUIREMENTS**

Section 701. General Requirements

No final subdivision/land development plan shall be approved, no permit authorizing construction shall be issued, or an earth moving or land disturbance activity initiated until the final stormwater management plan for the site is approved in accordance with the provisions of this Ordinance.

Section 702. General Exemptions

The activities identified in subparagraphs A, B, C, D, E, F, and G below are specifically exempt from the plan preparation provisions of this Ordinance unless the Township determines that the activity is likely to, has, or will negatively impact the purposes and objectives set forth in Article I. For example, where an activity occurs on very steep terrain or where an activity is the latest in a series of incremental developments expected to cause pronounced stormwater impacts, it may be that these activities will be required to comply with the plan preparation requirements contained herein even though their activities qualify under the listing in this section. Upon making such determination, the Township will give notice in writing to the landowner and the developer, and direct the landowner and developer to immediately cease and desist all activity and affirmatively comply with the formal plan submission and approval procedures of this Ordinance. Exemption shall not relieve the applicant from providing adequate stormwater management controls to meet the purpose of this Ordinance.

- A. Any regulated activity that would create 10,000 square feet or less of impervious area. This criteria shall apply to the total development even if development is to take place in phases. 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 this exemption criteria.
- B. Use of land for gardening for home consumption.
- C. Agriculture when operated in accordance with a conservation plan or erosion and sedimentation control plan prepared by the Crawford County Conservation District. The agricultural activities such as growing crops, rotating crops, tilling of soil and grazing animals and other such activities are specifically exempt from complying with the requirements of this Ordinance when such activities are conducted in accordance with a conservation plan approved by the Crawford County Conservation District. The construction of buildings, parking lots or any activity that may result in impervious surface which increases the rate and volume of stormwater runoff shall comply with the requirements of this Ordinance.

- D. Forest management operations which are following the Department of Environmental Protection's management practices contained in its publication "Soil Erosion and Sedimentation Control Guidelines for Forestry" and are operating under an erosion and sedimentation control plan.
- E. Subdivisions which are certified by the owner on the subdivision plot to be used solely for purposes other than building or development.
- F. Subdivisions or land developments affecting less than 1.0 acre of the ground surface.
- G. Land disturbances of less than 1.0 acre involving uses and structures accessory to existing one and two family residential dwellings.

Section 703. Stormwater Plan Contents

The Stormwater Management Plan shall be a combination of written text, maps, drawings, calculations and other supporting documents.

Some or all of the following items shall be included in the plan in relationship to the magnitude of the project as determined by the Township.

A. General:

- 1. Description of project including existing and proposed land use, soil types, land cover, etc.
- 2. Description of temporary and permanent stormwater management controls to be utilized, and how these controls will achieve compliance with the technical standards of this Ordinance.
- 3. Description of methodology used in designing stormwater management facilities.

B. Maps and Drawings:

- 1. The location of the project relative to highways, property lines, and other landmarks.
- 2. Overall watershed boundary map showing location of the project site within overall watershed and subwatershed(s). All upstream drainage areas tributary to the project site must be shown. Identify subwatershed names and numbers corresponding to any supporting calculations.
- 3. 100 year flood plain(s) and floodway(s) boundaries within the project site based on FEMA Flood Insurance Studies or other independent engineering studies.
- 4. Natural features on the project site including bodies of water, watercourses, swales, wetlands and other areas that will be affected by the development.
- 5. Existing and proposed ground surface contours at intervals of two (2) feet or less. In areas with slopes greater than fifteen (15) percent, five (5) foot contour intervals must be used.

6. Existing and proposed land cover classifications utilized in developing runoff curve numbers.
7. Soil types and boundaries within the project site, including SCS hydrologic group classification for each.
8. Existing and proposed overhead and underground utilities, including electric, telephone, cable, gas, water, sanitary sewer, storm sewer, etc.
9. Proposed structures, roads, paved areas, buildings and other improvements.
10. Existing and proposed stormwater management controls including swales, culverts, detention basin, etc., on the development site, or which are located offsite, but will be affected by runoff from the development.

All maps and drawings shall be drawn to appropriate scales, and shall contain a title block with name and address of Developer and Engineer, scale, north arrow, legend and date of preparation and revision. Project site plan drawings shall be drawn at a scale of not less than one inch equals fifty (50) feet. Cross-section drawings shall be drawn at a scale of not less than one inch equals five (5) feet horizontally and one inch equals five (5) feet vertically. Plan and profile drawings of roads, streets, pipelines, stream channels, etc., shall be drawn at a scale of not less than one inch equals fifty (50) feet horizontally and one inch equals five (5) feet vertically.

- C. Calculations: Supporting calculations for design of the stormwater management facilities shall be submitted with the plan. Such calculations shall include, but are not necessarily limited to: time of concentration; runoff curve numbers; pre and post development runoff rates and volumes; storm sewer and catch basin sizing and spacing; culvert hydraulic capacities; detention basin stage-storage-discharge relationships; open channel water surface profiles; and reservoir-routing calculations. All calculations shall be prepared using the methods and data prescribed in Article III of this Ordinance. References shall be provided for the source of all coefficients, equations, parameters and methods used.

If computer simulations are used, input and output printouts shall be submitted to the extent required to support the results presented.

- D. Stormwater Controls: All proposed stormwater runoff control measures must be shown on the plan including methods for collecting, conveying and storing stormwater runoff onsite, which are to be used both during and after construction. Erosion and sedimentation controls shall be shown. The plan shall provide information on the exact type, location, sizing, design and construction of all proposed facilities and their relations to the existing watershed drainage system. The plan shall include technical specifications for materials and methods to be used in the construction of the stormwater management facilities.

1. If the development is to be constructed in stages, the applicant must demonstrate that stormwater facilities will be installed to manage stormwater runoff safely during each stage of development.
  2. A schedule for the installation of all temporary and permanent stormwater control measures and devices shall be submitted.
  3. If appropriate, a justification should be submitted as to why any preferred stormwater management techniques, as listed in Article IV of this Ordinance, are not proposed for use.
- E. Easements, Right-of-Ways, Deed Restrictions: All existing and proposed easements and rights-of-way for drainage and/or access to stormwater control facilities shall be shown along with any areas subject to special deed restrictions relative to or affecting stormwater management on the development site.
- F. Other Permits/Approvals: A list of any approvals/permits relative to stormwater management that will be require from other governmental agencies (Pennsylvania DEP Chapter 105 and 106 permits and/or NPDES permit) and anticipated dates of submission/receipt should be included with the stormwater plan submission. Copies of permit applications may be requested by the Township.
- G. Maintenance Program: The proposed maintenance plan for all stormwater control facilities shall:
1. Identify the proposed ownership entity (e.g., municipality, property owner, private corporation, homeowner's association, or other entity).
  2. Identify the type of maintenance, probable frequencies, personnel and equipment requirements and estimated annual maintenance costs.
  3. Identify the method for financing the continuing operation and maintenance of the facility if the facility is to be owned by other than a governmental agency.
  4. Include copies of any legal agreements required to implement the maintenance program and, if applicable, copies of the maintenance agreement as required by Article VI of this Ordinance.
- H. Financial Guarantees: Submit financial guarantees in accordance with the provisions of Article XI of this Ordinance.
- I. Evidence of Notification of Downstream Municipality: The developer shall notify (by certified mail) the nearest downstream municipality from the development site that a stormwater control plan has been prepared and submitted. This letter should identify the location of the proposed development site and the name of the affected stream. The developer shall submit a copy of this letter and a copy of the certified mail return receipt to the Township.

J. Professional Certification: The individual in responsible charge of preparing the stormwater management plan (including all calculations) shall be a Professional Engineer (P.E.) or Professional Land Surveyor (P.L.S.) licensed in the Commonwealth of Pennsylvania with training and experience in hydrology and hydraulics. The design plans, calculations and technical specifications shall be sealed and signed by the P.E. or P.L.S. in responsible charge. All design work requiring independent engineering judgement as defined by the Pennsylvania Engineer, Land Surveyor and Geologist Registration Law (Act of 1945, P.L. 913 No. 367, as amended), shall be performed by a qualified P.E. Documentation of qualifications of the plan preparer may be required by the Township.

The Plan shall contain the following certification by the P.E. or P.L.S. in responsible charge:

Name of Preparer \_\_\_\_\_  
PA Registration No. (P.E. or P.L.S.) \_\_\_\_\_

\_\_\_\_\_  
Seal

I, \_\_\_\_\_, do hereby certify that the information contained in the stormwater management plan, accompanying drawings, specifications, reports and calculations for \_\_\_\_\_ has been prepared in accordance with accepted engineering practices and is in conformance with the Cambridge Township Stormwater Management Ordinance.

**ARTICLE VIII  
PLAN REVIEW PROCEDURES**

Section 801. Pre-Application Phase

- A. Before submitting the stormwater plan, applicants are urged to consult with the Township on the applicable regulations and techniques for safely managing runoff from the development site. The Township may also be helpful in providing necessary data for the stormwater management plan.
- B. Applicants are encouraged to submit a sketch plan with a narrative description of the proposed stormwater management controls for general guidance and discussion with the Township and other agencies.
- C. The pre-application phase is not mandatory; any review comments provided by the Township are advisory only and do not constitute any legally binding action on the part of the Township.

Section 802. Stormwater Plan Reviews

- A. Submission of Plans: Stormwater plan applications shall be submitted with the preliminary and final subdivision/land development applications.
- B. Notification of Affected Municipalities: The developer is required to notify municipalities immediately downstream of the development site that a stormwater control plan has been submitted. The developer will make copies of the plan available to the downstream municipalities upon request. Comments received from any affected municipality will be considered by the Township and the Township Engineer in their reviews.
- C. Township Engineer's Review: The Township Engineer will recommend approval or disapproval of the stormwater management plan based on the requirements of the Township ordinances, the standards and criteria of the watershed plan and good engineering practice. The Township Engineer will submit a written report, along with supporting documentation, stating his/her reasons for recommending approval or disapproval.
- D. Permits Required from Other Governmental Agencies: Where the proposed development requires an obstruction permit from the Pennsylvania DEP or an erosion/sedimentation permit from the Crawford County Conservation District, final stormwater management plan approval will be granted subject to the receipt of such permits. No building permit will be issued, nor construction started, until the permits are received and copies filed with the Township.



### Section 803. Status of the Stormwater Plan After Final Approval

- A. Upon final stormwater plan approval, receipt of all necessary permits, recording of the final subdivision or land development plan in the Crawford County Recorder of Deeds Office, and compliance with other Township requirements (e.g., material submittals, testing, schedule, performance bond, etc.), the applicant may commence to install or implement the approved stormwater management controls.
- B. If site development or building construction does not begin within two (2) years of the date of final approval of the stormwater management plan, then prior to beginning construction, the applicant shall resubmit the stormwater management plan to verify that no condition has changed within the watershed that would affect the feasibility or effectiveness of the previously approved plan based on the changed conditions. The developer shall revise his stormwater management plan as required to address the Township Engineer's comments and resubmit the plan for approval. Further, if for any reason development activities are suspended for two (2) years or more, then the same requirement for resubmission of the stormwater management plan shall apply.

### Section 804. Stormwater Plan Modifications

- A. If the request for a plan modification is initiated before construction begins, the stormwater plan must be resubmitted and reviewed according to the procedures contained in this Article.
- B. If the request for a plan modification is initiated after construction is underway, the Township Engineer will recommend approval or disapproval of the modification based on field inspection, provided: (1) the requested changes in stormwater controls do not result in any modifications to other approved municipal land use/development requirements (e.g., building setbacks, yards, etc.) and (2) the performance standards in Article III of this Ordinance are met. Based on the Township Engineer's recommendation, the Township may, within fourteen (14) days, issue a stay of the plan modification and require the permittee to resubmit the plan modification for full stormwater plan review in accordance with the procedures contained in this Article.

**ARTICLE IX**  
**INSPECTIONS OF STORMWATER MANAGEMENT CONTROLS**

Section 901 Inspections

- A. The Township Engineer or a designated representative of the Township shall inspect the construction of the temporary and permanent stormwater management system for the development site. The Township will determine the extent of inspection required to ensure compliance with the provisions of this Ordinance. As a minimum, inspection by the Township Engineer will be required at the key development phases listed below. The permittee shall notify the Township Engineer 48 hours in advance of the completion of each of these phases:
1. At the completion of preliminary site preparation including stripping of vegetation, stockpiling of topsoil and construction of temporary stormwater management and erosion control facilities.
  2. At the completion of rough grading but prior to placing topsoil, permanent drainage or other site development improvements and ground covers.
  3. During construction of the permanent stormwater facilities at such times as determined to be necessary by the Township and the Township Engineer. Installation of pipelines, structures and embankments may require full-time inspection.
  4. Completion of permanent stormwater management facilities including established ground covers and plantings.
  5. Completion of final grading, vegetative control measures or other site restoration work done in accordance with the approved plan and permit.
- B. No work shall commence on any subsequent phase until the preceding one has been inspected and approved. If there are deficiencies in any phase, the Township Engineer will issue a written description of the required corrections and stipulate the time by which they must be made.
- C. If during construction, the contractor or permittee identifies any site condition, such as subsurface soil conditions, alterations in surface or subsurface drainage which could affect the feasibility of the approved stormwater facilities, he/she shall notify the Township and Township Engineer within 24 hours of the discovery of such condition and request a field inspection. The Township Engineer will determine if the condition requires a stormwater plan modification.

- D. The permittee shall pay the cost of all tests, inspections and special studies that may be required to adequately design and construct the stormwater management facilities. Such tests and studies could include but would not necessarily be limited to: soil test pit excavations; soil and rock borings; laboratory soil testing; hydrogeological investigations; slope-stability analyses; concrete testing; in-place density testing for compaction control; etc.

**ARTICLE X  
FEES AND EXPENSES**

Section 1001. General

Land disturbance permit fees covering costs to Cambridge Township for plan reviews, permit issuance and inspections shall be established by resolution of the Cambridge Township Board of Supervisors. Depending on the magnitude of the project, additional fees may be required as determined by the Board of Supervisors for engineering and/or solicitor costs. No permit to begin any work on the project shall be issued until the requisite fees have been paid. All fees shall be set in accordance with the applicable provisions of the Pennsylvania Municipalities Planning Code and any dispute over the fee amount shall be resolved in the manner prescribed by the Pennsylvania Municipalities Planning Code.

Section 1002 Modification of Plans

If it is determined that a modification to the existing stormwater management plan is required under Section 804 of this Ordinance, a new land disturbance permit shall not be issued until the additional fees have been paid by the applicant.

Section 1003. Expenses Covered by Fees

The fees payable by an applicant may cover the following items:

- A. The review of the stormwater management plan.
- B. The site inspection.
- C. The inspection of required controls and improvements during construction.
- D. The final inspection upon completion of the controls and improvements required in the plan.
- E. Any additional work required to enforce the permit provisions, correct violations and assure the completion of the stipulated remedial actions.

Costs for the preparation of the plan by a qualified Professional Engineer (P.E.) or Professional Land Surveyor (P.L.S.) shall be the responsibility of the owner, subdivider or developer.

**ARTICLE XI**  
**FINANCIAL GUARANTEES AND DEDICATION OF PUBLIC IMPROVEMENTS**

Section 1101. Financial Guarantees

- A. **Guarantee of Completion.** A completion guarantee in the form of a bond, cash deposit, certified check or other negotiable securities acceptable to the Township, shall be filed. The guarantee shall cover all stormwater management facilities and other required improvements, and shall be in the amount and form prescribed by the Pennsylvania Municipalities Planning Code (Section 509). The specific requirements of the financial guarantee shall be coordinated with the Cambridge Township Subdivision and Land Development Ordinance requirements.
- B. **Release of Completion Guarantee.** The procedure for requesting and obtaining a release of the completion guarantee shall be in a manner prescribed by the Pennsylvania Municipalities Planning Code (Section 510).
- C. **Default of Completion Guarantee.** If improvements are not installed in accordance with the approved final plan, the Township may enforce any corporate bond or other security by appropriate legal and equitable remedies. If proceeds of such bond or other security are insufficient to pay the cost of installing or making repairs or corrections to all the improvements covered by said security, the Township may at its option install part of such improvements in all or part of the development and may institute appropriate legal or equitable action to recover the moneys necessary to complete the remainder of the improvements. All proceeds, whether resulting from the security or from any legal or equitable action brought against the developer, or both, shall be used solely for the installation of the improvements covered by such security and not for any other municipal purpose.
- D. **Maintenance Guarantee.** Prior to acceptance of any improvements or facilities, the applicant shall provide a financial security to secure the structural integrity and functioning of the improvements. The security shall: (1) be in the form of a bond, cash, certified check or other negotiable securities acceptable to the Township, (2) be for a term of thirty-six (36) months, and (3) be in an amount equal to twenty-five (25) percent of the actual cost of the improvements and facilities so dedicated.

Section 1102. Dedication of Public Improvements

- A. When stormwater management facilities and other required improvements in the development have been completed in accordance with the final approved plan, such improvements shall be deemed private until such time as they have been offered for dedication to the Township and accepted by separate ordinance or resolution or until they have been condemned for use as a public facility.

B. Prior to acceptance of any improvements or facilities, the Township Engineer shall inspect them to ensure that they are constructed in accordance with the approved plan and are functioning properly. In the case of any stormwater control facility, it must be free of sediment and debris.

C. The Developer shall submit as-built plans for all facilities proposed for dedication.

#### Section 1103. Maintenance by Private Entity

In cases where it is determined that permanent control facilities are to be owned by a private entity (such as a homeowner's association), such entity shall be responsible for maintenance. A legally binding agreement between the entity and Cambridge Township shall be made providing for maintenance of all permanent control facilities, and allowing inspection by the Township of all such facilities deemed critical to the public welfare at any reasonable time. The private entity shall provide a bond or other form of security in an amount and form acceptable to the Township and its Solicitor. The purpose of the bond will be to cover maintenance costs in the event of default by the private entity of its Agreement with the Township.

#### Section 1104. Maintenance by Individual Single Family Residential Lot Owners

A. Stormwater management control facilities in residential subdivisions of three (3) or more lots shall be designed and constructed so that all lots share a common control facility. Stormwater management control facilities serving individual single family residential lots may be located on each lot when the subdivision is one (1) or two (2) lots.

B. When stormwater management control measures are located on an individual single family residential lot, and when it is determined that they are the responsibility of the landowner to maintain, a description of the facility or system and the terms of the required maintenance shall be incorporated as part of the deed to the property.

C. If Cambridge Township determines at any time that any permanent stormwater management control facility has been eliminated, altered, or improperly maintained, the owner of the property shall be advised of corrective measures required and given a reasonable period of time to take necessary action. If such action is not taken by the property owner, the Township Board of Supervisors may cause the work to be done and lien all costs against the property, if they so desire.

**ARTICLE XII**  
**ENFORCEMENT PROCEDURES AND REMEDIES**

Section 1201. Right of Entry

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

Section 1202. Notification

In the event that the applicant, developer, owner or his/her agent fails to comply with the requirements of this Ordinance or fails to conform to the requirements of any permit, the Township will issue written notice of violation. Such notification shall set forth the nature of violation(s) and establish a time limit for correction of the violation(s). Upon failure to comply within the time specified, unless otherwise extended by the Township, the applicant, developer, owner or his/her agent shall be subject to the enforcement remedies of this Ordinance.

Section 1203. Prevention Remedies

- A. In addition to other remedies, the Township may institute and maintain appropriate actions by law or in equity to restrain, correct or abate a violation, to prevent unlawful construction, to recover damages and to prevent illegal occupancy of a building or premises.
- B. In accordance with the Pennsylvania Municipalities Planning Code (Section 515.1), the Township may refuse to issue any permit or grant approval to further improve or develop any property which has been developed in violation of this Ordinance.

Section 1204. Enforcement Remedies

- A. Any person who has violated or permitted the violation of the provisions of this Ordinance shall, upon being found liable thereof in a civil enforcement proceeding commenced by the Township, pay a fine of not less than \$500.00 plus court costs, including reasonable attorney fees incurred by the Township. No judgement shall commence or be imposed, levied or be payable until the date of the determination of violation by a court of competent jurisdiction.
- B. If the defendant neither pays nor timely appeals the judgement, the Township may enforce the judgment pursuant to applicable rules of civil procedure.
- C. Each day that a violation continues shall constitute a separate violation, unless a court of competent jurisdiction further determines that there was a good faith basis for the person violating the Ordinance to have believed that there was no such violation, in which event there shall be deemed to have been only one such violation until the fifth day following

the date of the court's determination of violation; thereafter each day that violation continues shall constitute a separate violation.

- D. All judgements, costs and reasonable attorney fees collected for the violation of this Ordinance shall be paid over to the Township.
- E. The court of common pleas, upon petition, may grant an order of stay, upon causes shown, tolling the per diem fine pending a final adjudication of the violation and judgement.
- F. Nothing contained in this section shall be construed or interpreted to grant to any person or entity other than the Township the right to commence any action for enforcement pursuant to this section.

#### Section 1205. Additional Remedies

In addition to the above remedies, the Township may also seek remedies and penalties under applicable Pennsylvania statutes, or regulations adopted pursuant thereto, including but not limited to the Storm Water Management Act (32 P.S. Section 693.1-693.27) and the Erosion and Sedimentation Regulations (25 Pennsylvania Code, Chapter 102). Any activity conducted in violation of this Ordinance or any Pennsylvania approved watershed, stormwater management plan may be declared a public nuisance by the Township and abatable as such.

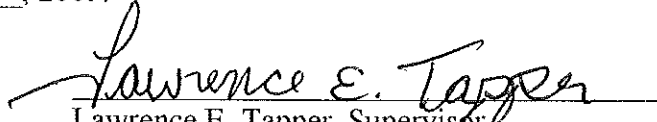
#### Section 1206. Appeals

Any person aggrieved by any decision of Cambridge Township under this Ordinance may appeal to the Crawford County Court of Common Pleas within forty-five (45) days of that decision.




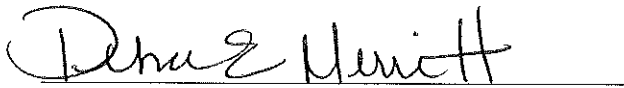
APPROVAL PAGE

Approved and adopted by the Board of Supervisors of Cambridge Township this  
10th day of October, 2005.

  
Lawrence E. Tapper, Supervisor

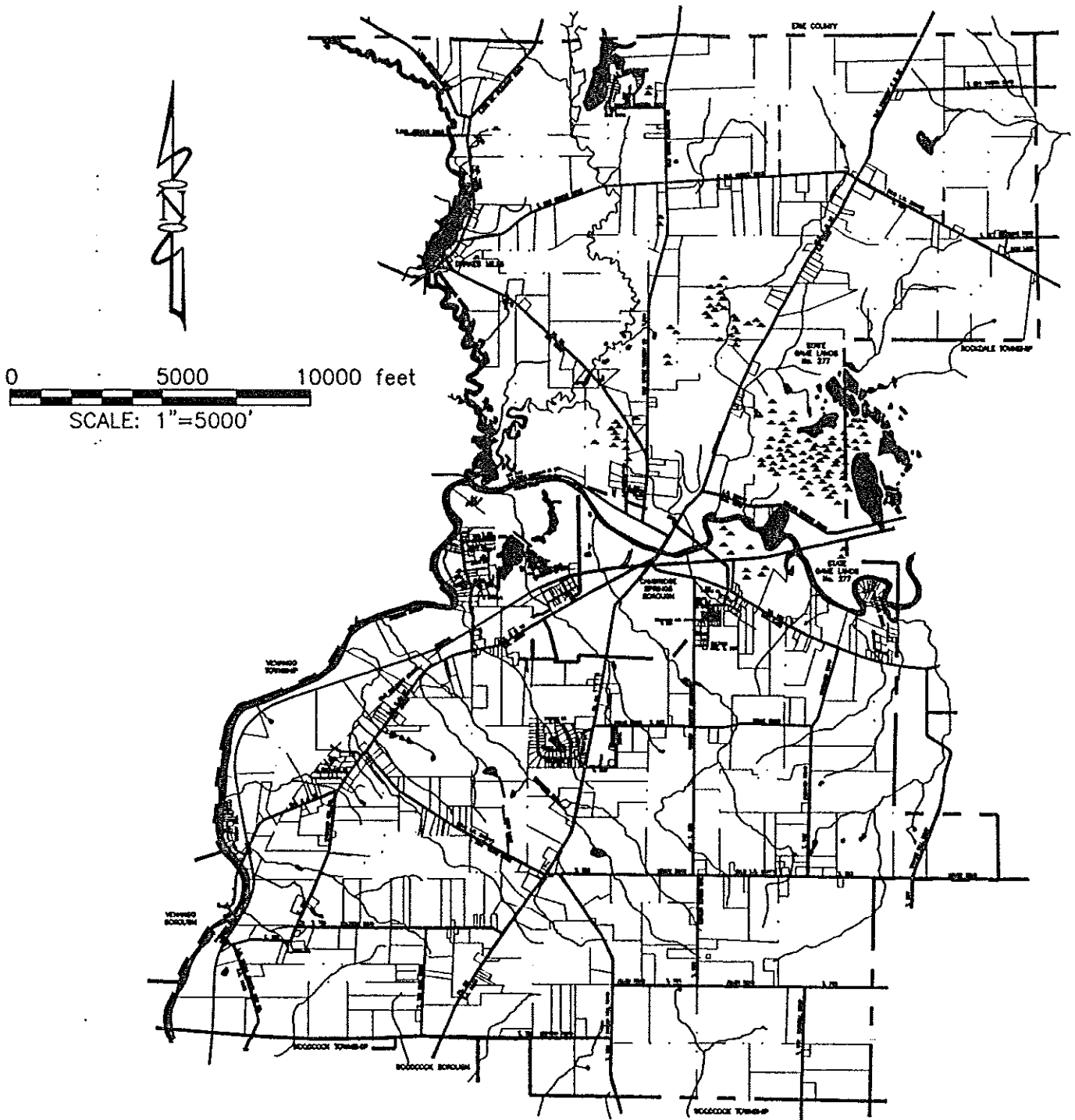
  
Kevin K. Cole, Supervisor

  
Charles J. Bauer, Supervisor

  
Debra E. Merritt, Secretary

**APPENDIX A:**  
**CAMBRIDGE TOWNSHIP**  
**WATERSHED BOUNDARY AND RELEASE RATE MAP**

# CAMBRIDGE TOWNSHIP



NOTE:  
THE RELEASE RATE FOR CAMBRIDGE TOWNSHIP IS 100%.

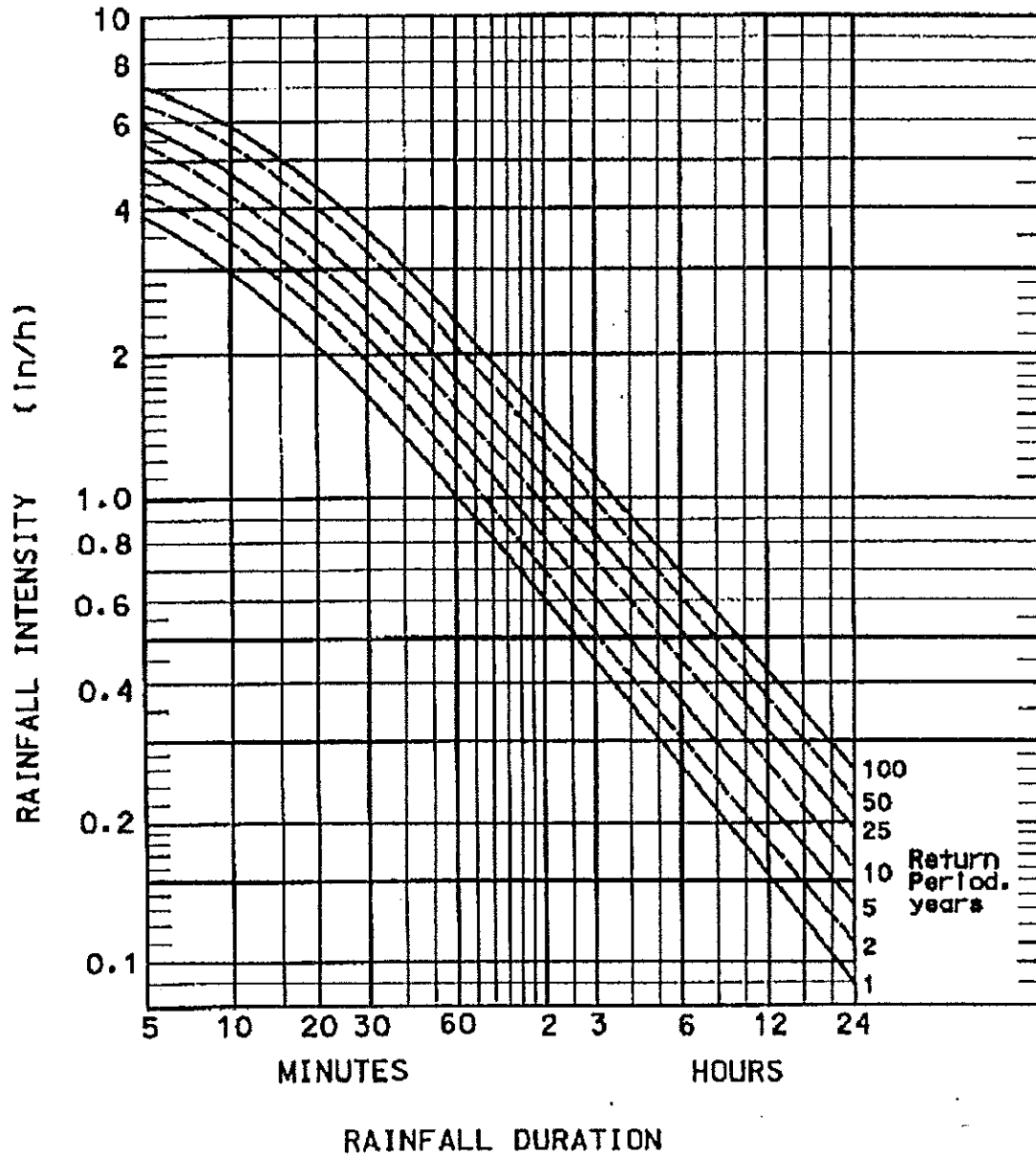
**APPENDIX B:**

**PRECIPITATION INTENSITY-DURATION-FREQUENCY (IDF) CURVE**

# CAMBRIDGE TOWNSHIP STORMWATER MANAGEMENT ORDINANCE

PRECIPITATION INTENSITY-DURATION-FREQUENCY (IDF) CURVE

## REGION 3



NOTE:

THE INTENSITY-DURATION-FREQUENCY CURVE WAS REPRODUCED FROM Pa.DOT PUBLICATION 13M (DM2) AND REPRESENTS Pa.DOT REGION 3.