

**STORMWATER MANAGEMENT**

**APPENDIX B**

**OF**

**SUMMIT TOWNSHIP LAND DEVELOPMENT**  
**AND SUBDIVISION ORDINANCE**

**SUMMIT TOWNSHIP**  
**ERIE COUNTY, PENNSYLVANIA**

**Adopted February 18, 1997**

# **APPENDIX B**

## **STORMWATER MANAGEMENT**

### **ARTICLE I**

#### **GENERAL PROVISIONS**

#### **Section 101 - Purpose**

These regulations have the following general purposes and objectives:

- A. To 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. To utilize and preserve the existing natural drainage systems and to preserve the flood-carrying capacity of streams.
- C. To encourage natural infiltration of rainfall to preserve groundwater supplies and stream flows.
- D. To provide for adequate maintenance of all permanent stormwater management structures in the municipality.

#### **Section 102 - Statutory Authority**

The municipality is empowered to regulate land use activities that affect runoff by the authority of the Act of October 4, 1978, P.L. 864 (Act 167), "The Storm Water Management Act" as amended by Act 63 and the Second Class Township Code, Act 69 of May 1, 1933, as re-enacted and amended November 9, 1995 (P.L. 350, No. 60) and the Pennsylvania Municipalities Planning Code, Act 247 of 1968, as amended.

#### **Section 103 - Applicability**

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

- A. Subdivision
- B. Land Development
- C. Construction of new or additional impervious or semi-pervious surfaces (driveways, parking lots, etc.)
- D. Diversion or piping of any natural or man-made stream channel

- E. Installation, replacement or substantial repair of storm water systems or appurtenances

**Section 104 - Repealer**

This Ordinance shall repeal all other ordinances, or parts thereof, which are contrary to or conflict with the provisions of this Ordinance to the extent necessary to give this Ordinance full force and effect.

**Section 105 -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 unconstitutional had never been a part of this Ordinance.

**Section 106 - Liability Disclaimer**

- A. Neither the granting of any approval under the provisions of this Ordinance, nor the compliance with the provisions of this Ordinance, or with any condition imposed by a municipal official hereunder, shall relieve any person from any responsibility for damage to persons or property resulting therefrom, or as otherwise imposed by law, nor impose any liability upon the municipality for damages to persons or property.
- B. To the maximum extent permitted by law, the granting of a permit which includes any stormwater management facilities shall not constitute a representation, guarantee or warranty of any kind by the municipality, or by any official, employee, solicitor, and consulting engineer thereof, of the practicability or safety of any structure, use or other plan proposed, and shall create no liability upon or cause of action against any official, employee, or designated representative for any damage that may result pursuant thereto.

## **ARTICLE II DEFINITIONS**

**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).

**Applicant:** A landowner or developer who has filed an application for development including his/her 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:** Erie County, Pennsylvania

**County Conservation District:** The Erie County Conservation District.

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

**Culvert:** A closed conduit for the free passage of surface drainage under a highway, railroad, canal or other embankment.

**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:** (see storm frequency)

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

**Detention Pond or Basin:** A basin or reservoir, usually small, constructed to impound or retard surface runoff temporarily.

**Developer:** The person, persons, or any corporation, partnership, association, or other entity or any responsible person therein or agent therefor that undertakes the activities associated with changes in land use. The term "developer" is intended to include but not necessarily be limited to the term "subdivider", "owner", and "builder" even though the individuals involved in successive stages of a project may vary.

**Development:** Any activity, construction, alteration, change in land use or practice that affects stormwater runoff characteristics.

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

**Drainage:** In general, the removal of surface water from a given area. Commonly applied to surface water and ground water.

**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.

**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:** Wearing away of the lands by running water, glaciers, winds and waves.

**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 one 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.

**Land Disturbance:** Any activity involving the changing, grading, transportation, 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: Summit Township, Erie County

Municipal Engineer: A professional engineer licensed in the Commonwealth of Pennsylvania, duly appointed by the Summit Township Board of Supervisors.

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.

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.

Peak Flow: Maximum flow.

Pennsylvania DEP: Pennsylvania Department of Environmental Protection.

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.

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

Runoff: That part of precipitation which flows over 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 not 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 water, wind or gravity.

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 specified 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 10 acres, not involving any new street or easement of access or any residential dwelling, shall be exempted.

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

**Watercourse:** Any channel for conveyance of surface water having a defined bed and banks, whether natural or artificial, with perennial or intermittent flow.

**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 Summit Township is divided into the following stormwater management districts:
  - 1. Lake Erie Area Watershed
  - 2. French Creek Watershed

One or more of these districts may be further subdivided into subareas which have similar hydrological characteristics and drain to a common point.

- B. The location and boundaries of the watershed(s) and subareas are shown on the "Municipal Stormwater Management District Map" which is hereby adopted as a part of this section.

**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: Designated Lake Erie Area Stormwater Management Watershed**

- A. The stormwater performance standards contained in this section are intended to implement the standards and criteria contained in the Lake Erie Area Watershed Stormwater Management Plan, adopted and approved in accordance with the Pennsylvania Storm Water Management Act. If there is any discrepancy between the provisions of this section and the standards and criteria of the plan, or if the watershed plan is subsequently amended, then the standards/criteria of the amended watershed plan shall govern.
- B. Storm Frequencies: 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:

<u>Storm Frequency</u>	<u>Rainfall Depth (inches)</u>
2-year	2.62
10-year	3.75
25-year	4.61
100-year	6.19



### 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: SCS publications, Technical Release (TR) 55 or 20, HEC I or Penn State Runoff Model (PSRM) or Modified Rational Method. Under special circumstances other computation methods may be used subject to the approval of the municipality.
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 as approved by the municipality may be applied. Rainfall intensities for design should be obtained from the Pennsylvania Department of Transportation rainfall charts.
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 municipality.
4. Predevelopment Conditions: Predevelopment conditions shall be assumed to be those which 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 subject to the approval of the municipality. At its discretion, the municipality may direct that hydrologic conditions for all areas with pervious cover (i.e., fields, woods, lawn areas, pastures, cropland, etc.) shall be assumed to be in "good" condition, and the lowest recommended SCS runoff curve number (CN) shall be applied for all pervious land uses within the respective range for each land use and hydrologic soil group.

### 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% 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 each subarea applies uniformly to all land development or alterations within the subarea. The release rate percentage for Summit Township shall be 70% for the 2, 10 and 25 year storm conditions for all stormwater management districts.

2. Procedure for Use

- (a) Identify the specific subarea in which the development site is located from the municipal stormwater management district map.
- (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 the runoff 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 volume are greater than the predevelopment peak runoff rate and volume, then stormwater detention shall be required. The capacity of the detention facility shall be calculated by multiplying the predevelopment rate of runoff from the 2, 10, and 25 year frequency storm by the 70% release rate percentage and the predevelopment runoff rate from the 100 year storm event by 100% to determine the maximum allowable releases from any detention facility.

E. Exception Areas

- 1. Exceptions to the peak discharge standards will be considered only in the following instances:
  - (a) In the Lake Erie Area Watershed: only in instances where the discharge from the development site occurs directly to Lake Erie, an adequately sized storm sewer which discharges directly into Lake Erie, or through a properly sized and designed regional stormwater detention facility.
- 2. The analyses of storm sewers and/or 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 directed by the municipality.

**Section 304 - Watershed Standards: Areas Outside the Lake Erie Area Watershed for which Act 167 Stormwater Management Planning Has Not Been Completed**

- A. The stormwater management performance standards in this section are intended to apply basic stormwater standards in areas of the municipality for which Act 167 Stormwater Management Planning has not been completed.
- B. Storm Frequencies: 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:

<u>Storm Frequency</u>	<u>Rainfall Depth (inches)</u>
2-year	2.62
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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: SCS publications, Technical Release (TR) 55 or 20, HEC I or Penn State Runoff Model (PSRM) or Modified Rational Method. Under special circumstances other computation methods may be used subject to the approval of the municipality.
- 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 as approved by the municipality may be applied. Rainfall intensities for design should be obtained from the Pennsylvania Department of Transportation rainfall charts.
- 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 municipality.

4. Predevelopment Conditions: Predevelopment conditions shall be assumed to be those which 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 subject to the approval of the municipality. At its discretion, the municipality may direct that hydrologic conditions for all areas with pervious cover (i.e., fields, woods, lawn areas, pastures, cropland, etc.) shall be assumed to be in "good" condition, and the lowest recommended SCS runoff curve number (CN) shall be applied for all pervious land uses within the respective range for each land use and hydrologic soil group.
- D. Post-development rates of runoff shall not exceed 70% of the peak rates of runoff prior to development for the 2, 10, and 25 year design storms, and 100% of the 100 year design storm.

**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 municipal engineer. The municipal 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 which may exist on the development site. In the event such conditions are identified on the site, the municipal 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.

#### **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 should 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. Should any stormwater management facilities be regulated by PA DEP Chapter 105 regulations, the facility shall be designed in accordance with those regulations and meet the regulations concerning dam safety.
- C. Shared-storage facilities which provide detention of runoff for more than one development site within a single subarea are encouraged wherever feasible and provided such facilities meet the criteria contained in this section. In addition, 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 the shared-storage facilities.

- D. Where detention facilities will be utilized, multiple use facilities, such as wetlands, lakes, ballfields or similar recreational/open space uses are encouraged wherever feasible, subject to the approval of the municipality and compliance with the Pennsylvania Department of Environmental Protection's Chapter 105 regulations.
- E. Other considerations which should be incorporated into the design of the detention facilities include:
1. Inflow and outflow structures shall be designed and installed to prevent erosion and bottoms of impoundment type structures should be protected from soil erosion.
  2. Control and removal of debris both in the storage structure and in all inlet or outlet devices shall be a design consideration.
  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 slope of storage ponds shall not exceed a ratio of three to one (3:1) horizontal to vertical dimension.
  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 subdrainage system may be required depending on the location of the pond bottom relative to groundwater levels.

**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 and constructed in accordance with the Summit Township Paving and Storm Sewer Specifications.

1. All sites shall be graded to provide drainage away from and around the structure in order to prevent any potential flooding damage.
  2. All lots shall extend roof 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 a major embankment to avoid the possibility of failing or causing the embankment to fail.
  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 such as a stormwater control facility, curbed street, 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.
- B. Wherever storm sewers are proposed to be utilized, they shall comply with the following criteria:
1. Where practical, 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. Preferably 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. Designed: (1) with cradle when traversing fill areas of indeterminate stability, (2) with anchors when gradient exceeds twenty (20) percent, and (3) with encasement or special backfill requirements when traversing under a paved area.
  4. 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 municipality and/or applicable PennDOT Specifications, Form 408.
  6. All corrugated metal pipe shall be polymer coated, and with asbestos bonding and paved inverts where prone to erode. Pipe with a municipal right-of-way shall be reinforced concrete, coated corrugated steel or corrugated polyethylene (smooth interior wall) pipe, with a minimum diameter of 15 inches.
  7. Storm inlets and structures shall be designed to be adequate, sage, self-cleaning and unobtrusive and consistent with municipal standards.

8. Approved grates shall be designed for all catch basins, stormwater inlets and other entrance appurtenances.
9. Manholes shall be designed so that the top shall be at finished grade and sloped to conform to the slope of the finished grade. Top castings of structures located in roads or parking areas shall be machined or installed to preclude "rattling."
10. 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.
11. Storm sewer outfalls 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, and approved by the County Conservation District, for each development site in accordance with the Pennsylvania Erosion/Sedimentation Regulations (25 PA Code, Chapter 102), the standards and guidelines of the County Conservation District, Summit Township Zoning Ordinance, and Summit Township Subdivision, Land Development and Mobile Home Park Ordinance.

**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 principals:
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 municipality, stormwater control facilities should be the responsibility of the owner or private management entity.
  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 governing body, upon recommendation of the municipal engineer, shall make the final determination on the continuing maintenance responsibilities prior to final approval of the stormwater management plan. The governing body 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 municipality 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 municipality to assure access for periodic inspections by the municipality 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 municipality. In the event of a change, new information will be submitted to the municipality within ten (10) days of the change.
  4. If the facility owner fails to maintain the stormwater control facilities, the municipality may perform the necessary maintenance work or corrective work following due notice by the municipality to the facility owner to correct the problem(s). The facility owner shall reimburse the municipality for all costs.

- B. The facility owner shall retain a qualified professional engineer to inspect and submit a certified report to the municipality on the following schedule:
- Annually for first five (5) years
  - Every five (5) years thereafter
  - Within 30 days following a 100 year storm event

Said inspection report must state the storage facility condition and recommendations for maintenance in order to insure adequate operations and compliance with this Ordinance.

- C. Other items may be included in the agreement where determined necessary to guarantee the satisfactory maintenance of all facilities.

**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 following activities are specifically exempt from the plan preparation provisions of this Ordinance unless the municipality 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 municipality shall give notice in writing to the land owner and the developer, if known, and direct the landowner and any 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 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 County Conservation District. 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 this Ordinance when such activities are conducted in accordance with a conservation plan prepared by the 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.

## Section 703 - Stormwater Plan Contents

- A. General Format: The stormwater plan shall be drawn to a scale of not less than 1 inch = 100 feet. All sheets shall contain a title block with; Name and address of applicant and engineer, scale, north arrow, legend and date of preparation.
- B. Existing and Proposed Features: The plan shall show the following under both pre-development and post-development conditions:
1. Watershed location - Provide a key map showing the location of the development site within the watershed(s) and watershed subarea(s). On all site drawings, show the boundaries of the watershed(s) and subarea(s) as they are located on the development site and identify watershed names(s) and subarea number(s).
  2. Floodplain boundaries - Identify 100-year floodplains on the development site (as appropriate) based on the municipal Flood Insurance Study maps.
  3. Natural features - Show all bodies of water (natural or artificial), watercourses (permanent and intermittent), swales, wetlands and other natural drainage courses on the development site, or which will be affected by runoff from the development.
  4. Soils - Provide an overlay showing soil types and boundaries within the development site (consult County, SCS and U.S. Geological Survey for information).
  5. Contours - Show existing and final contours at intervals of two (2) feet; in areas with slopes greater than fifteen (15) percent, five (5) foot contour intervals may be used.
  6. Land cover - Show existing and final land cover classifications as necessary to support and illustrate the runoff calculations performed.
  7. Drainage area delineations - Show the boundaries of the drainage areas employed in the runoff calculations performed.
  8. Stormwater management controls - Show any existing stormwater management or drainage controls and/or structures, such as storm sewers, swales, culverts, etc. which are located on the development site, or which are located off-site but will be affected by runoff from the development.
- C. Professional Certification: The principal in charge of preparing the stormwater management plan (including all calculations) shall be a registered professional engineer or registered land surveyor and the stormwater management plan shall be sealed by a registered professional engineer or professional land surveyor with training and expertise in hydrology and hydraulics. Documentation of qualifications may be required by the municipality.

- D. Runoff Calculations: Calculations for determining pre- and post-development discharge rates and for designing proposed stormwater control facilities must be submitted with the stormwater management plan. All calculations shall be prepared using the methods and data prescribed by Article III of this Ordinance.
- E. Stormwater Controls: All proposed stormwater runoff control measures must be shown on the plan including methods for collecting, conveying and storing stormwater runoff on-site, which are to be used both during and after construction. Erosion and sedimentation controls shall be shown in accordance with Article V of this Ordinance. The plan shall provide information on the exact type, location, sizing, design and construction of all proposed facilities and their relationship 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.
- F. Easements, Right-of-Ways, and Deed Restrictions: All existing and proposed easements and rights-or-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.
- G. Other Permits/Approvals: A list of any approvals/permits relative to stormwater management that will be required 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 municipality where they may be helpful for the plan review.
- H. 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 under Article VI of this Ordinance.
- I. Financial Guarantees: Submit financial guarantees in accordance with the provisions of Article X of this Ordinance.
- J. Evidence of Notification of Downstream Municipality: The developer shall notify (by certified mail) the municipality immediately downstream of the municipality within which the development is proposed 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.

**ARTICLE VIII  
PLAN REVIEW PROCEDURES**

**Section 801 - Pre-Application Phase**

- A. Before submitting the stormwater plan, applicants are urged to consult with the municipality on the applicable regulations and techniques for safely managing runoff from the development site. The municipality 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 municipality and other agencies.
- C. The pre-application phase is not mandatory; any review comments provided by the municipality are advisory only and do not constitute any legally binding action on the part of the municipality.

**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. Copies of the plans will be made available to the municipalities upon request. Comments received from any affected municipality will be considered by the municipal engineer and county agencies in their reviews.
- C. Municipal Engineer's Review: The municipal engineer shall recommend approval or disapproval of the stormwater management plan based on the requirements of the municipal ordinances, the standards and criteria of the watershed plan and good engineering practice.
- 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 County Conservation District, final stormwater management plan approval shall be granted subject to the receipt of such permits. No building permit shall be issued, nor construction started, until the permits are received and copies filed with the municipality.

### **Section 803 - Status of the Stormwater Plan after Final Approval**

- A. Upon final stormwater plan approval, receipt of all necessary permits, and recording of the final subdivision or land development plan in the Erie County Recorder of Deeds Office, 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 years of the date of final approval of the stormwater management plan, then before doing so, 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 stormwater management controls. Further, if for any reason development activities are suspended for two 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 municipal engineer shall 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. Notification of the engineer's action shall be sent to the governing body which may issue a stay of the plan modification within fourteen (14) days 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 municipal engineer or a designated representative of the municipality shall inspect the construction of the temporary and permanent stormwater management system for the development site. The permittee shall notify the municipal engineer 48 hours in advance of the completion of the following key development 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 specified by the municipal engineer.
  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 municipal engineer shall 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 municipal engineer within 24 hours of the discovery of such condition and request a field inspection. The municipal engineer shall determine if the condition requires a stormwater plan modification.
- D. In cases where stormwater facilities are to be installed in areas of landslide-prone soils or other special site conditions exist, the municipality may require special precautions such as soil tests and core borings, full-time inspectors and/or similar measures. All costs of any such measures shall be borne by the permittee.
- E. The facility owner shall retain a qualified professional engineer to inspect and submit a certified report to the municipality on the following schedule:
- Annually for first five (5) years
  - Every five (5) years thereafter
  - Within 30 days following a 100 year storm event
- Said inspection report must state the storage facility condition and recommendations for maintenance in order to insure adequate operations and compliance with this Ordinance.

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

**Section 1001 - Financial Guarantees**

- A. Financial Security: A financial security in the form of a bond, cash deposit, certified check or other negotiable securities acceptable to the municipality, shall be filed, consistent with the terms of the Developers Agreement. The financial security shall cover all streets, sanitary sewers, stormwater management facilities, water systems, fire hydrants, sidewalks and other required improvements; it shall be in the amount and form prescribed by the Pennsylvania Municipalities Planning Code (Section 509).
- B. Release of Financial Security: The procedures for requesting and obtaining a release of the financial security shall be in a manner prescribed by the Pennsylvania Municipalities Planning Code (Section 510).
- C. Default of Financial Security: If improvements are not installed in accordance with the approved final plan, the governing body 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 governing body 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.

**ARTICLE XI**  
**FEES**

**Section 1101 - Fee Schedule**

The municipal governing body may adopt by resolution from time to time a reasonable schedule of fees to cover the cost of plan reviews, inspections and other activities necessary to administer the provisions of this Ordinance. 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.

**ARTICLE XII  
ENFORCEMENT PROCEDURES AND REMEDIES**

**Section 1201 - Right of Entry**

Upon presentation of proper credentials, duly authorized representatives of the municipality may enter at reasonable times upon any property to investigate or ascertain the condition of the subject property in regard to an 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, a written notice of violation shall be issued by the municipal engineer or any designated municipal official. Such notification shall set forth the nature of the 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 municipality, the applicant, developer, owner or his/her agent shall be subject to the enforcement remedies of this Ordinance.

**Section 1203 - Preventive Remedies**

- A. In addition to other remedies, the municipality 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 (Sec. 515.1), the municipality 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 therefor in a civil enforcement proceeding commenced by the municipality, pay a fine of not less than \$100 for first offense, and not more than \$1,000 for each subsequent offense, plus court costs, including reasonable attorney fees incurred by the municipality. No judgment shall commence or be imposed, levied or be payable until the date of the determination of a violation by the district justice.
- B. If the defendant neither pays nor timely appeals the judgment, the municipality may enforce the judgment pursuant to applicable rules of civil procedure.
- C. Each day that a violation continues shall constitute a separate violation unless the district justice 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 such case there shall be deemed to have been only one such violation until the fifth day following the date of the district justice's determination of a violation; thereafter each day that a violation continues shall constitute a separate violation.

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

**Section 1205 - Additional Remedies**

In addition to the above remedies, the municipality 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 municipality and abatable as such.

**Effective Date**

ORDAINED AND ENACTED INTO AN ORDINANCE FEBRUARY 18, 1997.

- Amended April 20, 1999 - Revised wording to section 405
- Delete Section 405A.1 through 5 inclusive
  - Delete Section 405B.1 through 11 inclusive

ATTEST:

SUMMIT TOWNSHIP SUPERVISORS

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Richard P. Hessinger, Secretary

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Title