

WARRINGTON TOWNSHIP
YORK COUNTY, PENNSYLVANIA

ORDINANCE NO. 93-10

AN ORDINANCE OF WARRINGTON TOWNSHIP, YORK COUNTY, PENNSYLVANIA, REQUIRING PREPARATION OF STORM WATER MANAGEMENT PLANS; PRESCRIBING THE CONTENT THEREOF AND THE STANDARDS TO BE USED; PROVIDING FOR OWNERSHIP AND MAINTENANCE OF FACILITIES; AND PRESCRIBING PENALTIES FOR THE VIOLATION THEREOF.

BE IT ENACTED AND ORDAINED, and it is hereby enacted and ordained by the Board of Supervisors of Warrington Township, York County, Pennsylvania, by authority of law, as follows:

SECTION 1: SHORT TITLE

This ordinance shall be known as and may be cited as "The Warrington Township Storm Water Management Ordinance."

SECTION 2: SCOPE AND PURPOSE

A Storm Water Management Plan (SWMP), prepared in accordance with the provisions of this Ordinance, shall be required for each subdivision or land development plan at both the Preliminary and Final Plan submittal stage and for any new construction or expansion of any residential, commercial, industrial, accessory or other improvement that creates an area of impervious material on a parcel of twenty thousand (20,000) square feet or more. The twenty thousand (20,000) square foot requirement applies on individual large projects, projects which exceed a cumulative total of twenty thousand (20,000) square feet after the effective date of this Ordinance, and any projects occurring after the twenty thousand (20,000) square foot threshold has been reached, either initially or cumulatively.

As an integral part of the SWMP, Erosion and Sedimentation Control measures shall be included. A SWMP must be approved prior to the construction of any improvements. All SWMP's shall be prepared and certified by a professional engineer unless constituting an Incidental Storm Water Management Plan as defined in Section 203 of the Subdivision and Land Development Ordinance, in which case the plan may be prepared by a Professional Land Surveyor.

SECTION 3: TOWNSHIP LIABILITY

The degree of storm water management sought by the provisions of this Ordinance is considered reasonable for regulatory purposes.

The ordinance shall not create liability on the part of the Township, any appointed or elected official of the Township, the York County Conservation District, or any officer, Engineer or employee thereof for any erosion, sediment, pollution or flood damages that result from reliance on this ordinance or any administrative decision lawfully made thereunder.

SECTION 4: CONTENT

The SWMP shall be a separate document and shall contain the following:

- a) A general description of the proposed project.
- b) Project location on a 7.5 minute USGS map.
- c) Topographic features of the project site and adjacent lands that may impact upon the storm water management design. This data shall include:
 1. The natural drainage pattern of the site.
 2. Contour lines at two (2) foot intervals for slopes of twenty percent (20%) or less.
 3. Contour lines at five (5) foot intervals for slopes of greater than twenty percent (20%).
 4. Contour data shall be based on USGS benchmark or other datum acceptable to the Township Engineer and the location or description of said benchmark shall be indicated on the plan.
- d) The names of existing or proposed developments of adjacent land and the locations and dimensions of all streets and/or easements in each development.
- e) The existing and proposed use of the parcel.
- f) The total number of lots and the total acreage of the parcel.
- g) Parcel boundaries.
- h) Runoff calculations and related design computations of the total drainage basin necessary to substantiate the proposed temporary and permanent storm water management facilities.
- i) Design and specifications of temporary and permanent Storm water management facilities.

- j) Storm sewer and channel profiles and design cross-section management facility designs, profiles and cross-sections.
- k) Staging or Implementation Schedule for constructing the proposed storm water control system.
- l) A Grading Plan for the entire site which will include all off-road areas including building sites. This grading plan may be general in nature, but shall provide enough detail to support post-development storm water drainage facility designs.
- m) Provisions to ensure adequate maintenance of storm water management facilities for both during-construction and post-construction conditions.
- n) Signature of the licensed professional who performs the work, certifying the accuracy of the plan and all calculations associated therewith.

SECTION 5: STANDARDS

Computations for determining storm water runoff and for the design of storm water management facilities shall be based upon either the Soil-Cover-Complex method or the Rational Method. Runoff from sites with drainage areas with less than ten (10) acres may be calculated by the Rational Method. Sites with drainage areas of ten (10) to twenty (20) acres may be calculated by the Rational Method or by the Soil-Cover-Complex Method. Drainage areas in excess of twenty (20) acres shall be calculated by the Soil-Cover-Complex Method. Computations based upon an alternative method may be accepted upon recommendation of the Township Engineer. The following standards shall apply:

- a) Permanent control measures/facilities shall be designed to assure that the maximum rate of storm water runoff is no greater after development than prior to development at all points of discharge from the subject site for design storms of the two (2), five (5), ten (10), twenty-five (25), fifty (50) and one hundred (100) year storm events.

In those cases, however, where existing storm drainage facilities and/or road embankments control pre-development discharge from the site, pre-development conditions shall be simulated in the post-development design for all of the above referenced storm events.

Calculations of the pre-development peak discharge shall presume a good condition meadow cover for open areas. Where the site contains existing impervious surface, up to fifty percent (50%) of the impervious area may be

considered as an existing pre-development condition. The engineer preparing the calculations shall provide a signed and dated statement indicating that he/she has been to the site for the purpose of conducting a visual inspection in order to determine the existing ground cover. The date of the site inspection shall be included in said statement.

Land Development proposals involving parking lots in excess of one (1) acre; uses involving handling of chemicals, grease, oil, solvents and/or other potential contaminants; commercial decreasing and car washing operations, shall, in addition to the above, incorporate into the storm water management plan measures/facilities to maintain pre-development storm water quality at all points of discharge from the site.

- b) All storm water detention ponds shall be designed in accordance with the above criteria. Calculations shall be accompanied by the following supporting data:
1. Either singular or composite inflow and outflow hydrographs.
 2. Stage-storage data.
 3. Stage-discharge data.
 4. Storage-routing calculations.
 5. Other data as required by the Township Engineer.

Detention ponds based on graphical or short cut methods are prohibited.

Emergency spillways, at a minimum, shall be set at an elevation to allow discharge from the pond during the twenty-five (25) year storm. In no case, however, shall the composite outflow from the primary release device(s) and the emergency spillway exceed pre-development rates.

Spillways shall be provided structural stability. As such, locating spillways within the embankment is prohibited, unless adequate reinforcing is provided.

- c) Culverts, pipes, and storm sewers shall be designed for a ten (10) year storm with a five (5) minute time of concentration (T_c). Designs based upon calculation of actual T_c will be allowed if pipe size exceeds thirty-six (36) inches in diameter based upon said five (5) minute T_c . Supporting documentation verifying the same is

required. In the event, however, that a culvert passes beneath a public roadway, it shall be designed in such a manner to prevent the roadway from inundation during a twenty-five (25) year storm.

- d) The SWMP shall include calculations indicating velocities of flow, grades, sizes, and capacities of water carrying structure, debris or sedimentation basins, and retention and detention ponds and sufficient design information to construct such facilities.
- e) Subsurface infiltration facilities may be allowed only after all other alternatives have been explored and found not to be practical for the proposed subdivision or land development. Lack of sufficient area to install other alternatives shall not be an acceptable reason for allowing infiltration facilities.
- f) Storm water retention facilities shall only be permitted in those cases where the developer has proven that in pre-development condition an existing road embankment extends over an existing natural depression thereby causing runoff to be retained behind said embankment without release other than by natural causes such as percolation or evaporation. In such cases, the depth of the proposed retention facility shall not exceed the depth of that experienced in the pre-development condition. Requirements for design shall be as described in Subsections a) and b) above.

Ponding of runoff, except for detention purposes and as described above in Subsection f) is prohibited.

- g) All natural drainage ways and existing contouring of pre-development drainage patterns shall be preserved to the maximum extent possible. Post-development drainage patterns shall simulate predevelopment patterns.
- h) Storm water runoff shall be based on the following twenty-four (24)-hour storm events:

<u>STORM FREQUENCY</u>	<u>INCHES OF RAINFALL</u>
2 years	2.5 inches
5 years	3.8 inches
10 years	4.7 inches
25 years	5.1 inches
50 years	5.8 inches
100 years	6.4 inches

- i) Velocities: Maximum permitted velocities are as follows:
1. Three (3) feet per second where only sparse vegetation can be established.
 2. Four (4) feet per second under normal conditions where vegetation can be established by seeding.
 3. Five (5) feet per second where a dense, vigorous sod can be quickly established or where water can be temporarily diverted during establishment of vegetation.
 4. Six (6) feet per second where well established sod is in existence.
 5. For lined water carrying channels the following velocities are required.

<u>CHANNEL LINING</u>	<u>MAXIMUM VELOCITY</u>
6-inch rock rip-rap	6 feet per second
9-inch rock rip-rap	8 feet per second
Asphalt	7 feet per second
Durable Bedrock	8 feet per second
12-inch rock rip-rap	9 feet per second
Concrete or Steel	12 feet per second

6. The normal maximum velocity of open channel flows shall not exceed ten (10) feet per second.
- j) Energy dissipators/erosion control devices shall be placed at the outlets of all pipes where flow velocities exceed maximum permitted channel velocities.
- k) Vertical pipes, inlets and other surface water receiving structures shall be installed with trash racks, or so designed to control trash accumulation.
- l) Storm water runoff channels shall be designed to avoid trapping excess sediment, except if structures are so designed to trap sediment. In all instances, the minimum velocity of storm water through runoff channels shall be one and one-half (1.5) feet per second.
- m) Piping: Piping shall be in accordance with the following:
1. All piping used in the storm water drainage system shall be CMP galvanized steel, aluminum alloy or reinforced concrete. A minimum pipe

size of eighteen (18) inches in diameter shall be used in all roadway systems proposed for dedication to the Township. A minimum pipe size of twelve (12) inches in diameter is permitted on private facilities which receive no off-site drainage. Pipe shall be designed so as to provide a minimum velocity of two and one-half (2.5) feet per second when flowing full. Arch pipe may be used in lieu of round pipe where cover or utility conflict conditions exist.

2. All storm drainage piping discharging to the ground surface shall be provided with either reinforced concrete headwalls or metal pipe end sections compatible with the pipe size involved. A rip-rap apron of adequate length shall be provided at all surface discharge points in order to minimize erosion. The apron shall extend to the crown of the pipe. Rip-rap size shall be one half the width of the adjacent travel lane.

- n) Inlets: Storm drainage inlets shall be provided at all low points and hydraulically intermediate points on a system. Location spacing of inlets shall be based on the hydraulic capacity of each inlet related to the flow received and the amount of flow bypass from upstream inlets. Inlets shall be placed so street drainage shall not cross intersections or one half the width of the adjacent travel lane.

All Street inlet tops shall be a combination curb/gutter inlet referred to as PADOT Type "C" with a ten (10) inch curb reveal to allow an automatic depressed condition to exist when used on an eight (8) inch curb. Weepholes shall be provided on all inlet tops. In private parking areas, streets and yard areas with no curbing, Type "M" inlet tops shall be used.

- o) A central storm water management system shall be designed for all non-residential subdivisions and land developments proposing lots of four (4) acres or less (average lot size throughout the development). In no case will the responsibility of storm water management be passed off onto the future lot owner. In all other instances, where the lots exceed the four (4) acre minimum, the developer is encouraged to consider centralized storm water management facilities.

SECTION 6: COMPLIANCE WITH THE DEPARTMENT OF ENVIRONMENTAL
RESOURCES CHAPTER 105 REGULATIONS

Design criteria contained in the ordinance are intended for usage in conjunction with the Chapter 105 regulations of the Department of Environmental Resources Water Obstructions and Encroachments. All information and regulations contained in Chapter 105 shall be considered to be incorporated into this Ordinance as if reproduced in full. It shall be the developer's responsibility to review Chapter 105 regulations for his project and insure compliance with the same. Neither the Township Engineer or any other official of the Township shall be called on to interpret, determine necessity, or waive requirements of Chapter 105.

A Department of Environmental Resources permit, in accordance with Chapter 105, shall be required for any obstruction or encroachment in the regulated waters of the Commonwealth, prior to the approval of the Final Plan. All areas of the Township shall be classified suburban or urban for bridge and culvert designs. In the event any questions arises between this Ordinance and the Department of Environmental Resources regulations, the design criteria contained in the Department of Environmental Resources regulations shall govern.

SECTION 7: WETLANDS

In conjunction with Section 6 of this Ordinance, the developer shall comply with all Federal and State wetlands regulations in effect at the time his plan is submitted. Wetlands shall be delineated on all subdivision and land development plans that involve construction improvements or earthmoving activities. In those instances where single lots are being accessed from existing public streets, with driveways crossing wetlands, said wetland area must be delineated and note placed on the plan advising the future lot owner of the requirements to comply with all necessary wetlands regulation. In all other instances, it shall be the responsibility of the developer to investigate the presence of wetlands on his site. A Certification Statement to this effect shall be placed on the plan by the designer preparing the plan.

SECTION 8: OWNERSHIP AND MAINTENANCE PROGRAM

Each SWMP shall contain provisions which clearly set forth the ownership and maintenance responsibility of all permanent storm water management facilities, including:

- a) A description of temporary and permanent maintenance requirements.
- b) The establishment of suitable easements for access to all facilities, by Township officials.

- c) Identification of the responsible party or entity for ownership and maintenance of both temporary and permanent storm water management and erosion control facilities. In meeting this requirement, the following priority is herein established:
1. Maintenance by Private Entity: In cases where permanent control facilities are owned by a private entity (such as a homeowners association), such entity shall be responsible for maintenance. In this case, a legally binding agreement between the entity and the Township shall be made providing for maintenance of permanent control facilities, including the inspection by the Township of all such facilities deemed critical to the public welfare on a regular basis and after each major flood event.
 2. Township Ownership: The applicant may offer to dedicate the storm water management facilities to the Township. The Township shall not be required to accept dedication of storm water management facilities. However, said facilities may be offered for dedication, upon such terms and conditions established by the Board of Supervisors, and the decision to accept such dedication shall be at the sole discretion of the Board of Supervisors. As a condition of Township acceptance of said facilities, the applicant shall provide sufficient funds, as estimated by the Township Engineer, to cover anticipated maintenance, repair and construction or reconstruction costs for ten (10) years from the date of Final Plan approval.

SECTION 3: STORM WATER MANAGEMENT CONSTRUCTION STANDARDS

Basic Construction Criteria: Construction standards of storm water management and erosion control facilities shall be in accordance with the approved plans and accompanying specifications if any. The construction details and standards of the following publications in their most recent revision shall control:

- a) "Erosion and Sedimentation Control Handbook of York County".
- b) PA DOT, form 408, Specifications.
- c) PA DOT, RC Series, Roadway Construction Standards.

SECTION 10: INSPECTIONS

The Township Engineer or his designee shall periodically inspect the site during construction of the permanent storm water

facilities. It is the responsibility of the permittee to notify the Township Engineer 48 hours in advance of the beginning of construction of storm water management facilities.

Any portion of the work which does not comply with the approved plan must be promptly corrected by the permittee. No work may proceed on any subsequent phase of the storm water management plan, the subdivision or land development or building construction, until the required corrections have been made.

After construction of the facility, the developer's engineer will certify to the Township that the construction of the storm water management facility was completed in accordance with the plans and specifications as originally submitted and approved by the township. Plans which are not properly documented and certified or which do not accurately reflect correct site conditions will be rejected.

SECTION 11: CIVIL REMEDIES

Any development activity conducted in violation of the provisions of this Ordinance is hereby declared to be a public nuisance. Suits to restrain, prevent or abate violation of this Ordinance may be instituted in equity or at law by the Township or by an aggrieved person.

SECTION 12: PÉNALTY

Any person violating any of the terms or provisions of this Ordinance shall be fined in a sum ^{less than one hundred (\$100.00) dollars and not} not exceeding six hundred (\$600.00) dollars in summary proceedings commenced by the Township before any District Magistrate. Each day's violation shall constitute a separate offense for the purpose of commencing summary proceedings. Upon judgment against any person by summary conviction, or by proceedings by summons or default of the fine imposed and costs, said person may be sentenced to the York County Jail for a period not exceeding thirty (30) days.

SECTION 13: WAIVER

The provisions of these regulations are intended as a minimum standard for the protection of the public health, safety, and welfare. If the literal compliance with any mandatory provision of these regulations is shown by the applicant, to the satisfaction of the Township Engineer and the Board of Supervisors, to be unreasonable or to cause undue hardship as it applies to a particular property, or if the applicant shows that an alternative proposal will allow for equal or better results, the Board of Supervisors may grant a waiver from such mandatory provision. However, the granting of a waiver shall not have the effect of

making null and void the intent and purpose of this Ordinance. In granting waivers, the Board of Supervisors may impose such conditions as will, in its judgment, secure substantially the objectives of the standards and requirements of this Ordinance.

SECTION 14: SEVERABILITY

Should any section or provision of this Ordinance be declared by the courts to be unconstitutional or invalid, such decision shall not affect the validity of the Ordinance as a whole or any part thereof other than the part so declared to be unconstitutional or invalid, and it is hereby declared to be the intent of Warrington Township that the remainder of this Ordinance would have been adopted without any such provisions held to be invalid.

SECTION 15: EFFECTIVE DATE

This Ordinance shall be effective five (5) days after date of enactment as provided by law.

ENACTED AND ORDAINED this 6th day of October, 1993.

ATTEST:

Lynda Altland
SECRETARY

WARRINGTON TOWNSHIP
BOARD OF SUPERVISORS

John R. Tyle
CHAIRMAN