

ORDINANCE NO. 2009-01

AMENDMENT TO WARRIORS MARK TOWNSHIP ACT 167
STORMWATER MANAGEMENT ORDINANCE (i.e. ORDINANCE NO. 1998-1)

The Board of Supervisors of the Township of Warriors Mark, Huntingdon County, Pennsylvania, hereby ordains as follows:

SECTION 1. AMENDMENT OF ORDINANCE NO. 1998-1.

A. ARTICLE I shall be amended by adding the following section (i.e. Section 108) to the end of ARTICLE I of Ordinance No. 1998-1, and Section 108 shall state:

SECTION 108. LIABILITY DISCLAIMER

The degree of storm water management sought by the provisions of this Ordinance is considered reasonable for regulatory purposes. This Ordinance shall not create liability on the part of the Township, any appointed or elected official of the Township or any officer, engineer or employee thereof for the erosion, sedimentation or flood damages that result from reliance on this Ordinance or any administrative decision lawfully made pursuant to this Ordinance.

B. Section 302A1a) is hereby deleted in its entirety and replaced with the following:

- a) Having impervious coverage of less than ten (10%) percent of the total site area up to a maximum impervious area of 15,000 square feet shall be exempt from the Drainage Plan preparation provisions of this Ordinance, however, in any such situation, adequate and safe conveyance of storm water from the site must be provided. For developments that are to be constructed in phases, the area of impervious coverage when added together for all final phases shall be compared to the entire area of all final phases when added together in establishing exemption eligibility. Impervious coverage shall include, but not be limited to, any roof, parking or driveway areas, and any new streets and sidewalks.

C. Section 302B is hereby deleted in its entirety and in its place is inserted the following:

B. Detention/Infiltration Standard

Residential and commercial industrial buildings with roof areas less than 5,000 square feet can be removed from the computed impervious area when they are sumped to drywells in accordance with the following minimum standards:

1. Soils should have a minimum percolations rate of 0.47 in/hr. If no site soils meet the minimum percolation rate, no subsurface facilities shall be used. Percolation rates must be obtained by direct testing methods in accordance with the latest edition of Pennsylvania Department of Environmental Protection stormwater best management practices manual
2. The facility shall be designed to provide 0.04 cubic feet of volume per square foot of roof area.
3. The void ratio of the gravel or rock to be used in the facility must be specified on the plans. The gravel or rock should be covered with a geotextile to prevent soil migration and a minimum of 12 inches of cover should be provided over the facility.
4. Drywells and infiltration trenches shall not be installed on slopes greater than twenty (20%) percent.
5. Drywells or the drains to them must contain sediment/debris traps that can be maintained regularly. All downspouts shall have leaf strainers to prevent leaves from clogging the facility. An overflow system must be provided for heavy rains in excess of the design flow.
6. The bottom of the facility should be at least 30 inches above the seasonal high water table and 30 inches above bedrock.
7. Drywells and infiltration trenches shall be installed at least 10 feet from the down slope of building walls.

D. Section 303C2 shall be deleted in its entirety and in its place shall be inserted the following:

2. Open channels must be able to convey post-development runoff from a 25 year design storm within their banks with a minimum of 1.0 foot of freeboard and not create a hazard to any persons or property.

E. The following statement shall be added to the end of Section 303D:

All erosion protection shall be designed in accordance with the latest edition of the Department of Environmental Protection's Erosion and Sediment Pollution Control Program Manual, and Title 25 Pa. Code Chapter 102.

F. The text of Section 303I is hereby deleted in its entirety, and in its place shall be inserted the following:

DELETED.

G. Section 303.G is hereby deleted in its entirety and its place is inserted the following:

- G. Storm water management facilities located outside of existing or proposed rights-of-way shall be located within and accessible by easements as follows:
1. Drainage Easements: Where a tract is traversed by an existing or proposed watercourse, drainage-way, channel or stream, a drainage easement paralleling the line of such watercourse, drainage-way, channel or stream shall be provided. The width of the drainage easement will be adequate to preserve the unimpeded flow of natural drainage in the 100-year flood plain, in accordance with computed top widths for water surface elevations determined under Section 304 of this article.
 2. Access Easements. Where proposed storm water management facilities are not adjacent to proposed or existing public rights-of-way or are not accessible due to physical constraints, as determined by the Township Engineer, a twenty-foot-wide passable access easement specifying rights of entry shall be provided. Access easements shall provide for vehicle ingress and egress on grades of less than 10% for carrying out inspection or maintenance activities.
 3. Maintenance Easements. A maintenance easement shall be provided which encompasses the storm water facility and appurtenances and provides for access for maintenance purposes. The maintenance easement must be located outside of the one-hundred-year water surface elevation and the storm water facility appurtenances.
 4. No trees, shrubs, structures, or fill shall be placed in easement areas, nor shall easement areas be excavated without prior review by the Township Engineer and without prior written approval from the Township. Upon such approval from the Township such landscaping or fill may be placed in easement areas and/or such excavation can be performed in easement areas, provided the same do not impede access and/or threaten the public policy concerns that this Ordinance is designed to protect.

5. Whenever practicable, easements shall be parallel with and conjunctive to property lines of the subdivision.
6. When storm water conveyance pipes are located in undedicated land, they shall be placed within a drainage easement not less than 20 feet wide as approved by the Township Engineer.

H. ARTICLE III shall be amended by adding the following Subsection L to Section 303

which shall state:

L. Detention Basin Design.

1. Detention basin emergency spillways must have the ability to safely convey (i.e., without impairing the continued function of the facilities) the 100-year event assuming that all of the principal spillway orifices are clogged. A minimum of 1.0' of freeboard must be maintained above the resulting maximum water surface elevation. Should any storm water management facility require a dam safety permit under PADEP Chapter 105, the facility shall be designed in accordance with Chapter 105 and meet the regulations of chapter 105 concerning dam safety which may be required to pass storms larger than the 100-year event. Any underground storm water management facilities (pipe storage systems) must have a method to bypass flows higher than the required design (up to a 100-year post-development inflow) without structural failure or causing downstream harm or safety risks.
2. Top or toe of slope shall be located a minimum of ten (10) feet from any exterior property line. Basin exterior and interior slopes shall not exceed three (3) horizontal feet to one (1) vertical foot
3. Minimum top width of berm shall be ten (10) feet.
4. The Basin shall completely dewater within 72 hours of the storm event.
5. Energy dissipating devices shall be placed at all basin outlets.
6. Temporary or permanent grass stabilization measures shall be established on the sides and base of all basins within two weeks

7. Outlet structures within detention/retention basins shall be constructed of reinforced concrete or an approved alternate. With the exception of those openings designed to carry perennial stream flows, design openings shall have childproof, non-clogging trash racks over all openings nine inches or smaller in any dimension.
8. When rock is encountered during excavation of a basin, it shall be removed to an elevation of at least twelve inches below the proposed basin floor (for manufactured liner, twenty-four to thirty inches). All cracks and fissures are to be structurally filled.
9. Compaction test reports shall be kept on file at the site and be subject to review at all times with copies being forwarded to the Township upon request.

I. Section 304 is hereby deleted in its entirety and in its place is inserted the following:

SECTION 304. CALCULATION METHODOLOGY

Storm water runoff shall be calculated in accordance with the following:

A. Peak Rate Control

1. The design of facilities other than conveyance facilities shall determine storm water peak discharge and runoff by use of the National Resources Conservation Service (NRCS) Method as set forth in the Urban Hydrology for Small Watersheds, Technical Release No. 55 (TR55), and technical Release No. 20 (TR20), latest revisions.
2. Runoff curve numbers listed in Appendix A are to be used in the SCS methodologies.
3. Upon a landowner's written request, which said request explains why the use of the Rational Method is more appropriate than the NRCS's Methods for the site in question, the Township Engineer may permit the use of the Rational Method or Modified Rational Method for sites up to 20 acres.
4. Pre and post-development storm water analysis.
 - (a) Pre and Post Development storm water management analysis should be conducted using the one, two, ten, twenty-five and one hundred year design storms.

(b) The twenty-four-hour precipitation depths, from Appendix A, Fig. A, shall be used for storm water management analysis in Warriors Mark Township.

(c) All undeveloped areas are to be modeled as meadow or woods in good hydrologic condition. Existing impervious areas may be modeled as being impervious for pre-development conditions.

B. Storm drain conveyance system design (storm sewer pipes, swales and open channels)

1. Rational coefficients used are to be from Rawls et al. (1981), PADOT Design Manual 2-Chapter 10 or using the Aron curves to convert CNs to C. If Aron curves are used, all CNs must be applicable to the HSG as identified by NRCS.
2. Storm drains shall be designed at a minimum using the ten-year storm event without surcharging inlets. Storm drains across municipal roads or crossing other properties must convey, at a minimum, a twenty-five year storm event without surcharging inlets.
3. Storm drain conveyance system stability shall be computed using the ten-year return period peak runoff rate.
4. Inlet types and inlet assemblies shall conform to the Pennsylvania Department of Transportation Standards for Roadway Construction as approved by the Township Engineer. In curbed sections, the maximum encroachment of water on the roadway pavement shall not exceed half of a through traffic lane during the 10-year design storm of five minute duration. Inlets shall be used to control the encroachment of water on the pavement.
5. Accessible drainage structure shall be located on a continuous storm sewer system at all vertical dislocations, at all locations where a transition in storm sewer pipe sizing is required, at all vertical and horizontal angle points exceeding five degrees, and at all points of convergence of two or more influent storm sewer mains.

J. Section 402A is hereby deleted in its entirety and replaced with the following:

- A. All development activities having impervious coverage of less than ten (10%) percent of the total site area up to a maximum impervious area of 15,000 square feet shall be exempt from the

Drainage Plan preparation provisions of this Ordinance, however, in any such situation, adequate and safe conveyance of storm water from the site must be provided. For developments that are to be constructed in phases, the area of impervious coverage when added together for all final phases shall be compared to the entire area of all final phases when added together in establishing exemption eligibility. Impervious coverage shall include, but not be limited to, any roof, parking or driveway areas, and any new streets and sidewalks. Exemption shall not relieve the applicant from providing adequate storm water management to meet the purpose of this Ordinance.

K. The following sentences shall be added to the end of the first paragraph of Section 403:

Scale can be no greater than 1" equals 50' for tracts less than 20 acres and 1" equals 100' for tracts of 20 acres or more. All lettering shall be drawn at a size to be legible if the plans are reduced to half scale. All sheets comprising a submission shall be on one size.

L. Section 403B23 is hereby deleted in its entirety and in its place is inserted the following:

23. The following signature block for the Developer's Engineer:

"I, (Developer's Engineer), on this date (date of signature) have reviewed and hereby certify that the Drainage Plan meets all design standards and criteria of the Warriors Mark Township Act 167 Storm Water Management Ordinance."

M. The following statement shall be added to Section 403B:

25. A statement, signed by the landowner, acknowledging the storm water development system to be a permanent fixture that can be altered or removed only after approval of a revised plan by the Township.

SECTION 2. ORDINANCE NO. 1998-1.

All other provisions of Ordinance No. 1998-1 shall remain in full force and effect.

SECTION 3. SEVERABILITY. The provisions of this Ordinance are severable, and if any of its provisions shall be held to be invalid, illegal or unconstitutional, such decisions shall not affect or impair any of the remaining provisions of this Ordinance.

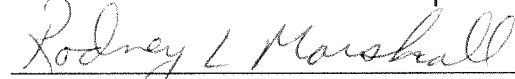
SECTION 4. EFFECTIVE DATE.


This Ordinance shall be effective immediately and shall remain in full force until modified, amended, or rescinded by the Township of Warriors Mark Board of Supervisors, Huntingdon County, Pennsylvania.

ORDAINED AND ENACTED by the Warriors Mark Township Board of Supervisors on the 3rd day of March, 2009.

WARRIORS MARK BOARD OF SUPERVISORS


L. Stewart Neff, Chair


Rodney L. Marshall, Vice Chair


Mark Brown, Supervisor

ATTEST:


Catherine G. Noll, Secretary